

Kenya 2003

# Kenya



**Demographic and  
Health Survey**

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Central Bureau of Statistics  
Nairobi, Kenya

Ministry of Health  
Nairobi, Kenya

Kenya Medical Research Institute  
Nairobi, Kenya

National Council for Population and Development  
Nairobi, Kenya

ORC Macro  
Calverton, Maryland, USA

Centers for Disease Control and Prevention  
Nairobi, Kenya

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## FOREWORD

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This detailed report presents the major findings of the 2003 Kenya Demographic and Health Survey (2003 KDHS). The 2003 KDHS is the fourth survey of its kind to be undertaken in Kenya, others being in 1989, 1993, and 1998. The 2003 KDHS differed in two aspects from the previous KDHS surveys: it included a module on HIV prevalence from blood samples, and it covered all parts of the country, including the arid and semi-arid districts that had previously been omitted from the KDHS. The 2003 KDHS was implemented by the Central Bureau of Statistics. Fieldwork was carried out between April and September 2003.

The primary objective of the 2003 KDHS was to provide up-to-date information for policymakers, planners, researchers, and programme managers, which would allow guidance in the planning, implementation, monitoring and evaluation of population and health programmes in Kenya. Specifically, the 2003 KDHS collected information on fertility levels, marriage, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of women and young children, childhood and maternal mortality, maternal and child health, and awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections (STIs). In addition, it collected information on malaria and use of mosquito nets, domestic violence among women, and HIV prevalence of adults.

The 2003 KDHS results present evidence of lower than expected HIV prevalence in the country, stagnation in fertility levels, only a very modest increase in use of family planning methods since 1998, continued increase in infant and under-five mortality rates, and overall decline in indicators of maternal and child health in the country. There is a disparity between knowledge and use of family planning methods. There is also a large disparity between knowledge and behaviour regarding HIV/AIDS and other STIs. Some of the critical findings from this survey, like the stagnation in fertility rates and the declining trend in maternal and child health, need to be addressed without delay.

I would like to acknowledge the efforts of a number of organisations that contributed immensely to the success of the survey. First, I would like to acknowledge financial assistance from the Government of Kenya, the United States Agency for International Development (USAID), the United Kingdom Department for International Development (DFID), the United Nations Population Fund (UNFPA), the Japan International Co-operation Agency (JICA), the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), and the Centers for Disease Control and Prevention (CDC). Second, in the area of technical backstopping, I would like to acknowledge ORC Macro, CDC, the National AIDS and STIs Control programme (NASCOP), the Kenya Medical Research Institute (KEMRI), and the National Council of Population and Development (NCPD). Special thanks go to the staff of the Central Bureau of Statistics and the Ministry of Health who coordinated all aspects of the survey.

Finally, I am grateful to the survey data collection personnel and, more importantly, to the survey respondents, who generously gave their time to provide the information and blood spots that form the basis of this report.

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Acting Director of Statistics



## SUMMARY OF FINDINGS

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The 2003 Kenya Demographic and Health Survey (2003 KDHS) is a nationally representative sample survey of 8,195 women age 15 to 49 and 3,578 men age 15 to 54 selected from 400 sample points (clusters) throughout Kenya. It is designed to provide data to monitor the population and health situation in Kenya as a follow-up of the 1989, 1993 and 1998 KDHS surveys. The survey utilised a two-stage sample based on the 1999 Population and Housing Census and was designed to produce separate estimates for key indicators for each of the eight provinces in Kenya. Unlike prior KDHS surveys, the 2003 KDHS covered the northern half of Kenya. Data collection took place over a five-month period, from 18 April to 15 September 2003.

The survey obtained detailed information on fertility levels, marriage, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of women and young children, childhood and maternal mortality, maternal and child health, awareness and behaviour regarding HIV/AIDS, and other sexually transmitted infections (STIs). New features of the 2003 KDHS include the collection of information on malaria and use of mosquito nets, domestic violence, and HIV testing of adults.

The 2003 KDHS was implemented by the Central Bureau of Statistics (CBS) in collaboration with the Ministry of Health (including the National AIDS and STIs Control Programme-NASCOP and the Kenya Medical Research Institute-KEMRI), and the National Council for Population and Development (NCPD). Technical assistance was provided through the MEASURE/DHS programme, in collaboration with the U.S. Centers for Disease Control and Prevention (CDC). Financial support for the survey was provided by the Government of Kenya and a consortium of donors, including: the U. S. Agency for International Development (USAID), the United Nations Population Fund (UNFPA), Japan International Cooperation Agency (JICA)/United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), the British Department for International Development (DFID), and

the Centers for Disease Control and Prevention (CDC).

### FERTILITY

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**Fertility Levels and Trends.** One of the most surprising findings from the 2003 KDHS is that the previously documented decline in fertility appears to have stalled. The total fertility rate of 4.9 children per woman for the three-year period preceding the survey (mid-2000 to mid-2003) is almost identical to the rate of 5.0 derived from the 1999 Population and Housing Census. Comparison with the 1998 KDHS requires restricting analysis to the southern parts of the country that were sampled in both surveys; this comparison shows a slight increase in fertility from 4.7 children per woman between 1995 and 1998 to 4.8 between 2000 and 2003. Given the dramatic decline in fertility from the late 1970s to the mid-1990s (from 8.1 to 4.7), this plateau in fertility is worrisome.

**Fertility Differentials.** There are substantial differences in fertility levels in Kenya. The total fertility rate is considerably higher in the rural areas (5.4 children per woman) than urban areas (3.3 children per woman). Regional differences are also marked. Fertility is lowest in Nairobi Province (2.7 children per woman) and highest in North Eastern Province (7.0 children per woman). Fertility in Central Province is also relatively low (3.4), compared with Nyanza (5.6), Rift Valley (5.8) and Western (5.8) Provinces.

In accordance with expectations, education of women is strongly associated with lower fertility. The total fertility rate (TFR) decreases dramatically from 6.7 for women with no education to 3.2 for women with at least some secondary education. In terms of trends over time, fertility has actually increased among women with no education and has only declined among those with some secondary education.

**Unplanned Fertility.** Despite a relatively high level of contraceptive use, the 2003 KDHS data indicate that unplanned pregnancies are common in Kenya. Overall, 20 percent of births in Kenya are unwanted, while 25 percent are mistimed (wanted later). Overall, the proportion of births considered mistimed or unwanted has changed little, compared with the

1998 KDHS; however, the trends show a sizeable increase in the percentage of births that are unwanted and a comparable reduction in those that are mistimed.

**Fertility Preferences.** The desire to have more children has increased since 1998 among both women and men. For example, the proportion of married women who want another child has increased from 40 to 45 percent (excluding the northern districts in order to be comparable). Nationally, 47 percent of married women want to have another child—29 percent later and 16 percent soon (within two years). There has been little change in the ideal number of children. In 2003, among women, the mean ideal family size is 3.9 children.

## **FAMILY PLANNING**

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**Knowledge of Contraception.** Knowledge of family planning is nearly universal, with 94 percent of all women age 15 to 49 and 97 percent of men age 15 to 54 knowing at least one modern method of family planning. Among all women, the most widely known methods of family planning are the male condom (91 percent), pills (90 percent), and injectables (89 percent). Three-quarters of all women have heard of female sterilisation, while about two-thirds have heard of the IUD, implants, and periodic abstinence.

Trends in contraceptive knowledge since the 1998 KDHS are mixed. Although it appears as if there has been a slight drop in knowledge since 1998, it is mostly due to the inclusion of the northern areas of Kenya in 2003. When these areas are excluded, there has been no change in overall levels of knowledge of any method or any modern method. Nevertheless, the level of knowledge of several methods has declined slightly since 1998. For example, among all women (excluding the northern districts), the percentages who know of female sterilisation, the pill, the IUD, and periodic abstinence have declined slightly since 1998. On the other hand, the percentages who know of male sterilisation, male condoms, injectables, implants and withdrawal have increased slightly.

**Use of Contraception.** Almost four in ten married women (39 percent) in Kenya are using a

method of family planning. Most are using a modern method (32 percent of married women), while 8 percent use a traditional method. Injectables, pills, and periodic abstinence are the most commonly used contraceptive methods, used by 14 percent, 8 percent, and 6 percent of married women, respectively.

**Trends in Contraceptive Use.** Contraceptive use has increased slightly since 1998, from 39 to 41 percent of married women (excluding the northern part of the country so as to be comparable to 1998). This is far less than the 6 percentage point rise in the five years between 1993 and 1998. Nevertheless, the 2003 KDHS corroborates trends in method mix, namely, a continuing increase in use of injectables and decrease in use of the pill as was the case in earlier KDHS surveys.

**Differentials in Contraceptive Use.** As expected, contraceptive use increases with level of education. Use of modern methods increases from 8 percent among married women with no education to 52 percent among women with at least some secondary education. Use of modern contraception among women with no education dropped from 16 percent in 1998 to 11 percent in 2003 (excluding the northern areas).

**Source of Modern Methods.** In Kenya, public (government) facilities provide contraceptives to slightly more than half (53 percent) of modern method users, while 41 percent are supplied through private medical sources, 5 percent through other private sources (e.g. shops) and only 1 percent through community-based distribution.

**Discontinuation Rates.** Overall, almost four in ten women (38 percent) discontinue use within 12 months of adopting a method. The 12-month discontinuation rate for injectables (32 percent) and periodic abstinence (33 percent) are lower than for the pill (46 percent) and male condom (59 percent). Discontinuation rates have increased since 1998, from 33 percent to 38 percent of users. This seems to be due to higher discontinuation rates for the pill and injectables, while rates for condoms and periodic abstinence have remained stable.

**Unmet Need for Family Planning.** One-quarter of currently married women in Kenya have an unmet need for family planning, unchanged since 1998. Three-fifths of unmet need is comprised of women who want to wait two or more years before having

their next child (spacers), while two-fifths is comprised of women who want no more children (limiters).

## MATERNAL HEALTH

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**Antenatal Care.** The 2003 KDHS data indicate that 88 percent of women in Kenya receive antenatal care from a medical professional, either from doctors (18 percent) or nurses or midwives (70 percent). A small fraction (2 percent) receives antenatal care from traditional birth attendants, while 10 percent do not receive any antenatal care. The 2003 data indicate a slight decline since 1998 in medical antenatal care coverage.

Just over half of women (52 percent) received two or more tetanus toxoid injections during pregnancy for their most recent birth in the five years preceding the survey, while 34 percent received one dose. There has been little change since 1998 in the proportion of women receiving tetanus toxoid injections during pregnancy.

With regard to anti-malarial indicators, the 2003 KDHS data shows that only 4 percent of pregnant women slept under an insecticide-treated mosquito net the night before the survey and 4 percent received intermittent preventive treatment with anti-malarial medication during antenatal care visits.

**Delivery Care.** Proper medical attention and hygienic conditions during delivery can reduce the risk of serious illness among mothers and their babies. The 2003 KDHS found that two out of five births (40 percent) are delivered in a health facility, while 59 percent are delivered at home. There has been no change since 1998 in the proportion of births occurring at home.

Similarly, 42 percent of births in Kenya are delivered under the supervision of a health professional, mainly a nurse or midwife. Traditional birth attendants continue to play a vital role in delivery, assisting with 28 percent of births. Relatives and friends assist in 22 percent of births. The proportion of births assisted by medically trained personnel has remained constant since 1998. Only 4 percent of births are delivered by Caesarean section, a slight decline since 1998.

**Maternal Mortality.** Data on the survival of respondents' sisters were used to calculate a ma-

ternal mortality ratio for the 10-year period before the survey, which was estimated as 414 maternal deaths per 100,000 live births. This represents a decline from the rate of 590 maternal deaths per 100,000 live births for the ten-year period prior to the 1998 KDHS; however, the sampling errors around each of the estimates are large and consequently, the two estimates are not significantly different. Thus, it is impossible to say with confidence that maternal mortality has declined. However, a comparison of data from the 1998 and 2003 KDHS surveys indicates a substantial increase in overall adult mortality rates for both males and females at all ages, with the exception of age group 15 to 19 among men.

## CHILD HEALTH

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**Childhood Mortality.** Data from the 2003 KDHS show that child mortality levels have been more or less stable over the recent few years. For the most recent five-year period preceding the survey, infant mortality is 77 deaths per 1,000 live births and under-five mortality is 115 deaths per 1,000 live births. This means that one in every nine children born in Kenya dies before attaining their fifth birthday.

**Childhood Vaccination Coverage.** In the 2003 KDHS, mothers were able to show a health card with immunisation data for only 60 percent of children age 12-23 months. Accordingly, estimates of coverage are based on both data from health cards and mothers' recall. The data show that 57 percent of children 12-23 months are fully vaccinated against the major childhood illnesses. This represents a deterioration in immunisation coverage for children. Seven percent of children 12-23 months have not received any of the recommended immunisations.

**Child Illness and Treatment.** Among children under five years of age, 18 percent were reported to have had symptoms of acute respiratory illness in the two weeks preceding the survey, while 41 percent had a fever in the two weeks preceding the survey and 16 percent had diarrhoea. Forty-six percent of children with symptoms of ARI and/or fever were taken to a health facility or provider for treatment. Thirty percent of children with diarrhoea were taken to a facility for treatment, while half were given either a solution prepared from oral rehydration salt (ORS) packets or increased fluids. Among children with fever in the two weeks preceding the survey, 11 percent were given the recommended medicine, sulfadoxine-pyrimethamine or SP, although only 6 percent of children received SP within a day of the onset of the fever. Survey data also

indicate that only 5 percent of children under five slept under an insecticide-treated mosquito net the night before the survey.

## NUTRITION

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**Breastfeeding Practices.** Breastfeeding is nearly universal in Kenya; 97 percent of children are breastfed. The median duration of breastfeeding is 20 months, similar to the duration documented in the 1993 and 1998 KDHSs. The 2003 KDHS data indicate that supplementary feeding of children begins early. For example, among newborns less than two months of age, 45 percent are receiving supplementary foods or liquids other than water. The median duration of exclusive breastfeeding is estimated at less than one month.

Bottle-feeding is common in Kenya; 27 percent of children under 6 months are fed with bottles with teats. Nevertheless, use of infant formula milk is minimal; only 5 percent of children below six months receive commercially produced infant formula.

**Intake of Vitamin A.** Ensuring that children between six months and 59 months receive enough vitamin A may be the single most effective child survival intervention, since deficiencies in this micronutrient can cause blindness and can increase the severity of infections, such as measles and diarrhoea. Overall, 62 percent of children under age three years consume vitamin A-rich foods and 33 percent of children age 6-59 months received a vitamin A supplement in the six months preceding the survey.

**Nutritional Status of Children.** Survey data show that the nutritional status of children under five has improved only slightly in the past few years. At the national level, 30 percent of children under five are stunted (low height-for-age), while 6 percent of children are wasted (low weight-for-height) and 20 percent are underweight (low weight-for-age). Children in Coast Province are most likely to be stunted, while those in North Eastern Province are most likely to be wasted and underweight.

**Nutritional Status of Women.** The mean body mass index (BMI) for women age 15-49 has increased very slightly since 1998 and is now 23.

## HIV/AIDS

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**Awareness of AIDS.** Almost all (99 percent) of Kenyan women and men have heard of AIDS. More than 4 in 5 respondents (81 percent of women and 89 percent of men) indicate that the chances of getting the AIDS virus can be reduced by limiting sex to one faithful partner. Similarly, 61 percent of women and 72 percent of men know that condoms can reduce the risk of contracting the HIV virus during sexual intercourse. As expected, the proportion of both women and men who know that abstaining from sex reduces the chances of getting the AIDS virus is high—79 percent among women and 89 percent among men.

Almost three-quarters of women (72 percent) and two-thirds of men (68 percent) know that HIV can be transmitted by breastfeeding; however, only one-third of women (33 percent) and 38 percent of men know that the risk of maternal to child transmission can be reduced by the mother taking certain drugs during pregnancy. Eighty-five percent of women and 90 percent of men are aware that a healthy-looking person can have the AIDS virus.

**Attitudes Towards HIV-Infected People.** Large majorities of Kenyan women and men (84 and 88 percent, respectively) express a willingness to care for a relative sick with AIDS in their own household, while far fewer (60 and 74 percent, respectively) say they would be willing to buy fresh vegetables from a vendor who has the AIDS virus. Survey results further indicate that only 57 and 60 percent of women and men, respectively, believe that a female teacher who has the AIDS virus should be allowed to continue teaching in school. Finally, 59 percent of women and 72 percent of men say that if a member of their family got infected with the virus that causes AIDS, they would not necessarily want it to remain a secret.

**HIV-Related Behavioural Indicators.** Comparison of data from the 2003 KDHS with similar data from the 1998 KDHS indicates that there has been an increase in the age at first sexual experience. The median age at first sex among women age 20 to 49 has increased from 16.7 to 17.8, even when the northern areas of Kenya are excluded to make the data more comparable. Since the most important mechanism of HIV transmission is sexual intercourse, it is important to know the extent of multiple sexual partners. The 2003 KDHS data show that only 2 percent of women and 12 percent of men report having had more than one sexual partner in the 12 months prior to the survey.

**HIV Prevalence.** In the one-half of the households selected for the man's survey, all women and men who were interviewed were asked to voluntarily provide some drops of blood for HIV testing in the laboratory. Results indicate that 7 percent of Kenyan adults are infected with HIV. HIV prevalence is nearly 9 percent among women age 15 to 49 and under 5 percent among men 15 to 54. The female-to-male ratio is higher than that found in most population-based studies in Africa and is due to the fact that young women are particularly vulnerable to HIV infection compared to young men. The peak prevalence among women is at age 25 to 29 (13 percent), while prevalence rises gradually with age among men to peak at age 40 to 44 (9 percent). Only in the 45 to 49 year age group is HIV prevalence among men higher than that for women.

**Patterns of HIV Prevalence.** Urban residents have a significantly higher risk of HIV infection (10 percent) than rural residents (6 percent). The HIV epidemic also shows regional heterogeneity. Nyanza Province has an overall prevalence of 15 percent, followed by Nairobi with 10 percent. All other provinces have levels between 4 percent and 6 percent overall, except North Eastern Province where no respondent tested positive. Women and men who are widowed have significantly higher rates than married respondents. Survey findings indicate that there is a strong relationship between HIV prevalence and male circumcision; 13 percent of men who are uncircumcised are HIV infected, compared with 3 percent of those who are circumcised. Among couples who are married or living together, 7 percent are discordant, with one partner infected and the other uninfected.

## **GENDER-RELATED VIOLENCE**

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**Violence Since Age 15.** Not only has domestic violence against women been acknowledged worldwide as a violation of the basic human rights of women, but an increasing amount of research highlights the health burdens, intergenerational effects, and demographic consequences of such

violence. In the 2003 KDHS, women were asked if they had experienced violence since age 15. The data show that half of women have experienced violence since they were 15 and one in four reported experiencing violence in the 12 months preceding the survey. The main perpetrators are husbands, and to a lesser extent, teachers, mothers, fathers and brothers.

**Marital Violence.** Twenty-six percent of ever-married women report having experienced emotional violence by husbands, 40 percent report physical violence and 16 percent report sexual violence. Almost half (47 percent) of ever-married women report suffering emotional, physical or sexual violence, while 8 percent have experienced all three forms of violence by their current or most recent husband. Two in three women who have experienced physical or sexual violence by their husbands have experienced such violence in the 12 months preceding the survey. One-quarter of ever-abused women (26 percent) have experienced spousal violence three or more times in the last 12 months. The factor most strongly related to marital violence is husband's alcohol and/or drug use; violence is 2-3 times more prevalent among women who say their husbands get drunk or take illegal drugs very often compared to those whose husbands do not drink or take illegal drugs.

**Attitudes Towards Marital Violence.** To gauge the acceptability of domestic violence, women and men interviewed in the 2003 KDHS were asked whether they thought a husband would be justified in hitting or beating his wife in each of the following five situations: if she burns the food; if she argues with him; if she goes out without telling him; if she neglects the children; and if she refuses to have sexual relations with him. Results show that two-thirds of Kenyan women and men agree that at least one of these factors is sufficient justification for wife beating.

**Female Genital Cutting.** Survey data show that 32 percent of Kenyan women are circumcised. This represents a decline from the level recorded in the 1998 KDHS (from 38 to 31 percent, excluding the northern districts so as to be comparable).



# KENYA



# INTRODUCTION

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*Fredrick Otieno and Silas Opiyo*

## 1.1 GEOGRAPHY, HISTORY, AND THE ECONOMY

### Geography

Kenya is situated in the eastern part of the African continent. The country lies between 5 degrees north and 5 degrees south latitude and between 24 and 31 degrees east longitude. It is almost bisected by the equator. Tanzania borders it to the south, Uganda to the west, Ethiopia and Sudan to the north, Somalia to the northeast, and the Indian Ocean to the southeast. The coastline and the port in Mombasa enable the country to trade easily with other countries.

The country is divided into 8 provinces and 72 districts. It has a total area of 582,646 square kilometres of which 571,466 square kilometres form the land area. Approximately 80 percent of the land area of the country is arid or semiarid, and only 20 percent is arable. The country has diverse physical features, including the Great Rift Valley, which runs from north to south; Mount Kenya, the second highest mountain in Africa; Lake Victoria, the largest freshwater lake on the continent; Lake Nakuru, a major tourist attraction because of its flamingos; Lake Magadi, famous for its soda ash; and a number of rivers, including Tana, Athi, Yala, Nzoia, and Mara.

The country falls into two regions: lowlands, including coastal and lake basin lowlands, and highlands, which extend on both sides of the Great Rift Valley. Rainfall and temperatures are influenced by altitude and proximity to lakes or the ocean. There are four seasons in a year: a dry period from January to March, the long rainy season from March to May, followed by a long dry spell from May to October, and then the short rains between October and December.

### History

Kenya is a former British colony. The independence process was met with resistance and an armed struggle. The Mau Mau rebellion in the 1950s paved the way for constitutional reform and political development in the following years. The country achieved self-rule in June 1963 and gained independence (*Uhuru*) on December 12, 1963. Exactly one year later, Kenya became a republic. The country has had a stable government and political tranquility since becoming independent. The country was a multi-party state until 1981, when the relevant parts of the constitution were amended to create a one-party state. However, in the early 1990s, the country reverted to a multiparty state. From the start of its independence until December 2002, the country was ruled by the Kenya African National Union. During the 2002 general elections, the National Alliance of Rainbow Coalition ascended to power through a landslide victory.

The country has about 42 ethnic groups which are distributed throughout the country. Major tribes include Kikuyu, Luo, Kalenjin, Luhya, Kamba, Kisii, Mijikenda, Somali, and Meru. In Kenya, English is the official language while Kiswahili is the national language. Main religions in the country are Christianity and Islam.

## Economy

The Kenyan economy is predominantly agricultural with a strong industrial base. The agriculture sector contributes 25 percent of the gross domestic product (GDP). Coffee, tea, and horticulture (flowers, fruits, and vegetables) are the main agricultural export commodities; in 2002, the three commodities jointly accounted for 53 percent of the total export earnings (Central Bureau of Statistics, 2003a). The manufacturing sector contributes about 13 percent of the total GDP and contributes significantly to export earnings, especially from the Common Market for Eastern and Southern Africa (COMESA) region. Despite recent declines, the tourism sector has also contributed to improving the living standards of Kenyans. The economy has undergone a structural transformation since 1964. There has been gradual decline in the share of the GDP attributed to agriculture, from over 30 percent during the period 1964-1979 to 25 percent in 2000-2002. The manufacturing sector has expanded from about 10 percent of the GDP in the period 1964-1973 to 13 percent in 2000-2002.

The performance of the Kenyan economy since the country became independent has been mixed. In the first decade after the country's independence, the economy grew by about 7 percent per annum, attributed to expansion in the manufacturing sector and an increase in agricultural production. Since then, there has been a consistent decline in the economy, reaching the lowest GDP growth level of about 2 percent between 1996 and 2002. The consistent poor growth performance has failed to keep pace with population growth. The weak performance has been due to external shocks and internal structural problems, including the drought of the 1980s, low commodity prices, world recession, bad weather, and poor infrastructure.

The poor growth of the economy has contributed to a deterioration in the overall welfare of the Kenyan population. Similarly, the economy has been unable to create jobs at a rate to match the rising labour force. Poverty has increased, such that about 56 percent of the population live in poverty and over half live below the absolute poverty level (Central Bureau of Statistics, 2003a). The number of poor people is estimated to have risen from 11 million in 1990 to 17 million in 2001. The worsening living standard is shown by rising child mortality rates, increasing rates of illiteracy, and rising unemployment levels. The HIV/AIDS pandemic has also had a devastating impact on all sectors of the economy, through loss of production and labour force. Against this background, the government of Kenya in 2003 launched the Economic Recovery Strategy for Wealth and Employment Creation, aimed at restoring economic growth, generating employment opportunities, and reducing poverty levels (Ministry of Planning and National Development, 2003). The government is convinced that employment creation is the most effective strategy for halting the increasing poverty.

### 1.2 POPULATION

The population of Kenya increased from 10.9 million in 1969 to 28.7 million in 1999 (Central Bureau of Statistics, 1994, 2001a) (see Table 1.1). The results of the previous censuses indicate that the annual population growth rate was 2.9 percent per annum during the 1989-1999 period, down from 3.4 percent reported for both the 1969-1979 and 1979-1989 inter-censal periods. The decline in population growth is a realisation of the efforts contained in the National Population Policy for Sustainable Development (National Council for Population and Development, 2000) and is a result of the decline in fertility rates since the mid-1980s. In contrast, mortality rates have risen since the 1980s, presumably due to increased deaths from the HIV/AIDS epidemic, deterioration of health services, and widespread poverty (National Council for Population and Development, 2000). As a result of changing population dynamics, the total population of Kenya was projected to be 32.2 million by 2003 (Central Bureau of Statistics, 2002d).

The crude birth rate increased from 50 per 1,000 in 1969 to 54 per 1,000 in 1979, but has declined to 48 and 41 per 1,000 in 1989 and 1999, respectively. After a long decline, the crude death rate has increased from 11 per 1,000 in 1979-1989 to 12 per 1,000 for the 1989-1999 period. Similarly, the infant mortality rate decreased from 119 deaths per 1,000 live births in 1969, to 88 per 1,000 in 1979, and to 66 per 1,000 in 1989, but has since increased to 77 per 1,000 in 1999. As a result of the high fertility and declining mortality in the past, the country is characterised by a youthful population, with almost 44 percent younger than 15 years and only 4 percent age 65 and older.

**Table 1.1 Basic demographic indicators**

Selected demographic indicators for Kenya, 1969, 1979, 1989, 1999

Indicator	1969	1979	1989	1999
Population (millions)	10.9	16.2	23.2	28.7
Density (pop./km <sup>2</sup> )	19.0	27.0	37.0	49.0
Percent urban	9.9	15.1	18.1	19.4
Crude birth rate	50.0	54.0	48.0	41.3
Crude death rate	17.0	14.0	11.0	11.7
Inter-censal growth rate	3.3	3.8	3.4	2.9
Total fertility rate	7.6	7.8	6.7	5.0
Infant mortality rate (per 1,000 births)	119	88	66	77.3
Life expectancy at birth	50	54	60	56.6

Source: CBS, 1970; CBS, 1981; CBS, 1994; CBS, 2002a

The proportion of the population that resides in rural areas is still higher than the proportion in the urban areas. The urban population has increased from 10 percent in 1969 to 19 percent in 1999. Increased urbanisation levels have mainly resulted from rural-urban migration.

### 1.3 POPULATION AND FAMILY PLANNING POLICIES AND PROGRAMMES

In 2000, the Government of Kenya launched the National Population Policy for Sustainable Development (National Council for Population and Development, 2000). This sessional paper builds on the strength of Sessional Paper No. 4 of 1984. The current policy outlines ways of implementing the programme of action developed at the 1994 International Conference on Population and Development in Cairo. The implementation of this policy is being guided by the national and district plans of action formulated by the National Council for Population and Development (NCPD).

The policy also addresses the issues of environment, gender, and poverty, as well as problems facing certain segments of the Kenyan population, such as the youth. The goals and objectives include full integration of population concerns into the development process; motivating and encouraging Kenyans to adhere to responsible parenthood; empowerment of women; and integration of the youth, elderly, and persons with disabilities into mainstream and national development. The overriding concern of the policy is the implementation of appropriate policies, strategies, and programmes that will shape the population growth to fit the available national resources over time, in order to improve the well-being and quality of life of individuals, the family, and the nation as a whole. The goals of the population policy include the following:

- Improvement of the standard of living and quality of life;

- Improvement of the health and welfare of the people through provision of information and education on how to prevent premature deaths and illness among risk groups, especially among mothers and children;
- Sustenance of the ongoing demographic transition to further reduce fertility and mortality, especially infant and child mortality;
- Continuing motivation and encouragement of Kenyans to adhere to responsible parenthood
- Promotion of stability of the family, taking into account equality of opportunity for family members, especially the rights of women and children;
- Empowerment of women and the improvement of their status in all spheres of life and elimination of all forms of discrimination, especially against the girl child;
- Sustainability of the population programme;
- Elimination of retrogressive sociocultural practices through education.

The policy has the following set targets:

- Reduction of the infant mortality rate per 1,000 live births from 71 in 1998, to 67 by 2005, and to 63 by 2010;
- Reduction of the under-five mortality rate per 1,000 live births from 112 in 1998, to 104 by 2005, and to 98 by 2010;
- Reduction of the maternal mortality rate per 100,000 births from 590 in 1998, to 230 by 2005, and to 170 by 2010;
- Maintenance of the crude death rate per 1,000 population at 12 up to the year 2000 and reducing it to 10 by 2005 and to 9 by 2010;
- Minimisation of the decline in life expectancy at birth for both sexes from 58 in 1995 to 53 by 2010;
- Stabilisation of the population growth rate at 2.1 percent per annum by 2010.

#### **1.4 HEALTH PRIORITIES AND PROGRAMMES**

On behalf of the Government of Kenya, the Ministry of Health launched a National Health Sector Strategic Plan covering the period 1999-2004 (Ministry of Health, 1999b). The current strategic plan operationalises Kenya's Health Policy Framework Paper approved and launched in 1994.

The strategic plan was prepared with an aim of reforming the entire health sector. These reforms are part of the larger economic reforms contained in the Economic Recovery Strategy for Employment and Wealth Creation of 2003-2007. The strategic plan sets out a number of objectives and interventions, which seek to address this situation in the context of the ongoing health sector reforms over the five-year period.

The objectives of the plan are to:

- Ensure equitable allocation of government resources to reduce disparities in health resources;
- Increase the cost-effectiveness and the cost-efficiency of resource allocation and use;
- Continue to manage population growth;
- Enhance the regulatory role of the government in all aspects of health care provision;
- Create an enabling environment for increased private sector and community involvement for increased private sector provision and finance;
- Increase and diversify per capita financial flows to the health sector.

The vision of the Ministry of Health is to create an enabling environment for the provision of sustainable quality health care that is acceptable, affordable, and accessible for all Kenyans. Within the framework of the vision, the strategic plan focuses on the critical areas in the health sector development agenda. To monitor the implementation of the strategic plan, the government has set various national health targets:

- Reduce iron deficiency anaemia in pregnant women by 30 percent;
- Achieve 90 percent childhood immunisation coverage with all antigens in 85 percent of districts (from 63 percent of districts);
- Reduce measles morbidity by 95 percent and mortality by 90 percent;
- Reduce the incidence of neonatal tetanus to less than 1 death per 1,000 live births with a 100 percent reporting rate;
- Eliminate vitamin A deficiency in children under five years;
- Reduce malnutrition by 30 percent among children under five years;
- Eradicate poliomyelitis by 2000 and reach certification by 2005;
- Increase areas with family planning services from the current 60 percent of health care facilities to 75 percent;
- Reduce malaria morbidity and mortality ratios by 30 percent;
- Reduce the HIV prevalence rate from the current 13 to 14 percent by 10 percent and sexually transmitted infection prevalence by 50 percent;
- Reduce the proportion of under-five morbidity and mortality rates attributable to measles, pneumonia, diarrhoea, malaria, and malnutrition from 70 to 40 percent;
- Increase provision of safe water and improve sanitation in rural areas by 30 percent.

## **1.5 STRATEGIC FRAMEWORK TO COMBAT THE HIV/AIDS EPIDEMIC**

To meet the challenge of the HIV/AIDS epidemic in the country, the Government of Kenya approved, in September 1997, Sessional Paper No. 4 on AIDS in Kenya (Ministry of Health, 1997). This was a clear intent of the government to support effective programmes to control the spread of AIDS, to protect the human rights of those with HIV or AIDS, and to provide care for those infected and affected by HIV/AIDS. The goal of the sessional paper is to “provide a policy framework within which AIDS prevention and control efforts will be undertaken for the next 15 years and beyond.” Specifically, it has the following objectives:

- Give direction on how to handle controversial issues while taking into account prevailing circumstances and the sociocultural environment.
- Enable the government to play the leadership role in AIDS prevention and control activities. Challenges posed by AIDS call for a multisectoral approach, necessitating involvement from a diversity of actors.
- Recommend an appropriate institutional framework for effective management and coordination of HIV/AIDS programme activities.

The sessional paper recognises that responding effectively to the HIV/AIDS crisis will require a strong political commitment at the highest level; implementation of a multisectoral prevention and control strategy with priority focus on young people; mobilisation of resources for financing HIV prevention, care, and support; and establishment of a National AIDS Control Council to provide leadership at the highest level possible.

## 1.6 OBJECTIVES AND ORGANISATION OF THE SURVEY

The 2003 Kenya Demographic and Health Survey (KDHS) is the latest in a series of national level population and health surveys to be carried out in Kenya in the last three decades. The 2003 KDHS is designed to provide data to monitor the population and health situation in Kenya and to be a follow-up to the 1989, 1993, and 1998 KDHS surveys.

The survey obtained detailed information on fertility levels; marriage; sexual activity; fertility preferences; awareness and use of family planning methods; breastfeeding practices; nutritional status of women and young children; childhood and maternal mortality; maternal and child health; and awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections. New features of the 2003 KDHS include the collection of information on malaria and the use of mosquito nets, domestic violence, and HIV testing of adults.

More specifically, the objectives of the 2003 KDHS were to:

- At the national and provincial level, provide data that allow the derivation of demographic rates, particularly fertility and childhood mortality rates, which can be used to evaluate the achievements of the current national population policy for sustainable development;
- Measure changes in fertility and contraceptive prevalence use and at the same time study the factors that affect these changes, such as marriage patterns, desire for children, availability of contraception, breastfeeding habits, and important social and economic factors;
- Examine the basic indicators of maternal and child health in Kenya, including nutritional status, use of antenatal and maternity services, treatment of recent episodes of childhood illness, use of immunisation services, use of mosquito nets, and treatment of children and pregnant women for malaria;
- Describe the patterns of knowledge and behaviour related to the transmission of HIV/AIDS and other sexually transmitted infections;
- Estimate adult and maternal mortality ratios at the national level;
- Ascertain the extent and pattern of domestic violence and female genital cutting in the country;
- Estimate the prevalence of HIV in the country at the national and provincial level and use the data to corroborate the rates from the sentinel surveillance system.

The 2003 KDHS information is intended to provide data to assist policymakers and programme implementers to monitor and evaluate existing programmes and to design new strategies for demographic, social, and health policies in Kenya. The survey also provides data to monitor the country's achievement of the Millenium Development Goals, as well as the Economic Recovery Strategy objectives.

The 2003 KDHS was the first survey in the Demographic and Health Surveys (DHS) programme to cover the entire country, including North Eastern Province and other northern districts that had been excluded from the prior surveys (Turkana and Samburu in Rift Valley Province and Isiolo, Marsabit, and Moyale in Eastern Province). The survey collected information on demographic and health issues from a sample of women in the reproductive ages (15-49) and from men age 15-54 years in the one-in-two sub-sample of households selected for the male survey.

## 1.7 SURVEY ORGANISATION

The 2003 KDHS was implemented by the Central Bureau of Statistics (CBS) in collaboration with the Ministry of Health (including the National AIDS and STIs Control Programme [NASCOP] and the Kenya Medical Research Institute [KEMRI]) and NCPD. Technical assistance was provided through the MEASURE/ *DHS+* programme, a project sponsored by the United States Agency for International Development (USAID) to carry out population and health surveys in developing countries. The Centers for Disease Control and Prevention (CDC) assisted in training the health field workers, supported the voluntary counselling and testing of respondents who wanted to know their HIV status, and implemented the HIV testing in the laboratory.

Financial support for the survey was provided by the Government of Kenya and a consortium of donors, namely, USAID, the United Nations Population Fund (UNFPA), Japan International Cooperation Agency (JICA)/United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), the British Department for International Development (DFID), and CDC.

## 1.8 SAMPLE DESIGN

The sample for the 2003 KDHS covered the population residing in households in the country. A representative probability sample of almost 10,000 households was selected for the KDHS sample. This sample was constructed to allow for separate estimates for key indicators for each of the eight provinces in Kenya, as well as for urban and rural areas separately. Given the difficulties in traveling and interviewing in the sparsely populated and largely nomadic areas in the North Eastern Province, a smaller number of households was selected in this province. Urban areas were oversampled. As a result of these differing sample proportions, the KDHS sample is not self-weighting at the national level; consequently, all tables except those concerning response rates are based on weighted data.

The survey utilised a two-stage sample design. The first stage involved selecting sample points ("clusters") from a national master sample maintained by CBS (the fourth National Sample Survey and Evaluation Programme [NASSEP IV]). The list of enumeration areas covered in the 1999 population census constituted the frame for the NASSEP IV sample selection and thus for the KDHS sample as well. A total of 400 clusters, 129 urban and 271 rural, were selected from the master frame. The second stage of selection involved the systematic sampling of households from a list of all households that had been prepared for NASSEP IV in 2002. The household listing was updated in May and June 2003 in 50 selected clusters in the largest cities because of the high rate of change in structures and household occupancy in the urban areas.

All women age 15-49 years who were either usual residents of the households in the sample or visitors present in the household on the night before the survey were eligible to be interviewed in the survey. In addition, in every second household selected for the survey, all men age 15-54 years were eligible to be interviewed if they were either permanent residents or visitors present in the household on the night before the survey. All women and men living in the households selected for the Men's Questionnaire and eligible for the individual interview were asked to voluntarily give a few drops of blood for HIV testing.

## 1.9 QUESTIONNAIRES

Three questionnaires were used in the survey: the Household Questionnaire, the Women's Questionnaire and the Men's Questionnaire. The contents of these questionnaires were based on model questionnaires developed by the MEASURE *DHS+* programme.



In consultation with a broad spectrum of technical institutions, government agencies, and local and international organisations, CBS modified the DHS model questionnaires to reflect relevant issues in population, family planning, HIV/AIDS, and other health issues in Kenya. A number of thematic questionnaire design committees were organised by CBS. Periodic meetings of each of the thematic committees, as well as the final meeting, were also arranged by CBS. The inputs generated in these meetings were used to finalise survey questionnaires. These questionnaires were then translated from English into Kiswahili and 11 other local languages (Embu, Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Maasai, Meru, Mijikenda, and Somali). The questionnaires were further refined after the pretest and training of the field staff.

The Household Questionnaire was used to list all of the usual members and visitors in the selected households. Some basic information was collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. The main purpose of the Household Questionnaire was to identify women and men who were eligible for the individual interview. The Household Questionnaire also collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor and roof of the house, ownership of various durable goods, and ownership and use of mosquito nets. In addition, this questionnaire was used to record height and weight measurements of women age 15-49 years and children under the age of 5 years, households eligible for collection of blood samples, and the respondents' consent to voluntarily give blood samples. The HIV testing procedures are described in detail in the next section.

The Women's Questionnaire was used to collect information from all women age 15-49 years and covered the following topics:

- Background characteristics (e.g., education, residential history, media exposure)
- Reproductive history
- Knowledge and use of family planning methods
- Fertility preferences
- Antenatal and delivery care
- Breastfeeding
- Vaccinations and childhood illnesses
- Marriage and sexual activity
- Woman's work and husband's background characteristics
- Infant and child feeding practices
- Childhood mortality
- Awareness and behaviour about AIDS and other sexually transmitted diseases
- Adult mortality including maternal mortality.

The Women's Questionnaire also included a series of questions to obtain information on women's experience of domestic violence. These questions were administered to one woman per household. In households with two or more eligible women, special procedures were followed, which ensured that there was random selection of the woman to be interviewed.

The Men's Questionnaire was administered to all men age 15-54 years living in every second household in the sample. The Men's Questionnaire collected similar information contained in the Women's Questionnaire, but was shorter because it did not contain questions on reproductive history, maternal and child health, nutrition, maternal mortality, and domestic violence.

All aspects of the KDHS data collection were pretested in November and December 2002. Thirteen teams (one for each language) were formed, each with one female interviewer, one male interviewer, and one health worker. The 39 team members were trained for two weeks and then proceeded to conduct

interviews in the various districts in which their language was spoken. In total, 260 households were covered in the pretest. The lessons learnt from the pretest were used to finalise the survey instruments and logistical arrangements for the survey. The pretest underscored the desirability of including voluntary counselling and testing (VCT) for HIV/AIDS as an integral part of the survey, since many respondents during the pretest wanted to know their HIV status.

## **1.10 HIV TESTING**

In all households selected for the Men's Questionnaire, all eligible women and men who were interviewed were asked to voluntarily provide some drops of blood for HIV testing. The protocol for the blood specimen collection and analysis was based on the anonymous linked protocol developed by the DHS programme and approved by ORC Macro's Institutional Review Board. This protocol was revised and enhanced by KEMRI and CDC. It was reviewed and approved by the Scientific and Ethical Review Committees of KEMRI and by the Institutional Review Board and Director of CDC in Atlanta, Georgia. The protocol allowed for the linking of the HIV results to the sociodemographic data collected in the individual questionnaires, provided that the information that could potentially identify an individual was destroyed before the linking took place. This required that identification codes be deleted from the data file and that the back page of the Household Questionnaire, containing the barcode labels and names of respondents, be destroyed prior to merging the HIV results with the individual data file.

For the purposes of blood sample collection, a health worker was included in each of the 17 field teams. The health workers were recruited with the assistance of the Ministry of Health. To obtain informed consent for taking blood for HIV testing, the health worker explained the procedures, the confidentiality of the data, and the fact that test results could not be traced back to or made available to the subject; the health worker also provided respondents with information about how they could obtain their HIV status through VCT services. If consent was granted, the health worker then collected a dried blood spot (DBS) sample on a filter paper card from a finger prick, using a single-use, spring-loaded, sterile lancet. Each DBS sample was given a barcode label, with a duplicate label attached to the Household Questionnaire on the line showing consent for that respondent. The health worker affixed a third copy of the same barcode label to a Blood Sample Transmittal Form in order to track the blood samples from the field to the laboratory. Filter papers were dried overnight in a plastic drying box, after which the health worker packed them in individual Ziploc bags with desiccant and a humidity indicator card and placed them in a larger Ziploc bag with other blood spots for that particular sample point. Blood samples were periodically collected in the field along with the completed questionnaires and transported to CBS headquarters in Nairobi for logging in, after which they were taken to the CDC laboratory at KEMRI headquarters in Nairobi for HIV testing.

At the laboratory, the DBS samples were each assigned a laboratory number and kept frozen until testing was started in early September. After the samples were allowed to attain room temperature, scissors were used to cut a circle at least 6.3 mm in diameter. The blots were placed in cryo-vials that contained 200 µl of elution buffer and were labeled with the lab number. The vials were left to elute overnight at 4°C, then they were centrifuged at 2,500 rpm for 10 minutes. These eluates were then tested with an Enzygnost Anti-HIV-1/2 Plus enzyme-linked immunosorbent assay (ELISA) test kit (DADE Behring HIV-1/2) for verification purposes. All positive samples and 10 percent of negative samples were then tested with a Vironostika HIV-1 MicroELISA System (Organon Teknika). Finally, 29 discrepant samples were tested by an INN-OLIA HIV confirmation Western blot kit (Innogenetics, Belgium).

## **1.11 TRAINING**

In February and early March 2003, CBS staff responsible for the survey spent considerable effort in recruiting people with the requisite skills to work as field staff. Most of those recruited were university

graduates, and many had experience either with a previous KDHS or similar surveys, such as the Behavioural Surveillance Survey or the DHS-type survey that was conducted in Nairobi slum areas by the African Population and Health Research Centre. CBS then organized a three-week training course from March 17 to April 5, 2003, at the Izaak Walton Inn in Embu.

A total of 146 field personnel were trained as interviewers, supervisors, health workers and data processing staff. Because of the large number involved, trainees were divided into three groups and trained separately on questionnaire administration. They came together in plenary sessions for special lectures. Four trainers were assigned to each group. The trainers were officers of CBS and NCPD as well as staff from ORC Macro. In addition to the 12 main trainers, guest lecturers gave presentations in plenary sessions on specialised topics, such as family planning; Kenya's Program on Integrated Management of Childhood Illnesses; nutrition and anthropometric measurements; HIV/AIDS; and Kenya's VCT programme for HIV/AIDS.

All participants were trained on interviewing techniques and the contents of the KDHS questionnaires. The training was conducted following the standard DHS training procedures, including class presentations, mock interviews, and four written tests. All of the participants were trained on how to complete the Women's Questionnaire and how to take anthropometric measurements.

Late in the second week of training, the health workers were split off from the other three groups to form a fourth group. Staff from KEMRI, CDC/Kenya, and ORC Macro trained the health workers on informed consent procedures, taking blood spots for HIV testing, and procedures for minimising risks in handling blood products ("universal precautions"). Meanwhile, the other trainees practiced interviewing in their local languages.

During the final week, the whole group visited households in two sites close to the training center for practical interviews. Towards the end of the training programme, some trainees were selected as supervisors and field editors. This group was further trained on how to supervise fieldwork and editing of the questionnaires in the field.

## **1.12 FIELDWORK**

Data collection took place over a five-month period, from April 18 to September 15, 2003. Seventeen interviewing teams were involved in the exercise. Each team consisted of one supervisor, one field editor, four female interviewers, one male interviewer, one health worker, and one driver. The Maasai-speaking team and the two Somali-speaking teams had fewer female interviewers. Five senior staff from CBS coordinated and supervised fieldwork activities. ORC Macro participated in field supervision for interviews, weight and height measurements, and blood sample collection.

To ensure that respondents could learn their HIV status, CDC/Kenya (in collaboration with KEMRI and NASCOP) organised a parallel team of two VCT counselors to work with each of the data collection teams (except in Nairobi, where VCT is accessible through many fixed sites). These mobile VCT teams followed the same protocol applied in fixed VCT sites according to the National Guidelines for Voluntary Counselling and Testing for HIV (Ministry of Health, 2003). This includes discussing the clients' reasons for coming for counselling and testing, their risk factors, and implications of test outcomes, followed by anonymous testing for HIV for those requesting the service. A finger prick was performed to collect several drops of blood for simultaneous (parallel) testing performed with two simple, rapid HIV test kits (Abbott Determine HIV 1/2 and Trinity Biotech Uni-Gold); for quality control, a dried blood spot filter paper was collected on every fifth client for testing in the laboratory. During the 15 minutes while the test was developing, prevention counselling was provided. If the two test results were dis-

crepant, a third test (Instascreen) was performed as a “tiebreaker.” Post-test counselling was then provided.

In the field, the team supervisors and counsellors worked with local officials to locate suitable places within or adjacent to the cluster in which the counsellors could provide VCT services that were accessible and allowed privacy for testing and counselling. The plan was for the two VCT counsellors to “leapfrog” each other, with one staying behind for one or two days after the interviewing team left the area and the other moving ahead of the team to set up services in advance. In practice, this was not always possible because of transport logistics problems.

CDC/Kenya also printed a brochure on HIV/AIDS and VCT for the team’s health workers to provide all households and survey respondents. Similarly, numbered vouchers were printed and left with eligible respondents. The vouchers were to be given to the mobile VCT teams or the fixed VCT site when the eligible respondents went for VCT. NASCOP and CDC/Kenya also made arrangements with the few fixed VCT sites charging for services, so that they would provide free services to KDHS clients and send the vouchers back to CDC for reimbursement. Finally, although the VCT teams were to give priority to clients presenting the KDHS vouchers, they also accepted any other clients from the sampled communities. Over 10,600 clients, both respondents and other community members, sought and received free VCT services through the KDHS.

### **1.13 DATA PROCESSING**

The processing of the 2003 KDHS results began shortly after the fieldwork commenced. Completed questionnaires were returned periodically from the field to CBS offices in Nairobi, where they were edited and entered by data processing personnel specially trained for this task. Data were entered using CSPro. All data were entered twice (100 percent verification). The concurrent processing of the data was a distinct advantage for data quality, since CBS was able to advise field teams of errors detected during data entry. The data entry and editing phase of the survey was completed in October 2003.

### **1.14 RESPONSE RATES**

Table 1.2 shows response rates for the survey. A total of 9,865 households were selected in the sample, of which 8,889 were occupied and therefore eligible for interviews. The shortfall was largely due to structures that were found to be vacant or destroyed. Of the 8,889 existing households, 8,561 were successfully interviewed, yielding a household response rate of 96 percent.

In the households interviewed in the survey, 8,717 eligible women were identified; interviews were completed with 8,195 of these women, yielding a response rate of 94 percent. With regard to the male survey results, 4,183 eligible men were identified in the subsample of households selected for the male survey, of whom 3,578 were successfully interviewed, yielding a response rate of 86 percent. The response rates are higher in rural areas, as compared with urban areas both for males and females. More detailed tables on response rates for women and men are given in Appendix A.

The principal reason for nonresponse among both eligible men and women was the failure to find individuals despite repeated visits to the household and even sometimes the work place. The substantially lower response rate for men reflects the more frequent and longer absences of men from the household.

Response rates for the HIV testing component were lower than those for the interviews. Details of the HIV testing response rates are discussed in Chapter 13.

Table 1.2 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence, Kenya 2003

Result	Residence		Total
	Urban	Rural	
<b>Household interviews</b>			
Households selected	3,423	6,442	9,865
Households occupied	3,068	5,821	8,889
Households interviewed	2,893	5,668	8,561
Household response rate	94.3	97.4	96.3
<b>Interviews with women</b>			
Number of eligible women	3,019	5,698	8,717
Number of eligible women interviewed	2,751	5,444	8,195
Eligible woman response rate	91.1	95.5	94.0
<b>Household interviews for male subsample</b>			
Households selected	1,680	3,188	4,868
Households occupied	1,505	2,891	4,396
Households interviewed	1,420	2,814	4,234
Household response rate for male subsample	94.4	97.3	96.3
<b>Interviews with men</b>			
Number of eligible men	1,466	2,717	4,183
Number of eligible men interviewed	1,150	2,428	3,578
Eligible man response rate	78.4	89.4	85.5

*Francis M. Munene*

This chapter presents information on the social, economic, and demographic characteristics of the household population, focusing mainly on such background characteristics as age, sex, educational attendance and attainment, place of residence, and socio-economic conditions of households. The information provided is intended to facilitate interpretation of the key demographic, socioeconomic, and health indices. It is further intended to assist in the assessment of the representativeness of the survey.

One of the background characteristics used throughout this report is an index of socioeconomic status. The economic index used here was recently developed and tested in a large number of countries in relation to inequities in household income, use of health services, and health outcomes (Rutstein et al., 2000). It is an indicator of the level of wealth that is consistent with expenditure and income measures (Rutstein, 1999). The economic index was constructed using household asset data with principal components analysis. The asset information was collected through the Household Questionnaire of the 2003 KDHS and covers information on household ownership of a number of consumer items ranging from a television to a bicycle or car, as well as dwelling characteristics, such as source of drinking water, sanitation facilities, and type of material used for flooring.

Each asset was assigned a weight (factor score) generated through principal components analysis, and the resulting asset scores were standardised in relation to a normal distribution with a mean of zero and standard deviation of one (Gwatkin et al., 2000). Each household was then assigned a score for each asset, and the scores were summed for each household; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into quintiles from one (lowest) to five (highest). A single asset index was developed for the whole sample; separate indices were not prepared for the urban and rural population separately.

## 2.1 HOUSEHOLD POPULATION BY AGE AND SEX

The 2003 KDHS Household Questionnaire solicited information on key demographic and socioeconomic characteristics; parental survivorship and residence for people age 15 years and under; educational attendance/attainment; and housing characteristics. A household was defined as a person or group of people, related or unrelated to each other, who live together in the same dwelling unit and share a common source of food.

Table 2.1 presents the distribution of the 2003 KDHS household population by five-year age groups, according to sex and urban-rural residence. The household population constitutes 37,128 persons, of which 49 percent are males and 51 percent are females. There are more persons in the younger age groups than in the older groups for both sexes.

Figure 2.1 shows the age-sex structure of the Kenyan population. The household population age-sex structure is still wide based, as depicted by the population pyramid, despite evidence that the percentage share of the younger population has been falling while the percentage of those age 15-64 has been increasing. The KDHS household population has a median age of 17.5, a slight increase from the previous

Table 2.1 Household population by age, sex, and residence

Percent distribution of the de facto household population by five-year age groups, according to sex and residence, Kenya 2003

Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5	14.6	13.9	14.2	16.6	16.1	16.4	16.2	15.7	15.9
5-9	10.9	11.2	11.0	15.7	14.7	15.2	14.7	14.0	14.4
10-14	9.6	10.4	10.0	16.3	14.4	15.4	15.0	13.6	14.3
15-19	9.2	11.2	10.2	12.0	10.3	11.1	11.4	10.5	10.9
20-24	12.5	15.1	13.8	7.8	8.2	8.0	8.7	9.5	9.1
25-29	11.9	11.2	11.5	5.8	6.9	6.4	7.0	7.8	7.4
30-34	8.6	8.3	8.5	5.1	5.6	5.3	5.8	6.2	6.0
35-39	7.0	6.0	6.5	4.0	4.6	4.3	4.6	4.9	4.7
40-44	4.9	4.4	4.6	3.9	4.5	4.2	4.1	4.4	4.3
45-49	3.7	2.9	3.3	2.6	2.9	2.8	2.9	2.9	2.9
50-54	2.9	2.3	2.6	2.5	3.3	2.9	2.6	3.1	2.9
55-59	1.9	1.3	1.6	2.1	2.4	2.2	2.0	2.2	2.1
60-64	1.0	0.9	1.0	1.7	1.8	1.8	1.6	1.6	1.6
65-69	0.6	0.3	0.4	1.2	1.3	1.2	1.0	1.1	1.1
70-74	0.4	0.2	0.3	1.1	1.3	1.2	1.0	1.1	1.0
75-79	0.1	0.3	0.2	0.7	0.6	0.7	0.6	0.6	0.6
80+	0.2	0.1	0.2	0.8	0.9	0.9	0.7	0.8	0.7
Don't know/missing	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3,663	3,680	7,344	14,627	15,157	29,784	18,291	18,837	37,128

Figure 2.1 Population Pyramid



KDHS 2003

observed population samples (15.3 in 1993 and 16.9 in 1998). This is an indication that the Kenyan population is aging, most probably because of the decline in fertility in the 1980s and 1990s. The share of the Kenyan population under 15 years of age is 45 percent, those age 15-64 constitute 52 percent, and those age 65 years and above make up 3 percent of the total Kenyan household population. This means that the age dependency ratio in Kenya has declined from 127 in 1989, to 98 in 1998, and to 92 in 2003.<sup>1</sup>

## 2.2 HOUSEHOLD COMPOSITION

Table 2.2 shows the distribution of households by sex of the head of household and by household size, according to rural-urban residence and province. At the national level, women head 32 percent of Kenyan households, a pattern that has remained more or less constant since the 1993 KDHS but is lower than the 37 percent from the 1999 population census (Central Bureau of Statistics, 2002g :11). There are modest differences in female-headed households between urban (26 percent) and rural areas (34 percent). Regional differentials are relatively modest, with Western, Nyanza, and Eastern provinces registering the highest proportions of female-headed households (38, 37, and 36 percent, respectively), while Nairobi Province has the lowest (20 percent).

Table 2.2 Household composition

Percent distribution of households by sex of head of household and by household size, according to residence and province, Kenya 2003

Characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
Sex of head of household											
Male	74.4	66.2	79.9	65.8	71.9	64.2	63.4	72.4	62.2	70.2	68.3
Female	25.6	33.8	20.1	34.2	28.1	35.8	36.6	27.6	37.8	29.8	31.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of usual members											
1	22.6	11.1	22.0	18.0	16.2	11.3	12.0	11.9	12.4	3.7	14.0
2	18.1	9.9	20.2	12.6	12.9	10.6	11.7	10.8	8.7	8.3	12.0
3	16.3	13.8	17.2	17.5	14.6	13.1	14.4	12.9	13.5	10.0	14.4
4	14.9	15.7	15.0	18.4	13.5	15.0	15.9	13.9	17.1	10.8	15.5
5	11.2	15.3	11.3	15.4	11.2	13.9	14.4	15.9	14.4	14.1	14.3
6	7.0	12.4	6.7	8.1	10.5	12.0	12.4	12.4	12.7	16.0	11.1
7	4.4	9.4	4.3	5.2	6.7	10.6	8.9	9.3	9.1	14.5	8.2
8	2.5	5.7	1.6	2.6	5.4	5.7	4.7	6.5	5.9	9.6	4.9
9+	3.0	6.6	1.7	2.2	8.9	7.8	5.6	6.4	6.4	13.1	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	2,136	6,405	837	1,350	683	1,313	1,278	1,927	966	187	8,542
Mean size	3.5	4.7	3.3	3.8	4.4	4.7	4.5	4.6	4.6	5.7	4.4

Note: Table is based on de jure members, i.e., usual residents.

Table 2.2 also shows that the mean size of a Kenyan household is 4.4 persons, identical to the mean household size of 4.4 found in the 1999 population census (Central Bureau of Statistics, 2002g: 15). When the northern areas of Kenya are excluded for comparison with previous surveys, the mean household size is 4.3 in 2003, a drop from the 4.8 persons per household reported in the 1993 KDHS, but identical to the 1998 KDHS level of 4.3.

<sup>1</sup> The dependency ratio is defined as the sum of all persons under 15 years or over 64 years of age, divided by the number of persons age 15-64, multiplied by 100.



As expected, urban households have, on average, much smaller household sizes (3.5 persons) than rural households (4.7 persons). Wide variations in the average household sizes are also observed across provinces, with the largest household sizes occurring in North Eastern Province (5.7 persons) and the smallest in Nairobi (3.3 persons).

## 2.3 EDUCATIONAL ATTAINMENT OF HOUSEHOLD MEMBERS

Tables 2.3.1 and 2.3.2 show the percent distribution of the female and male household population age six years and over by highest level of education attended, according to background characteristics. Twenty-three percent of females and 16 percent of males have no education at all, while about three in five women and men have some primary education or complete primary only. Among males, 22 percent have attained at least some secondary education, compared with only 17 percent of females.

Table 2.3.1 Educational attainment of household population: females

Percent distribution of the de facto female household population age six and over by highest level of education attended or completed, according to background characteristics, Kenya 2003

Background characteristic	No education	Primary incomplete	Primary complete <sup>1</sup>	Secondary incomplete	Secondary complete <sup>2</sup>	More than secondary	Don't know/missing	Total	Number	Median number of years
<b>Age</b>										
6-9	41.8	57.9	0.0	0.0	0.0	0.0	0.3	100.0	2,166	0.0
10-14	9.6	88.1	1.2	0.8	0.0	0.0	0.2	100.0	2,566	3.1
15-19	7.8	51.9	18.5	16.7	4.5	0.6	0.0	100.0	1,981	6.5
20-24	8.1	27.4	30.9	9.6	17.4	6.4	0.2	100.0	1,797	7.5
25-29	10.3	29.4	28.6	7.6	14.6	9.2	0.2	100.0	1,462	7.4
30-34	13.0	32.0	22.9	9.2	14.4	7.9	0.5	100.0	1,159	7.2
35-39	14.7	25.3	26.4	11.3	14.3	7.3	0.7	100.0	915	6.5
40-44	25.7	24.5	20.1	9.6	12.0	7.8	0.3	100.0	837	5.9
45-49	33.2	27.5	18.0	7.4	8.1	4.9	0.8	100.0	543	4.0
50-54	40.6	29.4	18.1	2.5	4.5	3.7	1.2	100.0	587	2.4
55-59	57.8	26.5	8.6	1.1	1.5	2.6	1.9	100.0	414	0.0
60-64	73.9	20.9	3.7	0.3	0.5	0.5	0.3	100.0	305	0.0
65+	80.5	16.2	1.8	0.3	0.0	0.2	1.0	100.0	665	0.0
<b>Residence</b>										
Urban	13.9	30.3	20.3	9.0	15.2	10.7	0.5	100.0	3,099	7.1
Rural	25.2	48.2	13.6	5.7	5.0	1.7	0.4	100.0	12,316	3.5
<b>Province</b>										
Nairobi	10.0	22.9	20.4	8.9	21.8	15.4	0.6	100.0	1,157	7.8
Central	12.0	43.1	20.5	8.2	10.8	5.0	0.5	100.0	2,234	6.1
Coast	37.8	36.7	13.0	3.5	5.8	2.7	0.5	100.0	1,222	2.0
Eastern	21.2	49.2	17.1	4.5	5.6	2.3	0.2	100.0	2,632	3.9
Nyanza	18.3	54.9	12.2	8.7	4.0	1.8	0.2	100.0	2,393	4.0
Rift Valley	28.6	43.4	13.8	5.3	5.8	2.6	0.4	100.0	3,594	3.5
Western	18.2	55.1	12.1	7.9	4.2	1.6	1.0	100.0	1,794	4.0
North Eastern	86.8	11.9	0.5	0.3	0.1	0.2	0.2	100.0	389	0.0
<b>Wealth quintile</b>										
Lowest	43.7	44.9	7.6	2.2	1.0	0.1	0.5	100.0	2,833	0.6
Second	25.9	52.5	12.9	5.6	2.3	0.3	0.4	100.0	3,085	3.2
Middle	22.8	51.3	14.5	6.3	4.3	0.5	0.3	100.0	3,205	3.6
Fourth	14.7	45.0	18.6	8.0	9.9	3.2	0.5	100.0	3,161	5.6
Highest	9.5	29.3	20.5	9.5	17.3	13.3	0.6	100.0	3,131	7.4
Total	22.9	44.6	15.0	6.4	7.1	3.5	0.4	100.0	15,415	4.3

Note: Total includes 16 women whose age was not stated.

<sup>1</sup> Completed grade 8 at the primary level

<sup>2</sup> Completed form 4 at the secondary level

Table 2.3.2 Educational attainment of household population: males

Percent distribution of the de facto male household population age six and over by highest level of education attended or completed, according to background characteristics, Kenya 2003

Background characteristic	No education	Primary incomplete	Primary complete <sup>1</sup>	Secondary incomplete	Secondary complete <sup>2</sup>	More than secondary	Don't know/missing	Total	Number	Median number of years
<b>Age</b>										
6-9	45.2	54.3	0.0	0.0	0.0	0.0	0.4	100.0	2,195	0.0
10-14	8.6	89.8	1.0	0.6	0.0	0.0	0.1	100.0	2,741	2.8
15-19	5.7	61.9	13.0	14.9	3.8	0.1	0.6	100.0	2,084	6.0
20-24	5.1	29.3	25.4	10.6	21.4	7.4	0.8	100.0	1,594	7.6
25-29	5.8	26.5	27.2	7.0	22.3	10.9	0.3	100.0	1,287	7.7
30-34	5.8	24.8	24.8	7.8	25.0	11.7	0.2	100.0	1,055	7.9
35-39	8.3	12.7	33.3	11.0	21.8	12.4	0.5	100.0	843	7.6
40-44	11.7	18.1	27.6	6.5	24.8	10.7	0.6	100.0	749	6.8
45-49	14.6	21.3	23.2	8.3	17.8	14.0	0.9	100.0	523	6.7
50-54	17.6	24.2	25.8	8.2	12.0	11.8	0.5	100.0	471	6.4
55-59	18.2	25.5	28.2	9.2	9.7	7.8	1.4	100.0	369	6.3
60-64	34.6	26.6	17.6	5.7	7.2	6.6	1.7	100.0	287	3.0
65+	47.9	34.6	9.9	2.8	2.1	1.6	1.1	100.0	611	0.3
<b>Residence</b>										
Urban	9.6	28.4	18.4	9.0	21.7	12.3	0.6	100.0	3,051	7.5
Rural	17.4	50.9	14.4	5.8	7.6	3.2	0.5	100.0	11,774	4.2
<b>Province</b>										
Nairobi	7.3	21.2	16.0	9.4	28.9	16.4	0.7	100.0	1,212	9.2
Central	6.8	44.6	20.8	8.3	12.4	6.4	0.6	100.0	2,123	6.4
Coast	23.5	39.4	17.9	5.3	10.2	3.0	0.7	100.0	1,190	4.0
Eastern	14.3	53.9	15.7	4.8	7.2	3.6	0.4	100.0	2,484	4.0
Nyanza	10.3	55.0	13.3	8.5	8.9	3.7	0.4	100.0	2,236	4.9
Rift Valley	22.7	44.4	14.4	4.6	9.1	4.3	0.5	100.0	3,465	4.2
Western	11.4	56.8	12.6	7.6	7.2	3.5	1.0	100.0	1,705	4.3
North Eastern	65.2	28.3	2.5	1.1	2.3	0.8	0.0	100.0	410	0.0
<b>Wealth quintile</b>										
Lowest	33.6	49.9	10.1	3.0	2.8	0.4	0.3	100.0	2,781	1.7
Second	16.9	56.4	14.1	5.4	5.2	1.3	0.7	100.0	2,900	3.7
Middle	14.5	53.8	15.5	6.9	7.3	1.4	0.5	100.0	2,910	4.5
Fourth	8.8	46.4	18.4	7.3	12.7	5.8	0.6	100.0	3,084	6.1
Highest	7.3	26.8	17.5	9.1	23.1	15.4	0.7	100.0	3,149	7.8
Total	15.8	46.3	15.2	6.5	10.5	5.1	0.6	100.0	14,825	5.0

Note: Total includes 15 men whose age was not stated.

<sup>1</sup> Completed grade 8 at the primary level

<sup>2</sup> Completed form 4 at the secondary level

There has been a slight increase in the proportion of children and young adults who have never attended school between the 1998 KDHS and the 2003 KDHS, most notably among those age 6-9 years. Differences are diminished, however, when the northern areas of the country are excluded from the 2003 data so as to be comparable to the preceding surveys. Differences in the youngest age group (6-9) may be due to the addition of a code "0" in the 2003 survey to allow for preschool, such as nursery school and kindergarten. It is possible that children in Standard 1 were erroneously coded as having reached only level "0," instead of level "1" for primary school.

The proportion of the household population age six years and above who have attended school is higher for males than females in most age groups. However, the gender gap in the proportions with no education is narrower in 2003 than in 1998. Whereas about 95 percent of children of both sexes have at least some schooling, only 25 to 30 percent of young adults are able to complete secondary school.

The median number of years of schooling completed by sex has increased slightly between 1998 and 2003 for both sexes when the northern areas of the country are excluded. Educational attainment is higher in urban areas than in rural areas. The median number of years of education is highest in Nairobi for both sexes and lowest in North Eastern Province. Almost two-thirds of males and 87 percent of females age six and over in North Eastern Province have no education.

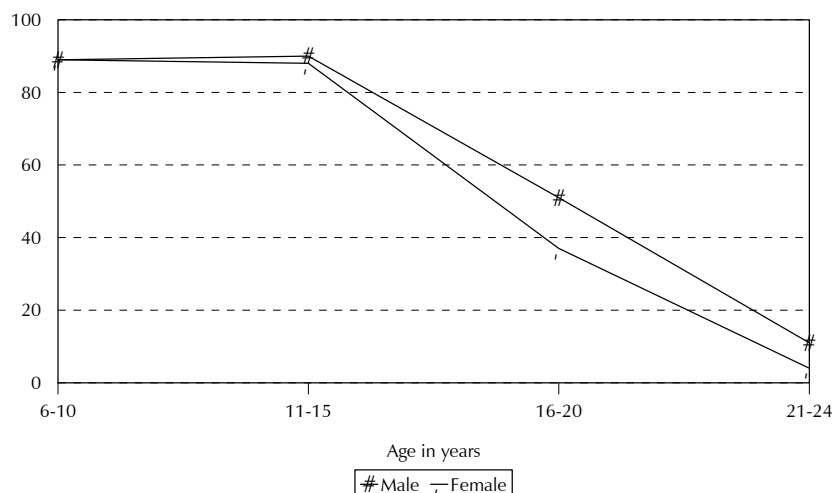
Table 2.4 shows the percentage of the household population age 6-24 who are currently attending school, by age, sex, and residence. Eighty-nine percent of those age 6-15 are in school, with rural attendance identical to urban attendance and male attendance negligibly higher than female attendance (90 and 89 percent, respectively). However, at age group 16-20, attendance levels have dropped in half, and they are noticeably higher in rural than in urban areas and also considerably higher for males than females.

A comparison of data from the 2003 KDHS and the 1998 KDHS shows that there is some improvement in school attendance at all ages from 6 to 24 years. Excluding the north, the proportion of children age 6-15 attending school increased from 85 percent in 1998 to 93 percent in 2003.

Table 2.4 School attendance									
Percentage of the de facto household population age 6-24 years currently attending school, by age, sex, and residence, Kenya 2003									
Age	Male			Female			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6-10	89.7	89.3	89.4	93.3	88.4	89.2	91.6	88.9	89.3
11-15	91.7	90.2	90.4	82.5	89.4	88.3	87.0	89.8	89.4
6-15	90.6	89.7	89.9	88.3	88.9	88.8	89.4	89.3	89.3
16-20	35.5	55.1	51.3	23.0	41.5	36.9	28.6	48.5	44.1
21-24	13.6	9.4	10.6	4.8	3.4	3.8	8.7	6.2	6.9
Note: Table includes children attending kindergarten/pre-school.									

Figure 2.2 shows that attendance rates for both males and females are at par (89 percent) at age group 6-10. However, girls tend to drop out of school earlier than boys, such that at age group 11-15, 90 percent of boys and 88 percent of girls are attending school. After age 11-15, the gender gap begins to widen, such that by age 21-24, only 11 percent of males and 4 percent of females are in school. The largest drop in attendance for both sexes occurs at age 16-20 (51 and 37 percent for males and females, respectively).

**Figure 2.2 Percentage of Males and Females Currently Attending School, by Age**



KDHS 2003

Table 2.5 presents net attendance ratios (NARs) and gross attendance ratios (GARs) for the household population by level of schooling and sex, according to background characteristics. The NAR for primary school measures the proportion of children of primary school age who are attending primary school, while the GAR represents the total number of primary school students of any age from 5 to 24 as a percentage of children of primary school age. In the Kenyan context, the levels refer to 6 to 13 years for primary and 14 to 17 years for secondary. The GAR is usually higher than the NAR because the GAR includes participation of those who may be older or younger than the official age range for that level. Students who are over age for a given level of school may have started school late, may have repeated one or more grades in school, or may have dropped out of school and later returned.

The NAR indicates that 79 percent of children of primary school age are attending primary school. There is no gender gap among the children who are attending primary school; the NAR is 79 percent for both boys and girls. NARs for primary school are higher in urban (83 percent) than in rural areas (78 percent) and are highest in the Central (91 percent), Western (86 percent), Nairobi (85 percent) and Eastern (85 percent) provinces. Ratios are lowest in North Eastern Province (36 percent). The GAR indicates that there are children in primary school who are not of primary school age, with ratios of 113 for males and 106 for females.

As expected, both the NAR and GAR are lower at the secondary school level. The NAR indicates that only 13 percent of the secondary school age population are attending secondary school. Net secondary school attendance is higher for females (NAR of 13) than for males (NAR of 12). Nairobi, Central, and Nyanza provinces have the highest NARs at the secondary level of 32, 19, and 14 percent respectively, while North Eastern Province has the lowest (2 percent). The GAR shows that there are many secondary school students who are not of secondary school age. In fact, discrepancies between the NAR and GAR indicate that there are almost as many secondary school students who are either over age or under age as there are students of secondary school age.

Table 2.5 School attendance ratios

Net attendance ratios (NAR) and gross attendance ratios (GAR) for the de jure household population by level of schooling and sex, according to background characteristics, Kenya 2003

Background characteristic	Net attendance ratio <sup>1</sup>			Gross attendance ratio <sup>2</sup>			Gender parity index <sup>3</sup>
	Male	Female	Total	Male	Female	Total	
PRIMARY SCHOOL							
<b>Residence</b>							
Urban	82.4	82.5	82.5	103.2	99.9	101.5	0.97
Rural	78.0	78.1	78.0	114.2	107.2	110.8	0.94
<b>Province</b>							
Nairobi	85.9	84.1	85.0	101.4	97.0	99.2	0.96
Central	90.6	91.1	90.8	121.9	119.4	120.7	0.98
Coast	71.9	67.2	69.7	98.8	86.0	92.8	0.87
Eastern	85.2	84.2	84.7	125.6	117.4	121.5	0.93
Nyanza	78.5	81.7	80.1	122.3	111.4	116.9	0.91
Rift Valley	70.9	73.9	72.4	101.6	98.3	99.9	0.97
Western	86.5	86.1	86.3	123.4	123.4	123.4	1.00
North Eastern	44.6	26.5	36.3	66.6	34.1	51.7	0.51
<b>Wealth quintile</b>							
Lowest	63.0	59.4	61.3	95.5	84.1	90.1	0.88
Second	79.0	81.0	79.9	116.5	112.2	114.4	0.96
Middle	83.5	84.1	83.8	122.7	116.0	119.3	0.94
Fourth	88.4	87.9	88.1	126.3	119.4	123.0	0.95
Highest	85.5	86.4	86.0	103.0	99.8	101.4	0.97
Total	78.6	78.8	78.7	112.7	106.1	109.5	0.94
SECONDARY SCHOOL							
<b>Residence</b>							
Urban	26.8	21.8	24.2	42.1	29.9	35.7	0.71
Rural	9.1	11.6	10.3	20.9	19.6	20.3	0.94
<b>Province</b>							
Nairobi	35.5	28.9	32.1	52.6	37.7	44.8	0.72
Central	19.0	19.4	19.2	31.2	29.6	30.4	0.95
Coast	8.4	11.0	9.7	17.6	12.7	15.1	0.72
Eastern	5.9	8.1	6.9	15.1	12.8	14.0	0.85
Nyanza	12.2	16.5	14.2	31.2	28.9	30.2	0.93
Rift Valley	10.6	8.6	9.7	18.0	14.6	16.4	0.81
Western	9.8	15.9	12.9	28.6	28.8	28.7	1.00
North Eastern	2.8	1.4	2.2	6.6	1.6	4.4	0.25
<b>Wealth quintile</b>							
Lowest	2.7	5.4	4.0	9.1	8.6	8.9	0.94
Second	6.7	7.9	7.3	20.9	17.3	19.2	0.83
Middle	11.1	11.6	11.4	23.9	19.4	21.8	0.81
Fourth	13.6	19.1	16.2	26.9	29.4	28.1	1.09
Highest	31.9	25.0	28.2	48.1	34.2	40.8	0.71
Total	11.7	13.4	12.5	24.0	21.4	22.7	0.89

<sup>1</sup> The NAR for primary school is the percentage of the primary-school-age (6-13 years) population that is attending primary school. The NAR for secondary school is the percentage of the secondary-school-age (14-17 years) population that is attending secondary school. By definition the NAR cannot exceed 100 percent.

<sup>2</sup> The GAR for primary school is the total number of primary school students, expressed as a percentage of the official primary-school-age population. The GAR for secondary school is the total number of secondary school students, expressed as a percentage of the official secondary-school-age population. If there are significant numbers of over-age and underage students at a given level of schooling, the GAR can exceed 100 percent.

<sup>3</sup> The Gender Parity Index for primary school is the ratio of the primary school GAR for females to the GAR for males. The Gender Parity Index for secondary school is the ratio of the secondary school GAR for females to the GAR for males.

The gender parity index shows the ratio of the female to male GARs. For the primary school level, the gender parity index is close to one (indicating parity between the sexes) for all groups except North Eastern Province, where the GAR for females is half that for males. For the secondary school level, the gender parity index is generally lower, especially for North Eastern Province.

## 2.4 HOUSING CHARACTERISTICS

Given that there is a strong relationship between household economic conditions and exposure to diseases, information on housing characteristics, such as access to electricity, source of drinking water, sanitary facilities, and flooring and roofing materials, is key to explaining the interrelationships between the social and economic conditions of the household and likely exposure to and prevalence of diseases. Table 2.6 presents the percent distribution of households by housing characteristics, according to residence and province.

The table shows that only 16 percent of Kenyan households have electricity, with large discrepancies by urban-rural residence. Half of urban households have electricity, compared with only 5 percent of rural households. Wide regional variations in the supply of electricity are evident, with Nairobi Province registering the highest proportion of households (71 percent) connected to electricity supply. Western Province is least supplied, with only 2 percent of households having electricity.

The predominant flooring materials used by Kenyan households are earth, mud, dung, and sand, with a share of 62 percent. Cement is the next most common flooring material, with a share of 34 percent. Seventy-one percent of urban households use cement for flooring their houses, while 77 percent of rural households use packed earth. These proportions are almost identical to those from the 1999 population census (Central Bureau of Statistics, 2002g: 30).

About two-thirds of Kenyan households (69 percent) live in dwellings with corrugated iron (*ma-bati*) roofs, while almost all of the rest (22 percent) have grass or thatched roofs. Urban-rural differences in roofing material are not as strong as those for some of the other housing characteristics, with 73 percent of urban households having corrugated iron roofs, compared with 67 percent of rural households. Data from the 1999 population census show a slightly larger proportion of households with grass or thatched roofs (28 percent) and fewer with iron sheet roofs (64 percent), as compared with the 2003 KDHS (Central Bureau of Statistics, 2002g: 25).

The 2003 KDHS collected data on the number of rooms used by members of the households for sleeping. This information provides a rough measure of the degree and severity of household crowding. Most households in Kenya (77 percent) have 1 to 2 persons sleeping together in a single room, and the mean is 2.6.

For cooking fuel, two-thirds of Kenyan households depend on firewood. Urban households mostly use kerosene (51 percent) or charcoal (26 percent), while 85 percent of rural households use firewood.

The 2003 KDHS collected information on the source of drinking water (Table 2.6). Almost one in four (24 percent) Kenyan households draws its drinking water from either rivers or streams; 21 percent have piped water connected to their dwelling, compound, or plot; and 11 percent use a public tap. Almost one in five households uses wells as a source of drinking water, the majority of which are covered or protected wells. Less than 5 percent of households use other types of water supply sources. A majority of households (53 percent) are within 15 minutes of their water source.

Table 2.6 Housing characteristics

Percent distribution of households by housing characteristics, according to residence and province, Kenya 2003

Housing characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
<b>Electricity</b>											
Yes	50.2	4.6	71.4	19.2	19.3	6.9	5.1	10.5	1.6	3.2	16.0
No	49.8	95.2	28.5	80.4	80.5	93.1	94.9	89.5	98.2	95.9	83.9
Missing	0.0	0.2	0.1	0.4	0.2	0.0	0.0	0.1	0.2	1.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Flooring material</b>											
Earth, mud, dung, sand	18.8	76.5	10.9	60.7	54.7	62.5	73.8	66.3	83.1	93.7	62.1
Wood planks	0.9	0.3	1.7	0.3	0.0	0.5	0.0	0.7	0.0	0.0	0.5
Palm, bamboo	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1
Parquet, polished wood	1.2	0.1	3.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
Vinyl, asphalt strips	1.4	0.1	2.3	0.7	0.1	0.1	0.0	0.2	0.1	0.0	0.4
Ceramic tiles	2.1	0.3	4.4	0.8	0.4	0.1	0.3	0.5	0.1	0.1	0.8
Cement	71.4	22.1	70.7	36.2	41.8	35.6	25.8	31.4	16.5	6.0	34.4
Carpet	2.9	0.3	4.1	0.8	2.7	0.3	0.0	0.6	0.1	0.1	0.9
Other	1.2	0.0	2.7	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.3
Missing	0.2	0.2	0.1	0.3	0.1	0.6	0.0	0.0	0.1	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Roofing material</b>											
Grass, thatch, makuti	4.0	28.4	0.1	2.7	39.4	18.4	30.0	24.7	34.1	89.6	22.3
Tin cans	0.3	0.4	0.7	1.1	0.3	0.2	0.0	0.3	0.0	0.0	0.4
Corrugated iron (mabati)	73.3	67.1	56.2	92.0	52.3	78.1	68.2	64.7	65.2	9.8	68.6
Asbestos sheets	3.4	0.7	4.2	0.7	2.8	2.2	0.5	0.5	0.5	0.2	1.3
Concrete	12.6	0.6	26.2	1.0	4.0	0.3	0.3	2.0	0.0	0.2	3.6
Tiles	5.9	0.6	12.2	2.2	1.3	0.3	0.7	0.4	0.0	0.1	1.9
Other	0.5	2.1	0.2	0.0	0.0	0.2	0.2	7.3	0.0	0.0	1.7
Missing	0.2	0.2	0.1	0.3	0.1	0.5	0.0	0.1	0.2	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Persons per sleeping room</b>											
1-2 persons	64.1	60.8	65.7	80.4	60.0	67.3	63.4	46.0	62.7	16.1	61.6
3-4 persons	27.3	26.4	26.9	15.6	28.8	24.5	28.4	31.9	29.9	28.7	26.6
5-6 persons	6.9	8.6	6.2	3.3	8.1	5.5	6.3	14.9	5.9	27.9	8.2
7+ persons	1.7	4.2	1.1	0.8	3.1	2.6	2.0	7.1	1.6	27.3	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean number	2.4	2.7	2.3	1.9	2.6	2.4	2.5	3.2	2.5	5.0	2.6
<b>Type of cooking fuel</b>											
Electricity	1.0	0.1	1.8	0.2	0.4	0.4	0.1	0.1	0.0	0.0	0.3
LPG, natural gas	10.8	1.1	19.8	4.3	2.4	0.7	1.0	1.5	0.9	0.0	3.5
Biogas	0.3	0.0	0.6	0.0	0.3	0.0	0.0	0.1	0.1	0.0	0.1
Kerosene	50.8	2.8	68.3	14.5	22.5	6.8	4.2	8.8	3.3	0.4	14.8
Coal, lignite	0.2	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Charcoal	25.9	10.2	7.4	14.8	19.1	8.2	15.6	19.7	11.7	9.1	14.2
Firewood, straw	9.4	85.2	0.1	65.1	53.9	83.5	79.0	68.9	83.5	90.2	66.2
Dung	1.6	0.4	1.7	0.8	1.2	0.4	0.1	0.9	0.4	0.2	0.7
Other	0.1	0.1	0.1	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Continued...

Table 2.6—Continued

Housing characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
<b>Source of drinking water</b>											
Piped into dwelling	19.2	3.8	33.2	11.8	8.1	4.1	0.6	4.5	1.3	0.6	7.6
Piped into compound/plot	30.2	7.8	43.4	19.3	9.7	18.4	2.3	8.2	2.6	1.6	13.4
Public tap	21.8	6.8	15.0	3.5	40.1	9.1	11.7	7.8	3.9	0.1	10.6
Open well in compound/plot	1.8	1.7	0.2	2.2	1.3	0.6	0.7	3.3	2.3	3.8	1.7
Open public well	4.1	6.0	0.1	3.5	9.7	6.6	5.5	6.3	3.5	25.0	5.5
Covered well in compound/plot	3.3	5.9	0.3	8.3	0.9	1.6	1.2	13.0	4.1	1.4	5.3
Covered public well	2.6	7.5	0.1	4.5	1.8	8.1	9.4	4.8	13.5	6.1	6.3
Spring	1.7	16.9	0.0	6.2	0.9	11.5	33.4	3.2	40.3	0.0	13.1
River, stream	2.5	31.1	0.0	24.8	11.7	29.9	25.0	32.4	26.2	21.1	23.9
Pond, lake	0.0	2.2	0.0	0.1	1.7	0.3	7.6	1.2	0.2	0.4	1.6
Dam	0.7	4.1	0.1	1.7	9.6	4.6	0.3	3.3	0.0	34.1	3.3
Rainwater	0.7	2.5	0.1	7.5	0.4	0.9	1.7	1.3	0.9	1.7	2.1
Bottled water	0.7	0.0	1.3	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.2
Other	10.6	3.5	6.2	6.4	3.9	4.4	0.5	10.7	1.0	4.1	5.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Time to water source</b>											
Percentage <15 minutes	83.8	43.1	95.9	70.9	63.6	38.7	31.6	50.5	44.6	22.1	53.2
Median time to source	0.0	14.9	0.0	0.7	5.0	24.7	19.7	10.0	14.4	u	9.7
<b>Water availability</b>											
Usually available	70.0	82.0	64.8	85.7	77.3	77.0	90.7	67.7	95.3	67.1	79.0
Several hours per day	10.1	1.6	14.0	1.2	6.7	4.6	3.4	1.2	0.8	2.5	3.7
Once or twice per week	10.0	3.1	12.8	2.7	4.0	8.6	1.9	4.9	0.9	2.8	4.9
Infrequent	9.1	13.1	7.0	10.2	11.7	9.6	3.8	26.2	2.5	27.2	12.1
Drinks bottled water	0.7	0.0	1.3	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.2
Missing	0.1	0.2	0.2	0.3	0.1	0.3	0.0	0.0	0.3	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Sanitation facility</b>											
Flush toilet	39.0	1.7	66.5	9.5	12.3	4.9	2.1	3.4	1.9	0.3	11.0
Traditional pit toilet	44.2	70.3	26.5	84.3	39.2	74.2	66.1	58.8	87.3	14.3	63.8
Ventilated improved pit latrine	11.7	7.3	2.2	5.5	14.6	8.9	5.6	13.2	7.9	1.4	8.4
No facility, bush, field	3.7	20.4	2.7	0.2	33.5	11.8	26.2	24.1	2.8	80.9	16.2
Other	1.2	0.1	1.6	0.2	0.4	0.1	0.1	0.4	0.0	2.7	0.4
Missing	0.2	0.2	0.4	0.3	0.0	0.2	0.0	0.1	0.1	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Share toilet with other households</b>											
No facilities	3.7	20.4	2.7	0.2	33.5	11.8	26.2	24.1	2.8	80.9	16.2
No	28.0	47.4	32.8	59.5	27.1	55.3	35.5	36.9	48.2	7.8	42.5
Yes	68.3	32.1	64.4	40.1	39.4	32.9	38.3	39.1	48.9	11.3	41.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Wealth quintile</b>											
Lowest	1.3	21.2	0.0	0.9	22.7	12.3	23.7	22.1	20.3	71.6	16.3
Second	1.4	23.3	0.0	12.7	10.6	20.7	29.6	16.5	30.2	10.8	17.9
Middle	2.6	24.9	0.0	27.7	13.6	27.3	20.1	14.6	27.6	9.3	19.3
Fourth	12.2	22.8	2.9	36.0	15.7	27.2	12.9	22.7	14.2	4.6	20.2
Highest	82.5	7.7	97.1	22.7	37.4	12.4	13.6	24.1	7.7	3.7	26.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Continued...



Table 2.6—Continued

Housing characteristic	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
<b>Household owns structure</b>											
Owns	19.3	87.6	10.4	73.3	63.8	85.3	84.6	66.4	89.6	87.3	70.5
Pays rent, lease	76.2	6.7	84.7	20.4	29.5	9.9	14.2	24.7	7.8	4.4	24.1
No rent, with consent of owner	4.3	4.9	4.6	5.7	5.9	4.8	1.2	7.1	2.2	6.3	4.7
No rent, squatting	0.1	0.7	0.1	0.3	0.8	0.1	0.0	1.7	0.1	1.9	0.6
Missing	0.1	0.1	0.2	0.3	0.1	0.0	0.0	0.1	0.1	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Household owns land on which structure sits</b>											
Owns	15.6	80.5	8.3	58.1	54.5	78.6	83.9	60.0	89.3	75.8	64.3
Pays rent, lease	58.4	5.3	49.5	18.7	27.4	9.9	12.1	19.4	6.5	4.4	18.5
No rent with consent of owner	25.4	12.7	42.0	21.5	15.6	11.2	3.9	18.2	3.9	10.7	15.9
No rent, squatting	0.5	1.4	0.1	1.3	2.4	0.1	0.1	2.3	0.2	9.1	1.2
Missing	0.1	0.2	0.1	0.3	0.1	0.2	0.0	0.1	0.2	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>State of repair of dwelling</b>											
Completely dilapidated, shack	2.1	2.1	3.2	0.2	9.1	1.2	1.4	2.0	0.5	4.6	2.1
Needs major repairs	17.3	22.4	17.8	13.9	17.6	19.7	25.5	28.2	13.6	48.1	21.2
Needs no or minor repairs	79.5	72.9	78.7	85.3	69.4	74.3	70.3	67.8	84.9	43.7	74.5
Being repaired	0.5	0.5	0.3	0.1	1.8	0.4	0.4	0.3	0.0	3.6	0.5
Under construction	0.4	2.0	0.1	0.2	1.8	3.8	2.5	1.6	0.7	0.0	1.6
Missing	0.3	0.2	0.1	0.3	0.4	0.6	0.0	0.0	0.2	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>How household disposes of kitchen waste and trash</b>											
Regular collection by gov't.	2.5	0.2	2.9	0.3	2.3	0.2	0.4	0.6	0.1	0.0	0.8
Infrequent collection by gov't.	2.4	0.0	2.8	0.3	1.1	0.3	0.1	0.4	0.2	0.1	0.6
Pays for private collection	23.6	0.4	51.7	1.6	7.8	0.3	0.1	0.7	0.3	0.0	6.2
Composted	12.3	30.5	1.7	48.2	8.8	41.9	24.3	12.6	38.9	6.3	26.0
Dumps, buries, burns in compound	29.1	55.3	10.0	37.5	59.1	42.1	59.0	64.3	56.5	42.6	48.8
Dumps in street, empty plot	24.9	8.3	22.0	7.1	18.6	1.8	15.6	15.6	3.8	49.3	12.4
Other	4.9	5.0	8.4	4.7	2.2	12.7	0.4	5.5	0.0	0.2	5.0
Missing	0.4	0.3	0.5	0.5	0.1	0.6	0.0	0.3	0.2	1.5	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	2,138	6,423	837	1,351	684	1,316	1,282	1,937	967	187	8,561

u = Unknown (not available)

There are marked provincial differentials in the source of drinking water. More than three-quarters of the households in Nairobi have piped water in their dwelling, compound, or plot compared with only 2 to 4 percent of households in Western, Nyanza, and North Eastern provinces.

About 83 percent of the households in Kenya have access to some type of sanitary facility. Two-thirds of households in Kenya have traditional pit toilets, while only 11 percent have flush toilets. Sixteen percent of households have no toilet facilities. As expected, flush toilets are more widely used in urban areas and in Nairobi, although pit toilets are also very common. Traditional pit toilets are the predominant type of toilet in all the provinces, with the exception of Nairobi, where flush toilets are more common, and North Eastern Province, where toilet facilities are rare. The proportion of households with private toilets is almost identical to the proportion with shared toilets.

Interpretation of trends in housing and household characteristics over time is made slightly more difficult by the inclusion of areas in the northern part of Kenya in the 2003 KDHS. Excluding these areas shows that electricity coverage has increased from 15 percent of households in 1998 to 17 percent in 2003. The proportion of households with piped water has remained stable, as have the types of toilets that households have. There are also few notable differences in the types of flooring materials used in Kenya since the 1998 KDHS.

Table 2.6 provides information about household ownership of the structure and the land. Overall, 71 percent of Kenyan households own their own home, while 24 percent pay rent. As expected, in urban areas, renting is more common, with 76 percent of households renting. A similar pattern holds for ownership of the land. The table also shows that most homes in Kenya need only minor repairs or no repairs at all. With regard to trash disposal, almost half of Kenyan households bury or burn their trash themselves, while about one-quarter compost their trash. Urban households are almost equally likely to bury or burn their trash themselves, dump their trash in the street or an empty plot, or pay for private collection.

## 2.5 HOUSEHOLD DURABLE GOODS

Table 2.7 shows the percentage of households possessing various durable goods by urban-rural residence. This indicator provides a rough measure of the socioeconomic status of households. Of the ten selected durable household goods, radio, bicycle, and television stand out as the three most commonly owned by a household. Seventy-four percent of Kenyan households own a radio, 29 percent own a bicycle, and 19 percent own a television.

There is noticeable urban-rural variation in the proportion of households owning durable goods. Eighty-one percent of households in urban areas have a radio, compared with 71 percent of rural households. Similarly, 33 percent of urban households have a telephone, as opposed to 6 percent of rural households. Overall, 15 percent of urban households and 24 percent of rural households have none of the selected durable goods.

There has been an increase in the percentage of households owning radios, bicycles, and televisions since the 1998 KDHS. Those owning radios went up from 63 percent in 1998 to 76 percent in 2003 (excluding the northern parts of Kenya), while those owning television sets increased from 13 percent in 1998 to 20 percent in 2003. The percentage of households owning bicycles went up from 24 to 30 percent between the 1993 KDHS and the 2003 KDHS.

Durable consumer goods	Residence		Total
	Urban	Rural	
Radio	80.6	71.3	73.6
Television	40.6	12.4	19.4
Telephone/mobile	32.7	6.2	12.8
Refrigerator	13.4	1.2	4.3
Bicycle	17.7	33.1	29.3
Motorcycle	0.9	0.6	0.7
Car/truck	9.6	3.3	4.9
Solar power	1.1	4.0	3.3
None of the above	15.3	24.3	22.1
Number of households	2,138	6,423	8,561

## CHARACTERISTICS OF SURVEY RESPONDENTS

*Godfrey Kyalo Ndeng'e*

### 3.1 BACKGROUND CHARACTERISTICS OF RESPONDENTS

Information on the basic characteristics of women and men interviewed in the survey is essential for the interpretation of findings presented later in the report. Background characteristics of the 8,195 women and 3,578 men interviewed in the Kenya Demographic and Health Survey (KDHS) are presented in Table 3.1. The distribution of respondents according to age shows a similar pattern for both genders. The proportion of respondents in each age group declines as age increases, reflecting the comparatively young age structure of the population. The distribution of sampled population by age and sex closely resembles that of the 1999 Population and Housing Census<sup>1</sup> and indicates that there is no substantial selection bias in the sample.

In terms of rural and urban dichotomy, three-quarters of both males and females are rural respondents. The distribution of respondents by province shows that Rift Valley and Eastern provinces have the largest proportion of respondents, while North Eastern and Coast provinces have the least proportions.

Sixty percent of female respondents are currently married or living with a man, compared with 51 percent of males. The never-married females account for slightly less than a third of all women, while 45 percent of males have never married.

The proportion of female respondents who have never been to school is twice that of their male counterparts (13 versus 6 percent). Male respondents are much more likely to reach secondary school (37 percent) than females (29 percent), while only 10 percent of men and 6 percent of women manage to go beyond a secondary level of education. While the percentage of women with secondary education and above remained constant, that of men shows a downward trend since 1998.

The tabulation of respondents by religion indicates that nine in ten women and men are Christian (about 25 percent are Roman Catholic, and 60 to 65 percent are Protestant), while only 6 to 8 percent are Muslim. Males (7 percent) are more likely than females (2 percent) to have no religion.

In terms of ethnic affiliation, Kikuyu respondents (both sexes) account for 23 percent of the total and are followed approximately in order of size by Luhya, Luo, Kamba, and Kalenjin.

### 3.2 EDUCATIONAL ATTAINMENT AND LITERACY

Tables 3.2.1 and 3.2.2 present the distributions of female and male respondents, respectively, by the highest level of education attended according to age, urban-rural residence, province, and wealth index. The large majority of respondents have not gone beyond the primary level of education. Generally, younger persons have reached higher levels of school than older people, as have urban residents. For

<sup>1</sup> The distribution of the 2003 KDHS sample population of males and females by age matches that of the 1999 Population and Housing Census, where for males, 44 and 28 percent were age 15-24 and 25-34 years, respectively, while 29 percent were age 35-54. Similarly, for women, the pattern closely follows that of the census, where 47 percent of women were age 15-24, 29 percent were age 25-34, and 24 percent were age 35-49 years.

Table 3.1 Background characteristics of respondents

Percent distribution of women and men by background characteristics, Kenya 2003

Background characteristic	Weighted percent	Number of women		Weighted percent	Number of men	
		Weighted	Un-weighted		Weighted	Un-weighted
<b>Age</b>						
15-19	22.6	1,856	1,820	23.9	856	829
20-24	20.6	1,691	1,710	19.0	681	674
25-29	16.9	1,382	1,400	14.2	509	514
30-34	13.3	1,086	1,116	11.6	415	421
35-39	10.6	871	859	11.1	396	390
40-44	9.6	788	780	8.7	310	314
45-49	6.4	521	510	5.5	196	206
50-54	na	na	na	6.0	215	230
<b>Marital status</b>						
Never married	29.8	2,443	2,466	45.0	1,611	1,584
Married	54.5	4,462	4,449	49.9	1,786	1,829
Living together	5.6	457	427	0.9	31	26
Divorced/separated	5.9	488	516	3.5	126	116
Widowed	4.2	346	337	0.7	23	23
<b>Residence</b>						
Urban	25.1	2,056	2,751	25.4	907	1,150
Rural	74.9	6,139	5,444	74.6	2,671	2,428
<b>Province</b>						
Nairobi	10.2	835	1,169	11.1	397	493
Central	14.4	1,181	1,314	15.5	554	621
Coast	8.1	667	938	7.0	252	375
Eastern	16.2	1,325	993	16.4	588	468
Nyanza	14.9	1,222	1,025	13.4	481	434
Rift Valley	22.8	1,872	1,328	23.6	846	586
Western	11.3	927	991	11.1	396	435
North Eastern	2.0	168	437	1.8	65	166
<b>Education</b>						
No education	12.7	1,039	1,291	6.4	228	296
Primary incomplete	32.8	2,685	2,409	33.8	1,210	1,110
Primary complete	25.2	2,069	1,939	22.9	820	813
Secondary incomplete	11.2	914	902	11.0	392	392
Secondary complete	12.3	1,009	1,073	15.7	562	581
More than secondary	5.9	480	581	10.2	366	386
<b>Religion</b>						
Roman Catholic	25.2	2,067	1,919	26.6	953	913
Protestant/other Christian	64.9	5,322	5,045	60.3	2,156	2,055
Muslim	7.6	619	1,025	6.4	231	381
No religion	1.9	156	167	6.5	232	219
Other	0.3	22	29	0.1	5	9
Missing	0.1	10	10	0.0	1	1
<b>Ethnicity</b>						
Embu	1.6	129	101	1.7	60	46
Kalenjin	10.1	831	643	11.8	423	324
Kamba	11.4	938	786	11.7	420	371
Kikuyu	23.0	1,886	1,977	22.6	808	845
Kisii	5.7	466	454	5.6	202	208
Luhya	15.0	1,230	1,229	14.7	527	520
Luo	12.0	984	853	11.9	427	390
Maasai	2.3	189	162	2.4	87	68
Meru	5.6	460	386	5.7	203	172
Mijikenda/Swahili	5.0	407	566	4.1	147	214
Somali	3.6	298	602	3.1	111	223
Taita/Taveta	1.2	101	135	1.0	36	51
Turkana	1.4	116	121	1.5	53	51
Kuria	0.6	49	47	0.7	26	27
Other	1.4	111	133	1.4	50	68
<b>Wealth quintile</b>						
Lowest	16.6	1,364	1,376	15.3	548	540
Second	18.0	1,475	1,306	17.0	609	556
Middle	18.3	1,503	1,381	18.1	648	615
Fourth	20.9	1,711	1,568	22.2	794	752
Highest	26.1	2,141	2,564	27.4	979	1,115
Total	100.0	8,195	8,195	100.0	3,578.	3,578

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.  
na = Not applicable

example, 48 percent of females in urban areas have attended at least some secondary school, compared with 23 percent of rural women. Among the provinces, Nairobi and Central have the largest proportion of women and men who have attended secondary school and above. The educational level of women in North Eastern Province is worrying, as 93 percent of women reported that they did not attend school at all, and less than 1 percent had any secondary education. As expected, the level of education increases with the wealth index. For example, among males in the lowest quintile, only 14 percent have at least some secondary education, compared with 63 percent of those in the highest quintile.

Table 3.2.1 Educational attainment by background characteristics: women

Percent distribution of women by highest level of schooling attended or completed, and median number of years of schooling,, according to background characteristics, Kenya 2003

Background characteristic	Educational attainment						Total	Number of women	Median years of schooling
	No education	Primary incomplete	Primary complete <sup>1</sup>	Secondary incomplete	Secondary complete <sup>2</sup>	More than secondary			
<b>Age</b>									
15-19	6.8	49.6	20.8	17.3	4.9	0.6	100.0	1,856	6.7
20-24	7.3	27.7	30.8	10.0	17.7	6.5	100.0	1,691	7.5
25-29	9.4	29.0	30.4	7.6	14.8	8.7	100.0	1,382	7.4
30-34	12.9	31.7	22.1	9.5	15.2	8.5	100.0	1,086	7.3
35-39	15.7	25.0	28.3	11.1	12.6	7.3	100.0	871	6.4
40-44	26.3	24.4	19.3	10.4	12.7	6.9	100.0	788	5.9
45-49	33.5	27.0	19.7	7.0	7.5	5.3	100.0	521	3.9
<b>Residence</b>									
Urban	7.8	16.9	27.2	13.1	21.0	14.1	100.0	2,056	7.9
Rural	14.3	38.1	24.6	10.5	9.4	3.1	100.0	6,139	6.5
<b>Province</b>									
Nairobi	5.6	12.5	25.6	11.7	26.1	18.6	100.0	835	9.4
Central	2.6	22.3	33.6	15.2	18.3	8.1	100.0	1,181	7.6
Coast	29.6	28.6	21.9	5.8	9.9	4.3	100.0	667	5.5
Eastern	8.4	37.8	31.6	7.8	10.4	3.9	100.0	1,325	6.9
Nyanza	7.1	44.9	21.7	15.6	7.2	3.4	100.0	1,222	6.6
Rift Valley	17.4	33.6	23.9	9.4	11.3	4.4	100.0	1,872	6.6
Western	9.0	47.6	19.3	13.8	7.7	2.7	100.0	927	6.4
North Eastern	93.4	4.0	1.8	0.1	0.3	0.4	100.0	168	0.0
<b>Wealth quintile</b>									
Lowest	34.5	44.0	15.1	3.9	2.4	0.1	100.0	1,364	3.9
Second	13.5	45.1	25.5	10.7	4.6	0.7	100.0	1,475	6.3
Middle	10.3	40.6	27.1	12.7	8.1	1.1	100.0	1,503	6.6
Fourth	6.3	27.8	29.8	13.6	17.4	5.0	100.0	1,711	7.4
Highest	5.0	15.5	26.6	13.1	22.8	17.1	100.0	2,141	8.7
<b>Total</b>	12.7	32.8	25.2	11.2	12.3	5.9	100.0	8,195	7.0

<sup>1</sup> Completed grade 8 at the primary level

<sup>2</sup> Completed form 4 at the secondary level

**Table 3.2.2 Educational attainment by background characteristics: men**

Percent distribution of men by highest level of schooling attended or completed, and median number of years of schooling,, according to background characteristics, Kenya 2003

Background characteristic	Educational attainment						Total	Number of women	Median years of schooling
	No education	Primary incomplete	Primary complete <sup>1</sup>	Secondary incomplete	Secondary complete <sup>2</sup>	More than secondary			
<b>Age</b>									
15-19	3.9	58.7	14.7	17.4	4.7	0.7	100.0	856	6.4
20-24	3.0	28.2	25.4	8.8	24.2	10.3	100.0	681	7.8
25-29	6.1	30.9	25.5	7.7	16.2	13.6	100.0	509	7.5
30-34	3.8	26.8	24.6	9.0	22.5	13.2	100.0	415	7.9
35-39	7.6	16.5	27.0	12.7	19.9	16.4	100.0	396	8.0
40-44	10.8	22.7	27.1	7.9	17.5	14.0	100.0	310	6.8
45-49	13.5	25.1	24.5	8.3	14.3	14.3	100.0	196	6.5
50-54	17.0	28.6	23.7	7.3	9.2	14.1	100.0	215	6.2
<b>Residence</b>									
Urban	4.3	17.1	20.9	13.3	23.1	21.3	100.0	907	9.3
Rural	7.1	39.5	23.6	10.2	13.2	6.5	100.0	2,671	6.8
<b>Province</b>									
Nairobi	4.9	10.8	16.9	13.9	25.9	27.5	100.0	397	10.6
Central	1.5	24.2	33.2	10.8	18.4	11.9	100.0	554	7.6
Coast	10.0	28.5	30.4	9.3	16.8	4.9	100.0	252	7.2
Eastern	3.5	47.4	19.0	9.9	12.4	7.9	100.0	588	6.7
Nyanza	1.8	43.3	21.0	14.3	13.3	6.3	100.0	481	6.8
Rift Valley	10.2	34.6	22.9	7.9	15.3	9.0	100.0	846	7.0
Western	3.4	44.0	20.4	14.9	11.0	6.3	100.0	396	6.9
North Eastern	71.1	10.9	7.8	2.7	7.0	0.6	100.0	65	0.0
<b>Wealth quintile</b>									
Lowest	17.9	51.6	17.0	5.2	6.3	2.0	100.0	548	5.1
Second	6.2	46.8	24.6	9.4	9.6	3.4	100.0	609	6.4
Middle	4.5	40.8	27.1	12.2	12.8	2.6	100.0	648	6.9
Fourth	2.9	30.3	26.8	12.2	18.3	9.5	100.0	794	7.5
Highest	4.0	13.9	19.3	13.4	24.6	24.8	100.0	979	10.1
<b>Total</b>	6.4	33.8	22.9	11.0	15.7	10.2	100.0	3,578	7.2

<sup>1</sup> Completed grade 8 at the primary level

<sup>2</sup> Completed form 4 at the secondary level

Unlike previous KDHS surveys in which respondents were asked if they could read, the 2003 KDHS interviewers asked respondents to read a simple, short sentence to establish literacy. The sentences were written not only in English and Kiswahili but also in the same 11 local vernaculars in which the questionnaires were translated. Tables 3.3.1 and 3.3.2 show the percent distribution of female and male respondents, respectively, by level of literacy and percent literate according to background characteristics.

The data show that illiteracy among females is almost twice (21 percent) that of males (12 percent). The difference is almost entirely due to the gender gap at older ages; for younger respondents, there is much less difference in illiteracy between the sexes.

The urban-rural differential also displays the expected pattern, such that more rural respondents are illiterate than their urban counterparts. North Eastern Province has, by far, the highest illiteracy rates (94 percent among females and 71 percent among males), and illiteracy is lowest in Nairobi and Central provinces for both sexes.

Illiteracy decreases as wealth increases. As expected, the poorest women have the highest rate of illiteracy (47 percent), while the richest women are least likely to be illiterate (9 percent). This pattern also holds for men.

Table 3.3.1 Literacy: women

Percent distribution of women by level of schooling attended and by level of literacy, and percent literate, according to background characteristics, Kenya 2003

Background characteristic	Secondary school or higher	No schooling or primary school			Missing	Total	Number of women	Percent literate <sup>1</sup>
		Can read a whole sentence	Can read part of a sentence	Cannot read at all				
Age								
15-19	22.8	56.7	6.1	14.0	0.4	100.0	1,856	85.5
20-24	34.2	46.0	5.6	13.9	0.2	100.0	1,691	85.9
25-29	31.1	45.8	7.3	15.6	0.2	100.0	1,382	84.2
30-34	33.3	38.5	7.5	20.4	0.3	100.0	1,086	79.3
35-39	31.0	32.2	9.3	27.1	0.4	100.0	871	72.5
40-44	30.0	22.3	8.9	38.7	0.1	100.0	788	61.2
45-49	19.8	21.6	7.8	50.8	0.0	100.0	521	49.2
Residence								
Urban	48.2	36.5	3.8	11.3	0.2	100.0	2,056	88.5
Rural	23.0	44.0	8.2	24.5	0.3	100.0	6,139	75.2
Province								
Nairobi	56.4	32.0	3.5	7.8	0.3	100.0	835	91.8
Central	41.6	42.0	7.5	8.8	0.0	100.0	1,181	91.1
Coast	19.9	40.4	5.2	34.3	0.1	100.0	667	65.6
Eastern	22.2	49.0	10.4	17.9	0.5	100.0	1,325	81.6
Nyanza	26.2	47.6	6.0	19.7	0.5	100.0	1,222	79.8
Rift Valley	25.0	40.0	8.2	26.5	0.2	100.0	1,872	73.2
Western	24.2	46.5	6.7	22.5	0.1	100.0	927	77.4
North Eastern	0.8	4.4	1.1	93.6	0.0	100.0	168	6.4
Wealth quintile								
Lowest	6.4	37.2	9.0	47.0	0.5	100.0	1,364	52.5
Second	15.9	48.0	9.8	26.2	0.1	100.0	1,475	73.7
Middle	21.9	48.2	8.6	20.9	0.3	100.0	1,503	78.7
Fourth	36.1	45.2	6.0	12.5	0.2	100.0	1,711	87.3
Highest	52.9	34.4	3.8	8.5	0.3	100.0	2,141	91.2
Total	29.3	42.1	7.1	21.2	0.3	100.0	8,195	78.5

<sup>1</sup> Refers to women who attended secondary school or higher and women who can read a whole sentence or part of a sentence

Table 3.3.2 Literacy: men

Percent distribution of men by level of schooling attended and by level of literacy, and percent literate, according to background characteristics, Kenya 2003

Background characteristic	Secondary school or higher	No schooling or primary school				Missing	Total	Number of men	Percent literate <sup>1</sup>
		Can read a whole sentence	Can read part of a sentence	Cannot read at all					
Age									
15-19	22.7	60.4	6.2	10.6	0.1	100.0	856	89.3	
20-24	43.3	42.4	5.4	8.9	0.0	100.0	681	91.1	
25-29	37.5	46.9	4.3	10.9	0.3	100.0	509	88.7	
30-34	44.7	42.1	5.5	7.5	0.2	100.0	415	92.3	
35-39	49.0	35.3	5.1	10.5	0.0	100.0	396	89.5	
40-44	39.4	39.0	7.6	14.0	0.0	100.0	310	86.0	
45-49	36.9	32.0	7.0	24.0	0.0	100.0	196	76.0	
50-54	30.7	36.9	8.1	23.8	0.5	100.0	215	75.7	
Residence									
Urban	57.7	33.3	2.7	6.3	0.0	100.0	907	93.7	
Rural	29.9	49.4	6.9	13.6	0.1	100.0	2,671	86.2	
Province									
Nairobi	67.4	25.0	1.9	5.8	0.0	100.0	397	94.2	
Central	41.1	49.0	4.3	5.5	0.0	100.0	554	94.4	
Coast	31.1	52.5	4.5	11.8	0.0	100.0	252	88.2	
Eastern	30.2	53.6	7.9	8.3	0.0	100.0	588	91.7	
Nyanza	34.0	51.2	4.3	10.4	0.2	100.0	481	89.4	
Rift Valley	32.2	42.9	8.9	15.8	0.1	100.0	846	83.9	
Western	32.2	46.9	5.7	15.0	0.2	100.0	396	84.8	
North Eastern	10.3	16.7	2.6	70.5	0.0	100.0	65	29.5	
Wealth quintile									
Lowest	13.5	51.3	9.4	25.7	0.0	100.0	548	74.3	
Second	22.3	56.6	6.7	14.0	0.1	100.0	609	85.6	
Middle	27.6	53.2	7.7	11.5	0.0	100.0	648	88.5	
Fourth	39.9	46.4	5.5	7.8	0.2	100.0	794	91.9	
Highest	62.8	28.9	2.4	5.9	0.0	100.0	979	94.1	
Total	36.9	45.4	5.8	11.8	0.1	100.0	3,578	88.1	

<sup>1</sup> Refers to men who attended secondary school or higher and men who can read a whole sentence or part of a sentence

### 3.3 ACCESS TO MASS MEDIA

Information access is essential in increasing people's knowledge and awareness of what is taking place around them, which may eventually affect their perceptions and behaviour. In the survey, exposure to media was assessed by asking respondents how often they read a newspaper, watched television, or listened to a radio. It is important to know the types of persons who are more or less likely to be reached by the media for purposes of planning programmes intended to spread information about health and family planning. Tables 3.4.1 and 3.4.2 show the percentage of male and female respondents, respectively, exposed to different types of mass communication media by age, place of residence, province, education and wealth index.



Table 3.4.1 Exposure to mass media: women

Percentage of women who usually read a newspaper at least once a week, watch television at least once a week, and listen to the radio at least once a week, by background characteristics, Kenya 2003

Background characteristic	Reads a newspaper at least once a week	Watches television at least once a week	Listens to the radio at least once a week	All three media	No media	Number of women
<b>Age</b>						
15-19	23.4	28.2	74.0	11.3	22.6	1,856
20-24	27.4	32.8	79.5	16.7	17.2	1,691
25-29	24.7	29.6	77.6	14.2	19.2	1,382
30-34	22.7	28.5	74.2	14.7	23.4	1,086
35-39	18.7	26.3	74.8	12.0	22.8	871
40-44	16.4	24.4	69.4	10.1	27.0	788
45-49	13.1	27.3	68.7	9.6	28.1	521
<b>Residence</b>						
Urban	42.4	57.3	84.3	29.7	9.7	2,056
Rural	15.9	19.3	72.0	7.7	25.9	6,139
<b>Province</b>						
Nairobi	49.7	72.1	89.4	40.7	5.4	835
Central	25.7	35.5	84.5	15.5	11.5	1,181
Coast	21.0	26.2	64.7	11.1	30.4	667
Eastern	16.4	25.4	72.0	9.9	25.7	1,325
Nyanza	14.8	15.7	74.0	5.6	23.6	1,222
Rift Valley	23.6	26.7	71.3	12.7	25.6	1,872
Western	15.8	14.2	82.3	5.2	16.1	927
North Eastern	1.3	1.8	12.6	0.3	86.8	168
<b>Education</b>						
No education	0.4	8.2	39.0	0.2	59.8	1,039
Primary incomplete	7.5	16.0	71.0	2.7	26.7	2,685
Primary complete	21.0	27.8	82.2	9.7	14.4	2,069
Secondary+	50.3	52.9	89.1	33.7	6.3	2,403
<b>Wealth quintile</b>						
Lowest	5.7	2.8	44.4	0.5	53.9	1,364
Second	8.2	6.4	71.5	1.6	27.1	1,475
Middle	12.1	14.2	77.3	3.9	20.7	1,503
Fourth	25.8	35.2	85.2	13.3	12.1	1,711
Highest	47.9	65.9	87.4	35.8	6.3	2,141
Total	22.5	28.8	75.1	13.2	21.8	8,195

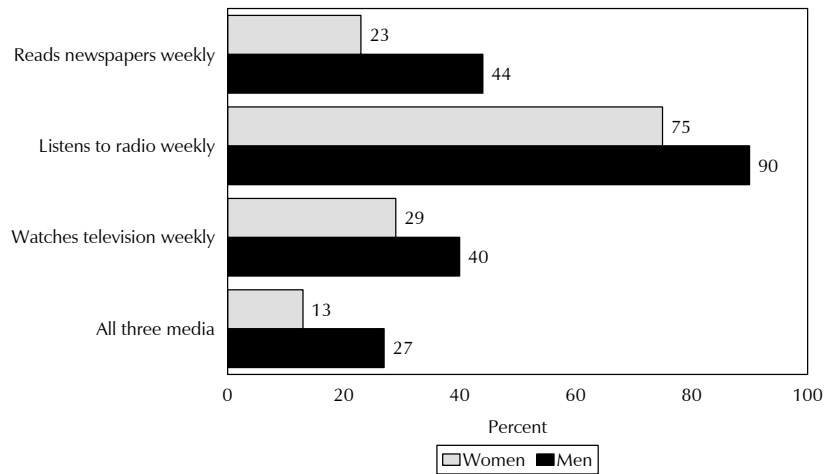
Table 3.4.2 Exposure to mass media: men

Percentage of men who usually read a newspaper at least once a week, watch television at least once a week, and listen to the radio at least once a week, by background characteristics, Kenya 2003

Background characteristic	Reads a newspaper at least once a week	Watches television at least once a week	Listens to the radio at least once a week	All three media	No media	Number of men
<b>Age</b>						
15-19	32.4	34.6	86.5	17.6	10.9	856
20-24	49.8	44.8	93.6	31.6	4.7	681
25-29	49.3	44.3	91.0	31.3	7.8	509
30-34	51.1	43.9	93.6	30.8	4.4	415
35-39	52.0	43.2	91.7	33.5	6.2	396
40-44	43.0	34.8	89.0	25.1	9.6	310
45-49	41.3	33.1	85.0	23.9	13.0	196
50-54	42.4	35.4	87.0	27.4	12.7	215
<b>Residence</b>						
Urban	72.0	65.8	95.2	52.3	2.3	907
Rural	35.1	31.1	88.3	18.5	10.1	2,671
<b>Province</b>						
Nairobi	74.4	71.9	93.8	56.8	2.5	397
Central	55.9	51.9	96.8	35.9	1.8	554
Coast	45.9	39.0	93.3	29.8	5.4	252
Eastern	26.3	26.0	86.4	15.0	11.9	588
Nyanza	40.3	24.8	87.7	15.1	9.9	481
Rift Valley	44.9	41.4	87.1	27.9	11.4	846
Western	33.2	32.6	94.6	17.5	4.4	396
North Eastern	15.5	9.8	58.8	6.1	39.2	65
<b>Education</b>						
No education	1.4	13.8	62.1	0.3	37.5	228
Primary incomplete	20.9	26.7	85.0	10.0	12.8	1,210
Primary complete	40.4	33.0	95.0	20.3	4.1	820
Secondary+	76.0	60.9	96.4	51.6	1.2	1,320
<b>Wealth quintile</b>						
Lowest	19.6	13.2	71.8	7.4	26.1	548
Second	27.7	19.2	89.3	9.6	8.1	609
Middle	32.8	30.2	92.2	16.3	7.3	648
Fourth	50.3	47.4	94.9	30.6	4.3	794
Highest	71.7	68.2	95.4	53.3	1.7	979
Total	44.4	39.9	90.1	27.1	8.1	3,578

In general, women are less likely than men to have access to mass media; this is true for all types of media (Figure 3.1). Twenty-three percent of women and 44 percent of men read newspapers at least once a week, 29 percent of women and 40 percent of men watch television at least once a week, and 75 percent of women and 90 percent of men listen to the radio once a week. Only 13 percent of women and 27 percent of men are exposed to all three of these media sources. Twenty-two percent of women and 8 percent of men have no access to mass media. Since 1998, the proportions of both women and men who reported reading newspapers weekly have declined, and the proportion watching television has increased slightly for women and declined for men. At least some of these apparent changes in media exposure could be due to a change in the way the questions were worded between the two surveys. Also, in 1988, the question on radio listenership referred to daily listening, further confounding trend analysis.

**Figure 3.1 Access to Mass Media**



KDHS 2003

Nairobi and Central provinces have the highest proportion of women and men who have access to all three media, while the least access to media is reported in North Eastern Province.

The data also show that urban residents are more likely to have access to mass media than rural residents. Exposure to media is positively associated with educational attainment; the proportion with access to all three media outlets increases with increasing education level of respondents. Similarly, access to all three media outlets increases as wealth increases for both sexes.

### 3.4 EMPLOYMENT

#### 3.4.1 Employment Status

The KDHS asked respondents whether they were employed at the time of the survey and, if not, whether they were employed in the 12 months preceding the survey. Table 3.5 shows that 58 percent of women and 72 percent of men are currently employed. The proportion currently employed generally increases with age and number of living children. Women who are divorced, separated, or widowed are most likely to be employed (76 percent), followed by those who are married (65 percent). In contrast, married men are somewhat more likely to be employed than divorced, separated, or widowed men.

There are notable regional variations in the proportion currently employed. Women in Nyanza (70 percent), Western (64 percent) and Central (63 percent) provinces are the most likely to be employed, while women in North Eastern Province are least likely to be employed. Among men, Central, Rift Valley, and Coast provinces have the highest employment levels. Only about 20 percent of women and 30 percent of men in North Eastern Province are currently employed. Current employment shows a mixed pattern by education, generally increasing with education among women, but not among men. The proportion currently employed generally increases as wealth status of the respondent increases, though the relationship is not strong.

Table 3.5 Employment status

Percent distribution of women and men by employment status, according to background characteristics, Kenya 2003

Background characteristic	Women						Men					
	Employed in the 12 months preceding the survey		Not employed in the 12 months preceding the survey	Don't know/missing	Total	Number of women	Employed in the 12 months preceding the survey		Not employed in the 12 months preceding the survey	Don't know/missing	Total	Number of men
	Currently employed	Not currently employed					Currently employed	Not currently employed				
<b>Age</b>												
15-19	28.6	3.1	68.4	0.0	100.0	1,856	25.5	3.0	70.4	1.1	100.0	856
20-24	54.1	5.1	40.8	0.0	100.0	1,691	69.9	8.8	21.1	0.1	100.0	681
25-29	65.4	4.1	30.1	0.4	100.0	1,382	87.3	7.5	4.7	0.5	100.0	509
30-34	73.0	4.1	22.7	0.2	100.0	1,086	92.3	4.1	3.7	0.0	100.0	415
35-39	76.7	1.4	21.5	0.3	100.0	871	96.0	1.9	2.1	0.0	100.0	396
40-44	75.0	3.3	21.5	0.2	100.0	788	94.8	2.4	2.8	0.0	100.0	310
45-49	73.3	1.6	25.2	0.0	100.0	521	91.7	3.9	4.4	0.0	100.0	196
50-54	na	na	na	na	na	na	92.2	2.5	5.4	0.0	100.0	215
<b>Marital status</b>												
Never married	39.4	3.1	57.4	0.2	100.0	2,443	45.9	6.1	47.2	0.8	100.0	1,611
Married or living together	64.9	3.7	31.3	0.2	100.0	4,919	93.7	3.1	3.1	0.0	100.0	1,818
Divorced/separated/widowed	75.6	4.3	20.0	0.2	100.0	833	87.6	9.4	3.1	0.0	100.0	149
<b>Number of living children</b>												
0	36.5	3.7	59.8	0.1	100.0	2,399	48.4	6.1	44.8	0.7	100.0	1,704
1-2	62.7	4.8	32.4	0.2	100.0	2,427	92.3	4.5	3.3	0.0	100.0	721
3-4	71.4	2.5	26.0	0.1	100.0	1,752	95.5	1.8	2.8	0.0	100.0	544
5+	70.2	2.7	26.8	0.3	100.0	1,616	92.8	3.7	3.5	0.0	100.0	609
<b>Residence</b>												
Urban	58.0	5.9	35.8	0.3	100.0	2,056	74.7	6.5	18.0	0.8	100.0	907
Rural	58.5	2.8	38.7	0.1	100.0	6,139	71.0	4.1	24.7	0.2	100.0	2,671
<b>Province</b>												
Nairobi	56.6	5.1	38.1	0.1	100.0	835	68.6	9.1	21.9	0.4	100.0	397
Central	63.4	2.0	34.4	0.2	100.0	1,181	80.2	0.3	19.2	0.2	100.0	554
Coast	49.7	7.3	42.8	0.2	100.0	667	75.9	4.1	20.0	0.0	100.0	252
Eastern	48.3	3.0	48.6	0.1	100.0	1,325	71.0	4.5	24.3	0.2	100.0	588
Nyanza	69.6	3.6	26.7	0.1	100.0	1,222	68.1	4.0	27.2	0.7	100.0	481
Rift Valley	59.8	4.1	36.0	0.2	100.0	1,872	76.1	6.3	16.9	0.6	100.0	846
Western	63.5	1.2	35.3	0.0	100.0	927	65.0	4.8	30.1	0.0	100.0	396
North Eastern	19.5	2.7	77.4	0.4	100.0	168	29.8	4.2	66.0	0.0	100.0	65
<b>Education</b>												
No education	50.0	3.2	46.6	0.3	100.0	1,039	70.3	9.7	20.0	0.0	100.0	228
Primary incomplete	55.7	3.2	41.0	0.1	100.0	2,685	63.3	4.1	32.4	0.2	100.0	1,210
Primary complete	63.6	3.6	32.6	0.1	100.0	2,069	85.1	3.4	10.9	0.5	100.0	820
Secondary+	60.4	4.1	35.4	0.2	100.0	2,403	71.9	5.2	22.4	0.4	100.0	1,320
<b>Wealth quintile</b>												
Lowest	55.6	2.0	42.2	0.1	100.0	1,364	62.0	6.9	30.7	0.4	100.0	548
Second	58.7	3.7	37.5	0.1	100.0	1,475	69.5	3.6	26.9	0.0	100.0	609
Middle	60.0	2.6	37.3	0.1	100.0	1,503	68.7	4.1	27.0	0.2	100.0	648
Fourth	56.4	3.4	40.0	0.2	100.0	1,711	76.5	3.1	20.0	0.4	100.0	794
Highest	60.3	5.2	34.3	0.2	100.0	2,141	77.5	6.0	16.0	0.5	100.0	979
<b>Total</b>	58.4	3.6	37.9	0.2	100.0	8,195	71.9	4.7	23.0	0.3	100.0	3,578
na = Not applicable												

### 3.4.2 Occupation

The distributions of women and men employed in the 12 months preceding the survey, by occupation and other background characteristics, are shown in Tables 3.6.1 and 3.6.2, respectively. Forty-nine percent of working women and 42 percent of working men are engaged in agricultural occupations. Among women, the next most common occupation is in the sales and services sector (26 percent), while for men, it is unskilled manual occupations (22 percent). For men, the sales and service sector is the third major occupation category, engaging 17 percent of working men. Nine percent of employed Kenyan women do domestic work, while only 7 percent work in professional, technical, or managerial fields. The proportion of women employed in agricultural activities has remained the same since 1998.

Table 3.6.1 Occupation: women

Percent distribution of women employed in the 12 months preceding the survey by occupation, according to background characteristics, Kenya 2003

Background characteristic	Professional/technical/managerial	Clerical	Sales and services	Skilled manual	Unskilled manual	Domestic service	Agriculture	Missing	Total	Number of women
<b>Age</b>										
15-19	1.9	0.1	20.1	0.0	6.5	24.6	46.6	0.1	100.0	587
20-24	4.1	1.6	25.9	0.0	11.2	12.7	44.3	0.2	100.0	1,001
25-29	7.4	2.8	26.0	0.1	8.9	8.2	46.4	0.2	100.0	960
30-34	7.4	2.5	31.0	0.2	5.8	4.7	48.2	0.0	100.0	838
35-39	7.7	2.6	28.7	0.1	6.7	3.8	49.9	0.5	100.0	681
40-44	9.6	3.2	26.3	0.1	4.9	1.9	54.1	0.0	100.0	617
45-49	8.3	2.7	24.0	0.5	4.4	1.5	58.6	0.0	100.0	390
<b>Marital status</b>										
Never married	7.3	3.2	22.1	0.0	12.3	26.2	28.4	0.4	100.0	1,036
Married or living together	7.2	2.0	25.8	0.1	5.8	3.2	55.8	0.1	100.0	3,371
Divorced/separated/widowed	1.5	1.8	35.8	0.1	8.3	8.4	44.0	0.0	100.0	665
<b>Number of living children</b>										
0	7.9	3.2	21.4	0.1	11.6	24.2	31.3	0.3	100.0	964
1-2	6.8	2.6	29.9	0.2	9.3	8.9	42.2	0.1	100.0	1,638
3-4	7.1	2.1	26.6	0.0	5.0	3.1	55.9	0.1	100.0	1,293
5+	4.2	1.0	25.3	0.2	4.2	1.1	63.9	0.2	100.0	1,179
<b>Residence</b>										
Urban	11.4	5.6	41.0	0.4	11.4	19.4	10.7	0.1	100.0	1,314
Rural	4.8	1.0	21.3	0.0	6.1	4.7	61.9	0.2	100.0	3,759
<b>Province</b>										
Nairobi	15.5	7.2	37.2	0.7	13.0	23.9	2.2	0.2	100.0	515
Central	7.5	2.5	19.3	0.0	7.4	7.3	56.1	0.0	100.0	772
Coast	4.9	1.7	39.8	0.2	14.5	8.1	30.6	0.2	100.0	380
Eastern	7.1	1.4	26.0	0.2	10.3	12.4	42.5	0.0	100.0	679
Nyanza	3.4	1.3	26.6	0.0	5.1	3.6	59.9	0.0	100.0	895
Rift Valley	5.3	1.9	23.5	0.0	5.2	6.9	56.8	0.5	100.0	1,195
Western	4.9	1.0	21.1	0.0	3.5	3.7	65.8	0.0	100.0	600
North Eastern	0.0	1.9	64.1	0.0	2.7	1.6	27.8	1.9	100.0	37
<b>Education</b>										
No education	0.3	0.0	30.3	0.0	3.6	3.2	62.4	0.1	100.0	552
Primary incomplete	0.4	0.0	21.7	0.0	3.7	8.5	65.7	0.0	100.0	1,580
Primary complete	1.0	0.2	27.7	0.1	11.5	12.2	47.1	0.1	100.0	1,391
Secondary+	19.9	7.0	28.5	0.3	9.0	7.2	27.8	0.4	100.0	1,549
<b>Wealth quintile</b>										
Lowest	0.8	0.0	20.6	0.0	4.3	1.7	72.3	0.4	100.0	786
Second	2.1	0.0	19.6	0.0	6.7	2.7	68.9	0.0	100.0	920
Middle	3.5	0.4	20.7	0.0	7.4	3.3	64.7	0.0	100.0	942
Fourth	7.2	1.6	27.1	0.2	5.9	6.6	51.2	0.3	100.0	1,023
Highest	14.1	6.5	37.3	0.3	10.9	21.1	9.5	0.2	100.0	1,402
<b>Total</b>	6.5	2.2	26.4	0.1	7.5	8.5	48.7	0.2	100.0	5,073

Table 3.6.2 Occupation: men

Percent distribution of men employed in the 12 months preceding the survey by occupation, according to background characteristics, Kenya 2003

Background characteristic	Professional/technical/managerial	Clerical	Sales and services	Skilled manual	Unskilled manual	Domestic service	Agriculture	Missing	Total	Number of men
<b>Age</b>										
15-19	0.6	1.1	9.3	4.9	17.1	7.5	58.6	0.7	100.0	244
20-24	4.7	1.7	21.9	4.1	23.9	5.0	37.2	1.6	100.0	537
25-29	8.0	1.1	22.6	5.6	21.1	3.1	38.4	0.0	100.0	482
30-34	10.6	0.9	17.3	4.9	21.8	3.2	40.9	0.4	100.0	400
35-39	10.8	0.9	16.5	6.3	27.2	0.9	37.4	0.0	100.0	388
40-44	18.4	2.4	13.8	5.3	21.5	0.8	37.8	0.1	100.0	301
45-49	13.6	0.8	13.1	1.4	16.1	1.7	53.3	0.0	100.0	188
50-54	16.9	1.6	14.1	3.4	14.9	1.4	47.3	0.3	100.0	204
<b>Marital status</b>										
Never married	5.3	1.4	16.5	4.0	19.7	6.7	45.2	1.2	100.0	837
Married or living together	12.0	1.4	18.0	5.0	21.7	1.4	40.4	0.1	100.0	1,761
Divorced/separated/widowed	6.6	0.0	15.8	6.3	29.1	3.0	39.2	0.0	100.0	145
<b>Number of living children</b>										
0	5.7	1.5	17.6	4.3	19.5	6.0	44.3	1.0	100.0	928
1-2	9.9	1.0	21.8	6.4	23.2	1.9	35.5	0.4	100.0	698
3-4	14.6	1.2	17.0	4.5	25.3	1.1	36.2	0.1	100.0	529
5+	11.2	1.6	12.1	3.8	19.2	1.7	50.4	0.1	100.0	588
<b>Residence</b>										
Urban	14.1	2.9	30.3	10.5	33.7	1.9	6.3	0.2	100.0	736
Rural	8.0	0.7	12.7	2.6	17.0	3.6	54.8	0.6	100.0	2,006
<b>Province</b>										
Nairobi	18.1	4.2	30.3	12.9	31.2	1.6	1.4	0.3	100.0	308
Central	6.7	1.6	15.2	4.5	19.7	1.8	50.4	0.2	100.0	446
Coast	8.3	1.1	31.0	6.3	28.3	2.5	21.7	0.8	100.0	201
Eastern	9.2	0.7	14.1	2.1	20.0	9.4	44.3	0.3	100.0	444
Nyanza	10.0	1.1	12.4	5.4	22.6	0.8	47.4	0.3	100.0	347
Rift Valley	8.7	0.5	15.5	2.4	19.0	2.3	51.0	0.6	100.0	698
Western	8.1	1.0	12.6	4.5	17.0	2.5	53.1	1.2	100.0	277
North Eastern	16.6	2.9	23.8	0.0	11.4	0.0	45.3	0.0	100.0	22
<b>Education</b>										
No education	0.9	0.0	18.0	0.9	11.6	1.9	66.7	0.0	100.0	183
Primary incomplete	0.7	0.1	13.7	2.9	23.5	5.5	53.0	0.6	100.0	816
Primary complete	2.2	0.2	17.0	5.2	25.6	3.2	46.3	0.3	100.0	726
Secondary+	23.8	3.3	20.6	6.5	18.8	1.3	25.1	0.6	100.0	1,018
<b>Wealth quintile</b>										
Lowest	0.8	1.4	9.9	2.6	15.2	0.7	69.0	0.5	100.0	378
Second	5.5	0.0	10.5	1.9	19.7	1.3	60.9	0.1	100.0	445
Middle	5.2	0.6	12.0	3.4	18.7	3.7	55.9	0.5	100.0	472
Fourth	10.5	1.0	13.5	3.0	21.9	4.9	44.4	0.7	100.0	632
Highest	18.0	2.6	30.7	9.4	26.8	3.4	8.6	0.5	100.0	817
Total	9.7	1.3	17.4	4.7	21.5	3.1	41.8	0.5	100.0	2,743

Differences by background characteristics show that, as expected, rural women and men are more likely to be employed in agricultural jobs than urban residents. Among women, domestic service is particularly high among never-married and younger respondents, as well as those who live in urban areas, in Nairobi, and in wealthier households. The latter finding could be due to the fact that the wealth index is derived from household-based information; to the extent that female domestic workers live in the households in which they work, they take on the characteristics of that household.

### 3.4.3 Type of Employer, Form of Earnings, and Continuity of Employment

Tables 3.7.1 and 3.7.2 present the percent distribution of employed women and men, respectively, by type of earnings and employment characteristics, according to type of employment (agricultural or nonagricultural). Seventy-five percent of women receive cash for their work, while almost one in five is unpaid. Women are more likely to be paid in kind or not paid at all if they are employed in agricultural activities. Men are more likely than women to be paid in cash for their work (87 percent); men engaged in nonagricultural work are almost all (93 percent) paid cash only.

Three in five working women are self-employed, with only 27 percent employed by a nonfamily member. Women are more likely to be self-employed if they are doing agricultural work than if they are engaged in nonagricultural work. Women are more prone to seasonal and occasional work if they are employed in agricultural activities (45 percent) than if they are in nonagricultural occupations (26 percent) and, conversely, continuity of employment is more assured for women who are engaged in nonagricultural work.

**Table 3.7.1 Type of employment: women**

Percent distribution of women employed in the 12 months preceding the survey by type of earnings, type of employer, and continuity of employment, according to type of employment (agricultural or nonagricultural), Kenya 2003

Employment characteristic	Agricultural work	Nonagricultural work	Total
<b>Type of earnings</b>			
Cash only	25.2	84.1	55.4
Cash and in-kind	30.3	8.9	19.3
In-kind only	13.4	0.7	6.8
Not paid	31.1	6.3	18.3
Total	100.0	100.0	100.0
<b>Type of employer</b>			
Employed by family member	15.8	5.7	10.6
Employed by nonfamily member	11.8	41.6	27.1
Self-employed	72.4	52.5	62.2
Total	100.0	100.0	100.0
<b>Continuity of employment</b>			
All year	54.6	74.1	64.5
Seasonal	39.3	17.7	28.2
Occasional	6.0	8.2	7.1
Total	100.0	100.0	100.0
Number of women	2,468	2,596	5,073

Note: Total includes 8 women with missing information on type of employment, who are not shown separately.

**Table 3.7.2 Type of employment: men**

Percent distribution of men employed in the 12 months preceding the survey by type of earnings, according to type of employment (agricultural or nonagricultural), Kenya 2003

Type of earnings	Agricultural work	Nonagricultural work	Total
Cash only	49.2	93.4	74.6
Cash and in-kind	23.6	3.9	12.1
In-kind only	5.8	0.3	2.6
Not paid	21.4	2.4	10.3
Missing	0.0	0.1	0.4
Total	100.0	100.0	100.0
Number of men	1,146	1,583	2,743

Note: Total includes 13 men with missing information on type of employment, who are not shown separately.

### 3.4.4 Control Over Earnings and Women's Contribution to Household Expenditures

Women who were working and receiving cash earnings were asked to state who decides how their earnings are used. In addition, they were asked what proportion of household expenditures is met by their earnings. Table 3.8 shows that two in three working women decide by themselves how their earnings are used, while 23 percent make the decision jointly with someone else. Only about one in ten women

Table 3.8 Decision on use of earnings and contribution of earnings to household expenditures

Percent distribution of women employed in the 12 months preceding the survey receiving cash earnings by person who decides how earnings are to be used and by proportion of household expenditures met by earnings, according to background characteristics, Kenya 2003

Background characteristic	Person who decides how earnings are used				Total	Proportion of household expenditures met by earnings					Total	Number of women
	Self only	Jointly <sup>1</sup>	Someone else only <sup>2</sup>	Missing		Almost none/none	Less than half	Over half	All	Missing		
<b>Age</b>												
15-19	62.4	12.7	24.8	0.0	100.0	33.6	20.6	35.4	10.4	0.0	100.0	363
20-24	71.4	15.7	13.0	0.0	100.0	15.2	31.5	41.1	12.2	0.0	100.0	755
25-29	63.8	26.5	9.7	0.0	100.0	8.0	25.3	50.6	16.1	0.0	100.0	705
30-34	59.6	31.7	8.8	0.0	100.0	4.0	25.3	50.6	20.1	0.0	100.0	654
35-39	66.8	25.6	7.5	0.2	100.0	4.1	24.6	51.6	19.5	0.2	100.0	521
40-44	70.5	22.1	7.1	0.3	100.0	3.5	24.4	47.9	23.9	0.3	100.0	494
45-49	70.6	20.4	9.0	0.0	100.0	1.3	25.8	47.1	25.8	0.0	100.0	298
<b>Marital status</b>												
Never married	85.5	2.9	11.6	0.0	100.0	29.5	23.7	33.9	12.9	0.0	100.0	786
Married or living together	53.3	33.7	12.9	0.1	100.0	3.8	28.2	51.7	16.2	0.1	100.0	2,458
Divorced/separated/widowed	96.8	2.0	1.1	0.1	100.0	6.4	18.9	43.2	31.3	0.1	100.0	546
<b>Number of living children</b>												
0	75.9	9.6	14.5	0.0	100.0	29.3	24.8	34.4	11.5	0.0	100.0	705
1-2	65.9	24.1	10.0	0.0	100.0	7.3	26.9	50.2	15.6	0.0	100.0	1,255
3-4	60.6	29.6	9.7	0.1	100.0	3.1	24.2	52.0	20.7	0.1	100.0	984
5+	65.3	23.8	10.8	0.2	100.0	3.9	27.4	45.9	22.7	0.2	100.0	846
<b>Residence</b>												
Urban	75.4	17.1	7.5	0.1	100.0	13.2	22.2	46.9	17.7	0.1	100.0	1,182
Rural	62.1	25.3	12.5	0.1	100.0	7.9	27.6	46.7	17.7	0.1	100.0	2,608
<b>Province</b>												
Nairobi	80.6	14.0	5.3	0.0	100.0	16.0	20.7	43.1	20.2	0.0	100.0	482
Central	63.3	29.3	7.3	0.1	100.0	12.0	22.6	47.2	18.1	0.1	100.0	565
Coast	69.3	19.9	10.8	0.0	100.0	7.1	23.4	54.7	14.8	0.0	100.0	281
Eastern	67.2	22.3	10.4	0.0	100.0	13.3	30.2	46.1	10.4	0.0	100.0	601
Nyanza	63.5	23.0	13.6	0.0	100.0	3.4	31.6	51.1	14.0	0.0	100.0	639
Rift Valley	59.4	27.3	13.2	0.1	100.0	9.2	22.2	44.6	23.9	0.1	100.0	847
Western	68.7	16.6	14.4	0.2	100.0	5.1	29.8	43.6	21.2	0.2	100.0	349
North Eastern	67.3	11.3	21.5	0.0	100.0	0.0	53.1	40.0	6.9	0.0	100.0	26
<b>Education</b>												
No education	76.0	12.4	11.2	0.5	100.0	6.9	24.1	43.5	25.0	0.5	100.0	337
Primary incomplete	65.2	20.1	14.7	0.0	100.0	8.5	27.9	44.0	19.5	0.0	100.0	1,092
Primary complete	65.3	21.9	12.7	0.0	100.0	12.1	26.4	44.5	17.0	0.0	100.0	1,061
Secondary+	65.4	28.3	6.3	0.0	100.0	9.0	24.3	51.7	14.9	0.0	100.0	1,300
<b>Wealth quintile</b>												
Lowest	62.6	22.0	15.4	0.0	100.0	5.1	33.1	43.9	18.0	0.0	100.0	486
Second	63.1	22.8	13.8	0.3	100.0	5.4	29.9	45.0	19.4	0.3	100.0	613
Middle	63.9	25.1	11.0	0.0	100.0	5.0	26.4	49.5	19.1	0.0	100.0	636
Fourth	60.2	25.9	13.8	0.0	100.0	10.2	26.3	48.2	15.3	0.0	100.0	774
Highest	74.0	19.9	6.1	0.0	100.0	15.1	20.9	46.4	17.5	0.0	100.0	1,281
Total	66.3	22.8	10.9	0.1	100.0	9.5	25.9	46.8	17.7	0.1	100.0	3,791

<sup>1</sup> With husband or someone else

<sup>2</sup> Includes husband



report that the decision on how to use their earnings is made by some else only. The proportion of women who say that they decide by themselves how their earnings are used increased from 55 percent in 1998 to 66 percent in 2003.<sup>2</sup>

Table 3.8 also shows how the respondent's degree of control over her earnings varies by background characteristics. Irrespective of age, most respondents make their own decisions on how their cash earnings are used. Unmarried women tend to make their own decisions about the use of their earnings, while married women, compared with unmarried women, are more likely to involve another person in making the decision. Urban women are more independent in making their own decisions than rural women (75 and 62 percent, respectively). In rural areas, 25 and 13 percent of the decisions on the use of women's earnings are made either jointly or by someone else, respectively.

There are regional variations in the way decisions are made on how women's earnings are used. The percentage of women who make decisions on their earnings by themselves ranges from 81 percent in Nairobi Province to 59 percent in Rift Valley Province. There are no clear patterns by education and poverty status.

Regarding the proportion of household expenditures met by their earnings, 18 percent of working women reported that their earnings supported all household expenditures, while 47 percent reported that their earnings constitute over half of household expenditures. Older women; women who are widowed, divorced, or separated; and less educated women are more likely to support their households financially.

Table 3.9 shows information on how decisions on use of women's earnings are related to the proportional contribution of these earnings to the household expenditures, according to marital status. The analysis indicates that independence in decisionmaking is slightly inversely related to the proportion of women's contribution to the household expenses. For instance, 75 percent of women whose contribution to household expenditures is minimal decide for themselves how their earnings are used. On the other hand, only 57 percent of women who support all of their household's expenses decide by themselves how their earnings are used, while 30 percent share the decision with their husband and 14 percent say that their husband alone makes decisions. Almost all unmarried women (between 87 and 96 percent) make their own decisions regarding their earnings, regardless of their contribution to the household expenditures.

Table 3.9 Women's control over earnings

Percent distribution of women who received cash earnings for work in the past 12 months by person who decides how earnings are used, according to marital status, and the proportion of household expenditures met by earnings, Kenya 2003

Contribution to household expenditures	Currently married or living together						Not married <sup>1</sup>					
	Self only	Jointly with husband	Jointly with someone else	Husband only	Someone else only	Total	Number of women	Self only	Jointly with someone else	Someone else only	Total	Number of women
Almost none/none	75.3	19.9	0.0	4.8	0.0	100.0	94	89.0	3.2	7.9	100.0	267
Less than half	59.1	29.5	0.5	10.5	0.4	100.0	693	87.4	3.3	9.2	100.0	290
Over half	47.5	37.8	0.3	14.0	0.4	100.0	1,270	89.3	1.9	8.8	100.0	502
All	56.8	29.7	0.0	13.5	0.0	100.0	399	96.1	2.1	1.8	100.0	273
Total	53.3	33.4	0.3	12.6	0.3	100.0	2,458	90.2	2.5	7.3	100.0	1,332

<sup>1</sup> Never-married, divorced, separated, or widowed women

<sup>2</sup> The figure is 66 percent for the entire sample, as well as for the sample excluding the northern districts.

### 3.5 WOMEN'S EMPOWERMENT

In addition to information on women's education, employment status, and control over earnings, the 2003 KDHS collected information from both women and men on other measures of women's autonomy and status. In particular, questions were asked about women's roles in making household decisions, on acceptance of wife beating, and on their opinions about when a wife should be able to deny sex to her husband. Such information provides insight into women's control over their environment and their attitudes towards gender roles, both of which are relevant to understanding women's demographic and health behaviour.

#### 3.5.1 Women's Participation in Decisionmaking

To assess women's decisionmaking autonomy, the 2003 KDHS sought information on women's participation in five different types of household decisions: on the respondents' own health care; on making large household purchases; on making household purchase for daily needs; on visits to family or relatives; and on what food should be cooked each day. Table 3.10 shows the percent distribution of women according to who in the household usually has the final say on each aspect. The autonomy of women in this case would be gauged by either their independently making such decisions or jointly deciding on such issues.

Table 3.10 Women's participation in decisionmaking

Percent distribution of women by person who has the final say in making specific decisions, according to current marital status and type of decision, Kenya 2003

Decision	Currently married or living together								Not married <sup>1</sup>					
	Self only	Jointly with husband	Jointly with someone else	Husband only	Someone else only	Decision not made/ not applicable/ missing	Total	Number of women	Self only	Jointly with someone else	Someone else only	Decision not made/ not applicable/ missing	Total	Number of women
Own health care	39.8	14.3	0.3	42.9	2.3	0.4	100.0	4,919	41.6	2.9	54.7	0.8	100.0	3,276
Large household purchases	11.8	24.2	0.2	61.3	2.3	0.2	100.0	4,919	24.4	2.5	70.4	2.7	100.0	3,276
Daily household purchases	40.5	19.2	0.5	37.3	2.2	0.3	100.0	4,919	25.6	3.5	68.3	2.4	100.0	3,276
Visits to family or relatives	22.9	35.1	0.4	39.4	1.7	0.5	100.0	4,919	32.7	6.1	59.2	1.9	100.0	3,276
What food to cook each day	81.2	5.0	1.1	10.0	2.4	0.1	100.0	4,919	28.0	5.2	64.9	1.9	100.0	3,276

<sup>1</sup> Never-married, divorced, separated, or widowed women

Among currently married women, independence in making decisions ranges from 81 percent on what food to cook daily to only 12 percent on making large household purchases. Although 40 percent of married women make decisions on their own health care by themselves, 43 percent of women say that their husbands make such decisions alone. Husbands are more likely to decide on making large purchases (61 percent) and visits to family or relatives (39 percent).

Among unmarried women, decisions on their own health care are made by the respondents (42 percent) or someone else (55 percent). The other decisions are made mostly by either the respondents themselves or by someone else, possibly because the majority are younger women who still live with their guardians or parents.

Table 3.11 shows that although one in four women have a say in all five areas of decisionmaking, another one in four have no say at all in any of the specified areas. Generally, women's participation in making all of the specified decisions increases with age, from 3 percent among women age 15-19 to 50

Table 3.11 Women's participation in decisionmaking by background characteristics

Percentage of women who say that they alone or jointly have the final say in specific decisions, by background characteristics, Kenya 2003

Background characteristic	Alone or jointly has final say in:						None of the specified decisions	Number of women
	Own health care	Making large purchases	Making daily purchases	Visits to family or relatives	What food to cook each day	All specified decisions		
<b>Age</b>								
15-19	20.8	5.5	8.5	15.7	17.3	3.2	65.7	1,856
20-24	47.2	20.1	36.1	44.3	59.3	14.6	24.1	1,691
25-29	56.2	35.8	55.5	56.0	78.9	25.1	11.2	1,382
30-34	64.0	44.8	65.9	65.9	87.7	34.6	5.9	1,086
35-39	64.6	51.2	73.2	69.5	92.5	39.8	4.2	871
40-44	69.7	59.2	78.8	74.6	92.8	47.2	4.8	788
45-49	70.2	62.6	77.6	80.7	92.4	49.9	3.9	521
<b>Marital status</b>								
Never married	32.0	11.5	13.5	24.5	18.0	9.6	59.1	2,443
Married or living together	54.4	36.2	60.2	58.4	87.4	24.5	8.1	4,919
Divorced/separated/widowed	81.0	72.2	75.1	80.7	77.8	68.2	11.9	833
<b>Number of living children</b>								
0	28.9	10.9	15.0	24.4	22.6	8.4	57.4	2,399
1-2	57.2	34.3	52.6	56.7	74.6	25.7	14.5	2,427
3-4	60.0	43.8	66.2	63.9	88.9	32.9	6.5	1,752
5+	61.8	49.6	69.1	65.8	91.3	37.3	5.8	1,616
<b>Residence</b>								
Urban	61.4	40.4	53.1	59.9	69.5	32.6	17.3	2,056
Rural	46.8	29.8	46.0	47.5	64.5	21.8	25.8	6,139
<b>Province</b>								
Nairobi	62.6	40.6	55.0	63.6	68.9	33.7	16.2	835
Central	63.8	36.5	51.1	63.6	67.2	30.0	20.5	1,181
Coast	42.6	35.1	41.7	48.8	61.5	27.3	28.8	667
Eastern	60.6	35.5	46.2	50.9	63.5	26.8	21.6	1,325
Nyanza	31.3	27.9	51.6	42.0	61.2	18.4	30.2	1,222
Rift Valley	57.6	32.0	48.5	52.9	72.0	24.1	18.3	1,872
Western	29.0	21.0	38.4	31.2	59.6	13.3	35.8	927
North Eastern	24.0	32.3	40.5	42.4	71.3	20.2	24.1	168
<b>Education</b>								
No education	48.1	40.3	52.9	52.6	79.8	30.3	15.4	1,039
Primary incomplete	42.4	27.3	42.1	42.8	59.5	19.6	31.1	2,685
Primary complete	52.5	31.2	47.9	52.6	67.4	22.2	19.4	2,069
Secondary+	58.7	36.1	51.7	56.7	65.1	29.4	22.6	2,403
<b>Employment</b>								
Not employed	36.0	17.7	26.4	33.8	48.1	12.3	41.2	3,397
Employed for cash	65.6	48.2	67.9	66.7	80.4	37.6	8.7	3,561
Employed not for cash	46.7	28.2	49.1	50.7	72.9	20.3	18.0	1,218
<b>Wealth quintile</b>								
Lowest	41.1	30.1	45.8	43.6	67.0	22.4	26.6	1,364
Second	40.7	28.7	45.7	45.7	64.9	18.5	25.5	1,475
Middle	46.6	30.2	45.7	45.2	63.9	21.5	27.5	1,503
Fourth	52.9	31.1	45.8	51.8	62.5	23.3	25.0	1,711
Highest	63.9	39.4	53.4	61.2	69.4	32.9	16.7	2,141
Total	50.4	32.5	47.8	50.6	65.7	24.5	23.7	8,195

percent among those age 45-49. Women who have never married, have no children, have incomplete primary education, and who are not employed are the least likely to participate in decisionmaking in the household. About four in ten women (38 percent) who are employed for cash participate in making all decisions, compared with 20 percent who are employed but do not earn cash and 12 percent of unemployed women. This implies that cash employment increases women's decisionmaking power.

### 3.5.2 Women's Attitudes Towards Wife-Beating

Violence against women is an area that is increasingly being recognised as affecting women's health and autonomy. Violence against women has serious consequences for their mental and physical well-being, including their reproductive and sexual health (World Health Organization, 1999). If violence against women is tolerated and accepted in a society, its eradication is made more difficult. To gauge the acceptability of domestic violence, women and men interviewed in the 2003 KDHS were asked whether they thought a husband would be justified in hitting or beating his wife in each of the following five situations: if she burns the food, if she argues with him, if she goes out without telling him, if she neglects the children, and if she refuses to have sexual relations with him.<sup>3</sup>

Tables 3.12.1 and 3.12.2 show that many women and men, respectively, find wife-beating to be justified in certain circumstances. Overall, about two-thirds of Kenyan women and men agree that at least one of these factors is sufficient justification for wife-beating. This is not unexpected because many traditional customs in Kenya teach and expect women to accept, tolerate, and even rationalise wife-beating. This custom impedes women's empowerment and has serious health consequences.

The most widely accepted reasons for wife-beating are neglecting the children (55 percent of women and 50 percent of men) and arguing with the husband (46 percent of women and 41 percent of men). Four in ten women and one in three men think that going out without informing the husband is a justifiable reason for beating. Only about one-quarter of women and men feel that denying sex to the husband is a justification for wife-beating. Even smaller proportions believe that burning the food is a justifiable reason to hit or beat the wife.

The tables also show attitudes towards wife-beating by background characteristics. Acceptance of wife-beating for at least one of the specified reasons is generally lower among urban women and men as well as among those in Nairobi Province. Women in Nyanza Province and men in North Eastern Province are the most likely to agree that wife-beating is justified for some reason. Acceptance of wife-beating declines steeply as level of education increases. For all reasons, poorer women and men are more likely than their wealthier counterparts to believe that wife-beating is justified.

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<sup>3</sup> The 2003 KDHS also included questions on the actual prevalence of gender violence (see Chapter 15).

Table 3.12.1 Women's attitude towards wife-beating

Percentage of women who agree that a husband is justified in hitting or beating his wife for specific reasons, by background characteristics, Kenya 2003

Background characteristic	Husband is justified in hitting or beating his wife if she:					Agrees with at least one specified reason	Number of women
	Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sex with him		
<b>Age</b>							
15-19	18.1	47.4	41.0	56.8	23.3	69.2	1,856
20-24	14.1	44.6	37.8	52.5	27.7	66.1	1,691
25-29	16.5	47.6	40.8	56.1	30.0	68.0	1,382
30-34	16.7	40.3	37.3	53.5	28.2	66.3	1,086
35-39	15.6	46.3	39.3	55.4	32.9	70.1	871
40-44	16.8	47.5	37.5	54.7	37.2	67.3	788
45-49	16.7	48.2	41.9	58.7	39.9	69.5	521
<b>Marital status</b>							
Never married	13.9	37.5	32.8	47.8	19.9	59.0	2,443
Married or living together	17.5	49.2	42.3	58.5	32.9	71.4	4,919
Divorced/separated/widowed	16.6	50.6	41.3	56.8	36.5	73.6	833
<b>Number of living children</b>							
0	14.6	40.5	35.2	49.0	21.0	61.2	2,399
1-2	15.3	44.7	38.1	53.8	27.4	66.6	2,427
3-4	16.3	46.7	40.3	58.5	32.8	71.0	1,752
5+	20.6	54.8	46.2	62.6	41.3	76.5	1,616
<b>Residence</b>							
Urban	12.3	33.5	31.6	42.8	22.1	54.0	2,056
Rural	17.7	50.0	41.9	59.3	31.8	72.6	6,139
<b>Province</b>							
Nairobi	10.1	24.4	23.9	33.7	16.0	42.6	835
Central	10.6	39.3	28.7	52.2	28.5	61.0	1,181
Coast	19.4	50.3	55.2	55.4	37.8	69.6	667
Eastern	9.4	34.8	32.8	56.7	21.8	65.6	1,325
Nyanza	18.7	69.3	38.0	56.8	31.9	79.2	1,222
Rift Valley	21.1	45.4	45.7	61.8	34.6	73.2	1,872
Western	26.1	53.3	50.9	58.1	30.7	74.4	927
North Eastern	6.1	61.5	55.0	66.0	45.6	77.1	168
<b>Education</b>							
No education	23.5	61.4	57.7	66.0	47.4	79.2	1,039
Primary incomplete	22.2	57.1	47.7	64.1	35.3	78.1	2,685
Primary complete	14.2	45.4	38.7	56.5	28.9	70.1	2,069
Secondary+	8.6	27.0	22.6	39.2	15.5	49.8	2,403
<b>Employment</b>							
Not employed	15.5	43.9	40.5	56.2	27.0	68.0	3,397
Employed for cash	15.0	42.6	35.9	51.2	28.3	64.3	3,561
Employed not for cash	22.7	61.2	46.3	63.7	39.4	78.9	1,218
<b>Number of decisions in which woman has final say<sup>1</sup></b>							
0	18.4	45.2	39.3	52.8	25.0	65.8	1,939
1-2	16.0	50.3	44.3	59.0	32.4	72.9	2,285
3-4	16.7	47.3	37.9	58.6	31.9	71.2	1,965
5	14.4	40.1	35.1	49.6	27.8	61.1	2,006
<b>Wealth quintile</b>							
Lowest	23.2	61.2	52.6	66.3	39.5	80.0	1,364
Second	21.1	54.3	43.5	60.2	34.9	75.6	1,475
Middle	16.1	48.7	41.7	58.9	31.9	72.9	1,503
Fourth	14.1	43.9	36.6	57.3	27.5	69.1	1,711
Highest	10.7	29.9	28.6	40.0	19.0	50.4	2,141
<b>Total</b>	16.3	45.9	39.4	55.1	29.4	67.9	8,195

Note: Total includes 19 women missing information on employment status

<sup>1</sup> Either by herself or jointly with others

Table 3.12.2 Men's attitude towards wife beating

Percentage of men who agree that a husband is justified in hitting or beating his wife for specific reasons, by background characteristics, Kenya 2003

Background characteristic	Husband is justified in hitting or beating his wife if she:					Agrees with at least one specified reason	Number of men
	Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sex with him		
<b>Age</b>							
15-19	20.3	51.3	41.0	58.6	30.1	73.1	856
20-24	14.3	41.3	34.0	48.2	24.7	63.8	681
25-29	7.7	37.0	31.3	46.8	19.7	59.0	509
30-34	8.8	36.0	28.2	43.6	17.6	56.8	415
35-39	11.6	33.8	32.2	44.5	24.5	55.6	396
40-44	11.9	41.3	37.7	47.3	25.5	61.5	310
45-49	15.9	38.3	36.8	50.8	25.2	61.6	196
50-54	9.0	39.8	34.3	48.2	25.6	62.9	215
<b>Marital status</b>							
Never married	15.4	44.0	36.0	52.3	27.1	65.9	1,611
Married or living together	11.7	38.8	33.7	46.9	22.3	60.5	1,818
Divorced/separated/widowed	12.8	45.7	37.8	52.8	25.6	68.1	149
<b>Number of living children</b>							
0	15.3	44.5	36.5	52.4	26.2	65.9	1,704
1-2	9.7	38.5	29.9	46.1	20.1	61.5	721
3-4	11.8	38.4	31.6	44.6	23.0	57.4	544
5+	13.9	38.7	39.4	50.3	27.0	63.0	609
<b>Residence</b>							
Urban	8.3	33.7	26.0	37.6	17.3	52.0	907
Rural	15.2	44.0	38.0	53.7	27.1	67.1	2,671
<b>Province</b>							
Nairobi	5.2	27.1	17.6	29.7	15.2	42.5	397
Central	13.7	53.4	33.2	59.0	34.0	65.0	554
Coast	10.3	29.7	44.4	51.6	31.7	65.5	252
Eastern	6.2	31.9	31.0	42.2	18.0	54.8	588
Nyanza	25.7	61.8	41.4	50.0	28.6	71.8	481
Rift Valley	16.4	40.5	36.3	60.8	24.9	72.7	846
Western	10.7	34.2	39.0	36.3	18.2	58.3	396
North Eastern	26.0	62.7	63.5	81.5	39.5	87.1	65
<b>Education</b>							
No education	25.0	61.7	62.9	76.8	48.2	83.6	228
Primary incomplete	19.9	52.8	45.0	60.4	31.0	76.6	1,210
Primary complete	13.4	45.3	36.8	53.3	28.6	68.8	820
Secondary+	5.5	24.9	19.7	32.7	12.2	44.1	1,320
<b>Employment</b>							
Not employed	16.2	41.8	35.5	51.6	25.6	65.0	1,004
Employed for cash	11.6	40.1	33.5	47.5	23.3	61.3	2,261
Employed not for cash	17.7	49.9	43.1	59.0	30.7	71.8	310
<b>Number of decisions in which wife should have a say<sup>1</sup></b>							
0	30.0	56.3	53.3	68.3	46.0	81.2	229
1-2	20.5	54.3	46.7	62.0	36.2	76.7	1,276
3-4	8.8	37.3	30.9	45.9	18.4	60.4	1,413
5	3.8	20.0	14.2	27.3	7.9	37.1	661
<b>Wealth quintile</b>							
Lowest	21.1	49.1	49.0	63.6	32.1	76.3	548
Second	17.8	44.3	38.1	51.3	27.4	68.5	609
Middle	14.3	43.3	38.2	50.3	27.4	64.3	648
Fourth	12.0	42.8	32.6	53.5	24.5	65.3	794
Highest	7.0	32.9	24.8	37.1	16.9	50.4	979
<b>Total</b>	<b>13.4</b>	<b>41.4</b>	<b>34.9</b>	<b>49.6</b>	<b>24.6</b>	<b>63.3</b>	<b>3,578</b>

Note: Total includes 2 men missing information on employment status

<sup>1</sup> Either by herself or jointly with others

### 3.5.3 Attitudes Towards Refusing Sex with Husband

The extent of control women have over when and with whom they have sex has important implications for demographic and health outcomes, such as transmission of HIV and other sexually transmitted infections. To measure beliefs about sexual empowerment of women, the 2003 KDHS asked women and men respondents whether they think a wife is justified in refusing to have sex with her husband in the following circumstances: when she knows that her husband has a sexually transmitted disease, when she knows that her husband has sex with other women, when she has recently given birth, and when she is tired or not in the mood. Tables 3.13.1 and 3.13.2 show the responses of women and men, respectively.

Overall, acceptance of women's sexual autonomy is rather high in Kenya. Half of women and 56 percent of men agree that all of the above reasons are rational justifications for a woman to refuse to have sexual relations with her husband, and only 7 percent of women and 2 percent of men agree with none of the reasons. The most accepted reasons for refusing to have sex among women and men are if the wife knows her husband has a sexually transmitted disease and if the wife has recently given birth. For both women and men, the least acceptable reason for a wife to refuse sex is being tired or not in the mood.

Young women and men, men who have never married, men who have no children, women and men who live in rural areas (particularly in North Eastern Province), uneducated respondents, unemployed respondents, those who have no say in household decisions, and poorer women and men are the least likely to agree with all of the reasons for refusing sex.

Male respondents in the 2003 KDHS were further asked whether they thought that a husband had the right to take specific actions if his wife refused to have sex with him. The specified actions were to get angry and reprimand her, to refuse to give her money or other means of financial support, to use force and have sex with her even if she does not want to, and to go and have sex with another woman. Table 3.14 presents the results.

Table 3.13.1 Women's attitude towards refusing sex with husband

Percentage of women who believe that a wife is justified in refusing to have sex with her husband for specific reasons, by background characteristics, Kenya 2003

Background characteristic	Wife is justified in refusing sex with her husband if she:				Agrees with all of the specified reasons	Agrees with none of the specified reasons	Number of women
	Knows husband has a sexually transmitted infection	Knows husband has sex with other women	Has recently given birth	Is tired or not in the mood			
<b>Age</b>							
15-19	80.9	76.1	76.6	59.1	47.6	11.9	1,856
20-24	88.7	80.9	83.0	63.1	53.0	6.6	1,691
25-29	88.9	79.9	88.4	62.4	53.0	4.8	1,382
30-34	90.1	80.4	88.2	59.0	51.2	4.5	1,086
35-39	88.8	77.2	85.7	58.9	49.9	6.5	871
40-44	87.2	77.7	85.1	56.2	47.8	6.6	788
45-49	89.4	79.5	85.1	59.6	50.8	5.7	521
<b>Marital status</b>							
Never married	83.4	78.6	77.8	60.4	49.6	10.3	2,443
Married or living together	88.4	78.8	86.4	60.3	51.2	5.8	4,919
Divorced/separated/widowed	89.9	78.9	85.8	58.8	50.1	5.4	833
<b>Number of living children</b>							
0	83.3	78.0	77.2	59.8	48.6	10.6	2,399
1-2	89.5	80.8	86.9	63.1	54.1	5.3	2,427
3-4	89.4	79.6	86.7	58.3	50.4	5.5	1,752
5+	86.5	76.0	85.7	58.7	48.4	6.5	1,616
<b>Residence</b>							
Urban	92.1	85.1	86.6	63.2	55.3	4.0	2,056
Rural	85.4	76.7	82.8	59.2	49.0	8.2	6,139
<b>Province</b>							
Nairobi	94.1	88.2	88.5	64.7	57.2	2.7	835
Central	91.4	85.2	85.2	47.8	41.4	3.4	1,181
Coast	88.1	78.8	86.3	59.0	50.7	6.3	667
Eastern	89.0	82.7	86.4	66.1	58.0	6.0	1,325
Nyanza	80.5	70.3	77.1	63.6	50.9	14.1	1,222
Rift Valley	83.2	73.4	81.8	57.3	45.9	8.4	1,872
Western	89.2	82.5	87.1	67.9	57.5	5.2	927
North Eastern	81.4	57.4	72.7	48.0	33.8	14.3	168
<b>Education</b>							
No education	78.6	65.9	77.3	51.7	40.6	13.2	1,039
Primary incomplete	83.6	75.7	81.1	60.6	49.8	9.2	2,685
Primary complete	90.1	80.7	85.9	59.9	50.9	5.1	2,069
Secondary+	92.0	86.1	87.7	63.7	55.5	3.9	2,403
<b>Employment</b>							
Not employed	84.1	76.3	80.5	58.0	48.1	9.3	3,397
Employed for cash	89.4	81.1	86.1	62.2	52.2	5.3	3,561
Employed not for cash	89.4	79.7	86.8	61.0	53.0	5.6	1,218
<b>Number of decisions in which woman participates<sup>1</sup></b>							
0	80.0	75.3	75.4	60.0	49.2	13.5	1,939
1-2	88.1	78.9	83.8	58.5	49.2	6.1	2,285
3-4	90.0	79.6	88.4	62.2	52.1	4.8	1,965
5	89.8	81.3	87.3	60.4	52.1	4.5	2,006
<b>Number of reasons wife-beating is justified</b>							
0	86.6	79.0	83.3	60.0	51.3	8.9	2,630
1-2	88.3	79.2	84.3	60.1	50.1	6.1	2,566
3-4	87.6	78.3	83.5	58.1	48.3	6.6	2,253
5	82.9	77.8	84.1	67.8	56.1	6.5	747
<b>Wealth quintile</b>							
Lowest	82.5	73.0	80.5	60.2	49.7	10.4	1,364
Second	82.9	72.3	82.3	59.8	47.4	9.5	1,475
Middle	84.9	77.5	82.2	57.8	48.4	8.4	1,503
Fourth	89.4	81.4	84.0	58.2	50.3	6.1	1,711
Highest	92.6	85.7	87.8	63.8	55.0	3.3	2,141
<b>Total</b>	<b>87.1</b>	<b>78.8</b>	<b>83.8</b>	<b>60.2</b>	<b>50.6</b>	<b>7.1</b>	<b>8,195</b>

Note: Total includes 19 women missing information on employment status

<sup>1</sup> Either by herself or jointly with others



Table 3.13.2 Men's attitude towards wives refusing sex with husband

Percentage of men who believe that a wife is justified in refusing to have sex with her husband for specific reasons, by background characteristics, Kenya 2003

Background characteristic	Wife is justified in refusing sex with her husband if she:				Agrees with all of the specified reasons	Agrees with none of the specified reasons	Number of men
	Knows husband has a sexually transmitted infection	Knows husband has sex with other women	Has recently given birth	Is tired or not in the mood			
<b>Age</b>							
15-19	86.1	71.8	87.9	54.9	43.0	5.8	856
20-24	92.2	78.8	96.2	70.8	57.5	0.8	681
25-29	94.8	78.5	96.4	74.6	63.9	1.6	509
30-34	96.9	81.5	96.4	75.4	63.9	1.0	415
35-39	96.2	79.1	96.3	72.6	59.3	0.2	396
40-44	95.2	78.7	96.0	66.2	56.6	1.6	310
45-49	94.6	80.2	99.0	67.8	60.2	1.0	196
50-54	96.8	81.2	96.3	71.2	60.5	1.3	215
<b>Marital status</b>							
Never married	89.2	74.9	91.7	62.6	50.0	3.7	1,611
Married or living together	95.8	80.4	96.8	72.4	61.6	0.9	1,818
Divorced/separated/widowed	93.9	72.7	94.8	66.2	55.4	1.0	149
<b>Number of living children</b>							
0	89.7	76.2	92.0	63.4	51.5	3.6	1,704
1-2	95.0	79.2	96.8	73.5	61.9	0.6	721
3-4	95.5	79.7	95.6	71.8	61.2	1.7	544
5+	96.4	78.0	97.4	69.4	57.6	0.5	609
<b>Residence</b>							
Urban	94.3	80.8	94.1	74.5	62.5	1.3	907
Rural	92.3	76.6	94.5	65.4	54.0	2.5	2,671
<b>Province</b>							
Nairobi	93.9	82.1	94.7	77.6	64.1	1.2	397
Central	93.4	81.0	93.3	61.4	52.2	2.9	554
Coast	93.0	71.2	91.6	59.7	46.4	2.6	252
Eastern	89.5	76.0	92.5	60.8	54.1	4.5	588
Nyanza	93.6	79.0	95.0	69.8	58.0	2.0	481
Rift Valley	93.1	74.8	96.8	71.5	57.5	1.0	846
Western	93.3	77.4	94.4	76.2	60.8	1.1	396
North Eastern	96.2	88.5	97.1	38.8	37.5	1.9	65
<b>Education</b>							
No education	92.5	71.2	94.1	52.2	38.6	2.4	228
Primary incomplete	89.0	71.7	92.0	60.2	47.6	3.3	1,210
Primary complete	93.6	78.4	95.4	66.5	55.4	2.1	820
Secondary+	95.8	83.7	96.2	78.1	67.4	1.1	1,320
<b>Employment</b>							
Not employed	88.0	74.8	90.4	57.8	47.7	4.9	1,004
Employed for cash	95.2	79.6	96.0	72.3	60.8	1.0	2,261
Employed not for cash	90.6	72.4	96.4	66.6	49.5	1.7	310
<b>Number of decisions in which wife has say<sup>1</sup></b>							
0	86.8	60.3	91.3	51.4	37.8	7.7	229
1-2	91.3	76.1	92.6	59.7	48.6	2.6	1,276
3-4	93.3	78.9	95.7	71.2	58.8	1.4	1,413
5	96.5	83.8	96.4	81.4	71.4	1.0	661
<b>Number of reasons wife-beating is justified</b>							
0	93.5	81.9	94.3	75.8	65.7	2.8	1,315
1-2	93.0	78.4	94.9	68.6	56.7	1.5	1,129
3-4	91.9	71.3	94.6	58.1	44.3	1.9	914
5	91.2	74.4	92.1	55.5	45.3	2.8	221
<b>Wealth quintile</b>							
Lowest	90.2	72.7	94.9	59.5	44.4	2.7	548
Second	91.3	75.1	92.5	63.8	54.1	3.6	609
Middle	92.1	76.2	94.1	67.0	54.5	2.1	648
Fourth	92.9	78.2	94.6	66.3	56.2	2.5	794
Highest	95.4	82.4	95.5	76.4	65.0	0.8	979
<b>Total</b>	<b>92.8</b>	<b>77.6</b>	<b>94.4</b>	<b>67.7</b>	<b>56.1</b>	<b>2.2</b>	<b>3,578</b>

Note: Total includes 2 men missing information on employment status

<sup>1</sup> Either by herself or jointly with others

Table 3.14 shows that almost four in ten men agree with at least one of the four specified actions. The most acceptable response to a wife's refusal to have sex is for men to get angry and reprimand her (33 percent). Only 13 percent of men say that it is justifiable for a man to refuse to provide financial support, and only about one in ten men say that it is justifiable to force the wife to have sex or to have sex with another woman. Differences by background characteristics are not large. However, men in North Eastern Province appear to be the most tolerant of women's sexual autonomy, with only 14 percent agreeing that a man is justified in taking any of the specified actions when his wife refuses sex. Men in Nyanza and Coast provinces, on the other hand, are the most likely to believe that a man is justified in taking some action, mainly getting angry.

Table 3.14 Men's attitudes towards justifiable actions if wife refuses sex						
Percentage of men who believe a wife's refusal of sex justifies specific actions, by background characteristics, Kenya 2003						
Background characteristic	Husband's justifiable actions if wife refuses sex:				Agrees with at least one specified reason	Number of men
	Getting angry	Refusing money	Using force	Having sex with another woman		
<b>Age</b>						
15-19	36.2	16.7	13.0	12.0	41.7	856
20-24	30.5	13.3	6.3	11.2	36.9	681
25-29	29.5	10.5	6.2	9.9	35.0	509
30-34	29.9	9.9	8.0	9.7	34.7	415
35-39	31.5	11.4	8.9	12.1	39.3	396
40-44	32.4	13.9	9.3	12.5	41.5	310
45-49	34.8	8.1	8.0	9.2	39.5	196
50-54	36.4	15.7	11.5	9.7	39.8	215
<b>Marital status</b>						
Never married	32.7	15.0	9.7	11.5	38.9	1,611
Married or living together	31.3	10.7	8.3	10.0	37.2	1,818
Divorced/separated/widowed	46.0	19.7	11.9	18.4	50.6	149
<b>Number of living children</b>						
0	32.7	14.6	9.8	11.3	38.8	1,704
1-2	29.6	9.8	6.6	10.8	35.1	721
3-4	32.3	13.0	8.4	10.4	37.6	544
5+	35.6	12.5	10.4	11.4	42.7	609
<b>Residence</b>						
Urban	26.9	10.3	5.7	11.5	33.7	907
Rural	34.4	14.0	10.2	10.9	40.1	2,671
<b>Province</b>						
Nairobi	25.0	7.7	6.2	8.1	30.4	397
Central	21.8	14.1	5.7	10.4	27.7	554
Coast	45.4	22.5	17.6	20.8	51.9	252
Eastern	33.9	13.3	5.3	6.9	37.4	588
Nyanza	45.8	13.4	14.4	14.3	53.0	481
Rift Valley	32.5	12.2	11.8	10.8	40.3	846
Western	32.1	13.3	5.6	13.0	37.6	396
North Eastern	11.1	3.0	1.8	0.6	13.6	65
<b>Educational attainment</b>						
No education	37.1	13.4	15.4	20.0	46.8	228
Primary incomplete	42.6	18.4	13.5	15.3	49.7	1,210
Primary complete	34.4	12.9	7.8	8.7	38.7	820
Secondary+	21.3	8.1	4.7	7.1	26.7	1,320
<b>Employment</b>						
Not employed	32.9	13.2	9.6	8.5	37.8	1,004
Employed for cash	32.2	12.3	8.5	11.6	38.3	2,261
Employed not for cash	33.3	17.7	11.1	15.1	42.1	310
<b>Wealth quintile</b>						
Lowest	45.2	17.2	13.8	14.1	53.2	548
Second	39.2	14.7	13.4	13.1	44.7	609
Middle	33.3	16.2	9.4	11.4	39.7	648
Fourth	27.5	10.8	6.9	8.7	32.9	794
Highest	24.8	9.3	5.1	9.8	30.2	979
<b>Total</b>	<b>32.5</b>	<b>13.0</b>	<b>9.0</b>	<b>11.1</b>	<b>38.5</b>	<b>3,578</b>
Note: Total includes 2 men missing information on employment status						

## FERTILITY LEVELS, TRENDS, AND DIFFERENTIALS

*Collins Opiyo*

### 4.1 INTRODUCTION

Fertility is one of the three principal components of population dynamics, the others being mortality and migration (United Nations, 1973). Collection of data on fertility levels, trends and differentials has remained a prime objective of the Demographic and Health Surveys (DHS) programme since its inception in the 1980s. In Kenya, continued collection of such data through birth histories and other means has been important in recognising the important role that fertility plays in balancing Kenya's overall population growth equation. The fact that fertility reduction became the thrust of the country's population policy as early as 1967 underlines the deliberate efforts made by the Government to contain it.

The 2003 KDHS was conducted against the backdrop of a dramatic fertility transition that was first reported in the 1989 KDHS. On the basis of the 1999 Kenya Population and Housing Census, fertility was projected to continue to decline to a total fertility rate of 3.2 by 2015-2020 (Central Bureau of Statistics, 2002d: 27). The government and other stakeholders are therefore keen to monitor developments with respect to the fertility transition process, with a view to evaluating the course of the fertility transition through population and development policies and programmes.

This chapter presents an analysis of the fertility data collected in the 2003 KDHS. It includes a discussion on levels, trends, and differentials in fertility by selected background characteristics; data on lifetime fertility (children ever born and living); and a scrutiny of age at first birth and birth intervals. Thereafter, a brief discussion on adolescent fertility, which has become critical to the issue of fertility transition, particularly in the wake of a new policy modelled on adolescent reproductive health, is presented.

The fertility data were collected by asking all women of reproductive age (15-49 years) to provide complete birth histories of all children they had given birth to, those who were currently living with them, those who were living away, and those who had died. In addition, the following information was collected for each live birth: name, sex, date of birth, survival status, current age (if alive), and age at death (if dead). It is important to mention at the outset that the birth history approach has some limitations that might distort fertility levels and patterns. For instance, women may include relatives' children as their own or omit children who died young, while older women may forget grown children who have left home (United Nations, 1983). Accordingly, the results should be viewed with these caveats in mind.

### 4.2 CURRENT FERTILITY

Measures of current fertility are presented in Table 4.1 for the three-year period preceding the survey, corresponding to the period from mid-2000 to mid-2003. Several measures of current fertility are shown. Age-specific fertility rates (ASFRs) are calculated by dividing the number of births to women in a specific age group by the number of woman-years lived during a given period.<sup>1</sup> The total fertility rate (TFR) is a common measure of current fertility and is defined as the average number of children a woman

<sup>1</sup> Numerators for the age-specific fertility rates are calculated by summing all births that occurred during the 1 to 36 months preceding the survey, classified by the age of the mother at the time of birth in 5-year age groups. The denominators are the number of woman-years lived in each specific 5-year age group during the 1 to 36 months preceding the survey.

would have if she went through her entire reproductive period (15-49 years) reproducing at the prevailing ASFR. Two additional measures of fertility reported in this chapter are the general fertility rate (GFR), which represents the annual number of births per 1,000 women age 15-44, and the crude birth rate (CBR), which represents the annual number of births per 1,000 population. The CBR was estimated using the birth history data in conjunction with the population data collected in the household schedule.

Table 4.1 shows a TFR of 4.9 children per woman for the three-year period preceding the survey (mid-2000 to mid-2003). Fertility is considerably higher in the rural areas (5.4 children per woman) than urban areas (3.3 children per woman), a pattern that is evident at every age and that widens with age, with fertility of rural women age 35 and over becoming around twice that of urban women.

Overall, peak fertility occurs at age 20-24. In the rural areas, fertility also peaks at age 20-24, falling sharply after age 39. In the urban areas, however, fertility peaks at age 25-29 years (actually it tends to peak broadly at age 20-29) and tapers off sharply after age 34. The persistence of a disparity in fertility between urban and rural women is due to favourable factors most probably associated with urbanisation (e.g., better education, higher status of women, better access to family planning information and services and later marriage). This is well documented in the literature both in Kenya and elsewhere.

Differentials in fertility levels by urban-rural residence, province, educational attainment and wealth quintile are shown in Table 4.2 and Figure 4.1. Regionally, disparities are still large. Fertility is lowest in Nairobi Province (2.7 children per woman) and highest in North Eastern Province (7.0 children per woman). Fertility in Central Province is also relatively low (3.4), compared with Nyanza (5.6), Rift Valley (5.8), and Western (5.8) provinces. Regional differentials in fertility are closely associated with regional disparities in knowledge and use of family planning methods (see Chapter 5).

In accordance with expectations, education of women is strongly associated with lower fertility. The TFR decreases dramatically from 6.7 for women with no education to 3.2 for women with at least some secondary education. While some primary education is associated with lower fertility, complete primary education is associated with a reduction in fertility of almost two children per woman. Fertility is also very closely associated with wealth. The disparity in fertility between the poorest and the richest women is on the order of almost five children per woman.

Table 4.2 also presents a crude assessment of trends in fertility in the various subgroups by comparing current fertility with a measure of completed fertility, the mean number of children ever born to women age 40-49. Current fertility always falls substantially below lifetime fertility, except for respondents from the poorest households. This provides further evidence that fertility has fallen substantially over time for all of these subgroups. Overall, the table shows that fertility has fallen by about one child per woman in recent periods. However, it seems to have increased slightly for women from the poorest households.

**Table 4.1 Current fertility**

Age-specific and cumulative fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by urban-rural residence, Kenya 2003

Age group	Residence		
	Urban	Rural	Total
15-19	88	123	114
20-24	162	278	243
25-29	168	254	231
30-34	136	217	196
35-39	78	137	123
40-44	23	62	55
45-49	(6)	17	15
TFR	3.3	5.4	4.9
GFR	123	187	170
CBR	35.3	38.1	37.5

Note: Rates for age group 45-49 may be slightly biased because of truncation. Rates in parentheses are based on 125 to 249 unweighted woman-years of exposure.

TFR: Total fertility rate for women age 15-49, expressed per woman

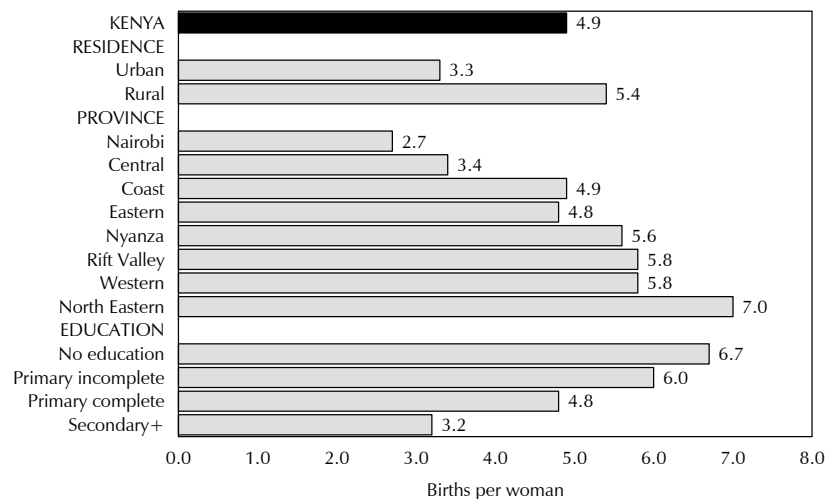
GFR: General fertility rate (births divided by the number of women age 15-44), expressed per 1,000 women

CBR: Crude birth rate, expressed per 1,000 population

Table 4.2 indicates that 8 percent of women were pregnant at the time of the survey. This is likely to be an underestimate, as women in the early stages of pregnancy may be unaware or unsure that they are pregnant, while some may refuse to declare that they are pregnant. Noticeably, differentials in pregnancy rates are generally consistent with the pattern depicted by fertility across the various subgroups.

Table 4.2 Fertility by background characteristics			
Total fertility rate for the three years preceding the survey, percentage of women 15-49 currently pregnant, and mean number of children ever born to women age 40-49 years, by background characteristics, Kenya 2003			
Background characteristic	Total fertility rate <sup>1</sup>	Percentage currently pregnant <sup>1</sup>	Mean number of children ever born to women age 40-49
<b>Residence</b>			
Urban	3.3	6.6	4.4
Rural	5.4	8.2	6.4
<b>Province</b>			
Nairobi	2.7	6.6	3.5
Central	3.4	5.0	4.9
Coast	4.9	8.5	6.2
Eastern	4.8	7.9	5.8
Nyanza	5.6	8.3	6.8
Rift Valley	5.8	8.4	6.8
Western	5.8	9.4	6.5
North Eastern	7.0	11.5	8.3
<b>Education</b>			
No education	6.7	9.1	6.9
Primary incomplete	6.0	9.1	6.8
Primary complete	4.8	8.4	6.0
Secondary+	3.2	5.3	4.4
<b>Wealth quintile</b>			
Lowest	7.6	9.4	7.4
Second	5.8	9.3	6.8
Middle	5.1	7.9	6.5
Fourth	4.0	6.8	5.5
Highest	3.1	6.5	4.2
Total	4.9	7.8	6.0
<sup>1</sup> Women age 15-49			

**Figure 4.1 Total Fertility Rate, by Background Characteristics**



KDHS 2003

### 4.3 FERTILITY TRENDS

Kenya is endowed with a wealth of demographic data. Accordingly, changes in fertility levels over time can be tracked by examining fertility estimates from various surveys and censuses, spanning the last three decades. Table 4.3 and Figure 4.2 indicate that the TFR declined dramatically during the last two decades of the 20th century, changing from a high of 8.1 children per woman in the late 1970s, through 6.7 in the late 1980s, to 4.7 during the last half of the 1990s. However, fertility seems to have started rising, albeit marginally, from 1998, reaching a TFR of 4.9 children per woman during the period from mid-2000 to mid-2003.<sup>2</sup> This upturn in birth rates has especially affected age groups 25-39.

The stagnation in fertility is one of the most surprising and worrisome findings from the 2003 KDHS, since fertility decline was first observed about 15 years ago. Nevertheless, this trend seems to be corroborated by the findings of the 1999 Population and Housing Census, where a TFR of 5.0 was estimated for a period varying from 12 months to a little less than 5 years before the census (Figure 4.2).

Further, data on other fertility correlates collected in the 2003 KDHS are internally consistent with this new trend: contraceptive use has only inched up from 39 percent of married women in 1998 to 41 percent in 2003 (excluding the northern areas); pronatalist desires have reemerged (the proportion of women who either want no more children or are sterilised decreased from 53 percent in 1998 to 50 percent in 2003 excluding the north); child mortality has risen since the early 1990s, which tends to reintroduce the “insurance effect” phenomenon; and age at first marriage and age at first birth have largely remained the same or have slightly increased.

<sup>2</sup> Although both the census data and the 2003 KDHS are nationally representative, data from all previous surveys exclude the northern half of the country. Retabulation of the 2003 KDHS data excluding the same northern areas produces a TFR of 4.8.

**Table 4.3 Trends in fertility**

Age-specific fertility rates (per 1,000 women) and total fertility rates from selected surveys and censuses: 1977-78 KFS, 1989 KDHS, 1993 KDHS, 1998 KDHS, 1999 Population and Housing Census, and 2003 KDHS

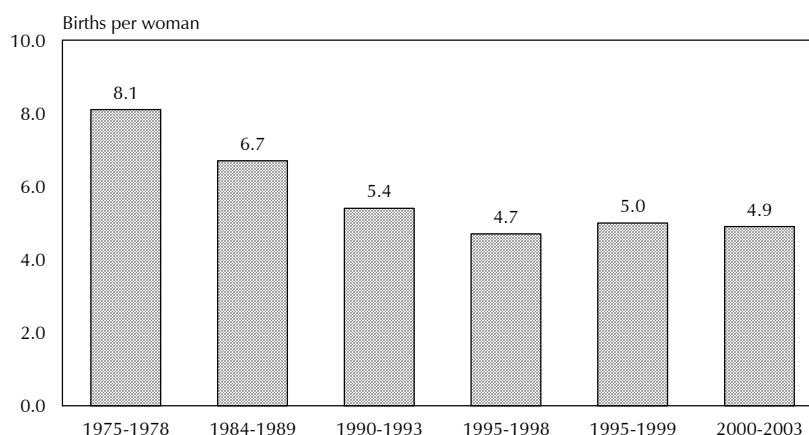
Age group	1977-1978 KFS <sup>1</sup> 1975-1978	1989 KDHS <sup>1</sup> 1984-1989	1993 KDHS <sup>1</sup> 1990-1993	1998 KDHS <sup>1</sup> 1995-1998	1999 Census	2003 KDHS 2000-03 <sup>1</sup>	2003 KDHS 2000-03
15-19	168	152	110	111	142	114	114
20-24	342	314	257	248	254	241	243
25-29	357	303	241	218	236	227	231
30-34	293	255	197	188	185	193	196
35-39	239	183	154	109	127	119	123
40-44	145	99	70	51	56	55	55
45-49	59	35	50	16	7	15	15
TFR	8.1	6.7	5.4	4.7	5.0	4.8	4.9

Note: Rates refer to the three-year period preceding the surveys, except for the 1989 KDHS, which uses a five-year period, and the 1999 census, which uses a period that varies with the age groups used to make the correction.

Sources: National Council for Population and Development et al., 1999: 31 and Central Bureau of Statistics, 2002b: 25

<sup>1</sup> Excludes the northern part of the country

**Figure 4.2 Total Fertility Rates, Kenya 1975-2003**



Note: Rates for the first four time periods exclude the northern half of Kenya, while the rates from the 1999 census and the 2003 KDHS cover the entire country.

Table 4.4 shows the changes in fertility between the 1998 KDHS and the 2003 KDHS by selected background characteristics. Overall, the table shows that the rise in the TFR was statistically insignificant, from 4.7 children per woman during the 1995-1998 period to 4.8 during the 2000-2003 period. Across the provinces, fertility increased in all except Central and Coast provinces. Nyanza Province recorded the highest increase in TFR (12 percent). With respect to education, the data show that fertility increased for women with no education and those who had not completed primary education. However, fertility remained the same for women who completed primary education and declined for women with at least some secondary education. According to place of residence, fertility increased in both urban and rural areas, but the rise was a little larger for women in the urban areas (7 percent) than those in the rural (4 percent).

**Table 4.4 Trends in fertility by background characteristics**

Total fertility rates and percent change according to province, residence, and education, Kenya 1998 and 2003

Background characteristic	1998 KDHS 1995-1998	2003 KDHS 2000-2003	Percentage change
<b>Residence</b>			
Urban	3.1	3.3	+6.5
Rural	5.2	5.4	+3.8
<b>Province</b>			
Nairobi	2.6	2.7	+3.8
Central	3.7	3.4	-8.1
Coast	5.1	4.9	-3.9
Eastern	4.7	4.8	+2.1
Nyanza	5.0	5.6	+12.0
Rift Valley	5.3	5.8	+9.4
Western	5.6	5.8	+3.6
<b>Education</b>			
No education	5.8	6.7	+15.5
Primary incomplete	5.2	6.1	+17.3
Primary complete	4.8	4.8	+0.0
Secondary and above	3.5	3.2	-8.6
Total	4.7	4.8	+2.1

Note: The TFRs for the 2003 KDHS in this table differ from those in Table 4.2 because, for comparison the areas covered in the 1998 KDHS, areas in the northern part of Kenya have been excluded.

- Indicates net decline/decrease

+ Indicates net rise/increase

Table 4.5 presents the ASFRs for five-year periods preceding the 2003 KDHS. A mixed pattern is observed, in which fertility seems to have declined steadily for women age 20-24 and 25-29, while it tended to increase between the most recent periods for women age 15-19 and 30-34.

**Table 4.5 Trends in age-specific fertility rates**

Age-specific fertility rates for five-year periods preceding the survey, by mother's age at the time of the birth, Kenya 2003

Mother's age at birth	Number of years preceding survey			
	0-4	5-9	10-14	15-19
15-19	116	113	147	145
20-24	248	266	287	317
25-29	231	245	280	294
30-34	196	190	233	[272]
35-39	128	139	[203]	-
40-44	58	[90]	-	-
45-49	[19]	-	-	-

Note: Age-specific fertility rates are per 1,000 women. Estimates in brackets are truncated.



#### 4.4 CHILDREN EVER BORN AND CHILDREN SURVIVING

Table 4.6 shows the distribution of all women and of currently married women age 15-49 years by number of children ever born and mean number of living children. More than four-fifths of women age 15-19 (82 percent) have never given birth. However, this proportion declines rapidly to less than 4 percent for women age 30 years and above, indicating that childbearing among Kenyan women is nearly universal. On average, Kenyan women attain a parity of 6.5 children per woman at the end of their childbearing. This is a little more than 1.5 children above the total fertility rate, a discrepancy that is attributable to the dramatic decline in fertility during the 1980s and 1990s.

Table 4.6 Children ever born and living

Percent distribution of all women and currently married women by number of children ever born, and mean number of children ever born and mean number of living children, according to age group, Kenya 2003

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	81.5	14.7	3.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,856	0.23	0.21
20-24	32.7	31.1	22.1	10.9	2.8	0.2	0.2	0.0	0.0	0.0	0.0	100.0	1,691	1.21	1.09
25-29	10.6	17.9	20.5	22.5	16.3	7.3	3.2	1.0	0.3	0.1	0.2	100.0	1,382	2.60	2.32
30-34	3.8	8.5	16.7	17.7	17.5	13.0	11.1	6.0	3.8	1.1	0.8	100.0	1,086	3.88	3.48
35-39	2.8	3.7	8.9	13.2	15.0	15.9	13.4	11.1	8.3	3.5	4.2	100.0	871	5.01	4.34
40-44	1.9	3.1	4.4	11.9	13.5	15.6	12.4	11.5	9.2	7.5	9.0	100.0	788	5.72	5.07
45-49	2.7	2.8	4.6	6.9	7.9	11.8	12.9	11.0	13.9	8.6	17.1	100.0	521	6.52	5.53
Total	28.1	14.8	12.7	11.5	9.0	6.9	5.5	4.0	3.2	1.8	2.5	100.0	8,195	2.75	2.43
CURRENTLY MARRIED WOMEN															
15-19	34.7	46.4	16.8	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	100.0	333	0.86	0.80
20-24	10.7	33.5	32.6	17.7	4.9	0.3	0.3	0.0	0.0	0.0	0.0	100.0	965	1.75	1.57
25-29	4.0	13.3	22.6	26.3	19.2	9.2	3.5	1.1	0.4	0.2	0.2	100.0	1,056	2.96	2.65
30-34	2.0	6.5	15.3	18.8	18.3	13.7	12.2	6.9	4.3	1.1	1.0	100.0	873	4.11	3.70
35-39	1.0	2.7	7.8	12.6	15.6	16.1	13.2	12.5	10.0	3.6	5.0	100.0	691	5.31	4.62
40-44	1.5	1.7	3.3	11.0	13.6	16.1	12.6	11.9	10.2	8.0	10.2	100.0	614	5.97	5.30
45-49	2.8	0.6	3.7	6.4	6.7	13.1	11.6	11.0	14.5	10.2	19.5	100.0	388	6.87	5.86
Total	6.2	14.3	16.9	16.2	12.7	9.8	7.3	5.6	4.7	2.5	3.7	100.0	4,919	3.80	3.36

The same pattern is replicated for currently married women, except that only a little more than one-third (35 percent) of the married women age 15-19 have not borne a child. As with all women, this proportion diminishes, although more rapidly, to 4 percent or less for women age 25 and above. This difference in childbearing can be explained by the presence of many young and unmarried women in the “all women” category, who are known to exhibit extremely low fertility. On average, currently married women age 45-49 have borne 6.9 children each, of which one child on average has died. As expected, women above 40 years have much higher parities, with substantial proportions having 10 or more births by the end of their childbearing years.

Consonant with expectations, the mean number of children ever born and mean number living rise monotonically with rising age of women, thus presupposing minimal or no recall lapse, which heightens confidence in the birth history reports.

## 4.5 BIRTH INTERVALS

Examination of birth intervals is important in providing insights into birth spacing patterns and, subsequently, maternal and child health. Studies have shown that children born less than 24 months after a previous sibling risk poorer health and also threaten maternal health. Table 4.7 provides a glimpse into the birth intervals of children born to Kenyan women of reproductive age during the five years preceding the survey across selected subgroups.

Table 4.7 Birth intervals

Percent distribution of nonfirst births in the five years preceding the survey, by number of months since preceding birth, according to background characteristics, Kenya 2003

Background characteristic	Months since preceding birth					Total	Number of nonfirst births	Median number of months since preceding birth
	7-17	18-23	24-35	36-47	48+			
<b>Age</b>								
15-19	22.4	29.3	35.5	8.1	4.8	100.0	79	23.7
20-29	10.8	16.4	42.4	16.0	14.4	100.0	2,289	29.6
30-39	7.5	10.9	32.5	17.2	31.9	100.0	1,801	35.6
40-49	7.6	6.9	22.4	21.2	41.9	100.0	454	42.1
<b>Birth order</b>								
2-3	10.1	14.5	36.3	15.8	23.3	100.0	2,168	32.1
4-6	8.1	11.7	37.5	16.8	25.9	100.0	1,628	33.3
7+	10.1	14.6	34.8	19.8	20.8	100.0	828	32.2
<b>Sex of preceding birth</b>								
Male	9.3	14.6	37.0	15.3	23.8	100.0	2,329	32.4
Female	9.4	12.5	36.0	18.4	23.7	100.0	2,294	32.7
<b>Survival of preceding birth</b>								
Living	7.0	12.6	37.4	18.0	24.9	100.0	4,069	33.5
Dead	26.8	20.3	29.2	8.3	15.4	100.0	554	24.6
<b>Residence</b>								
Urban	9.8	14.1	26.1	17.3	32.8	100.0	748	36.0
Rural	9.3	13.4	38.5	16.8	22.0	100.0	3,875	32.1
<b>Province</b>								
Nairobi	11.3	14.5	26.3	15.2	32.7	100.0	242	34.9
Central	6.3	9.3	32.7	14.7	37.0	100.0	449	36.6
Coast	9.0	12.5	35.4	19.6	23.5	100.0	384	34.0
Eastern	8.5	9.9	37.3	17.4	26.9	100.0	731	33.7
Nyanza	10.2	15.0	36.6	17.3	20.9	100.0	786	31.6
Rift Valley	9.2	14.2	37.7	17.1	21.8	100.0	1,266	31.9
Western	8.6	17.1	40.1	16.1	18.0	100.0	609	30.3
North Eastern	20.5	17.3	36.4	15.0	10.8	100.0	157	27.2
<b>Education</b>								
No education	10.0	14.8	35.0	18.4	21.8	100.0	801	32.5
Primary incomplete	8.5	13.6	42.0	16.1	19.7	100.0	1,764	31.4
Primary complete	9.6	13.6	35.8	16.2	24.7	100.0	1,218	32.7
Secondary+	10.2	12.0	27.2	17.8	32.8	100.0	840	36.2
<b>Wealth quintile</b>								
Lowest	11.1	15.3	41.7	16.8	15.1	100.0	1,285	30.2
Second	8.0	11.5	40.4	18.5	21.7	100.0	1,005	32.2
Middle	9.1	14.6	34.3	16.0	26.0	100.0	896	33.6
Fourth	8.4	11.2	35.1	15.3	30.0	100.0	721	34.0
Highest	9.6	14.3	25.7	17.3	33.1	100.0	716	36.1
<b>Total</b>	9.4	13.5	36.5	16.9	23.7	100.0	4,623	32.6

Note: First-order births are excluded. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth.

Overall, the median birth interval has remained constant since 1998, changing marginally from 32.9 months in the 1998 KDHS to 32.6 months in the 2003 KDHS. However, the median birth interval is relatively shorter for children born to younger women; to women in the rural areas; to women in North Eastern, Western, Nyanza, and Rift Valley provinces; to women with less than secondary education; and to women from poorer households.

The shortest birth interval is observed among children born to women age 15-19 (23.7 months) and children whose preceding sibling died (24.6 months), while the longest is among children born to women with at least some secondary education (36.2 months) and women age 40-49 (42.1 months).

Overall, 23 percent of Kenyan children are born less than 24 months after a previous birth, an interval perceived to be “too short.” This is identical to the level in 1998. A larger proportion of such children is born to younger women age 15-19 (52 percent) relative to other age groups, to women in North Eastern Province (38 percent) compared with other provinces, and to women with no education (25 percent) relative to other education categories.

#### 4.6 AGE AT FIRST BIRTH

The onset of childbearing has a direct bearing on fertility. Early initiation into childbearing lengthens the reproductive period and subsequently increases fertility.

Table 4.8 shows median age at first birth as well as the percentage of women who gave birth by a given exact age, by five-year age groups of women. The youngest cohort of women for whom median age at first birth can be calculated is 25-29 years (the medians for groups age 15-19 and 20-24 cannot be determined, as less than half of the women had a birth before reaching the lowest age of the age group).

Current age	Percentage who gave birth by exact age					Percentage who have never given birth	Number of women	Median age at first birth
	15	18	20	22	25			
15-19	1.5	na	na	na	na	81.5	1,856	a
20-24	3.4	22.7	45.4	na	na	32.7	1,691	a
25-29	4.4	24.9	48.3	68.0	84.8	10.6	1,382	20.1
30-34	5.7	30.6	54.9	71.2	85.7	3.8	1,086	19.6
35-39	6.1	27.6	50.7	72.8	89.0	2.8	871	19.9
40-44	5.7	31.3	56.9	75.2	89.9	1.9	788	19.4
45-49	7.6	33.8	57.3	73.5	88.5	2.7	521	19.3

na = Not applicable  
<sup>a</sup> Omitted because less than 50 percent of women had a birth before reaching the beginning of the age group

The median age at first birth is 20.1 years for women age 25-29 in 2003, reflecting a marginal rise from the 19.6 years recorded for the same women in the 1998 KDHS. Generally, age at first birth has shown some slight increase over the years, being later for younger women as compared with older women. However, caution should be exercised in interpreting these slight changes, as they are likely to be statistically insignificant.

Further insights into the onset of childbearing can be discerned by examining the percentage of women who had a first birth by the given exact ages for various age groups of women. While this per-

centage increases progressively by increasing exact ages as expected, the proportion having their first birth by age 18, for instance, is slightly lower for younger women, compared with older ones. This observation is consistent with a slightly rising age at first birth.

Table 4.9 depicts the differential patterns in age at first birth using the median among women age 25-49 by current age, according to selected background characteristics. A significantly higher median age at first birth is observed in the urban areas, compared with rural areas for all age groups. Among the provinces, a higher median is recorded in Nairobi (22.0 years) for women age 25-49, followed by Central Province (20.3 years), while the lowest was recorded in Nyanza Province (18.4 years). This implies that women in Nyanza Province, on average, have their first birth nearly four years earlier than those in Nairobi.

Clearly, the onset of childbearing is significantly related to education of women. According to Table 4.9, women with some secondary education and above begin their childbearing more than three years (22.2 years) later than women with no education (18.7 years). Delayed onset of childbearing of about three years is also exhibited by wealthier women, relative to poorer ones.

**Table 4.9 Median age at first birth by background characteristics**

Median age at first birth among women age 25-49, by current age and background characteristics, Kenya 2003

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
<b>Residence</b>						
Urban	22.4	21.3	20.8	20.4	20.7	21.2
Rural	19.6	19.3	19.7	19.2	19.0	19.4
<b>Province</b>						
Nairobi	23.0	22.0	21.7	21.6	21.0	22.0
Central	21.0	20.6	20.7	19.7	19.2	20.3
Coast	20.0	20.4	19.0	19.5	19.0	19.8
Eastern	19.9	19.7	20.3	20.1	19.0	19.9
Nyanza	19.1	18.0	18.6	18.0	18.3	18.4
Rift Valley	20.0	19.1	19.8	19.0	20.1	19.6
Western	19.9	19.2	19.6	19.0	18.5	19.4
North Eastern	18.0	19.0	19.6	21.5	(21.6)	19.4
<b>Education</b>						
No education	18.7	17.4	18.8	19.1	19.4	18.7
Primary incomplete	18.7	18.3	18.5	18.3	18.4	18.5
Primary complete	19.9	19.7	19.8	19.1	18.4	19.6
Secondary+	23.0	22.2	22.0	21.2	22.2	22.2
<b>Wealth quintile</b>						
Lowest	18.9	18.1	18.2	18.9	18.9	18.6
Second	19.7	18.7	19.5	18.8	18.7	19.3
Middle	19.1	19.3	20.1	19.1	19.0	19.3
Fourth	20.6	19.9	20.4	19.4	19.4	20.0
Highest	22.6	21.8	21.2	21.2	21.0	21.8
Total	20.1	19.6	19.9	19.4	19.3	19.8

Note: Figures in parentheses are based on fewer than 25 unweighted women.

## 4.7 TEENAGE FERTILITY

Adolescent fertility in Kenya occupies a prime place in the design and implementation of reproductive health strategies, policies, and programmes. In an attempt to address the reproductive health needs

and to reduce fertility of this special group, the government, through the Ministry of Health and the National Council for Population and Development, has recently put in place an Adolescent Reproductive Health Policy to help meet the needs of this group.

It is important to examine the fertility of adolescents for various reasons. First, children born to very young mothers are normally predisposed to higher risks of illness and death. Second, adolescent mothers are more likely to experience complications during pregnancy and are less likely to be prepared to deal with them, which often leads to maternal deaths. Third, their early entry into reproduction denies them the opportunity to pursue basic and further academic goals. This is detrimental to their prospects for good careers, which often lowers their status in society.

Table 4.10 displays the percentage of women age 15-19 who were mothers or were pregnant with their first child at the time of the 2003 KDHS, by selected background characteristics. Generally, teenage fertility has edged slightly upward, with the proportion that have begun childbearing rising from 21 percent in 1998 to 23 percent in 2003. The proportion of teenage mothers rose from 17 percent in 1998 to 19 percent in 2003, while the proportion of those pregnant with their first child rose as well, from 4 percent in 1998 to 5 percent in 2003.

Table 4.10 also shows that the proportion of teenagers who have begun childbearing increases dramatically from 4 percent at age 15 to 46 percent at age 19. Not much disparity, though, is observed in this parameter between rural and urban women. Teenage fertility is much higher in Rift Valley, North Eastern, Coast, and Nyanza provinces, where at least one-fourth of women age 15-19 have begun childbearing. Almost half of uneducated teenagers (46 percent) have begun childbearing, compared with only 10 percent of those with some secondary education and above. Teenagers from poorer households are more likely to have begun childbearing (29 percent), as compared with those from wealthier households (21 percent).

**Table 4.10 Teenage pregnancy and motherhood**

Percentage of women age 15-19 who are mothers or pregnant with their first child, by background characteristics, Kenya 2003

Background characteristic	Percentage who are:		Percentage who have begun child-bearing	Number of women
	Mothers	Pregnant with first child		
<b>Age</b>				
15	2.4	1.8	4.1	351
16	5.3	3.0	8.3	360
17	12.0	4.1	16.1	365
18	30.4	7.2	37.7	397
19	39.4	6.2	45.6	383
<b>Residence</b>				
Urban	17.7	4.5	22.2	388
Rural	18.7	4.5	23.3	1,467
<b>Province</b>				
Nairobi	15.2	4.4	19.5	144
Central	13.8	1.5	15.3	230
Coast	23.5	5.9	29.4	145
Eastern	11.0	3.7	14.8	316
Nyanza	21.3	5.8	27.1	325
Rift Valley	25.5	5.0	30.5	390
Western	16.4	4.7	21.1	268
North Eastern	20.8	8.2	29.0	39
<b>Education</b>				
No education	40.2	5.7	45.9	127
Primary incomplete	18.1	5.2	23.3	921
Primary complete	23.6	5.1	28.7	386
Secondary+	8.1	2.3	10.4	422
<b>Wealth quintile</b>				
Lowest	21.5	7.3	28.8	316
Second	21.4	4.8	26.1	360
Middle	18.1	3.8	21.8	380
Fourth	15.6	3.1	18.7	401
Highest	16.8	4.3	21.2	398
<b>Total</b>	<b>18.5</b>	<b>4.5</b>	<b>23.0</b>	<b>1,856</b>

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This chapter presents results from the 2003 KDHS regarding various aspects of contraceptive knowledge, attitudes, and behaviour. Although the focus is on women, some results from the male survey are also presented, since men play an important role in the realisation of reproduction goals. To get an indication of interspousal communication and agreement in knowledge and attitudes of couples regarding family planning, the study compared the responses of men, where possible, with responses of their wives in the same household.

## 5.1 KNOWLEDGE OF CONTRACEPTIVE METHODS

One major objective of the 2003 KDHS was to develop a profile of Kenyan women and men regarding knowledge of family planning methods. Individuals who have adequate information about the available methods of contraception are better able to develop a rational approach to planning their families. Information on knowledge of contraception was collected during the survey by asking the respondents to name ways or methods by which a couple could delay or avoid pregnancy. If the respondent failed to mention a particular method spontaneously, the interviewer described the method and asked whether the respondent recognised it. In this manner, information was collected about nine modern methods (female sterilisation, male sterilisation, the pill, intrauterine device [IUD], injections, implants, male condoms, female condoms, and emergency contraception) and two traditional methods (calendar or rhythm method and withdrawal). Provision was also made in the questionnaire to record any other methods named spontaneously by the respondent. This presentation places more emphasis on women, since they have the greatest level of exposure to the risk of pregnancy and most methods are designed for them.

Tables 5.1.1 and 5.1.2 show the knowledge of contraceptive methods among all women age 15-49 and men age 15-54, as well as among those who are currently married, unmarried, and sexually active. Knowledge of family planning is nearly universal, with 95 percent of all women age 15-49 and 97 percent of men age 15-54 knowing at least one method of family planning.

Modern methods are more widely known than traditional methods. For example, 94 percent of women have heard of at least one modern method, while only 70 percent know of a traditional method. Among all women, the male condom, pills, and injectables are the most widely known methods of family planning, with about 90 percent of all women saying they had heard of these methods. The least widely known methods are emergency contraception, the female condom, and male sterilisation. About two-thirds of all women have heard of periodic abstinence (calendar or rhythm method), while about four in ten know about withdrawal.

As expected, contraceptive knowledge is higher among currently married women and sexually active women than among all women. The mean number of methods recognised by all women is 7.0, compared to 7.6 among married women and 7.4 among sexually active women. Unmarried women who have never had sexual intercourse are the least likely to know about contraceptive methods; nevertheless, they have heard of an average of 4.8 methods. Although knowledge of the male condom is high among all groups of women, it is highest among sexually active, unmarried women (98 percent). The gap in knowledge between women who are married and those who are unmarried and sexually active is most apparent for long-term and permanent methods (i.e., sterilisation, IUD).

Table 5.1.1 Knowledge of contraceptive methods: women

Percentage of all women, of currently married women, of sexually active unmarried women, of sexually inactive unmarried women, and of women with no sexual experience who know any contraceptive method, by specific method, Kenya 2003

Contraceptive method	All women	Currently married women	Unmarried women who ever had sex		Unmarried women who never had sex
			Sexually active <sup>1</sup>	Not sexually active <sup>2</sup>	
Any method	94.6	95.5	99.2	96.8	87.9
Any modern method	94.4	95.3	99.2	96.7	87.7
Female sterilisation	73.9	80.3	77.9	75.6	48.2
Male sterilisation	47.2	52.1	45.9	47.5	29.3
Pill	89.5	93.1	93.2	92.7	72.0
IUD	67.0	74.6	67.7	70.0	36.3
Injectables	88.9	93.5	93.3	93.1	66.5
Implants	63.7	72.3	68.6	64.6	31.5
Male condom	90.6	91.6	97.8	93.2	82.7
Female condom	41.6	43.1	48.8	44.4	31.4
Emergency contraception	23.7	25.2	27.5	25.5	15.3
Any traditional method	70.0	76.3	71.4	72.3	44.8
Periodic abstinence	64.7	70.1	64.9	68.2	41.5
Withdrawal	41.3	46.8	45.0	40.9	21.4
Folk method	9.3	12.2	10.2	6.4	2.6
Mean number of methods known	7.0	7.6	7.4	7.2	4.8
Number of women	8,195	4,919	267	1,621	1,389

<sup>1</sup> Had sexual intercourse in the month preceding the survey

<sup>2</sup> Did not have sexual intercourse in the month preceding the survey

Contraceptive knowledge is slightly higher among all men and currently married men than among all women and currently married women. However, among those who are unmarried, men are somewhat less likely to know about contraceptive methods. Men are more likely than women to know about female and male condoms, female and male sterilisation, periodic abstinence, and withdrawal, while women are more likely to know about such female-oriented methods as the pill, IUD, injectables, and implants.

Trends in contraceptive knowledge since the 1998 KDHS are mixed. Although it appears as if there has been a slight drop in knowledge since 1998, it is mostly due to the inclusion of the northern areas of Kenya in 2003; when these areas are excluded, there has been no change in overall levels of knowledge of any method or any modern method. Nevertheless, the level of knowledge of several methods has declined slightly since 1998. For example, among all women (excluding the north), the percentages who know of female sterilisation, the pill, the IUD, and periodic abstinence have declined slightly since 1998. On the other hand, the percentages who know of male sterilisation, male condoms, injectables, implants, and withdrawal have increased slightly.



**Table 5.1.2 Knowledge of contraceptive methods: men**

Percentage of all men, of currently married men, of sexually active unmarried men, of sexually inactive unmarried men, and of men with no sexual experience who know any contraceptive method, by specific method, Kenya 2003

Contraceptive method	All men	Currently married men	Unmarried men who ever had sex		Unmarried men who never had sex
			Sexually active <sup>1</sup>	Not sexually active <sup>2</sup>	
Any method	97.2	97.7	98.9	99.7	90.7
Any modern method	96.9	97.2	98.7	99.7	90.2
Female sterilisation	76.9	86.9	79.5	74.8	44.0
Male sterilisation	58.8	69.5	59.2	55.2	27.5
Pill	86.4	92.0	92.3	86.6	62.2
IUD	49.2	61.7	45.9	42.5	19.6
Injectables	80.7	91.0	82.3	76.3	51.3
Implants	36.2	47.4	32.4	27.6	14.1
Male condom	95.9	96.5	98.7	99.0	86.8
Female condom	56.1	61.9	63.0	56.6	30.5
Foam/jelly	0.8	1.1	0.1	0.7	0.6
Emergency contraception	25.6	28.2	33.4	24.7	12.1
Any traditional method	81.5	93.6	88.1	81.1	35.7
Periodic abstinence	79.2	92.2	84.7	77.8	32.8
Withdrawal	55.1	64.5	66.7	51.9	18.3
Folk method	4.1	5.8	3.2	2.6	1.5
Mean number of methods known	7.1	8.0	7.4	6.8	4.0
Number of men	3,578	1,818	432	791	537

<sup>1</sup> Had sexual intercourse in the month preceding the survey

<sup>2</sup> Did not have sexual intercourse in the month preceding the survey

## 5.2 EVER USE OF CONTRACEPTION

All women interviewed in the 2003 KDHS who said that they had heard of a method of family planning were asked whether they had ever used that method. Table 5.2 shows the percentage of all women, currently married women, and sexually active unmarried women who have ever used specific methods of family planning, by age.<sup>1</sup>

Table 5.2 shows that 64 percent of currently married women have ever used a contraceptive method, 55 percent have used a modern method, and 24 percent have used a traditional method. The methods most commonly used by married women are injectables (33 percent), pills (32 percent), periodic abstinence (20 percent), and male condom (10 percent). Ever use of other methods does not exceed 10 percent.

Ever use of any method is highest among sexually active unmarried women, 71 percent of whom have used a method at some time. Sexually active unmarried women are much more likely (34 percent) than either all women or currently married women to have used the male condom.

<sup>1</sup> In the 2003 KDHS, men were only asked about ever use of male-oriented methods, so the data are not comparable.

Table 5.2 Ever use of contraception

Percentage of all women, currently married women, and sexually active unmarried women who have ever used any contraceptive method, by specific method and age, Kenya 2003

Age	Modern method												Traditional method				Number of women
	Any method	Any modern method	Female sterilisation	Male sterilisation	Pill	IUD	Injectables	Implants	Male condom	Female condom	Foam/jelly	Emergency contraception	Any traditional method	Periodic abstinence	Withdrawal	Folk method	
ALL WOMEN																	
15-19	14.7	10.5	0.0	0.0	3.4	0.1	3.1	0.3	6.1	0.0	0.0	0.3	6.6	5.9	1.7	0.1	1,856
20-24	47.1	38.0	0.1	0.0	17.3	0.9	21.2	0.8	12.9	0.4	0.0	1.4	20.4	18.1	3.9	1.2	1,691
25-29	64.9	55.1	0.4	0.0	31.9	2.5	36.4	2.7	12.8	0.4	0.0	1.3	25.4	22.0	6.8	1.5	1,382
30-34	70.8	64.8	2.3	0.1	41.4	9.4	39.8	3.1	11.7	0.4	0.4	1.1	21.9	18.3	5.7	2.0	1,086
35-39	68.8	61.4	6.0	0.0	39.1	13.3	37.1	4.7	10.5	0.3	0.3	1.0	23.0	20.2	6.1	1.2	871
40-44	65.5	58.6	11.8	0.2	34.9	16.0	31.8	2.6	10.6	0.0	0.1	0.3	19.6	17.3	3.0	1.5	788
45-49	60.1	50.2	12.0	0.2	28.5	14.5	20.8	1.6	5.9	0.5	0.9	0.8	21.5	17.6	3.3	4.0	521
Total	50.8	43.5	2.9	0.0	24.5	5.7	24.8	1.9	10.2	0.3	0.1	0.9	18.6	16.2	4.2	1.3	8,195
CURRENTLY MARRIED WOMEN																	
15-19	33.9	22.8	0.0	0.0	11.4	0.1	9.3	0.2	8.0	0.0	0.0	0.3	16.9	15.0	6.1	0.4	333
20-24	57.3	47.4	0.1	0.0	23.5	0.9	29.9	1.2	11.9	0.6	0.0	1.1	23.6	20.8	4.9	1.5	965
25-29	68.9	58.0	0.5	0.0	35.1	2.7	40.0	2.8	10.6	0.2	0.0	1.0	27.3	23.2	7.5	1.7	1,056
30-34	72.0	65.5	2.6	0.2	41.8	10.3	39.9	3.2	10.7	0.4	0.5	1.4	23.9	20.0	6.5	2.3	873
35-39	69.7	62.0	6.6	0.0	38.7	14.4	37.2	5.1	9.5	0.2	0.3	1.1	24.2	20.7	6.8	1.2	691
40-44	66.1	59.0	13.5	0.2	33.8	17.0	33.3	2.9	9.9	0.0	0.1	0.3	20.6	18.1	3.5	1.6	614
45-49	63.9	52.4	14.6	0.0	29.3	14.8	20.6	1.9	6.8	0.7	1.0	1.1	24.9	20.2	3.1	5.3	388
Total	64.2	55.1	4.3	0.1	32.3	7.9	33.2	2.6	10.2	0.3	0.2	1.0	23.8	20.4	5.8	1.9	4,919
SEXUALLY ACTIVE UNMARRIED WOMEN <sup>1</sup>																	
15-19	55.6	47.2	0.0	0.0	9.5	0.0	7.6	1.3	37.3	0.0	0.0	2.0	26.5	25.3	7.0	0.0	68
20-24	73.2	65.8	0.0	0.0	32.9	4.6	31.3	1.3	37.1	0.0	0.0	5.4	25.3	22.1	8.7	3.2	75
25+	77.5	71.3	3.1	0.0	41.6	8.9	43.2	6.4	30.2	0.0	0.6	1.6	26.6	24.4	2.8	0.9	125
Total	70.8	63.6	1.4	0.0	31.0	5.5	30.9	3.7	34.0	0.0	0.3	2.8	26.2	24.0	5.5	1.3	267

<sup>1</sup> Women who had sexual intercourse in the month preceding the survey

Ever use of family planning has increased slightly since the 1998 KDHS. For example, excluding the northern areas of Kenya, the percentage of married women who have ever used any method of contraception has increased from 64 percent in 1998 to 67 percent in 2003. Similarly, the proportion who have ever used a modern method has increased from 53 to 57 percent (data not shown).

### 5.3 CURRENT USE OF CONTRACEPTIVE METHODS

The percentage of currently married women age 15-49 who are using any method of family planning is known as the contraceptive prevalence rate (CPR). As shown in Table 5.3, the CPR for Kenya in 2003 is 39 percent. Most currently married women use modern methods (32 percent), while 8 percent use a traditional method. As expected, current contraceptive use is higher among sexually active women than among married women and, in turn, among all women. However, current use is highest among sexually active unmarried women (54 percent).

Table 5.3 Current use of contraception

Percent distribution of all women, currently married women, all sexually active women, and sexually active unmarried women, by contraceptive method currently used, according to age, Kenya 2003

Age	Modern method								Traditional method					Total	Number of women
	Any method	Any modern method	Female sterilisation	Pill	IUD	Injectables	Implant	Male condom	Any traditional method	Periodic abstinence	Withdrawal	Other method	Not currently using		
ALL WOMEN															
15-19	6.7	4.8	0.0	0.8	0.0	2.0	0.2	1.8	1.8	1.6	0.1	0.1	93.3	100.0	1,856
20-24	21.6	16.8	0.1	4.2	0.4	10.1	0.4	1.6	4.7	3.9	0.4	0.4	78.4	100.0	1,691
25-29	36.7	29.5	0.4	6.5	1.3	17.3	1.8	2.3	7.1	5.9	0.6	0.7	63.3	100.0	1,382
30-34	41.2	34.0	2.3	8.7	2.9	16.9	1.8	1.4	7.2	6.1	0.4	0.7	58.8	100.0	1,086
35-39	45.6	36.5	6.0	8.1	3.6	13.8	2.8	2.0	9.1	7.4	1.1	0.6	54.4	100.0	871
40-44	41.1	35.0	11.8	6.1	3.5	10.8	1.8	1.1	6.0	5.1	0.4	0.6	58.9	100.0	788
45-49	31.0	22.3	12.0	2.4	2.7	4.6	0.3	0.4	8.7	6.4	0.3	2.0	69.0	100.0	521
Total	28.4	22.7	2.9	4.9	1.6	10.5	1.2	1.7	5.6	4.7	0.4	0.5	71.6	100.0	8,195
CURRENTLY MARRIED WOMEN															
15-19	16.4	12.7	0.0	3.6	0.0	6.8	0.2	2.1	3.7	3.1	0.6	0.0	83.6	100.0	333
20-24	27.8	22.4	0.1	6.4	0.5	14.1	0.7	0.6	5.4	4.4	0.5	0.5	72.2	100.0	965
25-29	40.7	32.6	0.5	8.2	1.5	19.0	1.9	1.5	8.0	6.4	0.8	0.9	59.3	100.0	1,056
30-34	45.0	36.6	2.6	10.1	3.3	17.4	1.9	1.2	8.4	7.0	0.5	0.8	55.0	100.0	873
35-39	50.1	39.7	6.6	9.5	4.2	14.2	3.2	1.9	10.4	8.5	1.1	0.7	49.9	100.0	691
40-44	47.9	40.8	13.5	7.5	3.9	12.8	2.3	0.9	7.0	5.9	0.5	0.6	52.1	100.0	614
45-49	38.4	26.7	14.6	2.8	3.6	4.9	0.4	0.6	11.7	8.6	0.3	2.7	61.6	100.0	388
Total	39.3	31.5	4.3	7.5	2.4	14.3	1.7	1.2	7.8	6.3	0.6	0.8	60.7	100.0	4,919
ALL SEXUALLY ACTIVE WOMEN <sup>1</sup>															
15-19	25.9	19.7	0.0	4.3	0.0	7.0	0.5	7.9	6.2	5.6	0.6	0.0	74.1	100.0	314
20-24	35.0	28.5	0.0	7.5	0.7	17.4	0.8	2.1	6.5	5.2	0.6	0.7	65.0	100.0	796
25-29	47.8	38.9	0.6	9.7	1.9	21.9	2.6	2.3	8.9	7.2	0.7	0.9	52.2	100.0	872
30-34	53.8	44.4	2.9	12.2	4.1	21.2	2.4	1.6	9.4	7.9	0.6	0.9	46.2	100.0	685
35-39	57.3	46.1	7.6	11.2	5.0	16.6	3.0	2.4	11.2	9.2	1.5	0.5	42.7	100.0	536
40-44	56.4	48.8	15.8	9.3	4.6	15.0	2.7	1.5	7.6	6.7	0.4	0.5	43.6	100.0	456
45-49	44.5	32.9	17.7	3.3	5.2	5.8	0.6	0.4	11.5	7.5	0.5	3.4	55.5	100.0	250
Total	46.6	38.0	4.6	9.0	2.8	17.1	2.0	2.4	8.6	7.0	0.7	0.9	53.4	100.0	3,909
SEXUALLY ACTIVE UNMARRIED WOMEN <sup>1</sup>															
15-19	49.4	37.1	0.0	3.7	0.0	5.7	1.3	26.4	12.3	12.3	0.0	0.0	50.6	100.0	68
20-24	53.1	42.0	0.0	4.0	0.0	20.4	0.8	16.8	11.1	7.8	1.5	1.8	46.9	100.0	75
25+	57.8	49.6	3.1	6.8	1.7	25.2	3.0	9.8	8.2	8.2	0.0	0.0	42.2	100.0	125
Total	54.4	44.3	1.4	5.2	0.8	18.9	2.0	15.9	10.1	9.2	0.4	0.5	45.6	100.0	267

Note: If more than one method is used, only the most effective method is considered in this tabulation.

<sup>1</sup> Women who had sexual intercourse in the month preceding the survey

Injectables, pills, and periodic abstinence are the most commonly used contraceptive methods, used by 14, 8, and 6 percent of married women, respectively. However, among sexually active unmarried women, male condoms are the most commonly used method after injectables.

Use of any contraceptive method rises with age, from 16 percent among married women age 15-19, to a peak of 50 percent at age 35-39, and then declines to 38 percent at age 45-49. As expected, female sterilisation is used more commonly by women age 40-49, while pills and injectables are mostly used by women at the peak of childbearing years (age 20-39).

## 5.4 TRENDS IN CONTRACEPTIVE USE

Table 5.4 shows that contraceptive use has increased very slightly since 1998, from 39 to 41 percent of married women. This is far less than the 6 percentage point rise in the five years between 1993 and 1998. The largest increase since 1998 has been among the small number of sexually active unmarried women.

Table 5.4 Trends in current use of contraception

Percent distribution of all women, currently married women, and sexually active unmarried women, by contraceptive method currently used, according to age, Kenya 2003,<sup>a</sup> 1998, and 1993

Background characteristic	Modern method								Traditional method					Total	Number of women
	Any method	Any modern method	Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Any traditional method	Periodic abstinence	Withdrawal	Folk method/other	Not currently using		
<b>All women</b>															
2003 <sup>a</sup>	29.5	23.6	3.0	5.1	1.6	10.8	1.2	1.7	5.9	4.8	0.5	0.6	70.5	100.0	7,875
1998	29.9	23.6	4.2	6.5	1.9	8.8	0.7	1.5	6.3	5.3	0.4	0.6	70.1	100.0	7,881
1993	25.9	20.7	3.9	7.5	2.8	5.5	0.0	0.9	5.2	4.5	0.3	0.4	74.1	100.0	7,540
<b>Currently married women</b>															
2003 <sup>a</sup>	41.0	32.9	4.5	7.9	2.5	14.9	1.7	1.3	8.1	6.6	0.7	0.9	59.0	100.0	4,706
1998	39.0	31.5	6.2	8.5	2.7	11.8	0.8	1.3	7.5	6.1	0.6	0.8	61.0	100.0	4,834
1993	32.7	27.3	5.5	9.5	4.2	7.2	0.0	0.8	5.5	4.4	0.4	0.6	67.3	100.0	4,629
<b>Sexually active unmarried women<sup>1</sup></b>															
2003 <sup>a</sup>	54.4	44.3	1.4	5.2	0.8	18.9	2.0	15.9	10.1	9.2	0.4	0.5	45.6	100.0	267
1998	46.5	36.2	2.5	10.7	1.4	12.2	1.4	8.1	10.2	9.9	0.3	0.0	53.5	100.0	434

Note: If more than one method is used, only the most effective method is considered in this tabulation.

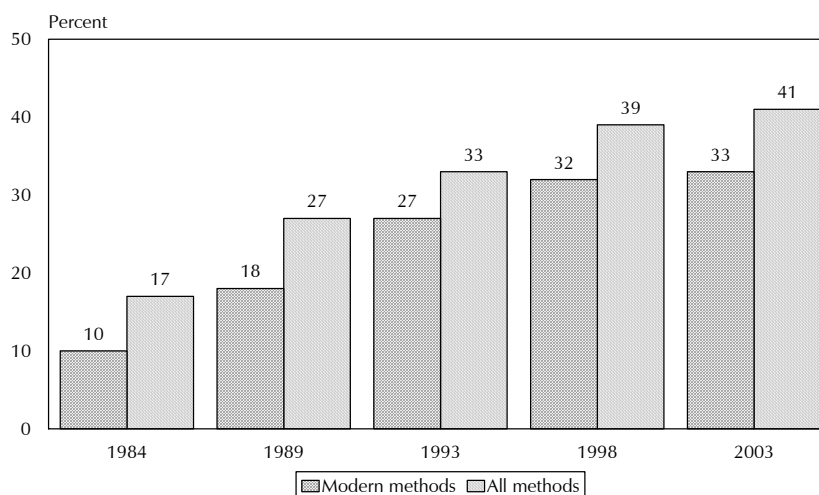
<sup>a</sup> Excludes all of North Eastern Province and five other northern districts so as to be comparable to prior surveys

<sup>1</sup> Women who have had sexual intercourse in the one month preceding the survey

This slowing of the increase in contraceptive use is in sharp contrast with previous trends. Since the early 1980s, there had been a steady increase in family planning use among married women, as shown in Figure 5.1. The 1984 Contraceptive Prevalence Survey (CPS), 1989 KDHS, 1993 KDHS, and 1998 KDHS documented the increase in use of modern contraceptive methods from 10, to 18, to 27, and to 32 percent, respectively. The rate of increase slowed between 1993 and 1998 and now appears to have slowed even more.

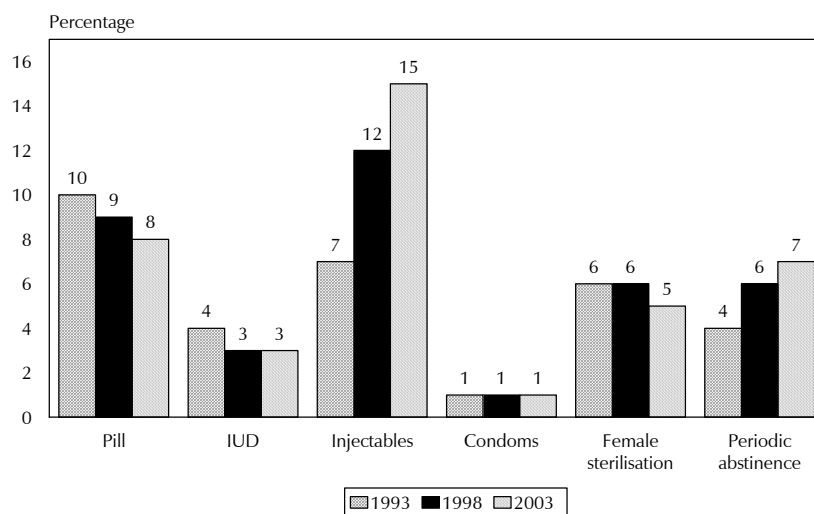
Nevertheless, the 2003 KDHS corroborates trends in method mix, namely, a continuing increase in use of injectables and decrease in use of the pill, as was the case in earlier KDHS surveys (Figure 5.2). The increase in use of injectables (from 7 percent in 1993, to 12 percent in 1998, and to 15 percent in 2003) has been the most dramatic, making it the predominant method in 2003.

**Figure 5.1 Contraceptive Use among Currently Married Women, Kenya 1984-2003 (excluding northern districts)**



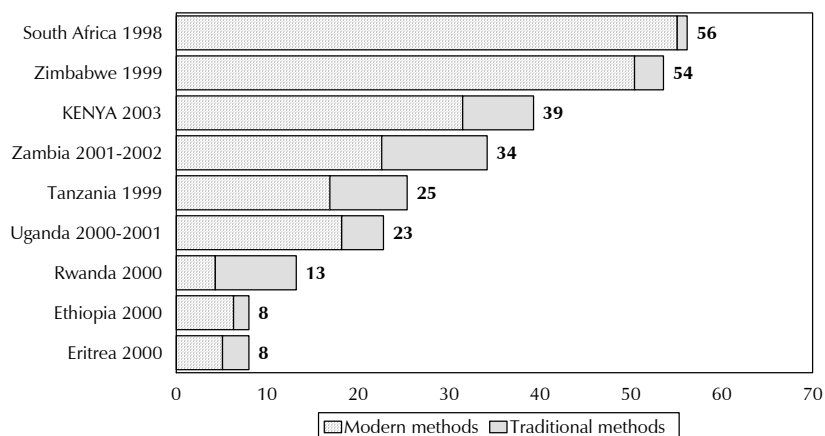
Note: The value for 2003 differs from Table 5.3 because of exclusion of northern areas.

**Figure 5.2 Trends in Current Use of Specific Contraceptive Methods among Currently Married Women Age 15-49, Kenya 1993-2003 (excluding northern districts)**



When compared with other countries in east and southern Africa where Demographic and Health surveys are conducted, Kenya's level of contraceptive use is exceeded only by Zimbabwe and South Africa (Figure 5.3).

**Figure 5.3 Current Use of Family Planning among Currently Married Women Age 15-49, Selected Countries in East Africa and Southern Africa**



## 5.5 DIFFERENTIALS IN CONTRACEPTIVE USE BY BACKGROUND CHARACTERISTICS

As shown in Table 5.5 and Figure 5.4, some women in Kenya are more likely to use contraceptives than others. Married women in urban areas are more likely to use modern contraceptives (40 percent) than those in rural areas (29 percent), which also applies for each of the specific modern methods except female sterilisation, which is very slightly higher among rural women.

Use of modern methods among currently married women is highest in Central Province (58 percent) and Nairobi (44 percent) and lowest in North Eastern Province (less than 1 percent), Coast Province (19 percent), and Nyanza Province (21 percent). Use of injectables is particularly high in Central Province, where almost one-quarter of married women are using the method.

As expected, contraceptive use increases with level of education. Use of modern methods increases from 8 percent among married women with no education to 52 percent among women with at least some secondary education. Use of modern contraception among women with no education dropped from 16 percent in 1998 to 11 percent in 2003 (excluding the northern areas).

The proportion of married women using modern methods increases with the number of children they have, reaching a peak at four children and then dropping for those with five or more children. Use of modern methods rises from 12 percent among married women in the lowest wealth quintile to 45 percent among those in the highest wealth quintile.

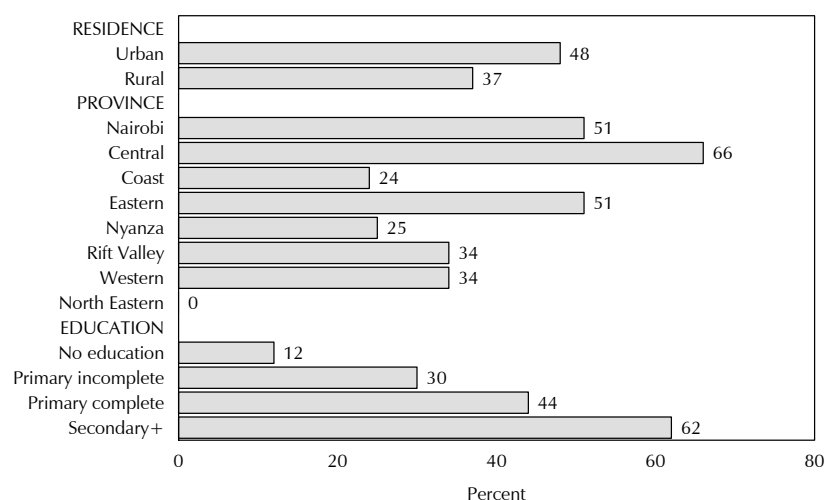
Table 5.5 Current use of contraception by background characteristics

Percent distribution of currently married women, by contraceptive method currently used, according to background characteristics, Kenya 2003

Background characteristic	Modern method								Traditional method							Total	Number of women
	Any method	Any modern method	Female sterilisation	Pill	IUD	In-j ect-ables	Im-plants	Male condom	Any tradi-tional method	Periodic absti-nence	With-drawal	Other meth-od	Not currently using				
Residence																	
Urban	47.6	39.9	4.1	10.4	4.2	16.2	2.6	2.2	7.7	6.5	0.2	0.9	52.4	100.0	1,091		
Rural	37.0	29.2	4.4	6.7	1.9	13.8	1.4	0.9	7.8	6.2	0.8	0.8	63.0	100.0	3,828		
Province																	
Nairobi	50.7	44.3	5.9	12.5	4.5	16.1	2.6	2.7	6.4	6.0	0.2	0.2	49.3	100.0	418		
Central	66.4	57.9	7.2	15.6	8.3	22.5	3.5	0.7	8.5	7.5	0.2	0.8	33.6	100.0	656		
Coast	24.1	19.1	3.0	3.6	0.7	9.9	1.5	0.4	5.0	3.8	0.5	0.7	75.9	100.0	418		
Eastern	50.6	38.4	4.5	9.6	1.8	19.9	1.7	1.1	12.2	11.1	0.4	0.7	49.4	100.0	783		
Nyanza	24.7	21.0	4.7	4.1	0.5	10.9	0.6	0.3	3.7	3.2	0.3	0.2	75.3	100.0	775		
Rift Valley	34.4	24.5	3.1	4.9	1.9	11.3	1.4	1.8	9.9	7.1	1.6	1.2	65.6	100.0	1,186		
Western	34.1	27.3	3.8	6.5	0.4	13.5	1.3	1.9	6.8	4.3	0.6	1.8	65.9	100.0	559		
North Eastern	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	99.8	100.0	125		
Education																	
No education	12.0	8.0	3.1	1.4	0.3	3.0	0.2	0.0	4.0	2.7	0.9	0.4	88.0	100.0	762		
Primary incomplete	30.2	23.1	3.3	4.3	0.7	13.2	0.9	0.7	7.1	5.8	0.5	0.8	69.8	100.0	1,569		
Primary complete	44.2	35.7	4.5	9.5	1.9	17.6	1.1	1.2	8.5	7.2	0.4	0.9	55.8	100.0	1,312		
Secondary+	61.8	51.7	6.1	13.2	6.3	19.2	4.0	2.6	10.1	8.2	0.9	1.0	38.2	100.0	1,276		
Number of living children																	
0	7.2	3.8	0.0	2.1	0.2	0.6	0.2	0.8	3.3	3.1	0.0	0.2	92.8	100.0	355		
1	32.1	26.8	0.4	8.4	1.8	12.8	1.1	2.2	5.4	4.5	0.6	0.3	67.9	100.0	795		
2	44.2	36.7	0.8	10.8	3.5	17.8	2.4	1.4	7.4	5.8	0.6	1.0	55.8	100.0	915		
3	49.1	40.8	4.7	8.7	4.5	19.5	1.8	1.4	8.3	6.6	1.0	0.7	50.9	100.0	827		
4	48.3	41.2	6.0	10.1	2.4	19.0	2.2	1.5	7.1	6.0	0.3	0.8	51.7	100.0	644		
5+	38.5	27.9	9.1	4.3	1.3	11.2	1.5	0.4	10.6	8.5	0.8	1.2	61.5	100.0	1,383		
Wealth quintile																	
Lowest	17.9	11.8	1.3	2.2	0.2	7.2	0.3	0.7	6.0	4.9	0.7	0.4	82.1	100.0	947		
Second	31.9	24.2	3.4	5.3	0.8	12.5	0.7	1.4	7.8	6.1	0.9	0.7	68.1	100.0	954		
Middle	42.0	33.4	4.8	7.7	1.4	17.7	1.2	0.6	8.5	6.7	0.5	1.3	58.0	100.0	915		
Fourth	50.7	41.0	7.1	10.2	3.4	16.4	2.8	1.1	9.7	7.4	1.1	1.2	49.3	100.0	965		
Highest	51.5	44.5	4.9	11.4	5.5	17.4	3.1	2.1	7.0	6.3	0.1	0.6	48.5	100.0	1,139		
Total	39.3	31.5	4.3	7.5	2.4	14.3	1.7	1.2	7.8	6.3	0.6	0.8	60.7	100.0	4,919		

Note: If more than one method is used, only the most effective method is considered in this tabulation.

**Figure 5.4 Current Use of Any Contraceptive Method among Currently Married Women Age 15-49, by Background Characteristics**



KDHS 2003

## 5.6 CURRENT USE OF CONTRACEPTIVES BY WOMEN'S STATUS

Table 5.6 shows the level of current use of contraceptive methods by various women's status indicators. Current use of a modern contraceptive method increases steadily with the number of decisions in which a woman has a final say, from 18 percent among married women with no say in any decision to 40 percent among women who participate in five decisions.

The more reasons a married woman cites for justifying a wife's refusing to have sex with her husband, the more likely she is to be currently using a modern contraceptive method. Current use of modern contraceptives rises from 22 percent among women who believe there is no justifiable reason for refusing sex with a husband to 33 percent among women with three or four reasons for refusing to have sex with a husband.

Women who do not believe that there is any reason to justify wife-beating are more likely to be currently using a modern contraceptive method than those who feel that wife-beating is justified. Current use of modern contraceptives decreases from 41 percent among women who do not believe in any reason to justify wife-beating to 21 percent among women who report five reasons in which wife-beating is justified. The patterns in current use of modern methods observed for the indicators of women's status also apply for the specific modern methods of contraception.



Table 5.6 Current use of contraception by women's status

Percent distribution of currently married women, by contraceptive method currently used, according to selected indicators of women's status, Kenya 2003

Women's status indicator	Modern method								Traditional method						Total	Number of women
	Any method	Any modern method	Female sterilisation	Pill	IUD	In-ject-ables	Implant	Male condom	Any traditional method	Periodic abstinence	Withdrawal	Folk method	Not currently using			
Number of decisions in which woman has final say <sup>1</sup>																
0	22.2	18.1	3.0	4.9	1.6	7.4	0.5	0.6	4.2	3.5	0.4	0.2	77.8	100.0	397	
1-2	30.6	24.1	2.8	5.7	0.8	12.9	1.2	0.6	6.5	4.7	1.0	0.8	69.4	100.0	1,539	
3-4	43.9	35.5	4.7	8.8	2.3	16.1	1.9	1.6	8.5	6.9	0.6	0.9	56.1	100.0	1,780	
5	49.2	39.6	6.3	8.8	4.7	15.8	2.3	1.6	9.6	8.4	0.2	1.0	50.8	100.0	1,204	
Number of reasons to refuse sex with husband																
0	28.2	22.1	2.9	6.2	0.3	11.9	0.7	0.1	6.1	5.2	0.4	0.5	71.8	100.0	287	
1-2	36.2	28.7	3.5	5.9	2.2	14.8	1.3	1.0	7.5	5.1	0.9	1.6	63.8	100.0	754	
3-4	40.7	32.8	4.6	7.9	2.6	14.4	1.8	1.4	8.0	6.6	0.6	0.7	59.3	100.0	3,878	
Number of reasons wife-beating is justified																
0	49.2	40.8	5.4	10.4	4.2	16.6	2.6	1.5	8.4	7.2	0.5	0.6	50.8	100.0	1,408	
1-2	41.0	32.7	4.7	7.2	1.9	15.3	1.6	1.9	8.4	6.8	1.0	0.6	59.0	100.0	1,535	
3-4	32.2	25.1	3.7	6.0	1.5	12.4	0.8	0.7	7.1	5.6	0.3	1.2	67.8	100.0	1,479	
5	27.3	21.1	2.3	5.1	1.2	10.7	1.7	0.0	6.2	4.4	1.0	0.9	72.7	100.0	497	
Total	39.3	31.5	4.3	7.5	2.4	14.3	1.7	1.2	7.8	6.3	0.6	0.8	60.7	100.0	4,919	

Note: If more than one method is used, only the most effective method is considered in this tabulation.

<sup>1</sup> Either by herself or jointly with others

## 5.7 TIMING OF FIRST USE OF CONTRACEPTION

Table 5.7 shows the distribution of women who have ever used contraception by age and number of living children at first use of contraception. The results indicate that Kenyan women are adopting family planning at lower parities (i.e., when they have fewer children) than in the past. Among younger women (age 20-24), 37 percent first used contraception before having any children and 43 percent used contraception by parity 1. Among older women (age 45-49), only 4 percent used contraception before having any children and 17 percent used contraception by parity 1. Conversely, while 55 percent of women age 45-49 did not use contraception before having four or more children, less than 1 percent of women age 20-24 waited until parity 4 before starting to use contraception.

Sterilisation is a very effective, permanent method of family planning, which could be used by more couples who do not want to have any more children. Consequently, it is of interest to know whether the age at which women adopt sterilisation is increasing or declining. Data from the 2003 KDHS indicate that 74 percent of women who are sterilised had the procedure after reaching age 30 and 39 percent had the procedure after reaching age 35 (data not shown). The median age at the time of sterilisation is 33 years, showing a slight increase from 32 years in 1998.

Table 5.7 Number of children at first use of contraception

Percent distribution of women who have ever used contraception by number of living children at the time of first use of contraception, according to current age, Kenya 2003

Current age	Number of living children at time of first use of contraception					Missing	Total	Number of women
	0	1	2	3	4+			
15-19	69.4	27.5	2.5	0.0	0.0	0.6	100.0	273
20-24	37.4	43.0	14.8	3.6	0.7	0.5	100.0	796
25-29	19.3	43.0	22.8	8.3	6.2	0.3	100.0	897
30-34	10.0	36.2	23.9	13.0	16.9	0.0	100.0	769
35-39	6.2	28.4	23.1	12.1	30.1	0.0	100.0	599
40-44	4.5	18.9	15.4	18.5	42.6	0.0	100.0	516
45-49	3.7	17.1	10.3	14.4	54.5	0.0	100.0	313
Total	19.4	33.7	18.3	10.0	18.3	0.2	100.0	4,163

## 5.8 USE OF FEMIPLAN SOCIAL MARKETING PILL BRAND

Current users of pills as a method of contraception were asked which brand of pills they use. Table 5.8 indicates that 16 percent of these users said that they use Femiplan, the brand that is socially marketed in Kenya. Pill users in urban areas are more likely to be using Femiplan (22 percent) than are those in rural areas (14 percent). Differentials by province are hampered by small numbers of pill users in some provinces. Use of Femiplan increases with the economic status of women. The wealthiest users of pills are more likely to be using Femiplan than are poorer users of pills.

## 5.9 KNOWLEDGE OF THE FERTILE PERIOD

An elementary knowledge of reproductive physiology provides a useful background for successful practice of coitus-related methods, such as the calendar method, the Billings method, and other methods collectively called “periodic abstinence.” The successful use of such methods depends in part on an understanding of when, during the ovulatory cycle, a woman is most likely to conceive. Women were asked, “From one menstrual period to the next, are there certain days when a woman is more likely to get pregnant if she has sexual relations?” If the answer was “yes,” they were further asked whether that time was just before her period begins, during her period, right after her period has ended, or halfway between two periods. Table 5.9 provides the results for all women, as well as for women who report that they are currently using periodic abstinence and those who are not.

Table 5.8 Use of social marketing brand pills

Percentage of pill users who are using Femiplan, a social marketing brand, by urban-rural residence, province, and wealth quintile, Kenya 2003

Residence/province/ wealth quintile	Percentage of pill users	Number of women
<b>Residence</b>		
Urban	21.5	128
Rural	13.5	275
<b>Province</b>		
Nairobi	16.4	61
Central	15.5	111
Coast	(25.4)	17
Eastern	11.7	80
Nyanza	(27.6)	33
Rift Valley	(23.4)	61
Western	(0.0)	39
<b>Wealth quintile</b>		
Lowest	*	20
Second	(6.1)	56
Middle	12.6	75
Fourth	19.5	109
Highest	20.4	142
Total	16.0	402

Note: Table excludes pill users who do not know the brand name. Numbers in parentheses are based on 25-49 unweighted cases, while an asterisk indicates a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 5.9 Knowledge of fertile period

Percent distribution of all women by knowledge of the fertile period during the ovulatory cycle, according to current use/nonuse of periodic abstinence, Kenya 2003

Perceived fertile period	Users of periodic abstinence	Nonusers of periodic abstinence	All women
Just before her period begins	14.2	11.2	11.3
During her period	4.1	2.6	2.7
Right after her period has ended	41.3	30.0	30.5
Halfway between two periods	30.4	18.8	19.3
Other	0.0	0.5	0.5
No specific time	3.9	11.1	10.8
Don't know	6.1	25.8	24.9
Missing	0.0	0.1	0.1
Total	100.0	100.0	100.0
Number of women	381	7,814	8,195

Among all women, less than one in five (19 percent) understand that a woman is most likely to conceive halfway between her menstrual periods. Almost one-third wrongly believe that the fertile period is right after a woman's period has ended, one-quarter of women say they do not know when the fertile period falls, and 11 percent believe that there is no specific fertile time.

As expected, users of periodic abstinence are more likely than nonusers to know that the fertile time in a woman's menstrual cycle is halfway between periods. There has been an apparent deterioration in knowledge of the menstrual cycle since 1998, with fewer women—even periodic abstinence users—mentioning the correct fertile time.

## 5.10 SOURCE OF CONTRACEPTION

Information on where women obtain their contraceptives is useful for family planning programme managers and implementers for logistic planning. In the 2003 KDHS, women who reported using a modern contraceptive method at the time of the survey were asked where they obtained the method the last time they acquired it. Since some women may not exactly know in which category the source they use falls (e.g., government hospital, mission health centre), interviewers were instructed to note the full name of the source or facility. Supervisors and field editors were instructed to verify that the name and source type were consistent, asking informants in the clusters for the names of local family planning outlets, if necessary. This practice, used during the 1993 KDHS and 1998 KDHS as well, was designed to improve the accuracy of source reporting.

Table 5.10 shows that public (government) facilities provide contraceptives to 53 percent of users, while 41 percent are supplied through private medical sources, 5 percent through other private sources (e.g., shops), and only 1 percent through community-based distribution. The most common single source of contraceptives in Kenya is private hospitals and clinics, which supply about one-quarter of all users of modern methods. Government hospitals supply about one-fifth of users, followed closely by government health centres and government dispensaries. As expected, government sources supply a larger proportion of users of long-term methods, such as implants, injectables, and female sterilisation, compared with users of pills, IUDs, and especially male condoms. Nevertheless, almost half of all women who are sterilised obtained the procedure at a private source, especially a private hospital or clinic, or a mission facility. More than half of all condom users get their supplies from private, nonmedical sources, such as shops and friends.

Table 5.10 Source of contraception

Percent distribution of current users of modern contraceptive methods, by most recent source of method, according to specific method, Kenya 2003

Source	Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Total
<b>Public source</b>	53.9	48.5	48.9	61.5	61.2	16.1	53.4
Government hospital	48.6	10.8	33.7	14.2	39.8	8.5	20.1
Government health centre	4.3	17.0	7.9	24.8	18.0	6.7	17.6
Government dispensary	1.0	20.7	7.3	22.5	3.5	1.0	15.7
<b>Private medical</b>	45.3	45.5	50.5	37.7	38.8	25.9	40.5
Mission, church hospital/clinic	14.6	4.2	4.9	6.3	5.0	0.8	6.3
FPAK health centre/clinic	4.8	1.2	12.1	1.4	13.0	2.0	3.3
Private hospital/clinic	25.3	17.6	31.9	29.3	20.0	5.2	24.2
Pharmacy/chemist	0.0	21.9	0.0	0.5	0.0	17.9	6.3
Nursing/maternity home	0.7	0.6	1.6	0.2	0.8	0.0	0.4
<b>Other private</b>	0.0	2.2	0.0	0.0	0.0	56.2	4.6
Shop	0.0	0.7	0.0	0.0	0.0	39.9	3.1
Friend/relative	0.0	1.5	0.0	0.0	0.0	16.3	1.5
Mobile clinic	0.3	0.3	0.0	0.4	0.0	0.3	0.3
Community-based distributors	0.0	3.5	0.5	0.5	0.0	0.5	1.1
Other/missing	0.5	0.0	0.0	0.0	0.0	1.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	238	402	129	858	95	137	1,862

Note: Total includes two users of female condoms.

The contribution of public sources in the provision of family planning supply has continued to shrink, from 68 percent in 1993, to 58 percent in 1998, and to 53 percent in 2003, as private medical sources continue to expand from 25 percent in 1993, to 33 percent in 1998, and to 41 percent in 2003. The largest decline in the public sector is for government hospitals, which supplied 30 percent of contraceptive users in 1998 but only 20 percent in 2003.

## 5.11 INFORMED CHOICE

Current users of modern methods who are well informed about the side effects and problems associated with methods and know of a range of method options are better placed to make an informed choice about the method they would like to use. Current users of various modern contraceptive methods were asked whether at the time they were adopting the particular method, they were informed about side effects or problems that they might have with the method. Table 5.11 shows the percentage of current users of modern methods who were either informed about side effects or problems of the method used, informed of other methods they could use, and informed that sterilisation is a permanent method; these are broken down by method type, initial source, and various background characteristics.

Almost all women (92 percent) who were sterilised during the five-year period preceding the survey were informed that they would not be able to have any more children. Forty-seven percent of users of modern contraceptives were informed of other methods available and 45 percent were informed about the side effects or health problems of the method they were provided. The results indicate that users of implants are more likely than other users to be informed about side effects or problems (67 percent) and other methods available (69 percent). Less than half of all pill users and IUD users were informed of side effects or of other methods they might use.

Table 5.11 Informed choice

Among current users of modern contraceptive methods who adopted the current method in the five years preceding the survey, percentage who were informed about the side effects of the method used, percentage who were informed of other methods that could be used for contraception, and percentage of women who were sterilised in the five years preceding the survey who were informed that they would not be able to have any more children, by specific method, initial source of method, and background characteristics, Kenya 2003

Method/source/ background characteristic	Informed about side effects or problems of method used <sup>1</sup>	Informed of other methods that could be used <sup>2</sup>	Informed that sterilisation is permanent <sup>3</sup>
<b>Method</b>			
Female sterilisation	18.8	21.3	91.7
Pill	42.4	47.9	na
IUD	41.5	41.6	na
Injectables	52.0	51.6	na
Implants	67.1	68.5	na
<b>Initial source of method<sup>4</sup></b>			
Public source	61.6	62.2	(88.5)
Government hospital	68.2	70.6	(89.4)
Government health centre	59.4	59.1	*
Government dispensary	57.1	56.1	na
Private medical	57.4	58.1	(91.1)
Mission, church hospital/clinic	65.3	58.5	*
FPAK health centre/clinic	(77.4)	(90.9)	*
Private hospital/clinic	59.7	60.9	*
Pharmacy/chemist	32.2	31.8	na
Other private	(41.7)	(63.5)	na
<b>Residence</b>			
Urban	50.7	53.1	91.5
Rural	42.9	44.1	91.8
<b>Province</b>			
Nairobi	52.9	59.6	(96.9)
Central	38.2	36.2	92.5
Coast	54.0	55.0	*
Eastern	46.0	52.7	(88.1)
Nyanza	44.1	45.2	(89.9)
Rift Valley	45.3	39.6	(94.2)
Western	47.9	56.2	(93.3)
<b>Education</b>			
No education	22.6	21.4	(90.5)
Primary incomplete	40.6	38.5	92.4
Primary complete	44.7	45.9	89.0
Secondary+	51.0	55.4	93.9
<b>Wealth quintile</b>			
Lowest	46.3	49.1	*
Second	42.1	47.9	(90.3)
Middle	45.3	43.3	91.1
Fourth	37.1	40.6	91.0
Highest	52.5	52.8	92.8
Total	45.2	46.8	91.7

Note: Some categories (e.g., North Eastern Province) have been omitted because of small sample size. Numbers in parentheses indicate a figure based on 25-49 unweighted cases. An asterisk indicates a figure based on fewer than 25 unweighted cases that has been suppressed.

na = Not applicable

<sup>1</sup> Among users of female sterilisation, pill, IUD, injectables, and implants

<sup>2</sup> Among users of female sterilisation, pill, IUD, injectables, implants, and female condom

<sup>3</sup> Sterilised women who were told that they would not be able to have any more children

<sup>4</sup> Source at start of current episode of use

With regard to the source of supply, users who obtained their methods from pharmacies or chemists were less likely to be informed about side effects or problems associated with the method and about other methods that could be used. Users in urban areas were more likely to be informed about the side effects or problems associated with method used than those in rural areas. Current users of modern contraceptive methods in Coast Province and Nairobi were more likely to be informed of the side effects and problems associated with the method being used than users in other provinces. Provision of information about the effects or problems associated with the method used rose with the level of education.

## 5.12 CONTRACEPTIVE DISCONTINUATION

Couples can realise their reproductive goals only when they use contraceptive methods continuously. A prominent concern for managers of family planning programmes is the discontinuation of methods. In the 2003 KDHS “calendar” section, all segments of contraceptive use between January 1998 and the date of interview were recorded, along with reasons for any discontinuation. One-year contraceptive discontinuation rates based on the calendar data are presented in Table 5.12.<sup>2</sup>

Table 5.12 First-year contraceptive discontinuation rates					
Percentage of contraceptive users who discontinued use of a method within 12 months after beginning its use, by reason for discontinuation and specific method, Kenya 2003					
Method	Reason for discontinuation				Total
	Method failure	Desire to become pregnant	Switched to another method <sup>1</sup>	Other reason	
Pill	4.0	4.7	12.8	24.6	46.2
Injectables	1.0	3.9	7.3	19.6	31.8
Male condom	3.7	6.1	9.1	40.4	59.4
Periodic abstinence	15.4	6.1	3.2	8.7	33.3
All methods	5.5	5.0	7.7	19.4	37.6

Note: Table is based on episodes of contraceptive use that began 3 to 59 months prior to the survey.  
<sup>1</sup> Used a different method in the month following discontinuation or said they wanted a more effective method and started another method within two months of discontinuation

The data show that more than one-third (38 percent) of family planning users in Kenya discontinue using the method within 12 months of starting its use. Six percent of users stop using as a result of method failure (i.e., unintended pregnancy), while 5 percent discontinue because of a desire to become pregnant, and 8 percent switch to another method. Discontinuation rates are highest for condom users (59 percent) and pill users (46 percent) and lowest for users of injectables (32 percent). Pill users are the most likely to switch to another method, while method failure is highest for periodic abstinence users.

There has been an apparent increase in contraceptive discontinuation rates over the previous five years, from 33 percent of users in 1998 to 38 percent in 2003. This seems to be due to higher discontinuation rates for the pill and injectables, while rates for condoms and periodic abstinence have remained stable.

<sup>2</sup> The discontinuation rates presented here include only those segments of contraceptive use that *began* since January 1998. The rates apply to the 3-63 month period prior to the survey; exposure during the month of interview and the two months prior are excluded to avoid the biases that may be introduced by unrecognised pregnancies. These cumulative discontinuation rates represent the proportion of users discontinuing a method within 12 months after the start of use. The rates are calculated by dividing the number of women discontinuing a method by the number exposed at that duration. The single-month rates are then cumulated to produce a one-year rate. In calculating the rate, the various reasons for discontinuation are treated as competing risks.

Table 5.13 also presents reasons for discontinuation, but from a different perspective. All of the 3,041 contraceptive discontinuations occurring in the five years preceding the survey, regardless of duration of use, are distributed by the main reason for discontinuation, according to method. Side effects of the method is the most prominent reason for discontinuation (25 percent), followed closely by the desire to become pregnant (23 percent). This is a reverse of what was shown in the 1998 KDHS, where 27 percent of clients discontinued because of the desire to become pregnant, followed by 20 percent who discontinued because of side effects. Injectables, pills, the IUD, and implants are the methods that contribute most to discontinuation because of side effects.

**Table 5.13 Reasons for discontinuation**

Percent distribution of discontinuations of contraceptive methods in the five years preceding the survey, by main reason for discontinuation, according to specific method, Kenya 2003

Source	Pill	IUD	Injectables	Implants	Con-dom	Periodic abstinence	Withdrawal	Other	All methods
Became pregnant while using	9.9	6.7	4.0	(0.0)	9.7	44.2	33.5	20.1	15.7
Wanted to become pregnant	21.6	24.5	23.9	(27.9)	13.6	27.9	27.2	25.6	23.3
Husband disapproved	2.7	3.0	3.7	(1.9)	10.8	1.6	6.3	0.0	3.5
Side effects	35.7	32.3	41.7	(32.0)	1.0	0.0	0.0	5.6	25.4
Health concerns	4.0	9.3	4.9	(6.9)	0.1	0.1	0.0	0.2	3.2
Access/availability	2.9	0.0	2.0	(7.6)	2.3	0.0	0.0	1.7	1.8
Wanted a more effective method	4.6	2.9	1.2	(0.0)	7.4	5.2	4.7	10.4	3.9
Inconvenient to use	4.9	3.7	0.3	(3.2)	9.9	2.9	4.8	0.0	3.3
Infrequent sex/husband away	5.0	4.5	5.4	(2.7)	27.8	5.5	11.9	9.1	7.5
Cost too much	0.6	0.0	2.3	(0.0)	1.0	0.0	0.0	0.0	1.0
Difficult to get pregnant/ menopausal	0.0	1.6	0.5	(0.0)	0.0	0.5	0.0	4.0	0.4
Marital dissolution/separation	0.9	0.6	0.6	(0.0)	0.5	0.6	0.0	2.1	0.7
Other	5.1	10.1	6.2	(17.8)	8.6	2.4	2.9	10.7	5.6
Don't know	0.2	0.0	0.5	(0.0)	0.3	0.4	0.0	0.0	0.3
Missing	2.0	0.8	2.7	(0.0)	7.0	8.8	8.6	10.5	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of discontinuations	928	101	937	36	273	626	73	64	3,041

Note: Total includes two discontinuations of female condom use which are not shown separately. Figures in parentheses are based on 25-49 unweighted cases.

## 5.13 FUTURE USE OF CONTRACEPTION

An important indicator of the changing demand for family planning is the extent to which non-users of contraception plan to use family planning in the future. Women who were not currently using a method of contraception were asked about their intention to use family planning in the future. The results are presented in Table 5.14.

Fifty-eight percent of currently married nonusers say that they intend to use family planning in future, 38 percent do not intend to use, and 4 percent are unsure. The proportion of those intending to use varies with the number of living children, increasing from 45 percent for those with no child to a peak for those with two children (70 percent). Those who do not intend to use contraception in the future are concentrated among those with no child and those with four or more children.

There has been a slight decline in the proportion of nonusers who say that they intend to use in the future, from 63 percent in 1998 to 61 percent in 2003 (excluding the northern areas).

**Table 5.14 Future use of contraception**

Percent distribution of currently married women who are not using a contraceptive method by intention to use in the future, according to number of living children, Kenya 2003

Intention	Number of living children <sup>1</sup>					Total
	0	1	2	3	4+	
Intends to use	45.4	61.5	70.2	62.8	51.1	57.8
Unsure	6.3	3.4	3.9	3.5	3.7	3.9
Does not intend to use	47.7	35.0	25.7	33.4	44.4	37.9
Missing	0.7	0.1	0.3	0.3	0.8	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	212	507	534	490	1,242	2,985

<sup>1</sup> Includes current pregnancy

## 5.14 REASONS FOR NOT INTENDING TO USE

Table 5.15 presents the main reasons for not using contraception as reported by currently married nonusers who do not intend to use a contraceptive method in future. Fertility-related reasons (40 percent), opposition to use (31 percent), and method-related reasons (24 percent) were mainly cited. The most common single reasons for not intending to use are religious prohibitions (15 percent), a desire for more children (14 percent), and fear of side effects (13 percent).

Among women under age 30, the most frequently cited reasons for not using contraception were opposition to use (43 percent)—either due to religious prohibition or by the respondent herself—and method-related reasons (29 percent), mainly fear of side effects. The most important reasons among nonusers 30 years and above were fertility-related (51 percent) because of subfecundity and infecundity.

## 5.15 PREFERRED METHOD FOR FUTURE USE

Demand for specific methods can be assessed by asking nonusers which method they intend to use in the future. Table 5.16 presents information on method preferences for married women who are not using contraception but say they intend to use in the future. The largest percentage of prospective users reported injectables as their preferred method (47 percent), with 13 percent citing pills, and 8 percent favouring female sterilisation. Method preference among women under 30 and those over 30 years is similar, except that older women are more likely than younger women to prefer female sterilisation.

**Table 5.15 Reason for not intending to use contraception**

Percent distribution of currently married women who are not using a contraceptive method and who do not intend to use in the future by main reason for not intending to use, according to age, Kenya 2003

Reason	Age		Total
	15-29	30-49	
<b>Fertility-related</b>	21.7	51.4	40.3
Infrequent sex	2.8	6.5	5.1
Menopausal, hysterectomy	0.0	14.2	8.9
Subfecund, infecund	2.4	18.4	12.4
Wants more children	16.5	12.3	13.9
<b>Opposition to use</b>	42.8	23.9	30.9
Respondent opposed	13.4	8.6	10.4
Husband opposed	9.0	2.6	5.0
Others opposed	0.9	0.1	0.4
Religious prohibition	19.5	12.5	15.1
<b>Lack of knowledge</b>	3.3	1.8	2.4
Knows no method	2.8	1.6	2.0
Knows no source	0.5	0.2	0.3
<b>Method-related</b>	28.6	20.7	23.6
Health concerns	6.9	9.7	8.6
Fear of side effects	19.6	9.8	13.4
Lack of access	0.6	0.0	0.2
Inconvenient to use	0.0	0.4	0.3
Interfere with body	1.5	0.9	1.1
Other	0.0	0.5	0.3
Don't know	3.2	1.6	2.2
Missing	0.4	0.0	0.1
Total	100.0	100.0	100.0
Number of women	421	709	1,130



**Table 5.16 Preferred method of contraception for future use**

Percent distribution of currently married women who are not using a contraceptive method but who intend to use in the future by preferred method, according to age, Kenya 2003

Method	Age		Total
	15-29	30-49	
Female sterilisation	3.9	15.2	7.9
Male sterilisation	0.1	0.5	0.2
Pill	13.8	11.7	13.0
IUD	1.1	1.8	1.4
Injectables	50.4	39.8	46.6
Implants	7.4	7.0	7.2
Condom	1.0	1.8	1.3
Female condom	0.1	0.4	0.2
Periodic abstinence	4.7	5.8	5.1
Withdrawal	0.2	0.2	0.2
Other	0.2	0.7	0.4
Unsure	16.3	13.6	15.3
Missing	0.9	1.6	1.2
Total	100.0	100.0	100.0
Number of women	1,106	620	1,725

## 5.16 EXPOSURE TO FAMILY PLANNING MESSAGES

Information on the level of public exposure to a particular type of media allows policymakers to use the most effective media for various target groups in the population. To assess the effectiveness of such media on the dissemination of family planning information, the 2003 KDHS asked all female respondents whether they had heard about condoms on the radio or television, or read about them in a newspaper or magazine in the few months preceding the interview. Women were also asked whether they considered it acceptable or unacceptable for condoms to be advertised through these same three media. On the other hand, men were asked whether they had heard about family planning on the radio or television, or read about it in a newspaper or magazine during the few months preceding the interview. Men were also asked the same question about acceptability of condom advertising.

Table 5.17 shows that only one in four women has not been exposed to a condom message through the media. Most women (73 percent) hear about condoms through the radio, 37 percent hear messages on the television, and 35 percent see messages in print.

There is a sharp contrast in exposure to condom messages through television and the print media between urban and rural areas; 65 percent of urban women are exposed to condom messages through television, compared with only 28 percent of rural women. Variation by province in exposure of women to condom messages through the media is not large, except that in Nairobi, exposure is highest, while in North Eastern Province, exposure is minimal. Exposure to condom messages through the media rises with the level of education and with the wealth index.

**Table 5.17 Exposure to condom messages**

Percentage of women who heard or saw a condom message on the radio or television, or in a newspaper/magazine in the past few months, according to background characteristics, Kenya 2003

Background characteristic	Radio	Television	Newspaper/ magazine	None of these three media sources	Number of women
<b>Age</b>					
15-19	66.4	33.8	34.0	30.5	1,856
20-24	79.0	44.0	42.3	18.7	1,691
25-29	76.9	38.5	36.3	21.0	1,382
30-34	75.2	37.8	38.5	22.4	1,086
35-39	73.3	34.6	30.8	25.5	871
40-44	66.0	32.2	27.7	31.4	788
45-49	66.0	28.3	22.8	31.4	521
<b>Residence</b>					
Urban	81.5	64.6	55.5	14.9	2,056
Rural	69.6	27.5	28.2	28.4	6,139
<b>Province</b>					
Nairobi	84.6	75.7	65.1	11.2	835
Central	77.4	47.9	44.3	19.3	1,181
Coast	67.7	33.5	30.7	30.1	667
Eastern	68.1	32.7	34.4	29.7	1,325
Nyanza	76.3	27.1	32.6	21.8	1,222
Rift Valley	68.2	35.3	30.9	29.2	1,872
Western	82.1	18.2	18.2	17.1	927
North Eastern	4.1	1.4	1.2	95.9	168
<b>Education</b>					
No education	39.9	11.8	6.9	59.6	1,039
Primary incomplete	69.0	22.9	19.7	29.3	2,685
Primary complete	78.4	37.3	35.4	19.6	2,069
Secondary+	85.8	62.8	64.1	9.9	2,403
<b>Wealth quintile</b>					
Lowest	52.3	9.2	10.4	47.1	1,364
Second	68.4	14.6	20.0	30.5	1,475
Middle	71.7	25.5	27.8	25.8	1,503
Fourth	78.5	44.9	41.0	18.4	1,711
Highest	84.4	71.2	61.5	11.8	2,141
Total	72.6	36.8	35.1	25.0	8,195

Overall, two in three women interviewed reported that it was acceptable to use electronic and print media to air messages about condoms (Table 5.18). All three media are equally acceptable as vehicles for advertising condoms.

Urban women are more likely than rural women to view dissemination of condom messages in the media as acceptable. Other variations in the acceptability of condom messages in the print and electronic media are not large, except for women in North Eastern Province and those with no education; both of these groups are less likely to consider as acceptable the use of print and electronic media to spread condom messages.

**Table 5.18 Acceptability of media messages about condoms**

Percentage of women who believe that media messages about condoms are acceptable on the radio or television, or in a newspaper/magazine, according to background characteristics, Kenya 2003

Background characteristic	Radio	Television	Newspaper/ magazine	None of these three media sources	Number of women
<b>Age</b>					
15-19	58.2	55.2	56.5	40.8	1,856
20-24	72.4	69.5	71.6	26.3	1,691
25-29	73.5	69.2	72.1	25.3	1,382
30-34	70.9	67.7	69.8	27.7	1,086
35-39	69.6	65.9	68.9	28.6	871
40-44	62.3	58.2	61.5	36.6	788
45-49	59.5	55.4	57.7	39.4	521
<b>Residence</b>					
Urban	72.8	70.2	72.9	25.7	2,056
Rural	65.2	61.4	63.5	33.7	6,139
<b>Province</b>					
Nairobi	75.2	73.1	75.6	23.3	835
Central	58.1	55.8	58.6	40.4	1,181
Coast	65.8	62.6	64.5	33.0	667
Eastern	65.3	62.5	64.2	34.1	1,325
Nyanza	78.0	73.8	75.2	21.2	1,222
Rift Valley	65.7	61.5	65.1	32.5	1,872
Western	74.6	68.6	70.2	24.2	927
North Eastern	4.8	4.2	4.3	95.2	168
<b>Education</b>					
No education	41.6	37.8	38.2	58.0	1,039
Primary incomplete	67.2	63.6	65.0	31.7	2,685
Primary complete	73.2	69.9	71.9	25.9	2,069
Secondary+	72.8	69.3	73.6	25.2	2,403
<b>Wealth quintile</b>					
Lowest	57.7	53.6	54.8	41.6	1,364
Second	67.2	63.4	65.1	31.9	1,475
Middle	64.7	60.9	63.1	33.7	1,503
Fourth	67.8	64.3	67.4	31.0	1,711
Highest	74.1	71.4	74.3	24.3	2,141
Total	67.1	63.6	65.9	31.7	8,195

Table 5.19 shows that only 29 percent of men have not been exposed to a family planning message through the media in the few months before the survey. Two-thirds of men are exposed to family planning messages through the radio, 37 percent have seen a message on television, and 43 percent saw a message in the newspaper or in a magazine. Differentials in exposure to family planning messages among men mirror those in exposure to messages about condoms among women.

**Table 5.19 Exposure of men to family planning messages**

Percentage of men who heard or saw a family planning message on the radio or television, or in a newspaper/magazine in the past few months, according to background characteristics, Kenya 2003

Background characteristic	Radio	Television	Newspaper/ magazine	None of these three media sources	Number of men
<b>Age</b>					
15-19	47.6	20.7	25.4	48.5	856
20-24	67.8	39.8	46.9	25.5	681
25-29	73.1	44.7	50.2	22.4	509
30-34	78.6	44.5	49.6	18.6	415
35-39	76.9	48.1	53.5	19.7	396
40-44	73.1	44.8	49.7	23.8	310
45-49	72.8	34.8	42.6	25.6	196
50-54	67.3	36.1	43.7	29.0	215
<b>Residence</b>					
Urban	70.9	52.8	60.2	20.8	907
Rural	65.3	32.1	37.3	32.0	2,671
<b>Province</b>					
Nairobi	63.9	50.8	60.6	23.1	397
Central	61.1	42.7	50.1	33.8	554
Coast	60.2	36.2	40.9	37.4	252
Eastern	65.5	37.4	35.8	33.5	588
Nyanza	71.5	36.0	49.3	24.1	481
Rift Valley	70.4	33.0	37.1	26.4	846
Western	78.7	33.3	39.3	19.6	396
North Eastern	9.8	3.5	5.0	90.0	65
<b>Education</b>					
No education	34.6	9.2	5.5	64.5	228
Primary incomplete	60.4	24.3	23.5	38.5	1,210
Primary complete	70.3	35.9	43.4	25.8	820
Secondary+	75.7	55.0	67.2	16.6	1,320
<b>Wealth quintile</b>					
Lowest	52.2	16.1	20.5	46.1	548
Second	66.8	30.0	35.6	31.2	609
Middle	68.8	34.1	40.5	28.8	648
Fourth	70.2	41.0	46.7	26.4	794
Highest	70.5	53.0	59.1	21.0	979
Total	66.7	37.3	43.1	29.2	3,578

## 5.17 CONTACT OF NONUSERS WITH FAMILY PLANNING PROVIDERS

In the 2003 KDHS, women who were not using any family planning method were asked whether they had been visited by a fieldworker who talked with them about family planning in the 12 months preceding the survey. This information is especially useful for determining whether nonusers of family planning are being reached by family planning programmes throughout Kenya.

The results show that only a small proportion (4 percent) of nonusers are being reached by fieldworkers to discuss family planning issues (data not shown).

## 5.18 DISCUSSION OF FAMILY PLANNING BETWEEN COUPLES

Use of family planning methods is facilitated when husbands and wives discuss the issue and air their views. To assess the extent to which couples discuss family planning, the 2003 KDHS asked married women how often they had talked with their husbands/partners about family planning in the year preceding the survey. Table 5.20 shows the number of times currently married women who know about contraception reported having discussed family planning with their husbands in the 12 months before the survey.

Thirty-six percent of women have not discussed family planning with their husbands at any time in the previous year, 37 percent have discussed it one or two times, and 27 percent have discussed the issue three or more times during the last 12 months.

Table 5.20 Discussion of family planning with husband

Percent distribution of currently married women who know a contraceptive method by the number of times they discussed family planning with their husband in the past year, according to current age, Kenya 2003

Age	Number of times family planning discussed with husband				Total	Number of women
	Never	One or two	Three or more	Missing		
15-19	38.1	42.9	19.0	0.0	100.0	310
20-24	30.4	40.2	29.3	0.1	100.0	929
25-29	26.2	40.6	33.0	0.1	100.0	999
30-34	32.1	36.8	30.5	0.5	100.0	840
35-39	40.7	32.1	27.1	0.1	100.0	662
40-44	46.3	32.5	20.1	1.2	100.0	585
45-49	58.1	26.6	14.6	0.7	100.0	372
Total	36.0	36.7	27.0	0.4	100.0	4,696

## 5.19 ATTITUDES OF RESPONDENTS TOWARDS FAMILY PLANNING

Use of effective contraceptive methods is facilitated when couples have a positive attitude towards family planning. Widespread disapproval of contraception can act as a barrier to the adoption of family planning methods. Attitudinal data were collected by asking women whether they approved of couples using family planning and what they perceived as their husband's attitude towards family planning. Men were also asked whether they approved of family planning.

The results presented in Table 5.21 are confined to currently married women and exclude those who have never heard of a contraceptive method. Overall, 85 percent of married women approve of family planning, with 62 percent of women saying that their husbands also approve of family planning. Thirteen percent of women disapprove of family planning. Approval of family planning is particularly low among women in North Eastern Province (only 7 percent approve). Better educated and wealthier women are more likely to approve of family planning than less educated and poorer women.

Table 5.21 Attitudes towards family planning: married women

Percent distribution of currently married women who know of a method of family planning, by approval of family planning and their perception of their husband's attitude towards family planning, according to background characteristics, Kenya 2003

Background characteristic	Respondent approves of family planning			Respondent disapproves of family planning			Woman unsure <sup>1</sup>	Total	Number of women
	Husband approves	Husband disapproves	Husband's attitude unknown, missing	Husband approves	Husband disapproves	Husband's attitude unknown, missing			
<b>Age</b>									
15-19	46.5	17.8	8.8	1.1	14.8	4.8	6.3	100.0	310
20-24	59.2	17.6	9.1	1.4	8.5	2.8	1.3	100.0	929
25-29	66.1	17.1	6.1	1.0	6.5	1.8	1.3	100.0	999
30-34	65.8	13.6	6.8	0.7	9.3	1.3	2.4	100.0	840
35-39	63.6	14.7	9.0	1.3	6.1	2.8	2.4	100.0	662
40-44	62.8	12.7	8.3	2.2	9.4	2.0	2.7	100.0	585
45-49	55.6	12.8	9.9	1.4	13.1	3.2	4.0	100.0	372
<b>Residence</b>									
Urban	67.4	16.3	5.0	1.0	6.6	2.3	1.3	100.0	1,075
Rural	60.1	15.1	8.9	1.3	9.4	2.4	2.7	100.0	3,621
<b>Province</b>									
Nairobi	73.3	13.5	3.9	0.8	5.8	1.6	1.0	100.0	415
Central	78.0	10.8	3.9	1.7	3.5	0.7	1.5	100.0	656
Coast	43.4	19.9	8.2	1.1	15.5	5.3	6.6	100.0	397
Eastern	67.0	10.0	7.9	1.7	9.4	2.3	1.7	100.0	777
Nyanza	50.3	21.1	15.2	0.8	8.0	2.1	2.5	100.0	774
Rift Valley	60.8	14.7	8.0	1.5	9.8	2.2	3.1	100.0	1,094
Western	61.1	20.6	6.1	0.8	9.0	1.6	0.8	100.0	555
North Eastern	2.3	3.5	0.9	0.0	46.0	46.3	1.0	100.0	28
<b>Education</b>									
No education	33.6	14.9	11.6	0.6	23.2	9.6	6.5	100.0	563
Primary incomplete	53.5	20.5	10.2	1.5	10.2	1.9	2.3	100.0	1,552
Primary complete	66.8	14.4	7.6	1.8	6.0	1.8	1.6	100.0	1,306
Secondary+	79.3	10.5	4.1	0.7	3.6	0.4	1.4	100.0	1,276
<b>Wealth quintile</b>									
Lowest	44.5	19.1	13.2	1.8	12.7	4.9	3.7	100.0	799
Second	55.4	17.3	8.9	1.4	11.4	3.4	2.3	100.0	915
Middle	60.5	16.5	8.9	1.5	8.3	1.8	2.6	100.0	895
Fourth	73.0	9.7	5.3	1.0	7.5	1.1	2.4	100.0	958
Highest	70.8	15.2	5.1	0.8	5.4	1.5	1.2	100.0	1,129
Total	61.8	15.4	8.0	1.3	8.8	2.4	2.4	100.0	4,696

<sup>1</sup> Includes missing

Table 5.22 shows the distribution of all men by attitudes towards family planning. Almost 80 per-cent of all men approve of family planning. Differentials in approval reflect the same patterns as among married women.

Table 5.22 Attitudes towards family planning: all men					
Percent distribution of men by their attitude towards family planning, according to background characteristics, Kenya 2003					
Background characteristic	Respondent approves of family planning	Respondent disapproves of family planning	Respondent unsure	Total	Number of men
<b>Age</b>					
15-19	65.5	22.7	11.8	100.0	856
20-24	80.6	16.7	2.7	100.0	681
25-29	84.5	14.1	1.4	100.0	509
30-34	87.7	10.5	1.8	100.0	415
35-39	86.8	12.6	0.6	100.0	396
40-44	85.7	12.7	1.7	100.0	310
45-49	80.0	16.3	3.7	100.0	196
50-54	79.0	20.4	0.6	100.0	215
<b>Marital status</b>					
Never married	73.1	19.2	7.7	100.0	1,611
Married, living together	84.9	13.7	1.3	100.0	1,817
Divorced/separated/widowed	79.0	19.6	1.6	100.0	149
<b>Residence</b>					
Urban	81.5	15.7	2.8	100.0	907
Rural	78.6	16.7	4.7	100.0	2,671
<b>Province</b>					
Nairobi	86.2	11.9	1.9	100.0	397
Central	74.7	21.8	3.6	100.0	554
Coast	77.1	19.1	3.8	100.0	252
Eastern	81.3	8.5	10.2	100.0	588
Nyanza	81.4	14.8	3.8	100.0	481
Rift Valley	81.5	16.0	2.5	100.0	846
Western	83.7	13.7	2.6	100.0	396
North Eastern	0.6	94.5	5.0	100.0	65
<b>Education</b>					
No education	43.9	49.7	6.4	100.0	228
Primary incomplete	71.9	19.5	8.6	100.0	1,210
Primary complete	83.8	14.4	1.8	100.0	820
Secondary+	89.6	9.2	1.3	100.0	1,320
<b>Wealth quintile</b>					
Lowest	65.3	28.0	6.7	100.0	548
Second	78.1	16.3	5.7	100.0	609
Middle	80.7	14.5	4.9	100.0	648
Fourth	82.7	14.2	3.1	100.0	794
Highest	84.5	13.1	2.3	100.0	979
Total	79.4	16.4	4.2	100.0	3,578

In addition to questions about general approval of family planning, men were also asked whether they agreed or disagreed with three statements about family planning use: 1) contraception is women's business and a man should not have to worry about it; 2) women who use contraception may become promiscuous; and 3) a woman is the one who gets pregnant so she should be the one to get sterilised. Results are shown in Table 5.23.

The data show that only one in four men believe that contraception is women's business only, while almost half believe that women who use family planning may become promiscuous. Forty-four percent of men believe that women should be the ones to get sterilised, since they are the ones who get pregnant. Differences by background characteristics are not large. However, men in Nairobi and men with more education are less likely to express sexist views about family planning use, being less likely to believe that women should bear the burden of dealing with contraception.

**Table 5.23 Men's attitudes towards contraception**

Percentage of men who agree with statements about contraceptive use, by background characteristics, Kenya 2003

Background characteristic	Woman's business	Woman may become promiscuous	Woman is the one who becomes pregnant	Number of men
<b>Age</b>				
15-19	25.5	45.9	42.4	856
20-24	22.4	51.9	43.3	681
25-29	23.7	47.3	42.1	509
30-34	21.6	43.7	39.5	415
35-39	19.5	47.3	42.3	396
40-44	28.7	50.0	49.8	310
45-49	25.7	42.7	49.8	196
50-54	25.2	47.6	48.0	215
<b>Marital status</b>				
Never married	23.3	49.1	41.8	1,611
Married, living together	23.9	45.1	44.8	1,817
Divorced/separated/ widowed	28.2	57.2	47.2	149
<b>Residence</b>				
Urban	21.5	48.1	34.2	907
Rural	24.6	47.2	46.7	2,671
<b>Province</b>				
Nairobi	16.8	42.5	29.9	397
Central	17.6	59.9	47.0	554
Coast	40.7	63.5	49.7	252
Eastern	26.6	36.5	46.6	588
Nyanza	30.3	39.9	51.2	481
Rift Valley	22.2	49.3	48.0	846
Western	20.0	45.4	27.6	396
North Eastern	25.7	52.2	28.8	65
<b>Education</b>				
No education	37.8	58.2	49.4	228
Primary incomplete	34.7	50.7	53.5	1,210
Primary complete	25.6	54.1	50.2	820
Secondary+	10.3	38.5	29.3	1,320
<b>Wealth quintile</b>				
Lowest	32.5	49.2	53.5	548
Second	24.9	50.4	47.1	609
Middle	26.6	48.6	46.3	648
Fourth	21.5	46.2	44.5	794
Highest	18.4	44.8	33.1	979
Total	23.8	47.4	43.5	3,578



## OTHER PROXIMATE DETERMINANTS OF FERTILITY

*Alfred Agwanda*

### 6.1 INTRODUCTION

Research on fertility demonstrates that fertility levels in most populations can be explained by five key proximate determinants that define the risk of becoming pregnant. These are marriage, sexual intercourse, postpartum amenorrhoea and abstinence from sexual relations, onset of menopause, and contraceptive use. This chapter addresses all of these determinants except contraception (see Chapter 5).

Marriage is a principal indicator of women's exposure to risk of pregnancy. Early age at marriage in a population is usually associated with a longer period of exposure to the risk of pregnancy and higher fertility levels. The early initiation of childbearing associated with early marriage may also adversely affect women and children's health. The durations of postpartum amenorrhoea and postpartum abstinence that affect the length of time a woman is insusceptible to pregnancy determine the interval between births. The onset of menopause marks the end of a woman's reproductive life cycle. These factors taken together determine the length and pace of reproduction, hence they are important in understanding fertility levels and differences.

### 6.2 MARITAL STATUS

The distribution of women and men by marital status at the time of survey is presented in Table 6.1. The categories "married" and "living together" when combined are referred to as "currently married," while those who are divorced, separated, or widowed are referred to as "formerly married." The currently married and the formerly married combined gives the proportion ever married.

Thirty percent of women of childbearing age have never been married; 60 percent are either married or living together with a man; and the remaining 10 percent are either divorced, separated, or widowed. The low proportion (3 percent) of women age 45-49 who have never been married indicates that marriage is still nearly universal in Kenya. Divorce and separation (6 percent) are uncommon in Kenya. These patterns have not changed since the 1993 KDHS.

Forty-five percent of the men interviewed have never been married; half of the men are currently married; and only 4 percent are separated, divorced, or widowed. Compared with women, a greater proportion of men have never been married (15 percentage points more), while a smaller proportion are formerly married.

Although women enter into marriage earlier than men, by age 35 a higher proportion of men have ever been in a marital union, compared with women. Women are also more likely than men to report living together (informal union). Compared with the 1993 KDHS and the 1998 KDHS, the proportion currently married among women has declined and the proportion living together has increased slightly.

**Table 6.1 Current marital status**

Percent distribution of women and men by current marital status, according to age, Kenya 2003

Age	Marital status						Total	Number of women/ men
	Never married	Married	Living together	Divorced	Separated	Widowed		
WOMEN								
15-19	79.7	13.9	4.0	0.3	1.9	0.2	100.0	1,856
20-24	36.2	49.4	7.6	1.0	4.7	1.1	100.0	1,691
25-29	14.8	68.9	7.6	1.7	5.1	1.9	100.0	1,382
30-34	5.9	73.9	6.5	2.5	5.3	5.9	100.0	1,086
35-39	4.1	75.9	3.4	2.7	6.4	7.5	100.0	871
40-44	3.8	73.2	4.6	2.7	5.0	10.7	100.0	788
45-49	3.3	72.1	2.4	1.8	4.2	16.1	100.0	521
Total	29.8	54.5	5.6	1.6	4.4	4.2	100.0	8,195
MEN								
15-19	98.1	1.3	0.0	0.2	0.5	0.0	100.0	856
20-24	79.2	17.1	1.3	0.6	1.8	0.0	100.0	681
25-29	32.1	61.9	0.3	3.5	2.2	0.0	100.0	509
30-34	12.0	79.3	1.9	1.4	4.8	0.6	100.0	415
35-39	2.8	89.3	1.3	1.4	3.5	1.7	100.0	396
40-44	1.9	88.6	2.4	2.5	2.7	1.8	100.0	310
45-49	0.7	94.3	0.0	0.4	0.8	3.9	100.0	196
50-54	0.1	93.8	0.3	2.3	2.9	0.6	100.0	215
Total	45.0	49.9	0.9	1.3	2.2	0.7	100.0	3,578

### 6.3 POLYGYNY

The extent of polygyny was measured by asking married women respondents the question, “Does your husband/partner have any other wives besides yourself?” For currently married men, the question was, “Do you have one wife or more than one wife?” If more than one, he was asked, “How many wives do you have?” Table 6.2 shows the distribution of the respondents by the number of co-wives for women and the number of wives for men, according to background characteristics.

Sixteen percent of currently married women live in polygynous unions (having one or more co-wives). Older women are more likely to be in polygynous unions. Polygyny is more prevalent in rural than in urban areas (Figure 6.1). The regional distribution shows substantial variation, with North Eastern Province having the highest proportion of women in polygynous marriages (34 percent) and Central Province the lowest (3 percent). Nyanza, Rift Valley, Western, and Coast provinces all have proportions ranging between 20 and 23 percent. Women with no or low education and those who are poor are more likely to live in polygynous marriages.

Table 6.2 Polygyny

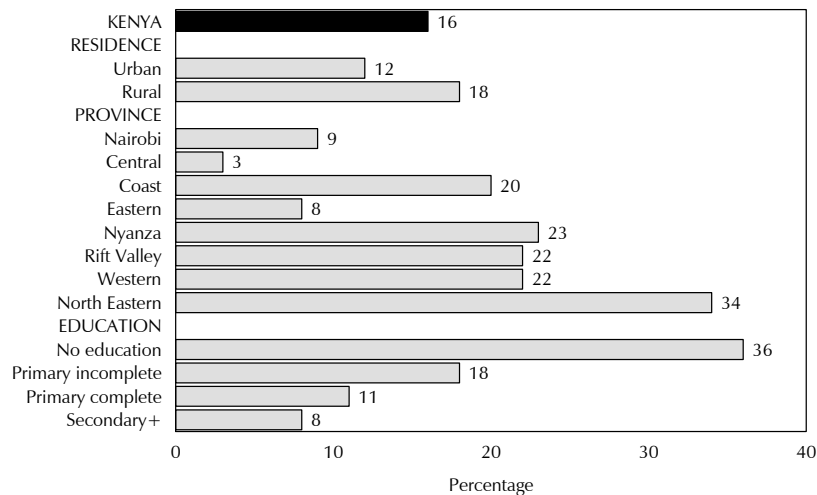
Percent distribution of currently married women by number of co-wives, and percent distribution of currently married men by number of wives, according to background characteristics, Kenya 2003

Background characteristic	Women						Men			
	Number of co-wives				Total	Number of women	Number of wives		Total	Number of men
	0	1	2+	Missing			1	2+		
<b>Age</b>										
15-19	90.2	6.8	1.3	1.7	100.0	333	*	*	100.0	11
20-24	88.2	7.8	1.8	2.2	100.0	965	98.3	1.7	100.0	125
25-29	83.8	10.5	3.4	2.3	100.0	1,056	97.0	3.0	100.0	316
30-34	80.1	13.0	4.5	2.4	100.0	873	93.4	6.6	100.0	337
35-39	75.3	15.4	6.4	2.8	100.0	691	89.8	10.2	100.0	359
40-44	74.9	17.2	5.9	2.0	100.0	614	86.3	13.7	100.0	282
45-49	71.9	17.3	7.7	3.2	100.0	388	78.4	21.6	100.0	185
50-54	na	na	na	na	na	na	85.8	14.2	100.0	203
<b>Residence</b>										
Urban	84.4	9.5	2.2	3.8	100.0	1,091	92.4	7.6	100.0	483
Rural	80.3	13.0	4.8	1.9	100.0	3,828	89.4	10.6	100.0	1,335
<b>Province</b>										
Nairobi	86.4	7.0	1.5	5.1	100.0	418	94.8	5.2	100.0	214
Central	93.5	3.0	0.3	3.2	100.0	656	97.6	2.4	100.0	254
Coast	77.7	14.8	5.6	1.9	100.0	418	89.8	10.2	100.0	138
Eastern	90.9	6.2	1.5	1.4	100.0	783	95.3	4.7	100.0	267
Nyanza	76.0	15.2	7.3	1.4	100.0	775	84.0	16.0	100.0	267
Rift Valley	74.6	17.3	5.0	3.1	100.0	1,186	86.2	13.8	100.0	454
Western	76.5	16.9	5.4	1.2	100.0	559	88.5	11.5	100.0	182
North Eastern	65.6	19.6	14.5	0.3	100.0	125	80.2	19.8	100.0	42
<b>Education</b>										
No education	63.0	24.6	11.6	0.8	100.0	762	70.5	29.5	100.0	154
Primary incomplete	79.7	13.6	4.6	2.1	100.0	1,569	89.2	10.8	100.0	477
Primary complete	86.1	9.0	1.9	2.9	100.0	1,312	91.9	8.1	100.0	477
Secondary+	88.8	6.4	1.6	3.1	100.0	1,276	94.0	6.0	100.0	710
<b>Wealth quintile</b>										
Lowest	72.5	19.7	6.3	1.5	100.0	947	80.5	19.5	100.0	312
Second	79.5	12.2	6.2	2.1	100.0	954	88.6	11.4	100.0	283
Middle	83.6	10.9	3.8	1.7	100.0	915	91.3	8.7	100.0	312
Fourth	84.0	10.7	2.9	2.4	100.0	965	92.8	7.2	100.0	380
Highest	85.6	8.4	2.2	3.9	100.0	1,139	94.2	5.8	100.0	532
Total	81.2	12.2	4.2	2.4	100.0	4,919	90.2	9.8	100.0	1,818

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

na = Not applicable

**Figure 6.1 Percentage of Currently Married Women Whose Husbands Have at Least One Other Wife**



KDHS 2003

Data for currently married men show that 10 percent of men report having more than one wife. The pattern for men remains the same as that of women, reflecting similar regional and socioeconomic status differences. Although the 1993 KDHS indicated that polygyny declined in the early 1990s, the 2003 data reflect little change from the observed prevalence in 1998.

#### 6.4 AGE AT FIRST MARRIAGE

Marriage in most African societies defines the onset of the socially acceptable time for childbearing. Women who marry early will have, on average, a longer period of exposure to pregnancy, often leading to a higher number of children ever born. Table 6.3 shows the percentage of women and men who have married by specific ages, according to current age group.

The proportion of women marrying by age 15 appears to have declined over time. More than half of all women enter marriage before their 20th birthday. Among women age 25-49, the median age at first marriage is 19.7 years (19.8 excluding the northern areas), indicating a slight increase when compared with the median of 19.2 from the 1998 KDHS. This corroborates the observations across the age cohorts in Table 6.3, which show the median age at marriage increasing over time. The median age rises from 18.9 years among women age 45-49 to 20.3 among those age 25-29.

The lower panel of Table 6.3 shows the distribution among men. Only 11 percent of men marry before their 20th birthday, and about half marry before age 25. The median age at marriage among men age 30 and above is 25.1 years, only a slight increase from the 24.8 years derived for men age 25-54 from the 1998 KDHS. Unlike for women, the median age at first marriage for men is almost constant across the age cohorts, reflecting stability over time.

Table 6.3 Age at first marriage

Percentage of women age 15-49 and men age 15-54 who were first married by specific exact ages and median age at first marriage, according to current age, Kenya 2003

Current age	Percentage first married by exact age					Percentage never married	Number	Median age at first marriage
	15	18	20	22	25			
WOMEN								
15-19	3.5	na	na	na	na	79.7	1,856	a
20-24	3.8	24.6	45.2	na	na	36.2	1,691	a
25-29	6.2	28.0	48.0	65.0	80.7	14.8	1,382	20.3
30-34	8.8	32.1	52.6	66.5	81.3	5.9	1,086	19.8
35-39	9.2	30.9	54.6	69.0	84.4	4.1	871	19.6
40-44	10.6	37.2	58.4	74.0	85.8	3.8	788	19.1
45-49	12.6	42.1	60.1	76.2	87.0	3.3	521	18.9
20-49	7.5	30.5	51.2	na	na	15.2	6,339	19.9
25-49	8.8	32.6	53.4	68.9	83.1	7.6	4,648	19.7
MEN								
15-19	0.0	na	na	na	na	98.1	856	a
20-24	0.0	2.5	5.9	na	na	79.2	681	a
25-29	0.1	2.8	8.9	24.2	48.5	32.1	509	a
30-34	0.0	3.9	11.6	22.9	42.1	12.0	415	25.6
35-39	0.0	4.8	9.0	21.0	47.7	2.8	396	25.2
40-44	0.0	4.2	12.5	27.7	55.5	1.9	310	24.3
45-49	0.0	4.5	11.6	28.8	54.0	0.7	196	24.7
50-54	1.0	4.5	11.8	24.7	48.8	0.1	215	25.1
25-54	0.1	4.0	10.6	na	na	11.4	2,041	a
30-54	0.1	4.4	11.1	24.4	48.7	4.5	1,532	25.1

na = Not applicable

a = Omitted because less than 50 percent of the women/men married for the first time before reaching the beginning of the age group

Table 6.4 further examines the median age at first marriage for women age 20-49, by background characteristics. Urban women tend to marry two years later than their rural counterparts; the difference is larger among the younger age cohorts. The variation by provinces is even larger. Women from North Eastern, Nyanza, and Coast provinces generally enter into marriage earlier than women in other provinces. The difference in median age at marriage between North Eastern and Nairobi provinces is as great as seven years among women age 25-29, but this declines among older women. The pattern of provincial differences has remained constant over time, although the median age has increased slightly for all provinces since 1998. Similarly large variations exist with education and wealth index.

Although variations exist in median age at first marriage for men, the differences are not as great as those of the women. The 2003 KDHS shows little difference in the median age between men in the rural and urban areas. The provincial difference between the highest (Nairobi) and lowest (Nyanza) is only 2.5 years. Men and women (especially) who are relatively poor or have little education enter into marriage earlier than other men and women.

Table 6.4 Median age at first marriage

Median age at first marriage among women age 20-49 and men age 30-54, by current age (women) and background characteristics, Kenya 2003

Background characteristic	Age						Women age 25-49	Men age 30-54
	20-24	25-29	30-34	35-39	40-44	45-49		
Residence								
Urban	a	22.4	21.9	20.7	20.1	20.1	21.4	25.6
Rural	19.9	19.6	19.3	19.3	18.9	18.5	19.3	25.0
Province								
Nairobi	a	23.2	22.1	21.6	20.9	20.8	22.1	26.2
Central	a	21.7	21.5	20.9	20.5	19.9	21.1	26.0
Coast	19.9	19.3	19.3	17.1	17.5	17.6	18.6	24.6
Eastern	a	21.1	19.7	20.0	20.4	19.4	20.1	25.4
Nyanza	19.4	18.5	17.7	18.2	17.0	17.4	17.8	23.7
Rift Valley	19.9	19.8	19.2	19.4	18.9	19.3	19.4	25.0
Western	19.6	19.8	19.4	19.1	18.2	17.8	19.2	24.3
North Eastern	17.5	15.8	17.8	17.3	18.5	*	17.5	24.9
Education								
No education	17.5	17.4	16.5	17.6	17.5	17.4	17.3	24.6
Primary incomplete	18.6	18.5	18.1	18.1	17.9	17.9	18.2	23.6
Primary complete	a	20.5	20.3	19.3	18.8	19.1	19.7	24.5
Secondary+	a	23.3	22.6	22.8	21.9	21.9	22.7	26.1
Wealth quintile								
Lowest	18.5	18.2	17.7	17.4	17.8	17.4	17.8	23.6
Second	19.6	19.6	18.5	19.2	18.5	18.0	19.0	24.2
Middle	a	19.2	19.7	19.6	18.7	18.8	19.3	24.8
Fourth	a	21.2	20.2	20.5	19.4	19.2	20.2	25.6
Highest	a	22.6	22.0	21.5	21.2	21.1	22.0	26.0
Total	a	20.3	19.8	19.6	19.1	18.9	19.7	25.1

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

a = Omitted because less than 50 percent of the women married for the first time before reaching the beginning of the age group

## 6.5 AGE AT FIRST SEXUAL INTERCOURSE

Although age at marriage is often used as a proxy measure for the beginning of exposure to the risk of pregnancy, some women engage in sexual activity before marriage. The 2003 KDHS gathered information on the timing of the first sexual intercourse for both men and women. The percentage of women and men who had had sexual intercourse by exact ages is given in Table 6.5.

Eighteen percent of women age 25-49 had sex before age 15, while more than half had their first sex by their 18th birthday. Older women are more likely to have had their first sexual encounter at an earlier age. This is further reflected in the median age at first sex, which is about 18 years for those under age 40 and about 17 for women age 40 and above.

The data for the male respondents show an earlier age at first sex at most age groups, compared with female respondents. Twenty-five percent of men age 20-54 had sex before age 15, with no clear trend across the age cohorts. The median age at first sex is 17 years, although older men have a slightly higher median age. This trend is different from that of women.

**Table 6.5 Age at first sexual intercourse**

Percentage of women and men who had first sexual intercourse, by exact ages and median age at first intercourse, according to current age, Kenya 2003

Current age	Percentage who had first sexual intercourse by exact age					Percentage who never had intercourse	Number of women/ men	Median age at first intercourse
	15	18	20	22	25			
WOMEN								
15-19	14.5	na	na	na	na	57.9	1,856	a
20-24	12.8	48.1	71.7	na	na	15.0	1,691	18.1
25-29	16.7	50.5	72.7	82.2	89.4	3.3	1,382	18.0
30-34	16.2	52.9	72.4	81.4	87.4	1.0	1,086	17.7
35-39	16.5	52.9	73.9	85.4	89.8	0.5	871	17.7
40-44	20.3	61.0	79.1	88.2	92.2	0.1	788	17.1
45-49	22.4	60.8	76.2	86.7	91.3	0.2	521	16.9
20-49	16.5	52.8	73.6	na	na	5.0	6,339	17.8
25-49	17.8	54.4	74.3	84.1	89.7	1.3	4,648	17.6
MEN								
15-19	30.9	na	na	na	na	49.6	856	a
20-24	26.2	61.2	79.9	na	na	13.2	681	16.6
25-29	23.6	54.8	78.8	89.3	94.2	3.3	509	17.4
30-34	26.6	60.0	77.3	88.2	92.0	1.2	415	16.9
35-39	22.7	58.4	77.2	88.9	94.4	0.2	396	17.1
40-44	25.8	55.8	74.8	87.2	91.9	0.2	310	17.2
45-49	21.6	52.4	76.0	89.5	91.1	0.0	196	17.6
50-54	23.2	51.3	76.3	89.9	92.8	0.0	215	17.8
20-54	24.6	57.4	77.7	na	na	4.2	2,722	17.1
25-54	24.1	56.1	77.0	88.8	93.0	1.1	2,041	17.2

na = Not applicable

a = Omitted because less than 50 percent of the women/men had intercourse for the first time before reaching the beginning of the age group

Comparison of data from the 2003 KDHS with similar data from the 1998 KDHS indicates that there has been an increase in age at first sex. The median age at first sex among women age 20-49 has increased from 16.7 to 17.8. Among younger women age 20-24, the median age at first sex has increased from 17.3 to 18.1, even when the northern areas of Kenya are excluded to make the data more comparable. There has been a smaller increase in age at first sex among men age 20-24, from 16.2 in 1998 to 16.6 in 2003.

Table 6.6 shows the median age at first sex by background characteristics for women age 20-49 and men age 20-54 years. Women in the rural areas start sexual activity about one year earlier than their urban counterparts. Sexual activity begins earliest in Nyanza Province (15.9 years) and latest in Nairobi (19.2 years). With respect to education, women with at least some secondary education begin sexual activity at least three years later than those with no education. Poor women tend to initiate sexual activity two years earlier than those who are wealthy.

Table 6.6 Median age at first intercourse

Median age at first sexual intercourse among women age 20-49 and men age 20-54, by current age (women) and background characteristics, Kenya 2003

Background characteristic	Age						Women age 20-49	Men age 20-54
	20-24	25-29	30-34	35-39	40-44	45-49		
Residence								
Urban	18.6	18.9	18.7	18.3	18.2	18.3	18.6	17.3
Rural	17.9	17.6	17.4	17.6	16.9	16.7	17.4	16.9
Province								
Nairobi	19.3	19.4	19.4	18.5	19.0	18.4	19.2	17.2
Central	18.7	18.5	18.6	18.6	17.7	17.3	18.4	18.5
Coast	18.7	17.9	18.5	16.9	16.9	17.1	18.0	18.0
Eastern	18.1	17.7	17.8	17.5	17.4	15.8	17.6	16.4
Nyanza	16.4	15.8	15.7	15.8	15.3	15.6	15.9	16.4
Rift Valley	18.2	18.1	17.5	18.2	17.3	18.4	18.0	15.9
Western	17.4	17.6	17.1	17.3	16.7	16.6	17.2	17.0
North Eastern	17.5	16.1	18.1	19.1	18.5	*	17.9	a
Education								
No education	17.0	16.4	16.4	16.5	16.0	16.2	16.4	a
Primary incomplete	16.6	16.4	16.0	16.5	16.0	16.6	16.4	16.4
Primary complete	18.0	18.0	18.1	17.8	17.1	16.2	17.8	16.9
Secondary+	19.8	19.9	19.4	19.9	18.8	19.9	19.6	17.4
Wealth quintile								
Lowest	16.9	17.0	16.4	16.2	16.3	16.7	16.6	16.9
Second	17.2	17.4	16.6	17.5	16.5	16.5	17.0	16.4
Middle	17.9	17.2	17.2	17.8	16.6	16.6	17.3	16.8
Fourth	18.4	18.3	18.3	18.4	17.6	16.6	18.1	17.4
Highest	18.8	19.3	19.3	18.4	18.6	18.6	18.9	17.5
Total	18.1	18.0	17.7	17.7	17.1	16.9	17.8	17.1

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

<sup>a</sup> Omitted because less than 50 percent of the men had intercourse for the first time before reaching the beginning of the age group

The data for men show a different pattern from that for women, with almost no differences in the timing of first sexual activity between those in the rural and the urban areas. The lowest median age at first sex is in Rift Valley Province (15.9 years), and the highest median age is in Central Province (18.5 years). Like women, the median age at first sex among men increases with the level of education, whereas the differences according to wealth status are small.

## 6.6 RECENT SEXUAL ACTIVITY

In the absence of contraception, the chance of becoming pregnant is related to the frequency of sexual intercourse. Thus, the information on sexual activity can be used to refine measures of exposure to pregnancy. Women and men were asked how long ago their last sexual activity occurred. The responses to this question allow for an assessment of recent sexual activity (in the four weeks preceding the survey). Tables 6.7.1 and 6.7.2 show the distribution of women and men, respectively, according to the timing of last sexual activity, by background characteristics.

Seventeen percent of women age 15-49 and 15 percent of men age 15-54 have never had sexual intercourse. Eleven and 13 percent of women and men, respectively, report that their last sexual encounter occurred more than one year before the survey. About half of the female and male respondents had a recent sexual encounter.



Table 6.7.1 Recent sexual activity: women

Percent distribution of women by timing of last sexual intercourse, according to background characteristics, Kenya 2003

Background characteristic	Timing of last sexual intercourse				Never had sexual intercourse	Total	Number of women
	Within the last 4 weeks	Within 1 year <sup>1</sup>	One or more years	Missing			
<b>Current age</b>							
15-19	16.9	16.7	7.1	1.4	57.9	100.0	1,856
20-24	47.1	25.6	10.4	2.0	15.0	100.0	1,691
25-29	63.0	23.6	7.5	2.7	3.3	100.0	1,382
30-34	63.0	23.2	10.1	2.7	1.0	100.0	1,086
35-39	61.6	25.6	10.7	1.6	0.5	100.0	871
40-44	57.8	22.6	17.5	2.0	0.1	100.0	788
45-49	48.1	23.1	26.2	2.5	0.2	100.0	521
<b>Marital status</b>							
Never married	6.1	19.5	15.8	1.7	56.8	100.0	2,443
Married or living together	74.0	21.6	2.8	1.5	0.0	100.0	4,919
Divorced/separated/widowed	14.2	36.0	43.3	6.5	0.0	100.0	833
<b>Marital duration<sup>2</sup></b>							
Married only once							
0-4 years	75.9	21.6	0.6	1.7	0.1	100.0	1,227
5-9 years	79.6	18.2	1.1	1.0	0.0	100.0	1,007
10-14 years	74.8	21.4	2.3	1.5	0.0	100.0	763
15-19 years	74.9	21.2	2.5	1.3	0.0	100.0	645
20-24 years	66.9	25.0	6.6	1.6	0.0	100.0	498
25+ years	63.1	25.2	9.9	1.9	0.0	100.0	439
Married more than once	71.5	23.7	3.4	1.4	0.0	100.0	340
<b>Residence</b>							
Urban	47.2	20.5	13.2	1.9	17.2	100.0	2,056
Rural	47.8	23.1	10.0	2.1	16.9	100.0	6,139
<b>Province</b>							
Nairobi	45.9	20.7	14.2	1.2	18.1	100.0	835
Central	49.0	18.3	12.4	1.7	18.6	100.0	1,181
Coast	49.8	21.9	8.8	2.9	16.5	100.0	667
Eastern	51.8	21.0	8.4	1.2	17.6	100.0	1,325
Nyanza	49.9	28.1	8.4	1.1	12.5	100.0	1,222
Rift Valley	44.4	22.9	12.9	3.6	16.2	100.0	1,872
Western	43.1	24.6	9.9	1.8	20.6	100.0	927
North Eastern	52.1	17.8	9.6	3.1	17.4	100.0	168
<b>Education</b>							
No education	45.0	26.2	18.1	4.6	6.1	100.0	1,039
Primary incomplete	46.9	22.1	8.3	1.8	20.9	100.0	2,685
Primary complete	51.5	24.6	10.5	1.8	11.7	100.0	2,069
Secondary+	46.4	19.5	10.8	1.5	21.8	100.0	2,403
<b>Contraceptive method</b>							
Female sterilisation	76.1	15.0	7.0	1.9	0.0	100.0	238
Pill	87.5	10.7	1.2	0.6	0.0	100.0	402
IUD	85.9	8.2	4.6	1.2	0.0	100.0	129
Condom	67.8	27.2	3.9	1.1	0.0	100.0	137
Periodic abstinence	72.0	22.1	4.3	1.0	0.7	100.0	381
Other method	78.2	16.5	3.7	1.2	0.4	100.0	1,036
No method	35.5	24.9	13.6	2.4	23.6	100.0	5,871
<b>Wealth quintile</b>							
Lowest	46.0	26.3	10.3	3.1	14.3	100.0	1,364
Second	48.0	24.5	10.4	2.3	14.8	100.0	1,475
Middle	48.5	22.5	9.7	2.0	17.3	100.0	1,503
Fourth	47.8	21.0	10.6	1.7	18.8	100.0	1,711
Highest	47.7	19.8	12.5	1.6	18.4	100.0	2,141
Total	47.7	22.5	10.8	2.1	17.0	100.0	8,195

<sup>1</sup> Excludes women who had sexual intercourse within the last four weeks

<sup>2</sup> Excludes women who are not currently married

Table 6.7.2 Recent sexual activity: men

Percent distribution of men by timing of last sexual intercourse, according to background characteristics, Kenya 2003

Background characteristic	Timing of last sexual intercourse				Never had sexual intercourse	Total	Number of men
	Within the last 4 weeks	Within 1 year <sup>1</sup>	One or more years	Missing			
<b>Current age</b>							
15-19	11.5	18.7	20.3	0.0	49.6	100.0	856
20-24	33.9	33.5	19.3	0.0	13.2	100.0	681
25-29	50.0	32.8	13.9	0.0	3.3	100.0	509
30-34	69.6	22.8	6.1	0.3	1.2	100.0	415
35-39	72.7	23.9	3.2	0.0	0.2	100.0	396
40-44	74.0	20.3	5.5	0.0	0.2	100.0	310
45-49	76.0	17.6	6.0	0.3	0.0	100.0	196
50-54	69.5	25.4	4.7	0.5	0.0	100.0	215
<b>Marital status</b>							
Never married	15.1	27.2	24.3	0.0	33.4	100.0	1,611
Married or living together	77.0	21.7	1.2	0.2	0.0	100.0	1,818
Divorced/separated/widowed	30.3	42.8	26.9	0.0	0.0	100.0	149
<b>Marital duration<sup>2</sup></b>							
Married only once							
0-4 years	79.0	20.5	0.5	0.0	0.0	100.0	418
5-9 years	72.2	26.9	0.8	0.2	0.0	100.0	324
10-14 years	77.0	20.9	1.9	0.2	0.0	100.0	259
15-19 years	80.1	19.4	0.1	0.4	0.0	100.0	212
20-24 years	75.8	21.4	2.3	0.5	0.0	100.0	188
25+ years	74.2	23.2	2.6	0.0	0.0	100.0	170
Married more than once	79.9	19.1	0.9	0.0	0.0	100.0	247
<b>Residence</b>							
Urban	51.0	26.6	10.3	0.2	11.9	100.0	907
Rural	45.9	24.5	13.5	0.0	16.1	100.0	2,671
<b>Province</b>							
Nairobi	48.9	27.8	10.6	0.5	12.2	100.0	397
Central	44.8	19.6	15.2	0.0	20.3	100.0	554
Coast	51.6	26.2	7.2	0.0	15.0	100.0	252
Eastern	45.2	21.7	16.3	0.0	16.9	100.0	588
Nyanza	48.6	22.2	11.6	0.0	17.5	100.0	481
Rift Valley	49.1	32.1	12.2	0.1	6.5	100.0	846
Western	41.7	25.2	13.5	0.0	19.7	100.0	396
North Eastern	55.6	9.3	1.1	0.0	34.0	100.0	65
<b>Education</b>							
No education	51.8	26.2	8.0	0.2	13.7	100.0	228
Primary incomplete	40.0	23.1	13.5	0.0	23.4	100.0	1,210
Primary complete	50.8	27.4	11.8	0.1	10.0	100.0	820
Secondary+	50.7	25.2	13.2	0.1	10.7	100.0	1,320
<b>Wealth quintile</b>							
Lowest	48.4	23.6	11.3	0.0	16.6	100.0	548
Second	45.7	22.2	16.2	0.0	15.9	100.0	609
Middle	42.5	23.3	13.0	0.0	21.3	100.0	648
Fourth	47.6	25.0	13.8	0.1	13.6	100.0	794
Highest	50.2	28.8	10.2	0.2	10.6	100.0	979
Total	47.2	25.1	12.7	0.1	15.0	100.0	3,578

<sup>1</sup> Excludes men who had sexual intercourse within the last four weeks

<sup>2</sup> Excludes men who are not currently married

As expected, recent sexual activity is less common among the youngest age group, 15-19; 58 percent of women and about half of men in this age group have never had sex. Recent sexual activity is more common among the currently married, with about three-quarters of women and men having had sex in the four weeks before the survey. Male-female differences are greatest for those who have never married and those formerly married. Among those who have never married, the proportion of males who report a recent sexual encounter is more than twice that of women (15 and 6 percent, respectively). This is also the case for those who were formerly married (30 and 14 percent, respectively).

The proportions reporting recent sexual activity do not differ much across the other characteristics. However, women who report using no contraceptive method are less likely to have had a recent sexual encounter. This is not surprising, as many of them also reported not to have ever had sex.

There has been a slight decline in recent activity since 1998; the proportion of women having sex in the four weeks preceding the survey declined from 52 percent in 1998 to 48 percent in 2003 (excluding areas in northern Kenya that were not covered in the 1998 KDHS). For men, the decline was from 56 percent in 1998 to 47 percent in 2003.

## 6.7 POSTPARTUM AMENORRHOEA, ABSTINENCE, AND INSUSCEPTIBILITY

Postpartum amenorrhoea is defined as the period between childbirth and the return of ovulation, generally approximated by the resumption of menstruation following childbirth. This period is largely determined by the duration and intensity of breastfeeding. The risk of conception in this period is very low. The duration of the postpartum amenorrhoea and the period of sexual abstinence following birth jointly determine the length of the insusceptibility period. Thus, women are considered insusceptible if they are abstaining from sex following childbirth or are amenorrhoeic.

Women who gave birth three years preceding the survey were asked about the duration of their periods of amenorrhoea and sexual abstinence following each birth. The results are presented in Table 6.8. Almost all women are insusceptible to pregnancy within the first two months following childbirth. After the second month, the contribution of abstinence is greatly reduced. At 10 to 11 months after birth, about half of all women are still amenorrhoeic, but only 18 percent are abstaining. After about one year, the proportion amenorrhoeic drops sharply, such that at 26 to 27 months following childbirth, less than 5 percent are amenorrhoeic and only 8 percent are still insusceptible to the risk of pregnancy.

**Table 6.8 Postpartum amenorrhoea, abstinence, and insusceptibility**

Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrhoeic, abstaining, and insusceptible, by number of months since birth, and median and mean durations, Kenya 2003

Months since birth	Percentage of births for which the mother is:			Number of births
	Amenorrhoeic	Abstaining	Insusceptible	
<2	96.6	92.0	99.7	179
2-3	85.8	46.2	90.8	237
4-5	68.0	31.5	75.8	215
6-7	58.1	26.4	66.5	210
8-9	55.6	19.5	62.2	221
10-11	50.5	18.3	57.6	232
12-13	33.5	13.5	40.2	220
14-15	40.6	13.5	45.6	208
16-17	18.7	10.9	25.7	227
18-19	13.9	11.0	19.7	175
20-21	10.2	8.2	15.7	215
22-23	11.3	11.9	18.9	183
24-25	5.7	7.3	11.0	203
26-27	4.5	5.2	8.2	158
28-29	5.7	4.8	9.2	204
30-31	3.8	4.4	8.1	164
32-33	5.1	4.7	8.8	181
34-35	2.3	2.8	5.1	209
Total	33.0	18.6	38.6	3,640
Median	9.7	2.9	11.8	na
Mean	11.7	6.9	13.6	na

Note: Estimates are based on status at the time of the survey. na = Not applicable

The principal determinant of the length of the period of insusceptibility is postpartum amenorrhoea. The median duration of amenorrhoea is 9.7 months; of abstinence, 2.9 months; and insusceptibility, 11.8 months. The duration of abstinence has been constant since 1993, while the median period of amenorrhoea declined from 11 months in 1993 to 9 months in 1998 and 2003 (excluding the northern part of the country).

Table 6.9 displays the median durations of postpartum amenorrhoea, abstinence, and insusceptibility by background characteristics of the respondents. Older women (age 30 and over) have a longer median period of insusceptibility, mainly because of the longer duration of postpartum amenorrhoea. Women living in urban areas also have a shorter median duration of amenorrhoea and, hence, a shorter period of insusceptibility. There are considerable variations by province in the period of insusceptibility. The median duration in Rift Valley Province (13.5 months) is almost double that of Nairobi (7.5 months) and Central (8.5 months) provinces, respectively. Whereas the median duration of insusceptibility has increased in Nairobi and Rift Valley provinces, there is a slight decline in Central and Eastern provinces since 1998. There is clearly an inverse relationship between the median duration of amenorrhoea and the level of education. However, the duration of abstinence is similar across the educational categories except for those with no education. Similarly, the median duration of postpartum amenorrhoea declines as the wealth status increases. The poorest women have the longest durations of amenorrhoea, abstinence, and hence insusceptibility.

Table 6.9 Median duration of postpartum insusceptibility by background characteristics				
Median number of months of postpartum amenorrhoea, postpartum abstinence, and postpartum insusceptibility following births in the three years preceding the survey, by background characteristics, Kenya 2003				
Background characteristic	Postpartum:			Number of births
	Amenorrhoea	Abstinence	Insusceptibility	
<b>Mother's age</b>				
15-29	8.7	2.9	10.4	2,426
30-49	12.7	3.1	13.1	1,214
<b>Residence</b>				
Urban	6.2	3.2	8.2	684
Rural	10.5	2.8	12.7	2,956
<b>Province</b>				
Nairobi	6.8	2.8	7.5	239
Central	5.9	2.5	8.5	377
Coast	9.6	2.8	11.0	311
Eastern	10.2	2.6	10.4	564
Nyanza	11.7	2.7	12.8	605
Rift Valley	11.1	4.4	13.5	995
Western	9.5	2.2	10.2	446
North Eastern	(7.6)	(2.5)	(14.4)	104
<b>Education</b>				
No education	14.9	4.4	16.6	554
Primary incomplete	10.2	2.4	12.8	1,351
Primary complete	8.5	3.0	10.2	1,000
Secondary+	7.9	3.0	9.1	735
<b>Wealth quintile</b>				
Lowest	13.7	3.6	14.9	893
Second	9.7	3.1	10.4	756
Middle	8.9	2.3	11.0	683
Fourth	8.6	2.6	12.0	622
Highest	6.2	3.1	7.5	687
<b>Total</b>	<b>9.7</b>	<b>2.9</b>	<b>11.8</b>	<b>3,640</b>
Note: Medians are based on status at the time of the survey. Figures in parentheses are based on 25-49 unweighted cases and have been suppressed.				

## 6.8 TERMINATION OF EXPOSURE TO PREGNANCY

While the onset of infecundity is difficult to determine for an individual woman, there are ways of estimating it for a given population. One indicator of infecundity is the onset of menopause. Menopausal women are defined by the KDHS as women who are neither pregnant nor postpartum amenorrhoeic, but who have not had a menstrual period in the six months before the survey. The prevalence of menopause increases with age, typically from around age 30.

Table 6.10 presents the indicator for women age 30-49, which ranges from 4 percent for women age 30-34 to 53 percent for women age 48-49. Twelve percent of women age 30-49 were reported to be menopausal, compared with 14 percent in 1998.

Table 6.10 Menopause

Percentage of women age 30-49 who are menopausal, by age, Kenya 2003

Age	Percentage menopausal <sup>1</sup>	Number of women
30-34	4.2	1,086
35-39	7.5	871
40-41	10.8	375
42-43	16.9	288
44-45	17.4	271
46-47	31.6	215
48-49	52.7	160
Total	12.2	3,266

<sup>1</sup> Percentage of all women who are not pregnant and not postpartum amenorrhoeic whose last menstrual period occurred six or more months preceding the survey

## FERTILITY PREFERENCES

*Murungaru Kimani*

Analysis and interpretation of the need for contraception as assessed by whether or not respondents want another child, their preferred interval between children, and the number of children they consider ideal have revealed important implications for the planning and implementation of family planning programmes. Therefore, in the 2003 KDHS, as in the previous KDHS surveys, women and men were asked a series of questions to ascertain fertility preferences. These data are utilised in this chapter to quantify fertility preferences and, in combination with data on contraceptive use, to permit estimation of unmet need for family planning, both to space and limit births.

### 7.1 DESIRE FOR MORE CHILDREN

Women and men in the 2003 KDHS sample were asked, “Would you like to have (a/another) child or would you prefer not to have any (more) children?” Respondents who said that they would like to have more children were asked, “How long would you like to wait from now before the birth of (a/another) child?” Responses to these questions are presented in Table 7.1 by the number of living children for both married women and men.

Overall, 49 percent of married women either do not want another child or are sterilised, 47 percent want to have another child—29 percent later, 16 percent soon (within two years) and 2 percent undecided when—and the remainder are undecided (Figure 7.1). Fertility preferences among married men show a similar pattern, although the percentage of men who do not want any more children is lower (39 percent) than among women, while the proportion who would like to have another child is higher (54 percent).

Comparing the 2003 KDHS results with those of the 1998 KDHS shows that the desire to have children among both men and women has increased since 1998. For example, the proportion of married women who want another child has increased from 40 percent in 1998 to 45 percent (excluding the northern districts) in 2003.

As expected, the desire to stop childbearing increases with the number of living children reaching 80 percent and 61 percent for women and men with six or more living children, respectively. Only about 1 percent of childless women and men do not want to have any children. Among women and men who want to have another child, the reverse is observed; that is, the proportion who want to have another child decreases with the number of living children.

The desire to stop childbearing by residence, province, education, and wealth index is shown in Table 7.2. Although women in rural areas appear to have a higher overall preference for not having more children, this is mainly because rural women already have more children than urban women do. Among women with two to five children, the desire for no more children is higher in urban areas than in rural areas as would be expected. Wide regional variations are observed in the desire for more children. Sixty-one percent of currently married women in Central Province do not want to have another child, compared with 33 percent of women in Coast Province and 4 percent of women in North Eastern Province. However, desire to limit fertility seems to have spread in all regions after the sixth birth except in North Eastern Province; desire to have no more children is over 73 percent in all other provinces after the sixth birth.

Table 7.1 Fertility preferences by number of living children

Percent distribution of currently married women and currently married men by desire for children, according to number of living children, Kenya 2003

	Number of living children <sup>1</sup>							
Desire for children	0	1	2	3	4	5	6+	Total
WOMEN								
Have another soon <sup>2</sup>	79.4	27.8	13.9	11.9	7.5	7.8	5.2	15.7
Have another later <sup>3</sup>	6.9	58.2	45.4	31.7	20.6	9.9	7.9	29.0
Have another, undecided when	3.5	3.3	1.9	1.7	0.9	0.6	1.2	1.8
Undecided	2.1	1.1	3.9	4.0	1.6	2.9	2.5	2.7
Want no more	0.8	8.1	32.9	45.6	61.0	68.8	70.7	44.3
Sterilised <sup>4</sup>	0.0	0.4	0.7	4.3	5.9	8.1	9.3	4.3
Declared infecund	6.7	1.1	1.1	0.8	2.5	1.6	2.9	1.9
Missing	0.6	0.1	0.1	0.0	0.0	0.2	0.3	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	237	762	939	897	662	501	921	4,919
MEN								
Have another soon <sup>2</sup>	47.4	27.0	21.9	15.8	12.6	11.6	11.2	18.8
Have another later <sup>3</sup>	45.6	62.4	42.8	30.1	22.9	19.8	17.4	33.4
Have another, undecided when	3.8	1.0	1.7	2.4	1.4	2.2	0.3	1.6
Undecided	0.5	3.6	4.6	6.5	3.3	6.9	5.6	4.8
Want no more	1.4	5.8	28.2	41.7	56.9	53.7	61.4	38.7
Declared infecund	1.2	0.1	0.8	3.1	2.9	5.7	3.6	2.5
Missing	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	122	266	322	296	218	211	384	1,818

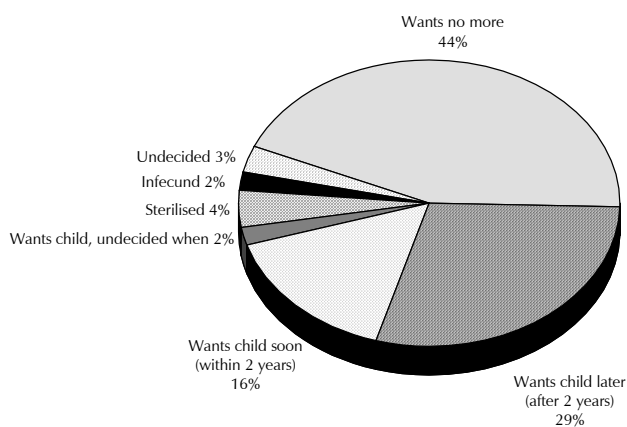
<sup>1</sup> Includes current pregnancy

<sup>2</sup> Wants next birth within two years

<sup>3</sup> Wants to delay next birth for two or more years

<sup>4</sup> Includes both female and male sterilisation

Figure 7.1 Fertility Preferences among Currently Married Women Age 15-49



KDHS 2003

Table 7.2 Desire to limit childbearing

Percentage of currently married women and men who want no more children, by number of living children and background characteristics, Kenya 2003

Background characteristic	Number of living children <sup>1</sup>							All women	All men
	0	1	2	3	4	5	6+		
<b>Residence</b>									
Urban	0.4	10.9	45.5	66.1	71.2	80.6	77.4	44.5	36.5
Rural	1.1	7.3	28.6	45.5	65.9	76.2	80.2	49.9	39.5
<b>Province</b>									
Nairobi	(0.0)	7.7	48.4	62.0	68.7	(88.4)	*	41.7	37.7
Central	*	11.8	46.1	75.5	89.7	88.9	87.5	61.0	46.1
Coast	(1.3)	9.8	17.6	37.1	29.9	(57.5)	73.8	33.2	24.7
Eastern	*	12.6	40.7	54.5	82.5	87.7	86.3	57.6	50.0
Nyanza	(2.6)	4.5	26.6	38.1	67.3	75.7	86.7	47.0	43.5
Rift Valley	(0.0)	8.1	25.7	46.0	63.1	75.7	78.9	48.1	35.2
Western	*	7.3	25.8	38.0	58.9	75.8	92.4	52.0	34.4
North Eastern	*	(0.0)	(0.0)	(1.5)	(2.5)	(0.0)	9.3	4.0	0.0
<b>Education</b>									
No education	(1.0)	7.5	14.5	23.4	30.2	52.4	61.0	38.0	17.7
Primary incomplete	0.0	9.6	21.6	39.4	57.2	76.7	86.2	46.9	34.9
Primary complete	2.7	5.9	35.6	51.9	81.0	87.0	91.1	51.5	41.3
Secondary+	0.0	10.3	47.3	67.8	83.5	86.0	90.1	54.3	44.2
<b>Wealth quintile</b>									
Lowest	(0.0)	4.7	14.1	25.2	46.3	58.1	69.7	41.8	27.8
Second	*	3.6	19.0	37.7	57.7	74.8	84.1	46.9	35.4
Middle	(0.0)	5.8	26.7	48.5	76.6	78.7	85.8	53.1	43.0
Fourth	(0.8)	13.0	40.7	61.5	76.5	86.1	85.1	55.1	45.6
Highest	0.0	10.6	47.6	69.0	77.3	89.7	89.2	46.8	39.5
Total	0.8	8.4	33.7	49.9	66.8	76.9	80.0	48.7	38.7

Note: Women who have been sterilised are considered to want no more children. Figures in parentheses are based on 25-49 unweighted cases, while an asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

<sup>1</sup> Includes current pregnancy

Substantial differences in fertility preferences among women by levels of education are apparent. For example, 38 percent of married women with no education want to stop childbearing, compared with 54 percent of those with some secondary education. A similar pattern is observed with the wealth index. Desire for no more children generally increases with the wealth index, except for the highest quintile.

Fertility preference among men show similar patterns to those for the women, although overall proportions of men who do not want to have more children are lower.

## 7.2 NEED FOR FAMILY PLANNING SERVICES

Women who are currently married and who say either that they do not want any more children or that they want to wait two or more years before having another child, but are not using contraception, are considered to have an unmet need for family planning. Women who are using family planning methods are said to have a met need for family planning. Women with unmet need and met need constitute the total demand for family planning. Table 7.3 presents information for currently married women on unmet need, met need, and total demand for family planning, according to whether the need is for spacing or limiting births.



Table 7.3 Need for family planning among currently married women

Percentage of currently married women with unmet need for family planning and with met need for family planning, and the total demand for family planning, along with percentage of demand satisfied, by background characteristics, Kenya 2003

Background characteristic	Unmet need for family planning <sup>1</sup>			Met need for family planning (currently using) <sup>2</sup>			Total demand for family planning <sup>3</sup>			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
<b>Age</b>											
15-19	26.6	1.2	27.8	12.7	3.7	16.4	40.6	5.6	46.1	39.7	333
20-24	27.6	4.8	32.4	19.8	8.0	27.8	50.2	13.2	63.4	48.9	965
25-29	16.8	6.7	23.5	24.0	16.6	40.7	42.8	24.5	67.3	65.0	1,056
30-34	13.3	14.2	27.4	16.9	28.1	45.0	31.9	42.6	74.6	63.2	873
35-39	6.4	16.5	22.9	8.2	41.9	50.1	15.5	58.8	74.3	69.2	691
40-44	2.3	15.0	17.3	1.9	46.0	47.9	4.2	61.3	65.5	73.7	614
45-49	0.6	11.8	12.4	0.2	38.2	38.4	0.8	50.0	50.8	75.6	388
<b>Residence</b>											
Urban	10.8	6.3	17.2	20.5	27.1	47.6	32.2	33.8	66.1	74.0	1,091
Rural	15.4	11.2	26.6	12.5	24.4	37.0	29.6	36.2	65.8	59.6	3,828
<b>Province</b>											
Nairobi	12.5	3.5	16.0	23.3	27.5	50.7	36.7	31.4	68.1	76.5	418
Central	6.1	5.2	11.4	20.6	45.8	66.4	28.6	51.8	80.4	85.9	656
Coast	16.2	8.7	24.9	12.1	12.0	24.1	29.5	21.0	50.6	50.7	418
Eastern	10.9	10.8	21.7	17.7	32.9	50.6	31.5	44.4	76.0	71.4	783
Nyanza	20.5	14.2	34.7	7.7	17.0	24.7	29.1	31.4	60.5	42.6	775
Rift Valley	15.6	12.1	27.7	12.5	21.9	34.4	29.2	34.4	63.6	56.4	1,186
Western	19.3	12.7	32.1	13.3	20.8	34.1	34.2	34.7	68.9	53.5	559
North Eastern	8.9	1.3	10.1	0.0	0.2	0.2	8.9	1.5	10.3	1.6	125
<b>Education</b>											
No education	11.3	10.1	21.4	2.7	9.3	12.0	15.2	19.8	35.0	38.9	762
Primary incomplete	21.7	13.4	35.1	11.4	18.8	30.2	34.6	32.6	67.2	47.8	1,569
Primary complete	13.9	10.7	24.7	16.1	28.1	44.2	31.9	39.5	71.4	65.5	1,312
Secondary+	7.8	5.4	13.2	22.9	38.9	61.8	32.0	44.9	76.9	82.9	1,276
<b>Wealth index</b>											
Lowest	18.8	13.9	32.7	7.6	10.3	17.9	28.1	24.4	52.6	37.8	947
Second	16.5	13.8	30.3	12.3	19.6	31.9	30.0	33.9	64.0	52.7	954
Middle	15.7	11.1	26.8	13.3	28.6	42.0	30.9	40.3	71.2	62.4	915
Fourth	10.0	7.4	17.4	15.4	35.3	50.7	27.0	43.6	70.6	75.4	965
Highest	11.7	5.4	17.0	21.3	30.2	51.5	34.2	35.9	70.1	75.7	1,139
Currently married women	14.4	10.1	24.5	14.3	25.0	39.3	30.2	35.7	65.8	62.8	4,919
Unmarried women	1.9	0.8	2.7	6.2	5.7	11.9	8.6	6.7	15.3	82.5	3,276
All women	9.4	6.4	15.8	11.1	17.3	28.4	21.6	24.1	45.6	65.4	8,195

<sup>1</sup> Unmet need for spacing includes pregnant women whose pregnancy was mistimed, amenorrhoeic women who are not using family planning and whose last birth was mistimed, and fecund women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and say that they want to wait two or more years for their next birth. Also included in unmet need for spacing are fecund women who are not using any method of family planning and say that they are unsure whether they want another child or who want another child but are unsure when to have the birth (unless they say that it would not be a problem if they discovered they were pregnant in the next few weeks). Unmet need for limiting refers to pregnant women whose pregnancy was unwanted, amenorrhoeic women whose last child was unwanted, and fecund women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and who want no more children. Excluded from the unmet need category are pregnant and amenorrhoeic women who became pregnant while using a method (these women are in need of a better method of contraception).

<sup>2</sup> Using for spacing is defined as women who are using some method of family planning and say that they want to have another child or are undecided whether to have another. Using for limiting is defined as women who are using and who want no more children. The specific methods used are not taken into account here.

<sup>3</sup> Nonusers who are pregnant or amenorrhoeic and women whose pregnancy was the result of a contraceptive failure are not included in the category of unmet need, but they are included in total demand for family planning (since they would have been using had their method not failed).

One-quarter of currently married women in Kenya have an unmet need for family planning, 14 percent for spacing, and 10 percent for limiting. This shows that unmet need has remained unchanged since 1998. Because 39 percent of currently married women are using a contraceptive method, it implies that the total demand for family planning comprises two-thirds of married women in Kenya, which is about the same level estimated in 1998. The 2003 KDHS (as did the 1998 KDHS) shows that if all women who want to space or limit childbearing were to use family planning, the contraceptive prevalence rate could increase from the current level of 39 percent to about 66 percent. The data in this table, however, show that only 63 percent of this total demand among married women is satisfied.

Unmet need is higher among women younger than 35 years and declines thereafter. Analysis of the unmet need for spacing and limiting reveals the expected patterns, where unmet need for spacing declines with age, while that for limiting increases. Unmet need for family planning is higher in rural (27 percent) than urban (17 percent) areas. It is highest among women with incomplete primary education and decreases with the women's wealth status. Unmet need is highest in Nyanza (35 percent) and Western (32 percent) provinces and lowest in North Eastern (10 percent) and Central (11 percent) provinces. In 1998, unmet need was highest in Western and Coast provinces.

Demand for family planning is also associated with demographic and socioeconomic indicators. Demand generally increases with age up to age 30-39, is highest in Central (80 percent) and Eastern (76 percent) provinces, and is much lower in North Eastern Province (10 percent). Variations in the other provinces are modest. Demand among women with no education is about half that of those with at least some secondary school. According to the wealth index, demand is much lower among the poorest. Similar patterns are observed for the percentage of demand satisfied. Thus, the percentage of demand that is satisfied is highest in Central, Nairobi, and Eastern provinces; among married women with secondary and higher education; and among the wealthy. Satisfied demand is also substantially higher in urban areas.

Table 7.3 also presents the unmet need for family planning for women who are not currently married and all women. Unmet need for all women and unmarried women is much lower (16 and 3 percent), compared with that for currently married women (25 percent). The overall demand is also lower—46 percent of all women, compared with 66 percent of married women. An important observation is that, overall, the percentage of demand that is satisfied is higher among unmarried women (83 percent), compared with married women (63 percent).

### 7.3 IDEAL FAMILY SIZE

Women and men who were interviewed in the 2003 KDHS were asked two questions for determining ideal family size. Respondents who did not have any living children were asked, "If you could choose exactly the number of children to have in your lifetime, how many would that be?" For respondents who had living children the question was rephrased as follows, "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your lifetime, how many would that be?" The results are presented in Table 7.4 for both women and men.

Results indicate that the vast majority of both women and men gave a numeric response; only 5 percent of women and 4 percent of men failed to give a numeric response, which is about the same proportion as in the 1998 KDHS. Among the women who gave a numeric response, the mean ideal family size is 3.9 children. Excluding areas in northern Kenya for comparison with prior KDHS surveys shows that the mean ideal family size is 3.7 in 2003, which is close to the 3.8 and 3.7 reported in the 1998 KDHS and the 1993 KDHS, respectively. The average ideal family size reported by men (4.3 children) is higher than for women and is also higher than the level reported by men in the 1998 KDHS (4.0); however, when the northern districts are excluded, the mean family size as reported by men in 2003 is 4.1 children. These results suggest that there has been little change in the ideal family size over the last 10 years in Kenya.

Table 7.4 Ideal number of children

Percent distribution of all women and all men by ideal number of children, and mean ideal number of children for all women and for all men and for currently married women and for currently married men, according to number of living children, Kenya 2003

	Number of living children <sup>1</sup>							
Ideal number of children	0	1	2	3	4	5	6+	Total
WOMEN								
0	2.6	0.7	0.6	1.0	0.9	0.4	0.9	1.3
1	2.6	6.0	3.1	2.4	1.4	0.1	0.2	2.6
2	28.4	24.8	24.7	13.1	13.5	12.1	6.1	19.8
3	22.3	28.3	22.2	22.7	10.6	12.7	7.0	19.5
4	25.1	22.8	31.9	34.2	41.3	29.1	32.1	29.6
5	7.4	6.1	6.5	9.5	9.0	16.2	9.2	8.4
6+	7.7	7.7	7.3	11.8	17.9	23.3	33.4	13.6
Non-numeric responses	4.0	3.6	3.6	5.3	5.3	6.1	11.2	5.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	2,240	1,297	1,158	1,042	800	594	1,064	8,195
Mean ideal number of children for <sup>2</sup>								
All women	3.4	3.4	3.5	3.9	4.3	4.8	5.5	3.9
Number	2,150	1,250	1,117	987	757	557	945	7,764
Currently married women	4.0	3.7	3.6	4.0	4.3	4.8	5.6	4.3
Number	224	734	904	850	627	469	816	4,624
MEN								
0	1.2	0.4	0.4	0.2	0.0	0.4	0.7	0.8
1	1.4	1.0	0.8	0.0	1.5	0.5	0.2	1.0
2	20.3	20.2	20.7	9.6	15.1	8.7	5.6	16.8
3	24.1	28.8	26.8	23.9	10.0	14.5	10.3	21.8
4	27.1	27.4	28.6	36.4	37.2	20.3	27.1	28.4
5	11.2	7.3	9.2	11.8	14.6	18.0	3.4	10.4
6+	12.4	11.4	11.0	13.6	18.4	31.6	41.9	17.0
Non-numeric responses	2.3	3.6	2.4	4.4	3.3	6.1	10.9	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	1,704	347	374	315	229	217	393	3,578
Mean ideal number of children for <sup>2</sup>								
All men	3.9	3.8	3.8	4.3	4.5	5.3	7.0	4.3
Number	1,665	335	365	301	221	204	350	3,440
Currently women	3.6	3.8	3.8	4.4	4.6	5.3	7.0	4.8
Number	119	256	313	282	211	198	344	1,723

<sup>1</sup> Includes current pregnancy

<sup>2</sup> Means are calculated excluding respondents giving non-numeric responses.

The ideal number of children increases with the number of living children. Women with six or more living children have an ideal family size of 5.5, compared with 3.4 for those with no children or one child. Among men, ideal family size ranges from 3.9 for those without a child to 7.0 for men with six or more living children. This pattern could be attributed to either those with smaller family sizes tending to achieve these desired small families or to “adjustments” of ideal number of children as the actual number increased (rationalisation). However, despite the likelihood of rationalisation, the results are similar to those obtained from the 1998 KDHS, which showed considerable proportions of women and men reporting ideal family sizes smaller than their actual family sizes. For example, 56 percent of women and 47 percent of men with six or more living children report ideal family sizes of less than six children. As in the 1998 KDHS, four children is the most commonly reported ideal for both women and men.

Table 7.5 presents data on the mean ideal number of children for all women and men, by age (for women) and background characteristics. The ideal family size for both men and women increases with age, from 3.6 for women age 15-19 to 4.8 for women age 45-49. Ideal family size is higher in rural areas, compared with urban areas, and it decreases with the level of education, particularly between those without and those with some education. A similar trend is observed with the wealth index. Provincial variations in ideal family size among both women and men are modest, ranging from about 3 to 5 children, except in North Eastern Province, where the ideal family size is much higher (about 11 children for both women and men).

Mean ideal number of children for all women and men, by age (women) and background characteristics, Kenya 2003									
Background characteristic	Age							All women	All men
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
<b>Residence</b>									
Urban	3.1	3.1	3.3	3.4	3.7	4.3	4.5	3.4	4.0
Rural	3.8	3.6	4.1	4.2	4.6	4.8	4.9	4.1	4.5
<b>Province</b>									
Nairobi	3.0	3.0	3.2	3.2	3.5	3.8	4.0	3.2	3.8
Central	2.8	2.7	2.9	3.3	3.4	3.9	4.2	3.1	3.4
Coast	4.3	4.0	4.2	4.5	4.9	4.8	6.5	4.5	5.1
Eastern	3.2	2.9	3.4	3.5	4.0	4.1	4.1	3.5	3.5
Nyanza	3.8	3.6	3.8	4.1	4.6	4.8	4.9	4.1	4.2
Rift Valley	3.9	3.6	4.2	4.1	4.3	5.2	5.2	4.1	5.1
Western	3.6	3.6	3.9	4.1	4.7	4.8	4.6	4.0	4.3
North Eastern	9.9	10.9	11.8	11.4	11.9	11.2	*	11.1	10.9
<b>Education</b>									
No education	7.3	6.7	7.8	6.9	6.7	6.4	5.8	6.7	9.4
Primary incomplete	3.6	3.8	4.2	4.1	4.5	4.9	4.7	4.0	4.5
Primary complete	3.3	3.3	3.4	3.6	4.1	4.1	4.5	3.6	4.1
Secondary+	2.9	2.8	2.9	3.1	3.4	3.6	3.9	3.1	3.5
<b>Wealth quintile</b>									
Lowest	4.9	5.1	5.3	5.4	5.6	6.1	6.5	5.4	6.2
Second	3.7	3.8	4.4	4.1	4.8	5.1	5.1	4.3	4.6
Middle	3.7	3.3	3.9	3.9	4.5	4.8	4.3	3.9	4.0
Fourth	3.2	3.2	3.3	3.7	4.0	4.0	4.4	3.5	3.8
Highest	3.0	2.9	3.1	3.2	3.2	3.8	4.1	3.1	3.8
Total	3.6	3.4	3.8	4.0	4.3	4.7	4.8	3.9	4.3

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

## 7.4 WANTED AND UNWANTED FERTILITY

Interviewers asked women a series of questions regarding children born in the five years preceding the survey date and any current pregnancy to determine whether each birth/pregnancy was wanted then, wanted later, or unwanted. These questions provide a powerful indicator of the degree to which couples successfully control fertility. Also, the data can be used to gauge the effect of the prevention of unwanted births on fertility rates. Table 7.6 shows the percent distribution of births in the five years preceding the survey by whether the birth was wanted by the mother then, wanted later, or not wanted.

**Table 7.6 Fertility planning status**

Percent distribution of births in the five years preceding the survey (including current pregnancies), by fertility planning status, according to birth order and mother's age at birth, Kenya 2003

Birth order and mother's age at birth	Planning status of birth			Missing	Total	Number of births
	Wanted then	Wanted later	Wanted no more			
<b>Birth order</b>						
1	61.3	19.9	18.4	0.4	100.0	1,613
2	61.3	28.9	9.8	0.0	100.0	1,334
3	58.9	29.6	11.3	0.2	100.0	1,108
4+	46.9	24.1	28.6	0.5	100.0	2,686
<b>Age at birth</b>						
<20	53.2	26.1	20.5	0.2	100.0	1,175
20-24	60.7	27.7	11.3	0.2	100.0	2,103
25-29	59.2	26.9	13.6	0.3	100.0	1,592
30-34	50.4	22.0	27.5	0.0	100.0	1,060
35-39	43.0	18.0	38.2	0.8	100.0	577
40-44	39.8	11.7	46.1	2.4	100.0	210
45-49	37.2	4.2	58.6	0.0	100.0	24
Total	55.2	24.9	19.6	0.3	100.0	6,742

The data indicate that nearly 20 percent of births in Kenya are unwanted and 25 percent are mistimed (wanted later). Overall, the proportion of births considered mistimed or unwanted has changed little, compared with the 1998 KDHS; however, the trends show a sizeable increase in the percentage of births that are unwanted (from 11 to 21 percent, excluding northern districts) and a comparable reduction in those that are mistimed (from 37 to 28 percent).<sup>1</sup> The percentage of births considered to have been unwanted is highest for births of order four and above. Similarly, a larger proportion of births to older women are reported as unwanted, compared with births to young women. Only slightly more than 10 percent of births to women age 20-24 are unwanted, compared with nearly 60 percent among women age 45-49.

Table 7.7 presents wanted fertility rates. These rates are calculated in the same manner as the total fertility rate, but unwanted births are excluded from the numerator. For this purpose, unwanted births are defined as those that exceed the number considered ideal by the respondent. Women who did not report a numeric ideal family size were assumed to want all of their births. These rates represent the level of fertility that would have prevailed in the three years preceding the survey if all unwanted births had been prevented. A comparison of the total wanted fertility rate and the actual total fertility rate suggests the potential demographic impact of the elimination of unwanted births.

The total wanted fertility rate for Kenya is 3.6 (3.5 excluding the northern districts), which is the same as that obtained from the 1998 KDHS. This rate is more than one child less than the actual fertility rate (4.9). The gap between wanted and observed fertility is greatest among poor women, those living in rural areas, and those with less than secondary education.

<sup>1</sup> In order to be comparable to the 1998 KDHS, only births in the three years preceding the survey were examined.

**Table 7.7 Wanted fertility rates**

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Total wanted fertility rates	Total fertility rate
<b>Residence</b>		
Urban	2.6	3.3
Rural	3.9	5.4
<b>Province</b>		
Nairobi	2.3	2.7
Central	2.8	3.4
Coast	4.3	4.9
Eastern	3.3	4.8
Nyanza	3.8	5.6
Rift Valley	4.1	5.8
Western	4.0	5.8
North Eastern	6.5	7.0
<b>Education</b>		
No education	5.7	6.7
Primary incomplete	4.2	6.0
Primary complete	3.5	4.8
Secondary+	2.3	3.2
<b>Wealth quintile</b>		
Lowest	5.3	7.6
Second	4.1	5.8
Middle	3.9	5.1
Fourth	2.9	4.0
Highest	2.5	3.1
Total	3.6	4.9

Note: Rates are calculated on the basis of births to women age 15-49 in the period 1 to 36 months preceding the survey. The total fertility rates are the same as those presented in Table 4.2.

## 7.5 IDEAL FAMILY SIZE AND UNMET NEED BY WOMEN'S STATUS

The ability of women to effectively make decisions has important implications on their fertility preferences and practise of family planning. Table 7.8 shows the ideal family size and unmet need for family planning by some indicators of women status. The table shows that generally, unmet need and ideal family size are related to a woman's status. For example, mean ideal family size declines as the number of decisions in which a woman has a final say and the number of reasons to refuse sex with the husband increase. Also, women who think that wife-beating is not justified for any reason have a mean ideal family size of 3.8, compared with 4.9 for women who gave five reasons why beating a wife is justified. Women who give no reason to justify wife beating have an overall unmet need of 18 percent, compared with 29 percent for those who gave five reasons. Unmet need is also lower among women who participate in more household decisions.

**Table 7.8 Ideal number of children and unmet need by women's status**

Among currently married women, the mean ideal number of children and unmet need for spacing and limiting, by women's status indicators, Kenya 2003

Women’s status indicator	Mean ideal number of children <sup>1</sup>	Number	Unmet need for family planning <sup>2</sup>			Number of women
			For spacing	For limiting	Total	
<b>Number of decisions in which woman has final say<sup>3</sup></b>						
1-2	4.5	1,433	18.1	9.7	27.8	1,539
3-4	4.0	1,696	13.5	10.8	24.3	1,780
5	4.1	1,143	8.9	10.4	19.3	1,204
<b>Number of reasons to refuse sex with husband</b>						
0	5.1	247	13.8	10.2	23.9	287
1-2	4.8	690	13.9	9.7	23.5	754
3-4	4.1	3,688	14.6	10.2	24.7	3,878
<b>Number of reasons wife-beating is justified</b>						
0	3.8	1,326	10.1	8.1	18.1	1,408
1-2	4.0	1,458	17.0	10.8	27.7	1,535
3-4	4.7	1,378	15.1	10.6	25.6	1,479
5	4.9	462	16.7	12.4	29.2	497
Total	4.3	4,624	14.4	10.1	24.5	4,919

<sup>1</sup> Totals are calculated excluding the women giving non-numeric responses.

<sup>2</sup> See Table 7.3 for definition of unmet need for family planning.

<sup>3</sup> Either by herself or jointly with others

## INFANT AND CHILD MORTALITY

*Fredrick Otieno and Christopher Omolo*

This chapter reports information on levels, trends, and differentials in neonatal, postneonatal, infant and child mortality. The information is critical for assessment of population and health policies and programmes. Estimates of infant and child mortality are required as an input into population projections, particularly if the level of adult mortality is known from another source or can be inferred with reasonable confidence. Information on mortality of children also serves the needs of health ministries by identifying sectors of the population that are at high risk. Infant and child mortality are also regarded as indices reflecting the degree of poverty and deprivation of a population.

The primary causes of childhood mortality change as children age, from factors related mostly to biological conditions to factors related mostly to their environment. After the neonatal period, postneonatal and child mortality are caused mainly by childhood diseases and accidents. In this chapter, age-specific mortality rates are defined as follows:

**Neonatal mortality:** the probability of dying within the first month of life

**Postneonatal mortality:** the difference between infant and neonatal mortality

**Infant mortality:** the probability of dying before the first birthday

**Child mortality:** the probability of dying between the first and fifth birthdays

**Under-five mortality:** the probability of dying before the fifth birthday.

All rates are expressed per 1,000 live births, except for child mortality, which is expressed per 1,000 children surviving to 12 months of age.

The data for mortality estimates were collected in the birth history section of the Women's Questionnaire. The section begins with questions about the aggregate childbearing experience of respondents (i.e., the number of sons and daughters who live with the respondent, those who live elsewhere, and the number who have died). For each of the births, more detailed information was collected on the sex, the month and year of birth, survivorship status, and current age if the child was alive, or age at death if the child had died.

The quality of mortality estimates calculated from retrospective birth histories depends upon the completeness with which births and deaths are reported and recorded. Potentially the most serious data quality problem is the selective omission from the birth histories of births who did not survive, which can lead to underestimation of mortality rates. Other potential problems include displacement of birth dates, which may cause a distortion of mortality trends, and misreporting of the age at death, which may distort the age pattern of mortality. When selective omission of childhood deaths occurs, it is usually most severe for deaths in early infancy. If early neonatal deaths are selectively underreported, the result is an unusually low ratio of deaths occurring within seven days to all neonatal deaths, and an unusually low ratio of neonatal to infant deaths. Underreporting of early infant deaths is most commonly observed for births that occurred long before the survey; hence it is useful to examine the ratios over time.

An examination of the ratios (see Appendix Tables C.5 and C.6) shows that no significant number of early infant deaths was omitted in the 2003 KDHS. The 2003 proportion of neonatal deaths occurring in the first week of life (82 percent) is higher than the proportions recorded in the 1998 KDHS (74



percent) and the 1993 KDHS (75 percent).<sup>1</sup> Moreover, the proportions are roughly constant over the 20 years preceding the survey (between 77 and 83 percent). The proportion of infant deaths that occur during the first month of life is entirely plausible in level (47 percent); it is the same as the proportion recorded in the 1993 KDHS but higher than the proportion recorded in the 1998 KDHS (42 percent). The proportions are also stable over the 20 years preceding the survey (varying between 44 and 47 percent). This inspection of the mortality data reveals no evidence of selective underreporting or misreporting of age at death that would significantly compromise the quality of the KDHS rates of childhood mortality.

## 8.1 LEVELS AND TRENDS IN INFANT AND CHILD MORTALITY

Table 8.1 shows the variation in neonatal, postneonatal, infant, child, and under-five mortality rates for three successive five-year periods preceding the survey. The use of rates for five-year periods conceals any year-to-year fluctuations in early childhood mortality. For the most recent five-year period preceding the survey, infant mortality is 77 deaths per 1,000 live births, and under-five mortality is 115 deaths per 1,000 live births. This means that one in every nine children born in Kenya dies before attaining his or her fifth birthday. The pattern shows that 29 percent of deaths under-age five occur during the neonatal period and 38 percent occur during the postneonatal period.

Table 8.1 Early childhood mortality rates					
Neonatal, postneonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, Kenya 2003					
Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality <sup>1</sup> (PNN)	Infant mortality ( <sub>1</sub> Q <sub>0</sub> )	Child mortality ( <sub>4</sub> Q <sub>1</sub> )	Under-five mortality ( <sub>5</sub> Q <sub>0</sub> )
0-4	33	44	77	41	115
5-9	32	41	73	40	110
10-14	31	42	73	35	105

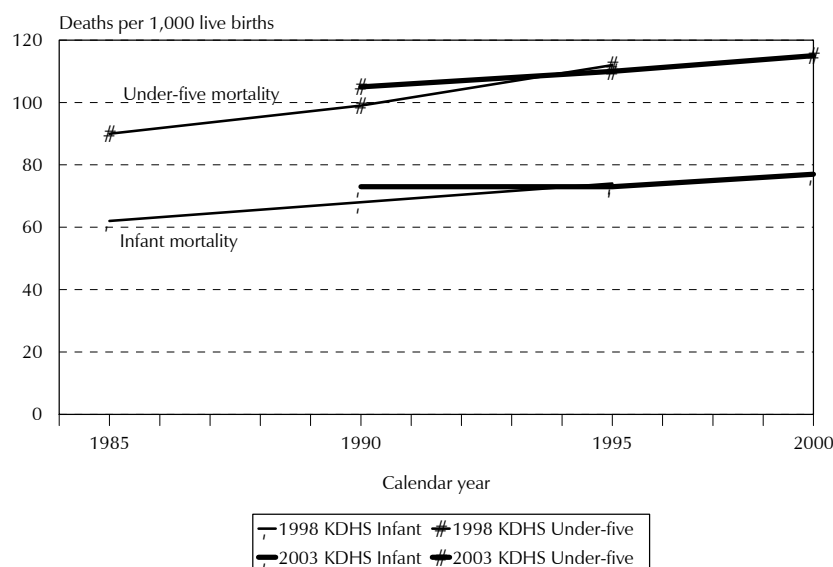
<sup>1</sup> Computed as the difference between the infant and the neonatal mortality rates

Figure 8.1 shows the infant and under-five mortality rates for each of the three five-year periods preceding the 1998 KDHS and the 2003 KDHS.<sup>2</sup> Both infant and under-five mortality rates are increasing. The increases are more pronounced during the period between the mid-1980s and mid-1990s, especially from the 1998 KDHS. The subsequent period shows a slowdown in the increases, with the mortality rates nearing stagnation. The results from the 2003 KDHS indicate that under-five mortality has increased from 110 deaths per 1,000 live births in the period five to nine years before the survey (i.e., 1993-1997) to 115 deaths per 1,000 live births for the period zero to four years before the survey (i.e., 1998-2003).

<sup>1</sup> There are no models for mortality patterns during the neonatal period. However, one review of data from several developing countries concluded that, at neonatal mortality levels of 20 per 1,000 or higher, approximately 70 percent of neonatal deaths occur within the first six days of life (Boerma, 1988).

<sup>2</sup> Since the 2003 KDHS covered areas in northern Kenya that were excluded in the prior KDHS surveys, the data were retabulated for 2003, excluding North Eastern Province; Samburu and Turkana districts in Rift Valley Province; and Isiolo, Moyale, and Marsabit districts in Eastern Province, so as to be comparable with previous KDHS surveys. However, the results were largely identical to the national figures.

**Figure 8.1 Trends in Infant and Under-Five Mortality  
1998 KDHS and 2003 KDHS**



Childhood mortality rates from the 2003 KDHS are comparable with those from the 1999 population census. The under-five mortality rate based on the 1999 census was estimated at 116 deaths per 1,000 live births for 1989-1999 (Central Bureau of Statistics, 2002c), almost identical to the under-five mortality based on the 2003 KDHS. Similarly, the infant mortality rate of 77 based on the 1999 population census, is equivalent to the 2003 KDHS estimate of 77 deaths per 1,000 live births (Central Bureau of Statistics, 2002c).

In interpreting the mortality data, it is useful to keep in mind that sampling errors are quite large. For example, the 95 percent confidence intervals for the under-five mortality estimate of 115 deaths per 1,000 live births are 100 and 129 per 1,000 (Appendix B), indicating that, given the sample size of the 2003 KDHS, the true value may be 15 points higher or lower than the estimated rate of 115 per 1,000.

## 8.2 SOCIOECONOMIC DIFFERENTIALS IN INFANT AND CHILD MORTALITY

Mortality differentials by place of residence, province, educational level of the mother, and wealth index are presented in Table 8.2 and Figure 8.2. For a sufficient number of births to study mortality differentials across population subgroups, period-specific rates are presented for the ten-year period preceding the survey (mid-1993 to mid-2003).

Differentials by place of residence show that the under-five mortality rate is 26 percent higher in rural areas than in urban areas (117 and 93 deaths per 1,000 live births, respectively). The rates by province display considerable differentials. Except for neonatal mortality, all childhood mortality indicators are highest in Nyanza Province and lowest in Central Province. Under-five mortality is highest in Nyanza Province (206 deaths per 1,000 live births), followed by North Eastern Province (163 per 1,000), and lowest in Central (54 per 1,000) and Rift Valley (77 per 1,000) provinces. This implies that a child born in Nyanza Province is four times more likely than a child born in Central Province to die before celebrating his or her fifth birthday. The same pattern is also observed in infant mortality rates, with the highest rate in Nyanza Province (133 deaths per 1,000 live births) and the lowest in Central Province (44 deaths per 1,000 live births). Rates by province should be interpreted cautiously because of the high level of sampling errors (see Appendix B).

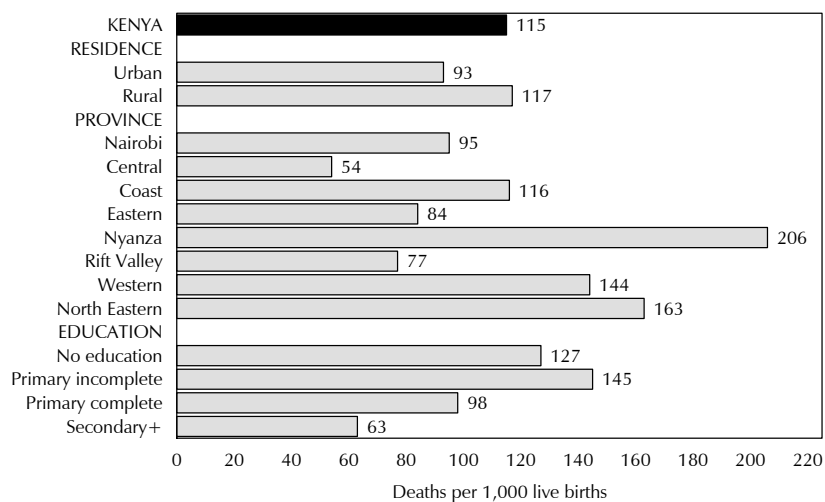
Table 8.2 Early childhood mortality rates by socioeconomic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the ten-year period preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality <sup>1</sup> (PNN)	Infant mortality ( <sub>1</sub> q <sub>0</sub> )	Child mortality ( <sub>4</sub> q <sub>1</sub> )	Under-five mortality ( <sub>5</sub> q <sub>0</sub> )
<b>Residence</b>					
Urban	26	36	61	35	93
Rural	34	44	79	41	117
<b>Province</b>					
Nairobi	32	35	67	30	95
Central	27	17	44	10	54
Coast	45	33	78	41	116
Eastern	32	24	56	29	84
Nyanza	27	106	133	84	206
Rift Valley	37	25	61	17	77
Western	25	54	80	70	144
North Eastern	50	41	91	79	163
<b>Mother's education</b>					
No education	43	37	80	51	127
Primary incomplete	35	62	97	54	145
Primary complete	29	40	69	31	98
Secondary +	25	19	44	20	63
<b>Wealth quintile</b>					
Lowest	38	58	96	59	149
Second	33	42	75	37	109
Middle	35	47	82	43	121
Fourth	30	23	53	26	77
Highest	26	36	62	31	91

<sup>1</sup> Computed as the difference between the infant and the neonatal mortality rates

Figure 8.2 Under-Five Mortality by Background Characteristics



KDHS 2003

A comparison of the rates from the 2003 KDHS excluding the northern districts, with those from the 1998 KDHS indicates that all provinces have experienced an increase in under-five mortality and, except for Nyanza Province, an increase in infant mortality. Nyanza Province experienced an increase in postneonatal mortality (from 97 to 106 deaths per 1,000 live births) and a considerable decline in neonatal mortality (from 38 to 27 deaths per 1,000 live births), while Rift Valley Province experienced an increase in neonatal mortality from 28 to 37 deaths per 1,000 births. Neonatal mortality rates are higher than postneonatal mortality in Central, Coast, Eastern, Rift Valley, and North Eastern provinces.

As observed in most studies, the mother's level of education is strongly linked to child survival. Higher levels of educational attainment are generally associated with lower mortality rates, since education exposes mothers to information about better nutrition, use of contraceptives to space births, and knowledge about childhood illness and treatment. Children of women with no education are an exception to this pattern, since they experience lower mortality than children of women with incomplete primary education. Larger differences exist between the mortality of children of women who have attained secondary education and above and those with primary level of education or less. According to Table 8.2, under-five mortality rates of children born to mothers with incomplete primary education are the highest (145 deaths per 1,000 live births), higher than mothers without any education (127 deaths per 1,000 live births). Children whose mothers have at least some secondary education have the lowest under-five mortality rates (63 deaths per 1,000 live births).

### **8.3 DEMOGRAPHIC DIFFERENTIALS IN INFANT AND CHILD MORTALITY**

Childhood mortality rates by sex of child, age of mother at birth, birth order, previous birth interval, and birth size are presented in Table 8.3. Differences between the mortality of male and female children at birth are found in nearly all populations. The results show that female mortality is lower than that of males at all ages up to five years.

The relationship between mother's age at birth and childhood mortality shows the expected U-shaped pattern, with children of the youngest and oldest women experiencing the highest risk of death. Childhood mortality rates are considerably higher among children born to women in their forties and lowest among children whose mothers are age 20–29 years at the time of birth. A similar U-shaped pattern occurs with the birth order of the child, but only for neonatal mortality. After the neonatal period, first-order births show lower mortality risks than births of order two to six.

The length of birth interval has a significant impact on a child's chances of survival, with short birth intervals considerably reducing the chances of survival. As the birth interval gets longer, the mortality risk is reduced considerably. Children born less than two years after a prior sibling suffer substantially higher risks of death than children born after intervals of two or more years. For example, the infant mortality rate is 134 deaths per 1,000 live births for children born after an interval of less than two years, compared with a rate of 60 deaths per 1,000 live births for birth intervals of three years.

Size of the child at birth also has a bearing on the childhood mortality rates. Children whose birth size is small or very small have a 50 percent greater risk of dying before their first birthday than those whose birth size is average or larger. The birth size of the child appears to affect only the neonatal mortality rate and does not have any effect during the postneonatal period. The same pattern was recorded in the 1998 KDHS.

**Table 8.3 Early childhood mortality rates by demographic characteristics**

Neonatal, postneonatal, infant, child, and under-five mortality rates for the ten-year period preceding the survey, by demographic characteristic, Kenya 2003

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality <sup>1</sup> (PNN)	Infant mortality ( <sub>1</sub> q <sub>0</sub> )	Child mortality ( <sub>4</sub> q <sub>1</sub> )	Under-five mortality ( <sub>5</sub> q <sub>0</sub> )
<b>Child's sex</b>					
Male	36	47	84	42	122
Female	29	38	67	39	103
<b>Mother's age at birth</b>					
<20	34	45	79	41	117
20-29	31	40	71	36	104
30-39	32	45	76	46	119
40-49	(75)	57	132	(89)	209
<b>Birth order</b>					
1	35	27	62	29	90
2-3	28	42	69	34	101
4-6	28	48	77	42	116
7+	51	61	112	73	176
<b>Previous birth interval<sup>2</sup></b>					
<2	57	77	134	56	182
2 years	22	40	62	49	108
3 years	28	32	60	38	95
4+ years	21	38	59	25	83
<b>Birth size<sup>3</sup></b>					
Small/very small	63	40	103	na	na
Average or larger	26	43	68	na	na

Note: Rates based on 250 to 499 exposed persons are in parentheses.

na =Not applicable

<sup>1</sup> Computed as the difference between the infant and the neonatal mortality rates

<sup>2</sup> Excludes first-order births

<sup>3</sup> Rates for the five-year period preceding the survey

## 8.4 DIFFERENTIALS IN INFANT AND CHILD MORTALITY BY WOMEN'S STATUS

The ability to access information, make decisions, and act effectively in their own interest, or the interest of those who depend on them, is an essential aspect of empowerment of women. It follows that if women, the primary caretakers of children, are empowered, the health and survival status of their infants would be enhanced. In fact, mother's empowerment fits into Mosley and Chen's (1984) framework on child survival as an individual-level variable that affects child survival through proximate determinants. Table 8.4 shows information on the impact of women's status as measured by three specific indicators—participation in household decisionmaking, attitude towards refusing to have sex with husband, and attitude towards wife-beating.

The data show that women who have no final say in any decision in the household have higher childhood mortality rates than those who have a say in some decisions in the household. For example, the infant mortality rate of children whose mothers have no final say in any decision is 95 deaths per 1,000 live births, compared with 69 deaths per 1,000 live births for those who participate in five decisions in the household. There is no consistent pattern in mortality rates by the number of reasons to justify a wife's refusing to have sex with her husband. As expected, rates of childhood mortality increase with the number of reasons a woman mentions as justifying wife-beating. The under-five mortality rate is 42 percent higher among women who cite 5 reasons to justify wife beating than among those with no reasons.

Table 8.4 Early childhood mortality rates by women's status

Neonatal, postneonatal, infant, child, and under-five mortality rates for the ten-year period preceding the survey, by women's status indicators, Kenya 2003

Women's status indicators	Neonatal mortality (NN)	Postneonatal mortality <sup>1</sup> (PNN)	Infant mortality ( ${}_1q_0$ )	Child mortality ( ${}_4q_1$ )	Under-five mortality ( ${}_5q_0$ )
<b>Number of decisions in which woman has final say<sup>2</sup></b>					
0	39	56	95	38	129
1-2	33	45	78	42	117
3-4	33	41	73	35	105
5	30	38	69	45	110
<b>Number of reasons to refuse sex with husband</b>					
0	50	39	89	30	116
1-2	35	39	74	38	109
3-4	31	44	75	42	113
<b>Number of reasons wife-beating is justified</b>					
0	33	29	61	29	89
1-2	34	48	81	38	116
3-4	32	48	80	48	124
5	35	43	78	53	126

<sup>1</sup> Computed as the difference between the infant and the neonatal mortality rates

<sup>2</sup> Either by herself or jointly with others

## 8.5 PERINATAL MORTALITY

Pregnancy losses occurring after seven completed months of gestation (stillbirths) plus deaths to live births within the first seven days of life (early neonatal deaths) constitute perinatal deaths. When the total number of perinatal deaths is divided by the total number of pregnancies reaching seven months gestation, the perinatal mortality rate is derived. The distinction between a stillbirth and an early neonatal death may be a fine one, depending often on the observed presence or absence of some faint signs of life after delivery. The causes of stillbirths and early neonatal deaths are overlapping, and examining just one or the other can understate the true level of mortality around delivery.

Table 8.5 presents the number of stillbirths and early neonatal deaths, and the perinatal mortality rate for the five-year period preceding the survey by place of residence, by province, and for selected demographic and socioeconomic characteristics. The results indicate that the perinatal mortality rate is 40 deaths per 1,000 pregnancies. Pregnancies with an interpregnancy interval of less than 15 months have a higher perinatal risk (102 deaths per 1,000 pregnancies) than all other pregnancies.

There are no apparent rural and urban differences in perinatal mortality rates, which contradicts the findings in the previous section that showed that neonatal mortality is higher in rural areas than in urban areas. There are, however, considerable differences in perinatal mortality by province. Coast Province has the highest perinatal mortality rate (57 deaths per 1,000) and Western Province has the lowest rate (28 deaths per 1,000). Perinatal mortality rates according to educational attainment show that women with no education experience higher rates (54 deaths per 1,000) than those with primary (37 deaths per 1,000) or at least some secondary (39 deaths per 1,000) education. Surprisingly, the relationship between perinatal mortality and the wealth index is positive; that is mortality increases with wealth.

**Table 8.5 Perinatal mortality**

Number of stillbirths and early neonatal deaths, and the perinatal mortality rate for the five-year period preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Number of stillbirths <sup>1</sup>	Number of early neonatal deaths <sup>2</sup>	Perinatal mortality rate (per 1,000 pregnancies)	Number of pregnancies of 7+ months duration <sup>3</sup>
<b>Mother's age at birth</b>				
<20	11	31	38	1,081
20-29	43	85	38	3,366
30-39	23	36	39	1,523
40-49	7	13	*	217
<b>Previous pregnancy interval in months</b>				
First pregnancy	17	42	41	1,460
<15	8	28	102	355
15-26	20	36	39	1,439
27-38	14	30	31	1,393
39+	25	28	35	1,539
<b>Residence</b>				
Urban	20	27	40	1,162
Rural	64	138	40	5,024
<b>Province</b>				
Nairobi	7	13	49	405
Central	11	13	35	663
Coast	7	23	57	517
Eastern	13	26	41	959
Nyanza	20	19	38	1,020
Rift Valley	13	56	41	1,651
Western	11	11	28	787
North Eastern	3	5	45	184
<b>Education</b>				
No education	17	35	54	955
Primary incomplete	31	53	37	2,254
Primary complete	21	42	37	1,699
Secondary +	15	35	39	1,278
<b>Wealth index</b>				
Lowest	6	48	36	1,516
Second	16	28	34	1,287
Middle	29	22	43	1,188
Fourth	13	35	46	1,045
Highest	20	33	46	1,151
Total	84	165	40	6,186

Note: An asterisk indicates that a rate is based on fewer than 250 pregnancies and has been suppressed.

<sup>1</sup> Stillbirths are fetal deaths in pregnancies lasting seven or more months.

<sup>2</sup> Early neonatal deaths are deaths at age 0-6 days among live-born children.

<sup>3</sup> The sum of the number of stillbirths and early neonatal deaths divided by the number of pregnancies of seven or more months' duration.

## 8.6 HIGH-RISK FERTILITY BEHAVIOUR

Numerous studies have found a strong relationship between children's chances of dying and certain fertility behaviours. Typically, the probability of dying in early childhood is much greater if children are born to mothers who are too young or too old, if they are born after a short birth interval, or if they are born to mothers with high parity. Very young mothers may experience difficult pregnancies and deliveries because of their physical immaturity. Older women may also experience age-related problems during pregnancy and delivery. For purposes of this analysis, a mother is classified as "too young" if she is less than 18 years of age and "too old" if she is over 34 years of age at the time of delivery; a "short birth interval" is defined as a birth occurring within 24 months of a previous birth; and a "high-order" birth is one occurring after three or more previous births (i.e., birth order four or higher). First-order births may be at increased risk of dying, relative to births of other orders; however, this distinction is not included in the risk categories in the table because it is not considered avoidable fertility behaviour. Also, for the short birth interval category, only children with a preceding interval of less than 24 months are included. Short succeeding birth intervals are not included, even though they can influence the survivorship of a child, because of the problem of reverse causal effect (i.e., a short succeeding birth interval can be the result of the death of a child rather than being the cause of the death of a child).

Table 8.6 presents the distribution of children born in the five years preceding the survey by these categories of increased risk of mortality. Column 2 shows the percentage of children falling into specific categories. Column 3 shows the risk ratio of mortality for children by comparing the proportion dead among children in each high-risk category with the proportion dead among children not in any high-risk category (i.e., those whose mothers were age 18-34 at delivery, who were born 24 or more months after the previous birth, or who are of birth order two or three).

Fifty-six percent of children in Kenya fall into a high-risk category, with 38 percent in a single high-risk category and 19 percent in a multiple high-risk category. High risks are associated with birth intervals of less than 24 months, births to mothers older than 34 years, and births to mothers younger than 18 years under the single high-risk category. In general, risk ratios are higher for children in a multiple high-risk category than for children in a single high-risk category. The highest risk (3.0) is associated with fourth and higher births that occur less than 24 months after a previous birth to mothers who are over age 34 years; however, only 2 percent of births fall into this multiple high-risk category. Seven percent of births in Kenya occur after a short birth interval to mothers who have had three or more births, with these children twice as likely to die in early childhood as children who are not in any high-risk category.

The last column of Table 8.6 addresses the question of what percentage of currently married women have the potential for a high-risk birth. This was obtained by simulating the distribution of currently married women by the risk category in which a birth would fall if a woman were to conceive at the time of the survey. Although many women are protected from conception because of use of family planning, postpartum insusceptibility, and prolonged abstinence, for simplicity only those who have been sterilised are included in the "not in any high-risk category." Overall, 73 percent of currently married women have the potential for having a high-risk birth, with 30 percent falling into a single high-risk category and 43 percent into a multiple high-risk category.



**Table 8.6 High-risk fertility behaviour**

Percent distribution of children born in the five years preceding the survey by category of elevated risk of mortality and the risk ratio, and percent distribution of currently married women by category of risk if they were to conceive a child at the time of the survey, Kenya 2003

Risk category	Births in the 5 years preceding the survey		Percentage of currently married women <sup>1</sup>
	Percentage of births	Risk ratio	
Not in any high-risk category	25.8	1.00	22.1 <sup>a</sup>
<b>Unavoidable risk category</b>			
First-order births between ages 18 and 34 years	18.0	0.89	5.1
<b>Single high-risk category</b>			
Mother's age <18	6.5	1.60	0.7
Mother's age >34	0.7	1.80	3.2
Birth interval <24 months	8.4	1.84	10.3
Birth order >3	22.1	1.12	15.7
Subtotal	37.6	1.38	29.9
<b>Multiple high-risk category</b>			
Age <18 and birth interval <24 months <sup>2</sup>	0.4	2.49	0.3
Age >34 and birth interval <24 months	0.0	na	0.1
Age >34 and birth order >3	9.6	1.47	25.8
Age >34 and birth interval <24 months and birth order >3	2.0	3.04	4.3
Birth interval <24 months and birth order >3	6.7	2.15	12.5
Subtotal	18.6	1.90	42.9
In any avoidable high-risk category	56.2	1.55	72.8
Total	100.0	na	100.0
Number of births	6,102	na	4,919

Note: Risk ratio is the ratio of the proportion dead among births in a specific high-risk category to the proportion dead among births not in any high-risk category.

na = Not applicable

<sup>1</sup> Women are assigned to risk categories according to the status they would have at the birth of a child if they were to conceive at the time of the survey: current age younger than 17 years and 3 months or older than 34 years and 2 months, latest birth less than 15 months ago, or latest birth being of order 3 or higher.

<sup>2</sup> Includes the category age <18 and birth order >3

<sup>a</sup> Includes sterilised women

## MATERNAL AND CHILD HEALTH

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This chapter presents findings from key areas in maternal and child health namely, antenatal, postnatal and delivery care, childhood vaccination and common childhood illnesses and their treatment. One of the priorities of the Ministry of Health in Kenya is the provision of medical care and counselling services during pregnancy and at delivery that impact the survival of both the mother and infant. The 2003 KDHS results provide an evaluation of the utilisation of these health services, as well as information useful in assessing the need for service expansion. The information can be used to identify women whose babies are at risk due to non-use of maternal health services. The findings are also valuable to policy makers and programme implementers in strengthening implementation of programmes and activities to improve maternal and child care services. The results in the following sections are based on data collected from mothers about live births that occurred in the five years preceding the survey.

### 9.1 ANTENATAL CARE

#### Antenatal Care Coverage

Table 9.1 shows the percent distribution of women who had a live birth in the five years preceding the survey by the type of antenatal care provider for the most recent birth. Interviewers recorded all persons a woman may have seen for care, but in the table, only the provider with the highest qualification is considered (if more than one person was seen).

The data indicate that 88 percent of women in Kenya receive antenatal care from a medical professional, either from doctors (18 percent) or nurses or midwives (70 percent). A small fraction (2 percent) receives antenatal care from traditional birth attendants, while 10 percent do not receive any antenatal care.

The 2003 data indicate a slight decline since 1998 in medical antenatal care coverage. In the 1998 KDHS, the questions on antenatal care were asked only of women who had a birth in the three years before the survey. Moreover, the sample excluded the entire North Eastern Province and five other northern districts. Examining trends shows that the proportion of women who had antenatal care from a trained medical provider for their most recent birth in the three years before the survey declined very slightly from 92 to 90 percent (data not shown). Moreover, there has been a shift away from doctors (28 percent in 1998 versus 19 percent in 2003) towards nurses and midwives (64 percent in 1998 versus 71 percent in 2003).

Examination of differentials in antenatal care in Table 9.1 shows that the mother's age at birth and the child's birth order are not strongly related to use of antenatal care. However, higher parity women are more likely than lower parity women to see no one for antenatal care. Rural women are less likely than their urban counterparts to get antenatal care from a doctor and more likely to get no care at all. There are marked regional variations in antenatal care coverage, with over two-thirds of women in North Eastern Province not getting any antenatal care at all. Women in Western Province have low use of doctors for antenatal care compared to nurses, while for Coast Province the reverse is true.

Women's education is associated with antenatal care coverage. Women with higher education are much more likely to have received care from a medical doctor than those with no education (24 percent versus 15 percent), while the proportion of women who get no antenatal care declines steadily as education increases.

**Table 9.1 Antenatal care**

Percent distribution of women who had a live birth in the five years preceding the survey by antenatal care (ANC) provider during pregnancy for the most recent birth, according to background characteristics, Kenya 2003

Background characteristic	Doctor	Nurse/ midwife	Traditional birth attendant/ other	No one	Missing	Total	Number of women
<b>Age at birth</b>							
<20	15.1	69.2	3.9	11.5	0.3	100.0	647
20-34	19.7	70.5	1.2	8.1	0.6	100.0	2,821
35-49	12.5	69.9	2.4	14.4	0.7	100.0	584
<b>Birth order</b>							
1	17.7	72.2	1.7	7.9	0.5	100.0	946
2-3	20.4	70.9	1.5	6.9	0.3	100.0	1,404
4-5	18.5	70.2	1.1	8.7	1.4	100.0	842
6+	13.5	66.8	2.8	16.5	0.4	100.0	859
<b>Residence</b>							
Urban	22.5	70.7	1.0	5.4	0.3	100.0	835
Rural	16.7	70.1	2.0	10.6	0.6	100.0	3,217
<b>Province</b>							
Nairobi	28.7	66.7	0.5	3.8	0.3	100.0	307
Central	21.1	71.8	0.4	6.3	0.4	100.0	495
Coast	35.2	52.3	1.2	11.3	0.0	100.0	336
Eastern	11.4	80.2	0.7	7.4	0.3	100.0	646
Nyanza	14.7	70.6	5.0	9.1	0.6	100.0	643
Rift Valley	19.3	69.0	0.9	9.6	1.2	100.0	1,052
Western	7.1	84.0	2.5	6.1	0.3	100.0	470
North Eastern	10.1	15.1	6.5	68.3	0.0	100.0	102
<b>Education</b>							
No education	14.6	53.6	3.4	27.7	0.7	100.0	582
Primary incomplete	16.0	71.7	2.3	9.4	0.7	100.0	1,395
Primary complete	16.7	74.5	1.5	6.5	0.8	100.0	1,143
Secondary +	24.4	73.1	0.3	2.2	0.0	100.0	932
<b>Wealth quintile</b>							
Lowest	15.6	59.5	4.2	19.9	0.8	100.0	869
Second	16.4	71.0	2.3	9.8	0.5	100.0	830
Middle	17.3	75.1	0.7	6.5	0.3	100.0	777
Higher	14.8	78.2	0.7	5.6	0.8	100.0	725
Highest	24.9	69.0	0.6	4.9	0.5	100.0	851
<b>Total</b>	<b>17.9</b>	<b>70.2</b>	<b>1.8</b>	<b>9.6</b>	<b>0.6</b>	<b>100.0</b>	<b>4,052</b>

Note: If more than one source of ANC was mentioned, only the provider with the highest qualifications is considered in this tabulation.

## Source of Antenatal Care

Table 9.2 shows the types of places where women say they obtained antenatal care. Since women can obtain care from several sources, multiple answers were allowed. The vast majority of women who obtained antenatal care went to government sources (71 percent), while private medical sources were only reported by 28 percent of women. The most common sources of antenatal care are government health

centres and government hospitals. The public-private distribution of sources is similar for urban and rural women; however, urban women are more likely to go to government hospitals and private hospitals and clinics than rural women, who are more likely to visit government dispensaries and Mission hospitals and clinics. Women in Nairobi use private sources more than women in other provinces, while women in Central and Coast Provinces are most likely to use public (government) sources for antenatal care. Twenty-two percent of women in North Eastern Province reported having received antenatal care at home, and very few used the private sector for this service.

Table 9.2 Source of antenatal care

Percentage of women who had a live birth in the five years preceding the survey and who received antenatal care for the most recent birth, by place(s) antenatal care was received, according to residence and province, Kenya 2003

Source of antenatal care	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
Home	1.4	3.4	0.5	0.0	1.8	0.8	6.1	0.9	10.2	21.6	3.0
<b>Public sector</b>	70.9	71.1	64.8	81.7	81.9	72.5	65.8	65.4	73.5	77.7	71.1
Government hospital	32.9	20.4	12.7	33.1	24.0	26.0	18.9	22.0	20.8	55.2	23.1
Government health centre	30.3	26.7	41.9	27.0	29.3	18.1	29.6	24.9	33.5	12.8	27.5
Government dispensary	7.2	24.5	9.0	22.0	29.6	27.8	18.6	18.8	19.4	9.7	20.7
Other public	0.7	0.5	1.4	1.0	0.2	0.7	0.3	0.3	0.1	0.0	0.5
<b>Private medical sector</b>	28.4	27.8	34.6	18.6	19.2	27.4	30.5	34.6	24.1	0.7	27.9
Mission hospital/clinic	8.0	16.8	6.8	8.0	5.2	18.4	18.6	19.7	14.9	0.0	14.9
Private hospital/clinic	19.4	10.6	26.8	9.8	13.4	8.2	10.9	14.7	9.3	0.7	12.5
Nursing/maternity home	1.0	0.3	0.9	1.0	0.6	0.2	0.7	0.1	0.2	0.0	0.4
Other private medical	0.6	0.3	0.5	0.0	0.0	0.8	0.6	0.2	0.0	0.0	0.3
Other	0.3	0.3	0.5	0.0	0.2	0.2	0.2	0.1	1.2	0.0	0.3
Number of women	787	2,855	294	462	298	596	581	938	440	32	3,642

## Number and Timing of Antenatal Care Visits

Health professionals and providers recommend that the first antenatal visit should occur within the first trimester of pregnancy and continue on a monthly basis through the 28th week of pregnancy and fortnightly up to the 36th week or until birth. This implies that 12-13 visits should be made during the entire pregnancy. Antenatal care can be more effective in preventing adverse pregnancy outcomes when it is sought early in pregnancy and continues through to delivery.

Table 9.3 provides information on the number of antenatal care visits and the timing of the first visit. Early detection of problems in pregnancy leads to more timely referrals in case of women in higher-risk categories or complications; this is particularly true in Kenya, where 80 percent of the population lives in rural areas and where physical barriers pose a challenge to health care delivery.

In Kenya, slightly over half (52 percent) of all women make four or more antenatal visits. In addition, 36 percent of mothers make fewer than four visits, far below the recommended number of 12. Two-thirds of urban women (67 percent) make four or more antenatal care visits, compared to less than half of rural women (49 percent).

Moreover, women do not receive antenatal care early in the pregnancy. Only 11 percent of women obtain antenatal care in the first trimester of pregnancy and less than half have received care before the sixth month of pregnancy. Overall, the median number of months of pregnancy at first visit is 5.9.

**Table 9.3 Number of antenatal care visits and timing of first visit**

Percent distribution of women who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits for the most recent birth, and by the timing of the first visit according to residence, Kenya 2003

Number and timing of ANC visits	Residence		Total
	Urban	Rural	
<b>Number of ANC visits</b>			
None	5.4	10.6	9.6
1	2.5	4.7	4.2
2-3	22.1	33.7	31.3
4+	66.7	48.6	52.3
Don't know/missing	3.3	2.5	2.6
Total	100.0	100.0	100.0
<b>Number of months pregnant at time of first ANC visit</b>			
No antenatal care	5.4	10.6	9.6
<4	15.8	9.9	11.1
4-5	38.4	36.3	36.7
6-7	36.2	37.3	37.1
8+	3.3	5.3	4.9
Don't know/missing	0.9	0.6	0.7
Total	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	5.7	5.9	5.9
Number of women	835	3,217	4,052

Comparing trends since the 1998 KDHS requires re-tabulating both sets of data to reflect information on the most recent birth in the three years prior to the survey to women who live in the southern half of the country. That analysis shows a decline in the proportion of women who have four or more antenatal visits, from 60 percent in 1998 to 54 percent in 2003. Overall, there has been less change in the pattern of antenatal attendance by gestational age. The median gestational age at first visit has increased slightly from 5.7 months in the 1998 KDHS to 5.9 in the 2003 survey. This calls for programme interventions that will encourage more women to attend antenatal clinics in the first trimester of pregnancy.

## Components of Antenatal Care

Pregnancy complications are an important cause of maternal and child morbidity and mortality. Consequently, informing women about the danger signs associated with pregnancy and the actions they should take in case complications arise, are important elements of antenatal care services. In the 2003 KDHS, women who had a live birth in the five years before the survey were asked about antenatal care services, including whether they were told about the signs of pregnancy complications, whether they were weighed, whether their height and blood pressure were measured, whether urine and blood samples were taken, and whether they were given any information or counseled about HIV/AIDS or about breastfeeding.<sup>1</sup>

<sup>1</sup> They were also asked whether they took iron supplements (see Chapter 10) and antimalarial drugs (see Chapter 11) during the pregnancy.

Table 9.4 shows that among women who had a birth in the five years preceding the survey, only 36 percent who received antenatal care for the most recent birth reported that they had been informed about pregnancy complications. Urban women and those with more education are more likely to have been told about pregnancy complications than rural or uneducated women. Similarly, the likelihood of a woman being told about pregnancy complications declines as parity increases. Women in the highest wealth quintile are twice as likely to receive information on pregnancy complications than those in the lowest quintile.

Background characteristic	Among women who received antenatal care								Number of women
	Informed of signs of pregnancy complications	Weight measured	Height measured	Blood pressure measured	Urine sample taken	Blood sample taken	Given information on AIDS	Given information on breast-feeding	
<b>Age at birth</b>									
<20	32.4	88.1	29.8	78.6	45.3	56.4	27.7	34.9	570
20-34	37.6	92.4	27.1	84.0	51.3	58.6	33.7	39.5	2,575
35-49	32.5	91.3	27.0	86.0	50.8	56.0	34.1	41.1	496
<b>Birth order</b>									
1	40.9	91.2	29.9	84.3	56.8	66.6	35.4	41.7	867
2-3	38.0	92.4	28.3	83.2	50.9	57.5	32.7	38.7	1,304
4-5	33.1	93.0	24.4	84.2	47.9	55.7	34.6	40.7	757
6+	30.0	89.1	26.5	82.0	43.7	50.4	28.0	34.3	714
<b>Residence</b>									
Urban	53.3	96.0	42.6	94.8	71.1	83.3	42.5	49.7	787
Rural	31.3	90.4	23.4	80.3	44.6	50.9	30.2	36.0	2,855
<b>Province</b>									
Nairobi	58.7	96.5	51.3	94.7	67.5	85.4	49.6	53.6	294
Central	39.5	92.2	22.1	92.8	60.2	71.1	41.4	45.6	462
Coast	39.4	91.2	28.2	86.6	78.6	80.1	29.6	31.2	298
Eastern	35.3	92.3	28.5	75.9	46.1	49.9	33.8	37.3	596
Nyanza	30.1	89.5	21.5	75.7	35.0	42.1	27.0	31.8	581
Rift Valley	29.5	91.8	26.5	85.2	47.5	55.9	27.2	39.4	938
Western	39.4	91.0	23.9	82.5	40.4	46.0	33.5	40.1	440
North Eastern	18.6	64.7	52.2	57.9	58.3	63.2	26.5	17.2	32
<b>Education</b>									
No education	21.5	85.5	31.6	77.2	45.8	48.1	23.0	25.3	417
Primary incomplete	29.4	89.5	22.8	77.4	39.1	48.2	26.0	31.2	1,255
Primary complete	38.9	93.5	26.4	85.6	51.3	61.9	35.9	39.9	1,059
Secondary +	48.6	95.0	33.5	92.1	66.7	71.0	43.2	55.0	911
<b>Wealth quintile</b>									
Lowest	24.5	88.7	22.8	73.9	35.9	42.1	24.0	30.7	690
Second	32.7	90.7	22.4	77.2	39.5	44.1	29.6	36.5	745
Middle	30.4	89.4	21.0	80.5	43.2	50.9	29.8	34.2	724
Fourth	36.1	92.4	26.5	89.3	58.0	66.0	34.3	40.8	678
Highest	54.1	96.2	42.9	95.0	72.4	83.7	44.8	51.2	805
Total	36.1	91.6	27.5	83.4	50.3	57.9	32.8	39.0	3,642

As concerns antenatal tests and examinations, 92 percent of pregnant women said they were weighed, 28 percent had their heights measured, and 83 percent had their blood pressure measured. Half of the women had a urine sample taken, while 58 percent had a blood sample taken. Thirty-three percent of pregnant women said they were given information or counseled about HIV/AIDS during an antenatal care visit, while 39 percent were given information or counselling about breastfeeding.

The socio-economic characteristics that appear to influence the content of antenatal care include residence, wealth, and level of education. Women in urban areas are more likely to receive all the specified components of antenatal care than rural women. Similarly, women with more education and those higher on the wealth index are more likely to receive most of the components of ANC compared to less educated and poorer women. In general, women in Nairobi who receive antenatal care are the most likely and those in North Eastern Province are the least likely to have received the stated services. This is not the case for height measurement and urine and blood samples, which pregnant women in North Eastern who receive antenatal care are not the least likely to receive.

## **Tetanus Toxoid Immunisation**

Tetanus toxoid injections are given during pregnancy for the prevention of neonatal tetanus, historically one of the principal causes of death among infants in many developing countries. To achieve protection for herself and her newborn baby, typically, a pregnant woman will receive at least two doses of tetanus toxoid. On the other hand, if a woman has been fully vaccinated during a previous pregnancy, she may only require one dose during her current pregnancy to achieve such protection. Five doses are considered adequate to provide lifetime protection. In order to estimate the extent of tetanus toxoid coverage during pregnancy, the 2003 KDHS collected data on the number of tetanus injections women received during pregnancy for the most recent birth in the five years preceding the survey. These results are presented in Table 9.5. The data may underestimate the actual extent of protection against tetanus, since women who had received prior vaccinations may not have received additional injections, as they were considered unnecessary.

The data indicate that 52 percent of mothers received two or more doses of tetanus toxoid during pregnancy, while 34 percent received one dose. The remaining 14 percent of mothers did not receive any tetanus injection. Lower parity births and those occurring in urban areas are more likely to have been protected by tetanus vaccination than higher parity and rural births. Similarly, births to wealthier and more educated women are more likely to be protected than those to poorer and less educated women. Coverage with two doses of tetanus toxoid ranges from a low of 18 percent of women in North Eastern Province to 62 percent of those in Central Province.

There has been little change in the proportion of women receiving tetanus toxoid injections during pregnancy. The proportion of women (excluding those in the northern areas) who received two or more tetanus injections during the pregnancy that resulted in their most recent birth in the three years before the survey increased from 51 percent in 1998 to 54 percent in 2003; however, the proportion who did not receive any tetanus injection at all also increased from 10 to 13 percent (data not shown).

**Table 9.5 Tetanus toxoid injections**

Percent distribution of women who had a live birth in the five years preceding the survey by number of tetanus toxoid injections received during pregnancy for the most recent birth, according to background characteristics, Kenya 2003

Background characteristic	None	One injection	Two or more injections	Don't know/missing	Total	Number of women
<b>Age at birth</b>						
<20	19.1	30.0	50.2	0.8	100.0	647
20-34	11.2	34.5	53.5	0.8	100.0	2,821
35-49	20.2	32.6	46.2	1.0	100.0	584
<b>Birth order</b>						
1	13.9	27.7	57.2	1.2	100.0	946
2-3	10.0	34.8	54.4	0.8	100.0	1,404
4-5	12.6	35.0	51.8	0.7	100.0	842
6+	20.7	36.3	42.3	0.7	100.0	859
<b>Residence</b>						
Urban	8.4	32.6	57.2	1.8	100.0	835
Rural	15.1	33.7	50.6	0.6	100.0	3,217
<b>Province</b>						
Nairobi	8.5	33.4	55.3	2.8	100.0	307
Central	7.8	29.4	61.7	1.1	100.0	495
Coast	15.9	28.9	54.6	0.6	100.0	336
Eastern	12.4	30.5	56.6	0.5	100.0	646
Nyanza	16.2	40.4	42.7	0.8	100.0	643
Rift Valley	13.5	33.3	52.2	0.9	100.0	1,052
Western	9.6	39.7	50.6	0.1	100.0	470
North Eastern	64.6	17.3	18.1	0.0	100.0	102
<b>Education</b>						
No education	30.4	28.7	40.3	0.6	100.0	582
Primary incomplete	15.0	36.2	48.2	0.6	100.0	1,395
Primary complete	11.0	34.6	53.5	0.9	100.0	1,143
Secondary +	4.8	31.1	63.0	1.1	100.0	932
<b>Wealth quintile</b>						
Lowest	28.0	32.7	38.7	0.5	100.0	869
Second	12.3	35.4	52.2	0.1	100.0	830
Middle	10.3	33.1	55.8	0.8	100.0	777
Fourth	8.8	36.1	54.1	1.0	100.0	725
Highest	7.9	30.6	59.9	1.7	100.0	851
Total	13.7	33.5	51.9	0.8	100.0	4,052

## 9.2 DELIVERY CARE

### Place of Delivery

The objective of providing safe delivery services is to protect the life and health of the mother and her child. An important component of efforts to reduce the health risk to mothers and children is to increase the proportion of babies delivered under the supervision of health professionals. Proper medical attention under hygienic conditions during delivery can reduce the risk of complications and infections that may cause death or serious illness either to the mother, baby or both. In the 2003 KDHS, women were asked where they delivered their children born in the five years preceding the survey (Table 9.6 and Figure 9.1).



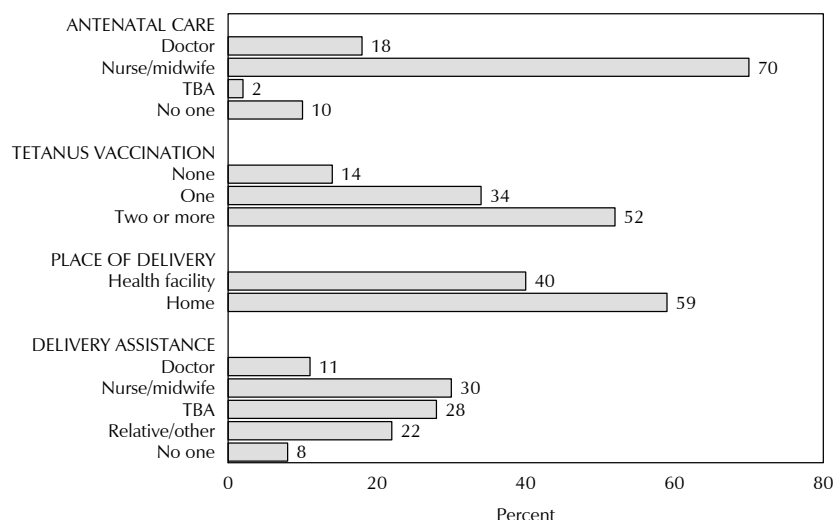
**Table 9.6 Place of delivery**

Percent distribution of live births in the five years preceding the survey by place of delivery, according to background characteristics, Kenya 2003

Background characteristic	Health facility		Home	Other	Missing	Total	Number of births
	Public sector	Private sector					
<b>Mother's age at birth</b>							
<20	32.4	13.3	53.6	0.6	0.2	100.0	1,070
20-34	26.0	14.8	58.2	0.8	0.2	100.0	4,287
35-49	17.7	10.3	69.4	1.6	1.0	100.0	745
<b>Birth order</b>							
1	39.8	19.2	40.2	0.4	0.3	100.0	1,469
2-3	26.5	15.6	56.8	0.9	0.1	100.0	2,177
4-5	21.7	11.4	65.9	0.9	0.2	100.0	1,215
6+	13.6	7.4	77.0	1.2	0.8	100.0	1,240
<b>Residence</b>							
Urban	44.9	25.3	29.2	0.4	0.2	100.0	1,143
Rural	21.8	11.4	65.5	0.9	0.3	100.0	4,959
<b>Province</b>							
Nairobi	38.2	39.7	21.5	0.5	0.1	100.0	398
Central	50.3	16.6	31.9	1.1	0.0	100.0	652
Coast	23.7	7.5	67.4	0.8	0.6	100.0	510
Eastern	26.4	11.3	60.8	1.4	0.1	100.0	946
Nyanza	22.1	14.1	62.6	0.9	0.4	100.0	1,000
Rift Valley	23.1	12.8	63.0	0.7	0.4	100.0	1,639
Western	16.8	11.6	70.6	0.6	0.4	100.0	776
North Eastern	7.4	0.3	91.9	0.0	0.4	100.0	181
<b>Mother's education</b>							
No education	7.8	6.4	83.9	1.0	0.8	100.0	938
Primary incomplete	19.6	9.9	69.2	0.9	0.4	100.0	2,222
Primary complete	33.4	12.6	52.9	1.0	0.1	100.0	1,678
Secondary +	41.4	28.7	29.5	0.3	0.1	100.0	1,263
<b>Antenatal care visits<sup>1</sup></b>							
None	6.8	3.4	89.1	0.7	0.0	100.0	387
1-3	21.8	13.5	63.9	0.8	0.0	100.0	1,438
4+	35.0	18.9	45.2	0.8	0.0	100.0	2,119
Don't know/missing	26.9	20.3	45.9	1.7	5.2	100.0	107
<b>Wealth quintile</b>							
Lowest	9.2	6.8	82.9	0.6	0.5	100.0	1,509
Second	19.1	12.3	66.7	1.6	0.3	100.0	1,271
Middle	27.8	8.7	62.3	1.0	0.2	100.0	1,159
Fourth	38.5	14.7	45.8	0.7	0.3	100.0	1,032
Highest	43.5	30.3	25.8	0.2	0.2	100.0	1,131
Total	26.1	14.0	58.7	0.8	0.3	100.0	6,102

<sup>1</sup> Includes only the most recent birth in the five years preceding the survey

**Figure 9.1 Antenatal Care, Tetanus Vaccinations, Place of Delivery, and Delivery Assistance**



TBA = Traditional birth attendant

KDHS 2003

Two out of five births (40 percent) in Kenya are delivered in a health facility, while 59 percent are delivered at home. Births to older women and births of higher order are more likely to occur at home. Similarly, rural children are twice as likely to be born at home than urban children. The proportion of children born at home decreases with increasing education and wealth quintile of the mother. For example, 84 percent of children whose mothers have no education are born at home, compared with 30 percent of those whose mothers have some secondary education. Similarly, children whose mothers had more antenatal care visits during the pregnancy are less likely to deliver at home. Births at home are substantially lower among women who live in Nairobi or Central Provinces and extremely high (92 percent) for those in the North Eastern Province.

There has been no change since 1998 in the proportion of births occurring at home. Excluding the northern areas and analysing births in the three years prior to the surveys in order to maintain comparability, the proportion of births occurring at home has remained steady at 57 percent.

### Assistance at Delivery

The type of assistance a woman receives during birth has important health consequences for both the mother and the child. Women interviewed in the 2003 KDHS were asked who assisted with the delivery of their children born in the five years preceding the survey. Interviewers were able to record multiple responses if more than one person assisted during delivery; however, for the purpose of this tabulation, only the most highly qualified attendant was considered if there were more than one response.

Table 9.7 shows that 42 percent of births in Kenya are delivered under the supervision of a health professional, mainly a nurse or midwife. Traditional birth attendants continue to play a vital role in delivery, assisting with 28 percent of births. Relatives and friends assist in 22 percent of births. Maternal age and child's birth order are associated with the type of assistance at delivery. Births to older women and those of higher birth order are more likely to occur with no assistance, compared to births to younger women and those of lower birth order.

Table 9.7 Assistance during delivery

Percent distribution of live births in the five years preceding the survey by person providing assistance during delivery, according to background characteristics, Kenya 2003

Background characteristic	Doctor	Nurse/ midwife	Traditional birth attendant	Relative/ friend	No one	Don't know/ missing	Total	Number of births
<b>Mother's age at birth</b>								
<20	13.8	33.2	29.5	18.8	4.4	0.2	100.0	1,070
20-34	11.4	30.9	27.3	23.0	7.1	0.3	100.0	4,287
35-49	7.7	21.7	29.8	21.5	18.4	1.0	100.0	745
<b>Birth order</b>								
1	18.8	41.5	21.6	15.6	2.0	0.4	100.0	1,469
2-3	11.0	32.8	26.4	23.6	6.0	0.1	100.0	2,177
4-5	9.0	25.2	30.2	24.8	10.7	0.2	100.0	1,215
6+	5.7	16.9	36.3	24.3	15.9	0.9	100.0	1,240
<b>Residence</b>								
Urban	24.0	48.0	12.5	11.1	4.2	0.1	100.0	1,143
Rural	8.5	26.0	31.6	24.6	8.9	0.4	100.0	4,959
<b>Province</b>								
Nairobi	33.8	45.2	9.4	7.8	3.6	0.1	100.0	398
Central	17.9	50.0	4.9	19.3	7.5	0.3	100.0	652
Coast	12.2	21.6	28.0	32.1	5.7	0.4	100.0	510
Eastern	9.0	29.6	25.5	28.4	7.5	0.0	100.0	946
Nyanza	5.8	32.8	33.1	18.0	9.8	0.4	100.0	1,000
Rift Valley	12.1	25.2	27.6	25.8	8.8	0.5	100.0	1,639
Western	4.9	24.5	41.6	18.1	10.6	0.4	100.0	776
North Eastern	1.5	7.0	82.8	7.9	0.2	0.6	100.0	181
<b>Mother's education</b>								
No education	3.3	12.5	47.0	23.4	13.0	0.8	100.0	938
Primary incomplete	8.0	22.5	31.7	27.7	9.6	0.5	100.0	2,222
Primary complete	12.2	35.5	24.1	21.6	6.5	0.1	100.0	1,678
Secondary +	22.3	49.7	12.7	11.7	3.4	0.1	100.0	1,263
<b>Wealth quintile</b>								
Lowest	4.0	13.0	48.2	23.9	10.3	0.6	100.0	1,509
Second	7.8	25.0	28.1	27.3	11.4	0.4	100.0	1,271
Middle	7.4	30.8	27.5	26.7	7.5	0.2	100.0	1,159
Fourth	13.4	41.5	17.2	21.3	6.1	0.4	100.0	1,032
Highest	27.5	47.9	11.4	9.6	3.5	0.1	100.0	1,131
Total	11.4	30.2	28.0	22.1	8.0	0.3	100.0	6,102

Note: If the respondent mentioned more than one person attending during delivery, only the most qualified person is considered in this tabulation.

As expected, births in urban areas and those whose mothers have more education or are in wealthier quintiles are more likely to be assisted by medical personnel than those whose mothers are rural, have less education, or are in poorer wealth quintiles. Regional differentials in type of assistance at delivery are also pronounced, with North Eastern Province recording the lowest proportion (9 percent) of births assisted by medical professionals, followed by Western Province (29 percent). Nairobi has the highest proportion of births assisted by medical personnel (79 percent).

The proportion of births assisted by medically trained personnel has remained constant since 1998, at 44 percent, considering births in the three years prior to the survey and excluding those in the northern areas of the country.

## Delivery Characteristics

The 2003 KDHS obtained information on a number of aspects of deliveries, including the frequency of caesarean sections and low-birth-weight babies. The caesarean section rate is sometimes considered to be a proxy indicator of women's access to care for complicated deliveries.

Table 9.8 shows that only 4 percent of live births in Kenya are delivered by caesarean section. Caesarean section is slightly more common among first births (7 percent), births to urban women (9 percent), births in Nairobi (10 percent), births to mothers with some secondary education (10 percent) and births to women in the highest wealth quintile (11 percent).

Table 9.8 Delivery characteristics

Percentage of live births in the five years preceding the survey delivered by caesarean section, and percent distribution by birth weight and by mother's estimate of baby's size at birth, according to background characteristics, Kenya 2003

Background characteristic	Delivery by C-section	Birth weight				Total	Size of child at birth				Total	Number of births
		Not weighed	Less than 2.5 kg	2.5 kg or more	Don't know/missing		Very small	Smaller than average	Average or larger	Don't know/missing		
Mother's age at birth												
<20	4.3	51.6	4.4	41.6	2.4	100.0	4.5	13.0	82.2	0.3	100.0	1,070
20-34	4.1	53.6	3.2	41.9	1.3	100.0	3.3	12.7	83.4	0.6	100.0	4,287
35-49	3.1	64.2	3.6	29.9	2.3	100.0	5.1	10.9	82.6	1.4	100.0	745
Birth order												
1	6.7	38.2	5.6	54.0	2.2	100.0	4.1	13.6	81.7	0.5	100.0	1,469
2-3	4.6	52.9	3.5	42.2	1.4	100.0	3.3	12.3	83.9	0.5	100.0	2,177
4-5	2.5	58.7	2.2	38.5	0.6	100.0	3.5	12.0	83.9	0.6	100.0	1,215
6+	1.4	72.6	2.1	23.0	2.3	100.0	4.1	12.2	82.6	1.0	100.0	1,240
Residence												
Urban	9.4	23.8	5.8	68.4	2.1	100.0	5.0	9.6	84.6	0.8	100.0	1,143
Rural	2.8	61.6	2.9	33.9	1.5	100.0	3.4	13.2	82.7	0.6	100.0	4,959
Province												
Nairobi	10.3	17.8	4.8	76.1	1.3	100.0	5.4	8.7	85.0	1.0	100.0	398
Central	6.2	26.2	4.7	68.7	0.4	100.0	3.2	11.9	84.5	0.4	100.0	652
Coast	4.3	50.5	5.8	41.4	2.3	100.0	5.5	12.3	81.6	0.6	100.0	510
Eastern	4.2	58.1	4.4	36.1	1.4	100.0	3.1	15.3	81.1	0.5	100.0	946
Nyanza	1.9	63.2	2.4	32.7	1.7	100.0	2.0	10.8	86.7	0.5	100.0	1,000
Rift Valley	3.8	57.8	2.6	37.7	1.9	100.0	4.3	13.0	81.9	0.9	100.0	1,639
Western	2.2	69.3	2.8	26.4	1.5	100.0	3.0	13.6	83.0	0.4	100.0	776
North Eastern	2.5	88.4	1.2	7.0	3.4	100.0	7.6	11.4	79.8	1.2	100.0	181
Mother's education												
No education	1.8	75.1	2.2	19.6	3.0	100.0	6.8	15.7	76.1	1.5	100.0	938
Primary incomplete	2.1	65.8	3.1	29.7	1.4	100.0	3.6	12.5	83.3	0.7	100.0	2,222
Primary complete	3.7	48.1	3.2	47.3	1.4	100.0	2.7	12.5	84.4	0.4	100.0	1,678
Secondary +	9.5	28.0	5.4	65.5	1.2	100.0	3.1	10.4	86.2	0.2	100.0	1,263
Wealth quintile												
Lowest	1.2	78.8	2.0	17.9	1.3	100.0	3.8	15.0	80.4	0.8	100.0	1,509
Second	3.0	65.2	2.4	31.3	1.1	100.0	3.0	12.9	83.6	0.5	100.0	1,271
Middle	2.6	55.8	3.2	39.3	1.7	100.0	3.4	12.0	84.0	0.6	100.0	1,159
Fourth	3.2	41.0	5.2	51.3	2.4	100.0	4.2	14.1	81.1	0.6	100.0	1,032
Highest	11.2	21.3	5.2	71.8	1.7	100.0	4.3	8.1	86.9	0.7	100.0	1,131
Total	4.0	54.5	3.5	40.4	1.6	100.0	3.7	12.5	83.1	0.6	100.0	6,102

Considering trends, the caesarean section rate has declined since 1998. Among births in the three years prior to the survey to women living in the southern part of the country, the proportion delivered by caesarean section declined from 7 percent in 1998 to 4 percent in 2003.

Information was also collected on the baby's birth weight and size, because low birth weight is associated with higher neonatal morbidity and mortality. To obtain the birth weight data, mothers were asked whether their baby was weighed at birth, and if so, how much the baby weighed. Two and a half kilograms or more is considered normal birth weight and babies weighing less than that are regarded as small or low birth weight. Because most women do not deliver in a health facility, the mothers were also asked whether the baby was very large, larger than average, average, smaller than average or very small at birth.

The data in Table 9.8 show that more than half (55 percent) of babies are not weighed at birth, presumably in part because of the low percentage of deliveries occurring in health facilities. Four percent of all births (8 percent of those who were weighed) are underweight. A large majority of babies (83 percent) are considered by their mothers to be of average or larger weight; 13 percent are considered to be smaller than average and 4 percent are considered very small.

Socioeconomic differentials in child's birth weight are not large. However, children whose mothers have no education are more likely to be smaller than average or very small than children whose mothers have at least some education. Similarly, there is a decrease in the proportion of babies considered to be smaller than average or very small as the wealth quintile of the mother increases.

### 9.3 POSTNATAL CARE

Postnatal care is important for mothers for treatment of complications arising from delivery, especially for births that occur at home. For non-institutional births particularly, postnatal care enables detection of complications that may threaten the survival of the mother. The timing of postnatal care is important. To provide the best outcome possible, it should occur within two days of the delivery since this is the critical period when most maternal deaths occur.

In the 2003 KDHS, to assess the extent of postnatal care utilisation, women whose last birth was delivered outside a health facility were asked whether they received a postnatal check up from a health professional or a traditional birth attendant. It is assumed that deliveries in any health facility will entail a postnatal check before the mother is discharged.

Table 9.9 shows the percent distribution of women whose last birth in the five years preceding the survey occurred outside a health facility by timing of postnatal care. The table shows that 81 percent of women who deliver outside a health facility do not receive postnatal care. Only 10 percent attend postnatal care within two days of delivery, while 2 percent get care three to six days after delivery and 7 percent get a checkup seven to 41 days after delivery. Women with at least some secondary education and those in the highest wealth quintile are more likely to utilise postnatal services than other women.

There are marked provincial differentials in postnatal care coverage. Nyanza Province shows the highest proportion of women with non-institutional births obtaining postnatal care within two days of the birth (20 percent), compared with North Eastern (1 percent) and Eastern (4 percent) Provinces.

Table 9.9 Postnatal care by background characteristics

Percent distribution of women who had a noninstitutional live birth in the five years preceding the survey by timing of postnatal care for the most recent noninstitutional birth, according to background characteristics, Kenya 2003

Background characteristic	Timing of first postnatal checkup				Did not receive postnatal checkup <sup>1</sup>	Total	Number of women
	Within 2 days of delivery	3-6 days after delivery	7-41 days after delivery	Don't know/missing			
<b>Age at birth</b>							
<20	11.6	3.2	6.2	0.5	78.5	100.0	319
20-34	9.4	2.4	6.7	0.2	81.4	100.0	1,582
35-49	11.2	1.7	6.7	0.0	80.4	100.0	409
<b>Birth order</b>							
1	11.4	2.5	8.2	0.1	77.7	100.0	331
2-3	10.3	2.2	7.0	0.5	79.9	100.0	766
4-5	9.1	2.7	4.6	0.0	83.6	100.0	539
6+	9.7	2.2	7.1	0.0	81.0	100.0	674
<b>Residence</b>							
Urban	9.3	3.9	7.9	0.0	78.9	100.0	225
Rural	10.1	2.2	6.5	0.2	81.0	100.0	2,086
<b>Province</b>							
Nairobi	8.3	4.9	10.7	0.0	76.0	100.0	59
Central	7.9	2.3	10.8	0.0	78.9	100.0	159
Coast	6.1	2.5	7.0	0.2	84.1	100.0	222
Eastern	3.5	0.4	4.2	0.3	91.6	100.0	380
Nyanza	20.4	3.5	8.9	0.0	67.3	100.0	411
Rift Valley	9.8	2.2	6.3	0.2	81.5	100.0	650
Western	11.4	3.3	5.7	0.3	79.3	100.0	336
North Eastern	1.4	1.2	2.3	0.0	95.1	100.0	94
<b>Education</b>							
No education	4.8	1.7	6.5	0.3	86.8	100.0	496
Primary incomplete	10.4	3.5	5.0	0.0	81.1	100.0	967
Primary complete	10.1	1.3	8.9	0.4	79.2	100.0	584
Secondary +	18.1	1.9	8.1	0.0	71.8	100.0	263
<b>Wealth quintile</b>							
Lowest	10.1	2.8	5.5	0.3	81.3	100.0	729
Second	8.4	2.7	6.2	0.0	82.8	100.0	569
Middle	10.0	1.4	6.5	0.0	82.1	100.0	483
Fourth	9.1	1.2	9.5	0.5	79.8	100.0	331
Highest	16.0	4.4	7.9	0.0	71.8	100.0	198
Total	10.0	2.4	6.6	0.2	80.8	100.0	2,310

<sup>1</sup> Includes women who received the first postnatal checkup after 41 days

## 9.4 REPRODUCTIVE HEALTH CARE AND WOMEN'S STATUS

Table 9.10 shows how antenatal, delivery and postnatal care coverage differ according to certain measures of women's status. The table shows only a very slight positive correlation between the number of household decisions in which a woman participates and all three variables: the proportion of women who receive antenatal care from a medical professional, the proportion who receive postnatal care within two days of delivery, and the proportion who receive delivery assistance from a doctor, nurse, or midwife.

Table 9.10 Reproductive health care by women's status

Percentage of women with a live birth in the five years preceding the survey who received antenatal and postnatal care from a health professional for the most recent birth, and percentage of births in the five years preceding the survey for which mothers received professional delivery care, by women's status indicators, Kenya 2003

Women's status indicator	Percentage of women who received antenatal care from a doctor, nurse, or midwife	Percentage of women who received postnatal care within first two days of delivery <sup>1</sup>	Number of women	Percentage of births for which mothers received delivery care from a doctor, nurse, or midwife	Number of births
<b>Number of decisions in which woman has final say<sup>2</sup></b>					
0	83.0	48.2	503	42.7	716
1-2	86.8	41.7	1,307	35.2	2,073
3-4	91.1	52.9	1,255	44.7	1,880
5	88.7	52.9	986	46.1	1,433
<b>Number of reasons to refuse sex with husband</b>					
0	78.4	37.2	248	34.1	374
1-2	85.3	42.5	603	35.3	926
3-4	89.4	50.7	3,201	43.3	4,802
<b>Number of reasons wife beating is justified</b>					
0	89.9	59.0	1,090	54.6	1,523
1-2	90.1	50.0	1,303	41.6	1,978
3-4	85.3	41.8	1,221	35.2	1,908
5	85.3	38.2	438	30.1	692
Total	88.1	48.7	4,052	41.6	6,102

<sup>1</sup> Includes mothers who delivered in a health facility

<sup>2</sup> Either by herself or jointly with others

The number of reasons for which women feel that a wife is justified in refusing to have sex with her husband has a stronger positive relationship with all three variables. For example, the proportion of women who receive postnatal care within two days of delivery increases from 37 percent among women who think a wife is not justified in refusing to have sex with her husband for any of the specified reasons to 51 percent of those who said three or four reasons cited were justifiable.

Similarly, there is a mostly steady decline in all three of the reproductive health indicators as the number of reasons for which women believe wife beating is justified increases. Among women who say wife beating is not justified under any of the situations described, 55 percent of their births are attended by medical professionals. This compares to only 30 percent of births to women who say that wife beating is justified in all five of the cited circumstances.

## 9.5 VACCINATION OF CHILDREN

To assess the Kenya Expanded Programme of Immunisation (KEPI), the 2003 KDHS collected information on vaccination coverage for all children who were born in the five years preceding the survey; however, the focus of the data presented here is on children age 12-23 months at the time of the survey, since they are the age group that should be fully immunised. The KEPI largely follows the World Health Organisation's (WHO) guidelines for vaccinating children. These guidelines stipulate that for a

child to be considered fully vaccinated, he/she should receive the following vaccinations: one dose of BCG, three doses each of DPT/HepatitisB/Influenza<sup>2</sup> and polio, and one dose of measles.

BCG should be given at birth or first clinic contact and protects against tuberculosis. DPT-HepB-Hib protects against diphtheria, pertussis, tetanus, Hepatitis B and Haemophilus influenza. DPT-HepB-Hib and polio require three vaccinations at approximately 6, 10 and 14 weeks of age; measles should be given at or soon after reaching 9 months of age. The government of Kenya has adopted the WHO goal to ensure completion of vaccinations by 12 months of age; the target is to fully vaccinate 80 percent of children in 80 percent of districts by that age by the year 2005.

Information presented in Table 9.11 was collected in two ways: from vaccination cards (under-five cards) seen by the interviewer and from mothers' verbal reports if the card was not available. Health facilities and clinics in Kenya routinely provide cards on which vaccinations and other important health indicators are recorded.

If a mother presented such a card to the interviewer, it was used as the source of information by directly transferring dates of vaccination to the questionnaire. Besides collecting vaccination information from cards, there were two ways of collecting information from the mother herself. If a card was presented, but a vaccine was not recorded as having been given, then the mother was asked to recall whether that particular vaccine had been given. In the event that the mother was not able to present a card for a child at all, she was asked to recall whether or not the child had received BCG, DPT-HepB-Hib and polio (including the number of doses for each), and measles vaccination.

Table 9.11 presents information on vaccination coverage, according to the sources of information. The data presented are for children aged 12-23 months, thereby including only those children who have reached the age by which they should be fully vaccinated. Vaccination cards were available for 60 percent of the children.

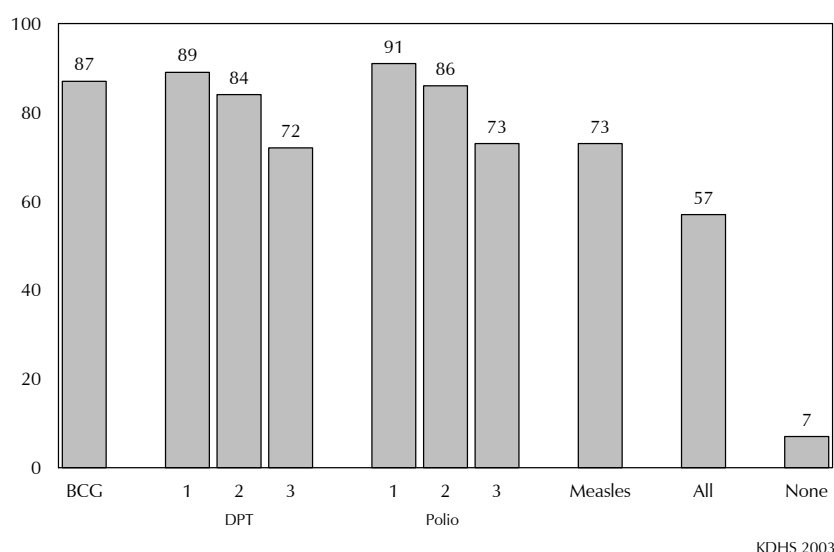
Table 9.11 Vaccinations by source of information												
Percentage of children age 12-23 months who received specific vaccines at any time before the survey, by source of information (vaccination card or mother's report), and percentage vaccinated by 12 months of age, Kenya 2003												
Source of information	Percentage of children who received:										No vaccinations	Number of children
	BCG	DPT-HepB-Hib			Polio <sup>1</sup>				Measles	All <sup>2</sup>		
		1	2	3	0	1	2	3				
<b>Vaccinated at any time before the survey</b>												
Vaccination card	57.0	59.3	57.1	52.6	43.5	59.3	57.2	52.2	46.4	42.5	0.0	678
Mother's report	30.3	29.9	26.8	19.6	5.9	31.7	28.3	20.3	26.1	14.4	7.4	453
Either source	87.3	89.2	83.9	72.2	49.4	91.0	85.5	72.5	72.5	56.8	7.4	1,131
Vaccinated by 12 months of age <sup>3</sup>	87.0	88.2	83.0	70.5	49.1	89.6	84.1	70.3	62.8	48.7	8.1	1,131
<sup>1</sup> Polio 0 is the polio vaccination given at birth. The data on polio vaccinations is adjusted for a likely misinterpretation of polio 0 and polio 1; for children who received three doses of DPT-HepB-Hib and polio 0, polio 1, and polio 2, it was assumed that polio 0 was in fact polio 1, polio 1 was polio 2, and polio 2 was polio 3. <sup>2</sup> BCG, measles, and three doses each of DPT-HepB-Hib and polio vaccine (excluding polio vaccine given at birth) <sup>3</sup> For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.												

<sup>2</sup> In 2001, the government adopted the DPT-HepB-Hib, (pentavalent) vaccine in place of DPT alone.



According to information from both the vaccination card and the mothers' reports, 87 percent of children 12-23 months have received BCG, 89 percent have received the first dose of DPT-HepB-Hib, while 91 percent have received the first dose of polio.<sup>3</sup> Coverage declines for subsequent doses of DPT-HepB-Hib and polio, so that only 72 percent and 73 percent of children receive the third doses of these vaccines, respectively (Figure 9.2). These figures represent a drop out rate of 19 percent for DPT-HepB-Hib and 20 percent for polio. Overall, 57 percent of children are considered fully immunised. Seven percent of children have not received any of the recommended immunisations.

**Figure 9.2 Percentage of Children Age 12-23 Months with Specific Vaccinations According to Health Cards and Mother's Reports**



Vaccinations are most effective when given at the proper age; thus it is recommended that children complete the schedule of immunisations during their first year of life, i.e. by 12 months of age. Overall, 49 percent of children age 12-23 months had all the recommended vaccinations before their first birthday.

Table 9.12 presents vaccination coverage (according to card information and mothers' reports) among children age 12-23 months by selected background characteristics. The table shows that 60 percent of mothers of children age 12-23 months presented a vaccination card. There is no marked difference in vaccination status by sex of the child. Birth order, however is related to immunisation coverage, with first born children more likely to be fully vaccinated than those of sixth or higher birth order (66 percent compared to 42 percent, respectively). Full vaccination coverage among urban children (59 percent) is only slightly higher than among rural children (56 percent).

<sup>3</sup> Data for polio vaccinations were adjusted for a likely underreporting. It appeared that for some children who did not receive polio at birth, interviewers may have mistakenly written the date polio 1 was given in the space for recording the date of polio 0. To correct for any such errors, the total number of doses of DPT and polio was checked, since the two vaccines are usually given at the same time. For children reported as having received all three doses of DPT and polio 0, polio 1, and polio 2 only, it was assumed that polio 0 was in fact polio 1, polio 1 was in fact polio 2, and polio 2 was in fact polio 3.

Table 9.12 Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report, and percentage with a vaccination card, by background characteristics, Kenya 2003

Background characteristic	Percentage of children who received:										No vaccinations	Percentage with a vaccination card	Number of children
	BCG	DPT-HepB-Hib			Polio <sup>1</sup>				Measles	All <sup>2</sup>			
		1	2	3	0	1	2	3					
<b>Sex</b>													
Male	86.6	88.6	83.2	71.0	49.4	90.7	85.3	71.6	72.9	56.4	7.7	58.3	570
Female	88.1	89.8	84.7	73.3	49.4	91.2	85.7	73.5	72.1	57.2	7.0	61.6	561
<b>Birth order</b>													
1	92.2	92.6	90.3	77.3	59.7	93.1	90.6	77.7	81.1	65.6	5.1	62.8	276
2-3	90.9	92.5	85.5	73.1	51.8	93.8	87.5	71.9	76.9	57.4	4.8	62.5	397
4-5	86.6	89.1	86.4	75.0	49.1	89.8	87.5	74.7	71.3	58.8	8.1	60.9	243
6+	75.3	79.0	69.9	60.6	32.1	84.1	72.8	64.6	54.7	42.1	14.2	50.3	214
<b>Residence</b>													
Urban	95.9	93.7	88.0	68.7	55.4	95.2	89.7	69.0	85.9	58.7	3.0	48.2	199
Rural	85.5	88.3	83.1	72.9	48.2	90.1	84.6	73.3	69.7	56.4	8.3	62.4	932
<b>Province</b>													
Nairobi	97.6	97.6	88.8	73.6	59.1	98.4	96.5	73.8	87.6	63.1	0.7	49.9	60
Central	97.9	96.3	95.0	87.5	66.2	96.3	94.2	88.5	90.0	78.5	2.1	64.9	125
Coast	88.8	95.4	88.9	76.7	53.0	95.4	91.1	83.1	79.4	65.8	4.6	70.7	104
Eastern	85.4	95.7	93.9	87.1	54.6	94.9	93.1	84.7	74.1	65.0	4.3	77.6	188
Nyanza	76.0	74.0	65.0	54.6	35.5	80.6	71.0	51.4	48.2	37.6	18.3	39.6	142
Rift Valley	90.4	88.8	85.0	70.3	54.0	90.8	85.6	70.4	74.4	55.5	6.8	58.9	326
Western	90.6	92.2	83.0	66.7	33.9	93.7	83.3	70.1	70.9	50.0	3.9	59.7	157
North Eastern	29.7	39.7	27.4	25.0	10.9	47.8	34.9	23.1	37.4	8.8	45.7	18.4	28
<b>Education</b>													
No education	61.6	69.1	59.6	51.9	27.2	73.5	63.0	50.7	51.1	33.6	23.9	45.9	163
Primary incomplete	90.1	91.1	84.5	70.9	47.0	92.4	86.3	71.0	66.6	53.8	5.8	65.8	398
Primary complete	91.7	93.5	89.4	76.5	55.5	93.9	90.5	78.6	81.3	61.8	3.8	61.9	329
Secondary +	94.2	93.9	91.9	82.0	60.1	96.4	92.5	81.5	84.9	70.6	3.6	57.1	241
<b>Wealth quintile</b>													
Lowest	70.0	74.3	65.7	56.5	33.7	79.1	69.5	58.1	54.8	40.0	18.5	55.1	286
Second	88.7	93.2	85.5	71.2	48.1	93.3	87.9	72.6	68.1	53.3	5.1	66.2	232
Middle	93.0	93.5	91.6	85.8	53.8	95.3	91.2	84.7	79.3	69.3	4.1	64.3	220
Fourth	95.7	95.8	94.1	80.7	61.1	95.2	93.0	79.9	80.3	63.7	2.0	64.5	193
Highest	96.2	94.9	89.9	72.4	57.5	96.3	91.9	72.5	88.0	64.5	2.9	50.4	201
Total	87.3	89.2	83.9	72.2	49.4	91.0	85.5	72.5	72.5	56.8	7.4	59.9	1,131
<b>Excluding north</b>													
2003	89.3	91.0	86.0	74.2	50.6	92.3	87.7	76.2	74.4	60.1	6.1	61.1	1,075
1998	95.9	95.8	90.0	79.2	u	95.4	90.4	80.8	79.2	65.4	2.7	55.4	1,097

u = Unknown (not available)

<sup>1</sup> Polio 0 is the polio vaccination given at birth. The data on polio vaccinations is adjusted for a likely misinterpretation of polio 0 and polio 1; for children who received three doses of DPT-HepB-Hib and polio 0, polio 1, and polio 2, it was assumed that polio 0 was in fact polio 1, polio 1 was polio 2, and polio 2 was polio 3.

<sup>2</sup> BCG, measles, and three doses each of DPT-HepB-Hib and polio vaccine (excluding polio vaccine given at birth)

Provincial variation in vaccination coverage needs to be interpreted with caution since the numbers of observation in which the estimates are based are, in some cases small. However, some important differences are apparent. The highest proportion of children fully vaccinated is in Central Province (79 percent), followed by Coast Province with 66 percent. North Eastern Province has the lowest proportion of children fully immunised—9 percent.

Education of the mother is associated with higher chances of their children having been fully vaccinated; 71 percent of children whose mothers had at least some secondary education are fully vaccinated as opposed to 34 percent of children whose mothers had no schooling. Table 9.12 also shows that children in the middle wealth quintile are the most likely to be fully vaccinated (69 percent), compared with those in the lowest quintile (40 percent).

Table 9.12 provides some comparable data from the 1998 KDHS, as well as data from the 2003 KDHS excluding the northern half of the country so as to be comparable to the 1998 KDHS. The result of this comparison indicates a worsening picture in the fight against vaccine-preventable diseases in Kenya. Full coverage has fallen from 65 percent to 60 percent. BCG coverage has declined from 96 percent to 89 percent, while measles coverage has declined from 79 percent to 74 percent. Failure to complete the DPT-HepB-Hib and polio series as described above has resulted in a decline of coverage from 79 to 74 percent for DPT-HepB-Hib and from 81 to 76 percent for polio.

## 9.6 ACUTE RESPIRATORY INFECTION AND FEVER

Medical records show that pneumonia is among the top three causes of hospital admissions and among the top five causes of infant and under five mortality in Kenya. The Kenya Government adopted the Integrated Management of Childhood Illness (IMCI) strategy in 1998. However, implementation began much later, in November 2000, when the first national capacity-building training was conducted. District level implementation began in three districts (Kajiado, Embu, and Vihiga). To date, 18 districts are implementing the strategy in some health facilities. The aim is to achieve a level of 60 percent of health workers trained. The strategy's core interventions are integrated management of the five most important causes of death among children under five, namely: acute respiratory infection (ARI), diarrhoea, measles, malaria, and malnutrition and anaemia.

One of the IMCI approaches to combating ARI is to treat cases of ARI early before complications develop. Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths due to pneumonia. Emphasis is therefore placed on early recognition of signs of impending severity, both by mothers and primary health care workers so that help can be sought.

It should be noted that prevalence of ARI as measured by the 2003 KDHS is based on mothers' subjective assessment of the child's symptoms, i.e., whether the child has been ill with a cough accompanied by short, rapid breathing in the two weeks preceding the survey. These signs are compatible with pneumonia. It should, however, be noted that morbidity data collected in surveys are subjective, i.e. mother's perception of illness, unvalidated by medical examination.

Malaria is endemic in most parts of Kenya and is also a common cause of hospital admission for all age groups. To assess the prevalence of malaria, whose major manifestation is fever, mothers were asked whether their children under age five had a fever in the two weeks preceding the survey. Whereas fever is the primary symptom of malaria, fever can also be a symptom of a large variety of diseases, including pneumonia, common colds/coughs and flu, etc. However, according to malaria guidelines, if fever is present, and the malaria risk in the area is high, a diagnosis of malaria is made and treated accordingly.

Table 9.13 shows that 18 percent of children under five were ill with a cough and rapid breathing during the two weeks preceding the survey. The reported prevalence of symptoms suggestive of pneumonia peaks at age 6-11 months.

ARI prevalence is slightly higher in rural areas (19 percent), compared to urban areas (16 percent). Provincial differentials are large, with Western Province having the highest level (30 percent) and North Eastern Province the lowest level (10 percent). ARI prevalence is lower for children whose mothers have some secondary education.

**Table 9.13 Prevalence and treatment of symptoms of ARI and fever**

Percentage of children under five years who had a cough accompanied by short, rapid breathing (symptoms of ARI) and percentage of children who had fever in the two weeks preceding the survey, and percentage of children with symptoms of ARI and/or fever for whom treatment was sought from a health facility or provider, by background characteristics, Kenya 2003

Background characteristic	Percentage of children with symptoms of ARI	Percentage of children with fever	Number of children	Among children with symptoms of ARI and/or fever, percentage for whom treatment was sought from a health facility/provider <sup>1</sup>	Number of children
<b>Age in months</b>					
<6	18.5	37.0	619	46.4	259
6-11	25.9	53.9	630	53.7	371
12-23	19.5	48.3	1,131	48.2	592
24-35	17.3	40.4	1,031	46.5	465
36-47	16.8	35.5	1,123	39.4	444
48-59	15.3	31.7	1,026	38.2	366
<b>Sex</b>					
Male	18.7	40.9	2,797	46.0	1,258
Female	18.1	40.2	2,762	45.0	1,239
<b>Residence</b>					
Urban	16.4	39.8	1,063	53.6	461
Rural	18.9	40.8	4,497	43.6	2,035
<b>Province</b>					
Nairobi	16.4	38.5	369	56.3	160
Central	19.6	48.9	622	45.9	314
Coast	15.9	40.7	467	58.3	209
Eastern	13.8	27.1	883	53.3	288
Nyanza	20.3	48.0	832	40.5	443
Rift Valley	16.5	35.8	1,532	47.1	614
Western	29.7	57.2	691	34.2	427
North Eastern	10.2	22.9	163	26.7	41
<b>Education</b>					
No education	17.6	33.3	852	46.2	320
Primary incomplete	21.2	43.2	1,980	45.9	950
Primary complete	18.9	41.2	1,539	42.9	703
Secondary +	13.7	40.5	1,189	47.8	524
<b>Wealth quintile</b>					
Lowest	18.0	37.5	1,343	41.7	568
Second	22.8	43.6	1,159	40.8	565
Middle	17.5	42.0	1,054	43.5	491
Fourth	17.5	41.1	957	49.5	423
Highest	15.7	39.3	1,046	54.6	450
<b>Total</b>	<b>18.4</b>	<b>40.6</b>	<b>5,560</b>	<b>45.5</b>	<b>2,496</b>

ARI = Acute respiratory infection

<sup>1</sup> Excludes pharmacy, shop, and traditional practitioner

Table 9.13 shows that 41 percent of children under five were reported to have had fever in the two weeks preceding the survey. Fever is more common among children aged 6-11 months (54 percent) and decreases with age, the lowest prevalence being at age 48-59 months (32 percent). Prevalence of fever is similar in the different sexes, residence groups, and education of the mother. Regional differentials show that the proportion of children with fever was highest in Western Province (57 percent) and lowest in North Eastern Province (23 percent).

Forty-six percent of children with symptoms of ARI and/or fever were taken to a health facility or provider for treatment. Younger children and urban children with ARI and/or fever are more likely to have been taken to a health facility/provider than older children and those from rural areas.

## **9.7 DIARRHOEAL DISEASE**

Poor hygiene, which includes poor faecal matter disposal, contributes to the spread of disease, especially diarrhoea. In Kenya, most communities have believed that young children's faecal matter is safe, consequently, not much effort is made to ensure safe disposal. Table 9.14 shows that the most commonly used method of disposal of young children's stools is throwing them into a toilet or latrine (42 percent). Other methods of disposal include rinsing stools away (15 percent) and throwing them either outside the yard or outside the dwelling.

A closer look at the table shows marked differentials by province in the disposal of faecal matter. In North Eastern Province, only 13 percent of mothers throw their child's faecal matter into a latrine, while 64 percent either throw it outside the dwelling or outside the yard. Data for Western Province show that in 71 percent of cases disposal is by the child using a toilet, or faecal matter is thrown into the toilet. Use of diapers is highest in Central Province. Uneducated women are less likely to use toilets or latrines for faecal disposal, compared with more educated women (25 versus 68 percent). As expected, mothers who have no toilet facilities in their household are much less likely to dispose of their children's stools in toilets.

Table 9.14 Disposal of children's stools

Percent distribution of mothers whose youngest child under five years is living with her by way in which child's faecal matter is disposed of, according to background characteristics and type of toilet facilities in household, Kenya 2003

Background characteristic	Stools contained			Stools uncontained				Uses diapers			Total	Number of mothers
	Child always uses toilet/latrine	Thrown into toilet/latrine	Buried in yard	Thrown outside dwelling	Thrown outside yard	Rinsed away	Not disposed of	Dis-posable	Wash-able	Missing		
<b>Residence</b>												
Urban	12.7	49.1	1.1	1.4	3.0	16.4	0.4	1.6	14.1	0.3	100.0	742
Rural	12.1	40.0	5.2	3.9	14.0	14.4	1.9	0.3	8.0	0.2	100.0	3,017
<b>Province</b>												
Nairobi	11.5	48.7	0.3	0.5	2.9	20.8	0.4	2.5	12.5	0.0	100.0	268
Central	19.1	37.7	2.1	0.0	0.4	14.2	0.5	0.8	25.3	0.0	100.0	468
Coast	11.6	30.7	10.7	4.0	28.6	7.2	0.6	0.5	5.6	0.3	100.0	309
Eastern	18.6	45.5	3.4	1.3	9.4	11.2	1.4	0.0	9.0	0.2	100.0	618
Nyanza	5.5	49.7	12.8	4.0	11.0	11.0	1.3	0.0	4.7	0.0	100.0	576
Rift Valley	9.0	34.8	0.7	5.9	17.3	20.1	3.6	0.9	7.3	0.3	100.0	984
Western	15.6	55.6	2.4	1.1	3.7	16.1	0.3	0.0	4.9	0.3	100.0	442
North Eastern	0.0	13.0	9.8	21.8	42.3	10.9	2.0	0.0	0.0	0.3	100.0	93
<b>Education</b>												
No education	5.0	19.8	6.9	12.1	38.6	8.6	3.5	0.4	4.8	0.2	100.0	548
Primary incomplete	12.1	40.4	5.7	2.6	12.5	17.1	1.9	0.5	6.9	0.3	100.0	1,280
Primary complete	12.2	47.5	4.0	2.1	5.1	14.8	1.2	0.4	12.5	0.1	100.0	1,053
Secondary +	16.9	50.7	1.4	0.7	2.3	15.2	0.3	0.9	11.4	0.0	100.0	878
<b>Toilet facilities</b>												
None	3.4	3.5	13.3	12.8	47.0	12.3	4.0	0.0	3.2	0.4	100.0	761
Pit latrine	14.0	51.3	2.5	1.2	3.3	15.7	1.1	0.5	10.2	0.2	100.0	2,422
Improved latrine	18.3	54.5	0.6	0.8	2.1	11.9	0.5	0.3	10.8	0.1	100.0	259
Flush toilet	15.7	51.2	0.2	0.0	0.1	15.8	0.0	2.2	14.9	0.0	100.0	306
<b>Wealth quintile</b>												
Lowest	5.9	22.7	8.8	9.6	31.4	15.8	2.6	0.2	2.8	0.2	100.0	818
Second	11.6	45.6	4.2	3.1	13.0	14.3	2.2	0.2	5.4	0.3	100.0	788
Middle	15.2	46.7	4.6	1.7	7.6	13.6	1.4	0.2	8.7	0.1	100.0	727
Fourth	15.7	44.5	3.4	1.0	3.4	13.3	1.3	1.2	15.9	0.2	100.0	681
Highest	13.8	51.4	0.4	0.8	1.0	16.7	0.3	1.0	14.6	0.0	100.0	745
Total	12.2	41.8	4.4	3.4	11.8	14.8	1.6	0.6	9.2	0.2	100.0	3,759

Dehydration caused by severe diarrhoea is a major cause of morbidity and mortality among children in Kenya. In the 2003 KDHS, women with children under age five were asked if the youngest child had diarrhoea in the two weeks preceding the survey. Table 9.15 presents the prevalence of diarrhoea among children under five. Sixteen percent of children had experienced diarrhoea in the two weeks preceding the survey. Diarrhoea prevalence increases with age to peak at 6-11 months (29 percent), then falls at older ages.

There are only small variations in the prevalence of diarrhoea by sex, residence, and wealth quintile. Central Province has a considerably lower prevalence of diarrhoea (7 percent) than other provinces. Diarrhoea is less common among children whose mothers have some secondary education than those whose mothers have less education. Diarrhoea seems less common among children drinking rain water or bottled water than those drinking water from other sources, though the percentage is based on a small sample size.

Table 9.15 Prevalence of diarrhoea

Percentage of children under five years with diarrhoea in the two weeks preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Diarrhoea in the two weeks preceding the survey	Number of children
<b>Age in months</b>		
<6	14.2	619
6-11	28.6	630
12-23	26.1	1,131
24-35	16.2	1,031
36-47	8.0	1,123
48-59	6.7	1,026
<b>Sex</b>		
Male	17.5	2,797
Female	14.5	2,762
<b>Residence</b>		
Urban	17.0	1,063
Rural	15.8	4,497
<b>Province</b>		
Nairobi	13.9	369
Central	7.0	622
Coast	21.9	467
Eastern	12.6	883
Nyanza	17.2	832
Rift Valley	16.7	1,532
Western	23.1	691
North Eastern	12.9	163
<b>Mother's education</b>		
No education	17.2	852
Primary incomplete	19.7	1,980
Primary complete	15.3	1,539
Secondary +	9.9	1,189
<b>Source of drinking water</b>		
Piped	15.4	1,415
Protected well	17.3	634
Open well	18.0	449
Surface	15.7	2,706
Rainwater/bottled water	4.9	85
Other/missing	18.8	271
<b>Wealth quintile</b>		
Lowest	18.2	1,343
Second	17.5	1,159
Middle	15.0	1,054
Fourth	13.0	957
Highest	15.2	1,046
<b>Total</b>	<b>16.0</b>	<b>5,560</b>

A simple and effective response to a child's dehydration is prompt increase in intake of appropriate fluids, possibly in the form of solution prepared from oral rehydration salts (ORS). In Kenya, families are encouraged to rehydrate children with either the commercially packaged ORS (also called Oralite), or other fluids prepared at home with locally obtained ingredients, e.g. water, juices, soups etc. They are also advised to prevent malnutrition from diarrhoea by continuing and increasing the feeding of children who have diarrhoea. Dehydration can be treated by the use of ORS, or, if dehydration is severe, intravenous fluids. ORS is usually distributed through health facilities and pharmacies, and is also available in local shops and kiosks, while preparation of recommended home-made fluids is taught in health facilities. In order to assess the extent of familiarity with ORS, women interviewed in the 2003 KDHS who had a birth in the five years preceding the survey were asked if they had ever heard of a special product called Oralite or ORS that you can get for the treatment of diarrhoea. The results are shown in Table 9.16.

Seven in ten mothers had heard of ORS packets. Knowledge of ORS increases with age and level of education of the mother. There is considerable difference in knowledge between urban (79 percent) and rural women (69 percent). Among provinces, mothers in Coast Province are more likely to know about ORS (81 percent) than women in other provinces, and women in the highest wealth quintile have slightly more knowledge of ORS (77 percent) compared with those in the other quintiles (approximately 70 percent).

Table 9.17 shows data concerning treatment of recent episodes of diarrhoea among children less than five years of age, as reported by the mothers. Results indicate that 30 percent of children with diarrhoea in the two weeks preceding the survey were taken to a health facility for treatment. When results are restricted to children under age three whose mothers live in the southern part of the country, comparison with data from the 1998 KDHS shows a sharp decline in the percentage of children with diarrhoea who were taken to a health facility or provider, from 44 percent in 1998 to 31 percent in 2003 (data not shown). In 2003, female children and children in Eastern and Coast Provinces were most likely to be taken to a health facility for treatment.

Overall, 29 percent of children with diarrhoea are treated with a solution made from ORS packets. About half of the children with diarrhoea are given ORS or more fluids to drink than before the diarrhoea. Twenty-two percent of children with diarrhoea are treated with a pill or syrup, while 17 percent are given home-made remedies or herbal medicines. These remedies were more likely to be given to younger children, children in rural areas, and those living in Nyanza Province. Thirty-two percent of children with diarrhoea were given no treatment at all.

Table 9.16 Knowledge of ORS packets

Percentage of mothers with births in the five years preceding the survey who know about ORS packets for treatment of diarrhoea, by background characteristics, Kenya 2003

Background characteristic	Percentage of mothers who know about ORS packets	Number of mothers
<b>Age</b>		
15-19	48.5	343
20-24	65.1	1,084
25-29	74.9	1,052
30-34	77.6	743
35-49	77.6	829
<b>Residence</b>		
Urban	78.8	835
Rural	69.1	3,217
<b>Province</b>		
Nairobi	76.6	307
Central	68.4	495
Coast	81.4	336
Eastern	65.2	646
Nyanza	78.4	643
Rift Valley	69.9	1,052
Western	63.7	470
North Eastern	73.3	102
<b>Education</b>		
No education	65.0	582
Primary incomplete	65.9	1,395
Primary complete	73.1	1,143
Secondary +	80.2	932
<b>Wealth quintile</b>		
Lowest	70.4	869
Second	67.1	830
Middle	69.9	777
Fourth	70.7	725
Highest	77.3	851
<b>Total</b>	<b>71.1</b>	<b>4,052</b>



Table 9.17 Diarrhoea treatment

Percentage of children under five years who had diarrhoea in the two weeks preceding the survey who were taken for treatment to a health provider, percentage who received oral rehydration therapy (ORT), and percentage given other treatments, according to background characteristics, Kenya 2003

Background characteristic	Percent- age taken to a health provider <sup>1</sup>	Oral rehydration therapy			Other treatments				No treat- ment	Number of children with diarrhoea
		ORS packets	In- creased fluids	ORS or in- creased fluids	Pill or syrup	Injec- tion	Intra- venous solution	Home remedy/ other		
Age in months										
<6	20.6	17.2	18.4	28.0	10.9	0.0	6.0	23.6	39.3	88
6-11	32.1	32.1	30.8	51.6	22.9	0.9	0.9	24.0	29.5	180
12-23	33.2	32.2	38.4	53.9	23.0	1.7	1.1	14.0	29.8	295
24-35	25.5	29.3	33.5	52.5	21.4	2.6	0.7	13.0	33.7	167
36-47	32.4	27.6	41.3	54.7	23.1	1.1	0.0	16.3	30.2	90
48-59	26.7	25.8	37.9	52.7	27.0	4.5	2.2	8.1	34.7	69
Sex										
Male	26.6	27.2	33.9	49.0	22.9	1.9	1.7	18.6	32.1	489
Female	33.5	31.6	34.6	52.6	20.4	1.4	1.1	14.0	31.5	400
Residence										
Urban	30.7	31.9	42.5	52.4	22.2	3.0	2.9	10.5	33.9	180
Rural	29.5	28.5	32.1	50.1	21.7	1.4	1.1	18.1	31.3	708
Province										
Nairobi	35.0	41.1	64.2	66.3	22.9	2.7	1.7	11.2	22.4	51
Central	26.5	22.5	55.7	63.4	13.2	0.0	2.3	16.3	25.6	44
Coast	42.8	43.4	37.5	61.2	28.2	3.8	0.7	19.0	25.0	102
Eastern	49.2	37.3	55.5	71.9	30.8	0.0	2.5	13.1	13.5	111
Nyanza	22.5	21.0	20.3	36.1	22.9	0.7	0.0	28.0	36.2	143
Rift Valley	26.3	29.7	25.8	47.6	15.1	2.8	2.9	17.6	35.6	257
Western	21.4	18.3	29.1	38.4	24.9	0.9	0.0	9.2	41.6	159
North Eastern	10.2	34.2	24.0	49.0	8.6	1.3	0.0	1.7	48.3	21
Mother's education										
No education	30.4	40.1	21.0	48.6	17.7	2.3	0.8	19.7	33.0	146
Primary incomplete	28.7	24.2	31.7	45.3	19.3	1.2	1.9	15.3	35.9	390
Primary complete	30.9	31.9	41.3	58.0	27.9	2.4	1.0	16.2	25.3	235
Secondary +	29.9	26.8	45.1	56.0	22.7	1.2	1.5	17.7	29.9	117
Wealth quintile										
Lowest	29.7	29.7	27.2	46.6	20.3	1.4	0.6	21.0	31.1	245
Second	25.0	26.6	34.1	48.0	18.5	1.2	0.5	19.9	36.3	202
Middle	25.2	26.4	38.8	53.1	22.0	0.8	1.7	14.1	30.7	158
Fourth	32.7	27.7	33.5	50.2	28.4	2.3	1.9	13.3	30.5	124
Highest	37.8	35.7	41.2	57.8	22.9	3.3	3.2	10.5	29.3	159
Total	29.7	29.2	34.2	50.6	21.8	1.7	1.4	16.6	31.8	888

Note: ORT includes solution prepared from oral rehydration salt (ORS) packets or increased fluids.

<sup>1</sup> Excludes pharmacy, shop and traditional practitioner

To gauge knowledge about drinking and eating practices for a child with diarrhoea, mothers with children under five who had had diarrhoea in the two weeks preceding the survey were asked about the drinking and eating patterns of these children, compared with normal practice. Table 9.18 shows that roughly one-third of children with diarrhoea are given more to drink than usual, while one-third are given the same as usual, and one-third are given less to drink than usual or nothing at all. It is particularly disconcerting to note that almost 20 percent of children with diarrhoea are given much less or nothing to drink.

**Table 9.18 Feeding practices during diarrhoea**

Percent distribution of children under five years who had diarrhea in the two weeks preceding the survey by amount of liquids and food offered compared with normal practice, Kenya 2003

Liquid/food offered	Percent
<b>Amount of liquids offered</b>	
Same as usual	32.9
More	34.2
Somewhat less	15.1
Much less	13.4
None	4.1
Don't know/missing	0.3
Total	100.0
<b>Amount of food offered</b>	
Same as usual	34.5
More	6.6
Somewhat less	25.8
Much less	18.6
None	7.2
Never gave food	7.1
Don't know/missing	0.2
Total	100.0
Number of children	888

Food intake is curtailed even more than fluid intake during an episode of diarrhoea. One-third of children with diarrhoea are offered the same amount of food as usual, but only 7 percent were given more to eat than usual. More than one-quarter are given somewhat less food to eat than usual, while 26 percent are given much less or no food at all. These patterns reflect a gap in practical knowledge among some mothers regarding the nutritional requirements of children during episodes of diarrhoeal illness. This indicates a need for further health education efforts to reduce the number of children becoming dehydrated or malnourished due to diarrhoea.

## 9.8 CHILD HEALTH INDICATORS AND WOMEN'S STATUS

Table 9.19 shows the relationship between indicators of children's health and women's status. The results show no relationship between the number of household decisions in which a woman participates and vaccination coverage of her children or the percentage of children with ARI, fever or diarrhoea who are taken to a health provider. Similarly, there is no relationship between the child health measures and the number of circumstances in which the mother feels a woman is justified in refusing to have sex with her husband. However, there is a slight inverse correlation between the percentage of children with diarrhoea who are taken to a health provider and the number of reasons for which a woman thinks wife-beating is justified. Children whose mothers believe that wife-beating is not justified by any reason are more likely to be taken to a health provider when they have diarrhoea, compared with children whose mothers believe that wife-beating is justified for all five of the stated reasons (36 versus 26 percent).

Table 9.19 Children's health care by women's status

Percentage of children age 12-23 months who were fully vaccinated, and percentage of children under five years who were ill with a fever, symptoms of ARI and/or diarrhoea, in the two weeks preceding the survey taken to a health provider for treatment, by women's status indicators, Kenya 2003

Women's status indicator	Percentage of children 12-23 months fully vaccinated <sup>1</sup>	Number of children	Percentage of children with fever and/or symptoms of ARI taken to a health provider <sup>2</sup>	Number of children	Percentage of children with diarrhoea taken to a health provider <sup>2</sup>	Number of children
<b>Number of decisions in which woman has final say<sup>3</sup></b>						
0	60.5	134	38.8	301	29.0	116
1-2	57.6	404	46.2	913	31.3	339
3-4	57.1	351	45.7	779	30.8	270
5	59.8	241	47.9	503	25.1	163
<b>Number of reasons to refuse sex with husband</b>						
0	48.5	57	46.6	129	43.5	41
1-2	62.6	170	41.8	381	26.4	133
3-4	58.0	904	46.1	1,986	29.5	714
<b>Number of reasons wife-beating is justified</b>						
0	67.6	276	46.5	606	35.6	164
1-2	55.9	360	47.7	832	31.7	293
3-4	55.1	372	41.2	770	26.0	310
5	53.6	122	48.3	288	26.1	120
Total	56.8	1,131	45.5	2,496	29.7	888

<sup>1</sup> Those who have received BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

<sup>2</sup> Excludes pharmacy, shops, and traditional practitioner

<sup>3</sup> Either by herself or jointly with others

## 9.9 BIRTH REGISTRATION

Kenya is a signatory to the Convention of the Rights of the Child and has an Act of Parliament on the Rights of the Child, both of which firmly establish birth registration as a fundamental right of children. In order to assess the extent of birth registration, in the 2003 KDHS, mothers of children born in a health facility in the five years before the survey were asked if the facility gave them a birth notification form for the baby. Those who were not given a form at the facility and those who did not deliver in a health facility were asked if they obtained a birth notification form, either from the assistant chief, a village elder, or at a registrar's office. All mothers were asked if their children born in the preceding five years had a birth certificate.

Table 9.20 shows that overall, 45 percent of births are notified, 30 percent in health facilities and 16 percent in the registrar's office or by an assistant chief or village elder. However, a much smaller proportion of births (21 percent) can be considered to be registered with a birth certificate.

Table 9.20 Birth registration

Percentage of births in the five years before the survey for which the health facility provided a birth notification form, for which the parents obtained a birth notification form and for which there is a birth certificate, according to background characteristics, Kenya 2003

Background characteristic	Birth notification form			Number of births
	From health facility	From registrar's office	Has birth certificate	
<b>Birth order</b>				
1	43.7	9.9	25.2	1,469
2-3	32.4	16.0	22.3	2,177
4-5	22.3	18.8	17.8	1,215
6+	15.5	17.9	17.2	1,240
<b>Residence</b>				
Urban	54.8	5.6	28.1	1,143
Rural	23.9	17.7	19.5	4,959
<b>Province</b>				
Nairobi	62.5	3.6	30.2	398
Central	60.5	15.6	23.6	652
Coast	20.5	31.3	26.3	510
Eastern	30.8	17.8	17.3	946
Nyanza	21.4	8.7	16.8	1,000
Rift Valley	23.8	11.8	20.1	1,639
Western	20.7	28.0	25.4	776
North Eastern	4.9	1.1	10.9	181
<b>Education</b>				
No education	8.9	11.7	14.0	938
Primary incomplete	19.8	20.0	20.1	2,222
Primary complete	34.2	15.4	21.0	1,678
Secondary +	56.7	10.3	28.3	1,263
<b>Wealth quintile</b>				
Lowest	9.0	20.8	15.9	1,509
Second	20.9	18.7	20.6	1,271
Middle	27.8	20.7	21.0	1,159
Fourth	41.5	10.6	19.2	1,032
Highest	58.4	4.0	30.3	1,131
Total	29.7	15.5	21.1	6,102

Notification in health facilities and presence of a birth certificate declines with birth order. There are marked urban-rural differentials, with 60 percent of urban births having a notification form and 28 percent having a birth certificate, compared to only 42 and 20 percent of rural births, respectively. Provincial comparison shows variation, with Central Province having the highest notification level (76 percent) and North Eastern Province the lowest (6 percent). Births in Nairobi Province are most likely to be registered with a birth certificate (30 percent). Birth notification and presence of birth certificates increases with mothers' education and wealth quintile.

## 9.10 KNOWLEDGE OF SIGNS OF ILLNESS

The IMCI programme aims at contributing to the reduction of morbidity and mortality among children under five. One of its strategies is to emphasise early recognition of signs of illness and early care-seeking behaviour among mothers of children under five, to prevent complications and death resulting from the common childhood illnesses. In the 2003 KDHS, women who have at least one child living

with them were asked what signs of illness would indicate that a child should be taken to a health facility or health worker.

Table 9.21 shows that almost all women (99 percent) mentioned some sign of illness. It is reassuring to note that a substantial proportion of the women were able to identify some of the general danger signs, such as not being able to drink or breastfeed (43 percent) and weakness (46 percent). Notably, many women correctly identified signs of three main killer diseases among children under five: fever and shivering for malaria (82 percent); diarrhoea (25 percent); and fast breathing for pneumonia (13 percent).

Table 9.21 Knowledge of illness signs	
Among women who have at least one child living with them, percentage who report specific signs of illness in a child that would indicate the child should be taken to a health facility or health worker, Kenya 2003	
Sign of illness	Total
Not able to drink/breastfeed	42.8
Fever, shivering	81.7
Repeated vomiting	19.8
Diarrhoea	25.4
Blood in stools	1.8
Fast breathing	12.8
Convulsions	5.3
Weakness	45.5
Getting sicker	13.3
Crying	14.5
Coughing	7.1
Change in color of eyes	4.1
Sleepy	2.3
Other	2.0
Able to name one sign	99.3
Number of women	5,426

## 9.11 SMOKING AND ALCOHOL USE

In order to measure the extent of smoking among Kenyan adults, women and men who were interviewed in the 2003 KDHS were asked if they currently smoked cigarettes or used tobacco. Less than 3 percent of women said they used tobacco of any kind and less than one percent said they smoked cigarettes (data not shown). One-quarter of men use tobacco products, with 23 percent saying that they smoke cigarettes. Although the proportion of women who smoke is too small to show details, Table 9.22 shows differentials in smoking among men.

Younger men are less likely to smoke than men in their 30s and early 40s. Similarly, men with no education and in the lowest wealth quintile are less likely to smoke cigarettes than men with some education and in higher wealth quintiles. However, men with no education are much more likely to use other tobacco products (e.g., snuff, chewing tobacco). Men in Eastern Province have the highest level of smoking (37 percent).

Table 9.22 Use of tobacco among men

Percentage of men who smoke cigarettes, smoke a pipe, or use other tobacco, according to background characteristics, Kenya 2003

Background characteristic	Type of tobacco			Does not use tobacco	Number of respondents
	Cigarettes	Pipe	Other tobacco		
<b>Age</b>					
15-19	5.4	0.0	0.2	94.3	856
20-24	21.0	0.1	0.9	78.1	681
25-29	27.6	0.0	2.3	70.5	509
30-34	34.2	0.0	2.0	63.8	415
35-39	33.8	0.1	1.9	65.2	396
40-44	33.9	0.0	4.3	62.7	310
45-49	26.0	0.4	6.1	67.2	196
50-54	26.7	0.0	5.4	67.8	215
<b>Residence</b>					
Urban	23.5	0.1	0.6	75.8	907
Rural	22.7	0.0	2.5	75.1	2,671
<b>Province</b>					
Nairobi	22.7	0.0	1.0	76.1	397
Central	29.7	0.0	0.4	69.9	554
Coast	29.8	0.3	1.6	68.6	252
Eastern	37.1	0.0	0.6	62.2	588
Nyanza	11.0	0.0	0.0	89.0	481
Rift Valley	17.5	0.0	6.2	77.2	846
Western	15.5	0.2	1.0	83.0	396
North Eastern	13.0	0.0	1.5	85.5	65
<b>Education</b>					
No education	16.9	0.2	15.8	67.2	228
Primary incomplete	25.0	0.1	1.6	73.5	1,210
Primary complete	25.3	0.0	0.8	74.1	820
Secondary +	20.5	0.0	0.7	79.0	1320
<b>Wealth quintile</b>					
Lowest	16.9	0.2	6.5	77.2	548
Second	22.0	0.0	2.9	75.3	609
Middle	21.9	0.0	1.0	77.2	648
Fourth	28.4	0.0	0.4	71.1	794
Highest	23.0	0.1	0.9	76.2	979
Total	22.9	0.1	2.0	75.3	3,578

Alcohol contributes to low birth weight babies and affects brain development during pregnancy, as well as affecting the mother's health. It is recommended that women should avoid alcohol during pregnancy and breastfeeding. Alcohol use, especially drunkenness, among men is related to higher prevalence of domestic violence (see Chapter 15).

Table 9.23 shows that 12 percent of women interviewed in the 2003 KDHS report that they have ever drunk alcohol, compared to 50 percent of men. In the month preceding the survey, 5 percent of women drank alcohol, compared to 30 percent of men. In general, older women and men are more likely to drink alcohol than younger ones. Urban women are twice as likely as their rural counterparts to drink alcohol. Similarly, a higher percentage of urban than rural men use alcohol. Regional differentials indicate that alcohol use is highest among women in Nairobi and Western Provinces, while among men, it is highest in Nairobi and Eastern Provinces.

There is a greater tendency for educated men to drink alcohol than less educated men. Among women there is little difference except that uneducated women are more likely to have drunk alcohol in the month preceding the survey than women with some education. Use of alcohol by women and men in the highest wealth quintile is noticeably higher than among respondents in the lower quintiles.

Table 9.23 Use of alcohol

Percentage of respondents who ever have drunk alcohol and who have drunk alcohol in the past month, by background characteristics and maternity status, Kenya 2003

Background characteristic	Women			Men		
	Ever drank alcohol	Drank alcohol in past month	Number of respondents	Ever drank alcohol	Drank alcohol in past month	Number of respondents
<b>Age</b>						
15-19	6.6	2.6	1,856	24.2	10.3	856
20-24	10.0	3.9	1,691	49.7	29.6	681
25-29	12.1	4.8	1,382	57.1	33.0	509
30-34	12.3	5.8	1,086	63.8	42.0	415
35-39	14.0	6.9	871	61.5	41.4	396
40-44	18.4	8.3	788	61.2	39.0	310
45-49	18.7	9.9	521	62.9	39.8	196
50-54	na	na	0	60.4	35.0	215
<b>Residence</b>						
Urban	18.2	7.4	2,056	59.7	35.4	907
Rural	9.5	4.4	6,139	46.7	28.1	2,671
<b>Province</b>						
Nairobi	23.8	10.4	835	69.4	37.6	397
Central	10.0	2.7	1,181	38.3	25.4	554
Coast	8.5	4.8	667	46.2	31.6	252
Eastern	8.8	2.9	1,325	61.6	34.3	588
Nyanza	11.6	4.4	1,222	37.6	23.8	481
Rift Valley	9.5	5.4	1,872	52.7	31.6	846
Western	16.1	8.2	927	49.4	29.5	396
North Eastern	0.0	0.0	168	0.0	0.0	65
<b>Education</b>						
No education	13.9	9.0	1,039	34.4	23.8	228
Primary incomplete	10.3	4.6	2,685	44.2	25.9	1,210
Primary complete	8.4	3.1	2,069	49.0	29.6	820
Secondary +	15.1	5.7	2403	58.5	34.8	1320
<b>Wealth quintile</b>						
Lowest	8.1	4.9	1,364	45.3	25.6	548
Second	10.0	5.3	1,475	46.4	27.6	609
Middle	9.3	4.2	1,503	42.7	27.4	648
Fourth	8.5	2.8	1,711	48.2	28.3	794
Highest	19.4	7.5	2,141	61.0	36.8	979
Total	11.7	5.1	8,195	50.0	29.9	3,578

na = Not applicable

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Nutritional status is the result of complex interactions between food consumption and the overall status of health and care practices. Poor nutritional status is one of the most important health and welfare problems facing Kenya today and afflicts the most vulnerable groups: women and children. At the individual level, inadequate or inappropriate feeding patterns lead to malnutrition. Numerous socioeconomic and cultural factors influence the decision on patterns of feeding and nutritional status. The 2003 KDHS collected data on feeding practices, that is, breastfeeding, complementary feeding, and use of feeding bottles. Heights and weights of all children under five years and women age 15-49 were measured to determine the adult female and child nutritional status. This chapter presents the findings on infant feeding practices and nutritional status of women and children.

## 10.1 BREASTFEEDING AND SUPPLEMENTATION

Feeding practices play a pivotal role in determining optimal development of infants. Poor breastfeeding and infant feeding practices have adverse consequences for the health and nutritional status of children, which in turn has consequences on the mental and physical development of the child.

### Initiation of Breastfeeding

Women delivering in health facilities and at home are encouraged to initiate breastfeeding within the first 30 minutes after birth, except for an HIV-positive mother who has chosen not to breastfeed (Ministry of Health, 2000). Bottle-feeding is discouraged, and mothers are educated to breastfeed exclusively for six months. Early breastfeeding increases chances of breastfeeding success and generally lengthens the duration of breastfeeding. Mixed breastfeeding (breastfeeding combined with other liquids and foods) may increase the risk of HIV infection and is discouraged.

Table 10.1 indicates that 97 percent of children are breastfed at some point, the same proportion as in 1998. Overall, 52 percent of children are breastfed within one hour of birth and 82 percent within one day after delivery, indicating a slight decline when compared with the 1998 KDHS. The proportion of women initiating breastfeeding within one hour of birth is highest in Eastern Province (67 percent) and lowest in Coast Province (22 percent).

Two-thirds (65 percent) of children are given something before breastfeeding (prelacteal feed). Mothers in rural areas (67 percent) are more likely to practise prelacteal feeding than those in urban areas (57 percent). Prelacteal feeding is also common in Western and Coast provinces and least common in Central Province.



**Table 10.1 Initial breastfeeding**

Percentage of children born in the five years preceding the survey who were ever breastfed, and among children ever breastfed, percentage who started breastfeeding within one hour and within one day of birth and percentage who received a prelacteal feed, by background characteristics, Kenya 2003

Background characteristic	Percentage ever breastfed	Number of children	Percentage who started breastfeeding within 1 hour of birth	Percentage who started breastfeeding within 1 day of birth <sup>1</sup>	Received a prelacteal feed <sup>2</sup>	Number of children ever breastfed
<b>Sex</b>						
Male	96.2	3,110	50.5	80.7	65.9	2,993
Female	97.4	2,992	54.1	82.8	64.1	2,913
<b>Residence</b>						
Urban	96.5	1,143	51.2	80.0	57.2	1,103
Rural	96.9	4,959	52.5	82.1	66.8	4,803
<b>Province</b>						
Nairobi	96.2	398	55.1	82.3	51.3	383
Central	98.2	652	61.8	86.4	30.1	641
Coast	95.0	510	22.4	69.0	82.9	484
Eastern	96.8	946	66.6	92.3	57.7	916
Nyanza	97.9	1,000	46.2	77.5	73.1	980
Rift Valley	96.8	1,639	62.4	84.0	67.1	1,587
Western	97.3	776	30.7	76.5	83.8	755
North Eastern	88.9	181	54.9	68.3	66.8	160
<b>Education</b>						
No education	94.9	938	56.7	80.5	67.4	890
Primary incomplete	97.2	2,222	48.0	78.8	71.1	2,159
Primary complete	97.5	1,678	54.4	86.2	62.0	1,636
Secondary+	96.6	1,263	53.7	81.9	56.6	1,221
<b>Assistance at delivery</b>						
Health professional <sup>3</sup>	96.3	2,536	55.6	83.5	54.9	2,443
Traditional birth attendant	96.7	1,710	49.6	81.7	76.7	1,654
Other	97.1	1,347	51.4	81.3	68.8	1,308
No one	98.2	488	48.6	76.9	68.0	479
<b>Place of delivery</b>						
Health facility	96.2	2,447	56.0	83.2	54.2	2,355
At home	97.1	3,584	50.2	81.1	72.7	3,481
Other	100.0	51	39.2	81.4	60.8	51
<b>Wealth quintile</b>						
Lowest	96.0	1,509	49.8	80.2	74.1	1,449
Second	98.0	1,271	54.0	82.3	68.8	1,245
Middle	97.5	1,159	52.2	83.0	65.4	1,130
Fourth	96.6	1,032	54.6	84.0	54.1	997
Highest	96.0	1,131	51.6	79.7	58.1	1,085
<b>Total</b>	<b>96.8</b>	<b>6,102</b>	<b>52.3</b>	<b>81.7</b>	<b>65.0</b>	<b>5,906</b>

Note: Table is based on all births, whether the children are living or dead at the time of interview. Total includes 21 children with information on assistance at delivery missing and 19 children with place of delivery missing.

<sup>1</sup> Includes children who started breastfeeding within one hour of birth

<sup>2</sup> Given something other than breast milk during the first three days of life before the mother started breastfeeding regularly

<sup>3</sup> Doctor, nurse, or midwife

## Breastfeeding Patterns

For optimal growth, it is recommended that infants should be exclusively breastfed for the first six months of life. Exclusive breastfeeding in the early months of life is correlated strongly with increased child survival and reduced risk of morbidity, particularly from diarrhoeal diseases. Table 10.2 and Figure 10.1 show that only 29 percent of children under the age of two months are exclusively breastfed. This represents no change in breastfeeding patterns when compared with the 1998 KDHS. The propensity to feed infants under 2 months with plain water (26 percent), water-based liquids/juices (14 percent), other milk (15 percent), and food (16 percent) is high. At two to three months, almost half of all children are given complementary foods. By six to seven months, 81 percent of infants have been introduced to these foods. Overall, only 13 percent of infants under 6 months are exclusively breastfed. The implication of this duration is important since it is recommended that all infants be exclusively breastfed for six months.

Table 10.2 also shows that bottle-feeding is common in Kenya. More than one-quarter (27 percent) of children under six months are fed with a bottle with a nipple. Bottle-feeding practices may potentially result in increased morbidity because of the unsafe water and preparation facilities.

Table 10.2 Breastfeeding status by child's age

Percent distribution of youngest children under three years living with the mother, by breastfeeding status and percentage of children under three years using a bottle with a nipple, according to age in months, Kenya 2003

Age in months	Not breast-feeding	Exclusively breast-fed	Breastfeeding and consuming				Total	Number of children	Percentage using a bottle with a nipple <sup>1</sup>	Number of children
			Plain water only	Water-based liquids/juice	Other milk	Complementary foods				
<2	0.8	29.3	25.8	13.6	15.0	15.5	100.0	171	16.9	173
2-3	0.0	9.3	13.4	8.3	21.0	48.0	100.0	232	28.0	237
4-5	0.0	2.6	3.0	5.4	19.6	69.3	100.0	204	33.8	210
6-7	3.7	2.1	1.8	0.9	10.5	81.1	100.0	199	38.1	202
8-9	3.3	0.6	2.7	2.7	3.4	87.2	100.0	204	20.4	206
10-11	3.3	0.7	1.0	2.0	2.6	90.4	100.0	220	26.6	222
12-15	7.9	0.3	0.7	0.3	2.5	88.3	100.0	394	18.3	408
16-19	25.2	0.4	0.2	0.4	2.1	71.7	100.0	335	14.5	362
20-23	42.7	0.0	0.4	0.4	1.0	55.5	100.0	307	11.3	361
24-27	65.3	0.2	0.0	0.2	0.4	33.9	100.0	259	6.0	339
28-31	77.6	0.0	0.0	0.0	0.3	22.1	100.0	224	5.2	337
32-35	89.0	0.0	0.0	0.0	0.1	10.8	100.0	193	5.5	355
<6	0.2	12.7	13.4	8.8	18.8	46.1	100.0	607	26.9	619
6-9	3.5	1.3	2.3	1.8	6.9	84.2	100.0	403	29.2	408

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children classified as breastfeeding and consuming plain water only consume no supplements. The categories of not breastfeeding, exclusively breastfed, breastfeeding and consuming plain water, water-based liquids/juice, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and water-based liquids and who do not receive complementary foods are classified in the water-based liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

<sup>1</sup> Based on all children under three years

**Figure 10.1 Breastfeeding Practices by Age**

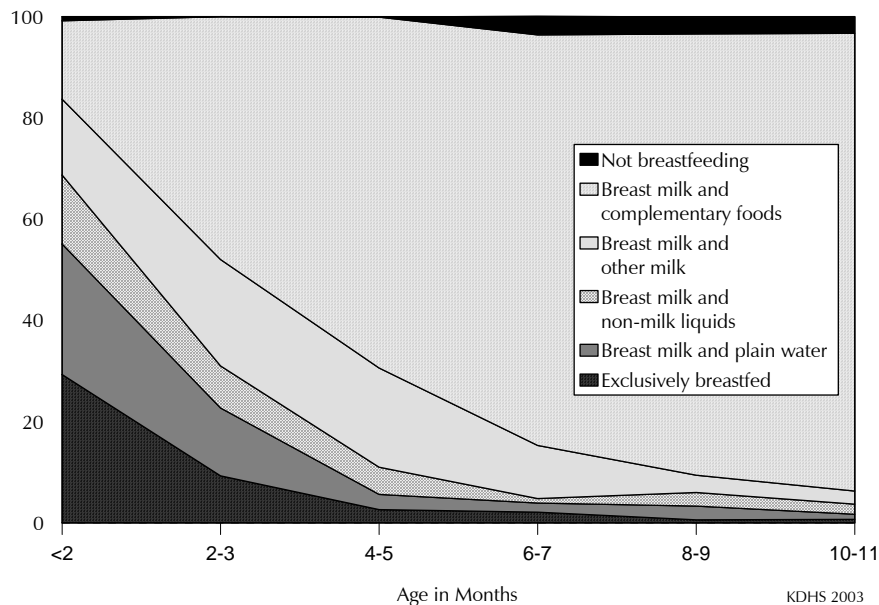


Table 10.3 shows that the median duration for any breastfeeding among Kenyan children is 20 months, which is similar to the duration documented in the 1993 KDHS and the 1998 KDHS, suggesting that for a decade the patterns have not changed significantly. The median duration of exclusive breastfeeding is estimated at less than one month.

The median duration of any breastfeeding is slightly higher in rural areas (20 months), compared with urban (19 months). At the provincial level, duration of breastfeeding is longest in Eastern Province (25 months) and shortest in North Eastern Province (13 months).

Analysis by background characteristics of the mother indicates that educational level and socio-economic status as measured by the wealth index are related to breastfeeding practices. Women with no education are more likely to breastfeed longer (24 months) than those who have at least some secondary education (19 months). Median duration of breastfeeding declines steadily with increasing wealth.

Frequent breastfeeding of children is a common occurrence in Kenya. More than nine in ten (92 percent) infants under six months of age were breastfed six or more times in the 24 hours prior to the survey.

Table 10.3 Median duration and frequency of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children born in the three years preceding the survey; percentage of breastfeeding children under six months living with the mother and who were breastfed six or more times in the 24 hours preceding the survey; and mean number of feeds (day/night), by background characteristics, Kenya 2003

Background characteristic	Median duration (months) of breastfeeding <sup>1</sup>				Breastfeeding children under six months <sup>2</sup>			
	Any breast-feeding	Exclusive breast-feeding	Predomi-nant breast-feeding <sup>3</sup>	Number of children	Percentage breastfed 6+ times in last 24 hours	Mean number of day feeds	Mean number of night feeds	Number of children
<b>Sex</b>								
Male	19.1	0.5	1.5	1,882	93.6	6.2	4.4	301
Female	21.0	0.5	1.7	1,821	90.6	5.9	4.2	309
<b>Residence</b>								
Urban	19.0	0.5	2.1	698	94.4	5.9	4.5	118
Rural	20.4	0.5	1.4	3,004	91.6	6.1	4.2	492
<b>Province</b>								
Nairobi	16.7	0.6	2.1	242	93.1	5.8	4.4	43
Central	19.0	0.4	1.4	381	95.9	6.4	5.0	65
Coast	21.5	0.5	2.1	318	95.9	6.6	4.8	50
Eastern	24.7	0.6	1.6	570	92.6	5.7	4.0	94
Nyanza	18.2	0.6	2.0	619	83.2	4.9	3.4	110
Rift Valley	19.4	0.4	0.6	1,008	96.8	6.8	4.6	159
Western	18.9	0.6	1.7	459	89.4	6.3	4.4	73
North Eastern	12.8	0.4	0.7	106	87.3	6.0	3.8	17
<b>Education</b>								
No education	23.8	0.5	1.2	565	94.8	6.5	4.6	102
Primary incomplete	19.2	0.5	1.6	1,371	92.2	6.0	4.1	229
Primary complete	20.5	0.5	1.6	1,013	91.7	5.9	4.2	167
Secondary+	19.4	0.6	1.7	753	90.2	6.0	4.3	112
<b>Wealth quintile</b>								
Lowest	21.6	0.6	1.9	908	89.5	5.9	4.1	135
Second	21.2	0.5	1.1	768	89.2	5.7	4.0	130
Middle	19.9	0.5	1.6	695	95.1	6.2	4.3	117
Fourth	18.9	0.5	1.1	636	92.5	6.2	4.7	113
Highest	18.5	0.5	2.0	696	95.1	6.3	4.4	115
Total	20.1	0.5	1.6	3,702	92.1	6.1	4.3	610
Mean for all children	20.7	1.6	3.1	na	na	na	na	na

Note: Median and mean durations are based on current status.

na = Not applicable

<sup>1</sup> It is assumed that non-last-born children or last-born child not living with the mother are not currently breastfeeding.

<sup>2</sup> Excludes children who do not have a valid answer on the number of times breastfed

<sup>3</sup> Either exclusively breastfed or received breast milk and plain water, water-based liquids, and/or juice only (excludes other milk)

## Complementary Feeding

Given that babies need nutritious food in addition to breast milk from the age of six months, it is recommended that children should begin receiving complementary foods at this age. To obtain full information on weaning practices, the 2003 KDHS collected data on breastfeeding and nonbreastfeeding children. Table 10.4 presents information on the types of complementary (weaning) foods received by children less than three years of age in the day or night preceding the survey. As observed in previous KDHS data, use of infant formula milk is minimal. Only 5 percent of children under six months receive commercially produced infant formula.

Table 10.4 Foods consumed by children in the day or night preceding the interview

Percentage of youngest children under three years of age living with the mother and who consumed specific foods in the day or night preceding the interview, by breastfeeding status and age, Kenya 2003

Child's age in months	Infant formula	Other milk/cheese/yogurt	Other liquids <sup>1</sup>	Food made from grains	Fruits/vegetables <sup>2</sup>	Food made from roots/tubers	Food made from legumes	Meat/fish/shellfish/poultry/eggs	Fruits and vegetables rich in vitamin A <sup>3</sup>	Any solid or semi-solid food	Number of children
BREASTFEEDING CHILDREN											
<2	2.6	17.8	23.4	3.8	5.4	2.5	0.7	0.4	2.7	22.9	169
2-3	2.9	37.3	36.0	31.9	21.3	8.7	3.1	1.8	12.0	56.0	232
4-5	8.8	49.4	45.4	44.7	40.0	16.7	5.8	8.4	32.7	78.4	204
6-7	6.1	63.0	48.2	59.5	59.1	20.6	14.8	8.9	46.3	90.1	192
8-9	4.0	53.6	55.5	67.8	69.3	24.7	23.2	22.0	55.7	91.9	197
10-11	7.5	65.5	61.3	74.3	78.5	30.7	24.6	26.9	69.0	96.0	213
12-15	4.5	58.3	61.6	78.9	83.6	28.1	29.2	28.1	77.7	97.1	363
16-19	3.1	62.7	65.3	78.8	81.6	36.3	38.9	27.9	74.3	97.4	250
20-23	2.5	62.7	64.9	80.6	84.3	25.3	35.6	26.3	78.1	96.8	176
24-35	3.6	56.7	61.2	80.5	86.8	30.5	33.7	24.7	84.6	99.2	161
<6	4.8	35.9	35.7	28.4	23.2	9.7	3.4	3.6	16.4	54.3	606
6-9	5.0	58.2	51.9	63.7	64.3	22.7	19.0	15.6	51.1	91.0	389
NONBREASTFEEDING CHILDREN											
16-19	1.1	71.3	67.2	75.2	85.2	38.3	25.8	25.4	82.2	98.8	84
20-23	1.9	58.3	71.3	83.9	88.2	37.6	33.9	33.0	81.1	100.0	131
24-35	3.6	63.5	66.9	85.1	87.4	36.3	38.9	38.6	83.4	98.7	515

Note: Breastfeeding status and food consumed refer to a "24-hour" period (yesterday and last night).

<sup>1</sup> Does not include plain water

<sup>2</sup> Includes fruits and vegetables rich in vitamin A

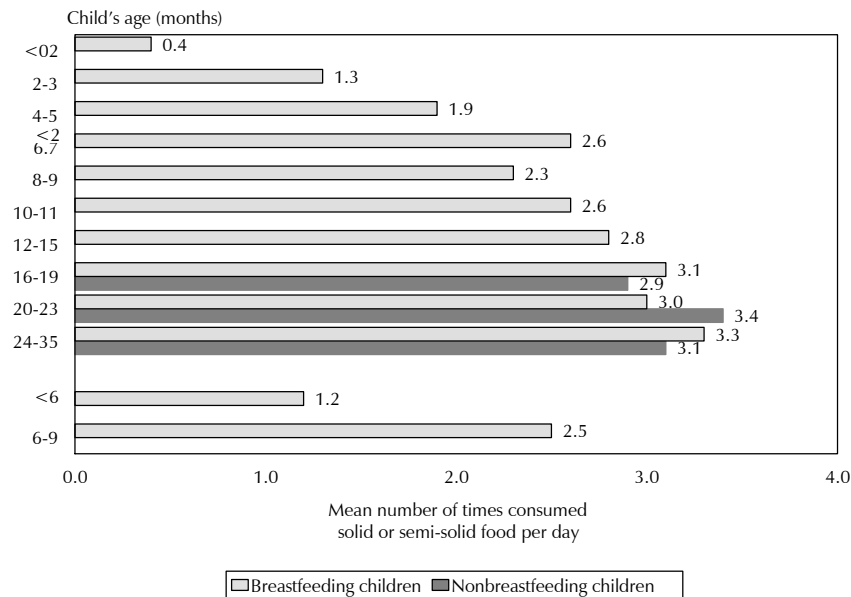
<sup>3</sup> Includes pumpkin, red or yellow yams or squash, carrots, red sweet potatoes, green leafy vegetables, mangoes, papayas, and other locally grown fruits and vegetables that are rich in vitamin A

Fifty-four percent of children under six months receive solid or semi-solid foods. The most commonly used complementary foods for breastfeeding children under six months include milk products other than breast milk (36 percent), food made from grains (28 percent), and fruits and vegetables (23 percent). Foods made from cereals are introduced to children by two to three months (32 percent); by six to seven months, 60 percent are already receiving these foods. On the other hand, foods made from roots/tubers and legumes are introduced gradually from four to five months. By the age of 10-11 months, 31 percent are receiving root/tuber-based food, and 25 percent get legumes.

Consumption of protein-rich foods (meat, fish, poultry, and eggs) generally begins at four to five months (8 percent) and increases to 27 percent by the first year of life. Generally, for all children under the age of three years, the percentage consuming protein-rich foods in the previous 24 hours does not rise above 39 percent. Fruits and vegetables rich in vitamin A are consumed much earlier. By two to three months, some children eat fruits and vegetables; this proportion rises to 69 percent by the first year of life.

Figure 10.2 shows the mean number of times that solid or semi-solid food was given to young children in the 24 hours preceding the survey. As expected, as children get older, they are given more meals per day. Those who are over one year of age are generally given solid or semi-solid foods about three times per day.

**Figure 10.2 Frequency of Meals Consumed by Children under 36 Months of Age Living with Their Mother**



KDHS 2003

## 10.2 MICRONUTRIENT INTAKE

Vitamin A is an essential micronutrient for the immune system and plays an important role in maintaining the epithelial tissue in the body. High levels of vitamin A deficiency (VAD) can cause eye damage leading to blindness and can increase the severity of infections such as measles and diarrhoeal diseases in children. Ensuring that children between 6 and 59 months receive enough vitamin A may be the single most effective child survival intervention. Additionally, adequate intake of the vitamin during pregnancy may reduce maternal deaths. According to the 1990 World Summit for Children goals and the national plan of action developed by the Government of Kenya in 1994, the target was to virtually eliminate VAD disorders by 2000 (Central Bureau of Statistics and UNICEF, 2003).

### Micronutrient Intake among Children

Table 10.5 shows the percentage of youngest children under three years who consumed foods rich in vitamin A in the 24 hours preceding the survey and the percentage of children under age 6-59 months who received vitamin A supplements in the six months preceding the survey. Overall, 62 percent of children under three years consume food rich in vitamin A, and 33 percent of children under five receive vitamin A supplements.

Table 10.5 Micronutrient intake among children

Percentage of youngest children under age three living with the mother and who consumed fruits and vegetables rich in vitamin A in the 24 hours preceding the survey and percentage of children age 6-59 months who received vitamin A supplements in the six months preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Consumed fruits and vegetables rich in vitamin A <sup>1</sup>	Number of children	Consumed vitamin A supplements	Number of children
<b>Age in months</b>				
<6	16.4	607	na	0
6-9	51.5	403	29.9	408
10-11	69.6	220	34.3	222
12-23	77.8	1,036	36.6	1,131
24-35	83.7	676	33.0	1,031
36-47	na	0	32.9	1,123
48-59	na	0	31.8	1,026
<b>Sex</b>				
Male	61.5	1,474	35.3	2,493
Female	63.0	1,469	31.4	2,447
<b>Birth order</b>				
1	61.1	683	35.4	1,228
2-3	64.1	1,032	34.6	1,760
4-5	64.0	632	32.4	983
6+	58.5	596	29.3	971
<b>Breastfeeding status</b>				
Breastfeeding	55.0	2,158	32.4	1,605
Not breastfeeding	82.2	782	33.9	3,309
<b>Residence</b>				
Urban	66.0	560	40.4	945
Rural	61.4	2,383	31.7	3,996
<b>Province</b>				
Nairobi	67.1	196	37.5	326
Central	72.6	330	35.0	557
Coast	58.8	251	33.2	416
Eastern	70.4	485	22.4	786
Nyanza	68.0	441	26.5	720
Rift Valley	55.2	807	36.5	1,372
Western	60.0	356	46.8	617
North Eastern	17.6	78	24.6	146
<b>Mother's education</b>				
No education	40.6	453	25.9	746
Primary incomplete	60.3	1,040	30.3	1,748
Primary complete	67.1	819	36.1	1,372
Secondary+	74.7	631	40.0	1,074
<b>Mother's age at birth</b>				
<20	58.6	480	34.7	866
20-24	60.1	884	35.0	1,553
25-29	64.9	704	32.5	1,165
30-34	65.5	508	33.2	777
35-49	62.6	367	28.8	580
<b>Wealth quintile</b>				
Lowest	53.1	701	29.9	1,204
Second	62.1	619	32.7	1,027
Middle	64.6	561	31.5	936
Fourth	68.4	503	36.9	842
Highest	66.0	559	37.2	931
Total	62.2	2,943	33.3	4,941

Note: Information on vitamin A supplements is based on mother's recall. Total includes 27 children with information on breastfeeding status missing.

na = Not applicable

<sup>1</sup> Includes pumpkin, red or yellow yams or squash, carrots, red sweet potatoes, green leafy vegetables, mangoes, papayas, and other locally grown fruits and vegetables that are rich in vitamin A

The consumption of food rich in vitamin A and the intake of supplements vary substantially by background characteristics. Male children are slightly more likely than females to consume vitamin A supplements (35 and 31 percent, respectively). Children who are not breastfeeding (82 percent) are more likely to consume fruits and vegetables rich in vitamin A, compared with their breastfeeding counterparts (55 percent), presumably because they are older than breastfeeding children. Analysis of data on area of residence and provinces also reveals differences. In general, children in urban areas are more likely to eat fruits and vegetables rich in vitamin A and also receive vitamin A supplements (66 and 40 percent, respectively) compared with those in rural areas (61 and 32 percent, respectively). The proportion of children consuming foods rich in vitamin A is highest in Central (73 percent) and Eastern (70 percent) provinces and lowest in North Eastern Province (18 percent). Consumption of vitamin A supplements is highest in Western Province (47 percent) and lowest in Eastern (22 percent) and North Eastern (25 percent) provinces. It appears that children in North Eastern Province are less likely to consume fruits and vegetables rich in vitamin A as well as to receive vitamin A supplements.

### **Micronutrient Intake among Women**

Table 10.6 presents the percentage of women with a birth in the five years preceding the survey who received a vitamin A dose in the first two months after birth and who took iron tablets or syrup during pregnancy. In general, 14 percent received a postpartum vitamin A dose, but this varies with area of residence, province, and educational attainment. Women in urban areas (20 percent) are more likely to receive vitamin A supplements than those in rural areas (13 percent). At the provincial level, the percentage of women who reported receiving a postpartum vitamin A dose is highest in Coast Province (23 percent) and lowest in Central Province (11 percent).

With regard to educational level, women with no education (12 percent) or those with incomplete primary education (11 percent) are less likely to receive vitamin A doses. The data show that 21 percent of women with some secondary education reported having received a postpartum vitamin A dose. Vitamin A supplementation is strongly associated with wealth, rising from 10 percent of the poorest mothers to 22 percent of the wealthiest.

As seen in the table, the intake of iron tablets and syrup during pregnancy is low. Overall, more than half of women (54 percent) did not take iron tablets or syrup during pregnancy. Intake varies considerably by province. Seventy-nine percent of women in North Eastern Province and 70 percent in Central Province did not take any iron supplements during pregnancy, compared with 35 percent in Coast Province and 36 percent in Nyanza Province. Coast and Nyanza Provinces are malaria-endemic areas, and as such, women are more likely to receive iron tablets or syrup. Among women who took iron supplements during pregnancy, the vast majority took them for less than 60 days.



**Table 10.6 Micronutrient intake among mothers**

Percentage of women with a birth in the five years preceding the survey who received a vitamin A dose in the first two months after delivery and percentage who took iron tablets or syrup for a specific number of days during pregnancy, by background characteristics, Kenya 2003

Background characteristic	Received vitamin A dose post-partum <sup>1</sup>	Number of days iron tablets/syrup taken during pregnancy				Don't know/missing	Number of women
		None	<60	60-89	90+		
<b>Age at birth</b>							
<20	16.7	54.9	37.5	1.2	2.2	4.3	647
20-24	15.2	56.8	33.9	1.4	1.8	6.1	1,172
25-29	14.3	50.3	39.4	1.9	3.1	5.4	964
30-34	13.4	51.0	38.0	2.3	3.1	5.6	685
35-49	10.2	53.9	30.8	3.8	2.7	8.8	584
<b>Number of children ever born</b>							
1	18.1	57.4	32.7	1.2	2.6	6.2	946
2-3	15.9	54.0	36.3	1.8	2.3	5.6	1,404
4-5	12.2	51.7	39.3	1.8	1.7	5.5	842
6+	8.9	50.3	36.1	3.3	3.7	6.6	859
<b>Residence</b>							
Urban	19.9	53.1	34.2	2.0	3.2	7.5	835
Rural	12.7	53.7	36.5	2.0	2.3	5.5	3,217
<b>Province</b>							
Nairobi	20.3	56.9	30.8	1.4	3.9	6.9	307
Central	10.7	70.4	24.8	0.6	0.8	3.3	495
Coast	22.9	34.8	49.5	3.5	3.9	8.3	336
Eastern	12.2	68.0	26.4	0.7	0.0	5.0	646
Nyanza	13.7	36.0	45.3	3.8	3.6	11.3	643
Rift Valley	13.6	53.4	36.3	2.2	2.8	5.3	1,052
Western	11.9	46.1	45.4	1.8	3.9	2.9	470
North Eastern	15.6	78.9	18.3	0.4	1.4	1.1	102
<b>Education</b>							
No education	12.0	52.5	38.7	2.5	1.4	4.8	582
Primary incomplete	10.9	52.1	37.7	2.0	3.2	5.0	1,395
Primary complete	14.2	57.2	34.1	1.2	1.4	6.1	1,143
Secondary+	20.5	51.9	34.2	2.6	3.6	7.8	932
<b>Wealth quintile</b>							
Lowest	9.6	53.3	38.6	1.8	2.7	3.5	869
Second	13.6	52.6	37.5	1.3	2.3	6.3	830
Middle	11.9	52.3	37.2	3.0	2.3	5.2	777
Fourth	13.8	56.6	32.6	1.9	1.2	7.7	725
Highest	21.8	53.2	33.8	1.9	3.8	7.3	851
Total	14.2	53.5	36.0	2.0	2.5	5.9	4,052

Note: For women with two or more live births in the five-year period, data refer to the most recent birth.

<sup>1</sup> In the first two months after delivery

### 10.3 NUTRITIONAL STATUS OF CHILDREN UNDER FIVE

The growth patterns of healthy and well-fed children are reflected in positive changes in their height and weight. Inadequate food supply, among other factors, often leads to malnutrition, resulting in serious consequences on the physical and mental growth and development of the children. Monitoring of nutrition indicators will provide information on the progress made in achieving the Millennium Development Goals,<sup>1</sup> as well as targets set in the Economic Recovery Strategy (Ministry of Planning and National Development, 2003).

In addition to questions about infant and young children's feeding practices, the 2003 KDHS included an anthropometric component, in which all children under five years of age were both weighed and measured. Each interviewing team carried a scale and measuring board. The scales were lightweight, bathroom-type scales with a digital screen designed and manufactured under the authority of the United Nations Children's Fund (UNICEF). The measuring boards were specially produced by Shorr Productions for use in survey settings. Children younger than 24 months were measured lying down on the board (recumbent length), and standing height was measured for older children.

In previous KDHS surveys, anthropometric measurements were restricted to children born to women interviewed with the Women's Questionnaire. However, these data do not represent all children, since they exclude children whose mothers were not in the household (either because they did not live there or because they had died), children whose mothers were not eligible for the individual interview (i.e., under age 15 or age 50 and over), and children whose mothers did not complete an individual interview. To overcome these biases, in the 2003 KDHS, workers weighed and measured all children who were born in the five years preceding the survey and listed in the Household Questionnaire.

Evaluation of nutritional status is based on the rationale that in a well-nourished population, there is a statistically predictable distribution of children of a given age with respect to height and weight. In any large population, there is variation in height and weight; this variation approximates a normal distribution. Use of a standard reference population as a point of comparison facilitates the examination of differences in the anthropometric status of subgroups in a population and of changes in nutritional status over time. One of the most commonly used reference populations, and the one used in this report, is the U.S. National Center for Health Statistics (NCHS) standard, which is recommended for use by the World Health Organisation (WHO). The use of this reference population is based on the finding that young children of all population groups have similar genetic potential for growth.

Three standard indices of physical growth that describe the nutritional status of children are presented:

- Height-for-age (stunting)
- Weight-for-height (wasting)
- Weight-for-age (underweight).

Each of the three nutritional indicators is expressed in standard deviations (Z-scores) from the mean of the reference population.<sup>2</sup> Deviations of the indicators below -2 standard deviations (SD) indicate that the children are moderately and severely affected, while deviations below -3 SD indicate that the children are severely affected. A total of 5,913 (weighted) children under age five were eligible to be weighed and measured. Six percent of these children were not measured, 3 percent had implausibly high or low values for the height and weight measurements, and 1 percent had incomplete age information.

<sup>1</sup> One of the 48 Millennium Development indicators is to reduce by half the proportion of malnourished children by 2015.

<sup>2</sup> The distribution of the standard reference population has been normalised and hence the mean and median coincide.

The following analysis focuses on the 5,307 children under five for whom complete and plausible anthropometric data were collected.

## Stunting

Height-for-age is a measure of linear growth. A child who is below -2 SD from the median of the NCHS reference population in terms of height-for-age is considered short for his/her age, or “stunted,” a condition reflecting the cumulative effect of chronic malnutrition. If the child is below -3 SD from the reference median, then the child is considered to be severely stunted. A child between -2 and -3 SD is considered to be moderately stunted. Stunting reflects failure to receive adequate nutrition over a long period of time and may also be caused by recurrent and chronic illness. Height-for-age, therefore, represents a measure of the long-term effects of malnutrition in a population and does not vary appreciably according to the season of data collection. Stunted children are not immediately obvious in a population; a stunted three-year-old child could look like a well-fed two-year-old.

Table 10.7 shows the nutritional status of children under five as measured by stunting (height-for-age) indicator and various background characteristics. At the national level, 30 percent of children under five are stunted, while the proportion severely stunted is 11 percent. This represents a small decline from the 1998 KDHS results.<sup>3</sup> Analysis of the indicator by various age groups shows that stunting is highest (43 percent) in children age 12-23 months and lowest (7 percent) in children age less than 6 months. Severe stunting shows a similar trend, where children age 12-23 months have the highest proportion of severely stunted children (16 percent) and those less than 6 months have the lowest proportion (1 percent).

A higher proportion (33 percent) of male children under five years are stunted, compared with 28 percent of female children. The survey data show that children living in urban areas are moderately and severely stunted to a lesser extent (24 percent), when compared with rural children (32 percent). At the provincial level, Coast Province (35 percent) has the highest proportion of stunted children, while Nairobi Province has the lowest (19 percent).

The mother’s level of education has an inverse relationship with stunting levels. For example, children of mothers with at least some secondary education have the lowest stunting levels (19 percent), while children whose mothers have no education have the highest level of stunting (36 percent).

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<sup>3</sup> Tabulating the data for 2003 only for children whose mothers were interviewed and omitting the northern areas of Kenya so as to be comparable to prior KDHS data shows that the proportion stunted has declined from 33 percent in 1998 to 31 percent in 2003 while the proportion severely stunted has declined from 13 to 11 percent.

Table 10.7 Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Kenya 2003

Background characteristic	Height-for-age			Weight-for-height			Weight-for-age			Number of children
	Percent-age below -3 SD	Percent-age below -2 SD <sup>1</sup>	Mean Z-score (SD)	Percent-age below -3 SD	Percent-age below -2 SD <sup>1</sup>	Mean Z-score (SD)	Percent-age below -3 SD	Percent-age below -2 SD <sup>1</sup>	Mean Z-score (SD)	
<b>Age in months</b>										
<6	0.9	7.4	(0.1)	0.6	3.9	0.5	0.0	2.4	0.4	511
6-9	3.6	12.1	(0.6)	0.7	4.8	(0.0)	1.9	10.2	(0.5)	395
10-11	4.3	21.2	(0.9)	2.7	8.1	(0.3)	3.9	24.1	(1.0)	215
12-23	15.9	43.1	(1.7)	2.3	9.5	(0.4)	7.8	26.8	(1.3)	1,086
24-35	13.6	35.5	(1.5)	1.4	5.5	(0.3)	5.2	25.3	(1.2)	1,005
36-47	13.3	34.1	(1.4)	0.8	4.3	(0.3)	3.2	20.8	(1.1)	1,100
48-59	10.1	27.9	(1.3)	0.5	3.4	(0.3)	2.9	17.8	(1.0)	995
<b>Sex</b>										
Male	11.6	32.9	(1.4)	1.3	6.4	(0.3)	4.6	22.0	(1.0)	2,663
Female	10.4	27.7	(1.1)	1.2	4.8	(0.2)	3.6	17.7	(0.9)	2,643
<b>Birth order</b>										
1	8.5	26.3	(1.2)	1.2	5.5	(0.2)	2.8	17.6	(0.9)	1,127
2-3	9.8	29.6	(1.2)	0.9	5.1	(0.2)	3.5	17.5	(0.9)	1,774
4-5	13.1	33.5	(1.3)	1.8	6.6	(0.2)	5.3	22.8	(1.0)	1,035
6+	12.7	34.6	(1.3)	1.4	5.6	(0.3)	5.0	24.1	(1.0)	995
<b>Birth interval in months</b>										
First birth	8.8	26.4	(1.2)	1.2	5.5	(0.2)	2.8	17.8	(0.9)	1,132
<24	14.5	34.5	(1.4)	0.9	6.3	(0.2)	5.5	23.9	(1.0)	810
24-47	10.9	33.0	(1.3)	1.7	6.1	(0.3)	4.6	20.8	(1.0)	2,091
48+	9.8	27.0	(1.1)	0.6	4.2	(0.1)	3.0	17.1	(0.8)	898
<b>Size at birth</b>										
Very small	20.5	40.7	(1.7)	0.2	8.7	(0.4)	11.2	34.1	(1.4)	166
Small	17.6	40.3	(1.7)	1.5	8.4	(0.5)	7.4	33.6	(1.5)	601
Average or larger	9.4	28.9	(1.2)	1.3	5.1	(0.2)	3.3	17.4	(0.9)	4,147
<b>Residence</b>										
Urban	9.3	23.6	(1.0)	1.0	4.2	0.1	2.8	12.6	(0.6)	882
Rural	11.3	31.7	(1.3)	1.3	5.8	(0.3)	4.4	21.3	(1.0)	4,425
<b>Province</b>										
Nairobi	5.3	18.7	(0.7)	1.2	4.5	0.2	1.9	6.3	(0.3)	304
Central	8.7	27.0	(1.1)	1.1	4.4	(0.0)	2.2	14.6	(0.7)	571
Coast	13.9	34.9	(1.5)	0.0	5.7	(0.3)	5.9	25.4	(1.2)	426
Eastern	12.9	32.5	(1.4)	0.9	4.2	(0.3)	4.2	21.4	(1.1)	888
Nyanza	7.9	31.1	(1.2)	0.1	2.3	(0.0)	2.4	15.6	(0.7)	826
Rift Valley	12.3	31.6	(1.3)	1.6	7.7	(0.4)	5.2	24.0	(1.1)	1,427
Western	11.8	30.2	(1.3)	1.2	4.5	(0.2)	4.2	19.0	(0.9)	739
North Eastern	12.3	24.3	(0.6)	10.9	26.5	(1.2)	9.9	33.7	(1.4)	127
<b>Education</b>										
No education	16.3	36.4	(1.4)	3.5	14.8	(0.6)	9.9	33.1	(1.3)	731
Primary incomplete	12.5	34.8	(1.4)	1.2	5.1	(0.2)	4.0	21.9	(1.1)	1,838
Primary complete	9.9	30.5	(1.3)	0.6	2.8	(0.2)	2.9	17.3	(0.9)	1,387
Secondary+	5.2	19.2	(0.8)	0.5	3.6	0.1	1.7	10.6	(0.5)	1,069
<b>Mother's age</b>										
15-19	12.6	32.5	(1.3)	1.7	7.7	(0.2)	4.9	20.3	(0.9)	322
20-24	9.7	30.8	(1.3)	1.1	5.4	(0.2)	3.1	18.3	(0.9)	1,324
25-29	10.9	29.2	(1.3)	1.6	5.9	(0.3)	4.6	21.3	(1.0)	1,421
30-34	9.6	29.7	(1.2)	0.8	4.4	(0.2)	3.2	19.8	(0.9)	988
35-49	12.7	32.2	(1.3)	1.0	5.6	(0.2)	5.2	19.8	(0.9)	968
<b>Wealth quintile</b>										
Lowest	14.2	38.1	(1.5)	2.3	9.0	(0.5)	7.8	29.6	(1.3)	1,312
Second	11.3	32.6	(1.3)	1.0	5.9	(0.3)	3.0	20.3	(1.1)	1,163
Middle	11.1	29.9	(1.3)	0.6	3.7	(0.1)	3.6	18.4	(0.9)	1,041
Fourth	10.3	27.3	(1.2)	0.8	4.1	(0.1)	3.0	17.2	(0.8)	928
Highest	6.3	19.2	(0.8)	1.0	3.8	0.1	1.9	9.2	(0.4)	864
Children of interviewed mothers	10.8	30.7	(1.3)	1.2	5.6	(0.2)	4.0	19.9	(1.0)	4,931
<b>Children of noninterviewed mothers</b>										
Mother in the household	10.4	22.5	(0.9)	0.0	1.7	(0.2)	4.9	15.9	(0.8)	93
Mother not in the household	14.5	27.0	(1.1)	0.9	5.9	(0.3)	5.1	20.0	(0.9)	283
<b>Total</b>	11.0	30.3	(1.2)	1.2	5.6	(0.2)	4.1	19.9	(0.9)	5,307

Note: Table is based on children who stayed in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the NCHS/CDC/WHO International Reference Population. The percentage of children who are more than three or more than two standard deviations below the median of the International Reference Population (-3 and -2 SD) are shown according to background characteristics. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight. Total includes 14 children with size at birth missing.

<sup>1</sup> Includes children who are below -3 SD from the International Reference Population median

<sup>2</sup> Excludes children whose mothers were not interviewed

<sup>3</sup> First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

<sup>4</sup> For women who are not interviewed, information is taken from the Household Questionnaire. It excludes children whose mothers are not listed in the household schedule.

<sup>5</sup> Includes children whose mothers are deceased

There seems to be no discernible relationship between the mother's age group and stunting levels. Wealth is negatively related to stunting; that is, stunting declines as wealth increases.

## Wasting

Weight-for-height measures body mass in relation to body length and describes current nutritional status. A child who is below -2 SD from the reference median for weight-for-height is considered to be too thin for his/her height, or "wasted," a condition reflecting acute malnutrition. Wasting represents the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or recent episodes of illness causing loss of weight and the onset of malnutrition. As with stunting, wasting is considered severe if the child is below -3 SD from the reference mean. Severe wasting is closely linked to an elevated risk of mortality. Prevalence of wasting may vary considerably by season.

Table 10.7 also shows the nutritional status of children under five years as measured by wasting children. Nationally, 6 percent of children are wasted, and the proportion of severely wasted children is 1 percent. This represents only a 1 percentage point decline since 1998 (from 6 percent in 1998 to 5 percent in 2003, when the northern areas have been excluded).

Wasting is highest (10 percent) in children age 12-23 months and lowest (3 percent) in children age 48-59 months. The survey data show few sharp differences in wasting by background characteristics except that the level among children in North Eastern Province is extraordinarily high (27 percent). Eleven percent of children in North Eastern Province are severely wasted. These levels may reflect food stress in the province, which is traditionally a region with food deficits. Women with no education also have very high levels of wasted and severely wasted children (15 and 4 percent, respectively).

## Underweight

Weight-for-age is a composite index of height-for-age and weight-for-height and, thus, does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). A child can be underweight for his age because he is stunted, wasted, or both. Weight-for-age is a useful tool in clinical settings for continuous assessment of nutritional progress and growth. Children whose weight-for-age is below -2 SD from the median of the reference population are classified as "underweight." In the reference population, only 2.3 percent of children fall below -2 SD for each of these three indices.

As shown in Table 10.7, 20 percent of children under five are underweight, representing a slight decline from the 1998 KDHS results (22 percent). The proportion of severely underweight children is 4 percent. The proportion of underweight children is highest (27 percent) in the 12-23 months age group and lowest (2 percent) for those less than six months of age. Male children (22 percent) are more likely to be underweight than female children (18 percent).

Urban children are less likely to be underweight (13 percent) than rural children (21 percent). At the provincial level, North Eastern Province has the highest proportion of moderate and severely underweight children (34 percent), while Nairobi Province has the lowest proportion (6 percent).

The proportion of underweight children is negatively correlated with the level of education of the mother. Children whose mothers have no education have the highest levels of being underweight (33 percent), while the proportion for children of mothers with some secondary education is lowest (11 percent). Wealth is also negatively correlated with the proportion of children who are underweight.

## Trends in Nutritional Status of Children

Table 10.8 compares the nutritional status indicators of children under five years from KDHS 2003 with previous surveys (Multiple Indicator Cluster Survey 2000 and 1998 KDHS). The trends show that the nutrition status of children under five years has improved only slightly at the national level. At the provincial level, Nairobi and Nyanza Provinces show remarkable declines in stunting, wasting, and underweight indicators when compared with previous surveys. Data from North Eastern Province cannot be compared since previous surveys did not fully cover this province.

**Table 10.8 Trends in nutritional status of children**

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Kenya 1993-2003

Background characteristic	Height-for-age (stunting)			Weight-for-height (wasting)			Weight-for-age (underweight)		
	1998 <sup>1</sup>	2000 <sup>2</sup>	2003 <sup>3</sup>	1998 <sup>1</sup>	2000 <sup>2</sup>	2003 <sup>3</sup>	1998 <sup>1</sup>	2000 <sup>2</sup>	2003 <sup>3</sup>
<b>Age in months</b>									
<6	7.1	12.4	7.6	5.2	2.4	3.7	2.3	3.0	2.5
6-11	17.5	24.5	15.7	7.8	3.9	5.7	14.8	14.6	14.9
12-23	41.8	47.5	43.7	9.1	9.9	8.3	26.9	28.4	25.9
24-35	37.8	34.8	35.4	4.9	6.6	5.0	28.3	22.5	24.4
36-47	35.6	34.5	34.7	4.9	4.1	3.0	23.8	19.4	19.5
48-59	38.0	34.7	27.7	4.0	4.9	2.6	22.7	21.9	16.9
<b>Sex</b>									
Male	35.2	37.9	33.3	5.9	6.6	5.5	22.2	22.6	20.8
Female	30.8	32.6	27.8	6.2	5.3	4.0	22.0	19.6	17.3
<b>Residence</b>									
Urban	24.7	26.6	23.5	5.1	3.3	3.5	13.3	12.4	11.7
Rural	34.7	38.0	32.0	6.2	6.8	5.1	23.9	23.9	20.6
<b>Province</b>									
Nairobi	25.7	29.6	18.7	7.1	3.1	4.5	11.4	12.4	6.3
Central	27.5	27.4	27.0	5.6	4.6	4.4	14.3	15.4	14.6
Coast	39.1	33.7	34.9	4.3	6.4	5.7	27.4	21.1	25.4
Eastern	36.8	42.8	32.7	4.7	7.8	4.2	25.7	29.6	21.2
Nyanza	30.8	35.9	31.1	7.0	5.2	2.3	22.2	19.9	15.6
Rift Valley	33.1	36.8	32.0	7.4	7.6	6.8	24.9	24.9	22.8
Western	35.0	38.1	30.2	4.6	5.5	4.5	19.1	21.5	19.0
<b>Education<sup>4</sup></b>									
No education	46.4	37.2	41.9	8.8	7.1	11.8	36.8	24.1	32.4
Primary incomplete	39.7	na	34.8	6.5	na	5.2	26.9	na	21.9
Primary complete	31.5	na	30.3	6.4	na	2.7	19.9	na	17.0
Secondary+	19.2	25.6	19.2	3.9	3.4	3.6	11.0	13.7	10.7
<b>Total</b>	<b>33.0</b>	<b>35.3</b>	<b>30.6</b>	<b>6.1</b>	<b>6.0</b>	<b>4.8</b>	<b>22.1</b>	<b>21.2</b>	<b>19.1</b>

Note: Numbers refer to the percentage of children who are more than two standard deviation units (SD) from the median of the NCHS/CDC/WHO International Reference Population. Table is based on children who stayed in the household the night before the interview and who have valid dates of birth (month and year) and valid measurement of both height and weight.

na = Not applicable

<sup>1</sup> 1998 KDHS; excludes children whose mothers were not interviewed

<sup>2</sup> 2000 Multiple Indicator Cluster Survey (CBS, 2001); total includes areas in urban Northeast Province

<sup>3</sup> 2003 KDHS; excludes northern districts

<sup>4</sup> For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the household schedule.

## 10.4 NUTRITIONAL STATUS OF WOMEN

The 2003 KDHS also collected data on the height and weight of women. The data are used to derive two measures of nutritional status: height and body mass index (BMI). A woman's height can be used to predict the risk of having difficulty in pregnancy, given the relationship between height and pelvic size. The cutoff point at which mothers can be considered at risk because of low stature is normally taken to be between 140 and 150 centimetres (cm). The BMI or Quetelet index is used to measure thinness or obesity. It is defined as weight in kilograms divided by height in metres squared ( $\text{kg/m}^2$ ). A cutoff point of 18.5 is used to define thinness or acute undernutrition. A BMI of 25 or above usually indicates overweight or obesity.

Table 10.9 shows nutritional indicators for women by various background characteristics. At the national level, the mean height for women is 159 cm., with only 1 percent of women falling below the 145-cm. cutoff. Variation by background characteristics is minimal.

The mean BMI for women age 15-49 is 23. Analysis by background characteristics shows that the mean BMI is less than 25 for all classifications. Since 1998, the mean BMI has increased very slightly from 22 to 23, when the same areas of the country are compared.

At the national level, the proportion of severely thin women stands at 2 percent ( $\text{BMI} < 16.0$ ). Differentials are few except that North Eastern Province stands out with the highest proportion of severely thin women (7 percent).

The proportion of overweight or obese women stands at 23 percent. The proportion of overweight or obese women is positively correlated with the woman's age. Thus, the group age 45-49 has the highest proportion (41 percent) of overweight or obese women, while the group age 15-19 has the lowest (8 percent) proportion of overweight or obese women.

The data show that the proportion of women living in urban areas who are overweight or obese (39 percent) is higher than that for women in rural areas (18 percent). Provincial comparison shows that North Eastern Province has the lowest proportion of overweight or obese women (8 percent), while Nairobi Province has the highest proportion of overweight or obese women (39 percent). Education has a positive relationship with overweight levels; better educated women are more likely to be overweight or obese (34 percent) than those with no education (15 percent).

Table 10.9 Nutritional status of women by background characteristics

Among women age 15-49, mean height, percentage under 145 centimetres (cm), mean body mass index (BMI), and percentage with specific BMI levels, by background characteristics, Kenya 2003

Background characteristic	Height			BMI <sup>1</sup> (kg/m <sup>2</sup> )									Number of women
	Mean height in cm	Percent-age below 145 cm	Number of women	Mean BMI	Normal	Thin				Overweight/obese			
					18.5-24.9 (normal)	<18.5 (thin)	17.0-18.4 (mildly thin)	16.0-16.9 (moderately thin)	<16.0 (severely thin)	≥25.0 (over-weight/obese)	25.0-29.9 (over-weight)	≥30.0 (obese)	
<b>Age</b>													
15-19	158.0	2.0	1,746	20.9	71.7	20.4	12.7	4.1	3.6	7.9	7.5	0.4	1,612
20-24	160.0	1.0	1,605	22.2	73.7	9.3	6.8	1.9	0.6	17.0	14.6	2.4	1,378
25-29	160.2	0.4	1,289	22.4	68.9	11.0	8.5	1.5	1.0	20.1	15.4	4.8	1,128
30-34	159.8	0.9	1,033	23.5	59.2	9.6	7.1	1.5	0.9	31.3	22.7	8.6	934
35-39	159.8	0.5	828	24.1	53.4	9.8	6.5	2.6	0.7	36.8	24.2	12.6	783
40-44	159.7	1.0	749	24.2	50.2	10.9	6.7	2.3	2.0	38.9	24.2	14.7	725
45-49	158.8	1.0	488	24.4	51.0	8.3	5.5	1.9	0.9	40.7	26.8	13.9	487
<b>Residence</b>													
Urban	159.6	0.8	1,899	24.5	55.9	5.4	4.1	0.9	0.4	38.7	26.4	12.3	1,759
Rural	159.4	1.1	5,840	22.1	67.1	14.6	9.7	2.9	2.0	18.3	14.0	4.4	5,288
<b>Province</b>													
Nairobi	160.0	0.7	786	24.6	56.4	4.5	3.8	0.4	0.4	39.1	26.9	12.2	721
Central	158.9	1.5	1,120	23.8	59.1	7.1	4.6	1.9	0.6	33.9	24.3	9.5	1,046
Coast	157.1	2.5	634	23.0	60.2	13.3	8.1	3.4	1.8	26.5	16.6	9.9	567
Eastern	157.2	1.8	1,249	22.2	68.4	13.0	9.1	2.5	1.4	18.6	14.3	4.3	1,160
Nyanza	160.9	0.7	1,178	22.1	72.8	10.6	7.5	1.1	2.0	16.6	12.8	3.8	1,050
Rift Valley	160.2	0.4	1,722	22.1	60.4	18.6	12.4	3.8	2.3	21.1	15.6	5.5	1,579
Western	160.9	0.3	902	22.1	71.6	11.9	8.4	2.5	1.0	16.4	13.2	3.2	798
North Eastern	160.6	2.0	148	19.9	65.0	27.5	14.2	6.0	7.3	7.5	7.1	0.4	125
<b>Education</b>													
No education	159.2	1.1	969	21.2	60.6	24.5	15.2	5.6	3.7	15.0	10.6	4.4	858
Primary incomplete	158.4	1.8	2,554	21.6	67.4	16.8	11.0	3.1	2.7	15.8	12.8	3.0	2,300
Primary complete	159.8	0.8	1,943	23.0	67.2	8.5	6.2	1.7	0.6	24.3	18.0	6.3	1,746
Secondary+	160.4	0.5	2,274	24.1	60.1	5.7	4.4	0.9	0.3	34.2	23.5	10.7	2,142
<b>Wealth quintile</b>													
Lowest	159.1	1.2	1,299	20.7	68.3	22.9	14.3	4.9	3.6	8.9	7.3	1.6	1,149
Second	159.1	1.2	1,409	21.4	70.3	16.9	11.7	2.9	2.3	12.9	10.5	2.4	1,256
Middle	159.6	0.8	1,426	22.3	68.6	12.3	8.7	2.3	1.3	19.1	14.4	4.7	1,303
Fourth	159.4	1.2	1,625	23.1	63.6	9.9	6.6	2.2	1.2	26.5	20.2	6.3	1,497
Highest	159.7	0.8	1,979	24.7	55.2	4.5	3.4	0.8	0.3	40.2	27.1	13.2	1,841
Total	159.4	1.1	7,739	22.7	64.3	12.3	8.3	2.4	1.6	23.4	17.1	6.3	7,047

<sup>1</sup> Excludes pregnant women and women with a birth in the preceding two months



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### 11.1 MALARIA CONTROL AND PREVENTION STRATEGIES IN KENYA

Malaria affects 20 million Kenyans annually; the cumulative human suffering and economic loss caused by malaria is immense (Snow et al., 1998). It is estimated that, annually, 26,000 children under five years of age (72 per day) die from the direct consequence of malaria infection (Snow et al., 1998), and pregnant women suffer severe anaemia and have a high likelihood of delivering infants with low birth weight (Menendez, 1999). All Kenyan households are affected by the financial hardship caused by malaria. It is estimated that 170 million working days are lost each year because of malarial illness, which in turn affects the country's economy, leading to increased poverty (Ministry of Health, n.d.).

The distribution of malaria is not uniform, because of geographical differences in altitude, rainfall and humidity. These factors influence transmission patterns, as they determine vector densities and intensity of biting. The country may be divided into four malaria ecozones: 1) stable malaria (Nyanza, Coast, and Western provinces, 2) seasonal malaria (Central, Eastern, and North Eastern Provinces) 3) highlands prone to malaria epidemics (mainly in Rift Valley Province and some parts of Nyanza Province), and 4) malaria free (Nairobi and some parts of Central Province).

The Kenya government is committed to the control and prevention of malaria. To this effort, it has developed a strategy document outlining several intervention measures. The four intervention measures outlined in the National Malaria Strategy (NMS) document are 1) management of malarial illness; 2) vector control by use of insecticide-treated mosquito nets (ITNs) and other methods, such as indoor house spraying; 3) control of malaria in pregnancy; and 4) control of malaria epidemics (Ministry of Health, no date). Data from the 2003 Kenya Demographic and Health Survey (KDHS) can be used to assess the extent of implementation of several of these malaria control strategies.

### 11.2 HOUSEHOLD OWNERSHIP OF MOSQUITO NETS

Untreated nets and window screening have long been considered useful protection methods against mosquitoes and other insects (Lindsay and Gibson, 1988). Nets reduce the human-vector contact by acting as a physical barrier and thus reducing the number of bites from infective vectors (Bradley et al., 1986). However, nets and screens are often not well fitted or are torn, thus allowing mosquitoes to enter or feed on the part of the body adjacent to the netting fabric during the night (Lines et al., 1987). The problem of ill-used nets and screens provides one of the motives for treating them with a fast-acting insecticide that will repel or kill mosquitoes before or shortly after feeding (Lines et al., 1987; Hossain and Curtis, 1989).

Over the past two decades, significant advances have been made in the prevention of malaria using ITNs and curtains. The treatment of nets has been made possible by the availability of synthetic pyrethroids, the only insecticides currently used for treatment of nets. This class of insecticides was developed to mimic the insecticidal compounds of natural pyrethrum. Synthetic pyrethroids have low mammalian toxicity; are repellent, highly toxic to mosquitoes, and odourless; and have low volatility with consequent long persistence. Their development has led to treatment of nets as a method of vector control.

ITNs are regarded as a promising malaria control tool, and when used by all or most members of the community, they may reduce malaria transmission. The Government of Kenya is committed to

achieving the goal of 60 percent of households using nets by 2006, according to the targets set in the national malaria control strategy. To this end, the government has created an enabling environment by fostering private-sector growth in the provision of unsubsidised, affordable ITNs and ensuring complementarity with alternative approaches offered by nonprofit, social marketing organisations. Moreover, free net distribution to pregnant women attending antenatal health services is carried out around Africa Malaria Day (25 April) in selected malaria-endemic districts.

There have been no nationally representative net usage figures apart from periodic monitoring of net coverage and retreatment in a few sentinel districts in the Roll Back Malaria campaign, which estimated net usage at 15 to 20 percent of households. Regular, national evaluation of the ITN programme is important to the government for determination of the gaps in achieving the national targets. As a means of filling this gap, the 2003 KDHS Household Questionnaire included questions on net ownership and retreatment practices. Table 11.1 provides information on the percentage of households that have a net and the percentage that have an ITN, according to residence, province, and wealth index.

Overall, 22 percent of households in Kenya have mosquito nets, while 10 percent have more than one net. This is about one-third of the target of 60 percent coverage by 2006. Six percent of households have at least one ITN, and 3 percent have more than one ITN.

Table 11.1 Ownership of mosquito nets							
Percentage of households with at least one and more than one mosquito net (treated or untreated), and the percentage of households that have at least one and more than one insecticide-treated net (ITN), by background characteristics, Kenya 2003							
Background characteristic	Percentage of households with at least one net	Percentage of households with more than one net	Average number of nets	Percentage of households with at least one ITN <sup>1</sup>	Percentage of households with more than one ITN <sup>1</sup>	Average number of ITNs <sup>1</sup>	Number of households
<b>Residence</b>							
Urban	37.6	18.8	0.7	10.6	5.0	0.2	2,138
Rural	16.6	7.2	0.3	4.4	1.9	0.1	6,423
<b>Province</b>							
Nairobi	37.0	19.5	0.7	6.9	3.0	0.1	837
Central	16.2	8.0	0.3	3.4	2.0	0.1	1,351
Coast	34.2	16.4	0.6	10.0	4.8	0.2	684
Eastern	16.8	7.8	0.3	4.6	2.5	0.1	1,316
Nyanza	32.1	13.2	0.5	11.3	5.3	0.2	1,282
Rift Valley	11.0	5.0	0.2	3.0	1.1	0.0	1,937
Western	19.8	7.6	0.3	6.7	2.4	0.1	967
North Eastern	37.0	18.9	0.7	2.7	1.2	0.0	187
<b>Wealth quintile</b>							
Lowest	11.2	2.8	0.1	2.5	0.3	0.0	1,391
Second	11.4	2.9	0.2	2.6	0.8	0.0	1,529
Middle	14.0	6.2	0.2	4.2	1.9	0.1	1,653
Fourth	24.4	12.0	0.4	5.6	3.1	0.1	1,728
Highest	39.3	20.7	0.7	11.7	5.8	0.2	2,260
Total	21.8	10.1	0.4	5.9	2.7	0.1	8,561
<sup>1</sup> In this table, an insecticide-treated net refers to a net that was treated with insecticide within the six months preceding the survey.							

Although the burden of malaria is greater in rural areas, net coverage and ITN coverage are both higher in urban areas than in rural areas. Nairobi Province, which is entirely urban, has the highest percentage of households with nets (37 percent); surprisingly, this percentage is identical to that for North Eastern Province, which is predominantly rural and arid. This implies that socioeconomic status alone does not determine the level of net ownership. Net coverage is lowest in Rift Valley Province (11 percent). ITN coverage patterns differ, with the highest ITN ownership in Nyanza and Coast Provinces. Despite the various programmes to encourage subsidised net distribution, net ownership is strongly related to wealth, as shown in Table 11.1. The percentage of households with at least one net ranges from 11 percent among the poorest households to 39 percent among the wealthiest.

### 11.3 USE OF MOSQUITO NETS

Age is an important factor in determination of levels of acquired immunity against malaria. For the first six months of life, antibodies acquired from the mother during pregnancy protect children born in areas endemic for malaria. This is gradually lost, as children start developing their own immunity over a period of time. The level of immunity developed depends on the level of exposure to malaria infection, but it is believed that in highly malaria-endemic areas, children are immune by the fifth birthday. Such children no longer suffer from severe life-threatening malaria. Immunity in areas of low malaria transmission is acquired more slowly, and malarial illness affects all members of the community, regardless of age. The Government of Kenya recognises children under five years of age as a high-risk group and recommends that this group should be protected by sleeping under ITNs.

Table 11.2 shows information on use of any nets and ITNs by children under five years of age. The table shows that overall, 15 percent of children under five slept under a net the night before the survey, with only 5 percent having slept under an ITN. There is a slight decline in use of any net as children age; however, there are no major differences in use of nets by sex of the child or in use of ITNs by age of the child or by sex of the child. Wealth is highly related to net use, with the proportion of children sleeping under a net ranging from 6 percent in the poorest group to 35 percent in the wealthiest group.

Table 11.2 Use of mosquito nets by children

Percentage of children under five years who slept under a mosquito net (treated or untreated) the night before the survey and percentage who slept under an insecticide-treated net (ITN), by background characteristics, Kenya 2003

Background characteristic	Percentage who slept under a net last night	Percentage who slept under an ITN last night	Number of children
<b>Age in months</b>			
<12	17.9	5.4	1,302
12-23	14.5	4.2	1,172
24-35	15.6	5.0	1,107
36-47	11.8	3.8	1,221
48-59	12.6	4.7	1,118
<b>Sex</b>			
Male	14.9	5.1	2,972
Female	14.2	4.1	2,947
<b>Residence</b>			
Urban	32.6	9.8	1,040
Rural	10.7	3.5	4,880
<b>Province</b>			
Nairobi	38.0	8.1	344
Central	12.2	3.9	650
Coast	22.4	7.5	486
Eastern	12.3	3.9	977
Nyanza	16.9	7.4	896
Rift Valley	7.6	2.5	1,618
Western	12.4	4.8	779
North Eastern	30.2	1.2	170
<b>Wealth quintile</b>			
Lowest	6.4	1.2	1,450
Second	7.0	2.2	1,263
Middle	11.4	4.9	1,146
Fourth	18.3	4.8	1,046
Highest	35.3	12.0	1,015
Total	14.5	4.6	5,920

Note: Table is based on de facto children under five in the household.

The proportion of children who slept under any type of net ranges from 8 percent in Rift Valley Province to 38 percent in Nairobi. Use of ITNs ranges from 1 percent of children in North Eastern Province to 8 percent in Nairobi and Coast provinces. Provinces with the highest burden of malaria—Nyanza, Coast, and Western—have intermediate levels of overall net usage but have relatively high levels of use

of ITNs. Nevertheless, it is surprising that Nairobi, which is malaria-free, shows the highest level of use of any net and ITNs.

Pregnancy leads to a depression of immunity. In malaria-endemic areas, adults acquire some immunity, which protects them from malaria infection. However, pregnant women, especially those in their first pregnancies, have a higher risk of malaria infection. Sometimes these malaria infections remain asymptomatic but lead to development of malaria anaemia. Asymptomatic malaria infection also interferes with the maternal-foetus exchange, leading to low birth weight infants. To reduce the risk of malaria infection during pregnancy, the NMS target is for 60 percent of pregnant women to sleep under ITNs. The 2003 KDHS collected information on usage of nets by women.

Table 11.3 shows the percentage of all women and pregnant women who slept under nets and ITNs the night preceding the survey. Sixteen percent of all women used nets, but only 5 percent slept under an ITN. Among pregnant women, 13 percent slept under a net, and 4 percent slept under an ITN.

Table 11.3 Use of mosquito nets by pregnant women						
Percentage of all women and pregnant women age 15-49 who slept under a mosquito net (treated or untreated) the night before the survey and percentage who slept under an insecticide-treated net (ITN), by background characteristics, Kenya 2003						
Background characteristic	Percentage of all women who slept under a net last night	Percentage of all women who slept under an ITN last night	Number of all women	Percentage of pregnant women who slept under net last night	Percentage of pregnant women who slept under an ITN last night	Number of pregnant women
<b>Residence</b>						
Urban	30.3	9.3	2,177	25.7	4.8	132
Rural	11.0	3.2	6,538	9.9	4.3	515
<b>Province</b>						
Nairobi	31.6	7.0	882	29.5	2.1	52
Central	12.3	3.6	1,255	22.6	9.6	58
Coast	25.3	7.9	710	18.4	4.7	56
Eastern	12.6	3.8	1,406	9.9	3.8	106
Nyanza	20.4	8.0	1,300	20.3	9.1	105
Rift Valley	8.3	2.2	2,001	2.0	1.0	159
Western	12.1	4.1	984	6.2	3.1	90
North Eastern	23.9	2.1	178	26.4	6.8	20
<b>Education</b>						
No education	10.2	1.9	1,139	10.4	1.1	95
Primary incomplete	8.5	2.6	2,863	6.2	2.2	249
Primary complete	14.1	4.4	2,162	16.0	7.9	175
Secondary+	28.1	8.6	2,537	24.6	6.6	127
<b>Wealth quintile</b>						
Lowest	5.8	1.1	1,452	5.7	1.7	131
Second	6.5	1.9	1,582	6.4	2.2	141
Middle	9.7	3.4	1,597	8.6	6.5	122
Fourth	16.4	4.6	1,808	17.4	6.3	118
Highest	32.6	9.9	2,275	27.5	5.9	135
Total	15.8	4.7	8,715	13.1	4.4	647
Note: Table is based on de facto women in the household.						

Use of nets and ITNs is higher among urban than rural women. Net use also varies by province. Use of any net is highest among women in Nairobi Province, while use of ITNs is highest among all women in Nyanza and Coast Provinces and among pregnant women in Central and Nyanza Provinces. Rift Valley Province has the lowest proportion of women using nets and ITNs.

As expected, the rate of net usage generally increases with the level of education. For example, 10 percent of women with no education slept under a net the night before the survey, compared with 28 percent of those with at least some secondary education. Wealth is also strongly related to use of nets and ITNs, with 33 percent of the wealthiest women using a net, compared with 6 percent of the poorest. Similarly, 28 percent of the wealthiest pregnant women use nets, compared with 6 percent of the poorest.

#### **11.4 INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN PREGNANCY**

Government policy calls for pregnant women to receive two doses of intermittent preventive treatment (IPT) in the second and third trimesters in order to reduce the risk of malaria infection. IPT using sulphadoxine and pyrimethamine (SP) (Fansidar) was introduced in Kenya in 1998 as a replacement to chloroquine prophylaxis, because of very high levels of chloroquine resistance. All pregnant women living in areas of high malaria transmission are supposed to receive two doses of SP. Some pregnant women may have received chloroquine prophylaxis, as the drug was still in stock for some time after the change of antimalarial drug policy. In the 2003 KDHS, women who had a live birth in the five years preceding the survey were asked whether they had taken any drugs to prevent getting malaria during the pregnancy for their most recent birth and, if yes, which drug. If they had taken SP, they were further asked how many times they took it and whether they had received it during an antenatal care visit. Table 11.4 shows the percentage of pregnant women who took antimalarial drugs for prevention and those who received IPT during an antenatal care visit.

Twenty-one percent of women said they took drugs for malaria prevention during pregnancy. There are few differences in the percentage of pregnant women receiving antimalarial drugs for protection by urban-rural residence, birth order, or wealth quintile. There is a slight increase with education and among more recent births. Coast and Western provinces have the highest proportion of pregnant women receiving antimalarial drugs for prevention, while Nairobi Province has the lowest.

Only 4 percent of women reported receiving IPT<sup>1</sup> during an antenatal care visit. The highest proportion of women receiving IPT during an antenatal visit is observed in Western Province (7 percent), while the lowest are in North Eastern and Central provinces (2 percent each). There is also an increase in IPT coverage with increasing education of the mother, from 2 percent of those with no education to 6 percent of those with some secondary or higher education.

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<sup>1</sup> IPT is defined here as receiving at least two doses of SP during an antenatal care visit.

**Table 11.4 Use of antimalarial drugs among pregnant women**

Of women who had a live birth in the five years preceding the survey, percentage who took antimalarial drugs for prevention during pregnancy for the most recent birth and percentage who received intermittent preventive treatment (IPT) during antenatal care visits for the most recent birth, by background characteristics, Kenya 2003

Background characteristic	Percentage of pregnant women who took any antimalarial drug for prevention	Percentage of pregnant women who received IPT <sup>1</sup> during antenatal care visits	Number of women
<b>Residence</b>			
Urban	20.3	4.2	835
Rural	21.2	3.9	3,217
<b>Province</b>			
Nairobi	11.9	2.3	307
Central	14.1	2.0	495
Coast	35.5	5.7	336
Eastern	22.6	4.8	646
Nyanza	19.7	4.8	643
Rift Valley	17.5	2.5	1,052
Western	31.6	7.0	470
North Eastern	19.1	1.8	102
<b>Education</b>			
No education	18.6	2.3	582
Primary incomplete	19.0	3.0	1,395
Primary complete	20.7	4.0	1,143
Secondary+	25.8	6.1	932
<b>Birth order</b>			
1-2	21.6	4.3	1,692
3-4	20.8	4.0	1,155
5+	20.3	3.3	1,205
<b>Timing of birth</b>			
<1 year ago	23.4	4.2	1,293
1 year ago	23.0	4.9	1,123
2 years ago	17.7	3.9	735
3 years ago	16.5	2.7	533
4 years ago	19.5	1.8	368
<b>Wealth quintile</b>			
Lowest	21.6	3.0	869
Second	20.2	4.7	830
Middle	22.3	4.7	777
Fourth	19.2	3.4	725
Highest	21.5	3.9	851
Total	21.0	3.9	4,052

<sup>1</sup> Intermittent preventive treatment refers to receiving two or more doses of SP during antenatal care visits.

Table 11.5 shows details about women who took an antimalarial drug during the pregnancy leading to their most recent live birth in the five years preceding the survey. The data show that 60 percent of pregnant women who took antimalarial drugs took SP. Differences by background characteristics in the proportion of treated women who took SP are not large, though SP treatment is more common in North Eastern Province and increases with level of education.

The IPT policy recommends that pregnant women living in areas of high malaria transmission take two doses of SP during pregnancy: the first at the beginning of the second trimester and the second at the beginning of the third trimester. Some women may receive a third dose if they become fall sick. As shown in Table 11.5, half of all women who receive SP during pregnancy take only one dose, one-quarter take two doses, and another one-quarter take three or more doses. Women who take SP in provinces with endemic malaria—Nyanza, Coast, and Western—are no more likely than women in other provinces are to take two or more doses of SP.

Table 11.5 Use of SP for intermittent treatment							
Among women who had a live birth in the five years preceding the survey and who took antimalarial drugs for prevention during pregnancy for the most recent birth, percentage who took sulfadoxine-pyrimethamine (SP) and among those who took SP, percent distribution by the number of times taken, according to background characteristics, Kenya 2003							
Background characteristic	Percentage who took SP	Number of mothers who took an antimalarial drug	Among those who took SP, percentage who took it:				Number of mothers who took SP
			Once	Twice	Three times or more	Don't know/missing	
<b>Residence</b>							
Urban	64.3	169	53.1	26.1	18.4	2.4	109
Rural	58.4	681	49.4	23.6	24.4	2.6	398
<b>Province</b>							
Nairobi	59.4	36	(55.7)	(29.7)	(14.6)	(0.0)	22
Central	48.6	70	(37.5)	(23.9)	(34.5)	(4.1)	34
Coast	55.5	120	60.6	23.2	14.3	1.9	66
Eastern	51.4	146	38.9	32.7	25.7	2.8	75
Nyanza	67.6	126	51.9	23.2	24.9	0.0	85
Rift Valley	60.2	185	51.3	17.8	25.7	5.2	111
Western	65.9	148	54.4	23.8	19.6	2.2	98
North Eastern	79.9	20	(38.0)	(32.3)	(29.6)	(0.0)	16
<b>Education</b>							
No education	53.5	108	47.9	28.5	21.2	2.4	58
Primary incomplete	51.4	265	47.5	22.9	25.3	4.4	136
Primary complete	61.4	237	52.6	20.4	25.2	1.9	145
Secondary+	69.6	241	51.2	26.9	20.3	1.6	168
<b>Birth order</b>							
1-2	58.2	366	47.5	24.6	24.9	3.0	213
3-4	65.9	240	49.9	27.1	20.4	2.6	158
5+	55.5	245	54.9	20.0	23.5	1.7	136
<b>Wealth quintile</b>							
Lowest	58.2	188	51.6	21.5	22.5	4.5	109
Second	58.2	167	43.7	22.9	31.0	2.4	97
Middle	62.1	173	53.3	29.0	17.7	0.0	108
Fourth	61.8	139	44.3	24.7	26.2	4.8	86
Highest	58.3	183	56.4	22.7	19.6	1.3	107
Total	59.6	850	50.2	24.1	23.1	2.5	507
Note: Numbers in parentheses are based on 25-49 unweighted cases.							

Among women who took SP and also received antenatal care for their most recent pregnancy, 69 percent received the SP at the antenatal visit, 18 percent received it at another facility visit, and 13 percent obtained the SP from another source (data not shown).

## **11.5 MALARIA CASE MANAGEMENT AMONG CHILDREN**

The Government of Kenya recognises that most malarial fevers and convulsions occur at home, and it has accepted that prompt and effective malaria treatment is important to prevent the disease from becoming severe and complicated. To this effort, the government has trained shopkeepers and community health workers to treat some malaria cases at home using antimalarial drugs purchased over the counter. Mothers are also educated to give correct doses of antimalarial drugs and to recognise danger signs requiring referral. The 2003 KDHS asked mothers whether their children under five years had a fever and/or convulsions in the two weeks preceding the survey and, if so, whether any treatment was sought. Questions were also asked about the types of drugs given to the child and how soon and for how long the drugs were taken.

Table 11.6 shows the percentage of children under five who had fever and/or convulsions in the two weeks preceding the survey, the percentage of such children who took antimalarial drugs, and the percentage taking drugs on the same or next day. Forty-two percent of children under five years of age were reported as having had fever and/or convulsions in the two weeks preceding the survey. Of those, 27 percent took antimalarial drugs; however, only 11 percent received antimalarial drugs the same or next day after the onset of illness.

Prevalence of fever and/or convulsions is higher among children age 6-23 months than among younger or older children; however, treatment with antimalarial drugs is not highly correlated with age, except that children under 6 months (15 percent) are less likely to receive antimalarial drugs. Western Province has the highest percentage of children with malaria symptoms (60 percent), followed by Central and Nyanza provinces (49 percent each), while North Eastern Province has the lowest prevalence (23 percent). Western Province also has the highest proportion of children with fever and/or convulsions who are treated with antimalarial drugs, followed by Coast and Eastern provinces. Prompt treatment (within the same or next day) with antimalarial drugs is highest in Eastern (21 percent) and Coast (20 percent) provinces. Sex of the child, urban-rural residence, level of education, and the wealth index are not strongly related to the prevalence of fever and/or convulsions or the prompt treatment of symptoms.



Table 11.6 Prevalence and prompt treatment of fever/convulsions					
Percentage of children under age five with fever and/or convulsions in the two weeks preceding the survey, and among children with fever and/or convulsions, percentage who took an antimalarial drug and percentage who took an antimalarial drug the same or next day, according to background characteristics, Kenya 2003					
Background characteristic	Percentage of children with fever/convulsions	Number of children	Percentage who took an antimalarial drug	Percentage who took an antimalarial drug same/next day	Percentage of children with fever/convulsions
<b>Age in months</b>					
<6	37.5	619	14.6	4.6	232
6-11	54.7	630	28.2	10.2	345
12-23	49.7	1,131	26.2	10.9	562
24-35	41.4	1,031	30.4	10.8	427
36-47	37.0	1,123	27.6	13.2	415
48-59	32.4	1,026	27.3	14.4	332
<b>Sex</b>					
Male	42.2	2,797	27.5	12.0	1,181
Female	41.0	2,762	25.5	10.1	1,132
<b>Residence</b>					
Urban	40.4	1,063	21.5	8.1	429
Rural	41.9	4,497	27.7	11.7	1,883
<b>Province</b>					
Nairobi	38.5	369	9.7	3.6	142
Central	49.2	622	13.0	6.3	306
Coast	42.9	467	34.3	19.8	201
Eastern	27.9	883	32.0	20.8	246
Nyanza	48.5	832	29.4	11.6	403
Rift Valley	36.8	1,532	19.3	5.9	564
Western	59.8	691	42.2	13.8	413
North Eastern	23.2	163	27.7	8.4	38
<b>Mother's education</b>					
No education	34.9	852	29.5	9.5	298
Primary incomplete	44.5	1,980	26.0	11.1	880
Primary complete	42.0	1,539	25.0	10.7	646
Secondary+	41.1	1,189	27.6	12.3	489
<b>Wealth quintile</b>					
Lowest	38.4	1,343	27.5	10.7	516
Second	44.7	1,159	31.6	12.2	518
Middle	43.3	1,054	28.7	12.3	456
Fourth	42.0	957	24.9	12.1	402
Highest	40.1	1,046	18.2	7.8	420
Total	41.6	5,560	26.5	11.1	2,313

Table 11.7 presents information on the types of antimalarial drugs given to children with fever and/or convulsions and the proportion who took both the first-line drug (SP) and the second-line drug (amodiaquine) on the same or next day after the onset of the illness. In interpreting the data, it is important to remember that the information is based on reports from the mothers of the ill children. Although interviewers carried a laminated chart with pictures of the eight most common forms of antimalarial drugs used in Kenya, to show to mothers as a means of improving reporting of drug types, many mothers may not have known the specific drug given to the child.

Table 11.7 Standard treatment of fever

Among children under age five who had fever and/or convulsions in the two weeks preceding the survey, percentage who took various drugs and percentage who took SP and amodiaquine the same or next day after developing fever and/or convulsions, according to background characteristics, Kenya 2003

Background characteristic	Percentage who took SP	Percentage who took SP same/next day	Percentage who took amodiaquine	Percentage who took amodiaquine same/next day	Percentage who took chloroquine	Percentage who took quinine	Percentage who took aspirin/calpol	Percentage who took other medications	Number of children with fever/convulsions
<b>Age in months</b>									
<6	4.8	1.4	6.7	3.2	2.7	1.0	49.1	23.0	232
6-11	10.1	5.6	10.0	4.8	5.3	5.4	50.9	20.8	345
12-23	10.2	5.6	9.5	5.3	3.5	3.6	48.1	26.5	562
24-35	12.7	6.4	9.6	4.9	3.6	6.0	46.7	21.0	427
36-47	14.0	8.0	9.4	5.8	2.3	3.9	47.7	19.0	415
48-59	12.1	8.4	11.6	6.4	2.6	3.9	48.7	17.3	332
<b>Sex</b>									
Male	11.9	7.2	9.4	5.2	3.7	4.8	48.6	22.3	1,181
Female	10.2	5.1	9.8	5.1	3.0	3.4	48.1	20.9	1,132
<b>Residence</b>									
Urban	7.6	4.6	9.5	4.1	2.6	2.9	46.0	24.5	429
Rural	11.9	6.5	9.6	5.4	3.5	4.4	48.9	21.0	1,883
<b>Province</b>									
Nairobi	2.7	1.6	4.3	2.0	0.5	2.1	47.4	21.7	142
Central	7.5	4.9	4.0	1.4	1.6	0.2	36.4	41.9	306
Coast	19.3	16.4	8.3	4.9	7.3	2.3	52.4	21.9	201
Eastern	12.4	10.0	13.7	11.4	1.4	7.1	44.9	15.6	246
Nyanza	13.2	6.1	8.6	5.7	5.6	4.3	70.6	8.1	403
Rift Valley	6.2	2.1	9.0	3.8	1.8	3.1	37.1	24.0	564
Western	15.9	6.8	15.7	7.4	4.8	8.3	53.5	21.9	413
North Eastern	16.2	8.4	7.5	0.0	4.8	0.0	23.7	0.0	38
<b>Mother's education</b>									
No education	13.2	7.0	9.0	3.0	5.7	2.7	33.8	11.1	298
Primary incomplete	10.3	6.2	10.1	5.4	3.8	3.5	51.8	18.5	880
Primary complete	9.8	5.8	9.3	5.1	2.2	6.0	49.6	24.3	646
Secondary+	12.9	6.1	9.3	6.2	2.7	3.6	49.5	30.0	489
<b>Wealth quintile</b>									
Lowest	11.1	6.1	8.1	5.0	6.5	3.9	49.6	11.7	516
Second	12.5	6.6	12.1	6.1	4.7	4.7	53.3	19.4	518
Middle	15.1	7.3	9.6	5.1	1.7	3.5	48.7	23.2	456
Fourth	8.3	6.3	10.9	5.8	0.9	6.2	44.2	30.1	402
Highest	7.6	4.4	7.0	3.6	2.1	2.3	44.3	26.6	420
Total	11.1	6.2	9.6	5.2	3.4	4.1	48.4	21.6	2,313

Overall, 11 percent of children with fever and/or convulsions took SP, with 6 percent taking SP within a day of onset of illness. Ten percent of children took amodiaquine, with 5 percent taking it within a day of onset of illness. Despite these rather low proportions, it is encouraging that only 3 percent of children are reported to have taken chloroquine, which was withdrawn from the Kenyan market in 1998, because of the high level of resistance to the drug. Quinine, reserved for severe and complicated malaria illness in health facilities, was taken by 4 percent of children with fever and/or convulsions. Half (48 percent) of all children with fever and/or convulsions took non-antimalarial drugs, such as Panadol, paracetamol, aspirin, and Calpol, while 22 percent took other medications.

Coast Province has the highest percentage of children with fever treated with SP (19 percent) and also the highest percentage who received SP on the same or next day of the onset of the illness (16 percent). North Eastern and Western provinces follow, with Eastern Province also having a relatively high proportion of children receiving SP the same or next day. Nairobi has the lowest level of treatment with SP, perhaps indicating the low level of malaria transmission.

Table 11.8 presents information on other interventions for treatment of fever and/or convulsions for children under age five in the two weeks preceding the survey. Exploring other intervention methods for fever and/or convulsion management among various communities is important in designing suitable health education messages.

Table 11.8 Other interventions for treatment of fever and/or convulsions						
Percentage of children under five years who had fever/convulsions in the two weeks preceding the survey who received various interventions, according to background characteristics, Kenya 2003						
Background characteristic	Among children with fever/convulsions, percentage who were					Number of children with fever/convulsions
	Given any intervention drug	Taken to a traditional healer	Given tepid sponging	Given herbs	Given other treatments	
<b>Residence</b>						
Urban	73.3	0.0	1.1	1.2	3.9	429
Rural	74.0	0.4	2.1	5.0	3.1	1,883
<b>Province</b>						
Nairobi	70.1	0.0	1.2	0.0	3.7	142
Central	72.4	0.0	1.4	0.0	5.5	306
Coast	78.4	2.8	3.9	5.8	6.1	201
Eastern	73.8	0.0	0.4	1.3	1.6	246
Nyanza	82.6	0.5	2.4	11.6	0.9	403
Rift Valley	61.4	0.0	2.0	3.7	3.9	564
Western	85.8	0.0	2.1	3.0	2.7	413
North Eastern	36.5	0.0	0.0	12.7	0.0	38
<b>Mother's education</b>						
No education	57.5	1.4	1.5	8.4	0.4	298
Primary incomplete	74.1	0.2	2.1	5.3	3.5	880
Primary complete	77.5	0.1	2.2	3.2	3.4	646
Secondary+	78.5	0.1	1.4	1.6	4.5	489
Total	73.8	0.3	1.9	4.3	3.3	2,313

The table shows that 74 percent of children with fever and/or convulsions in the two weeks preceding the survey received some sort of treatment (medication or another intervention). Some of the non-medication interventions were giving children herbs (4 percent), giving children tepid sponging (2 percent), and taking children to traditional healers (less than 1 percent).

The results provided in this report highlight the enormous gap between the national targets set for 2006 within the NMS and the present coverage of the interventions. Advocacy programmes need to be carried out among women to increase the use of ITNs, their retreatment, management of paediatric fevers, and uptake of IPT. Subsidised nets and insecticides should be put in place to break the gap between the poor and the rich in net use, especially ITN use. Rural-urban imbalances also need to be addressed, as transmission of malaria is higher in rural areas than urban areas. The prevalence of childhood fever and/or convulsions in the two weeks preceding the survey was high in all provinces. However, in the majority of cases, the fever and/or convulsions were not managed appropriately, with SP not being given within 24 hours of illness onset as recommended in the NMS.

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## 12.1 INTRODUCTION

Acquired Immune Deficiency Syndrome (AIDS), is caused by a human immunodeficiency virus (HIV) that weakens the immune system, making the body susceptible to and unable to recover from other opportunistic diseases that lead to death through these secondary infections. This is a serious public health and socioeconomic problem in many countries around the world. The most affected countries are found in sub-Saharan Africa, especially those located in the eastern, central, and southern parts of the continent.

HIV/AIDS remains a major concern in Kenya because of relatively high prevalence rates reported among adult populations and significantly higher rates among younger ages (Ministry of Health, 2001). The prevalence rate of HIV is lower in rural areas, where about 80 percent of the total population lives, than urban areas. About 75 percent of all AIDS cases occur among people in the most economically productive age group, 20 to 45 years (Ministry of Health, 2001). The deaths of these individuals constitute a serious economic and social tragedy in the lives of surviving family, friends, and employers.

The principal mode of transmission of HIV is through heterosexual contact. This accounts for 75 percent of all HIV infections in Kenya (Ministry of Health, 2001). Although the probability of transmitting HIV in a single act of intercourse may be low, a number of factors increase the risk. These factors include the viral load of the infected partner; the presence in either partner of sexually transmitted diseases (STDs), such as syphilis, chancroid, or herpes, which cause genital ulcers; lack of male circumcision; or trauma during sexual contact. A significant number of Kenyan adults suffer from STDs and some have multiple sexual partners, which increases their vulnerability and exposure to HIV. Consequently, most new HIV infections are because of heterosexual contact.

This is followed in importance by perinatal transmission, whereby the mother passes the HIV virus to the child during pregnancy, at the time of birth, or through breastfeeding. Approximately 30 to 40 percent of babies born to HIV-positive mothers in Kenya will themselves be infected with the HIV virus. The remainder may not be infected by HIV but are at risk of becoming orphans when one or both of their parents die from AIDS-related diseases. More than 100,000 children under the age of five are estimated to be infected (Ministry of Health, 2002).

Programmes designed to slow the spread of HIV need to focus on reducing transmission through sexual contact. Transmission risk is also high among men who have sex with other men, through blood transfusions, and use of unsterilised needles and skin piercing instruments.

The future direction of this pandemic depends on the level of knowledge of how the virus is spread and changes in sexual behaviour. The information obtained from the 2003 KDHS provides a unique opportunity to assess the level of knowledge and practices regarding transmission of the AIDS virus and other STDs. The main objective of this chapter is to determine the level of relevant knowledge, perceptions, attitudes, and behaviours at the national and provincial levels and for socioeconomic sub-groups of the population. The results are useful for AIDS control programmes to target those individuals and groups of individuals most in need of information and those who are at risk of contracting the disease.

The 2003 KDHS included a series of questions related to HIV/AIDS and STDs in both the woman's and man's questionnaires. Both female and male respondents were asked if they have ever heard of AIDS; what a person could do to avoid getting AIDS; if they know a person with AIDS or who died of AIDS; if they are aware of mother-to-child transmission; and if they ever talked to their spouse about ways of preventing AIDS. Other questions concerned stigma or discrimination towards people with HIV/AIDS; attitudes towards teaching children about condom use; chances of getting HIV/AIDS; testing for HIV/AIDS; knowledge of other STDs and infection with STDs.

## **12.2 KNOWLEDGE OF AIDS AND HIV TRANSMISSION**

### **Awareness of AIDS**

Table 12.1 shows the percentage of women and men who have heard of AIDS and the percentage who know someone personally who has the AIDS virus or has died of AIDS, according to background characteristics. The data show that the level of knowledge of AIDS is almost universal, with 99 percent of women and men indicating that they have heard about AIDS. The results further show that there are almost no differences in level of knowledge by age, marital status, urban-rural residence, province, level of education, and wealth index, with the possible exception of respondents in North Eastern Province and those with no education, fewer of whom have heard of AIDS. The level of awareness about HIV/AIDS for both women and men has been very high since the 1993 KDHS (98 percent of women and 99 percent of men).

The table also shows that three in four respondents either know someone who is HIV positive or has died of AIDS. This proportion is high throughout all groups of Kenyans, although North Eastern Province appears to have been far less affected by the epidemic than other provinces.

Table 12.1 Knowledge of AIDS

Percentage of women and men age 15-49 who have heard of AIDS, by background characteristics, Kenya 2003

Background characteristic	Women			Men		
	Has heard of AIDS	Percentage who know someone personally who has AIDS or died of AIDS	Number of women	Has heard of AIDS	Percentage who know someone personally who has AIDS or died of AIDS	Number of men
<b>Age</b>						
15-19	98.0	65.3	1,856	98.9	60.2	856
20-24	98.6	72.7	1,691	99.7	77.9	681
25-29	98.1	74.2	1,382	99.6	77.5	509
30-39	98.9	77.5	1,957	99.8	80.9	811
40-49	99.0	80.6	1,309	99.3	79.4	506
15-24	98.3	68.8	3,547	99.3	68.0	1,537
<b>Marital status</b>						
Never married	98.4	69.4	2,443	99.3	68.7	1,611
Ever had sex	99.2	74.1	1,055	99.9	75.6	1,073
Never had sex	97.8	65.9	1,388	97.9	54.8	537
Married/living together	98.5	74.8	4,919	99.7	79.3	1,615
Divorced/separated/widowed	98.9	79.4	833	98.7	81.9	137
<b>Residence</b>						
Urban	99.2	74.9	2,056	99.8	82.8	856
Rural	98.3	73.3	6,139	99.3	71.8	2,506
<b>Province</b>						
Nairobi	99.6	71.1	835	99.8	81.9	376
Central	99.8	89.0	1,181	99.7	85.7	515
Coast	99.1	68.4	667	99.4	77.0	234
Eastern	99.2	68.7	1,325	99.8	63.8	541
Nyanza	99.9	74.0	1,222	99.7	75.8	443
Rift Valley	95.4	69.8	1,872	99.6	70.5	818
Western	99.7	86.7	927	99.8	84.5	378
North Eastern	94.1	8.3	168	86.0	7.9	57
<b>Education</b>						
No education	92.6	51.6	1,039	94.5	41.3	191
Primary incomplete	98.8	70.6	2,685	99.4	67.8	1,148
Primary complete	99.6	76.1	2,069	100.0	78.3	769
Secondary+	99.8	84.6	2,403	100.0	84.4	1,254
<b>Wealth quintile</b>						
Lowest	95.4	61.4	1,364	97.6	52.5	510
Second	98.3	70.7	1,475	99.9	71.7	572
Middle	99.1	76.4	1,503	99.7	74.1	616
Fourth	99.7	79.7	1,711	99.6	81.0	741
Highest	99.2	76.8	2,141	99.9	84.0	924
Total	98.5	73.7	8,195	99.4	74.6	3,363

## Knowledge of Ways to Reduce AIDS Transmission

Abstaining from sex, being faithful to one uninfected partner, and using condoms are important ways to avoid the spread of HIV/AIDS. To ascertain the depth of knowledge about modes of HIV/AIDS transmission, respondents were asked general questions as to whether there is anything a person can do to avoid getting AIDS or the virus that causes AIDS, and if so, what can be done. They were further prompted with specific questions about whether it is possible to reduce the chance of getting AIDS by having just one faithful sexual partner, using a condom at every sexual encounter, and not having sex at all. Table 12.2 shows the percentage of women and men by their answers to these questions, according to background characteristics.

Table 12.2 Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to a prompted question, say that people can reduce the risk of getting the AIDS virus by using condoms, by having sex with just one partner who has no other partners, or by abstaining from sex, by background characteristics, Kenya 2003

Background characteristic	Women					Men				
	Using condoms	Limiting sex to one faithful partner	Using condoms and limiting sex to one faithful partner	Abstaining from sex	Number of women	Using condoms	Limiting sex to one faithful partner	Using condoms and limiting sex to one faithful partner	Abstaining from sex	Number of men
<b>Age</b>										
15-19	52.6	72.0	47.8	74.2	1,856	60.4	77.2	56.9	80.5	856
20-24	65.1	82.9	61.8	80.0	1,691	78.1	92.5	75.6	93.4	681
25-29	69.7	84.1	67.0	80.3	1,382	75.7	90.9	74.0	90.6	509
30-39	65.2	84.2	62.5	83.1	1,957	77.6	94.5	76.7	92.1	811
40-49	52.3	79.9	50.1	78.5	1,309	71.0	92.2	69.2	90.3	506
15-24	58.6	77.2	54.5	76.9	3,547	68.3	84.0	65.2	86.2	1,537
<b>Marital status</b>										
Never married	57.5	77.5	53.6	79.2	2,443	68.5	84.6	65.7	86.5	1,611
Ever had sex	69.1	82.9	65.1	82.6	1,055	79.5	91.1	76.3	91.6	1,073
Never had sex	48.7	73.3	44.8	76.6	1,388	46.5	71.6	44.5	76.4	537
Married/living together	62.6	81.8	59.8	79.3	4,919	75.1	93.2	73.8	91.6	1,615
Divorced/separated/widowed	62.0	81.2	58.5	79	833	77.7	87.4	73.8	86.0	137
<b>Residence</b>										
Urban	69.2	85.2	66.3	83.5	2,056	79.6	92.3	77.6	90.8	856
Rural	58.3	78.9	55.0	77.8	6,139	69.5	87.6	67.3	88.3	2,506
<b>Province</b>										
Nairobi	75.2	88.7	71.8	86.2	835	82.1	93.6	80.7	92.2	376
Central	62.4	87.3	60.4	87.0	1,181	68.6	94.1	67.9	93.0	515
Coast	57.8	72.5	55.6	69.7	667	72.8	79.0	64.4	80.6	234
Eastern	62.7	85.5	60.3	84.4	1,325	59.2	82.9	57.7	84.7	541
Nyanza	62.0	84.9	60.1	83.0	1,222	76.7	90.6	75.1	90.1	443
Rift Valley	56.1	71.7	50.1	71.0	1,872	77.4	91.8	75.5	90.9	818
Western	65.2	85.4	62.4	84.0	927	76.8	89.3	73.4	91.3	378
North Eastern	6.1	21.6	5.3	25.1	168	11.3	46.6	11.3	51.6	57
<b>Education</b>										
No education	29.8	51.9	27.2	49.4	1,039	39.9	61.5	37.1	63.9	191
Primary incomplete	57.8	76.4	53.9	76.9	2,685	66.6	81.5	63.7	83.1	1,148
Primary complete	67.3	86.0	63.9	83.2	2,069	71.8	92.6	69.8	93.0	769
Secondary+	72.8	92.6	70.3	91.3	2,403	82.1	97.3	80.7	95.6	1,254
<b>Wealth quintile</b>										
Lowest	46.2	66.6	43.0	64.6	1,364	63.0	79.0	59.9	81.2	510
Second	56.5	76.4	52.6	76.6	1,475	68.4	86.3	66.4	86.5	572
Middle	60.7	81.7	57.4	79.9	1,503	69.1	88.6	67.2	90.5	616
Fourth	64.6	85.5	61.6	85.8	1,711	72.1	90.8	69.8	89.5	741
Highest	71.0	87.2	68.2	84.7	2,141	81.2	94.4	79.4	93.2	924
Total	61.0	80.5	57.8	79.2	8,195	72.0	88.8	69.9	88.9	3,363

The results show that knowledge of HIV prevention methods is widespread, although there are differences between women and men. More than four in five respondents (81 and 89 percent of women and men, respectively) indicate that the chances of getting the AIDS virus can be reduced by limiting sex to one faithful partner. Similarly, 61 percent of women and 72 percent of men know that condoms can reduce the risk of contracting the HIV virus during sexual intercourse. Knowledge of both these means of avoiding HIV transmission is also high, with 58 percent of women and 70 percent of men citing both as ways of reducing the risk of getting the AIDS virus. As expected, the proportion of both women and men who know that abstaining from sex reduces the chances of getting the AIDS virus is high—79 percent among women and 89 percent among men.

Knowledge of HIV prevention methods among women and men age 15 to 19 is lower for all methods compared with people age 20 years and above. Likewise, knowledge of how people can reduce the risk of getting AIDS is lower among those who have never had sex than among those who are married or living together with a partner, and those who are divorced/separated/widowed or those who never married but have had sex.

For all methods of reducing the risk of HIV infection, urban dwellers are more knowledgeable than their rural counterparts. The level of awareness by province shows that women and men in Nairobi Province are better informed than those in other provinces. By far the most disadvantaged region is North Eastern Province, which shows the lowest levels of knowledge for all methods of reducing the risk of contracting HIV/AIDS.

The level of education attained is strongly related to respondents' knowledge of ways to avoid contracting HIV/AIDS. Women and men who have no education exhibit considerably lower levels of knowledge of HIV/AIDS prevention than those with some education. The data show that the poorest, irrespective of sex, are the most disadvantaged in terms of knowledge about methods that can be used to reduce the risk of getting HIV/AIDS virus.

### **Knowledge of Mother-to-Child Transmission**

Current strategies on HIV/AIDS in Kenya are geared towards improving the health of the HIV-infected mother and reducing the transmission to their children during pregnancy, labour, delivery, and post-delivery through breastfeeding as outlined in the National HIV/AIDS Strategic Plan 2000-2004 and the National Prevention of Mother-to-Child Transmission Strategic Plan (Ministry of Health, 1999b). Increasing the level of general knowledge of transmission of the virus from mother to child and of reducing the risk of transmission by use of antiretroviral drugs is critical to achieving this goal.

All women and men interviewed in the 2003 KDHS were asked if the virus that causes AIDS can be transmitted from a mother to a child. If the answer was in the affirmative, they were further asked whether the virus could be transmitted during pregnancy, during delivery, or during breastfeeding. They were also asked if a mother who is infected with the AIDS virus can reduce the risk of giving the virus to the baby by taking certain drugs during pregnancy. The results of the responses are shown in Table 12.3.

Almost three-quarters of women (72 percent) and two-thirds of men (68 percent) know that HIV can be transmitted by breastfeeding. Only one-third of women (33 percent) and 38 percent of men know that the risk of mother-to-child transmission can be reduced by the mother taking certain drugs during pregnancy. Only 28 percent of women and 30 percent of men know that HIV can be transmitted through breastfeeding and that the risk can be reduced with drugs.

The knowledge of transmission through breastfeeding and knowledge of antiretroviral drugs is lower for the youngest women and men, as well as those who have never had sex. It is also lower for rural women and men and substantially lower among women and men in North Eastern Province than elsewhere. Kenyans with no education and those who have not completed primary education are less likely to know about the transmission of HIV through breastfeeding than those who have completed primary or have some secondary and higher education. The data also show that wealth is positively associated with knowledge of HIV transmission. The poorest are disadvantaged in all aspects of HIV knowledge as shown in Table 12.3.



Table 12.3 Knowledge of prevention of mother-to-child transmission of HIV

Percentage of women and men 15-49 who know that HIV can be transmitted from mother to child by breastfeeding and that the risk of maternal to child transmission (MTCT) of HIV can be reduced by a mother taking special drugs during pregnancy, by background characteristics, Kenya 2003

Background characteristic	Women				Men			
	HIV can be transmitted by breastfeeding	Risk of MTCT can be reduced by mother taking drugs in pregnancy	HIV can be transmitted by breastfeeding and risk of MTCT can be reduced by mother taking drugs during pregnancy	Number of women	HIV can be transmitted by breastfeeding	Risk of MTCT can be reduced by mother taking drugs in pregnancy	HIV can be transmitted by breastfeeding and risk of MTCT can be reduced by mother taking drugs during pregnancy	Number of men
<b>Age</b>								
15-19	66.1	24.6	21.4	1,856	62.3	25.5	21.0	856
20-24	75.2	36.1	31.1	1,691	71.2	37.6	31.3	681
25-29	75.8	38.6	34.2	1,382	69.7	41.3	32.6	509
30-39	72.7	35.8	30.6	1,957	72.8	44.9	36.7	811
40-49	69.7	28.3	23.8	1,309	66.8	42.1	31.7	506
15-24	70.5	30.1	26.0	3,547	66.2	30.8	25.5	1,537
<b>Marital status</b>								
Never married	69.1	28.6	24.5	2,443	66.6	31.7	26.2	1,611
Ever had sex	72.7	34.1	29.1	1,055	70.6	36.4	30.1	1,073
Never had sex	66.3	24.5	21.0	1,388	58.6	22.3	18.5	537
Married/living together	73.3	34.9	30.2	4,919	69.9	43.5	34.4	1,615
Divorced/separated/widowed	70.4	30.7	26.2	833	72.0	34.6	28.3	137
<b>Residence</b>								
Urban	76.5	40.8	35.7	2,056	71.8	45.4	37.0	856
Rural	70.2	29.8	25.6	6,139	67.3	34.8	27.9	2,506
<b>Province</b>								
Nairobi	77.4	45.0	39.9	835	69.9	49.2	39.7	376
Central	75.3	37.3	32.5	1,181	73.5	27.8	22.3	515
Coast	71.5	24.8	22.7	667	69.4	31.1	26.7	234
Eastern	78.4	25.2	22.1	1,325	65.0	30.2	24.5	541
Nyanza	71.9	37.5	31.7	1,222	66.6	45.3	36.8	443
Rift Valley	65.4	30.4	25.3	1,872	70.8	39.3	31.6	818
Western	72.1	35.1	30.4	927	67.4	45.8	35.7	378
North Eastern	35.6	1.1	1.1	168	27.8	2.5	2.1	57
<b>Education</b>								
No education	50.8	12.1	10.4	1,039	47.7	11.0	8.5	191
Primary incomplete	69.4	25.9	22.4	2,685	65.1	28.2	22.1	1,148
Primary complete	76.1	35.6	30.1	2,069	69.2	34.5	28.0	769
Secondary+	79.7	46.3	40.4	2,403	74.2	51.9	42.4	1,254
<b>Wealth quintile</b>								
Lowest	60.4	19.0	16.0	1,364	57.3	24.6	18.2	510
Second	69.2	28.7	24.6	1,475	69.1	36.4	29.0	572
Middle	74.5	33.4	29.4	1,503	70.6	38.3	33.4	616
Fourth	74.5	33.6	28.1	1,711	68.0	36.3	28.8	741
Highest	76.6	42.5	37.4	2,141	73.0	45.8	36.7	924
Total	71.8	32.6	28.1	8,195	68.4	37.5	30.2	3,363

## Rejection of Misconceptions about AIDS Transmission

In addition to knowing about effective ways to avoid contracting HIV/AIDS, it is also useful to be able to identify incorrect ways of avoiding the virus, in order to eliminate misconceptions. Common misconceptions about AIDS include fear of contracting AIDS by sharing utensils with someone who is infected, transmission by mosquito or other insect bites, and a belief that people who are infected will show signs of illness. Respondents were asked about these three misconceptions.

The data as shown in Tables 12.4.1 and 12.4.2 indicate that not all Kenyans understand that AIDS cannot be transmitted by mosquito bites; only 61 percent of women and 74 percent of men know that AIDS cannot be transmitted by mosquito bites. Similarly, 71 percent of women and 81 percent of men know that a person cannot become infected with the AIDS virus by sharing utensils with a person who has AIDS.

Table 12.4.1 Beliefs about AIDS: women

Percentage of women 15-49 who, in response to a prompted question, reject local misconceptions about AIDS transmission or prevention, and who know that a healthy-looking person can have the AIDS virus, by background characteristics, Kenya 2003

Background characteristic	Percentage of women who know that:			Percentage who reject both misconceptions and says a healthy-looking person can have the AIDS virus	Number of women
	AIDS cannot be transmitted by mosquito bites	A person cannot become infected by sharing utensils with someone with AIDS	A healthy-looking person can have the AIDS virus		
<b>Age</b>					
15-19	57.3	65.3	78.3	43.5	1,856
20-24	66.2	74.2	87.8	56.0	1,691
25-29	65.3	77.0	85.6	55.7	1,382
30-39	62.6	73.9	87.8	53.6	1,957
40-49	52.7	66.0	84.5	44.2	1,309
15-24	61.6	69.5	82.9	49.4	3,547
<b>Marital status</b>					
Never married	65.2	72.6	83.7	53.9	2,443
Ever had sex	69.5	78.9	88.2	60.0	1,055
Never had sex	61.9	67.9	80.3	49.3	1,388
Married/living together	60.0	71.0	84.7	49.7	4,919
Divorced/separated/widowed	55.2	68.9	87.9	46.7	833
<b>Residence</b>					
Urban	75.2	80.9	91.2	66.6	2,056
Rural	56.3	68.0	82.6	45.3	6,139
<b>Province</b>					
Nairobi	83.0	84.8	90.9	72.4	835
Central	69.1	82.6	93.8	63.2	1,181
Coast	56.9	57.3	79.1	44.6	667
Eastern	62.1	69.2	92.3	50.1	1,325
Nyanza	54.7	69.8	88.5	46.0	1,222
Rift Valley	56.2	69.8	74.1	43.7	1,872
Western	59.1	72.4	87.3	48.6	927
North Eastern	13.5	15.6	31.1	5.7	168
<b>Education</b>					
No education	25.2	36.1	57.3	16.3	1,039
Primary incomplete	49.5	63.4	79.6	35.3	2,685
Primary complete	68.1	79.1	91.7	58.5	2,069
Secondary+	83.3	88.6	96.5	75.9	2,403
<b>Wealth quintile</b>					
Lowest	39.4	50.3	67.0	27.1	1,364
Second	51.7	65.6	81.9	40.3	1,475
Middle	58.1	70.9	86.4	47.6	1,503
Fourth	67.0	78.3	90.5	56.7	1,711
Highest	78.6	83.2	92.2	70.1	2,141
Total	61.0	71.3	84.7	50.7	8,195

Table 12.4.2 Beliefs about AIDS: men

Percentage of men 15-49 who, in response to a prompted question, reject local misconceptions about AIDS transmission or prevention, and who know that a healthy-looking person can have the AIDS virus, by background characteristics, Kenya 2003

Background characteristic	Percentage of men who know that:			Percentage who reject both misconceptions and says a healthy-looking person can have the AIDS virus	Number of men
	AIDS cannot be transmitted by mosquito bites	A person cannot become infected by sharing utensils with someone with AIDS	A healthy-looking person can have the AIDS virus		
<b>Age</b>					
15-19	64.6	70.5	79.0	50.3	856
20-24	84.3	86.5	94.6	75.3	681
25-29	78.7	82.6	93.6	71.3	509
30-39	76.3	85.6	95.0	70.0	811
40-49	68.9	78.9	90.4	60.2	506
15-24	73.3	77.6	85.9	61.4	1,537
<b>Marital status</b>					
Never married	74.1	78.1	85.9	62.4	1,611
Ever had sex	79.9	84.7	91.4	70.2	1,073
Never had sex	62.4	64.9	75.0	46.6	537
Married/living together	74.9	83.0	93.7	67.6	1,615
Divorced/separated/widowed	66.8	78.3	92.4	59.9	137
<b>Residence</b>					
Urban	86.8	87.7	93.6	78.2	856
Rural	69.9	78.0	88.7	60.2	2,506
<b>Province</b>					
Nairobi	90.4	88.8	95.2	83.5	376
Central	73.1	85.1	94.5	66.6	515
Coast	80.7	82.4	87.4	71.6	234
Eastern	72.0	73.7	90.2	61.2	541
Nyanza	62.3	73.9	92.5	54.4	443
Rift Valley	76.2	83.5	88.5	66.2	818
Western	74.1	82.2	86.0	59.9	378
North Eastern	34.8	35.8	49.4	25.2	57
<b>Education</b>					
No education	37.1	41.9	60.3	23.7	191
Primary incomplete	61.3	70.7	83.0	48.3	1,148
Primary complete	76.2	85.2	93.6	67.5	769
Secondary+	90.4	92.4	98.5	84.5	1,254
<b>Wealth quintile</b>					
Lowest	57.0	66.0	80.3	45.8	510
Second	69.1	76.2	87.7	58.3	572
Middle	72.1	80.8	89.0	62.7	616
Fourth	77.8	83.4	92.2	68.4	741
Highest	85.3	88.5	95.4	77.7	924
Total	74.2	80.5	89.9	64.8	3,363

Knowledge that a healthy-looking person can have the AIDS virus is more widespread. Eighty-five percent of women and 90 percent of men know that a healthy-looking person can have the AIDS virus. This reflects a moderate rise from the 1998 KDHS data, from 79 to 87 percent of women and from 85 to 91 percent of men, excluding the northern areas. Looking at all three beliefs together, 51 percent of women and 65 percent of men have correct knowledge on all these issues.

The analysis shows considerable differentials in the levels of rejection of these misconceptions regarding AIDS transmission. The proportions of women and men who know that AIDS cannot be transmitted by mosquitoes or by sharing utensils with a person who has AIDS and who know that a healthy-looking person can have the AIDS virus are lower among those age 15 to 19, those from rural areas, those with less education, and those who are poorer. North Eastern Province has the lowest levels of correct knowledge about HIV/AIDS transmission, with only 6 percent of women and 25 percent of men rejecting all the three misconceptions, while those from Nairobi are better informed, with 72 and 84 percent of women and men, respectively, reporting correct conceptions. It is also important to note that women are less knowledgeable than men about these misconceptions.

The level of education is highly associated with misconceptions about methods of transmission of the AIDS virus, with the lowest levels of correct understanding among those with no education and increasing with rising educational level among both women and men.

### **12.3 STIGMA TOWARDS HIV-INFECTED PEOPLE**

Beliefs about HIV/AIDS show the extent of stigma or discrimination towards people with HIV/AIDS. In the 2003 KDHS, questions were posed to respondents to measure their attitudes towards HIV-infected people, their willingness to buy vegetables from infected vegetable sellers, their willingness to let others know the HIV status of family members, and their willingness to take care of relatives who have the AIDS virus in their own households. Additionally, they were asked whether HIV-positive women teachers should be allowed to continue teaching. Tables 12.5.1 and 12.5.2 show the percentage of women and men who have heard about AIDS and who express positive attitudes toward people with HIV, by background characteristics.

Large majorities of women and men (84 and 88 percent, respectively) express their willingness to care for a relative sick with the virus that causes AIDS in their own household, while far fewer (60 and 74 percent, respectively) say they would be willing to buy fresh vegetables from a vendor who has the AIDS virus. The results further indicate that only 57 and 60 percent of women and men, respectively, believe that a female teacher who has the AIDS virus should be allowed to continue teaching in school. Finally, 59 percent of women and 72 percent of men say that if a member of their family got infected with the virus that causes AIDS, they would not want it to remain a secret. The percentage expressing acceptance on all the four measures is quite low at 27 and 40 percent for women and men, respectively. It is striking to note that women express less accepting attitudes towards people with HIV/AIDS than men.

A lower proportion of both women (20 percent) and men (25 percent) age 15 to 19 express accepting attitudes on all four measures towards people infected with HIV/AIDS, compared with those age 20 years and above. Urban women (35 percent) and men (48 percent) are more likely than rural women (24 percent) and men (37 percent) to accept all four measures towards people infected with HIV/AIDS. Accepting attitudes towards HIV-infected people are more common in Nairobi Province and least common in North Eastern Province, where only 1 and 2 percent of women and men, respectively, accept all four measures.

Education is strongly related to positive attitudes towards those who are HIV-positive. The proportion of women and men who accept all four measures increases steadily with education as well as with the wealth index.

Table 12.5.1 Accepting attitudes towards those living with HIV: women

Percentage of women age 15-49 who have heard about AIDS who express accepting attitudes toward people with HIV, by background characteristics, Kenya 2003

Background characteristic	Percentage of respondents who:					Number of women who have heard of HIV/AIDS
	Are willing to care for relative with HIV at home	Would buy fresh vegetables from a vendor with AIDS	Believe an HIV-positive female teacher should be allowed to continue teaching	Would not want an HIV-positive status of family member to remain secret	Percentage expressing accepting attitudes on all four measures	
<b>Age</b>						
15-19	78.7	57.1	51.0	52.4	20.0	1,818
20-24	84.8	64.1	59.8	58.4	30.2	1,668
25-29	83.7	61.4	62.8	60.3	28.3	1,356
30-39	87.4	60.3	60.4	62.4	29.4	1,935
40-49	86.5	57.8	50.9	61.4	24.8	1,296
15-24	81.6	60.5	55.2	55.3	24.9	3,486
<b>Marital status</b>						
Never married	84.4	65.7	62.2	57.1	29.7	2,404
Ever had sex	87.7	71.3	67.1	58.6	33.1	1,046
Never had sex	81.9	61.3	58.5	55.9	27.1	1,358
Married/living together	83.7	57.1	54.6	59.8	25.0	4,846
Divorced/separated/ widowed	85.7	62.0	56.0	58.4	26.0	824
<b>Residence</b>						
Urban	87.4	68.7	71.6	59.0	34.9	2,040
Rural	83.0	57.2	52.1	58.8	23.7	6,033
<b>Province</b>						
Nairobi	87.4	71.4	76.9	59.9	36.2	832
Central	91.3	69.6	72.3	68.3	39.1	1,178
Coast	82.8	43.6	50.8	55.7	20.5	661
Eastern	86.2	55.1	47.4	54.1	17.0	1,314
Nyanza	80.8	64.6	53.5	47.3	20.9	1,220
Rift Valley	85.6	60.4	53.6	65.4	29.4	1,786
Western	83.1	58.8	57.1	54.0	25.8	924
North Eastern	15.4	11.0	10.2	79.1	0.9	158
<b>Education</b>						
No education	65.0	28.4	27.4	61.8	8.5	961
Primary incomplete	80.0	49.0	42.2	53.7	15.6	2,653
Primary complete	87.9	66.3	60.6	59.2	28.2	2,060
Secondary+	93.1	79.8	82.2	63.0	44.4	2,398
<b>Wealth quintile</b>						
Lowest	73.2	39.8	34.1	56.8	12.6	1,301
Second	80.2	53.2	46.7	56.6	18.9	1,451
Middle	84.7	57.8	52.4	57.7	23.3	1,490
Fourth	88.8	68.3	64.5	60.4	31.7	1,706
Highest	89.2	72.4	75.3	61.1	38.3	2,125
Total	84.1	60.1	57.0	58.8	26.5	8,073

Table 12.5.2 Accepting attitudes towards those living with HIV: men

Percentage of men 15-49 who have heard about AIDS who express accepting attitudes toward people with HIV, by background characteristics, Kenya 2003

Background characteristic	Percentage of respondents who:				Percentage expressing accepting attitudes on all four measures	Number of men who have heard of HIV/AIDS
	Are willing to care for relative with HIV at home	Would buy fresh vegetables from a vendor with AIDS	Believe an HIV-positive female teacher should be allowed to continue teaching	Would not want an HIV-positive status of family member to remain secret		
<b>Age</b>						
15-19	81.3	64.3	46.1	59.3	24.9	847
20-24	90.4	78.1	61.5	74.8	40.5	679
25-29	90.2	75.9	63.0	74.1	42.8	506
30-39	89.2	79.0	69.2	78.9	50.4	809
40-49	88.3	71.5	61.7	73.0	41.8	502
15-24	85.4	70.4	53.0	66.2	31.8	1,526
<b>Marital status</b>						
Never married	86.0	71.7	55.3	67.4	34.4	1,599
Ever had sex	88.8	76.1	57.6	71.4	37.9	1,073
Never had sex	80.3	62.8	50.6	59.1	27.3	526
Married/living together	89.1	75.2	64.4	75.7	44.7	1,610
Divorced/separated/widowed	86.1	74.4	56.7	69.3	36.9	135
<b>Residence</b>						
Urban	89.1	80.5	70.8	72.7	47.7	854
Rural	86.9	71.1	55.9	71.1	36.7	2,490
<b>Province</b>						
Nairobi	91.3	83.5	78.4	73.4	52.5	375
Central	91.8	81.0	72.4	70.2	45.2	514
Coast	90.4	74.4	63.9	64.2	38.6	232
Eastern	86.8	65.3	46.2	74.1	29.4	540
Nyanza	88.0	72.4	48.2	62.0	31.7	442
Rift Valley	85.0	70.6	58.8	79.1	43.4	814
Western	84.9	77.3	61.5	72.9	39.3	377
North Eastern	63.1	33.2	18.7	23.8	2.2	49
<b>Education</b>						
No education	61.9	37.1	21.2	57.5	9.4	181
Primary incomplete	81.1	60.8	39.3	67.0	23.9	1,141
Primary complete	91.6	77.7	63.7	72.7	39.8	769
Secondary+	94.4	87.7	81.5	76.8	57.8	1,254
<b>Wealth quintile</b>						
Lowest	78.8	53.3	39.0	65.2	23.4	498
Second	86.6	70.3	49.9	70.3	30.6	571
Middle	87.0	72.6	56.8	71.9	38.7	614
Fourth	91.4	78.5	64.9	72.4	44.0	738
Highest	89.8	82.9	74.8	74.5	50.6	923
Total	87.5	73.5	59.7	71.5	39.5	3,344

## 12.4 PERCEIVED RISK OF GETTING AIDS

In order to gauge people's perceptions of their risk of getting HIV, respondents in the 2003 KDHS were asked if they thought their chances of getting AIDS were small, moderate, great, or if they had no risk at all. Table 12.6 shows the results regarding self-perception of risk to HIV infection.

About one-third of women and men say they have no risk of getting AIDS, while 40 percent of women and 52 percent of men say they have only a small chance. Fifteen percent of women and 10 percent of men feel they have a moderate risk of getting AIDS, while only 9 percent of women and 5 percent

Table 12.6 Perception of risk of getting AIDS

Percent distribution of women and men age 15-49 who know about AIDS by perception of risk of getting AIDS, by background characteristics, Kenya 2003

Background characteristic	Women							Men							
	No chance	Small chance	Moderate chance	Great chance	Don't know/ missing	Total	Number of women	No chance	Small chance	Moderate chance	Great chance	Has AIDS	Don't know/ missing	Total	Number of men
<b>Age</b>															
15-19	51.8	36.2	6.7	5.0	0.3	100.0	1,818	43.5	45.6	6.7	4.2	0.0	0.1	100.0	847
20-24	35.7	41.8	14.4	8.0	0.1	100.0	1,668	25.3	57.7	11.1	6.0	0.0	0.0	100.0	679
25-29	31.2	39.0	18.4	11.2	0.3	100.0	1,356	33.2	50.8	11.3	4.5	0.0	0.2	100.0	506
30-39	26.0	42.0	20.2	11.5	0.3	100.0	1,935	31.1	53.5	10.3	4.8	0.3	0.0	100.0	809
40-49	32.4	38.0	18.7	10.5	0.4	100.0	1,296	32.9	52.6	11.2	3.4	0.0	0.0	100.0	502
<b>Marital status</b>															
Never married	50.8	36.6	7.7	4.6	0.2	100.0	2,404	35.8	51.0	8.2	5.0	0.0	0.0	100.0	1,599
Currently married	28.6	40.6	19.2	11.4	0.2	100.0	4,846	31.9	53.2	10.9	3.8	0.1	0.1	100.0	1,610
Formerly married	33.5	41.7	15.6	8.8	0.5	100.0	824	29.0	44.4	16.7	9.9	0.0	0.0	100.0	135
<b>Number of partners other than spouse</b>															
No partner other than spouse	37.5	39.0	14.6	8.7	0.2	100.0	7,054	39.2	50.9	7.1	2.6	0.1	0.1	100.0	2,406
1 partner	23.9	44.9	20.7	10.1	0.4	100.0	934	19.8	56.8	16.4	7.0	0.0	0.0	100.0	716
2-3 partners	9.9	24.6	28.9	35.2	1.4	100.0	68	17.6	47.1	18.4	16.9	0.0	0.0	100.0	187
<b>Residence</b>															
Urban	36.8	38.9	13.6	10.2	0.4	100.0	2,040	31.7	53.4	10.5	4.2	0.0	0.2	100.0	854
Rural	35.3	39.7	16.0	8.7	0.2	100.0	6,033	34.3	51.3	9.6	4.8	0.1	0.0	100.0	2,490
<b>Province</b>															
Nairobi	31.1	45.2	13.3	10.1	0.4	100.0	832	23.4	58.1	13.9	4.1	0.0	0.5	100.0	375
Central	41.4	37.0	18.1	3.2	0.2	100.0	1,178	19.5	71.3	6.4	2.8	0.0	0.0	100.0	514
Coast	45.7	33.5	13.8	7.0	0.0	100.0	661	44.3	42.4	6.7	6.6	0.0	0.0	100.0	232
Eastern	28.1	53.7	14.0	4.2	0.1	100.0	1,314	25.5	61.0	9.8	3.7	0.0	0.0	100.0	540
Nyanza	25.1	42.8	17.5	14.5	0.2	100.0	1,220	36.8	41.0	12.8	8.9	0.5	0.0	100.0	442
Rift Valley	38.6	35.3	16.0	9.9	0.1	100.0	1,786	44.0	41.4	10.0	4.5	0.0	0.0	100.0	814
Western	37.5	28.6	15.8	17.0	1.0	100.0	924	33.5	53.6	9.5	3.4	0.0	0.1	100.0	377
North Eastern	77.7	21.6	0.6	0.2	0.0	100.0	158	97.8	0.0	1.4	0.8	0.0	0.0	100.0	49
<b>Education</b>															
No education	46.0	33.8	12.0	8.0	0.2	100.0	961	56.0	30.8	7.9	5.3	0.0	0.0	100.0	181
Primary incomplete	35.2	38.4	16.1	10.1	0.2	100.0	2,653	38.7	46.9	9.2	5.1	0.0	0.1	100.0	1,141
Primary complete	33.9	40.7	15.7	9.5	0.3	100.0	2,060	32.3	55.3	6.5	5.4	0.3	0.1	100.0	769
Secondary+	33.6	42.0	15.8	8.1	0.4	100.0	2,398	26.6	57.2	12.7	3.6	0.0	0.0	100.0	1,254
<b>Wealth quintile</b>															
Lowest	38.1	39.3	14.0	8.6	0.0	100.0	1,301	41.5	44.9	7.8	5.7	0.0	0.0	100.0	498
Second	34.6	36.9	16.8	11.4	0.3	100.0	1,451	36.4	48.2	9.9	5.0	0.4	0.0	100.0	571
Middle	33.5	41.1	16.7	8.5	0.2	100.0	1,490	34.3	52.3	8.2	5.2	0.0	0.0	100.0	614
Fourth	36.2	39.4	16.1	8.0	0.3	100.0	1,706	32.9	52.9	10.5	3.7	0.0	0.0	100.0	738
Highest	36.2	40.3	13.9	9.1	0.4	100.0	2,125	27.8	56.5	11.4	4.1	0.0	0.2	100.0	923
Total	35.7	39.5	15.4	9.1	0.3	100.0	8,073	33.6	51.8	9.8	4.6	0.1	0.1	100.0	3,344

Note: Total includes those with 4+ partners and number of partners missing.

of men think they have a great chance of getting AIDS. In general, women perceive their risks as greater than men.

Younger respondents are more likely to believe they have no chance of getting AIDS than older respondents. Similarly, those who have never married and those who have not had sex with anyone other than their spouse are more likely to fall in the “no risk” category. Risk perception is surprisingly similar among urban and rural respondents.

The distribution of respondents’ perception of risk of getting AIDS by province shows that the largest proportions who think they have no chance of getting AIDS are found in North Eastern Province (78 and 98 percent of women and men, respectively). Women in Western and Nyanza provinces are the most likely to think they have a moderate or great chance of getting AIDS, while men in Nyanza, Coast, and Nairobi provinces are more likely to feel they have a great chance of getting AIDS. Differences by education and wealth index are not large.

The main reasons that individual men and women provide to explain the perception of AIDS risk as low or nil are presented in Table 12.7. The most common reason for both men and women is that they have had just one partner (56 and 53 percent of women and men, respectively). Next in importance is that they are not having sex; 35 percent of women and 30 percent of men think they have a low risk of getting the AIDS virus because they have not been having sex. Those who have never married or who are no longer married are more likely to say they are at low risk because they are not having sex.

Table 12.7 Reasons for perception of small/no risk of getting AIDS

Among respondents who think they have small or no risk of getting AIDS, percentage who cite specific reasons for perception of risk, Kenya 2003

Reason	Women				Men			
	Never married	Currently married	Formerly married	Total	Never married	Currently married	Formerly married	Total
Not having sex	76.3	2.4	67.8	34.6	57.7	0.6	33.0	29.5
Uses condoms	4.5	0.7	5.2	2.5	19.2	9.4	31.0	14.9
Has only 1 partner	16.4	87.8	21.2	56.3	23.9	83.1	28.3	52.5
Limits the number of partners	2.5	2.9	5.5	3.0	9.4	11.8	23.9	11.0
Partner has no other partners	1.6	13.5	1.2	8.2	3.9	18.5	3.0	10.9
Doesn't fully trust partner	0.5	3.9	0.8	2.4	0.0	0.0	0.0	0.0
Religious	0.3	1.2	0.7	0.8	0.0	0.0	0.0	0.0
Other	4.5	2.4	3.4	3.2	6.0	7.0	9.5	6.6
Number	2,101	3,352	619	6,071	1,388	1,370	99	2,857

Table 12.8 shows the distribution of men and women who believe they are at moderate or great risk of getting AIDS, by reasons for this perception. Seventy percent of women who think they are at moderate to great risk of getting AIDS, think so because their partners have other partners, compared with 29 percent of the men. Almost four in ten men think they are at moderate or great risk because they have multiple partners.

Table 12.8 Reasons for perception of moderate/great risk of getting AIDS

Among respondents who think they have a moderate or great risk of getting AIDS, percentage who cite specific reasons for perception of risk, Kenya 2003

Reason	Women				Men			
	Never married	Currently married	Formerly married	Total	Never married	Currently married	Formerly married	Total
Doesn't use condoms	19.7	11.8	21.0	13.9	28.9	16.7	12.5	21.7
Has more than 1 sex partner	15.5	7.0	16.3	9.2	37.3	35.6	61.3	38.2
Partner has other partners	35.4	78.5	54.6	69.6	23.5	31.0	43.0	28.6
Homosexual contacts	0.0	0.1	0.4	0.1	0.0	0.0	0.9	0.1
Has had blood transfusions/injections	15.0	6.5	6.5	7.8	10.4	17.0	8.4	13.4
Other	23.0	5.5	11.8	8.7	26.7	19.8	16.4	22.6
Number	296	1,482	200	1,979	211	236	36	483



## 12.5 MULTIPLE SEXUAL PARTNERSHIPS

Because the most important mechanism of HIV transmission is sexual intercourse, it is important to know the extent of multiple sexual partners. Consequently, women and men interviewed in the 2003 KDHS were asked questions about the number of partners with whom they had had sex in the 12 months preceding the survey. Information on the percentage of women and men age 15 to 49 who have had more than one sexual partner in the 12 months preceding the survey is presented in Table 12.9.

The data show that only 2 percent of women and 12 percent of men report having had more than one sexual partner in the 12 months prior to the survey. Differentials by background characteristics among women are minimal. However, among men, those who are in their early twenties, ever-married, urban, and those in Coast, Nairobi, and Nyanza provinces are more likely than others to have had multiple partners.

Table 12.9 Multiple sex partnerships among women and men

Among women and men age 15-49, percentage who have had sex with more than one partner in the 12 months preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Women		Men	
	Percentage	Number of women	Percentage	Number of men
<b>Age</b>				
15-19	1.5	1,856	7.3	856
20-24	1.8	1,691	16.4	681
25-29	1.9	1,382	13.1	509
30-39	1.7	1,957	12.5	811
40-49	2.0	1,309	10.2	506
15-24	1.6	3,547	11.3	1,537
<b>Marital status</b>				
Never married	0.9	2,443	10.3	1,611
Ever married	2.1	5,752	13.0	1,752
<b>Residence</b>				
Urban	2.1	2,056	15.4	856
Rural	1.6	6,139	10.4	2,506
<b>Province</b>				
Nairobi	1.7	835	15.9	376
Central	1.1	1,181	4.3	515
Coast	2.1	667	19.2	234
Eastern	1.9	1,325	7.9	541
Nyanza	3.4	1,222	15.2	443
Rift Valley	1.1	1,872	13.7	818
Western	1.5	927	11.7	378
North Eastern	0.2	168	0.0	57
<b>Education</b>				
No education	1.4	1,039	12.4	191
Primary incomplete	2.3	2,685	13.2	1,148
Primary complete	2.3	2,069	11.4	769
Secondary+	0.8	2,403	10.4	1,254
<b>Wealth quintile</b>				
Lowest	2.1	1,364	10.7	510
Second	1.5	1,475	11.6	572
Middle	1.5	1,503	9.1	616
Fourth	1.5	1,711	11.0	741
Highest	2.0	2,141	14.7	924
Total	1.7	8,195	11.7	3,363

## 12.6 TESTING AND COUNSELLING FOR HIV

Voluntary counselling and testing (VCT) is now acknowledged as an effective strategy for HIV prevention. HIV testing through VCT or in clinical settings is essential for access to AIDS care. Knowledge of HIV status helps HIV-negative individuals make specific decisions to reduce risk and increase safer sex practices so they can remain disease-free. For those who are HIV-infected, knowledge of their status allows them to better protect their sexual partners, to access treatment for HIV disease, and to plan for their future.

In order to gauge the coverage of HIV testing as well as the unmet need for testing, respondents in the 2003 KDHS were asked if they have ever heard of “VCT.” Similarly, the interviewer asked respondents if they had ever been tested to see if they have the AIDS virus. Those who had been tested were asked when they were last tested, whether they had asked for the test or were required to take it, and whether they received their results. Those who had not been tested were asked if they would like to be tested and whether they know of a place to go for an AIDS test. Table 12.10 shows the percentage of women and men who have ever heard of VCT, who have ever been tested, and those who were tested and received the test results in the 12 months preceding the survey, by background characteristics.

Nearly half of all women (48 percent) and three-fifths of men (62 percent) have heard of VCT. Knowledge of VCT is highest among those in their early 20s and among never-married women and men who have ever had sex. Urban respondents are one and a half times more likely to have heard of VCT as their rural counterparts. Knowledge of VCT is highest in Nairobi and Central provinces and among men in Coast Province; it is by far the lowest in North Eastern Province, where only 2 percent of women and 15 percent of men have ever heard of VCT. Knowledge of VCT increases dramatically as the level of education and the wealth index rise.

Although knowledge of VCT services is quite widespread, Table 12.10 shows that the majority of those who are aware have not used the services. Only 15 percent of women and 16 percent of men say that they have ever been tested for HIV, almost identical to the levels reported in the 1998 KDHS. It is reassuring, however, that about 90 percent of those who have been tested received the test results. Half of those ever tested said they had been tested and received results in the 12 months preceding the survey.

Those most likely to have ever received an HIV test are women and men in their 20s and early 30s, those living in urban areas, and those in Nairobi Province. The percentage who have been tested increases with education level and wealth index.

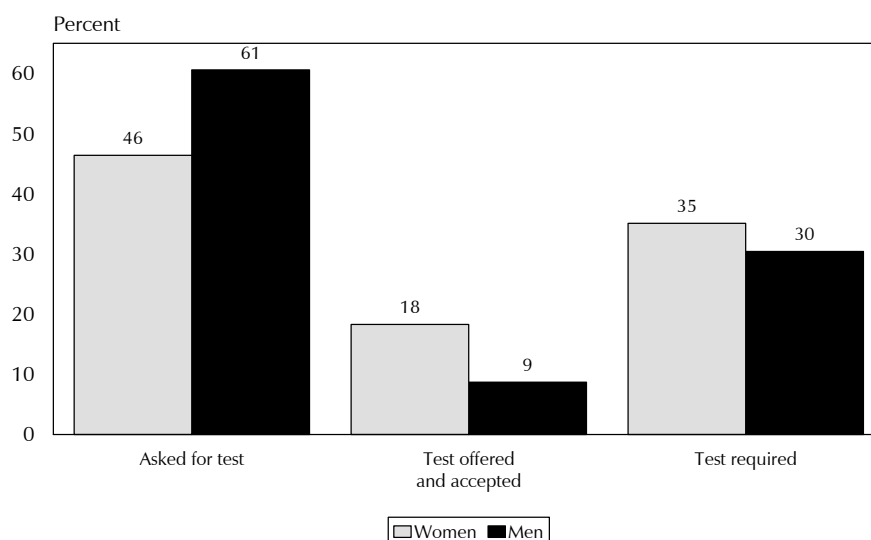
Among those who were tested for HIV, 46 percent of women and 61 percent of men asked for the test, while 18 percent of women and 9 percent of men were offered the test and accepted (Figure 12.1). About one-third of those tested (35 and 30 percent of women and men, respectively) indicated that the HIV test was required.

Table 12.10 Population who had an HIV test and received test results

Percent distribution of women and men age 15-49 by status of HIV testing, and percentage of women and men who were tested for HIV and received test results in the last 12 months, by background characteristics, Kenya 2003

Background characteristic	Women								Men							
	Heard of VCT	Ever tested		Never tested	Don't know/missing	Total	Tested and received results in past 12 months	Number of women	Heard of VCT	Ever tested		Never tested	Don't know/missing	Total	Tested and received results in past 12 months	Number of men
		Received results	No results							Received results	No results					
<b>Age</b>																
15-19	43.9	6.5	0.6	90.9	2.0	100.0	4.1	1,856	47.1	5.2	0.7	93.0	1.1	100.0	3.6	856
20-24	57.4	17.8	1.5	79.2	1.5	100.0	9.3	1,691	73.4	14.5	0.8	84.5	0.3	100.0	9.1	681
25-29	51.9	16.9	2.9	78.2	2.0	100.0	8.7	1,382	67.9	21.2	3.0	75.3	0.6	100.0	10.7	509
30-39	47.9	15.4	2.1	81.3	1.1	100.0	7.4	1,957	69.2	18.6	1.9	79.4	0.2	100.0	9.3	811
40-49	38.1	9.1	0.9	89.0	1.0	100.0	3.9	1,309	56.9	15.9	1.1	82.1	0.8	100.0	6.3	506
15-24	50.3	11.9	1.0	85.3	1.8	100.0	6.6	3,547	58.8	9.3	0.7	89.2	0.7	100.0	6.0	1,537
<b>Marital status</b>																
Never married	54.8	9.3	1.3	87.9	1.6	100.0	5.6	2,443	60.6	9.7	1.0	88.5	0.7	100.0	6.3	1,611
Ever had sex	60.4	16.0	2.2	81.0	0.8	100.0	9.7	1,055	66.5	12.4	1.3	86.2	0.1	100.0	7.9	1,073
Never had sex	50.5	4.1	0.5	93.2	2.2	100.0	2.4	1,388	48.8	4.3	0.4	93.2	2.1	100.0	3.3	537
Married/living together	45.0	14.6	1.8	82.0	1.6	100.0	7.1	4,919	64.4	18.1	1.8	79.8	0.4	100.0	8.3	1,615
Divorced/separated/widowed	46.5	15.6	1.5	81.8	1.1	100.0	7.9	833	59.4	24.5	1.2	73.0	1.3	100.0	13.1	137
<b>Residence</b>																
Urban	70.0	22.4	1.5	75.3	0.8	100.0	11.3	2,056	81.7	22.0	1.8	75.8	0.4	100.0	12.5	856
Rural	40.7	10.0	1.6	86.6	1.8	100.0	5.1	6,139	55.8	11.7	1.3	86.4	0.7	100.0	5.9	2,506
<b>Province</b>																
Nairobi	79.6	27.0	1.5	71.2	0.4	100.0	13.1	835	86.0	25.4	1.7	72.5	0.4	100.0	14.8	376
Central	59.3	17.7	2.7	79.4	0.2	100.0	8.6	1,181	70.1	16.3	1.9	81.4	0.3	100.0	8.8	515
Coast	42.5	10.2	0.3	88.6	0.9	100.0	5.6	667	71.5	18.5	1.3	79.6	0.6	100.0	7.5	234
Eastern	32.9	10.3	1.5	87.4	0.9	100.0	4.1	1,325	46.0	9.1	1.2	89.4	0.2	100.0	3.4	541
Nyanza	47.6	10.3	1.7	87.8	0.1	100.0	6.6	1,222	58.3	15.9	1.6	82.2	0.3	100.0	8.8	443
Rift Valley	43.0	12.4	2.2	80.8	4.6	100.0	6.4	1,872	58.5	11.1	1.3	87.2	0.4	100.0	6.8	818
Western	50.5	8.4	0.4	90.8	0.4	100.0	5.0	927	66.6	12.4	0.9	86.4	0.3	100.0	5.8	378
North Eastern	2.1	0.6	0.0	93.5	5.9	100.0	0.2	168	15.1	2.6	0.7	82.7	14.0	100.0	1.3	57
<b>Education</b>																
No education	13.4	5.1	1.0	86.5	7.4	100.0	2.7	1,039	20.0	8.4	1.0	85.1	5.5	100.0	5.5	191
Primary incomplete	34.1	7.6	1.6	89.6	1.2	100.0	4.5	2,685	40.7	8.9	0.9	89.5	0.7	100.0	4.6	1,148
Primary complete	49.0	13.6	1.4	84.4	0.5	100.0	7.0	2,069	64.6	14.1	1.2	84.7	0.0	100.0	7.2	769
Secondary +	77.9	22.4	2.0	75.4	0.2	100.0	10.7	2,403	87.4	20.4	2.0	77.6	0.0	100.0	10.8	1,254
<b>Wealth quintile</b>																
Lowest	23.3	5.0	0.8	89.6	4.6	100.0	2.8	1,364	36.0	9.4	1.1	87.1	2.4	100.0	5.1	510
Second	35.6	8.7	1.2	88.5	1.7	100.0	4.9	1,475	52.8	10.7	0.4	88.8	0.1	100.0	6.0	572
Middle	41.8	11.5	1.7	85.9	0.9	100.0	5.1	1,503	52.0	11.1	1.4	87.3	0.3	100.0	4.9	616
Fourth	52.0	12.9	2.3	84.5	0.3	100.0	7.2	1,711	69.4	12.4	1.7	85.5	0.4	100.0	6.1	741
Highest	73.7	22.7	1.7	74.7	0.9	100.0	11.2	2,141	84.1	23.0	2.0	74.8	0.3	100.0	12.8	924
<b>Total</b>	48.1	13.1	1.6	83.8	1.5	100.0	6.7	8,195	62.4	14.3	1.4	83.7	0.6	100.0	7.6	3,363

**Figure 12.1 Reason for Getting HIV Test among Women and Men Age 15-49 Who Have Ever Been Tested**



KDHS 2003

## 12.7 ATTITUDES TOWARDS NEGOTIATING SAFER SEX

Knowledge about HIV transmission and ways to prevent it are useless if people feel powerless to negotiate safer sex practices with their partners. To gauge attitudes towards safer sex, respondents in the 2003 KDHS were asked if they think a woman is justified in refusing to have sex with her husband if she knows he has an STD. They were also asked if they think that a woman in the same circumstances is justified in asking her husband to use a condom. The results are shown in Table 12.11.

About 90 percent of women and men feel that a woman is justified in refusing to have sex with her husband if she knows he has an STD, while around 80 percent believe that a woman is justified in asking her husband to use a condom if he has an STD. Ninety-four percent of women and 96 percent of men agree with one or both statements.

Differences in these attitudes by background characteristics are minimal. However, women in North Eastern Province appear to be less accepting of requesting a husband to use condoms.

Table 12.11 Attitudes towards negotiating safer sex

Percentage of women and men who believe that, if a husband has a sexually transmitted disease, his wife is justified in either refusing to have sex with him or asking that he use a condom, by background characteristics, Kenya 2003

Background characteristic	Women				Men			
	Refuse sex	Propose condom use	Refuse sex or propose condom use	Number of women	Refuse sex	Propose condom use	Refuse sex or propose condom use	Number of men
<b>Age</b>								
15-19	80.9	70.1	88.4	1,856	86.1	72.0	90.3	856
20-24	88.7	82.5	95.0	1,691	92.2	86.0	96.3	681
25-29	88.9	83.1	96.1	1,382	94.8	83.6	96.8	509
30-39	89.5	82.3	96.1	1,957	96.5	85.3	98.7	811
40-49	88.1	73.8	94.2	1,309	95.0	77.8	97.7	506
15-24	84.6	76.0	91.5	3,547	88.8	78.2	93.0	1,537
<b>Current marital status</b>								
Never married	83.4	75.6	90.7	2,443	89.2	77.9	93.1	1,611
Ever had sex	86.7	84.9	95.5	1,055	92.0	84.5	96.0	1,073
Never had sex	80.9	68.6	87.0	1,388	83.7	64.9	87.3	537
Married/living together	88.4	79.3	94.8	4,919	95.6	83.6	98.2	1,615
Divorced/separated/widowed	89.9	80.7	97.0	833	95.0	78.4	96.0	137
<b>Residence</b>								
Urban	92.1	87.5	97.2	2,056	94.2	86.3	97.4	856
Rural	85.4	75.3	92.6	6,139	91.9	78.7	95.1	2,506
<b>Province</b>								
Nairobi	94.1	88.9	97.7	835	93.7	89.6	96.9	376
Central	91.4	85.3	97.4	1,181	93.1	69.0	95.9	515
Coast	88.1	79.3	93.5	667	92.5	81.6	94.4	234
Eastern	89.0	83.9	96.1	1,325	89.0	75.0	91.0	541
Nyanza	80.5	70.7	91.3	1,222	93.1	82.9	95.6	443
Rift Valley	83.2	75.6	90.7	1,872	93.0	84.1	98.0	818
Western	89.2	76.0	94.1	927	93.3	86.2	96.5	378
North Eastern	81.4	27.4	82.8	168	95.7	73.9	95.7	57
<b>Education</b>								
No education	78.6	53.9	84.6	1,039	91.3	67.7	94.5	191
Primary incomplete	83.6	74.4	91.4	2,685	88.5	73.9	91.8	1,148
Primary complete	90.1	84.2	96.5	2,069	93.5	80.2	96.9	769
Secondary+	92.0	88.2	98.1	2,403	95.8	89.1	98.6	1,254
<b>Wealth quintile</b>								
Lowest	82.5	64.2	89.0	1,364	89.5	73.9	92.5	510
Second	82.9	72.5	91.1	1,475	90.8	78.3	93.5	572
Middle	84.9	77.3	93.5	1,503	92.0	78.0	96.0	616
Fourth	89.4	82.6	95.7	1,711	92.8	81.5	96.5	741
Highest	92.6	88.8	97.4	2,141	95.4	87.0	97.8	924
Total	87.1	78.3	93.8	8,195	92.5	80.7	95.7	3,363

## 12.8 CONDOM USE AT HIGHER-RISK SEX

As mentioned above, condom use is an important tool in the fight to curtail the spread of HIV/AIDS. Although truly effective protection would require condom use at every sexual encounter, the most important sexual encounters to cover are those considered to be “higher risk.” In the context of this survey, higher-risk sex is defined as sex with a nonmarital, noncohabitating partner in the 12 months preceding the survey. Table 12.12 shows the proportion of women and men who have been sexually active in the 12 months before the survey who have engaged in higher-risk sex and use of condom during sex with such partners.

Table 12.12 Higher-risk sex and condom use at last higher-risk sex

Among women and men who had sex in the last 12 months, percentage who had sex with a nonmarital, noncohabiting partner in the last 12 months and among women and men who have had higher-risk sex in the last 12 months, percentage who say they used a condom the last time they had sex with a nonmarital, noncohabiting partner, by background characteristics, Kenya 2003

Background characteristic	Women				Men			
	Percentage engaging in higher-risk sex in the past 12 months	Number of women who had sex in the past 12 months	Percentage who used condom at last higher-risk sex	Number of women who had higher-risk sex in past 12 months	Percentage engaging in higher-risk sex in the past 12 months	Number of men who had sex in the past 12 months	Percentage who used condom at last higher-risk sex	Number of men who had higher-risk sex in past 12 months
<b>Age</b>								
15-19	46.7	619	23.4	289	97.1	258	41.3	250
20-24	21.4	1,207	27.6	258	77.2	459	50.7	355
25-29	13.9	1,190	25.8	166	35.3	421	51.8	149
30-39	10.8	1,693	23.1	184	18.6	765	38.6	142
40-49	10.9	1,000	14.9	109	9.6	476	50.0	46
15-24	30.0	1,826	25.4	547	84.4	717	46.8	605
<b>Marital status</b>								
Never married	99.9	597	27.9	596	99.8	681	48.9	680
Married/living together	2.4	4,693	18.8	112	11.1	1,597	44.9	177
Divorced/separated/widowed	70.9	420	17.8	298	84.1	101	30.6	85
<b>Residence</b>								
Urban	23.8	1,381	33.0	328	42.5	655	59.1	279
Rural	15.7	4,329	19.5	678	38.5	1,725	41.2	663
<b>Province</b>								
Nairobi	26.7	554	31.7	148	42.9	285	64.4	122
Central	16.4	790	20.8	129	32.6	321	33.1	105
Coast	16.6	482	27.3	80	45.0	178	56.3	80
Eastern	18.9	958	25.2	181	39.1	348	43.7	136
Nyanza	21.0	946	16.5	199	39.2	304	35.2	119
Rift Valley	14.3	1,236	27.5	177	42.5	659	48.7	280
Western	14.8	625	19.4	93	39.8	250	42.0	99
North Eastern	0.0	118	*	0	0.0	35	*	0
<b>Education</b>								
No education	10.3	727	10.5	75	24.5	144	(40.6)	35
Primary incomplete	17.8	1,843	17.0	328	48.9	708	36.5	346
Primary complete	18.2	1,575	23.2	286	35.1	591	43.8	207
Secondary+	20.2	1,565	35.0	316	37.7	938	58.5	353
<b>Wealth quintile</b>								
Lowest	12.8	975	11.4	124	31.4	359	39.8	113
Second	14.5	1,067	13.8	155	42.1	379	39.1	160
Middle	16.6	1,064	15.0	177	35.3	395	33.7	139
Fourth	17.9	1,165	25.5	209	44.0	526	47.9	231
Highest	23.7	1,439	36.7	341	41.4	721	57.9	299
Total	17.6	5,710	23.9	1,006	39.6	2,380	46.5	942

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Higher-risk sex refers to sex with a non-marital, non-cohabiting partner.

The results show that 18 percent of sexually active women and 40 percent of sexually active men engaged in higher-risk sex in the 12 months prior to the survey. Of them, only one-quarter of women (24 percent) and half of men (47 percent) report using condoms at the most recent occurrence of higher-risk sex. Because the definition of higher-risk sex includes premarital sex, involvement in higher-risk sex is highest among women and men age 15-19 years, and decreases with increasing age. The percentage of those who used a condom at last higher-risk sex is alarmingly low for women (15 percent) age 40 to 49 years, compared with the highest rate of 28 percent of men age 20 to 24 years. However, among men, it is

lowest (39 percent) in the age cohort of 30 to 39 as compared with the highest (52 percent) in the age group 25 to 29 years.

By definition, all sexually active women and men who have never married engage in higher-risk sex, compared with only 2 percent of married women and 11 percent of married men. Condom use during higher-risk sex is more pronounced among women who have never married (28 percent) than those married (19 percent) or divorced/widowed/separated (18 percent).

Sexually active women and men (24 and 43 percent, respectively) from urban areas are more likely to be involved in higher risk sex than women and men (16 and 39 percent, respectively) from rural areas. They are also considerably more likely to use condoms than rural respondents. Women in Nairobi Province and men in Coast and Nairobi provinces are more likely to engage in higher-risk sex and to use condoms than respondents in other provinces, especially North Eastern Province, where no women or men reported sexual activity outside of marriage.

Among women, there is an increase in higher-risk sex and condom use with increasing level of education and increasing wealth index, while among men, engagement in higher-risk sex is lower for those with no education but fluctuates for other groups as well as by wealth index.

## **12.9 PAID SEX AND CONDOM USE**

A special category of higher-risk sex is sex for which compensation is paid. In the 2003 KDHS, men were asked if they had ever paid for sex and, if so, when the most recent encounter took place and if they used condoms at that most recent sex. Women were asked if they had given or received money, gifts, or favours in return for sex in the 12 months preceding the survey.

Results shown in Table 12.13 indicate that only 3 percent of men have had sex with prostitutes in the 12 months before the survey, 65 percent of whom report that they used condoms at the most recent paid sex. Six percent of women indicate that they received money, gifts, or favours in exchange for sex.

There are no significant variations by age in the percentage of men having paid sex in the 12 months preceding the survey. However, younger women age 15 to 19 are more likely than older women to receive money, gifts, or favours in exchange for sex (16 and 3 to 5 percent, respectively).

Divorced, widowed, or separated men are more likely than married and never-married men to have paid for sex. On the other hand, never-married women are the most likely to have received money, gifts, or favours for sex, with one in four reporting such activity in the 12 months preceding the survey.

The proportion of men having paid sex is higher among men in urban areas and in Coast Province than among other men. Education seems not to play a significant role among men reporting sex with prostitutes. Men in the lowest wealth quintile are lightly less likely than those in the highest quintile to have paid for sex.

Table 12.13 Paid sex in last year and condom use at last paid sex

Percentage of men reporting that they paid for sex in the 12 months preceding the survey and among them, percentage reporting condom use the last time they had paid sex, and percentage of women reporting they received money, gifts, or favours in return for sex in the 12 months preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Percentage reporting paid sex in past 12 months	Number of men	Percentage reporting condom use at last paid sex	Number of men reporting paid sex in past 12 months	Number of women reporting receiving money, gifts, or favours for sex	Number of women who had sex in the past 12 months
<b>Age</b>						
15-19	3.6	856	(35.1)	30	16.2	619
20-24	3.5	681	(86.4)	24	5.3	1,207
25-29	2.6	509	*	13	4.3	1,190
30-39	2.7	811	*	22	3.1	1,693
40-49	2.0	506	*	10	4.5	1,000
15-24	3.5	1,537	57.6	54	9.0	1,826
<b>Marital status</b>						
Never married	3.3	1,611	63.2	53	23.2	597
Married/living together	2.0	1,615	(63.5)	32	2.2	4,693
Divorced/separated/widowed	10.3	137	*	14	17.4	420
<b>Residence</b>						
Urban	4.6	856	81.3	39	6.6	1,381
Rural	2.4	2,506	(53.7)	60	5.1	4,329
<b>Province</b>						
Nairobi	1.5	376	*	6	6.0	554
Central	1.0	515	*	5	2.2	790
Coast	10.0	234	(90.4)	23	6.3	482
Eastern	1.0	541	*	5	7.6	958
Nyanza	3.4	443	*	15	7.6	946
Rift Valley	3.9	818	*	32	4.3	1,236
Western	3.4	378	*	13	5.5	625
North Eastern	0.0	57	*	0	0.0	118
<b>Education</b>						
No education	3.2	191	*	6	3.8	727
Primary incomplete	4.0	1,148	(47.4)	46	7.5	1,843
Primary complete	2.5	769	*	19	4.7	1,575
Secondary+	2.2	1,254	(81.9)	28	4.7	1,565
<b>Wealth quintile</b>						
Lowest	1.5	510	*	8	6.2	975
Second	2.4	572	*	14	5.9	1,067
Middle	2.1	616	*	13	5.2	1,064
Fourth	3.2	741	(61.3)	23	3.9	1,165
Highest	4.5	924	(84.6)	41	6.2	1,439
Total	2.9	3,363	64.5	99	5.5	5,710

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.

## 12.10 ATTITUDES TOWARDS CONDOMS

Questions were added in the man's questionnaire to gauge attitudes towards condom use among men. Respondents were asked to say whether they agree or disagree with several statements about condoms that were read by the interviewer. The statements included the following: 1) condoms diminish a man's sexual pleasure; 2) it's okay to reuse a condom if you wash it; 3) condoms protect against disease; 4) buying condoms is embarrassing; 5) a woman has no right to tell a man to use a condom; and (6) condoms contain HIV. Table 12.14 presents the percentage of men who agree with each of these statements about condoms, according to background characteristics.



Table 12.14 Attitude towards condoms

Percentage of men age 15-49 who agree with particular statements about condoms, by background characteristics, Kenya 2003

Background characteristic	Attitudes about condoms						Number of men
	Diminish pleasure	Can reuse condom	Condoms protect against disease	Buying condoms is embarrassing	Woman has no right to tell man to use condom	Condoms contain HIV	
<b>Age</b>							
15-19	29.9	5.0	67.1	36.1	31.7	9.2	856
20-24	52.8	4.0	84.8	29.0	26.9	9.5	681
25-29	52.2	4.7	80.4	33.9	24.0	6.8	509
30-39	51.3	4.5	84.0	32.9	26.5	6.7	811
40-49	47.1	5.7	74.2	39.6	28.8	6.6	506
<b>Marital status</b>							
Never married	40.5	4.6	74.6	33.2	27.3	8.6	1,611
Ever had sex	53.4	4.2	84.7	30.8	30.1	8.8	1,073
Never had sex	14.8	5.5	54.6	37.8	21.5	8.1	537
Married/living together	49.7	4.8	80.4	35.0	27.4	7.0	1,615
Divorced/separated/widowed	58.6	5.6	85.1	33.8	41.6	10.5	137
<b>Residence</b>							
Urban	54.1	2.1	80.7	32.9	22.4	5.4	856
Rural	42.8	5.6	76.9	34.5	29.8	8.7	2,506
<b>Province</b>							
Nairobi	55.2	2.4	83.2	29.5	17.9	5.5	376
Central	41.5	3.0	70.2	32.6	20.3	13.0	515
Coast	63.0	1.5	79.9	35.5	28.1	3.0	234
Eastern	43.9	5.8	74.7	46.5	26.6	12.8	541
Nyanza	40.1	6.2	82.7	34.5	38.0	10.6	443
Rift Valley	46.9	7.7	79.5	33.0	34.4	3.6	818
Western	42.3	2.3	86.1	22.3	25.0	5.6	378
North Eastern	13.7	1.3	17.9	44.8	21.2	5.9	57
<b>Education</b>							
No education	22.5	12.6	44.9	37.2	26.6	7.3	191
Primary incomplete	43.6	7.2	75.5	38.0	38.8	12.0	1,148
Primary complete	49.1	4.4	77.8	32.2	30.3	7.7	769
Secondary+	49.0	1.5	85.0	31.2	16.6	4.3	1,254
<b>Wealth quintile</b>							
Lowest	36.7	11.8	69.4	36.4	33.8	8.3	510
Second	40.3	4.0	79.7	34.9	34.5	9.5	572
Middle	42.2	5.7	73.8	33.4	28.1	10.3	616
Fourth	49.3	3.1	80.4	35.8	28.5	7.6	741
Highest	53.3	2.0	82.1	31.4	20.0	5.2	924
Total	45.7	4.7	77.9	34.1	27.9	7.9	3,363

It is encouraging to note that 78 percent of men indicate that condoms protect against disease. It is also notable that only 5 percent believe that it is ok to reuse a condom if it is washed and that only 8 percent believe that condoms contain the HIV virus. As for attitudes, 46 percent of men agree with the statement that condoms diminish a man's sexual pleasure and 34 percent say that buying condoms is embarrassing. More than one-quarter of men (28 percent) say that a woman has no right to tell a man to use a condom.

With regard to differentials, teenage men (age 15-19) are less likely than older men to know that condoms can protect against disease and are more likely to believe that condoms contain HIV. They are also less likely to think that condoms diminish a man's pleasure. Similarly, men who have never had sex

are less likely to know that condoms can protect against disease and less likely to say that condoms diminish pleasure.

Rural men are slightly more likely than urban men to believe that condoms can be reused and that they contain HIV. They are also somewhat less likely to agree that condoms diminish pleasure or that they protect against disease. A larger proportion of rural than urban men feel that a woman has no right to tell a man to use a condom.

Men in Coast and Nairobi provinces are the most likely to say that condoms diminish a man's sexual pleasure, while men in Western, Nairobi, and Nyanza provinces are most likely to know that condoms protect against disease. The belief that condoms can be reused is relatively higher among men in Rift Valley and Nyanza provinces than men in other provinces, while the belief that condoms contain HIV is highest among men in Central, Eastern, and Nyanza provinces. Men in North Eastern Province are the least likely to believe that condoms diminish pleasure or that they can be reused; however, they are also the least likely to know that condoms protect against disease.

The results show that men with no education and those with only primary level of education are somewhat disadvantaged in knowledge about condoms, compared with men with at least some secondary education. Men in the highest wealth quintile are most likely to know that condoms protect against disease and least likely to believe that condoms can be reused.

## 12.11 CONDOM BRANDS

Table 12.15 shows the percent distribution of men who have ever used condoms by brand of condoms usually used, according to residence. The majority of respondents in both urban and rural (68 and 54 percent, respectively) areas indicate that they usually use Trust condoms, the brand that is socially marketed by Population Services International. A sizeable proportion of men either do not know the brand (16 percent) or use an unbranded condom (11 percent). Condoms such as Rough Rider are more widely used in urban than rural areas, probably due to their higher cost as compared with Trust.

## 12.12 SELF-REPORTING OF SEXUALLY TRANSMITTED INFECTIONS

Information about the incidence of sexually transmitted infections (STIs) is not only useful as a marker of unprotected sexual intercourse but also as a cofactor for HIV transmission. Surveillance systems for STIs in Kenya have primarily focused on collection of incidence and prevalence data through passive case reporting and routine screening systems. The World Health Organisation, the Joint United Nations Programme on HIV/AIDS, and other partners have been promoting the tracking of STI epidemics in the region as part of the second generation HIV surveillance programmes. Nationally, the prevalence of syphilis and other STIs is reported from seroprevalence testing among pregnant women attending antenatal care clinics and STI clients attending clinics at selected health facilities ("sentinel sites") annually. Studies have shown that reported declines in prevalence of HIV have been accompanied by declines in the prevalence of other STIs. Additionally, studies among sex workers and adults in the general population have shown that infections with syphilis, gonorrhoea, chlamydia, and trichomonas are common and are potential agents for the spread of HIV via unprotected sex (MOH, 2001).

Table 12.15 Condom brands

Percent distribution of men who have ever used condoms by brand of condoms usually used, according to residence, Kenya 2003

Brand of condom	Residence		Total
	Urban	Rural	
Durex	5.7	6.3	6.1
Rough Rider	4.5	0.9	2.1
Sure	0.9	0.7	0.8
Trust	68.1	54.3	58.7
No brand	9.0	11.9	11.0
Other	2.6	3.5	3.2
Don't know brand	8.3	20.3	16.4
Missing	0.7	2.2	1.7
Total	100.0	100.0	100.0
Number	459	965	1,424

The 2003 KDHS elicited information from both female and male respondents about their knowledge of infections other than HIV that can be transmitted sexually. Additionally, respondents who had ever had sex were asked if they had had a sexually transmitted disease in the previous 12 months or if they had had either of two symptoms associated with STIs (a bad-smelling, unusual discharge from the vagina/penis or a genital sore or ulcer).

As shown in Table 12.16, only 2 percent of women and men who have ever had sex reported having had an STI in the 12 months before the survey. Three percent of women and 2 percent of men reported having had an abnormal genital discharge, and 2 percent of each sex reported having had a genital sore or ulcer in the 12 months before the survey. Only 4 percent of women and 3 percent of men reported having either an STI, an abnormal discharge, or a genital sore.

Table 12.16 Self-reporting of a sexually transmitted infection (STI) and STI symptoms

Among women and men who ever had sex, percentage self-reporting an STI and/or symptoms of an STI in the last 12 months, by background characteristics, Kenya 2003

Background characteristic	Women					Men				
	Percentage with an STI	Percentage with abnormal genital discharge	Percentage with genital sore/ulcer	Percentage with STI/discharge/genital sore/ulcer	Number of women who ever had sex	Percentage with an STI	Percentage with abnormal genital discharge	Percentage with genital sore/ulcer	Percentage with STI/discharge/genital sore/ulcer	Number of men who ever had sex
<b>Age</b>										
15-19	1.1	2.7	1.5	3.9	782	1.1	1.4	1.7	2.2	432
20-24	1.6	3.4	2.5	4.7	1,438	2.2	3.0	1.3	3.7	591
25-29	1.8	2.8	2.6	4.4	1,337	2.6	2.6	1.6	3.6	492
30-39	1.5	3.3	2.1	4.1	1,941	2.1	2.1	1.3	3.1	805
40-49	1.9	3.3	2.9	4.6	1,307	2.5	1.5	1.7	2.9	506
<b>Marital status</b>										
Never married	1.1	1.5	0.9	2.4	1,055	1.4	1.9	1.3	2.5	1,073
Married/living together	1.7	3.5	2.6	4.8	4,918	2.3	2.0	1.4	3.0	1,615
Divorced/separated/widowed	2.1	3.4	2.7	4.5	833	5.5	5.9	3.8	9.0	137
<b>Residence</b>										
Urban	1.6	3.1	2.2	4.1	1,702	2.0	1.7	1.7	3.1	748
Rural	1.6	3.2	2.4	4.4	5,104	2.1	2.3	1.4	3.1	2,077
<b>Province</b>										
Nairobi	1.6	3.7	2.2	4.3	684	1.6	0.9	1.7	3.2	327
Central	1.4	3.6	1.9	5.0	961	0.3	0.3	0.7	0.7	403
Coast	2.3	4.7	2.5	5.1	557	3.5	4.1	2.1	5.1	196
Eastern	1.0	2.0	1.1	2.3	1,092	0.7	0.7	0.0	0.7	442
Nyanza	0.9	3.8	4.1	6.6	1,069	5.1	6.0	4.8	7.6	359
Rift Valley	1.6	1.4	1.6	2.8	1,569	2.5	1.6	0.3	2.5	762
Western	3.6	6.0	4.4	6.8	736	2.1	4.2	3.4	5.4	300
North Eastern	0.0	0.3	0.0	0.3	138	0.0	0.0	0.0	0.0	35
<b>Education</b>										
No education	0.9	2.9	1.6	3.3	975	6.1	4.5	1.9	6.5	160
Primary incomplete	2.5	4.3	3.4	5.9	2,122	2.9	3.2	1.6	4.1	866
Primary complete	1.5	3.2	2.3	4.5	1,828	2.5	2.6	2.3	3.9	687
Secondary+	1.2	2.0	1.6	3.0	1,880	0.7	0.8	0.8	1.4	1,112
<b>Wealth quintile</b>										
Lowest	1.4	3.4	3.0	4.4	1,169	4.1	3.4	2.2	5.5	419
Second	1.5	2.8	2.7	4.6	1,257	1.5	2.8	1.8	3.3	475
Middle	1.5	3.3	1.5	3.8	1,244	1.9	1.7	1.5	2.2	478
Fourth	2.3	3.2	2.3	4.7	1,389	1.5	1.6	0.9	2.3	633
Highest	1.4	3.1	2.3	4.2	1,746	2.0	1.9	1.4	3.0	820
<b>Total</b>	1.6	3.2	2.4	4.4	6,806	2.1	2.2	1.5	3.1	2,825

Differentials in the proportion who report having an STI or a symptom of an STI are muted, with only slightly higher levels among men who are divorced/separated or widowed and among women in Western Province and women and men in Nyanza Province. The latter finding could be one factor in the higher levels of HIV prevalence found in Nyanza Province (see Chapter 14).

Table 12.17 shows the percentage of women and men who reported having an STI or symptoms of an STI in the past 12 months who sought specific types of care. Ninety percent of men and 68 percent of women sought some sort of advice or treatment for their symptoms. Proportionally more men than women (71 and 59 percent, respectively) sought treatment from a health facility or health professional. Fifteen percent of women and one-third of men sought treatment from traditional healers, while about 16 percent of each sex sought advice or medicine from a shop or pharmacy.

**Table 12.17** Women and men seeking treatment for sexually transmitted infections (STIs)

Percentage of women and men reporting an STI or symptoms of an STI in the past 12 months who sought care, by source of advice or treatment, Kenya 2003

Source of advice or treatment	Sought care for STI	
	Women	Men
Clinic/hospital/health professional	59.0	70.8
Traditional healer	14.8	33.1
Advice or medicine from shop/pharmacy	15.7	16.9
Advice from friends/relatives	8.7	28.5
Advice or treatment from any source	68.2	89.6
No advice or treatment	31.8	10.4
Number with STI or symptoms of STI	296	88

## 12.13 MALE CIRCUMCISION

Circumcision is practiced in many communities in Kenya and often serves as a rite of passage to adulthood. Recently, male circumcision has been associated with lower transmission of STIs, including HIV. In order to investigate this relationship, men interviewed in the 2003 KDHS were asked if they were circumcised.

Table 12.18 shows that 84 percent of Kenyan men are circumcised. A lower proportion of men age 15 to 19 are circumcised (72 percent) than those at older ages (minimum of 84 percent). This could indicate a decline in the practice, although it is also possible that some young men may not have yet gone through the circumcision process. Men living in urban and rural areas are equally likely to be circumcised.

At least 80 percent of men are circumcised in all provinces except Nyanza Province, where less than half of the men are circumcised (46 percent). Muslims (almost 100 percent) are more likely to be circumcised than those who belong to other religious groups (82 percent). Luo (17 percent) men are the least likely to be circumcised.

**Table 12.18 Male circumcision**

Percentage of men age 15-49 who have been circumcised, by background characteristics, Kenya 2003

Background characteristic	Percent circumcised	Number of men
<b>Age</b>		
15-19	71.5	856
20-24	89.0	681
25-29	88.3	509
30-39	89.3	811
40-49	83.7	506
<b>Residence</b>		
Urban	83.5	856
Rural	83.8	2,506
<b>Province</b>		
Nairobi	81.5	376
Central	90.3	515
Coast	96.1	234
Eastern	96.2	541
Nyanza	46.4	443
Rift Valley	86.6	818
Western	86.4	378
North Eastern	100.0	57
<b>Education</b>		
No education	85.3	191
Primary incomplete	76.5	1,148
Primary complete	85.3	769
Secondary+	89.1	1,254
<b>Religion</b>		
Protestant	82.4	2,041
Roman Catholic	82.1	879
Muslim	99.6	214
No religion/other/missing	87.1	229
<b>Ethnicity</b>		
Embu	96.6	54
Kalenjin	90.5	409
Kamba	99.5	397
Kikuyu	93.7	758
Kisii	99.1	191
Kuria	(76.1)	24
Luhya	92.5	503
Luo	16.9	396
Maasai	76.5	82
Meru	91.2	180
Mijikenda/Swahili	99.4	136
Somali	100.0	101
Taita/Taveta	97.3	35
Turkana	(39.7)	47
Other/missing	64.1	47
<b>Wealth quintile</b>		
Lowest	75.3	510
Second	82.5	572
Middle	88.9	616
Fourth	86.6	741
Highest	83.3	924
Total	83.7	3,363

## 12.14 AGE AT FIRST SEX AMONG YOUTH

Table 12.19 shows the proportion of women and men age 15 to 24 who had sex before age 15 years, by background characteristics. Fourteen percent of young women and 29 percent of young men had sex by age 15. As expected, the proportion of young people who had sex before age 15 is higher among those who have been married. It is also higher among women in Nyanza Province and among men in Rift Valley Province.

Level of education is strongly related to age at first sex, especially for women. While one-quarter of women age 15 to 24 with no education had sex by age 15, the proportion declines to only 4 percent among those with at least some secondary education.

Table 12.19 Age at first sex among young women and men				
Percentage of women and men age 15-24 who had sex by exact age 15, by background characteristics, Kenya 2003				
Background characteristic	Women		Men	
	Percentage who had sex by age 15	Number of women age 15-24	Percentage who had sex by age 15	Number of men age 15-24
<b>Age</b>				
15-17	14.5	1,076	29.3	536
18-19	14.4	780	33.5	320
15-19	14.5	1,856	30.9	856
20-22	12.0	1,027	26.6	426
23-24	14.1	665	25.5	255
20-24	12.8	1,691	26.2	681
<b>Marital status</b>				
Never married	8.6	2,090	28.2	1,379
Ever married	20.9	1,457	34.5	158
<b>Residence</b>				
Urban	10.0	912	23.5	353
Rural	15.0	2,635	30.4	1,184
<b>Province</b>				
Nairobi	8.2	381	19.6	149
Central	7.9	458	12.0	236
Coast	12.7	272	21.4	99
Eastern	16.5	580	30.4	264
Nyanza	24.2	563	29.2	219
Rift Valley	11.7	782	48.0	355
Western	12.3	444	25.3	195
North Eastern	7.8	68	0.0	20
<b>Education</b>				
No education	25.5	250	37.4	55
Primary incomplete	18.4	1,390	32.6	695
Primary complete	13.7	906	28.5	298
Secondary+	4.1	1,001	22.6	490
<b>Wealth quintile</b>				
Lowest	17.9	536	35.9	232
Second	18.4	624	31.9	286
Middle	13.6	674	29.2	312
Fourth	11.6	764	27.5	347
Highest	9.9	948	22.8	360
Total	13.7	3,547	28.8	1,537

## 12.15 KNOWLEDGE OF CONDOM SOURCES AMONG YOUTH

Knowledge of sources of condoms plays an important role in prevention of STI/HIV transmission and unwanted pregnancies. Younger people are often at a higher risk of contracting STIs, as they are more likely to be experimenting with sex before marriage.

As shown in Table 12.20, about half of young women and three-quarters of young men say that they know of a place where one can get a condom. Knowledge of a source for condoms is considerably higher among women and men age 20 to 24 than among those age 15 to 19. Urban women and men are more likely to know a source of condoms than rural women and men. Never-married women and men are less likely to know of a source of male condoms than ever-married women and men. Women from North Eastern Province are least knowledgeable (3 percent) about a source for condoms, compared with all other women (42 percent or more) and their male counterparts (43 percent).

Table 12.20 Knowledge of a source for condoms among young people				
Percentage of women and men age 15-24 who know at least one source of male condoms, by background characteristics, Kenya 2003				
Background characteristic	Women		Men	
	Know a source for male condom	Number of women age 15-24	Know a source for male condom	Number of men age 15-24
<b>Age</b>				
15-19	42.7	1,856	63.2	856
20-24	63.7	1,691	89.6	681
<b>Marital status</b>				
Never married	48.8	2,090	73.6	1,379
Ever had sex	61.5	765	85.0	865
Never had sex	41.4	1,326	54.3	514
Ever married	58.4	1,457	86.2	158
<b>Residence</b>				
Urban	69.0	912	89.4	353
Rural	47.1	2,635	70.6	1,184
<b>Province</b>				
Nairobi	73.0	381	87.7	149
Central	51.2	458	78.0	236
Coast	44.9	272	77.6	99
Eastern	41.6	580	60.2	264
Nyanza	58.2	563	64.4	219
Rift Valley	55.9	782	83.8	355
Western	51.4	444	78.8	195
North Eastern	2.9	68	42.6	20
<b>Education</b>				
No education	19.0	250	38.5	55
Primary incomplete	40.1	1,390	62.2	695
Primary complete	57.4	906	83.7	298
Secondary+	74.4	1,001	91.6	490
<b>Wealth quintile</b>				
Lowest	33.3	536	59.0	232
Second	46.0	624	72.0	286
Middle	44.9	674	67.1	312
Fourth	54.8	764	78.9	347
Highest	72.0	948	90.3	360
Total	52.7	3,547	74.9	1,537

Knowledge of a source of condoms increases with increasing educational level and wealth index of both women and men. Women and men (19 and 39 percent, respectively) with no education are less likely to know a source of condoms than women and men (74 and 92 percent, respectively) who have at least some secondary education. The poorest women and men (33 and 59 percent, respectively) are least

likely to know of a source of condoms, compared with the richest women and men (72 and 90 percent, respectively).

## 12.16 CONDOM USE AT FIRST SEX AMONG YOUTH

Table 12.21 presents the percentage of youth age 15 to 24 years who used a condom during first sex by background characteristics. Only 12 percent of young women and 14 percent of young men used condoms during their first sexual encounter. Never-married women and men are more likely to use a condom the first time they ever have sex than ever-married young people. Similarly, urban women and men (17 and 20 percent, respectively) tend to use condoms at first sexual activity more than rural women and men (10 and 12 percent, respectively).

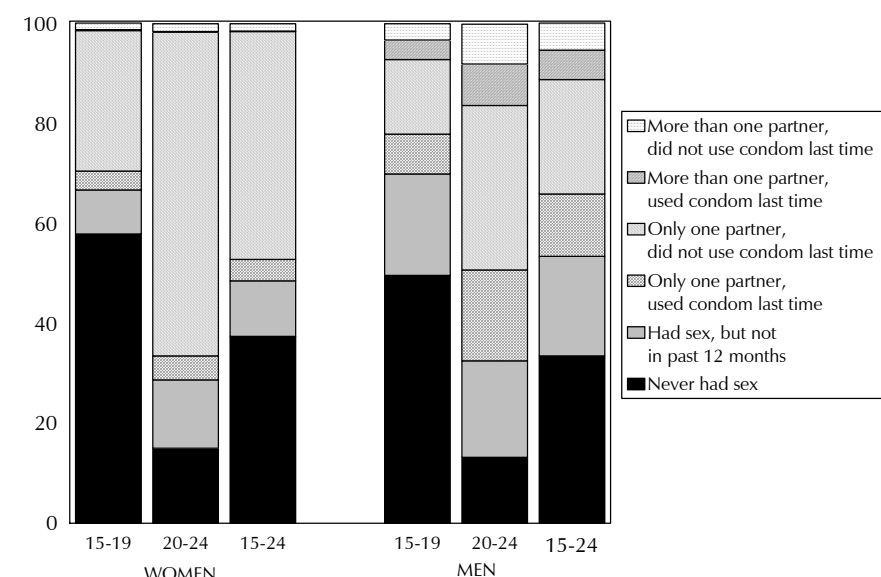
Table 12.21 Condom use at first sex among young women and men				
Among women and men age 15-24 who have ever had sex, percentage who used a condom the first time they had sex, by background characteristics, Kenya 2003				
Background characteristic	Women		Men	
	Used a condom at first sex	Number of women age 15-24 who have ever had sex	Used a condom at first sex	Number of men age 15-24 who have ever had sex
<b>Age</b>				
15-19	12.3	782	10.0	432
20-24	11.7	1,438	16.8	591
<b>Marital status</b>				
Never married	20.3	765	14.8	865
Ever married	7.5	1,455	9.2	158
<b>Residence</b>				
Urban	17.1	592	19.9	252
Rural	10.0	1,628	12.0	771
<b>Province</b>				
Nairobi	19.7	249	19.1	103
Central	11.4	248	20.1	127
Coast	8.7	165	21.8	64
Eastern	11.5	356	5.7	166
Nyanza	9.9	410	11.0	135
Rift Valley	12.5	496	12.3	305
Western	11.3	257	18.0	119
North Eastern	0.0	39	*	4
<b>Education</b>				
No education	1.3	188	12.3	32
Primary incomplete	7.2	832	9.0	419
Primary complete	12.7	676	13.1	223
Secondary+	22.2	523	20.5	349
<b>Wealth quintile</b>				
Lowest	3.5	343	12.4	147
Second	10.0	409	10.3	191
Middle	9.4	415	10.1	176
Fourth	12.8	450	13.7	245
Highest	19.1	603	20.2	263
Total	11.9	2,220	13.9	1,023
Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.				



Among women, condom use at first sex is highest among those in Nairobi Province and lowest in North Eastern province. Among men, it is highest in Coast Province, followed closely by Central and Nairobi Provinces. Level of education is strongly related to condom use at first sexual activity among women, rising from only 1 percent of young women with no education to 22 percent among those with some secondary education. Wealth index is also related to condom use at first sex among women, although the pattern is variable.

Figure 12.2 summarises data on the proportion of young people who fall into various categories of risk for HIV. For example, 37 percent of young women and 34 percent of young men age 15 to 24 have never had sex, while 11 and 20 percent, respectively, have had sex but not in the last 12 months. Four percent of women and 13 percent of men have had sex with only one partner in the 12 months prior to the survey and used a condom at the most recent sex. Moving up the scale of risk, 46 percent of women and 23 percent of men had sex with only one partner but did use condoms at the most recent sex. Less than 1 percent of women and 6 percent of men had sex with more than one partner in the last 12 months and used a condom the last time. Finally, 2 percent of women and 5 percent of men have had sex with more than one partner in the preceding 12 months and did not use condoms at the most recent sex. As expected, a much larger proportion of women and men in the younger age group (age 15 to 19) are at lower risk because they have not yet had sex. Among those age 20 to 24, a large majority of women and one-third of men have only one partner, with whom condom use is not common. Very few young women report having more than one partner, however, 16 percent of men age 20 to 24 report having had multiple partners.

**Figure 12.2 Abstinence, Being Faithful, and Using Condoms  
Among Young Women and Men**



Note: Refers to partners in the 12 months prior to the survey and condom use at most recent sexual encounter.

KDHS 2003

## 12.17 PREMARITAL SEX

The period between age at first sex and age at marriage is often a time of sexual experimentation. Unfortunately, in the era of HIV/AIDS, it can also be a risky time. Information is shown in Table 12.22 on the percentage of never-married women and men age 15 to 24 years who have had sex in the 12 months before the survey and the percentage who used condoms during last sex.

Table 12.22 Premarital sex and condom use among youth

Among never-married women and men age 15-24, percentage who have had sex in the last 12 months, and, among those who had premarital sex in the last 12 months, percentage who used a condom at last sex, by background characteristics, Kenya 2003

Background characteristic	Women				Men			
	Had sex in past 12 months	Number of never-married women age 15-24	Used condom at last sex	Number of women age 15-24 who had sex in the past 12 months	Had sex in past 12 months	Number of never-married men age 15-24	Used condom at last sex	Number of men age 15-24 who had sex in the past 12 months
<b>Age</b>								
15-19	17.6	1,478	24.7	260	28.8	839	41.1	241
20-24	30.8	612	30.5	188	58.9	540	52.3	318
<b>Residence</b>								
Urban	23.6	550	32.5	130	49.5	313	58.1	155
Rural	20.7	1,540	25.0	319	37.9	1,066	43.4	404
<b>Province</b>								
Nairobi	27.4	245	31.4	67	47.1	135	65.6	64
Central	18.1	315	15.0	57	30.8	220	27.4	68
Coast	16.1	137	(30.2)	22	46.2	86	59.0	40
Eastern	23.8	371	30.7	88	31.0	242	44.0	75
Nyanza	31.7	301	20.7	95	35.6	183	39.5	65
Rift Valley	16.4	415	(40.1)	68	58.9	318	51.6	187
Western	18.3	278	22.6	51	33.8	178	43.6	60
North Eastern	0.0	29	*	0	0.0	16	*	0
<b>Education</b>								
No education	1.9	76	*	1	35.8	46	*	17
Primary incomplete	17.8	796	21.3	142	35.7	619	40.2	221
Primary complete	31.4	475	20.7	149	47.6	260	50.0	124
Secondary+	21.0	743	38.9	156	43.6	453	54.6	197
<b>Wealth quintile</b>								
Lowest	17.9	268	(20.4)	48	36.0	194	47.2	70
Second	21.9	350	14.0	77	39.1	261	40.1	102
Middle	20.1	404	19.8	81	31.2	290	39.9	90
Fourth	20.7	480	28.9	99	41.4	311	49.5	128
Highest	24.4	588	39.4	144	52.0	324	54.5	168
Total	21.5	2,090	27.2	449	40.5	1,379	47.5	559

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Twenty-two percent of never-married women age 15 to 24 years indicate that they have had sex in the 12 months before the survey compared with 41 percent of men of the same age. About one-quarter of these women and half of the men reported having used condoms the most recent time they had sex.

As expected, premarital sex and condom use at last sex is higher among older respondents (age 20 to 24) than younger ones. Both are also higher among urban than rural youth. There are regional differentials in the percentage of never-married young people who have had sex in last 12 months. Among never-married women, those in Nyanza and Nairobi provinces are more likely to have had sex in the previous 12 months than other women. Among men, Rift Valley Province leads in the proportion of those who have had premarital sex. On the other hand, no never-married young women or men in North Eastern Province reported having had sex in the previous 12 months.

Fewer never-married young women and men with no education report having had sex in the last 12 months than those with some education. Level of education is also associated with condom use during sexual intercourse among youth. Women and men with at least some secondary education are more likely to use condoms during sex than those with less education. Wealth seems to have a mixed relationship with premarital sex and condom use.

## 12.18 HIGHER-RISK SEX AND CONDOM USE AMONG YOUTH

The most common means of transmission of HIV in Kenya is through unprotected sex with an infected person (Ministry of Health, 2001). To prevent HIV/AIDS virus transmission, it is important that young people practice safe sex through the most advocated “ABC” methods (abstinence, being faithful to one uninfected partner, and condom use). Table 12.23 indicates the percentage of young people who engage in higher-risk sex and the extent to which they use condoms in higher-risk sexual encounters (i.e., with nonmarital, noncohabiting partners). Among sexually active youths age 15 to 24 years, results show that the percentage of women and men who have engaged in higher-risk sex activity in the last 12 months is 30 and 84 percent, respectively. Men (47 percent) who engage in higher-risk sex are more likely to use condoms than women (25 percent).

Table 12.23 Higher-risk sex and condom use among young women and men

Among women and men age 15-24 who had sex in the 12 months preceding the survey, percentage who had sexual relations with a nonmarital, noncohabiting partner in the past 12 months, and among women and men age 15-24 who have had higher-risk sex in the past 12 months, percentage who say they used a condom the last time they had sex with a non-marital, non-cohabiting partner, by background characteristics, Kenya 2003

Background characteristic	Women				Men			
	Percentage engaging in higher-risk sex in past 12 months	Number of women who had sex in the past 12 months	Percentage used condom at last higher-risk sex	Number of women age 15-24 who had higher-risk sex in the past 12 months	Percentage engaging in higher-risk sex in past 12 months	Number of men who had sex in the past 12 months	Percentage used condom at last higher-risk sex	Number of men age 15-24 who had higher-risk sex in the past 12 months
<b>Age</b>								
15-19	46.7	619	23.4	289	97.1	258	41.3	250
20-24	21.4	1,207	27.6	258	77.2	459	50.7	355
<b>Marital status</b>								
Never married	100.0	449	27.2	449	99.8	559	47.6	558
Ever married	7.1	1,377	17.4	98	29.8	158	37.9	47
<b>Residence</b>								
Urban	32.5	475	32.4	154	85.0	195	58.2	166
Rural	29.1	1,351	22.6	393	84.1	522	42.6	439
<b>Province</b>								
Nairobi	36.8	200	30.6	74	87.7	77	66.3	68
Central	36.1	194	14.3	70	86.1	83	26.0	72
Coast	20.2	146	29.5	29	84.9	53	53.3	45
Eastern	35.3	284	29.4	100	80.1	97	42.7	78
Nyanza	36.4	354	17.0	129	74.0	101	38.0	75
Rift Valley	22.2	400	36.7	89	89.4	224	51.8	200
Western	26.2	213	24.5	56	87.6	77	44.9	68
North Eastern	0.0	35	*	0	*	4	*	0
<b>Education</b>								
No education	6.3	156	0.0	10	79.4	25	34.4	20
Primary incomplete	26.2	710	19.3	186	83.6	296	39.9	248
Primary complete	31.5	557	21.3	176	83.0	162	49.1	135
Secondary+	43.5	404	37.3	176	86.8	234	55.0	203
<b>Wealth quintile</b>								
Lowest	21.4	294	15.6	63	77.3	108	44.6	83
Second	26.4	342	15.0	90	86.4	127	39.7	110
Middle	30.6	334	17.0	102	84.1	112	38.8	94
Fourth	35.1	366	26.2	128	85.8	165	48.2	142
Highest	33.4	491	39.4	164	85.8	205	55.6	176
Total	30.0	1,826	25.4	547	84.4	717	46.8	605

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

A higher proportion of young women (47 percent) age 15 to 19 engage in higher-risk sex than those age 20 to 24 (21 percent). Similarly, almost all sexually active young men (97 percent) age 15 to 19 engage in higher-risk sex, compared with those age 20 to 24 (77 percent). However, older women and men (age 20–24) are more likely than those age 15 to 19 to have used a condom when they had higher-risk sex.

By definition, all sexually active women and men who have never married engage in higher-risk sex. Those who have never married are more likely to use condoms during higher-risk sexual activity than ever-married women and men.

Differences in the extent of higher risk sex among youth by province are not large. Among those having higher-risk sex, women in Rift Valley Province are the most likely to use condoms, while those in Central Province are the least likely. Among men, Nairobi Province leads, while Central Province is the lowest.

Higher-risk sexual activity increases dramatically with education among sexually active young women, from 6 percent among those with no education to 44 percent among those with some secondary education; however, there is little difference among young men by education. Among both sexes who engage in higher-risk sex, condom use increases with level of education. Engaging in higher-risk sexual behaviour and especially condom use during higher-risk sex rises with increasing wealth index, although the differences are greater among young women than young men.

## **12.19 AGE-MIXING IN SEXUAL RELATIONSHIPS**

In many societies, young women have sexual relationships with men who are considerably older than they are. This practice can contribute to the wider spread of HIV and other STDs. To investigate this practice, in the 2003 KDHS, women age 15 to 19 who had sex in the 12 months preceding the survey with a nonmarital partner were asked whether the man was younger, about the same age, or older than they. If older, they were asked if they thought he was less than 10 years older or 10 or more years older.

The results show that only 4 percent of women age 15 to 19 have had nonmarital sex with a man 10 years or more older than themselves in the last 12 months (data not shown). Differences by background characteristics are small, especially since the number of cases is also small.

## **12.20 ORPHANHOOD AND CHILDREN'S LIVING ARRANGEMENTS**

Kenya has observed an upsurge in the number of orphans due to the higher deaths occasioned from HIV/AIDS related infections. The 2003 KDHS sought information on orphanhood and fostering. Table 12.24 shows the percent distribution of children under age 15, by children's living arrangements and survival status of parents, according to background characteristics.

Almost three in five children (58 percent) under age 15 live with both their parents, while 25 percent live with their mothers but not their fathers, 3 percent live with their fathers but not their mothers, and 11 percent do not live with either of their parents (i.e., they are considered to be “fostered”). The observed pattern has not changed much since the 1998 KDHS. Younger children and those in Nairobi Province are more likely than other children to be living with both their natural parents.

Data on orphaned children (i.e., children under 15 who have lost either one or both of their natural parents) show that 9 percent have lost their fathers, 4 percent have lost their mothers, and 2 percent have lost both of their biological parents. Altogether, 11 percent of children under 15 have lost one or both parents (i.e., they are considered orphans). Corresponding data from the 1998 KDHS show a slight increase in the level of orphanhood, from 9 to 11 percent of children under 15.

Nyanza Province has by far the highest level of orphanhood, with almost one in five (19 percent) children under 15 having lost one or both of their biological parents.

Orphans are usually considered to be disadvantaged compared with children whose parents are living. To assess whether orphans are educationally disadvantaged, an indicator was devised that compares the proportion of children age 10 to 14 who are attending school among those whose parents are both dead to those whose parents are both alive and who are living with one of them. The results indicate that 92 percent of children whose parents are both alive and who are living with one or both parents are in school compared with 88 percent of children who have lost both parents ("double orphaned"). The ratio of school attendance among orphaned to non-orphaned children is 0.95 (data not shown). This implies that orphans have only a slight disadvantage in school attendance compared with children who are living with one or both parents. Interpretation of this index by background characteristics is hampered by small numbers of orphans in many categories.

Table 12.24 Children's living arrangements and orphanhood

Percent distribution of de jure children under age 15, by children's living arrangements and survival status of parents, according to background characteristics, Kenya 2003

Background characteristic	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent				Missing information on father/mother	Total	Number of children
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Only father alive	Only mother alive	Both dead			
<b>Age</b>												
<2	68.5	26.0	2.1	0.2	0.0	0.5	0.1	0.2	0.1	2.3	100.0	2,433
2-4	65.2	20.3	4.0	1.2	0.5	4.5	0.7	0.6	0.9	2.2	100.0	3,443
5-9	56.7	18.9	6.4	2.3	1.2	7.5	0.6	1.6	2.3	2.5	100.0	5,348
10-14	50.6	16.5	8.3	3.1	1.8	9.6	0.9	2.1	3.7	3.5	100.0	5,304
<b>Sex</b>												
Male	58.7	19.5	5.8	2.2	1.0	6.2	0.6	1.2	2.3	2.5	100.0	8,372
Female	57.8	19.5	5.9	1.8	1.2	6.9	0.7	1.5	1.9	3.0	100.0	8,154
<b>Residence</b>												
Urban	60.5	18.2	4.8	2.4	2.0	4.9	0.8	1.4	2.0	2.9	100.0	2,609
Rural	57.8	19.7	6.0	1.9	0.9	6.8	0.6	1.3	2.1	2.7	100.0	13,918
<b>Province</b>												
Nairobi	71.5	12.8	2.7	1.8	1.8	4.6	0.6	0.9	1.0	2.4	100.0	781
Central	58.2	20.1	7.1	1.1	1.0	2.9	0.3	1.9	1.1	6.4	100.0	1,960
Coast	58.6	19.9	5.6	3.8	1.1	6.1	1.2	1.1	1.1	1.6	100.0	1,338
Eastern	51.3	27.3	4.9	2.5	1.0	5.7	0.4	1.0	2.0	4.0	100.0	2,806
Nyanza	55.9	16.7	8.2	1.4	1.4	6.0	0.9	2.0	6.0	1.5	100.0	2,614
Rift Valley	63.3	16.7	5.8	1.9	1.1	6.8	0.6	1.0	1.1	1.7	100.0	4,326
Western	52.8	21.5	4.6	2.2	0.6	11.9	0.4	1.7	1.8	2.5	100.0	2,113
North Eastern	65.8	13.1	5.2	2.7	1.7	6.9	1.9	1.2	1.0	0.4	100.0	588
<b>Wealth quintile</b>												
Lowest	64.4	15.3	6.7	1.5	1.2	5.6	0.8	1.1	1.9	1.6	100.0	3,981
Second	55.2	20.7	7.2	2.0	0.5	7.7	0.8	1.2	1.8	2.8	100.0	3,558
Middle	55.3	21.9	5.6	1.9	1.0	6.9	0.4	1.4	2.7	2.9	100.0	3,397
Fourth	53.5	22.5	4.5	2.1	1.0	7.1	0.6	2.0	2.6	4.2	100.0	3,080
Highest	62.7	17.4	4.5	2.9	2.0	5.1	0.6	1.1	1.6	2.2	100.0	2,511
<b>Total</b>	58.2	19.5	5.8	2.0	1.1	6.5	0.6	1.3	2.1	2.7	100.0	16,527

## HIV PREVALENCE AND ASSOCIATED FACTORS

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This chapter presents information on the coverage of HIV testing among those eligible, the prevalence of HIV in the respondents, and the factors associated with HIV infection in the population. As described in Chapter 1, the 2003 KDHS is the fourth survey in the international DHS program to include HIV testing, and the first to anonymously link the HIV results with key behavioural, social and demographic factors. The HIV prevalence data provide important information to plan the national response, to evaluate programme impact, and to measure progress on the National HIV/AIDS Strategic Plan 2000-2005. The understanding of the distribution of HIV within the population and the analysis of social, biological and behavioural factors associated with HIV infection offer new insights about the HIV epidemic in Kenya that may lead to more precisely targeted messages and interventions.

In Kenya, as in most of sub-Saharan Africa, national HIV prevalence estimates have been derived primarily from sentinel surveillance in pregnant women. Currently, the national sentinel surveillance system consists of 42 sites in government and mission health facilities selected to represent the different groups, regions, and rural and urban populations in the country. For three months each year since 1990, pregnant women registering their first visit to these antenatal clinics (ANCs) and patients with sexually transmitted diseases in the sentinel sites have been anonymously tested for HIV and the results entered, analysed and reported by the National AIDS/STD Control Programme (NASCOP) (Ministry of Health, 2001). The latest round of sentinel surveillance was conducted between May and August 2003, during the same time period as the KDHS.

While the rate of HIV infection in pregnant women has been shown to be a reasonable proxy for the level in the combined male and female adult population in a number of settings (WHO and UNAIDS, 2000), there are several well recognized limitations in estimating the HIV rate in the general adult population from data derived exclusively from pregnant women attending selected antenatal clinics. First, the ANC data do not capture any information on HIV prevalence in non-pregnant women, nor in women who either do not attend a clinic for pregnancy care or receive antenatal care at facilities not represented in the surveillance system.<sup>1</sup> Pregnant women also are more at risk for HIV infection than women who may be avoiding both HIV and pregnancy through the use of condoms or women who are less sexually active and are therefore less likely to become pregnant or expose themselves to HIV. In addition, there may be biases in the ANC surveillance data because HIV infection reduces fertility and because knowledge of HIV status may influence fertility choices. Finally, the rates among pregnant women are not a good proxy for male HIV rates. For example, a WHO study of four cities in sub-Saharan Africa, including Kisumu in Kenya, demonstrated higher risk overall in women compared to men (Buve et al., 2001).

Thus, although the information from the ANC surveillance system has been very useful for monitoring trends in HIV levels in Kenya, the inclusion of HIV testing in the KDHS offers the opportunity to better understand the magnitude and patterns in the infection level in the general reproductive age population in Kenya. The KDHS results are in turn expected to improve the calibration of annual sentinel surveillance data, so that trends in HIV infection can be more accurately measured in the intervals between general population surveys.

<sup>1</sup> Nearly 90 percent of pregnant women in Kenya receive antenatal care; however, 21 percent attend dispensaries, which are not covered in the ANC surveillance system (Chapter 9).

## 13.1 COVERAGE OF HIV TESTING

Table 13.1 presents the coverage rates for HIV testing by the reason for not being tested according to gender and residence. HIV tests were conducted for 76 percent of the 4,303 eligible women and 70 percent of the 4,183 eligible men. For both sexes combined, coverage was 73 percent, with rural residents more likely to be tested than their urban counterparts (79 percent and 62 percent, respectively). There also were strong differences in HIV testing coverage rates by province. Among both sexes, Nyanza Province, which as discussed later in the chapter has the highest HIV rate among Kenya's provinces, had the highest rate of testing (89 percent), followed by Western (85 percent) and Rift Valley Province (78 percent). Central Province (67 percent) and Nairobi (52 percent) had the lowest testing rates. In every province, women were more likely to be tested than men.

Table 13.1 Coverage of HIV testing by sex and urban-rural residence

Percent distribution of women and men eligible for testing by testing status, according to sex and urban-rural residence, Kenya 2003 (unweighted)

	Residence		Province								
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Testing status											
WOMEN											
Tested	66.2	81.7	54.5	70.7	80.1	76.1	91.1	81.1	88.0	75.6	76.3
Refused	19.2	11.9	21.5	18.8	14.5	15.1	5.4	11.7	8.7	19.9	14.4
Absent for testing	10.6	3.5	19.5	5.1	3.3	4.6	1.9	3.1	2.4	4.5	6.0
Interviewed in survey	5.9	1.7	11.8	3.0	0.8	2.2	1.4	1.3	1.0	0.0	3.1
Not interviewed	4.7	1.8	7.7	2.2	2.5	2.4	0.6	1.9	1.4	4.5	2.8
Other/missing	4.0	2.9	4.5	5.3	2.0	4.2	1.6	4.1	1.0	0.0	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,488	2,815	651	738	488	502	514	702	507	201	4,303
MEN											
Tested	58.4	76.7	50.2	62.9	66.2	74.5	87.1	75.7	82.7	74.9	70.3
Refused	16.5	11.2	15.3	16.2	21.4	14.0	3.3	10.0	9.9	13.8	13.0
Absent for testing	20.3	7.9	30.8	13.0	8.8	6.1	6.6	9.4	4.9	11.3	12.2
Interviewed in survey	5.8	2.6	9.8	5.4	3.8	2.8	0.8	1.5	1.1	0.5	3.7
Not interviewed	14.5	5.3	21.1	7.6	5.0	3.4	5.7	8.0	3.9	10.8	8.5
Other/missing	4.8	4.2	3.6	7.8	3.6	5.3	3.1	4.9	2.6	0.0	4.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,466	2,717	665	739	444	506	488	679	467	195	4,183
TOTAL											
Tested	62.3	79.3	52.4	66.8	73.5	75.3	89.1	78.4	85.4	75.3	73.4
Refused	17.8	11.5	18.4	17.5	17.8	14.6	4.4	10.9	9.2	16.9	13.7
Absent for testing	15.4	5.7	25.2	9.1	5.9	5.4	4.2	6.2	3.6	7.8	9.1
Interviewed in survey	5.9	2.1	10.8	4.2	2.3	2.5	1.1	1.4	1.0	0.3	3.4
Not interviewed	9.6	3.5	14.4	4.9	3.6	2.9	3.1	4.9	2.6	7.6	5.6
Other/missing	4.4	3.5	4.0	6.6	2.8	4.8	2.3	4.5	1.7	0.0	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	2,954	5,532	1,316	1,477	932	1,008	1,002	1,381	974	396	8,486

Based on the reason for nonresponse, individuals who were not tested are divided into four categories in Table 13.1:

- those who refused testing when asked for informed consent by the health worker (14 percent overall)

- those who were interviewed in the survey, but who were not at home when the health worker arrived for testing and were not found on callbacks (3 percent)
- those who were not at home for the testing and were never interviewed (6 percent), and
- those who were missing test results for some other reason, such as they were incapable of giving consent for testing, there was a mismatch between the questionnaire and the blood sample, or there was a technical problem in taking blood (4 percent).

Refusal is the most important reason for non-response on the HIV testing component among both women and men. Among men, absence accounts for almost as much non-response as refusal, while it is less important among women. The fact that some respondents were interviewed but not subsequently contacted by the health worker is partly due to having only one health worker per team, which contributed to delays in the time of arrival of the health worker after the interview.

The proportions falling into the four non-response categories vary markedly by urban-rural residence. Refusal rates are higher among urban women and men (19 percent for women and 17 percent for men) than among their rural counterparts (12 percent for women and 11 percent for men). Absence was the main reason for non-response among urban men. Fifteen percent of urban men were not interviewed nor tested, compared with 5 percent of urban women, while in rural areas, only 5 percent of men and 2 percent of women were neither interviewed nor tested. Similarly, higher proportions of urban women and men (6 percent among both sexes) were interviewed but were not at home when the health worker visited to collect the blood sample, compared to rural residents (2 percent of women and 3 percent of men).

Looking at the provincial patterns, Nairobi had the highest rate of refusal in women (22 percent), the highest proportions absent for the interview (8 percent of women and 21 percent of men), and the highest level of those interviewed but absent for testing (12 percent of women and 10 percent of men). Nyanza had the lowest rates of refusal among both women (5 percent) and men (3 percent). Nyanza also had the lowest proportions of women absent for testing (under 2 percent), while men were least likely to be absent in Western (5 percent) and Eastern (6 percent) provinces.

Table 13.2 shows coverage rates for HIV testing by age group, education and wealth. If HIV status influenced participation in the testing, coverage would be expected to rise with age since HIV levels increase sharply with age before leveling off or declining at the older ages. In fact, the coverage rate for testing among women is consistent across all age groups (range 74 percent to 79 percent). Response rates are somewhat more variable by age among men (range between 64 percent and 76 percent), but again they do not rise with age as would be expected if they were influenced by HIV status.

Those with an incomplete primary education are the most likely to have been tested, while men and women with at least some secondary education were least likely to be tested. Similarly, those in the highest quintile of the wealth index were the least likely to be tested and had the highest levels of refusal (18 percent of women and 13 percent of men), absent after interview (6 percent for both men and women), and absent and not interviewed (5 percent of women and 15 percent of men).

In order to further explore whether nonresponse might have an impact on the HIV seroprevalence results, an analysis also was undertaken of the relationships between participation in the HIV testing and a number of other characteristics related to HIV risk. The descriptive tables which were examined in that analysis are included in Appendix A.



Table 13.2 Coverage of HIV testing by age, education, and wealth quintile

Percent distribution of women and men eligible for HIV testing by testing status, by age, education, and wealth quintile, Kenya 2003 (un-weighted)

Age, education, and wealth quintile	Testing status								Total	Number
	Tested		Refused		Absent		Other/missing			
	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed		
WOMEN										
Age										
15-19	75.1	0.2	13.4	1.2	3.8	3.4	1.6	1.2	100.0	975
20-24	77.2	0.5	11.7	1.7	2.4	2.3	2.4	1.9	100.0	886
25-29	76.1	0.3	11.2	1.7	3.4	3.3	2.4	1.6	100.0	704
30-34	76.1	0.5	13.3	0.8	4.0	1.3	2.1	1.9	100.0	618
35-39	78.9	0.0	11.8	1.8	1.8	3.5	1.3	0.9	100.0	451
40-44	74.2	0.0	15.7	1.5	2.8	3.5	1.0	1.3	100.0	395
45-49	73.7	0.4	16.8	1.8	3.3	2.9	0.4	0.7	100.0	274
Education										
No education	74.5	1.0	15.1	1.6	1.6	2.6	1.0	2.6	100.0	689
Primary incomplete	81.4	0.2	10.8	1.2	2.1	1.4	1.7	1.1	100.0	1,259
Primary complete	76.7	0.2	13.7	1.3	3.7	1.7	1.5	1.1	100.0	993
Secondary+	72.0	0.0	13.4	1.5	4.4	5.0	2.5	1.3	100.0	1,352
Wealth quintile										
Lowest	84.3	0.6	10.0	0.2	0.9	2.1	0.9	1.1	100.0	661
Second	86.6	0.4	8.7	0.4	0.4	1.0	0.7	1.6	100.0	677
Middle	81.7	0.5	10.2	0.7	1.9	1.6	1.6	1.6	100.0	732
Fourth	77.9	0.1	12.4	1.6	3.2	1.6	2.1	1.2	100.0	822
Highest	63.2	0.0	18.1	2.9	6.1	5.4	2.7	1.6	100.0	1,411
Total	76.1	0.3	12.9	1.5	3.1	2.8	1.8	1.5	100.0	4,303
MEN										
Age										
15-19	75.5	0.4	8.2	1.8	3.8	6.0	1.8	2.4	100.0	928
20-24	67.4	0.1	12.0	3.2	3.7	8.0	2.1	3.5	100.0	791
25-29	64.2	0.6	11.5	3.0	3.3	11.9	1.7	3.8	100.0	637
30-34	68.8	1.4	8.8	2.9	3.5	11.7	1.0	1.9	100.0	513
35-39	68.3	0.7	10.9	2.7	5.8	7.8	1.6	2.4	100.0	451
40-44	69.9	0.8	13.8	1.4	2.2	8.0	0.8	3.0	100.0	362
45-49	68.9	0.4	12.0	2.5	3.3	10.4	1.2	1.2	100.0	241
50-54	74.6	0.4	8.5	2.7	4.2	4.6	1.2	3.8	100.0	260
Education										
No education	69.3	0.8	10.7	2.5	2.0	7.3	1.4	5.9	100.0	355
Primary incomplete	75.1	0.7	8.9	2.1	3.0	6.2	1.8	2.2	100.0	1,250
Primary complete	70.2	0.2	10.9	3.5	3.9	7.5	1.6	2.2	100.0	939
Secondary+	65.9	0.6	11.6	2.0	4.5	10.9	1.5	2.9	100.0	1,627
Wealth quintile										
Lowest	79.5	0.8	9.1	2.2	1.2	4.7	0.8	1.7	100.0	596
Second	79.3	1.1	7.1	1.0	1.4	5.6	1.3	3.2	100.0	624
Middle	74.1	0.3	9.0	3.0	3.1	6.4	1.3	2.8	100.0	703
Fourth	72.9	0.4	11.0	1.9	3.8	4.9	2.0	3.1	100.0	838
Highest	57.4	0.5	13.1	3.5	6.0	14.6	1.9	3.0	100.0	1,422
Total	69.7	0.6	10.5	2.5	3.7	8.5	1.6	2.8	100.0	4,183

Note: Total includes 10 women and 8 men not stated as to education.

The variation in response rates with these measures is again reassuring as coverage rates are frequently but not uniformly higher among those groups considered to be at higher risk for HIV (Tables A.3-A.6). For example, response rates are slightly higher among those who have ever had sex than among those who have not. Similarly, rates are higher among those in polygynous unions and lowest among those who are not currently in union. Among women, response rates are highest among those who are widowed, while among men they are highest among those who are divorced or separated. Coverage is higher among those who reported having had higher risk sex in the 12 months preceding the survey than among those who had sex but not higher risk sex and those who did not have sex at all in the prior 12 months. Among women, response rates are higher for the small number who report having multiple partners; however, coverage is lower among men with multiple partners.

Among men, the coverage rate for HIV testing is higher among uncircumcised than circumcised men. Since HIV prevalence is higher among uncircumcised men (see next section), the higher response rates in the former group again are reassuring. However, men who sleep away from home—a characteristic assumed to be related to higher HIV risk—have lower rates of testing: 75 percent in those who sleep away more than 5 times a month and 77 percent for those who stay away for more than one month at a time compared to 81 percent or more among who were never absent or absent less frequently.

Finally, in addition to the examination of the descriptive tables, a multivariate analysis of the determinants of non-response was conducted (ORC Macro, 2004). The results of that analysis confirm that eligible respondents who were not tested for HIV did not differ in meaningful ways from those tested. In fact, adjusted prevalence based on the regression analysis would lower prevalence among both women and men by a fraction of one percent because those not tested have slightly lower behavioural and socio-demographic risks for HIV.

In summary, the initial descriptive and multivariate examinations of the HIV testing coverage levels provided no evidence of a consistent relationship between non-response rate and variables associated with higher HIV risk. Although further analysis is required, this analysis supports the conclusion that the KDHS prevalence rates are a reasonable measure of the actual levels of HIV prevalence in the population.

## **13.2 HIV PREVALENCE**

### **HIV Prevalence by Socioeconomic Characteristics**

Results from the 2003 KDHS indicate that 7 percent of Kenyan adults are infected with HIV. (Table 13.3). HIV prevalence in women age 15-49 is nearly 9 percent, while for men 15-54, it is under 5 percent. This female-to-male ratio of 1.9 to 1 is higher than that found in most population-based studies in Africa and implies that young women are particularly vulnerable to HIV infection compared with young men. Figure 13.1 shows, for example, that 3 percent of women age 15-19 are HIV infected, compared with less than half of one percent of men 15-19, while HIV prevalence among women 20-24 is over three times that of men in the same age group (9 percent and 2 percent, respectively). The peak prevalence among women is at age 25-29 (13 percent), while prevalence rises gradually with age among men to peak at age 40-44 (9 percent). Only in the 45-49 year age group is HIV prevalence among men (5 percent) higher than that for women (4 percent).

Since few HIV infected children survive into their teenage years, infected youth represent more recent cases of HIV infection and serve as an important indicator for detecting trends in both prevalence and incidence. Overall, prevalence among women age 15-24 in the KDHS is 6 percent, compared with slightly over 1 percent among men, for an overall prevalence in youth of under 4 percent. These prevalence levels will provide a baseline for measuring progress toward the goals of the National HIV/AIDS Strategic Plan in future surveys.

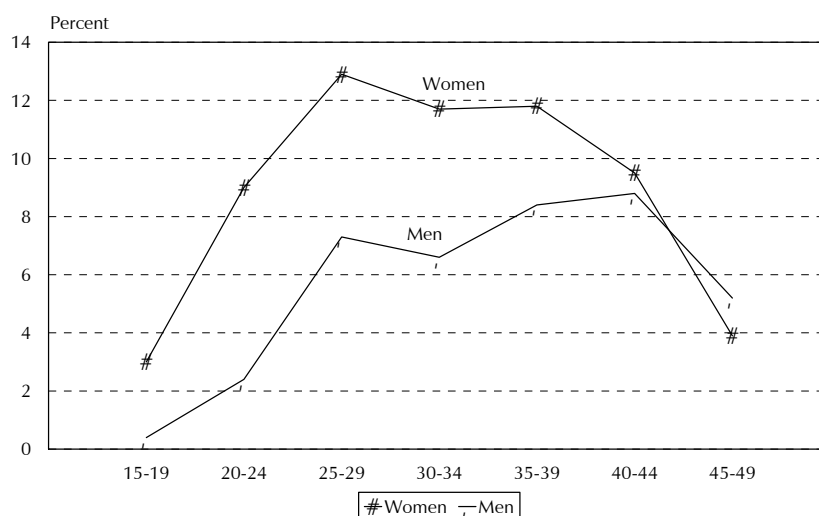
Table 13.3 HIV prevalence by age

Percentage HIV positive among women age 15-49 and men age 15-54 who were tested, by age, Kenya 2003

Age	Women		Men		Total	
	Percent HIV positive	Number	Percent HIV positive	Number	Percent HIV positive	Number
15-19	3.0	711	0.4	745	1.6	1,456
20-24	9.0	658	2.4	566	6.0	1,224
25-29	12.9	522	7.3	428	10.4	950
30-34	11.7	438	6.6	368	9.4	806
35-39	11.8	345	8.4	321	10.1	666
40-44	9.5	276	8.8	260	9.1	535
45-49	3.9	202	5.2	163	4.4	364
50-54	na	na	5.7	193	na	na
Total age 15-49	8.7	3,151	4.6	2,851	6.7	6,001
Total age 15-54	na	na	4.6	3,043	na	na

na = Not applicable

Figure 13.1 HIV Prevalence by Age Group and Sex



KDHS 2003

As Table 13.4 shows, urban residents have a significantly higher risk of HIV infection (10 percent) than rural residents (6 percent). Prevalence in urban women is 12 percent compared with less than 8 percent for rural women, for a 1.6 urban-rural relative risk of HIV infection. For men, the risk associated with urban residence is even greater; urban men are twice as likely to be infected as rural men (8 percent and 4 percent, respectively). Since 80 percent of Kenya's population is categorised as rural, however, the greatest burden of HIV infection is in the rural population.

The HIV epidemic shows regional heterogeneity. Nyanza Province has an overall prevalence of 15 percent, followed by Nairobi with 10 percent. All other provinces have levels between 4 percent and 6 percent overall, except North Eastern where no respondent tested positive, indicating that the rate is very low in this province. Gender differences persist in all the regions.

Table 13.4 HIV prevalence by selected socioeconomic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, by socioeconomic characteristics, Kenya 2003

Socioeconomic characteristic	Women		Men		Total	
	Percent HIV positive	Number	Percent HIV positive	Number	Percent HIV positive	Number
<b>Residence</b>						
Urban	12.3	779	7.5	716	10.0	1,495
Rural	7.5	2,372	3.6	2,135	5.6	4,507
<b>Province</b>						
Nairobi	11.9	332	7.8	314	9.9	646
Central	7.6	462	2.0	438	4.9	900
Coast	6.6	236	4.8	197	5.8	433
Eastern	6.1	514	1.5	464	4.0	978
Nyanza	18.3	432	11.6	376	15.1	808
Rift Valley	6.9	747	3.6	691	5.3	1,438
Western	5.8	368	3.8	323	4.9	690
North Eastern	0.0	60	0.0	48	0.0	108
<b>Education</b>						
No education	4.4	396	2.7	156	3.9	552
Primary incomplete	9.3	1,052	3.4	982	6.4	2,034
Primary complete	10.6	784	5.9	660	8.5	1,444
Secondary+	8.2	918	5.2	1,053	6.6	1,972
<b>Employment</b>						
Currently working	9.6	1,844	5.9	2,007	7.6	3,851
Not currently working	7.4	1,307	1.5	844	5.1	2,151
<b>Wealth quintile</b>						
Lowest	3.9	505	3.4	431	3.6	937
Second	8.5	580	4.2	501	6.5	1,082
Middle	7.1	597	2.2	528	4.8	1,125
Fourth	9.7	663	4.3	624	7.1	1,287
Highest	12.2	806	7.3	765	9.8	1,571
<b>Ethnicity</b>						
Embu	(2.8)	37	(3.7)	37	3.3	73
Kalenjin	4.9	346	2.0	366	3.4	712
Kamba	8.6	392	1.6	334	5.4	726
Kikuyu	6.6	742	2.8	621	4.9	1,363
Kisii	7.4	171	0.5	163	4.0	334
Luhya	7.9	481	5.1	438	6.6	919
Luo	25.8	361	17.5	341	21.8	702
Maasai	2.8	76	2.2	56	2.5	132
Meru	6.1	172	1.2	165	3.7	337
Mijikenda/Swahili	3.8	137	3.0	116	3.5	254
Somali	0.9	100	1.8	77	1.3	177
Taita/Taveta	11.7	41	7.1	30	9.7	71
Turkana	6.5	39	5.1	45	5.7	84
Kuria	*	19	(5.2)	21	2.7	40
Other	6.7	38	5.6	41	6.1	79
<b>Religion</b>						
Roman Catholic	8.9	800	4.9	756	6.9	1,556
Protestant/Other Christian	9.2	2,087	4.5	1,729	7.0	3,816
Muslim	2.7	204	3.1	175	2.9	378
No religion	11.1	52	5.5	185	6.7	237
<b>Total</b>	<b>8.7</b>	<b>3,151</b>	<b>4.6</b>	<b>2,851</b>	<b>6.7</b>	<b>6,001</b>

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

na = Not applicable

Those who have completed primary school have higher infection levels than those with either less or more education. Work status is related to the HIV rate among both women and men. Ten percent of currently working women and 6 percent of currently working men are HIV infected, compared with 7 percent of women and 2 percent of men currently not working. Those in the highest quintile of the wealth index have the highest rates of HIV infection.

HIV prevalence is substantially higher among the Luo ethnic group than other groups. More than one in four Luo women and 18 percent of men are HIV positive. The only other group with higher than average prevalence levels is Taita/Taveta. Women and men who identify themselves as Christian have rates similar to the national average for each gender, while Muslim women and men both have rates of 3 percent.

## HIV Prevalence by Other Sociodemographic Characteristics

As expected, marital status is related to HIV prevalence (Table 13.5). Women currently in a marital union have a prevalence of 8 percent, only slightly higher than the rate among men who are currently in union (7 percent). Women who are widowed, divorced, or separated have significantly higher rates (30 percent and 21 percent, respectively) than married women (8 percent).

Table 13.5 HIV prevalence by selected sociodemographic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, by marital status, pregnancy status for women, and mobility status for men, Kenya 2003

Sociodemographic characteristic	Women		Men		Total	
	Percent HIV positive	Number	Percent HIV positive	Number	Percent HIV positive	Number
<b>Marital status</b>						
Currently in union	8.0	1,897	7.0	1,353	7.6	3,250
Widowed	30.2	133	*	18	31.8	151
Divorced/separated	20.9	126	6.4	96	14.6	222
Never in union	5.6	995	1.6	1,384	3.2	2,378
Ever had sex	9.9	480	1.9	932	4.6	1,413
Never had sex	1.6	515	0.9	451	1.3	966
<b>Type of union</b>						
In polygynous union	11.4	326	11.9	126	11.6	452
Not in polygynous union	7.2	1,571	6.5	1,227	6.9	2,798
Not currently in union	9.8	1,254	2.4	1,498	5.7	2,752
<b>Currently pregnant</b>						
Pregnant	7.3	260	na	na	na	na
Not pregnant/not sure	8.8	2,891	na	na	na	na
<b>Numbers of times slept away</b>						
None	na	na	3.2	1,421	na	na
1-2	na	na	4.2	655	na	na
3-5	na	na	5.1	386	na	na
5+	na	na	9.3	373	na	na
<b>Away for more than one month</b>						
Away for more than 1 month	na	na	3.4	470	na	na
Away always less than 1 month	na	na	7.3	944	na	na
Never away	na	na	3.2	1,421	na	na
<b>Total</b>	<b>8.7</b>	<b>3,151</b>	<b>4.6</b>	<b>2,851</b>	<b>6.7</b>	<b>6,001</b>

Note: Total includes cases missing data on number of times slept away and whether away for more than one month. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. na = Not applicable

Women who report they ever had sex but have never been in a union have a higher risk than men in the same category (10 percent and 2 percent, respectively); this and the higher proportion of men who have never been in a union compared to women accounts for much of the overall female-male difference in prevalence. Around one percent of individuals who report they have never been in a union and have never had sex are also HIV-infected, suggesting either reporting errors in the sexual behaviour or non-sexual transmission of HIV.

Considering the type of current union, women in a polygynous union have a higher prevalence (11 percent) than those in non-polygynous unions (7 percent). Again the rates for men are similar (12 percent in polygynous unions and 7 percent for non-polygynous unions).

HIV prevalence among women who are currently pregnant is 7 percent, providing a useful benchmark to compare with rates in pregnant women tested during sentinel surveillance.

The survey results show that men who sleep away from home more frequently have higher HIV prevalence, 9 percent for those who slept away from home five or more times in the previous 12 months compared with 3 percent for those who did not sleep away from home. Those who are away from home for short periods of time (always less than one month) have double the risk of HIV infection (7 percent) than those who are never away and those who are away for more than one month at a time (3 percent for both groups).

## **HIV Prevalence by Sexual Risk Behaviour**

Table 13.6 examines the prevalence of HIV infection by sexual behaviour indicators among respondents who have ever had sexual intercourse. In reviewing these results, it is important to remember that responses about sexual risk behaviours may be subject to reporting bias. Also, sexual behaviour in the 12 months preceding the survey may not adequately reflect lifetime sexual risk.

For women, there is a clear pattern of higher HIV prevalence with earlier sexual debut. This pattern is not evident among men, who have a prevalence of 5 to 6 percent regardless of age at first sex.

Young women (15-24 years) whose first sex was with a man ten or more years older have a higher prevalence of HIV (10 percent) compared with those whose first partner was less than ten years older (8 percent). Women who said that a condom was used during their first sexual encounter have a higher prevalence of HIV (11 percent) than those who did not use a condom (8 percent). Among men, no significant difference in prevalence can be detected between those who used a condom at first sex and those who did not.

Seventeen percent of women who had a higher-risk sexual partner (a non-marital, non-cohabiting partner) are HIV-infected, compared with 8 percent of those who were sexually active but did not have a higher risk partner. In contrast, men reporting a higher-risk partner in the last year have a lower HIV prevalence, compared with sexually active men who did not have a higher-risk partner (5 percent and 7 percent, respectively). Among women reporting no sex in the last year, 11 percent are HIV-positive, compared with 2 percent of men reporting no sex in the last 12 months.

Among women, having more than one partner and having more than one higher-risk partner in the preceding 12 months are associated with higher HIV prevalence. Among men, however, these variables are not consistently related to HIV prevalence. Women who exchanged sex for money, gifts, or favours in the last 12 months have a slightly higher HIV infection level than those who have not (11 percent and 10 percent, respectively). Among men, those who paid for sex prior to the 12 months preceding the survey have higher HIV prevalence (8 percent) than either those who have never paid for sex (5 percent) and, surprisingly, those who paid for sex in the preceding 12 months (4 percent).

Table 13.6 HIV prevalence by sexual behaviour characteristics

Percentage HIV positive among women and men age 15-49 who ever had sex and were tested, by sexual behaviour characteristics, Kenya 2003

Sexual behaviour characteristic	Women		Men		Total	
	Percent HIV positive	Number	Percent HIV positive	Number	Percent HIV positive	Number
<b>Age at first sex</b>						
<15	12.4	940	5.1	1,143	8.4	2,083
16-17	9.3	648	5.2	457	7.6	1,106
18-19	9.7	515	4.8	436	7.5	951
20+	6.0	392	6.0	355	6.0	747
<b>First sexual partner was:<sup>1</sup></b>						
10 or more years older	10.4	66	na	na	na	na
Other/Doesn't know	7.7	681	na	na	na	na
<b>Condom use at first sex<sup>1</sup></b>						
Used at first sexual sex	10.7	93	0.0	108	4.9	201
Did not use at first sex	7.5	654	1.0	674	4.2	1,328
<b>Higher-risk sex in past 12 months</b>						
Had higher-risk sex	17.2	392	4.7	812	8.7	1,204
Had sex, not higher risk	8.3	1,833	6.7	1,213	7.7	3,046
No sex in past 12 months	11.1	411	1.9	374	6.7	785
<b>Number of partners in past 12 months</b>						
1	9.6	2,166	5.4	1,700	7.7	3,866
2	20.4	53	9.7	262	11.5	315
3+	*	6	3.3	64	5.3	70
<b>Number of higher-risk partners in past 12 months</b>						
1	15.7	361	4.8	632	8.7	993
2+	34.0	32	4.4	181	8.8	211
<b>Received money/gifts/favours for sex in past 12 months</b>						
Exchanged for sex	11.2	119	na	na	na	na
No exchange	9.8	2,106	na	na	na	na
<b>Paid for sex</b>						
In past 12 months	na	na	4.3	86	na	na
Prior to past 12 months	na	na	8.1	269	na	na
Never	na	na	4.9	2,045	na	na
<b>Condom use at last paid sex</b>						
Used	na	na	8.0	173	na	na
Did not use	na	na	6.4	181	na	na
<b>Any condom use</b>						
Ever used condom	12.9	410	5.0	1,230	7.0	1,640
Never used condom	9.5	2,226	5.5	1,170	8.1	3,396
<b>Condom use at last sex in past 12 months</b>						
Used condom at last sex	15.3	124	4.1	357	6.9	481
No condom at last sex	9.6	2,101	6.3	1,668	8.1	3,769
<b>Total</b>	<b>10.1</b>	<b>2,636</b>	<b>5.2</b>	<b>2,399</b>	<b>7.8</b>	<b>5,036</b>

Note: Totals include those with missing or inconsistent information on age at first sex. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

<sup>1</sup> Refers to those age 15-24 only.

na = Not applicable

The relationship between condom use and HIV infection is not uniform. Among women, any condom use and condom use at the most recent sexual encounter are associated with higher levels of HIV infection, while for men, condom use is associated with a lower level of infection. Women who know or suspect they or their partner might be infected would be more likely to use condoms, thus reversing the expected direction of the relationship of lower HIV prevalence among those who use condoms.

None of the results discussed above demonstrate a consistent relationship between HIV prevalence and sexual behavioural risk, particularly among men. However, more detailed analysis will be required to thoroughly examine these relationships since they may be complicated by other factors such as age, residence, and educational status that are associated with both the behavioral measures and HIV prevalence.

## HIV Prevalence by Other Characteristics Related to HIV Risk

Table 13.7 presents the variation in HIV prevalence with a number of other characteristics related to HIV risk among men and women who have ever had sex. As expected, women and men with a history of a sexually transmitted infection (STI) or STI symptoms have higher rates of HIV infection than those with none. Among women who reported ever drinking alcohol, HIV prevalence is 19 percent, compared with 9 percent among those who have never drunk alcohol. Differences for men are much smaller, with a prevalence of HIV of 6 percent among those who have drunk alcohol compared with 4 percent for those who have never drunk alcohol.

Characteristic	Women		Men		Total	
	Percent HIV positive	Number	Percent HIV positive	Number	Percent HIV positive	Number
<b>Sexually transmitted infection in past 12 months</b>						
Had STI or STI symptom	19.0	108	14.8	78	17.2	186
No STI, no symptoms	9.7	2,529	4.9	2,322	7.4	4,850
<b>Use of alcohol</b>						
Drank alcohol	18.8	334	6.1	1,353	8.6	1,687
Last month	18.5	145	6.4	808	8.2	953
Ever, not in past month	18.9	189	5.7	545	9.1	734
Never drank alcohol	8.8	2,301	4.2	1,046	7.4	3,348
<b>Perceived risk of getting AIDS</b>						
No risk at all	7.0	764	4.3	728	5.7	1,492
Small risk	11.0	1,077	5.8	1,261	8.2	2,338
Moderate risk	11.0	487	4.6	284	8.6	771
Great risk	14.6	267	7.5	118	12.4	385
<b>HIV testing status</b>						
Ever tested	12.5	446	7.6	428	10.1	875
Never tested	9.7	2,155	4.8	1,965	7.4	4,119
Total	10.1	2,636	5.2	2,399	7.8	5,036

Note: Total includes 40 women and 6 men missing data on risk of getting AIDS



The relationship between perception of the risk of getting AIDS and actual HIV infection is not straightforward, especially among men. It is disconcerting to note that 7 percent of women and 4 percent of men who say they have no risk of getting AIDS are actually HIV positive.

Both women and men who have been tested for HIV in the past are more likely to be HIV infected than those who have never been tested. Among women who have ever had sex, the level of HIV infection is 13 percent among those who have ever been tested for HIV in the past, compared with 10 percent among those who have never been tested. Among men, 8 percent of those previously tested are HIV positive, compared with 5 percent of those who have never been tested.

Although the individual's HIV status is associated with prior HIV testing, the above results indicate that many individuals who are HIV positive have not been tested. Overall, four out of five of those infected with HIV (82 percent of infected women and 77 percent of infected men) do not know their HIV status, either because they were never tested or because they were tested and did not receive their results (Table 13.8). For women, 18 percent of those who are HIV infected have been tested and know their results for their last test, compared to 13 percent of those who are HIV-negative. For men, there is a similar pattern; 23 percent of those who are HIV-infected know their results for their last test, compared with 14 percent of those who are HIV negative.

Table 13.8 HIV prevalence by prior HIV testing

Percent distribution of HIV positive and negative women and men age 15-49 by HIV testing status prior to the survey, Kenya 2003

HIV testing status	Women		Men	
	HIV positive	HIV negative	HIV positive	HIV negative
Ever tested and know results of last test	18.2	12.9	22.8	13.9
Ever tested, does not know results	2.6	1.4	2.2	1.5
Never tested	79.2	85.7	75.0	84.7
Total	100.0	100.0	100.0	100.0
Number	274	2,877	130	2,720

## HIV Prevalence and Male Circumcision

Lack of circumcision is considered a risk factor for HIV infection, in part because of physiological differences that increase the susceptibility to HIV infection among uncircumcised men. Several prior studies in Kenya have shown a significant relationship between male circumcision and HIV risk (Agot et al., 2004; Auvert et al., 2002; Baeten et al., 2002). The KDHS obtained information on male circumcision status, and these results can be used to examine the relationship between HIV prevalence and male circumcision status.

As Table 13.9 shows, the majority of Kenyan men (83 percent) are circumcised. However, the proportion circumcised varies with province and ethnicity, being markedly lower among men in Nyanza Province (46 percent), and among the Luo (17 percent).

Table 13.9 HIV prevalence by male circumcision

Among men age 15-54 who were tested for HIV, percentage who are circumcised and percentage HIV positive among circumcised and uncircumcised men, according to background characteristics, Kenya 2003

Background characteristic	All men tested for HIV		Circumcised men		Uncircumcised men	
	Percentage circumcised	Number of men tested	Percentage HIV positive	Number of circumcised men	Percentage HIV positive	Number of uncircumcised men
<b>Age</b>						
15-19	70.3	745	0.5	524	0.0	221
20-24	89.4	566	1.0	506	14.1	60
25-29	87.3	428	5.2	374	21.7	54
30-34	89.3	368	5.5	329	(16.1)	39
35-39	89.4	321	5.4	287	(33.7)	34
40-44	84.3	260	4.2	219	(33.2)	41
45-49	81.9	163	2.9	133	(15.2)	29
50-54	86.4	193	1.9	167	(29.5)	26
<b>Residence</b>						
Urban	82.2	763	5.4	627	16.9	136
Rural	83.8	2,280	2.3	1,911	11.0	369
<b>Province</b>						
Nairobi	80.0	336	6.6	269	13.5	67
Central	89.4	476	2.4	425	*	50
Coast	95.6	210	4.1	201	13.4	9
Eastern	96.1	502	1.6	482	*	20
Nyanza	46.4	408	2.1	189	21.1	218
Rift Valley	86.7	718	2.9	623	6.8	95
Western	86.8	339	3.9	295	1.9	45
North Eastern	100.0	55	0.0	55	*	0
<b>Education</b>						
No education	86.2	187	2.6	162	(0.0)	26
Primary incomplete	75.7	1,038	2.6	785	7.2	252
Primary complete	84.2	706	3.0	594	21.1	111
Secondary+	89.6	1,113	3.5	997	19.1	116
<b>Wealth quintile</b>						
Lowest	73.9	463	1.3	342	11.4	121
Second	82.9	531	2.8	440	9.6	91
Middle	88.9	558	1.3	496	11.8	62
Fourth	86.9	673	3.5	584	8.3	88
Highest	82.5	819	5.0	676	18.6	144
<b>Ethnicity</b>						
Embu	100.0	41	3.3	41	*	0
Kalenjin	90.3	379	2.1	342	(0.0)	37
Kamba	99.4	353	1.7	351	*	2
Kikuyu	92.7	669	3.0	620	0.0	49
Kisii	99.5	172	0.5	171	*	1
Luhya	92.8	460	5.6	427	(0.0)	33
Luo	16.9	367	9.8	62	20.1	305
Maasai	82.5	59	2.2	49	1.4	10
Meru	91.0	187	1.2	170	*	17
Mijikenda/Swahili	100.0	124	2.8	124	*	0
Somali	100.0	86	1.7	86	*	0
Taita/Taveta	96.9	30	7.3	29	*	1
Turkana	44.4	51	0.0	23	(8.1)	28
Kuria	77.3	22	6.2	17	*	5
<b>Religion</b>						
Roman Catholic	81.7	821	2.6	670	14.2	150
Protestant/other Christian	82.2	1,836	3.0	1,510	12.7	326
Muslim	100.0	188	2.9	188	*	0
No religion	86.4	192	5.6	166	(3.6)	26
<b>Total</b>	<b>83.4</b>	<b>3,043</b>	<b>3.0</b>	<b>2,538</b>	<b>12.6</b>	<b>505</b>

Note: Total includes cases with "other" and missing religion and ethnicity. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Looking at HIV prevalence levels by circumcision status, 13 percent of Kenyan men who are uncircumcised are HIV infected, compared with 3 percent of those who are circumcised. In Nyanza Province, men who are uncircumcised are ten times more likely to be HIV positive than men who are circumcised (21 and 2 percent, respectively). Multivariate analysis of these patterns is needed to obtain a better understanding of the role that the lack of male circumcision may be playing in the susceptibility to HIV infection in Kenya.

## **HIV Prevalence among Couples**

Over 1,000 cohabiting couples were both tested for HIV in the 2003 KDHS. Results shown in Table 13.10 indicate that, for 89 percent of cohabiting couples, both partners are HIV-negative while in 4 percent of couples, both partners are HIV positive. Seven percent of couples are discordant, that is, one partner is infected and the other not. The variation in the level of couple HIV infection by background characteristics generally conforms to the patterns observed with respect to the variation in individual seroprevalence rates, e.g., the infection rate is highest among couples in Nyanza Province.

Looking more specifically at discordant couples, among 3 percent of couples, the man is infected and the woman uninfected, while in 5 percent of couples, the woman is infected and the man is not. Discordance is more common among couples in which the woman is age 20-29 or the man age 20-39, couples whose union is polygynous, urban couples, and couples in Nyanza. The fact that there are twice as many couples that are discordant for HIV as couples that are both infected represents an unmet HIV prevention need for the country, since the vast majority of these couples do not mutually know their HIV status. Couple-oriented voluntary counselling and testing (VCT) services, where partners (including those in polygynous marriages) go together and receive results together, is available throughout the country, but few VCT clients attend as a couple.

## **HIV Prevalence among KDHS VCT Clients**

As described in the introductory chapter, voluntary counselling and testing (VCT) for HIV was provided to participants in the KDHS and others in the neighborhood (see Chapter 1). In all, 10,644 clients came voluntarily for information or counselling and 10,089 chose to be tested for HIV. Those who came for VCT were self-selected and are not, therefore, representative of the adult population as a whole. For example, two-thirds of those tested in the VCT component were men.

Among the 3,472 women who were part of the VCT component, 13 percent were HIV infected, compared with the national rate of 9 percent obtained for women 15-49 in the survey. The higher prevalence among the women who came for VCT compared with those tested in the KDHS is consistent with the KDHS finding that those who are HIV infected are more likely to learn their HIV status than those who are negative. Five percent of the 6,617 men who were tested in the VCT component were HIV positive, which is identical to the rate for men tested in the KDHS. The large number who came for the mobile VCT services is testimony to the desire for HIV testing and counselling, especially since the VCT component was mainly confined to rural areas, and for the importance of offering participants in surveys an opportunity to learn their HIV status.

Table 13.10 HIV prevalence among couples

Among cohabiting couples both of whom were tested, percent distribution by HIV test results, according to background characteristics, Kenya 2003

Background characteristic	Both partners HIV positive	Male partner positive, female partner negative	Female partner positive, male partner negative	Both partners HIV negative	Total	Number
<b>Woman's age</b>						
15-19	2.1	0.0	4.4	93.5	100.0	76
20-29	3.9	3.8	6.4	85.9	100.0	457
30-39	4.1	2.6	3.5	89.8	100.0	353
40-49	2.7	2.0	1.6	93.8	100.0	155
<b>Man's age</b>						
15-19	*	*	*	*	100.0	7
20-29	3.7	3.5	5.3	87.5	100.0	244
30-39	3.8	3.3	5.5	87.4	100.0	403
40-54	3.5	2.0	3.2	91.3	100.0	386
<b>Marital status</b>						
Married	3.3	3.1	4.4	89.2	100.0	948
Living together	7.7	0.5	6.0	85.8	100.0	92
<b>Type of union</b>						
Monogamous	3.1	3.1	3.9	89.9	100.0	913
Polygynous	7.5	1.4	9.0	82.1	100.0	128
<b>Residence</b>						
Urban	4.8	3.9	6.4	84.9	100.0	207
Rural	3.4	2.6	4.1	89.9	100.0	833
<b>Province</b>						
Nairobi	5.2	4.7	9.4	80.7	100.0	89
Central	1.6	2.1	1.4	94.9	100.0	134
Coast	1.1	3.5	8.8	86.6	100.0	71
Eastern	2.3	0.0	3.5	94.3	100.0	159
Nyanza	9.8	8.7	8.4	73.2	100.0	169
Rift Valley	2.8	0.6	2.8	93.8	100.0	275
Western	2.2	3.3	3.0	91.5	100.0	121
North Eastern	0.0	0.0	0.0	100.0	100.0	25
<b>Woman's education</b>						
No education	1.8	1.2	0.9	96.1	100.0	143
Primary incomplete	4.5	4.7	7.2	83.6	100.0	373
Primary complete	4.3	0.9	2.9	91.8	100.0	273
Secondary+	2.7	3.1	4.5	89.6	100.0	251
<b>Man's education</b>						
No education	1.7	1.0	1.4	95.9	100.0	94
Primary incomplete	2.7	2.4	4.8	90.1	100.0	289
Primary complete	5.4	2.7	4.4	87.6	100.0	261
Secondary+	3.7	3.8	5.3	87.3	100.0	397
<b>Wealth quintile</b>						
Lowest	2.3	2.2	3.5	91.9	100.0	210
Second	4.0	2.8	4.3	88.9	100.0	211
Middle	2.4	3.3	4.0	90.3	100.0	208
Fourth	2.8	1.5	5.7	90.0	100.0	203
Highest	6.6	4.4	5.3	83.6	100.0	209
Total	3.7	2.8	4.6	88.9	100.0	1,041

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

### 13.3 DISTRIBUTION OF THE HIV BURDEN IN KENYA

The inclusion of HIV testing in the KDHS provides the basis for a more precise estimate of the burden of HIV in Kenya and permits the calibration of estimates of HIV prevalence based on sentinel surveillance in pregnant women. Kenya has a heterogeneous HIV epidemic, with significant differences by region. Three provinces, containing half of Kenya's population, have 65 percent of the HIV infections: Nyanza Province with nearly one-third, Rift Valley with around one-fifth, and Nairobi with one-sixth of HIV infections in Kenya. Urban residents represent 25 percent of the population age 15-49, but nearly 40 percent of those HIV infected are urban residents. Higher educational level does not protect one from HIV infection in Kenya; HIV has spread through all regions and strata of society.

The linkage of biological and behavioural data in this survey has strengthened the validity of this survey by making multivariate analysis possible. The measurement of HIV prevalence in the KDHS has proven useful in calibrating HIV prevalence estimates of the general population from sentinel surveillance in pregnant women and has resulted in downward projections of the severity of the epidemic in Kenya. These adjustments arise from a better understanding of rural-urban population distribution, from a recognition that rural pregnant women who do not seek ANC care have lower rates than those who do, and, most importantly, from acknowledgement of the high ratio of 1.9 women infected for every man.

This linkage between HIV test results and demographic and behavioural data also enhances the understanding of the distribution, patterns, risk factors for HIV in Kenya, with the potential for improved planning and implementation of programs as a result of this information. The higher rate of HIV in uncircumcised men supports the need to evaluate possible causal links between male circumcision and HIV. Finally, the prevalence of couples that are discordant for HIV underscores the need for knowledge of both one's own HIV status and that of one's partner in order to prevent the continued spread of the HIV epidemic.

## ADULT AND MATERNAL MORTALITY

*Christopher Omolo and Paul Kizito*

This chapter presents information on overall adult mortality and maternal mortality in Kenya. Mortality levels and trends provide a good measure of the health status of the population and thus an indicator for national development. Studies have shown that improvement in economic performance and a decline in mortality follow similar trends.

Little is known about adult mortality in Kenya when compared with infant and child mortality, for a number of reasons. First, while early childhood mortality can be estimated through the birth history approach, there is no equivalent in adult mortality measurement. Second, death rates are much lower at adult ages than at childhood, and hence estimates for particular age groups can be distorted by sampling errors. Third, there is usually very limited information about the characteristics of those who have died. While the same can be said about data on childhood mortality, it is reasonable to expect the characteristics of parents to influence directly their children's chances of survival.

### 14.1 DATA

To estimate adult mortality, the 2003 KDHS included a sibling history in the Women's Questionnaire. A series of questions was asked about all of the respondent's brothers and sisters and their survival status. These data allow direct estimation of overall adult mortality (by age and sex) and maternal mortality.

Survival of siblings (i.e., biological brothers and sisters) is a useful method for collecting information on adult mortality. Each female respondent was asked to record a list of all children born to her biological mother, including herself. These included all siblings who were still alive and those who had died. For brothers and sisters who were alive, only the age at the last birthday was asked. For brothers who had died, only the number of years since death and age at death were asked. For sisters who had died at age 12 years or older, three questions were asked to determine whether the death was maternity related: "Was [NAME OF SISTER] pregnant when she died?" and, if negative, "Did she die during childbirth?" and, if negative, "Did she die within two months after the end of a pregnancy or childbirth?"

Adult and maternal mortality estimation by either direct or indirect methods requires accurate reporting of the number of siblings the respondent ever had, the number who died and the number of sisters who have died of maternal-related causes (for maternal mortality). Although there is no definitive procedure for establishing the completeness of retrospective data on sibling survivorship, Table 14.1 presents several indicators that can be used to measure the quality of sibling survivorship data.

The data do not show any obvious defects that would indicate poor data quality or significant underreporting. A total of 51,673 siblings was recorded in the maternal mortality section of the 2003 KDHS questionnaires. The sex ratio of the enumerated siblings (the ratio of brothers to sisters) is 1.03, which is the expected value. The survival status for only 21 (less than 1 percent) of the siblings was not reported. For the surviving siblings, current age was not reported for only 657 (less than 2 percent). Among deceased siblings, both the age at death and years since death were missing for 2 percent. Rather than exclude the siblings with missing data from further analysis, information on the birth order of siblings in

Table 14.1 Data on siblings						
Number of siblings reported by survey respondents and completeness of the reported data on age, age at death (AD), and years since death (YSD), Kenya 2003						
Sibling status and completeness of reporting	Females		Males		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
<b>All siblings</b>	25,508	100.0	26,165	100.0	51,673	100.0
Surviving	21,895	85.8	22,140	84.6	44,035	85.2
Deceased	3,603	14.1	4,014	15.3	7,617	14.7
Missing information	10	0.0	11	0.0	21	0.0
<b>Surviving siblings</b>	21,895	100.0	22,140	100.0	44,035	100.0
Age reported	21,591	98.6	21,787	98.4	43,378	98.5
Age missing	304	1.4	353	1.6	657	1.5
<b>Deceased siblings</b>	3,603	100.0	4,014	100.0	7,617	100.0
AD and YSD reported	3,417	94.8	3,722	92.7	7,139	93.7
Missing only AD	23	0.6	51	1.3	74	1.0
Missing only YSD	96	2.7	134	3.3	231	3.0
Missing both	67	1.9	107	2.7	173	2.3

conjunction with other information was used to impute the missing data.<sup>1</sup> The sibling survivorship data, including cases with imputed values, have been used in the direct estimation of adult and maternal mortality.

## 14.2 ESTIMATES OF ADULT MORTALITY

One way to assess the quality of data used to estimate maternal mortality is to evaluate the plausibility and stability of overall adult mortality. It is reasoned that if rates of overall adult mortality are implausible, rates based on a subset on deaths—maternal mortality in particular—are likely to have serious problems. Also, levels and trends in overall adult mortality have important implications in their own right for health and social programmes in Kenya, especially with regard to the potential impact of the AIDS epidemic.

The direct estimation of adult mortality uses the reported ages at death and years since death of respondents' brothers and sisters. Because of the differentials in exposure to the risk of dying, age- and sex-specific death rates are presented in this report. The results are also compared with rates obtained from the 1998 KDHS and the 1989 and 1999 population censuses. Since the number of deaths on which the KDHS rates are based is not very large (759 female deaths and 701 male deaths in 2003 and 529 female deaths and 500 male deaths in 1998), the estimated age-specific rates are subject to considerable sampling variation.

<sup>1</sup> The imputation procedure is based on the assumption that the reported birth order of siblings in the history is correct. The first step is to calculate birth dates. For each living sibling with a reported age and each dead sibling with complete information on both age at death and years since death, the birth date was calculated. For a sibling missing these data, a birth date was imputed within the range defined by the birth dates of the bracketing siblings. In the case of living siblings, an age at the time of the survey was then calculated from the imputed birth date. In the case of dead siblings, if either the age at death or years since death was reported, that information was combined with the birth date to produce the missing information. If both pieces of information were missing, the distribution of the ages at death for siblings for whom the years since death was unreported, but age at death was reported, was used as a basis for imputing the age at death.

Table 14.2 presents age-specific mortality rates for women and men age 15-49 for the seven-year period preceding the survey. The rates are stable, showing expected increases for both sexes with increasing age. For age group 15-34, female mortality exceeds male mortality, with a wider difference being observed at age group 25-29; the rates are nearly the same at age group 35-39. Above age 35, male mortality exceeds female mortality by wider margins as age advances.

A comparison of the 2003 KDHS and the 1998 KDHS rates indicates a substantial increase in adult mortality rates for both males and females at all ages, with the exception of men age 15-19.<sup>2</sup> The summary measure of mortality for age group 15-49 shows an increase of about 40 percent in female mortality rates and about 30 percent in male mortality rates from the 1998 KDHS rates. The overall mortality rates derived from the 2003 KDHS data are higher among females than males (6.6 and 6.2 deaths per 1,000 years of exposure, respectively), which is unusual since male mortality typically exceeds female mortality during these ages. However, AIDS is now a significant cause of death in Kenya, and its emergence has altered the age and sex pattern of mortality (see Chapter 13 for HIV prevalence rates by age and sex).

Figure 14.1 shows the age-specific mortality rates for males and females aged 15-49 for the 7-year period preceding the 1998 KDHS and the 2003 KDHS. Each series of rates in the figure is somewhat erratic, most probably because of sampling variability. As expected, the mortality rates rise as age advances. The rise is steeper for women at younger ages and steeper for men at older ages, probably because of the effects of HIV/AIDS. A comparison of the rates derived from the two KDHS surveys shows that the female mortality rates from the 2003 KDHS are higher than those derived from the 1998 KDHS, especially for those above age 20. The male rates based on the 2003 KDHS and 1998 KDHS are roughly the same at the younger ages, but the differences widen above age 25. Thus, the figure shows a sizeable rise in mortality rates for the more recent seven-year period (approximately 1996 to 2002), as compared with the earlier period (approximately 1991 to 1997).

Table 14.2 Adult mortality rates

Age-specific mortality rates for women and men age 15-49 based on the survivorship of sisters and brothers of survey respondents for the seven-year period preceding the survey, Kenya 2003

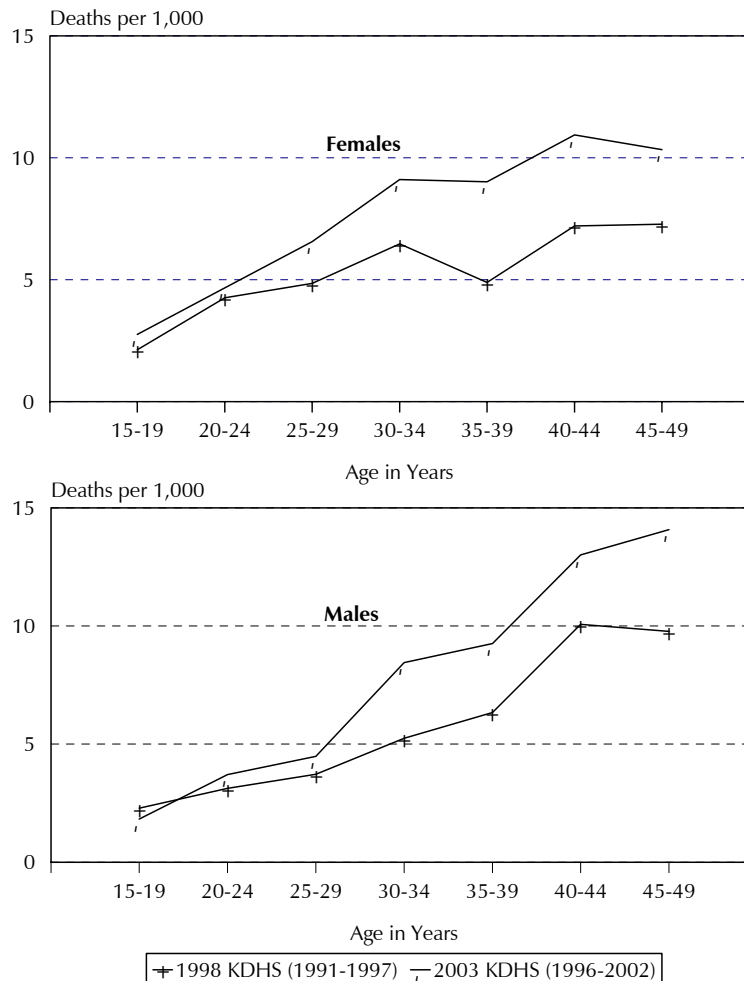
Age	Deaths	Exposure	Mortality rates
WOMEN			
15-19	65	23,470	2.76
20-24	117	25,091	4.67
25-29	148	22,601	6.56
30-34	166	18,221	9.11
35-39	119	13,248	9.02
40-44	92	8,428	10.94
45-49	51	4,912	10.34
15-49	759	115,971	6.57 <sup>a</sup>
MEN			
15-19	42	22,865	1.83
20-24	93	25,142	3.71
25-29	101	22,448	4.48
30-34	159	18,811	8.45
35-39	128	13,862	9.26
40-44	111	8,543	13.01
45-49	67	4,775	14.08
15-49	701	116,446	6.19 <sup>a</sup>

<sup>a</sup> Age standardised

<sup>2</sup> Exclusion of the northern part of Kenya from the 2003 KDHS data tends to increase the age-specific mortality rates very slightly from those reported in Table 14.2 but decreases the age-adjusted overall mortality very slightly.



**Figure 14.1 Trends in Adult Mortality, Kenya 1991-1997 and 1996-2002**



Note: Data refer to the seven-year period preceding the survey.

### 14.3 ESTIMATES OF MATERNAL MORTALITY

Two survey methods are generally used to estimate maternal mortality in developing countries: the sisterhood method (Graham et al., 1989) and a direct variant of the sisterhood method (Rutenberg and Sullivan, 1991). In this report, the direct estimation procedure is applied. Age-specific mortality rates are calculated by dividing the number of maternal deaths by woman-years of exposure. To remove the effect of truncation bias (the upper boundary for eligibility for women interviewed in the KDHS is 49 years), the report standardised the overall rate for women age 15-49 by the age distribution of the survey respondents. Maternal deaths are defined as any death that occurred during pregnancy, childbirth, or within two months after the birth or termination of a pregnancy.<sup>3</sup> Estimates of maternal mortality are therefore based solely on the timing of the death in relationship with pregnancy.

<sup>3</sup> This time-dependent definition includes all deaths that occurred during pregnancy and two months after pregnancy, even if the death was due to nonmaternal causes. However, this definition is unlikely to result in overreporting of maternal deaths because most deaths to women during the two-month period are due to maternal causes, and maternal deaths are more likely to be underreported than overreported.

Table 14.3 presents direct estimates of maternal mortality for the ten-year period preceding the survey. The data indicate that the rate of mortality associated with pregnancy and childbearing is 0.69 maternal deaths per 1,000 woman-years of exposure. The estimated age-specific mortality rates display a plausible pattern, being higher at the peak of childbearing ages of the twenties and thirties than at the younger and older age groups. Maternal deaths represent 15 percent of all deaths to women age 15-49 (115/759), a figure that is slightly more than half of the proportion found in the 1998 KDHS (27 percent) and lower than the level found in other Demographic and Health Surveys, except for Haiti and Indonesia (Stanton et al., 1997; Cayemittes et al., 2001; Badan Pusat Statistik and ORC Macro, 2003). The low proportion of maternal deaths could be due to an increase in nonmaternal deaths (e.g., AIDS-related deaths) or to underreporting of maternal deaths in the 2003 KDHS.

Table 14.3 Maternal mortality			
Maternal mortality rates for the ten-year period preceding the survey, based on the survivorship of sisters of survey respondents, Kenya 2003			
Age	Maternal deaths	Exposure (years)	Mortality rates (1,000)
15-19	12	34,536	0.34
20-24	29	35,037	0.82
25-29	26	30,744	0.84
30-34	27	24,133	1.10
35-39	17	17,016	1.00
40-44	3	10,610	0.32
45-49	1	5,794	0.25
Total 15-49	115	157,870	0.69 <sup>a</sup>
General fertility rate			0.166 <sup>a</sup>
Maternal mortality ratio <sup>b</sup>	-	-	414

<sup>a</sup> Age standardised  
<sup>b</sup> Per 100,000 births; calculated as maternal mortality rate divided by the general fertility rate

The maternal mortality rate can be converted to a maternal mortality ratio and expressed per 100,000 live births by dividing the rate by the general fertility rate of 0.166, which prevailed during the same time period. With this procedure, the maternal mortality ratio during the 10-year period before the survey is estimated as 414 maternal deaths per 100,000 live births. This figure should be viewed with caution, since the number of female deaths occurring during pregnancy, at delivery, or within two months of delivery is small (115). As a result, the maternal mortality estimates are subject to larger sampling errors than the adult mortality estimates; the 95 percent confidence intervals indicate that the maternal mortality ratio varies from 328 to 501 (see Appendix Table B.2).

At first glance, it would appear that the maternal mortality ratio has declined significantly over the last five years, from 590 maternal deaths per 100,000 live births for the ten-year period prior to the 1998 KDHS to 414 for the ten-year period before the 2003 KDHS (or 396, excluding the northern areas of Kenya). However, the methodology used and the sample size implemented in these two surveys do not allow for precise estimates of maternal mortality. The sampling errors around each of the estimates are large and, consequently, the two estimates are not significantly different; thus, it is impossible to say with confidence that maternal mortality has declined. A decline in the maternal mortality ratio is not supported by the trends in related indicators, such as antenatal care coverage, delivery in health facilities, and medical assistance at delivery, all of which have remained more or less stable over the last five years.

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## 15.1 INTRODUCTION

In recent years, there has been increasing concern about violence against women in general and domestic violence in particular, in both developed and developing countries. Not only has domestic violence against women been acknowledged worldwide as a violation of the basic human rights of women, but an increasing amount of research highlights the health burdens, intergenerational effects, and demographic consequences of such violence (United Nations General Assembly, 1991; Heise et al., 1994, 1998; Jejeebhoy, 1998). Gender-based violence occurs across all socioeconomic and cultural backgrounds, and in many societies, including Kenya, women are socialised to accept, tolerate, and even rationalise domestic violence and to remain silent about such experiences (Zimmerman, 1994). Violence of any kind has a serious impact on the economy of a country; because women bear the brunt of domestic violence, they bear the health and psychological burdens as well. Victims of domestic violence are abused inside what should be the most secure environment—their own homes.

To stop this violence, which sometimes causes great physical harm, death, psychological abuse, separation, divorce, and a host of other social ills, the Kenyan government has enacted the National Commission on Gender and Development Act of 2003 to help in the coordination and mainstreaming of gender concerns in national development. The Children Act of 2001 also classifies children exposed to domestic violence and female circumcision as children in need of care and protection.

## 15.2 DATA COLLECTION

Although gender-based violence is usually defined to include any physical, sexual, or psychological violence occurring not only in the family, but also within the general community (such as sexual harassment at the workplace and trafficking in women for prostitution), this survey only covers domestic violence occurring within the household. This was the first time in the history of Demographic and Health Surveys in Kenya that questions on domestic violence were included. Data on female genital cutting, however, were collected as part of the 1998 Kenya Demographic and Health Survey (KDHS).

There is a culture of silence surrounding gender-based violence, which makes collection of data on this sensitive topic particularly challenging. Even women who want to speak about their experiences of domestic violence may find it difficult because of feelings of shame or fear. The need for establishing rapport with the respondent and ensuring confidentiality and privacy during the interview are important for the entire survey, but are critical in ensuring the validity of the data on domestic violence. Complete privacy is also essential for ensuring the security of the respondent and the interviewer. Asking about or reporting violence, especially in households where the perpetrator may be present at the time of interview, carries the risk of further violence.

Given these concerns related to the collection of data on violence, organisers of the 2003 KDHS took the following steps to ensure the validity of the data and the security of respondents and interviewers:

- The module was specially designed to allow the interviewer to continue the interview only if privacy was ensured. If privacy could not be obtained, the interviewer was instructed to skip the module, thank the respondent, and end the interview. In Kenya, less than 2 percent of women selected for interview with the module could not be interviewed because of security considerations.
- Only one eligible woman in each selected household was administered the questions on domestic violence. In households with more than one eligible woman, the woman administered the module was randomly selected through a specially designed simple selection procedure. By interviewing only one woman in each household with the module, any security breach due to other persons in the household knowing that information on domestic violence was given was minimised.
- Informed consent of the respondent was obtained for the survey at the start of the individual interview. In addition, at the start of the domestic violence section, each respondent was read a statement informing her that she was now going to be asked questions that could be personal in nature because they explored different aspects of the relationship between couples. The statement assured her that her answers were completely confidential and would not be told to anyone else and that no one else in the household would be asked these questions.

Research on violence suggests that the most common form of domestic violence for adults is spousal violence. Thus, spousal violence was measured using a modified and greatly shortened Conflict Tactics Scale (CTS) (Strauss, 1990). The CTS scale has been found to be effective in measuring domestic violence and can be easily adapted for use in different cultural situations. In the 2003 KDHS, spousal violence was measured using the following set of questions:

Does/Did your (last) husband/partner ever—

- a) Push you, shake you, or throw something at you?
- b) Slap you or twist your arm?
- c) Punch you with his fist or with something that could hurt you?
- d) Kick you or drag you?
- e) Try to strangle you or burn you?
- f) Threaten you with a knife, gun, or other type of weapon?
- g) Attack you with a knife, gun, or other type of weapon?
- h) Physically force you to have sexual intercourse even when you did not want to?
- i) Force you to perform types of other sexual acts you did not want to?

The questions were asked with reference to the current husband for women currently married and the last husband for women not currently married. Women could answer with “yes” or “no” to each item, and in cases when the answer was “yes,” women were asked about the frequency of the act in the 12 months preceding the survey. A “yes” answer to one or more of items a to g constitutes evidence of physical violence, while a “yes” answer to items h or i constitutes evidence of sexual violence.

A similar approach was used to measure the prevalence of emotional violence. Respondents were asked the question—

Does/Did your last husband ever:

- a) Say or do something to humiliate you in front of others?
- b) Threaten you or someone close to you with harm?

Women could answer “yes” or “no” to each item, and for items they answered “yes” to, they were asked about frequency of occurrence in the 12 months preceding the survey.

This approach of asking separately about specific acts has the advantage of not being affected by different understandings of what constitutes violence. A woman has to say whether she has, for example, ever been slapped, not whether she has ever experienced any violence. All women would probably agree on what constitutes a slap, but what constitutes a violent act or is understood as violence may vary across women as it does across cultures. In fact, summary terms such as “abuse” or “violence” were avoided in training and not used at all in the title, design, or implementation of the module. This approach has the advantage of giving the respondent multiple opportunities to disclose any experience of violence and, if the different violent acts included in the list are chosen carefully, also allows the assessment of the severity of violence.

In addition to spousal violence, women were asked whether they had experienced violence at the hands of anyone other than their current or last husband: “From the time you were 15 years old, has anyone other than your (current/last) husband hit, slapped, kicked, or done anything else to hurt you physically?” Women who responded “yes” to this question were asked who had done this and the frequency of such violence during the 12 months preceding the survey.

Although this approach to questioning is widely considered to be optimal, the possibility of some underreporting of violence cannot be entirely ruled out in any survey. Caution should always be exercised in interpreting not only the overall prevalence of violence data, but also differentials in prevalence between subgroups of the population. Although a large part of any substantial difference in prevalence of violence between subgroups undoubtedly reflects actual differences in prevalence, differential underreporting by women in the different subgroups can also contribute to exaggerating or narrowing differences in prevalence to an unknown extent.

In the 2003 KDHS, men were not asked about their experience of violence because of security reasons. However, women were asked whether they had ever hit, slapped, kicked, or done anything else to physically hurt their husband or partner at any time when he was not already beating or physically hurting them. They were further asked whether their husband/partner drinks alcohol or takes illegal drugs, which is often associated with violence.

### **15.3 VIOLENCE SINCE AGE 15**

Table 15.1 shows the distribution of women who have experienced violence since age 15—ever and in the previous 12 months—by background characteristics. The data show that half of all women have experienced violence since they were 15 and one in four experienced violence in the 12 months preceding the survey.

The social and economic background of a woman has a bearing on her chances of experiencing domestic violence. Over half of all women in their thirties have experienced violence since age 15, with one-quarter experiencing violence in the 12 months preceding the survey. Those age 15-19 have the lowest proportion of women who ever experienced violence (42 percent).

Data from the 2003 KDHS imply that domestic violence may contribute to separation and divorce. Almost two-thirds (64 percent) of divorced or separated women report having experienced violence since age 15, compared with 53 percent of married women and 30 percent of those widowed. A surprisingly high proportion (40 percent) of women who have never been married report having experienced physical violence since age 15. Violence in the 12 months preceding the survey is high among currently married women, with three in ten reporting violence in the past year.

**Table 15.1 Experience of physical mistreatment**

Percentage of women who have experienced violence since age 15 and percentage who have experienced violence during the 12 months preceding the survey, by background characteristics, Kenya 2003

Background characteristic	Percentage who have experienced violence		Number of women
	Since age 15	In past 12 months	
<b>Age</b>			
15-19	41.8	26.3	1,335
20-29	49.8	25.1	2,197
30-39	53.0	26.2	1,424
40-49	49.4	21.8	922
<b>Marital status</b>			
In union	52.9	31.0	3,508
Separated/divorced	64.4	19.6	348
Widowed	29.5	2.9	260
Never married	40.1	17.7	1,762
<b>Residence</b>			
Urban	48.1	18.1	1,423
Rural	48.9	27.3	4,455
<b>Province</b>			
Nairobi	50.7	19.0	559
Central	44.0	16.6	838
Coast	30.2	13.8	481
Eastern	36.5	20.0	938
Nyanza	59.6	35.9	902
Rift Valley	46.4	28.1	1,369
Western	72.8	35.9	675
North Eastern	50.8	22.5	116
<b>Education</b>			
No education	43.9	24.5	736
Primary incomplete	53.8	33.8	1,933
Primary complete	46.3	24.9	1,445
Secondary+	47.0	15.9	1,765
<b>Employment status</b>			
Employed for cash	52.8	25.2	2,577
Employed, but not for cash	52.3	28.2	898
Not employed	43.0	23.9	2,401
<b>Wealth quintile</b>			
Lowest	51.9	31.5	986
Second	50.3	29.0	1,091
Middle	48.6	29.0	1,085
Fourth	46.0	22.3	1,218
Highest	47.7	17.5	1,499
Total	48.7	25.1	5,878

There is no urban-rural differential in the proportion of women who ever experienced violence since age 15, although recent violence is more prevalent among rural women. Women in Western Province are most likely to have experienced violence since age 15 (73 percent), followed by women in Nyanza Province (60 percent); women in Coast Province are least likely to have experienced violence (30 percent). Violence in the 12 months preceding the survey is highest in Nyanza and Western provinces (both 36 percent) and lowest in Coast Province (14 percent).

Experience of violence does not vary consistently with education level, except that women who have at least some secondary education are less likely to have experienced domestic violence in the preceding 12 months than less educated women. Women who are not employed (43 percent) are less likely to have experienced violence than those who are employed (52 to 53 percent). There is a slight negative relationship between domestic violence and the wealth quintile. Table 15.2 shows that the main perpetrators are husbands and, to a lesser extent, teachers, mothers, fathers, and brothers. It is notable that one-quarter of women who experienced physical violence since they were age 15 report teachers as the perpetrators.

#### 15.4 MARITAL VIOLENCE

Marital violence refers to violence perpetrated by partners in a marital union. Table 15.3 shows the percentage of married women, divorced or separated women who have ever experienced emotional, physical, or sexual violence by their current or last husband or partner, according to selected background characteristics. Note that the different types of violence are not mutually exclusive; therefore, women may report experiencing multiple forms of violence.

Twenty-six percent of ever-married women report having experienced emotional violence by husbands, 40 percent report physical violence, and 16 percent report sexual violence. Almost half (47 percent) of ever-married women report suffering emotional, physical, or sexual violence, while 8 percent have experienced all three forms of violence by their current or most recent husband.

The experience of all forms of spousal violence rises with age. The table further shows that divorced or separated women are most likely to have been abused emotionally, physically, and sexually, giving the impression that the violence might have been a factor in the termination of their marriages, though older age could also be a factor. On the other hand, women who are married and those who have no living children report less emotional, physical, and sexual violence, perhaps because they are more likely to be newly married and still in their courtship.

The relationship between education and spousal violence is not straightforward. Ever-married women with incomplete primary education are more likely than those with less or more education to report all three types of violence. Women who are employed, whether they are paid in cash or not, are more likely to have experienced spousal violence than unemployed women.

One might expect a correlation between spousal violence and poverty. However differences in spousal violence by wealth index are not strong; only the wealthiest women are less likely to experience violence from a husband or partner. It may seem that domestic violence is not related to socioeconomic status.

Table 15.2 Perpetrators of violence

Percentage of women who have experienced physical violence since age 15 and who report specific perpetrators, Kenya 2003

Perpetrator	Percentage
Husband	57.8
Mother	23.8
Father	14.5
Stepmother	0.7
Stepfather	0.3
Sister	2.3
Brother	8.2
Daughter	0.2
Son	0.1
Late/ex-partner	1.5
Current boyfriend	0.0
Former boyfriend	1.5
Mother-in-law	0.2
Father-in-law	0.1
Other female relative/in-law	0.9
Other male relative/in-law	2.6
Female friend/acquaintance	3.6
Male friend/acquaintance	1.4
Teacher	25.7
Employer	0.4
Stranger	1.7
Number of women	2,863

Table 15.3 Marital violence

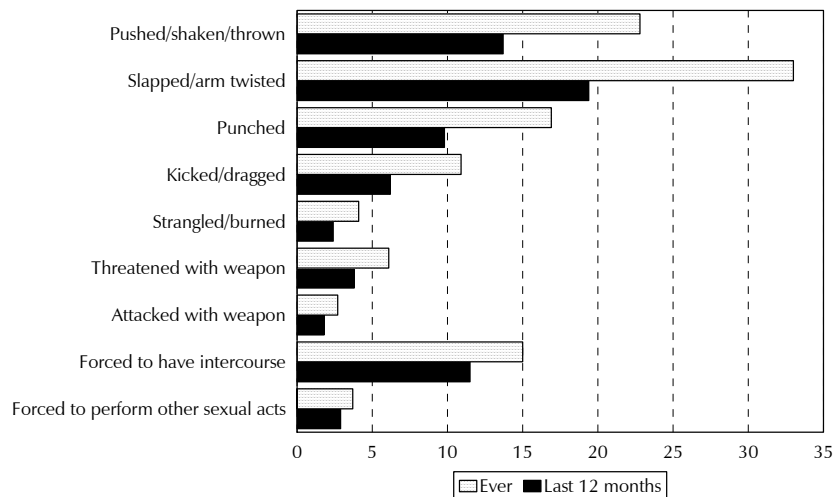
Percentage of married women and divorced or separated women who have ever experienced emotional, physical, or sexual violence by their current or most recent husband, according to selected background characteristics, Kenya 2003

Background characteristic	Type of violence						Number of women
	Emotional	Physical	Sexual	Physical or sexual	Emotional, physical, or sexual	Emotional, physical, and sexual	
<b>Age</b>							
15-19	15.9	26.1	12.0	29.7	33.3	4.7	274
20-29	23.3	37.1	14.5	40.5	44.6	7.5	1,565
30-39	25.8	43.6	15.9	46.3	50.9	8.4	1,248
40-49	33.1	44.0	19.2	47.2	51.9	11.3	769
<b>Marital status</b>							
Currently married	23.4	38.3	14.8	41.5	45.8	7.4	3,508
Once	22.8	37.4	14.4	40.7	45.0	6.9	3,267
More than once	31.8	50.0	21.4	52.3	56.8	13.5	240
Divorced/separated	47.1	54.9	24.5	57.2	62.4	18.3	348
<b>Number of living children</b>							
0	13.6	20.9	9.3	24.6	27.2	3.8	283
1-2	22.9	35.3	14.4	39.1	44.1	6.9	1,372
3-4	27.5	41.8	16.2	44.9	49.6	8.8	1,132
5 or more	30.0	48.5	18.5	50.7	54.3	10.9	1,067
<b>Education</b>							
No education	26.6	39.7	11.3	40.9	44.1	7.2	592
Primary incomplete	29.9	47.9	19.8	51.5	55.9	10.4	1,250
Primary complete	22.1	36.1	14.7	39.3	43.5	7.5	1,022
Secondary+	23.0	33.4	14.2	37.1	42.2	7.3	992
<b>Employment status</b>							
Employed for cash	27.2	42.3	19.6	46.4	50.6	10.2	1,886
Employed, but not for cash	25.8	44.6	16.6	47.8	51.1	8.5	666
Not employed	23.0	33.8	9.6	35.5	40.6	5.6	1,303
<b>Wealth quintile</b>							
Lowest	28.1	43.4	16.4	45.6	50.2	9.1	706
Second	26.8	43.0	18.4	47.1	50.9	9.5	751
Middle	27.2	43.5	17.5	46.9	50.5	9.2	722
Fourth	25.6	38.3	14.9	42.0	47.0	7.6	781
Highest	21.1	32.5	12.1	35.0	39.6	6.8	895
<b>Total</b>	<b>25.5</b>	<b>39.8</b>	<b>15.7</b>	<b>42.9</b>	<b>47.3</b>	<b>8.3</b>	<b>3,856</b>

The proportions of married women and divorced or separated women who have experienced different forms of violence by their current or last husbands, ever and during the 12 months preceding the survey are presented in Figure 15.1. The most common form of spousal violence is slapping or arm twisting, which has been experienced by one-third of women. Almost one-quarter (23 percent) of ever-married women have ever been pushed, shaken, or thrown by a husband; 17 percent have been punched; 15 percent have been forced to have intercourse; and 11 percent have been kicked or dragged. The least commonly reported forms of marital violence against women are attacking with a weapon (3 percent), forced sexual acts other than intercourse (4 percent), strangling or burning (4 percent), and threatening with a weapon (6 percent). Marital rape appears to be common, with 15 percent of married women and separated or divorced women reporting having experienced forced sexual intercourse; 12 percent report this experience in the 12 months preceding the survey.



**Figure 15.1 Percentage of Women Who Have Experienced Different Forms of Spousal Violence Ever (Since Age 15) and in the 12 Months Preceding the Survey**



KDHS 2003

## 15.5 FREQUENCY OF SPOUSAL VIOLENCE

Frequency of spousal violence is an indication of the extent to which domestic violence is a current or recurring problem for Kenyan women. Table 15.4 shows the percent distribution of currently married women and divorced or separated women who report physical or sexual violence by current or last husband by the maximum frequency of any form of such violence in the 12 months preceding the survey, by selected background characteristics.

This table shows that 65 percent of women who have experienced physical or sexual violence by their husbands have experienced such violence in the 12 months preceding the survey. One-quarter of ever-abused women (26 percent) have experienced spousal violence three or more times in the last 12 months.

Among those who have ever experienced spousal violence, those who are younger are likely to experience violence somewhat more frequently than older women; 30 percent of women age 15-19 report experiencing spousal violence three or more times in the 12 months preceding the survey, compared with 24 percent of women age 40-49. Women who have been married more than once are most likely (35 percent) to have experienced violence three or more times in the 12 months preceding the survey, while those divorced or separated are less likely (15 percent) than other women to have reported frequent violence in the recent past. Differences in the frequency of violence against women in the recent past by the number of living children, employment status, and wealth index do not show a clear pattern. Abused women with no education are more likely to experience more frequent spousal violence, compared with women who have secondary or higher education.

Table 15.4 Frequency of spousal violence

Percent distribution of currently married women and divorced or separated women reporting physical or sexual violence by current or last husband by maximum frequency of any form of such violence in the 12 months preceding the survey, according to background characteristics, Kenya 2003

Background characteristic	Maximum frequency of any type of physical or sexual violence in the 12 months preceding the survey					Total	Number of women
	0 times	1-2 times	3-5 times	>5 times	Don't know/missing		
<b>Age</b>							
15-19	8.4	61.3	22.6	7.7	0.0	100.0	81
20-29	23.1	50.8	14.1	11.8	0.2	100.0	634
30-39	41.3	30.9	13.2	13.8	0.9	100.0	578
40-49	48.9	25.9	11.4	12.3	1.5	100.0	363
<b>Marital status</b>							
Currently married	29.7	42.1	14.6	13.0	0.6	100.0	1,457
Once	30.7	42.0	14.2	12.7	0.4	100.0	1,331
More than once	20.0	42.8	18.3	16.5	2.4	100.0	126
Divorced/separated	68.4	15.5	6.5	8.3	1.3	100.0	199
<b>Number of living children</b>							
0	24.1	45.3	11.5	19.1	0.0	100.0	70
1-2	29.2	47.0	12.7	10.8	0.2	100.0	536
3-4	33.2	40.0	14.3	11.4	1.0	100.0	509
5 or more	41.9	28.9	14.1	14.1	0.9	100.0	541
<b>Education</b>							
No education	37.3	29.6	13.2	19.7	0.2	100.0	242
Primary incomplete	28.6	43.9	14.7	11.9	0.9	100.0	644
Primary complete	29.4	41.7	14.3	13.9	0.7	100.0	402
Secondary+	48.1	33.1	11.1	7.0	0.6	100.0	368
<b>Employment status</b>							
Employed for cash	35.6	36.5	14.8	12.7	0.5	100.0	875
Employed, but not for cash	36.1	38.0	13.2	11.7	0.9	100.0	319
Not employed	31.0	44.1	11.6	12.4	0.9	100.0	462
<b>Wealth quintile</b>							
Lowest	25.6	40.9	18.8	14.1	0.6	100.0	322
Second	30.1	46.2	11.2	11.4	1.2	100.0	354
Middle	32.6	41.8	12.0	13.4	0.3	100.0	339
Fourth	43.3	28.5	13.3	13.8	1.1	100.0	328
Highest	40.9	36.3	13.0	9.5	0.3	100.0	313
Total	34.4	38.9	13.6	12.4	0.7	100.0	1,656

## 15.6 ONSET OF SPOUSAL VIOLENCE AGAINST WOMEN

To study the timing of the onset of marital violence, the 2003 KDHS asked ever-married women who reported physical or sexual violence by their spouse how long after they got married the violence first occurred. Table 15.5 shows the percent distribution of married women and divorced or separated women by the number of years between marriage and the first time they experienced physical or sexual violence by their current or most recent husband, according to duration since marriage. The percentages who have not experienced spousal violence are shown as well.

Table 15.5 shows that in the majority of cases, initiation of violence takes place early in the marriage. Almost one-fifth (19 percent) of women experience spousal violence within the first two years of marriage, and one-third (32 percent) experience violence in the first five years of marriage.

Women who are currently married but married more than once and women who are currently divorced or separated are more likely to have experienced violence early in their marriages than women who married only once.

Table 15.5 Onset of spousal violence

Percent distribution of married women and divorced or separated women by number of years between marriage and first experience of physical or sexual violence by current or last husband if ever, according to marital status and number of unions, Kenya 2003

Duration since marriage	Experienced no violence	Before marriage	Years between union and first experience of violence					Don't know/missing	Total	Number of women
			<1 year	1-2 years	3-5 years	6-9 years	10 or more years			
<b>Currently married</b>	58.4	0.3	5.4	12.1	12.2	5.8	5.4	0.4	100.0	3,508
Married only once	59.2	0.3	4.9	11.8	12.3	6.0	5.1	0.4	100.0	3,267
<1 year	88.7	0.0	10.1	na	na	na	na	1.2	100.0	164
1-5 years	68.0	0.1	8.2	16.7	6.8	na	na	0.3	100.0	878
6-9 years	56.3	0.3	3.5	13.0	19.2	7.2	na	0.5	100.0	545
10 or more years	52.8	0.4	3.2	9.9	14.1	9.3	9.7	0.6	100.0	1,681
Married more than once	47.7	0.4	11.8	16.3	10.7	3.2	9.8	0.1	100.0	240
<b>Divorced/separated</b>	42.9	0.7	16.7	17.8	16.4	2.4	2.3	0.8	100.0	348
<b>Total</b>	57.1	0.3	6.4	12.6	12.6	5.5	5.1	0.4	100.0	3,856

na = Not applicable

## 15.7 PHYSICAL CONSEQUENCES OF SPOUSAL VIOLENCE

Table 15.6 shows the percentage of married, divorced, or separated women reporting different types of physical consequences resulting from something the current or last husband or partner did to them, by type of violence. Among all married, divorced, or separated women, 13 percent reported ever having had bruises or aches and 9 percent reported having bruises or aches in the past year because of something their husband did to them. Injuries and broken bones are far less common consequences of spousal violence, reported by 4 percent of women as ever occurring and by 2 percent as occurring in the 12 months preceding the survey. Six percent of all married, divorced or separated women reported ever visiting a health facility, and 4 percent reported visiting a health facility in the 12 months before the survey because of something their husband did to them.

Among women who report having ever experienced physical violence, one-third (32 percent) also report having ever had bruises or aches, 9 percent report having had a broken bone or injury, and 15 percent report having visited a health facility because of something their husband or partner did. Although the question was asked of all married, divorced, or separated women as another means of encouraging them to report any spousal violence that they may not have reported in prior questions, the data in Table 15.6 indicate that almost no women who had not previously reported spousal violence said “yes” to these questions on physical consequences.

Table 15.6 Physical consequences of spousal violence

Percentage of married, divorced, or separated women who report specific physical consequences resulting from something their current or last husband or partner did to them, according to type of violence reported, Kenya 2003

Type of violence experienced	Had bruises or aches		Had injury or broken bone		Had to visit health personnel		Number of women
	Ever	Last year	Ever	Last year	Ever	Last year	
<b>Emotional violence</b>							
Ever	36.7	24.2	11.5	5.6	19.1	11.1	985
At least once in last year	37.9	32.6	10.7	7.7	17.9	14.1	701
<b>Physical violence</b>							
Ever	31.7	21.0	8.9	4.7	15.2	9.3	1,534
At least once in last year	35.6	32.4	9.4	7.5	17.1	14.7	924
<b>Sexual violence</b>							
Ever	36.6	25.4	10.7	6.6	18.0	11.3	605
At least once in last year	36.0	31.5	9.9	7.9	16.0	13.1	466
<b>Physical or sexual violence</b>							
Ever	29.7	19.7	8.3	4.3	14.2	8.8	1,656
At least once in last year	32.9	28.8	8.4	6.4	15.3	12.5	1,087
<b>Experienced no violence</b>	0.2	0.2	0.0	0.0	0.1	0.1	2,032
<b>Total</b>	12.9	8.6	3.6	1.9	6.2	3.8	3,856

## 15.8 VIOLENCE INITIATED BY WOMEN AGAINST HUSBANDS

Violence by husbands against wives is not the only form of spousal violence; women may sometimes be the perpetrators of violence. In most cultures, however, the level of spousal violence initiated by wives is only a fraction of the level of spousal violence initiated by husbands. To measure spousal violence by women, the 2003 KDHS asked married, divorced, or separated women, “Have you ever hit, slapped, kicked, or done anything else to physically hurt your (last) husband/partner at times when he was not already beating or physically hurting you?” This line of questioning may result in some underreporting if women find it difficult to admit that they themselves initiated violence.

Results show that only 3 percent of married, divorced, or separated women report initiating violence against their husbands (data not shown). Of the women who have experienced violence from their husband, 5 percent report initiating violence; of the women who have not experienced violence from their husband, less than 1 percent report initiating violence.

## 15.9 VIOLENCE BY SPOUSAL CHARACTERISTICS AND WOMEN’S STATUS INDICATORS

Since the perpetrators of spousal violence are usually husbands, it is important to understand the characteristics of husbands. It is also useful to examine whether spousal violence varies with indicators of women’s status. Table 15.7 shows the percentage of married, divorced, or separated women who have experienced different forms of spousal violence by the current or last husband ever and in the year preceding the survey, as well as the percentage of women who have initiated violence against their husbands, by spousal characteristics and selected women’s status variables.

Table 15.7 Spousal violence, women's status, and husband's characteristics

Percentage of married, divorced, or separated women who experienced different types of spousal violence by the current or last husband ever and in the last year, and percentage who have been violent to their husbands, by spousal characteristics and women's status variables, Kenya 2003

Spousal characteristic/ women's status variable	Emotional violence		Physical violence		Sexual violence		Physical or sexual violence		Never experi- enced violence	Violence against husband by respondent		Number
	Ever	Last year	Ever	Last year	Ever	Last year	Ever	Last year		Ever	Last year	
<b>Husband's education</b>												
No education	22.7	19.6	39.1	27.6	9.5	8.7	39.7	28.4	57.1	3.1	2.0	369
Primary incomplete	29.0	24.6	47.5	32.5	21.2	18.6	51.2	38.2	44.4	2.3	1.3	733
Primary complete	25.8	19.6	39.2	25.4	15.2	13.2	42.7	30.8	52.4	1.1	0.9	996
Secondary+	19.1	14.5	33.0	19.5	12.7	9.5	36.4	23.5	59.5	2.5	1.2	1,362
<b>Age difference</b>												
Wife older than husband	26.4	20.9	41.4	29.0	14.0	12.5	41.4	31.0	53.8	0.9	0.9	84
Husband older by												
<2 years	22.5	16.8	36.8	22.3	14.9	11.8	41.6	26.6	53.5	1.2	0.2	275
2-4 years	22.2	18.4	34.7	21.3	13.7	11.1	38.5	26.8	56.2	1.6	1.1	895
5-9 years	23.6	18.1	39.7	26.2	16.1	13.4	42.8	30.7	53.8	2.4	1.2	1,375
10+ years	24.7	20.1	40.2	26.4	13.9	12.1	42.8	29.9	52.8	2.6	1.8	864
<b>Differences in education</b>												
Husband has more education	26.8	19.1	41.5	24.7	16.6	12.8	44.6	29.4	51.8	2.6	1.3	1,972
Wife has more education	26.6	19.6	41.5	25.3	17.7	14.7	45.3	30.4	49.0	2.7	1.6	817
Both have equal education	21.8	14.4	35.0	20.9	13.9	9.4	38.1	23.9	56.5	1.7	0.9	677
Neither educated	22.8	18.2	37.4	24.5	8.2	7.0	37.9	24.9	59.3	3.6	1.1	300
<b>Alcohol/illegal drug consumption of husband</b>												
Does not drink/take drugs	17.2	13.6	29.8	18.4	10.5	8.8	32.6	21.9	63.1	1.5	0.6	2,300
Never gets drunk/takes drugs	18.9	8.9	58.7	39.1	4.5	4.5	58.7	39.1	38.4	0.0	0.0	21
Gets drunk/takes drugs sometimes	28.3	19.4	44.4	26.3	16.9	12.9	48.3	31.6	46.4	2.3	1.4	957
Gets drunk/takes drugs very often	55.6	36.2	73.3	43.2	36.1	24.8	76.7	48.8	19.8	7.5	3.6	551
<b>Woman can refuse sex to husband<sup>1</sup></b>												
Yes for all reasons	26.3	18.8	39.9	24.8	17.4	13.9	43.2	29.4	52.5	3.1	1.5	2,001
No for one or more reasons	24.7	17.6	39.7	23.1	13.9	10.1	42.6	26.8	53.0	2.1	1.0	1,854
<b>Number of household decisions respondent participates in<sup>2</sup></b>												
0 decisions	24.2	15.2	33.3	21.0	9.1	7.0	34.6	22.2	60.4	3.2	0.8	344
1-2 decisions	26.4	20.3	41.7	28.6	15.3	13.8	44.9	33.4	51.1	2.8	1.3	1,182
3-4 decisions	24.1	19.6	39.1	23.4	16.6	13.4	42.4	28.2	53.1	2.1	1.4	1,304
5+ decisions	26.8	14.9	40.6	20.3	17.2	10.1	44.2	24.1	51.6	3.0	1.3	1,025
<b>Family structure</b>												
Nuclear	26.2	19.1	42.7	27.0	15.9	12.7	45.5	30.9	50.4	2.4	1.2	2,562
Non-nuclear	24.3	16.3	34.1	17.9	15.2	11.0	37.8	22.9	57.3	3.1	1.5	1,294
Total	25.5	18.2	39.8	24.0	15.7	12.1	42.9	28.2	52.7	2.7	1.3	3,856

Note: Total includes 396 women for whom husband's education is missing, 15 women for whom the age difference between spouses is missing, 90 women for whom education differences are missing, and 27 women for whom alcohol consumption of the husband is missing.

<sup>1</sup> For reasons, see Table 3.13.

<sup>2</sup> For decisions, see Table 3.11.

As mentioned above, 26 percent of married, separated, or divorced women have ever experienced emotional violence, 40 percent have ever experienced physical violence, and 16 percent have ever experienced sexual violence. Women whose husbands have at least some secondary education are less likely to have experienced emotional or physical violence than women whose husbands are less educated. All three types of violence—emotional, physical, and sexual—are more common for women whose husbands have incomplete primary education. Contrary to expectations that age and education discrepancies between spouses would exacerbate spousal violence, the data show only minor variations in the level of spousal violence by age or education differences between spouses.

Women's experience of violence varies strongly with the extent of alcohol and/or illegal drug consumption by their husbands or partners. All three forms of violence are two to three times more prevalent among women who say their husbands get drunk or take illegal drugs very often than among those whose husbands do not drink or take illegal drugs. Differences in spousal violence by women's status indicators and by family structure are minimal.

## 15.10 FEMALE GENITAL CUTTING

Female genital cutting or circumcision is widely practised in many Kenyan communities. It involves the partial or total removal of the external female genitalia or other injury to the female organs for cultural or other nontherapeutic reasons (World Health Organisation, 1997). The practice is widely condemned as harmful, because it poses a potentially great risk to the health and well-being of the women and girls who are subjected to it and it violates internationally accepted human rights. The United Nations Convention on the Rights of the Child recognises this as one of the cultural practices that violate the rights of the child. The Children Act of 2001 also describes girls who are likely to be forced into circumcision as children in need of special care and protection. The act further provides for courts to take action against the perpetrators. In the 2003 KDHS, women were asked whether they were circumcised. They were also asked whether their eldest daughters were circumcised and, for those who were not circumcised, whether they had plans of having them circumcised.

Table 15.8 shows that 32 percent of surveyed women are circumcised. This represents a decline from 38 percent recorded in the 1998 KDHS to 31 percent in 2003, excluding the northern districts so as to be comparable. The proportion of women circumcised increases with age, from 20 percent of women age 15-19 to 48 percent of those age 45-49. This implies a steep decline by about half in the practice of female circumcision over the past two decades.

A higher proportion of rural women (36 percent) than urban women (21 percent) have been circumcised. North Eastern Province, which was included for the first time in the 2003 KDHS sample, has the largest proportion of women who are circumcised (99 percent). Western Province, which is mainly occupied by the Luhya ethnic group, has the lowest proportion of women who have undergone genital cutting (4 percent).

There is a strong relationship between education level and circumcision status. Fifty-eight percent of women with no education report that they are circumcised, compared with only 21 percent of those with at least some secondary education. The survey results indicate that one-half of Muslim women (50 percent) are circumcised, compared with about one-third of non-Muslim women.

Female genital cutting varies widely across ethnic groups. It is nearly universal among Somali (97 percent), Kisii (96 percent), and Maasai (93 percent) women and is also common among the Taita/Taveta (62 percent), Kalenjin (48 percent), Embu (44 percent), and Meru (42 percent). Levels are lower among Kikuyu (34 percent) and Kamba (27 percent) women. Genital cutting is almost nonexistent among Luhya and Luo women (each less than 1 percent). There has been a notable reduction since 1998 in the proportions of Kalenjin, Kikuyu, Kamba, and Mijikenda/Swahili women who reported being circumcised.

Table 15.8 also shows the proportion circumcised among respondents' eldest daughters age 15 or older. Overall, 21 percent of eldest daughters age 15 and older were reported to have been circumcised. Differentials in circumcision of daughters largely mirror those for women's own circumcision status.

**Table 15.8 Female circumcision**

Percentage of women circumcised and percentage of eldest daughters age 15 and older who have been circumcised, by background characteristics, Kenya 2003

Background characteristic	Percentage of women circumcised	Number of women	Percentage of eldest daughters circumcised	Number of eldest daughters
<b>Age</b>				
15-19	20.3	1,856	*	0
20-24	24.8	1,691	*	0
25-29	33.0	1,382	*	6
30-34	38.1	1,086	12.7	138
35-39	39.7	871	16.9	399
40-44	47.5	788	24.2	591
45-49	47.7	521	22.7	442
<b>Residence</b>				
Urban	21.3	2,056	14.5	281
Rural	35.8	6,139	22.3	1,296
<b>Province</b>				
Nairobi	18.6	835	7.9	100
Central	36.3	1,181	12.8	244
Coast	20.2	667	15.4	115
Eastern	36.4	1,325	13.6	260
Nyanza	35.1	1,222	34.8	257
Rift Valley	42.8	1,872	30.8	370
Western	4.1	927	2.0	200
North Eastern	98.8	168	98.8	31
<b>Education</b>				
No education	58.2	1,039	37.3	388
Primary incomplete	32.8	2,685	18.5	464
Primary complete	31.0	2,069	17.4	373
Secondary+	21.1	2,403	9.9	351
<b>Religion</b>				
Roman Catholic	33.2	2,067	22.8	420
Protestant/other Christian	29.5	5,322	17.7	1,018
Muslim	49.6	619	44.4	105
No religion	39.6	156	(28.9)	28
<b>Ethnicity</b>				
Embu	43.6	129	*	19
Kalenjin	48.1	831	25.9	156
Kamba	26.5	938	9.6	187
Kikuyu	34.0	1,886	12.8	361
Kisii	95.9	466	95.8	91
Luhya	0.7	1,230	1.1	256
Luo	0.7	984	0.9	185
Maasai	93.4	189	(93.8)	48
Meru	42.4	460	11.0	75
Mijikenda/Swahili	5.8	407	0.7	75
Somali	97.0	298	97.5	47
Taita/Taveta	62.1	101	*	18
Turkana	12.2	116	(14.6)	25
Kuria	(95.9)	49	*	11
Other	17.6	111	*	23
<b>Wealth quintile</b>				
Lowest	40.0	1,364	26.8	320
Second	40.4	1,475	28.8	332
Middle	36.0	1,503	20.9	312
Higher	31.8	1,711	13.7	342
Highest	19.1	2,141	13.6	271
<b>Total</b>	<b>32.2</b>	<b>8,195</b>	<b>21.0</b>	<b>1,577</b>

Note: Total includes women with religion "other" or "missing." Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

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# SAMPLE IMPLEMENTATION

# APPENDIX A

Table A.1 Sample implementation: women

Percent distribution of households and eligible women by results of the household and individual interviews, and household, eligible women and overall response rates, according to urban-rural residence and province, Kenya 2003

Result	Residence		Province								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
<b>Selected households</b>											
Completed (C)	84.5	88.0	82.8	87.2	86.7	87.2	85.3	89.1	89.6	86.4	86.8
Household present but no competent respondent at home (HP)	3.1	0.9	5.4	2.1	1.0	0.4	0.4	1.0	1.0	0.6	1.7
Refused (R)	1.3	0.5	1.4	1.0	1.2	0.7	0.6	0.4	0.3	0.4	0.8
Dwelling not found (DNF)	0.6	1.0	0.9	0.5	0.2	2.8	0.2	0.2	0.3	4.1	0.9
Household absent (HA)	3.5	3.1	3.4	1.8	4.2	3.4	5.2	2.5	3.9	1.8	3.3
Dwelling vacant/address not a dwelling (DV)	5.6	3.8	5.2	5.0	4.4	2.5	6.4	3.7	3.3	4.6	4.4
Dwelling destroy (DD)	0.5	0.9	0.1	0.7	1.2	0.4	0.8	1.1	1.0	0.2	0.7
Other (O)	0.8	1.9	0.7	1.6	1.2	2.7	1.1	2.0	0.7	2.0	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	3,423	6,442	1,450	1,761	1,125	1,130	1,194	1,537	1,125	543	9,865
Household response rate (HRR) <sup>1</sup>	94.3	97.4	91.5	96.0	97.4	95.6	98.6	98.3	98.3	94.6	96.3
<b>Eligible women</b>											
Completed (EWC)	91.1	95.5	89.2	91.6	93.0	96.0	97.2	95.4	96.7	95.4	94.0
Not at home (EWNH)	5.3	2.4	7.9	4.4	3.7	1.5	1.0	2.3	1.9	3.1	3.4
Postponed (EWP)	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Refused (EWR)	2.4	1.0	2.3	2.5	1.7	1.1	0.5	1.2	0.7	0.7	1.4
Partly completed (EWPC)	0.2	0.1	0.0	0.3	0.1	0.2	0.2	0.1	0.1	0.0	0.1
Incapacitated (EWI)	0.9	0.8	0.4	0.8	1.3	1.2	0.9	0.9	0.6	0.7	0.8
Other (EWO)	0.1	0.2	0.2	0.3	0.2	0.1	0.3	0.1	0.1	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	3,019	5,698	1,310	1,434	1,009	1,034	1,055	1,392	1,025	458	8,717
Eligible women response rate (EWRR) <sup>2</sup>	91.1	95.5	89.2	91.6	93.0	96.0	97.2	95.4	96.7	95.4	94.0
Overall response rate (ORR)	85.9	93.0	81.7	88.0	90.5	91.8	95.8	93.8	95.1	90.2	90.5

<sup>1</sup> Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 * C}{C + HP + P + R + DNF}$$

<sup>2</sup> Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{100 * EWC}{EWC + EWNH + EWP + EWR + EWPC + EWI + EWO}$$

<sup>3</sup> The overall response rate (ORR) is calculated as: ORR = HRR \* EWRR/100

Table A.2 Sample implementation: men

Percent distribution of households and eligible men by results of the household and individual interviews, and household, eligible men and overall response rates, according to urban-rural residence and region, Kenya 2003

	Residence		Province								
Result	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
<b>Selected households</b>											
Completed (C)	84.5	88.3	82.7	87.5	87.0	88.4	84.6	89.7	89.6	85.2	87.0
Household present but no competent respondent at home (HP)	2.9	0.8	5.4	1.7	0.9	0.2	0.5	1.3	0.7	0.0	1.6
Refused (R)	1.6	0.6	1.6	1.6	1.3	0.5	0.5	0.4	0.4	0.8	0.9
Dwelling not found (DNF)	0.5	1.0	0.7	0.6	0.2	2.5	0.3	0.1	0.0	4.9	0.8
Household absent (HA)	3.3	2.9	3.4	1.8	3.7	3.0	4.3	2.6	3.9	1.9	3.1
Dwelling vacant/address not a dwelling (DV)	5.5	3.9	4.8	4.9	4.6	2.3	7.6	3.3	3.5	4.9	4.5
Dwelling destroy (DD)	0.5	0.9	0.3	0.7	1.3	0.7	1.0	0.9	1.2	0.0	0.8
Other (O)	1.1	1.5	1.1	1.2	1.1	2.3	1.0	1.7	0.7	2.3	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	1,680	3,188	704	881	545	561	579	769	565	264	4,868
Household response rate (HRR) <sup>1</sup>	94.4	97.3	91.5	95.8	97.3	96.5	98.4	98.0	98.8	93.8	96.3
<b>Eligible men</b>											
Completed (EMC)	78.4	89.4	74.1	84.0	84.5	92.5	88.9	86.3	93.1	85.1	85.5
Not at home (EMNH)	17.1	7.1	21.4	11.9	9.0	4.2	7.0	10.8	5.4	10.3	10.6
Postponed (EMP)	0.1	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
Refused (EMR)	2.8	2.1	2.6	2.2	4.7	2.6	1.4	1.9	0.6	4.6	2.4
Partly completed (EMPC)	0.1	0.1	0.2	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.1
Incapacitated (EMI)	0.3	1.1	0.3	1.4	1.1	0.8	1.0	0.7	0.6	0.0	0.8
Other (EMO)	1.0	0.3	1.2	0.4	0.5	0.0	1.2	0.3	0.2	0.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	1,466	2,717	665	739	444	506	488	679	467	195	4,183
Eligible men response rate (EMRR) <sup>2</sup>	78.4	89.4	74.1	84.0	84.5	92.5	88.9	86.3	93.1	85.1	85.5
Overall response rate (ORR)	74.0	87.0	67.8	80.5	82.2	89.3	87.5	84.6	92.1	79.8	82.4

<sup>1</sup> Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 * C}{C + HP + P + R + DNF}$$

<sup>2</sup> Using the number of eligible men falling into specific response categories, the eligible man response rate (EMRR) is calculated as:

$$\frac{100 * EMC}{EMC + EMNH + EMP + EMR + EMPC + EMI + EMO}$$

<sup>3</sup> The overall response rate (ORR) is calculated as:  $ORR = HRR * EMRR/100$

Table A.3 Coverage of HIV testing among interviewed women by sociodemographic characteristics

Percent distribution of interviewed women by testing status, according to sociodemographic characteristics (unweighted), Kenya 2003

Sociodemographic characteristic	Testing status				Total	Number
	Tested	Refused	Absent	Other/missing		
<b>Marital status</b>						
Currently in union	82.1	13.8	2.5	1.6	100.0	2,418
Widowed	84.0	13.0	1.9	1.2	100.0	162
Divorced/separated	80.7	15.7	1.8	1.8	100.0	166
Never in union	78.5	13.6	5.2	2.6	100.0	1,297
Ever had sex	79.7	12.1	6.0	2.2	100.0	601
Never had sex	77.4	14.9	4.6	3.0	100.0	696
<b>Type of union</b>						
In polygynous union	85.4	12.9	0.5	1.2	100.0	417
Not in polygynous union	81.4	13.9	2.9	1.7	100.0	2,001
Not currently in union	79.3	13.8	4.6	2.4	100.0	1,625
<b>Ever had sexual intercourse</b>						
Yes	81.7	13.5	3.1	1.7	100.0	3,347
No	77.4	14.9	4.6	3.0	100.0	696
<b>Currently pregnant</b>						
Pregnant	82.2	12.7	2.4	2.7	100.0	331
Not pregnant/not sure	80.8	13.9	3.4	1.9	100.0	3,712
<b>Ethnicity</b>						
Embu	(59.6)	(38.3)	(2.1)	(0.0)	100.0	47
Kalenjin	89.4	5.6	2.8	2.2	100.0	322
Kamba	79.1	14.9	4.8	1.3	100.0	397
Kikuyu	73.5	18.7	5.3	2.5	100.0	1,023
Kisii	94.1	4.5	0.9	0.5	100.0	221
Luhya	87.9	8.8	2.6	0.7	100.0	605
Luo	88.1	7.4	2.7	1.7	100.0	405
Maasai	80.7	16.9	2.4	0.0	100.0	83
Meru	77.7	13.6	2.2	6.5	100.0	184
Mijikenda/Swahili	81.2	15.5	1.1	2.2	100.0	271
Somali	72.5	25.7	1.1	0.7	100.0	276
Taita/Taveta	88.1	6.0	3.0	3.0	100.0	67
Turkana	75.0	17.9	1.8	5.4	100.0	56
Kuria	*	*	*	*	100.0	23
Other	65.1	17.5	12.7	4.8	100.0	63
<b>Religion</b>						
Roman Catholic	81.9	12.6	3.5	2.1	100.0	948
Protestant/other Christian	81.7	12.6	3.7	2.0	100.0	2,542
Muslim	77.6	20.4	1.1	0.9	100.0	460
No religion	73.0	25.7	0.0	1.4	100.0	74
<b>Total</b>	<b>81.0</b>	<b>13.8</b>	<b>3.3</b>	<b>1.9</b>	<b>100.0</b>	<b>4,043</b>

Note: Total includes 19 women with religion missing or "other." Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table A.4 Coverage of HIV testing among interviewed men by sociodemographic characteristics

Percent distribution of interviewed men by testing status, according to sociodemographic characteristics (unweighted), Kenya 2003

Sociodemographic characteristic	Testing status				Total	Number
	Tested	Refused	Absent	Other/missing		
<b>Marital status</b>						
Currently in union	81.2	13.3	4.2	1.2	100.0	1,855
Widowed	78.3	17.4	4.3	0.0	100.0	23
Divorced/separated	82.8	12.9	1.7	2.6	100.0	116
Never in union	81.8	10.9	4.7	2.5	100.0	1,584
Ever had sex	82.8	10.1	4.6	2.5	100.0	1,013
Never had sex	80.0	12.4	4.9	2.6	100.0	571
<b>Type of union</b>						
In polygynous union	84.7	11.1	3.7	0.5	100.0	190
Not in polygynous union	80.8	13.6	4.3	1.3	100.0	1,665
Not currently in union	81.8	11.1	4.5	2.5	100.0	1,723
<b>Ever had sexual intercourse</b>						
Yes	81.8	12.2	4.3	1.7	100.0	3,007
No	80.0	12.4	4.9	2.6	100.0	571
<b>Circumcision status</b>						
Circumcised	80.4	13.1	4.4	2.0	100.0	3,052
Not circumcised	87.8	7.4	4.0	0.8	100.0	526
<b>Times slept away from home in past 12 months</b>						
None	81.4	12.3	4.1	2.2	100.0	1,836
1-2	85.2	9.2	4.4	1.2	100.0	758
3-5	83.0	11.6	4.5	0.9	100.0	448
5+	75.0	17.7	5.0	2.3	100.0	519
<b>Whether away for more than one month in past 12 months</b>						
Away for more than 1 month	77.0	16.9	4.9	1.2	100.0	592
Away less than 1 month	83.9	10.1	4.5	1.6	100.0	1,134
Never away	81.4	12.3	4.1	2.2	100.0	1,836
<b>Ethnicity</b>						
Embu	(67.4)	(30.4)	(2.2)	(0.0)	100.0	46
Kalenjin	90.4	6.5	0.6	2.5	100.0	324
Kamba	75.2	15.9	7.3	1.6	100.0	371
Kikuyu	73.0	16.2	7.5	3.3	100.0	845
Kisii	91.8	6.7	1.4	0.0	100.0	208
Luhya	88.5	8.1	2.5	1.0	100.0	520
Luo	86.7	8.2	4.6	0.5	100.0	390
Maasai	72.1	19.1	7.4	1.5	100.0	68
Meru	85.5	10.5	0.6	3.5	100.0	172
Mijikenda/Swahili	77.6	15.4	4.7	2.3	100.0	214
Somali	81.2	16.1	1.8	0.9	100.0	223
Taita/Taveta	80.4	11.8	5.9	2.0	100.0	51
Turkana	92.2	5.9	2.0	0.0	100.0	51
Kuria	(96.3)	(0.0)	(0.0)	(3.7)	100.0	27
Other	75.0	16.2	7.4	1.5	100.0	68
<b>Religion</b>						
Roman Catholic	82.0	11.8	5.0	1.1	100.0	913
Protestant/other Christian	82.0	11.2	4.4	2.3	100.0	2,055
Muslim	79.0	17.1	3.1	0.8	100.0	381
No religion	79.5	15.5	2.3	2.7	100.0	219
Total	81.5	12.3	4.4	1.8	100.0	3,578

Note: Total includes 17 men missing data on the number of trips away, 16 missing data on whether away for more than one month, and 10 men with religion "other" or missing. Figures in parentheses are based on 25-49 unweighted cases.

Table A.5 Coverage of HIV testing among women who ever had sex by risk status variables

Percent distribution of women who ever had sex by testing status, according to characteristics relating to risk status (unweighted), Kenya 2003

Background characteristic	HIV testing status				Total	Number
	Tested for HIV	Refused test	Inter-viewed, absent for test	HIV test result		
<b>Age at first sex</b>						
<15	84.2	11.8	2.2	1.8	100.0	1,126
16-17	82.2	13.8	2.6	1.4	100.0	811
18-19	81.8	13.1	3.2	1.8	100.0	654
20+	76.1	15.8	5.8	2.3	100.0	568
<b>Higher-risk sex in past 12 months</b>						
Had higher-risk sex	82.6	11.1	4.4	1.9	100.0	476
Had sex, not higher risk	82.5	13.3	2.6	1.6	100.0	2,331
No sex in past 12 months	77.4	16.5	4.1	2.0	100.0	540
<b>Number of partners in past 12 months</b>						
1	82.4	13.0	2.9	1.7	100.0	2,744
2+	87.3	9.5	3.2	0.0	100.0	63
<b>Given/received money/gifts/ favours for sex in past 12 months</b>						
Exchanged for sex	89.8	8.8	0.7	0.7	100.0	137
No exchange	82.1	13.2	3.0	1.7	100.0	2,670
<b>Any condom use (FP/other)</b>						
Used condom at any time	82.3	10.8	4.1	2.9	100.0	491
Never used condom	81.6	14.0	2.9	1.5	100.0	2,856
<b>Condom use at last encounter in past 12 months</b>						
Used condom last encounter	81.0	11.1	5.2	2.6	100.0	153
No condom last encounter	82.6	13.1	2.8	1.6	100.0	2,654
<b>Condom use at last higher-risk sex in past 12 months</b>						
Used condom last higher-risk encounter	80.5	9.7	6.2	3.5	100.0	113
No condom last higher-risk encounter	83.2	11.6	3.9	1.4	100.0	363
<b>HIV testing status</b>						
Ever tested and knows results of last test	78.7	14.0	4.7	2.6	100.0	534
Ever tested, does not know results	80.0	14.5	3.6	1.8	100.0	55
Never tested	82.4	13.4	2.8	1.4	100.0	2,707
<b>Total</b>	<b>81.7</b>	<b>13.5</b>	<b>3.1</b>	<b>1.7</b>	<b>100.0</b>	<b>3,347</b>

Note: Total includes 188 women with age at first sex inconsistent/missing, 51 women missing data on whether ever obtained HIV test



Table A.6 Coverage of HIV testing among men who ever had sex by risk status variables

Percent distribution of men who ever had sex by testing status, according to characteristics relating to risk status (unweighted), Kenya 2003

Background characteristic	HIV testing status				Total	Number
	Tested for HIV	Refused test	Inter-viewed, absent for test	HIV test result		
<b>Age at first sex</b>						
<15	83.4	11.1	4.0	1.5	100.0	1,301
16-17	82.7	10.5	5.0	1.8	100.0	560
18-19	80.2	13.0	4.7	2.1	100.0	575
20+	78.9	15.7	3.6	1.8	100.0	559
<b>Higher-risk sex in past 12 months</b>						
Had higher-risk sex	83.1	10.7	4.1	2.1	100.0	913
Had sex, not higher risk	81.5	13.1	4.1	1.3	100.0	1,663
No sex in past 12 months	80.0	12.1	5.3	2.6	100.0	431
<b>Number of partners in past 12 months</b>						
1	82.5	11.9	4.1	1.5	100.0	2,174
2	80.4	13.7	4.0	1.9	100.0	321
3+	77.8	16.0	3.7	2.5	100.0	81
<b>Paid for sex</b>						
In past 12 months	83.2	14.0	1.9	0.9	100.0	107
Prior to past 12 months	83.9	9.1	5.0	2.1	100.0	341
Never	81.6	12.5	4.2	1.7	100.0	2,555
<b>Any condom use (FP/other)</b>						
Used condom at any time	82.3	12.0	4.1	1.7	100.0	1,444
Never used condom	81.4	12.5	4.4	1.7	100.0	1,563
<b>Condom use at last encounter in past 12 months</b>						
Used condom last encounter	79.6	13.4	4.4	2.5	100.0	432
No condom last encounter	82.6	12.0	4.0	1.4	100.0	2,144
<b>Condom use at last higher-risk sex in past 12 months</b>						
Used condom last higher-risk encounter	80.1	12.5	4.6	2.8	100.0	433
No condom last higher-risk encounter	85.8	9.2	3.5	1.5	100.0	480
<b>Condom use at last paid sex</b>						
Used	83.8	10.6	3.0	2.5	100.0	198
Did not use	83.6	10.0	5.2	1.2	100.0	250
<b>HIV testing status</b>						
Ever tested and knows results of last test	78.3	12.2	6.7	2.8	100.0	508
Ever tested, does not know results	83.0	10.6	6.4	0.0	100.0	47
Never tested	82.5	12.3	3.7	1.5	100.0	2,430
<b>Total</b>	<b>81.8</b>	<b>12.2</b>	<b>4.3</b>	<b>1.7</b>	<b>100.0</b>	<b>3,007</b>

Note: Total includes 12 men missing age at first sex, 4 missing data on whether paid for sex, 22 missing data on whether ever obtained an HIV test.

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 2003 Kenya Demographic and Health Survey (NDHS) to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2003 NDHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2003 NDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 2003 NDHS is the ISSA Sampling Error Module. This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate,  $r = y/x$ , where  $y$  represents the total sample value for variable  $y$ , and  $x$  represents the total number of cases in the group or subgroup under consideration. The variance of  $r$  is computed using the formula given below, with the standard error being the square root of the variance:

$$SE^2(r) = var(r) = \frac{1-f}{x^2} \sum_{h=1}^H \left[ \frac{m_h}{m_{h-1}} \left( \sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - rx_{hi}, \text{ and } z_h = y_h - rx_h$$

where  $h$  represents the stratum which varies from 1 to  $H$ ,

$m_h$	is the total number of clusters selected in the $h^{\text{th}}$ stratum,
$y_{hi}$	is the sum of the weighted values of variable $y$ in the $i^{\text{th}}$ cluster in the $h^{\text{th}}$ stratum,
$x_{hi}$	is the sum of the weighted number of cases in the $i^{\text{th}}$ cluster in the $h^{\text{th}}$ stratum, and
$f$	is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the 2003 NDHS, there were 362 non-empty clusters. Hence, 361 replications were created. The variance of a rate  $r$  is calculated as follows:

$$SE^2(r) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^k (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where  $r$  is the estimate computed from the full sample of 362 clusters,  
 $r_{(i)}$  is the estimate computed from the reduced sample of 361 clusters ( $i^{\text{th}}$  cluster excluded),  
and  
 $k$  is the total number of clusters.

In addition to the standard error, ISSA computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSA also computes the relative error and confidence limits for the estimates.

Sampling errors for the 2003 NDHS are calculated for selected variables considered to be of primary interest for woman's survey and for man's surveys, respectively. The results are presented in this appendix for the country as a whole, for urban and rural areas, and for each of the 6 regions. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.10 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits ( $R \pm 2SE$ ), for each variable. The DEFT is considered undefined when the standard error considering simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of unweighted cases is not relevant, as there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for *children ever born to women aged 40-49*) can be interpreted as follows: the overall average from the national sample is 6.808 and its standard error is 0.134. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e.,  $6.808 \pm 2 \times 0.134$ . There is a high probability (95 percent) that the *true* average number of children ever born to all women aged 40 to 49 is between 6.540 and 7.077.

Sampling errors are analyzed for the national woman sample and for two separate groups of estimates: (1) means and proportions, and (2) complex demographic rates. The relative standard errors (SE/R) for the means and proportions range between 1.1 percent and 32.7 percent with an average of 6.36 percent; the highest relative standard errors are for estimates of very low values (e.g., *currently using*

*female sterilization*). If estimates of very low values (less than 10 percent) were removed, then the average drops to 4.2 percent. So in general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small, 2.5 percent. However, for the mortality rates, the average relative standard error is much higher, 6.04 percent.

There are differentials in the relative standard error for the estimates of sub-populations. For example, for the variable *want no more children*, the relative standard errors as a percent of the estimated mean for the whole country, and for the urban areas are 4.9 percent and 6.1 percent, respectively.

For the total sample, the value of the design effect (DEFT), averaged over all variables, is 1.78 which means that, due to multi-stage clustering of the sample, the average standard error is increased by a factor of 1.78 over that in an equivalent simple random sample.

Table B.1 List of selected variables for sampling errors, Kenya 2003

Variable	Estimate	Base population
WOMEN		
Urban residence	Proportion	All women 15-49
No education	Proportion	All women 15-49
With secondary education or higher	Proportion	All women 15-49
Never married (in union)	Proportion	All women 15-49
Currently married (in union)	Proportion	All women 15-49
Had first sex before 18	Proportion	All women 20-49
Children ever born	Mean	All women 15-49
Children ever born to women 40-49	Mean	All women 40-49
Children surviving	Mean	All women 15-49
Knowing any contraceptive method	Proportion	Currently married women 15-49
Knowing any modern contraceptive method	Proportion	Currently married women 15-49
Ever used any contraceptive method	Proportion	Currently married women 15-49
Currently using any method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Currently female sterilization	Proportion	Currently married women 15-49
Currently using pill	Proportion	Currently married women 15-49
Currently using IUD	Proportion	Currently married women 15-49
Currently using condom	Proportion	Currently married women 15-49
Currently using injectables	Proportion	Currently married women 15-49
Currently using periodic abstinence	Proportion	Currently married women 15-49
Currently using withdrawal	Proportion	Currently married women 15-49
Using public sector source	Proportion	Currently married women 15-49
Want no more children	Proportion	Currently married women 15-49
Want to delay at least 2 years	Proportion	Currently married women 15-49
Ideal number of children	Mean	All women 15-49
Mother received tetanus injection	Proportion	Births in last 5 years
Mother received medical care at birth	Proportion	Births in last 5 years
Child has diarrhoea in the last 2 weeks	Proportion	Children under 5
Child treated with ORS packets	Proportion	Children under 5 with diarrhoea in last 2 weeks
Consulted medical personnel	Proportion	Children 12-23 months
Child having health card, seen	Proportion	Children 12-23 months
Child received BCG vaccination	Proportion	Children 12-23 months
Child received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Child received polio vaccination (3 doses)	Proportion	Children 12-23 months
Child received measles vaccination	Proportion	Children 12-23 months
Child fully immunized	Proportion	Children 12-23 months
Weight-for-height (<-2SD)	Proportion	Children under 5 who were measured
Height-for-age (<-2SD)	Proportion	Children under 5 who were measured
Weight-for-age (<-2SD)	Proportion	Children under 5 who were measured
Total fertility rate (last 3 years)	Rate	All women
Neonatal mortality rate (last 10 years)*	Rate	Number of births in last 5 (10 years)
Postneonatal mortality rate (last 10 years)*	Rate	Number of births in last 5 (10 years)
Infant mortality rate (last 10 years)*	Rate	Number of births in last 5 (10 years)
Child mortality rate (last 10 years)*	Rate	Number of births in last 5 (10 years)
Under-five mortality rate (last 10 years)*	Rate	Number of births in last 5 (10 years)
Maternal mortality ratio (0-9 years) <sup>1</sup>	Ratio	Number of births in last 10 years
HIV prevalence (15-49)	Proportion	All women 15-49 tested for HIV
MEN		
No education	Proportion	All men 15-54
With secondary education or higher	Proportion	All men 15-54
Never married (in union)	Proportion	All men 15-54
Currently married (in union)	Proportion	All men 15-54
Had first sex before 18	Proportion	All men 20-54
Knowing any contraceptive method	Proportion	Currently married men 15-54
Knowing any modern contraceptive method	Proportion	Currently married men 15-54
Want no more children	Proportion	Currently married men 15-54
Want to delay at least 2 years	Proportion	Currently married men 15-54
Ideal number of children	Mean	All men 15-54
HIV prevalence (15-49)	Proportion	All men 15-49 tested for HIV
HIV prevalence (15-54)	Proportion	All men 15-54 tested for HIV

\* 5 years for national sample and 10 years for regional sample.

<sup>1</sup> Maternal mortality ratio is reported only for national sample.

Table B.2 Sampling errors for national sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.251	0.010	8195	8195	2.064	0.039	0.231	0.271
No education	0.127	0.009	8195	8195	2.419	0.070	0.109	0.145
With secondary education or higher	0.293	0.010	8195	8195	1.945	0.033	0.274	0.313
Never married (in union)	0.298	0.007	8195	8195	1.337	0.023	0.285	0.312
Currently married (in union)	0.600	0.007	8195	8195	1.342	0.012	0.586	0.615
Had first sex before 18	0.528	0.010	6375	6339	1.609	0.019	0.507	0.548
Children ever born	2.751	0.044	8195	8195	1.422	0.016	2.664	2.839
Children ever born to women 40-49	6.038	0.097	1290	1309	1.233	0.016	5.844	6.232
Children surviving	2.425	0.036	8195	8195	1.367	0.015	2.352	2.498
Knowing any contraceptive method	0.955	0.007	4876	4919	2.289	0.007	0.941	0.968
Knowing any modern contraceptive method	0.953	0.007	4876	4919	2.359	0.008	0.939	0.967
Ever used any contraceptive method	0.642	0.013	4876	4919	1.946	0.021	0.615	0.669
Currently using any method	0.393	0.011	4876	4919	1.635	0.029	0.370	0.416
Currently using a modern method	0.315	0.011	4876	4919	1.711	0.036	0.293	0.338
Currently female sterilization	0.043	0.003	4876	4919	1.109	0.074	0.037	0.050
Currently using pill	0.075	0.005	4876	4919	1.447	0.073	0.064	0.086
Currently using IUD	0.024	0.003	4876	4919	1.319	0.121	0.018	0.030
Currently using condom	0.012	0.002	4876	4919	1.291	0.166	0.008	0.016
Currently using injectables	0.143	0.007	4876	4919	1.481	0.052	0.129	0.158
Currently using periodic abstinence	0.063	0.005	4876	4919	1.337	0.074	0.054	0.072
Currently using withdrawal	0.006	0.001	4876	4919	1.255	0.222	0.004	0.009
Using public sector source	0.534	0.017	1854	1862	1.473	0.032	0.500	0.568
Want no more children	0.443	0.009	4876	4919	1.274	0.020	0.425	0.461
Want to delay at least 2 years	0.290	0.007	4876	4919	1.124	0.025	0.276	0.305
Ideal number of children	3.917	0.049	7737	7764	1.935	0.013	3.818	4.015
Mothers received tetanus injection	0.854	0.007	3972	4052	1.329	0.009	0.840	0.869
Mothers received medical care at birth	0.416	0.013	5949	6102	1.717	0.031	0.390	0.441
Child had diarrhoea in the last 2 weeks	0.160	0.007	5447	5560	1.444	0.047	0.145	0.175
Treated with ORS packets	0.292	0.019	866	888	1.219	0.067	0.253	0.331
Consulted medical personnel	0.297	0.020	866	888	1.219	0.067	0.258	0.337
Child having health card, seen	0.599	0.020	1099	1131	1.343	0.033	0.560	0.639
Child received BCG vaccination	0.873	0.014	1099	1131	1.368	0.016	0.846	0.900
Child received DPT vaccination (3 doses)	0.722	0.018	1099	1131	1.311	0.025	0.686	0.757
Child received polio vaccination (3 doses)	0.725	0.017	1099	1131	1.276	0.024	0.691	0.759
Child received measles vaccination	0.725	0.017	1099	1131	1.281	0.024	0.691	0.760
Child fully immunized	0.568	0.019	1099	1131	1.292	0.034	0.530	0.606
Weight-for-height (-2SD)	0.056	0.005	5071	5307	1.487	0.089	0.046	0.066
Height-for-age (-2SD)	0.303	0.009	5071	5307	1.371	0.030	0.285	0.322
Weight-for-age (-2SD)	0.199	0.008	5071	5307	1.315	0.039	0.183	0.214
Total fertility rate (last 3 years)	4.884	0.135	na	22945	1.647	0.028	4.614	5.155
Neonatal mortality (last 5 years)	33.301	3.180	5962	6113	1.220	0.095	26.941	39.662
Postneonatal mortality (last 5 years)	43.863	4.843	5983	6136	1.694	0.110	34.178	53.548
Infant mortality (last 0-4 years)	77.164	5.534	5985	6139	1.437	0.072	66.096	88.233
Infant mortality (last 5-9 years)	73.423	5.165	5096	5145	1.338	0.070	63.093	83.753
Infant mortality (last 10-14 years)	72.620	7.347	4497	4563	1.663	0.101	57.927	87.314
Child mortality (last 5 years)	40.516	4.092	6037	6186	1.380	0.101	32.331	48.701
Under 5 mortality (last 5 years)	114.554	7.117	6062	6216	1.500	0.062	100.320	128.787
Maternal mortality ratio (0-9 years)	414	43	na	na	na	0.104	328	501
HIV prevalence (15-49)	0.087	0.006	3273	3151	1.280	0.073	0.074	0.099
MEN								
No education	0.064	0.007	3578	3578	1.675	0.107	0.050	0.077
Secondary education or higher	0.369	0.012	3578	3578	1.541	0.034	0.344	0.394
Never married (in union)	0.450	0.010	3578	3578	1.210	0.022	0.430	0.470
Currently married (in union)	0.508	0.010	3578	3578	1.153	0.019	0.489	0.527
Had sex before 18	0.574	0.011	2749	2722	1.179	0.019	0.551	0.596
Knowing any contraceptive method	0.977	0.003	1855	1818	1.005	0.004	0.970	0.984
Knowing any modern contraceptive method	0.972	0.005	1855	1818	1.179	0.005	0.962	0.981
Want no more children	0.387	0.015	1855	1818	1.328	0.039	0.357	0.417
Want to delay at least 2 years	0.334	0.012	1855	1818	1.106	0.036	0.310	0.358
Ideal number of children	4.338	0.093	3441	3440	1.804	0.021	4.152	4.523
HIV prevalence (15-49)	0.046	0.005	2723	2851	1.197	0.105	0.036	0.055
HIV prevalence (15-54)	0.046	0.005	2917	3043	1.179	0.099	0.037	0.056
na = Not applicable								

na = Not applicable

Table B.3 Sampling errors for urban sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	1.000	0.000	2751	2056	na	0.000	1.000	1.000
No education	0.078	0.011	2751	2056	2.078	0.136	0.057	0.099
With secondary education or higher	0.482	0.018	2751	2056	1.844	0.036	0.447	0.517
Never married (in union)	0.348	0.014	2751	2056	1.504	0.039	0.321	0.376
Currently married (in union)	0.531	0.013	2751	2056	1.340	0.024	0.505	0.556
Had first sex before 18	0.415	0.019	2224	1668	1.818	0.046	0.377	0.453
Children ever born	1.895	0.050	2751	2056	1.258	0.026	1.795	1.995
Children ever born to women 40-49	4.444	0.156	343	253	1.192	0.035	4.133	4.755
Children surviving	1.708	0.043	2751	2056	1.213	0.025	1.622	1.794
Knowing any contraceptive method	0.985	0.005	1440	1091	1.458	0.005	0.976	0.994
Knowing any modern contraceptive method	0.985	0.005	1440	1091	1.458	0.005	0.976	0.994
Ever used any contraceptive method	0.741	0.019	1440	1091	1.689	0.026	0.702	0.780
Currently using any method	0.476	0.021	1440	1091	1.569	0.043	0.434	0.517
Currently using a modern method	0.399	0.020	1440	1091	1.574	0.051	0.358	0.440
Currently female sterilization	0.041	0.006	1440	1091	1.118	0.142	0.030	0.053
Currently using pill	0.104	0.012	1440	1091	1.499	0.116	0.080	0.128
Currently using IUD	0.042	0.007	1440	1091	1.340	0.169	0.028	0.056
Currently using condom	0.022	0.007	1440	1091	1.690	0.296	0.009	0.035
Currently using injectables	0.162	0.014	1440	1091	1.394	0.084	0.135	0.189
Currently using periodic abstinence	0.065	0.007	1440	1091	1.017	0.102	0.052	0.078
Currently using withdrawal	0.002	0.001	1440	1091	0.898	0.487	0.000	0.005
Using public sector source	0.439	0.029	735	577	1.582	0.066	0.381	0.497
Want no more children	0.404	0.016	1440	1091	1.274	0.041	0.371	0.437
Want to delay at least 2 years	0.274	0.013	1440	1091	1.124	0.048	0.248	0.301
Ideal number of children	3.375	0.076	2638	1973	1.946	0.023	3.223	3.528
Mothers received tetanus injection	0.898	0.009	1100	835	1.009	0.010	0.880	0.916
Mothers received medical care at birth	0.720	0.020	1534	1143	1.469	0.027	0.680	0.759
Child had diarrhoea in the last 2 weeks	0.170	0.017	1410	1063	1.644	0.100	0.136	0.204
Treated with ORS packets	0.319	0.025	232	180	0.828	0.079	0.269	0.370
Consulted medical personnel	0.307	0.033	232	180	1.063	0.106	0.242	0.373
Child having health card, seen	0.482	0.044	266	199	1.371	0.090	0.395	0.569
Child received BCG vaccination	0.959	0.012	266	199	1.018	0.013	0.934	0.984
Child received DPT vaccination (3 doses)	0.687	0.038	266	199	1.305	0.056	0.610	0.764
Child received polio vaccination (3 doses)	0.690	0.045	266	199	1.535	0.065	0.600	0.780
Child received measles vaccination	0.859	0.028	266	199	1.297	0.032	0.804	0.915
Child fully immunized	0.587	0.045	266	199	1.458	0.078	0.496	0.678
Weight-for-height (-2SD)	0.042	0.008	1220	882	1.288	0.197	0.026	0.059
Height-for-age (-2SD)	0.236	0.018	1220	882	1.368	0.076	0.200	0.272
Weight-for-age (-2SD)	0.126	0.011	1220	882	1.108	0.090	0.103	0.149
Total fertility rate (last 3 years)	3.309	0.167	na	5889	1.479	0.051	2.974	3.643
Neonatal mortality (last 10 years)	25.582	3.860	2810	2049	1.119	0.151	17.862	33.303
Postneonatal mortality (last 10 years)	35.512	4.551	2814	2053	1.178	0.128	26.410	44.614
Infant mortality (last 10 years)	61.094	6.205	2814	2053	1.219	0.102	48.683	73.505
Child mortality (last 10 years)	34.502	4.616	2825	2056	1.163	0.134	25.269	43.734
Under 5 mortality (last 10 years)	93.488	8.292	2829	2060	1.241	0.089	76.905	110.071
HIV prevalence (15-49)	0.123	0.013	981	779	1.216	0.104	0.097	0.148
MEN								
No education	0.043	0.011	1150	907	1.789	0.248	0.022	0.065
Secondary education or higher	0.577	0.025	1150	907	1.709	0.043	0.527	0.626
Never married (in union)	0.427	0.017	1150	907	1.171	0.040	0.393	0.461
Currently married (in union)	0.533	0.017	1150	907	1.157	0.032	0.499	0.567
Had sex before 18	0.574	0.019	959	765	1.189	0.033	0.536	0.612
Knowing any contraceptive method	0.991	0.006	617	483	1.548	0.006	0.979	1.000
Knowing any modern contraceptive method	0.991	0.006	617	483	1.548	0.006	0.979	1.000
Want no more children	0.365	0.027	617	483	1.411	0.075	0.310	0.420
Want to delay at least 2 years	0.325	0.025	617	483	1.328	0.077	0.275	0.376
Ideal number of children	3.957	0.112	1109	878	1.465	0.028	3.733	4.182
HIV prevalence (15-49)	0.075	0.010	797	716	1.034	0.128	0.056	0.095
HIV prevalence (15-54)	0.075	0.010	847	763	1.103	0.133	0.055	0.095

na = Not applicable

Table B.4 Sampling errors for rural sample, Kenya 2003

Variable	Value (R)	Stand-ard error (SE)	Number of cases		Design effect (DEFT)	Rela-tive error (SE/R)	Confidence limits	
			Un-weighted (N)	Weight-ed (WN)			R-2SE	R+ 2SE
WOMEN								
Urban residence	0.000	0.000	5444	6139	na	na	0.000	0.000
No education	0.143	0.011	5444	6139	2.374	0.079	0.121	0.166
With secondary education or higher	0.230	0.011	5444	6139	1.893	0.047	0.208	0.252
Never married (in union)	0.281	0.008	5444	6139	1.256	0.027	0.266	0.296
Currently married (in union)	0.624	0.009	5444	6139	1.317	0.014	0.606	0.641
Had first sex before 18	0.568	0.012	4151	4672	1.508	0.020	0.544	0.591
Children ever born	3.038	0.053	5444	6139	1.339	0.017	2.932	3.144
Children ever born to women 40-49	6.420	0.108	947	1056	1.197	0.017	6.204	6.637
Children surviving	2.665	0.044	5444	6139	1.290	0.017	2.577	2.754
Knowing any contraceptive method	0.946	0.009	3436	3828	2.236	0.009	0.929	0.963
Knowing any modern contraceptive method	0.944	0.009	3436	3828	2.305	0.010	0.925	0.962
Ever used any contraceptive method	0.614	0.016	3436	3828	1.927	0.026	0.582	0.646
Currently using any method	0.370	0.013	3436	3828	1.620	0.036	0.343	0.396
Currently using a modern method	0.292	0.013	3436	3828	1.719	0.046	0.265	0.318
Currently female sterilization	0.044	0.004	3436	3828	1.088	0.086	0.036	0.052
Currently using pill	0.067	0.006	3436	3828	1.430	0.091	0.055	0.079
Currently using IUD	0.019	0.003	3436	3828	1.339	0.165	0.013	0.025
Currently using condom	0.009	0.002	3436	3828	1.116	0.196	0.006	0.013
Currently using injectables	0.138	0.009	3436	3828	1.480	0.063	0.121	0.156
Currently using periodic abstinence	0.062	0.006	3436	3828	1.375	0.091	0.051	0.074
Currently using withdrawal	0.008	0.002	3436	3828	1.224	0.238	0.004	0.011
Using public sector source	0.577	0.021	1119	1285	1.409	0.036	0.535	0.619
Want no more children	0.455	0.011	3436	3828	1.260	0.024	0.433	0.476
Want to delay at least 2 years	0.295	0.009	3436	3828	1.106	0.029	0.278	0.312
Ideal number of children	4.101	0.060	5099	5791	1.874	0.015	3.981	4.221
Mothers received tetanus injection	0.843	0.009	2872	3217	1.309	0.011	0.825	0.861
Mothers received medical care at birth	0.345	0.014	4415	4959	1.647	0.040	0.318	0.373
Child had diarrhoea in the last 2 weeks	0.158	0.008	4037	4497	1.365	0.053	0.141	0.174
Treated with ORS packets	0.285	0.024	634	708	1.246	0.083	0.238	0.332
Consulted medical personnel	0.295	0.023	634	708	1.207	0.079	0.248	0.341
Child having health card, seen	0.624	0.022	833	932	1.273	0.035	0.581	0.668
Child received BCG vaccination	0.855	0.016	833	932	1.302	0.019	0.823	0.887
Child received DPT vaccination (3 doses)	0.729	0.020	833	932	1.267	0.027	0.690	0.769
Child received polio vaccination (3 doses)	0.733	0.018	833	932	1.182	0.025	0.696	0.769
Child received measles vaccination	0.697	0.020	833	932	1.225	0.028	0.657	0.736
Child fully immunized	0.564	0.021	833	932	1.226	0.038	0.521	0.607
Weight-for-height (-2SD)	0.058	0.006	3851	4425	1.446	0.097	0.047	0.070
Height-for-age (-2SD)	0.317	0.010	3851	4425	1.314	0.033	0.296	0.338
Weight-for-age (-2SD)	0.213	0.009	3851	4425	1.259	0.041	0.196	0.231
Total fertility rate (last 3 years)	5.442	0.155	na	17056	1.547	0.028	5.132	5.752
Neonatal mortality (last 10 years)	34.428	2.692	8231	9187	1.176	0.078	29.044	39.813
Postneonatal mortality (last 10 years)	44.228	4.704	8242	9201	1.881	0.106	34.820	53.636
Infant mortality (last 10 years)	78.657	5.349	8244	9205	1.607	0.068	67.959	89.354
Child mortality (last 10 years)	41.488	3.684	8280	9240	1.299	0.089	34.119	48.856
Under 5 mortality (last 10 years)	116.881	7.125	8295	9261	1.696	0.061	102.630	131.132
HIV prevalence (15-49)	0.075	0.007	2292	2372	1.294	0.095	0.061	0.089
MEN								
No education	0.071	0.008	2428	2671	1.618	0.119	0.054	0.088
Secondary education or higher	0.299	0.014	2428	2671	1.465	0.046	0.271	0.326
Never married (in union)	0.458	0.012	2428	2671	1.196	0.026	0.434	0.482
Currently married (in union)	0.500	0.011	2428	2671	1.132	0.023	0.477	0.523
Had sex before 18	0.573	0.014	1790	1957	1.161	0.024	0.546	0.601
Knowing any contraceptive method	0.972	0.004	1238	1335	0.905	0.004	0.964	0.981
Knowing any modern contraceptive method	0.965	0.006	1238	1335	1.106	0.006	0.953	0.976
Want no more children	0.395	0.018	1238	1335	1.285	0.045	0.360	0.431
Want to delay at least 2 years	0.337	0.014	1238	1335	1.026	0.041	0.309	0.364
Ideal number of children	4.468	0.118	2332	2562	1.817	0.026	4.232	4.704
HIV prevalence (15-49)	0.036	0.005	1926	2135	1.279	0.152	0.025	0.046
HIV prevalence (15-54)	0.037	0.005	2070	2280	1.220	0.137	0.027	0.047

na = Not applicable



Table B.5 Sampling errors for Nairobi sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	1.000	0.000	1169	835	na	0.000	1.000	1.000
No education	0.056	0.019	1169	835	2.864	0.345	0.017	0.094
With secondary education or higher	0.564	0.027	1169	835	1.855	0.048	0.510	0.617
Never married (in union)	0.401	0.020	1169	835	1.385	0.049	0.362	0.441
Currently married (in union)	0.500	0.020	1169	835	1.359	0.040	0.461	0.540
Had first sex before 18	0.337	0.025	969	691	1.661	0.075	0.286	0.387
Children ever born	1.542	0.064	1169	835	1.249	0.041	1.415	1.669
Children ever born to women 40-49	3.471	0.182	132	91	1.144	0.052	3.107	3.835
Children surviving	1.405	0.054	1169	835	1.185	0.038	1.297	1.513
Knowing any contraceptive method	0.994	0.004	567	418	1.369	0.004	0.985	1.000
Knowing any modern contraceptive method	0.994	0.004	567	418	1.369	0.004	0.985	1.000
Ever used any contraceptive method	0.780	0.031	567	418	1.772	0.040	0.718	0.841
Currently using any method	0.507	0.025	567	418	1.183	0.049	0.458	0.557
Currently using a modern method	0.443	0.027	567	418	1.312	0.062	0.389	0.498
Currently female sterilization	0.059	0.010	567	418	1.047	0.176	0.038	0.079
Currently using pill	0.125	0.015	567	418	1.081	0.120	0.095	0.155
Currently using IUD	0.045	0.008	567	418	0.965	0.186	0.029	0.062
Currently using condom	0.027	0.008	567	418	1.238	0.311	0.010	0.044
Currently using injectables	0.161	0.016	567	418	1.035	0.099	0.129	0.193
Currently using periodic abstinence	0.060	0.010	567	418	0.975	0.162	0.041	0.079
Currently using withdrawal	0.002	0.002	567	418	0.970	0.997	0.000	0.005
Using public sector source	0.371	0.029	337	239	1.090	0.077	0.314	0.429
Want no more children	0.359	0.023	567	418	1.165	0.065	0.312	0.406
Want to delay at least 2 years	0.323	0.023	567	418	1.179	0.072	0.277	0.370
Ideal number of children	3.209	0.137	1127	808	2.477	0.043	2.935	3.483
Mothers received tetanus injection	0.887	0.016	417	307	1.070	0.018	0.854	0.920
Mothers received medical care at birth	0.791	0.026	548	398	1.309	0.033	0.738	0.843
Child had diarrhoea in the last 2 weeks	0.139	0.020	508	369	1.312	0.147	0.098	0.179
Treated with ORS packets	0.411	0.058	70	51	0.984	0.141	0.295	0.527
Consulted medical personnel	0.350	0.066	70	51	1.167	0.190	0.217	0.483
Child having health card, seen	0.499	0.053	85	60	0.959	0.107	0.392	0.606
Child received BCG vaccination	0.976	0.014	85	60	0.838	0.014	0.948	1.000
Child received DPT vaccination (3 doses)	0.736	0.033	85	60	0.685	0.045	0.670	0.802
Child received polio vaccination (3 doses)	0.738	0.044	85	60	0.912	0.060	0.650	0.826
Child received measles vaccination	0.876	0.045	85	60	1.252	0.051	0.786	0.966
Child fully immunized	0.631	0.046	85	60	0.869	0.073	0.538	0.723
Weight-for-height (-2SD)	0.045	0.015	434	304	1.389	0.343	0.014	0.076
Height-for-age (-2SD)	0.187	0.022	434	304	1.133	0.119	0.143	0.232
Weight-for-age (-2SD)	0.063	0.017	434	304	1.268	0.262	0.030	0.097
Total fertility rate (last 3 years)	2.729	0.182	na	2407	1.281	0.067	2.366	3.092
Neonatal mortality (last 10 years)	32.008	7.090	975	706	1.074	0.222	17.828	46.188
Postneonatal mortality (last 10 years)	34.976	7.870	976	706	1.238	0.225	19.237	50.716
Infant mortality (last 10 years)	66.984	11.955	976	706	1.275	0.178	43.075	90.894
Child mortality (last 10 years)	29.686	8.830	978	708	1.256	0.297	12.027	47.345
Under 5 mortality (last 10 years)	94.682	16.497	979	708	1.390	0.174	61.688	127.676
HIV prevalence (15-49)	0.119	0.020	355	332	1.142	0.165	0.080	0.159
MEN								
No education	0.049	0.021	493	397	2.158	0.429	0.007	0.091
Secondary education or higher	0.674	0.034	493	397	1.619	0.051	0.605	0.742
Never married (in union)	0.425	0.032	493	397	1.447	0.076	0.360	0.489
Currently married (in union)	0.539	0.028	493	397	1.231	0.051	0.484	0.595
Had sex before 18	0.574	0.026	427	341	1.094	0.046	0.521	0.626
Knowing any contraceptive method	0.987	0.012	264	214	1.797	0.013	0.963	1.000
Knowing any modern contraceptive method	0.987	0.012	264	214	1.797	0.013	0.963	1.000
Want no more children	0.377	0.038	264	214	1.269	0.101	0.301	0.452
Want to delay at least 2 years	0.325	0.032	264	214	1.109	0.099	0.261	0.389
Ideal number of children	3.790	0.168	476	384	1.349	0.044	3.455	4.126
HIV prevalence (15-49)	0.078	0.014	306	314	0.926	0.183	0.049	0.106
HIV prevalence (15-54)	0.080	0.016	328	336	1.052	0.198	0.048	0.111

na = Not applicable

Table B.6 Sampling errors for Central sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.139	0.019	1314	1181	2.015	0.138	0.101	0.177
No education	0.026	0.005	1314	1181	1.245	0.212	0.015	0.036
With secondary education or higher	0.416	0.029	1314	1181	2.154	0.070	0.357	0.475
Never married (in union)	0.324	0.016	1314	1181	1.210	0.048	0.293	0.355
Currently married (in union)	0.555	0.018	1314	1181	1.279	0.032	0.520	0.591
Had first sex before 18	0.435	0.021	1056	951	1.368	0.048	0.393	0.476
Children ever born	2.310	0.097	1314	1181	1.597	0.042	2.117	2.503
Children ever born to women 40-49	4.901	0.191	240	216	1.358	0.039	4.518	5.284
Children surviving	2.182	0.089	1314	1181	1.564	0.041	2.003	2.361
Knowing any contraceptive method	1.000	0.000	720	656	na	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	720	656	na	0.000	1.000	1.000
Ever used any contraceptive method	0.901	0.013	720	656	1.172	0.015	0.875	0.927
Currently using any method	0.664	0.024	720	656	1.344	0.036	0.616	0.711
Currently using a modern method	0.579	0.030	720	656	1.651	0.053	0.518	0.639
Currently female sterilization	0.072	0.011	720	656	1.116	0.149	0.051	0.094
Currently using pill	0.156	0.020	720	656	1.510	0.131	0.115	0.197
Currently using IUD	0.083	0.016	720	656	1.552	0.193	0.051	0.115
Currently using condom	0.007	0.004	720	656	1.142	0.503	0.000	0.014
Currently using injectables	0.225	0.020	720	656	1.272	0.088	0.185	0.265
Currently using periodic abstinence	0.075	0.015	720	656	1.510	0.198	0.045	0.105
Currently using withdrawal	0.002	0.002	720	656	1.175	1.004	0.000	0.006
Using public sector source	0.552	0.036	471	433	1.574	0.065	0.480	0.624
Want no more children	0.537	0.019	720	656	1.002	0.035	0.500	0.575
Want to delay at least 2 years	0.221	0.016	720	656	1.039	0.073	0.189	0.253
Ideal number of children	3.143	0.049	1262	1132	1.312	0.016	3.045	3.242
Mothers received tetanus injection	0.911	0.011	555	495	0.922	0.012	0.888	0.933
Mothers received medical care at birth	0.680	0.032	730	652	1.566	0.047	0.617	0.743
Child had diarrhoea in the last 2 weeks	0.070	0.012	697	622	1.218	0.170	0.046	0.094
Treated with ORS packets	0.225	0.057	51	44	0.968	0.252	0.111	0.339
Consulted medical personnel	0.265	0.067	51	44	1.082	0.253	0.131	0.399
Child having health card, seen	0.649	0.052	143	125	1.277	0.080	0.545	0.752
Child received BCG vaccination	0.979	0.012	143	125	0.956	0.012	0.956	1.000
Child received DPT vaccination (3 doses)	0.875	0.028	143	125	1.008	0.032	0.819	0.932
Child received polio vaccination (3 doses)	0.885	0.029	143	125	1.064	0.033	0.827	0.942
Child received measles vaccination	0.900	0.030	143	125	1.162	0.033	0.840	0.959
Child fully immunized	0.785	0.043	143	125	1.224	0.054	0.700	0.870
Weight-for-height (-2SD)	0.044	0.012	656	571	1.496	0.280	0.019	0.069
Height-for-age (-2SD)	0.270	0.027	656	571	1.409	0.099	0.217	0.323
Weight-for-age (-2SD)	0.146	0.021	656	571	1.315	0.145	0.104	0.189
Total fertility rate (last 3 years)	3.441	0.248	na	3318	1.511	0.072	2.945	3.937
Neonatal mortality (last 10 years)	27.247	5.024	1353	1221	1.052	0.184	17.199	37.295
Postneonatal mortality (last 10 years)	16.636	3.700	1352	1220	0.968	0.222	9.236	24.035
Infant mortality (last 10 years)	43.882	6.896	1353	1221	1.149	0.157	30.091	57.673
Child mortality (last 10 years)	10.467	3.004	1356	1224	1.090	0.287	4.459	16.475
Under 5 mortality (last 10 years)	53.890	7.836	1357	1225	1.207	0.145	38.218	69.563
HIV prevalence (15-49)	0.076	0.013	522	462	1.084	0.165	0.051	0.102
MEN								
No education	0.015	0.007	621	554	1.429	0.458	0.001	0.030
Secondary education or higher	0.411	0.032	621	554	1.631	0.078	0.346	0.475
Never married (in union)	0.489	0.021	621	554	1.054	0.043	0.447	0.532
Currently married (in union)	0.459	0.022	621	554	1.083	0.047	0.415	0.502
Had sex before 18	0.393	0.024	479	425	1.076	0.061	0.345	0.441
Knowing any contraceptive method	0.997	0.003	288	254	0.918	0.003	0.991	1.000
Knowing any modern contraceptive method	0.994	0.004	288	254	0.912	0.004	0.986	1.000
Want no more children	0.461	0.032	288	254	1.076	0.069	0.398	0.525
Want to delay at least 2 years	0.264	0.029	288	254	1.104	0.109	0.207	0.322
Ideal number of children	3.437	0.075	609	542	1.141	0.022	3.287	3.586
HIV prevalence (15-49)	0.020	0.006	430	438	0.934	0.317	0.007	0.032
HIV prevalence (15-54)	0.021	0.006	465	476	0.944	0.299	0.008	0.034

na = Not applicable

Table B.7 Sampling errors for Coast sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.451	0.027	938	667	1.639	0.059	0.397	0.504
No education	0.296	0.034	938	667	2.268	0.114	0.228	0.363
With secondary education or higher	0.199	0.026	938	667	1.988	0.130	0.148	0.251
Never married (in union)	0.241	0.020	938	667	1.405	0.081	0.202	0.280
Currently married (in union)	0.626	0.024	938	667	1.544	0.039	0.577	0.675
Had first sex before 18	0.496	0.027	735	522	1.459	0.054	0.442	0.550
Children ever born	2.829	0.102	938	667	1.118	0.036	2.626	3.032
Children ever born to women 40-49	6.160	0.252	140	101	1.059	0.041	5.657	6.664
Children surviving	2.445	0.090	938	667	1.124	0.037	2.266	2.625
Knowing any contraceptive method	0.950	0.015	575	418	1.700	0.016	0.919	0.981
Knowing any modern contraceptive method	0.950	0.015	575	418	1.700	0.016	0.919	0.981
Ever used any contraceptive method	0.441	0.046	575	418	2.202	0.103	0.350	0.533
Currently using any method	0.241	0.030	575	418	1.696	0.126	0.180	0.301
Currently using a modern method	0.191	0.024	575	418	1.486	0.128	0.142	0.239
Currently female sterilization	0.030	0.009	575	418	1.266	0.300	0.012	0.048
Currently using pill	0.036	0.009	575	418	1.172	0.253	0.018	0.054
Currently using IUD	0.007	0.004	575	418	1.082	0.544	0.000	0.014
Currently using condom	0.004	0.002	575	418	0.902	0.612	0.000	0.008
Currently using injectables	0.099	0.017	575	418	1.346	0.170	0.065	0.132
Currently using periodic abstinence	0.038	0.011	575	418	1.324	0.279	0.017	0.059
Currently using withdrawal	0.005	0.003	575	418	1.048	0.617	0.000	0.011
Using public sector source	0.620	0.051	158	107	1.325	0.083	0.518	0.723
Want no more children	0.302	0.023	575	418	1.208	0.077	0.256	0.348
Want to delay at least 2 years	0.334	0.022	575	418	1.142	0.067	0.289	0.379
Ideal number of children	4.483	0.201	752	530	2.270	0.045	4.081	4.886
Mothers received tetanus injection	0.836	0.026	467	336	1.514	0.031	0.784	0.887
Mothers received medical care at birth	0.338	0.041	699	510	1.927	0.123	0.255	0.421
Child had diarrhoea in the last 2 weeks	0.219	0.021	647	467	1.238	0.095	0.177	0.260
Treated with ORS packets	0.434	0.059	140	102	1.363	0.135	0.317	0.552
Consulted medical personnel	0.428	0.051	140	102	1.141	0.119	0.327	0.530
Child having health card, seen	0.707	0.056	142	104	1.461	0.079	0.594	0.819
Child received BCG vaccination	0.888	0.031	142	104	1.209	0.035	0.826	0.951
Child received DPT vaccination (3 doses)	0.767	0.045	142	104	1.274	0.058	0.678	0.857
Child received polio vaccination (3 doses)	0.831	0.040	142	104	1.278	0.048	0.752	0.910
Child received measles vaccination	0.794	0.043	142	104	1.294	0.055	0.707	0.880
Child fully immunized	0.658	0.047	142	104	1.194	0.071	0.564	0.752
Weight-for-height (-2SD)	0.057	0.011	600	426	1.153	0.197	0.035	0.080
Height-for-age (-2SD)	0.349	0.034	600	426	1.618	0.097	0.282	0.416
Weight-for-age (-2SD)	0.254	0.031	600	426	1.626	0.121	0.192	0.315
Total fertility rate (last 3 years)	4.945	0.374	na	1859	1.561	0.076	4.197	5.693
Neonatal mortality (last 10 years)	45.048	11.292	1326	958	1.677	0.251	22.464	67.633
Postneonatal mortality (last 10 years)	32.909	5.542	1329	960	1.048	0.168	21.824	43.993
Infant mortality (last 10 years)	77.957	12.107	1329	960	1.465	0.155	53.744	102.170
Child mortality (last 10 years)	41.315	5.781	1334	964	0.865	0.140	29.753	52.877
Under 5 mortality (last 10 years)	116.051	14.741	1337	966	1.448	0.127	86.569	145.533
HIV prevalence (15-49)	0.066	0.017	384	236	1.373	0.263	0.031	0.101
MEN								
No education	0.100	0.012	375	252	0.759	0.118	0.077	0.124
Secondary education or higher	0.311	0.043	375	252	1.799	0.138	0.225	0.397
Never married (in union)	0.422	0.027	375	252	1.053	0.064	0.368	0.476
Currently married (in union)	0.548	0.029	375	252	1.117	0.053	0.490	0.605
Had sex before 18	0.493	0.044	291	196	1.484	0.088	0.406	0.580
Knowing any contraceptive method	0.997	0.003	204	138	0.759	0.003	0.992	1.000
Knowing any modern contraceptive method	0.997	0.003	204	138	0.759	0.003	0.992	1.000
Want no more children	0.247	0.025	204	138	0.826	0.101	0.197	0.297
Want to delay at least 2 years	0.384	0.041	204	138	1.193	0.106	0.303	0.466
Ideal number of children	5.141	0.265	357	239	1.346	0.052	4.610	5.672
HIV prevalence (15-49)	0.048	0.014	270	197	1.043	0.284	0.021	0.075
HIV prevalence (15-54)	0.045	0.013	290	210	1.035	0.282	0.020	0.070

na = Not applicable

Table B.8 Sampling errors for Eastern sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.087	0.028	993	1325	3.160	0.325	0.030	0.144
No education	0.084	0.015	993	1325	1.695	0.177	0.055	0.114
With secondary education or higher	0.222	0.019	993	1325	1.444	0.086	0.183	0.260
Never married (in union)	0.320	0.018	993	1325	1.191	0.055	0.285	0.355
Currently married (in union)	0.591	0.020	993	1325	1.281	0.034	0.551	0.631
Had first sex before 18	0.555	0.023	756	1009	1.284	0.042	0.509	0.602
Children ever born	2.643	0.074	993	1325	0.873	0.028	2.495	2.791
Children ever born to women 40-49	5.772	0.209	167	221	1.014	0.036	5.355	6.189
Children surviving	2.415	0.067	993	1325	0.887	0.028	2.281	2.550
Knowing any contraceptive method	0.993	0.005	581	783	1.388	0.005	0.983	1.000
Knowing any modern contraceptive method	0.993	0.005	581	783	1.388	0.005	0.983	1.000
Ever used any contraceptive method	0.771	0.028	581	783	1.579	0.036	0.716	0.827
Currently using any method	0.506	0.036	581	783	1.717	0.070	0.435	0.578
Currently using a modern method	0.384	0.035	581	783	1.710	0.090	0.315	0.453
Currently female sterilization	0.045	0.009	581	783	1.027	0.197	0.027	0.062
Currently using pill	0.096	0.015	581	783	1.211	0.154	0.067	0.126
Currently using IUD	0.018	0.007	581	783	1.256	0.390	0.004	0.031
Currently using condom	0.011	0.004	581	783	1.010	0.405	0.002	0.019
Currently using injectables	0.199	0.023	581	783	1.387	0.116	0.153	0.245
Currently using periodic abstinence	0.111	0.016	581	783	1.219	0.143	0.079	0.143
Currently using withdrawal	0.004	0.003	581	783	1.021	0.690	0.000	0.009
Using public sector source	0.574	0.040	276	362	1.339	0.070	0.494	0.654
Want no more children	0.532	0.019	581	783	0.929	0.036	0.493	0.570
Want to delay at least 2 years	0.256	0.014	581	783	0.770	0.055	0.228	0.284
Ideal number of children	3.456	0.104	962	1281	1.889	0.030	3.247	3.664
Mothers received tetanus injection	0.871	0.017	480	646	1.087	0.019	0.838	0.904
Mothers received medical care at birth	0.386	0.029	700	946	1.372	0.076	0.327	0.444
Child had diarrhoea in the last 2 weeks	0.126	0.015	654	883	1.154	0.119	0.096	0.156
Treated with ORS packets	0.373	0.057	81	111	1.064	0.153	0.258	0.487
Consulted medical personnel	0.492	0.047	81	111	0.830	0.096	0.397	0.587
Child having health card, seen	0.776	0.037	136	188	1.046	0.047	0.702	0.850
Child received BCG vaccination	0.854	0.031	136	188	1.026	0.036	0.793	0.915
Child received DPT vaccination (3 doses)	0.871	0.028	136	188	0.976	0.032	0.816	0.926
Child received polio vaccination (3 doses)	0.847	0.030	136	188	0.997	0.036	0.787	0.908
Child received measles vaccination	0.741	0.038	136	188	1.032	0.052	0.664	0.817
Child fully immunized	0.650	0.040	136	188	0.996	0.062	0.570	0.730
Weight-for-height (-2SD)	0.042	0.009	640	888	1.185	0.217	0.024	0.060
Height-for-age (-2SD)	0.325	0.019	640	888	0.973	0.057	0.288	0.362
Weight-for-age (-2SD)	0.214	0.016	640	888	1.032	0.077	0.181	0.247
Total fertility rate (last 3 years)	4.845	0.319	na	3686	1.479	0.066	4.207	5.483
Neonatal mortality (last 10 years)	31.919	6.396	1296	1758	1.182	0.200	19.127	44.711
Postneonatal mortality (last 10 years)	24.133	5.240	1296	1758	1.194	0.217	13.654	34.613
Infant mortality (last 10 years)	56.052	8.368	1297	1761	1.218	0.149	39.317	72.787
Child mortality (last 10 years)	29.342	5.570	1299	1763	0.993	0.190	18.202	40.482
Under 5 mortality (last 10 years)	83.749	9.310	1301	1768	1.065	0.111	65.128	102.370
HIV prevalence (15-49)	0.061	0.012	382	514	1.000	0.200	0.037	0.086
MEN								
No education	0.035	0.009	468	588	1.109	0.271	0.016	0.053
Secondary education or higher	0.302	0.025	468	588	1.182	0.083	0.251	0.352
Never married (in union)	0.505	0.026	468	588	1.131	0.052	0.453	0.558
Currently married (in union)	0.454	0.025	468	588	1.087	0.055	0.404	0.504
Had sex before 18	0.629	0.024	351	440	0.930	0.038	0.581	0.677
Knowing any contraceptive method	0.992	0.004	215	267	0.682	0.004	0.983	1.000
Knowing any modern contraceptive method	0.992	0.004	215	267	0.682	0.004	0.983	1.000
Want no more children	0.500	0.051	215	267	1.502	0.103	0.398	0.603
Want to delay at least 2 years	0.320	0.033	215	267	1.030	0.103	0.254	0.385
Ideal number of children	3.523	0.092	450	568	1.371	0.026	3.338	3.708
HIV prevalence (15-49)	0.015	0.007	349	464	0.998	0.428	0.002	0.029
HIV prevalence (15-54)	0.016	0.006	376	502	0.985	0.405	0.003	0.028

na = Not applicable

Table B.9 Sampling errors for Nyanza sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.118	0.018	1025	1222	1.827	0.156	0.081	0.155
No education	0.071	0.013	1025	1222	1.602	0.181	0.046	0.097
With secondary education or higher	0.262	0.024	1025	1222	1.768	0.093	0.214	0.311
Never married (in union)	0.263	0.017	1025	1222	1.230	0.064	0.229	0.297
Currently married (in union)	0.635	0.016	1025	1222	1.096	0.026	0.602	0.668
Had first sex before 18	0.751	0.028	752	897	1.767	0.037	0.695	0.807
Children ever born	3.227	0.147	1025	1222	1.478	0.046	2.933	3.521
Children ever born to women 40-49	6.836	0.276	163	197	1.120	0.040	6.284	7.388
Children surviving	2.538	0.092	1025	1222	1.198	0.036	2.354	2.723
Knowing any contraceptive method	0.999	0.001	650	775	0.801	0.001	0.997	1.000
Knowing any modern contraceptive method	0.999	0.001	650	775	0.801	0.001	0.997	1.000
Ever used any contraceptive method	0.511	0.039	650	775	1.991	0.076	0.433	0.589
Currently using any method	0.247	0.029	650	775	1.735	0.119	0.188	0.306
Currently using a modern method	0.210	0.030	650	775	1.846	0.141	0.151	0.269
Currently female sterilization	0.047	0.007	650	775	0.901	0.160	0.032	0.062
Currently using pill	0.041	0.011	650	775	1.453	0.277	0.018	0.063
Currently using IUD	0.005	0.002	650	775	0.837	0.487	0.000	0.009
Currently using condom	0.003	0.002	650	775	0.867	0.673	0.000	0.006
Currently using injectables	0.109	0.018	650	775	1.508	0.169	0.072	0.146
Currently using periodic abstinence	0.032	0.009	650	775	1.355	0.292	0.013	0.051
Currently using withdrawal	0.003	0.002	650	775	0.996	0.712	0.000	0.007
Using public sector source	0.524	0.040	193	199	1.120	0.077	0.443	0.605
Want no more children	0.424	0.022	650	775	1.156	0.053	0.379	0.468
Want to delay at least 2 years	0.298	0.018	650	775	0.981	0.059	0.263	0.333
Ideal number of children	4.050	0.097	1002	1193	1.773	0.024	3.856	4.244
Mothers received tetanus injection	0.831	0.024	516	643	1.505	0.029	0.782	0.879
Mothers received medical care at birth	0.386	0.033	792	1000	1.655	0.084	0.321	0.452
Child had diarrhoea in the last 2 weeks	0.172	0.013	678	832	0.897	0.078	0.145	0.198
Treated with ORS packets	0.210	0.047	117	143	1.242	0.223	0.116	0.304
Consulted medical personnel	0.225	0.044	117	143	1.153	0.196	0.137	0.313
Child having health card, seen	0.396	0.063	115	142	1.401	0.160	0.270	0.523
Child received BCG vaccination	0.760	0.054	115	142	1.382	0.071	0.651	0.868
Child received DPT vaccination (3 doses)	0.546	0.061	115	142	1.315	0.111	0.424	0.667
Child received polio vaccination (3 doses)	0.514	0.064	115	142	1.374	0.124	0.387	0.642
Child received measles vaccination	0.482	0.069	115	142	1.498	0.144	0.343	0.620
Child fully immunized	0.376	0.071	115	142	1.579	0.188	0.234	0.517
Weight-for-height (-2SD)	0.023	0.008	645	826	1.298	0.329	0.008	0.038
Height-for-age (-2SD)	0.311	0.033	645	826	1.727	0.106	0.244	0.377
Weight-for-age (-2SD)	0.156	0.018	645	826	1.204	0.116	0.119	0.192
Total fertility rate (last 3 years)	5.563	0.339	na	3394	1.339	0.061	4.884	6.241
Neonatal mortality (last 10 years)	27.276	5.096	1466	1843	1.107	0.187	17.085	37.467
Postneonatal mortality (last 10 years)	106.209	16.165	1470	1850	1.942	0.152	73.878	138.540
Infant mortality (last 10 years)	133.485	17.305	1470	1850	1.881	0.130	98.875	168.094
Child mortality (last 10 years)	83.623	11.081	1477	1858	1.232	0.133	61.461	105.786
Under 5 mortality (last 10 years)	205.945	20.912	1481	1864	1.800	0.102	164.121	247.770
HIV prevalence (15-49)	0.183	0.024	465	432	1.329	0.131	0.135	0.230
MEN								
No education	0.018	0.009	434	481	1.419	0.508	0.000	0.036
Secondary education or higher	0.340	0.039	434	481	1.698	0.114	0.262	0.417
Never married (in union)	0.421	0.025	434	481	1.055	0.059	0.370	0.471
Currently married (in union)	0.556	0.025	434	481	1.039	0.045	0.506	0.606
Had sex before 18	0.661	0.040	297	330	1.449	0.060	0.581	0.741
Knowing any contraceptive method	1.000	0.000	236	267	na	0.000	1.000	1.000
Knowing any modern contraceptive method	0.991	0.009	236	267	1.431	0.009	0.974	1.000
Want no more children	0.435	0.034	236	267	1.060	0.079	0.367	0.504
Want to delay at least 2 years	0.264	0.030	236	267	1.056	0.115	0.203	0.325
Ideal number of children	4.234	0.178	396	436	1.818	0.042	3.878	4.590
HIV prevalence (15-49)	0.116	0.025	387	376	1.508	0.212	0.067	0.165
HIV prevalence (15-54)	0.123	0.022	417	408	1.355	0.178	0.079	0.166

na = Not applicable

Table B.10 Sampling errors for Rift Valley sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.200	0.018	1328	1872	1.656	0.091	0.164	0.236
No education	0.174	0.031	1328	1872	3.010	0.180	0.112	0.237
With secondary education or higher	0.250	0.022	1328	1872	1.874	0.089	0.206	0.295
Never married (in union)	0.265	0.017	1328	1872	1.395	0.064	0.231	0.298
Currently married (in union)	0.634	0.018	1328	1872	1.344	0.028	0.598	0.669
Had first sex before 18	0.499	0.022	1055	1482	1.440	0.044	0.455	0.543
Children ever born	3.056	0.114	1328	1872	1.449	0.037	2.828	3.284
Children ever born to women 40-49	6.777	0.202	222	303	1.099	0.030	6.372	7.181
Children surviving	2.776	0.109	1328	1872	1.527	0.039	2.558	2.993
Knowing any contraceptive method	0.922	0.024	868	1186	2.675	0.026	0.873	0.971
Knowing any modern contraceptive method	0.915	0.026	868	1186	2.733	0.028	0.863	0.966
Ever used any contraceptive method	0.565	0.034	868	1186	2.014	0.060	0.497	0.633
Currently using any method	0.344	0.023	868	1186	1.441	0.068	0.297	0.390
Currently using a modern method	0.245	0.022	868	1186	1.502	0.089	0.201	0.289
Currently female sterilization	0.031	0.007	868	1186	1.189	0.224	0.017	0.045
Currently using pill	0.049	0.011	868	1186	1.488	0.224	0.027	0.070
Currently using IUD	0.019	0.006	868	1186	1.261	0.311	0.007	0.030
Currently using condom	0.018	0.006	868	1186	1.292	0.321	0.007	0.030
Currently using injectables	0.113	0.016	868	1186	1.464	0.139	0.082	0.145
Currently using periodic abstinence	0.071	0.009	868	1186	1.056	0.130	0.052	0.089
Currently using withdrawal	0.016	0.005	868	1186	1.165	0.309	0.006	0.026
Using public sector source	0.530	0.053	226	345	1.605	0.101	0.423	0.636
Want no more children	0.450	0.022	868	1186	1.328	0.050	0.405	0.495
Want to delay at least 2 years	0.319	0.018	868	1186	1.106	0.055	0.284	0.354
Ideal number of children	4.140	0.150	1240	1755	2.358	0.036	3.840	4.440
Mothers received tetanus injection	0.856	0.016	767	1052	1.230	0.018	0.824	0.887
Mothers received medical care at birth	0.373	0.028	1200	1639	1.626	0.074	0.318	0.428
Child had diarrhoea in the last 2 weeks	0.167	0.019	1121	1532	1.578	0.115	0.129	0.206
Treated with ORS packets	0.297	0.037	193	257	1.040	0.123	0.223	0.370
Consulted medical personnel	0.263	0.045	193	257	1.322	0.173	0.172	0.354
Child having health card, seen	0.589	0.040	242	326	1.238	0.068	0.508	0.669
Child received BCG vaccination	0.904	0.031	242	326	1.612	0.035	0.841	0.966
Child received DPT vaccination (3 doses)	0.703	0.040	242	326	1.334	0.057	0.623	0.784
Child received polio vaccination (3 doses)	0.704	0.038	242	326	1.258	0.054	0.628	0.780
Child received measles vaccination	0.744	0.033	242	326	1.163	0.045	0.678	0.811
Child fully immunized	0.555	0.042	242	326	1.278	0.076	0.472	0.639
Weight-for-height (-2SD)	0.077	0.014	1036	1427	1.535	0.182	0.049	0.105
Height-for-age (-2SD)	0.316	0.014	1036	1427	0.915	0.044	0.288	0.344
Weight-for-age (-2SD)	0.240	0.016	1036	1427	1.096	0.065	0.209	0.271
Total fertility rate (last 3 years)	5.820	0.330	na	5295	1.435	0.057	5.161	6.479
Neonatal mortality (last 10 years)	36.569	5.334	2193	2989	1.156	0.146	25.901	47.237
Postneonatal mortality (last 10 years)	24.600	3.843	2195	2993	1.134	0.156	16.914	32.286
Infant mortality (last 10 years)	61.169	6.671	2195	2993	1.182	0.109	47.826	74.511
Child mortality (last 10 years)	17.377	3.316	2198	2995	0.986	0.191	10.745	24.008
Under 5 mortality (last 10 years)	77.483	7.091	2200	2999	1.109	0.092	63.301	91.665
HIV prevalence (15-49)	0.069	0.014	568	747	1.292	0.200	0.041	0.096
MEN								
No education	0.102	0.024	586	846	1.899	0.233	0.055	0.150
Secondary education or higher	0.322	0.025	586	846	1.320	0.079	0.271	0.373
Never married (in union)	0.420	0.023	586	846	1.136	0.055	0.374	0.467
Currently married (in union)	0.537	0.023	586	846	1.136	0.044	0.490	0.584
Had sex before 18	0.667	0.024	459	663	1.085	0.036	0.619	0.715
Knowing any contraceptive method	0.988	0.008	325	454	1.355	0.008	0.971	1.000
Knowing any modern contraceptive method	0.972	0.013	325	454	1.449	0.014	0.945	0.998
Want no more children	0.352	0.037	325	454	1.408	0.106	0.277	0.427
Want to delay at least 2 years	0.356	0.026	325	454	0.993	0.074	0.303	0.409
Ideal number of children	5.053	0.342	577	833	2.032	0.068	4.369	5.737
HIV prevalence (15-49)	0.036	0.009	488	691	1.094	0.258	0.017	0.054
HIV prevalence (15-54)	0.034	0.009	510	718	1.105	0.260	0.017	0.052

na = Not applicable

Table B.11 Sampling errors for Western sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.096	0.008	991	927	0.815	0.080	0.080	0.111
No education	0.090	0.015	991	927	1.640	0.166	0.060	0.119
With secondary education or higher	0.242	0.023	991	927	1.678	0.095	0.196	0.287
Never married (in union)	0.318	0.016	991	927	1.048	0.049	0.287	0.349
Currently married (in union)	0.603	0.018	991	927	1.168	0.030	0.567	0.639
Had first sex before 18	0.608	0.032	716	659	1.761	0.053	0.544	0.672
Children ever born	2.966	0.091	991	927	0.976	0.031	2.785	3.148
Children ever born to women 40-49	6.544	0.290	151	149	1.360	0.044	5.964	7.123
Children surviving	2.568	0.074	991	927	0.907	0.029	2.421	2.715
Knowing any contraceptive method	0.993	0.005	594	559	1.593	0.005	0.983	1.000
Knowing any modern contraceptive method	0.993	0.005	594	559	1.593	0.005	0.983	1.000
Ever used any contraceptive method	0.691	0.026	594	559	1.393	0.038	0.638	0.744
Currently using any method	0.341	0.030	594	559	1.533	0.088	0.281	0.400
Currently using a modern method	0.273	0.032	594	559	1.730	0.116	0.210	0.336
Currently female sterilization	0.038	0.008	594	559	0.971	0.201	0.023	0.053
Currently using pill	0.065	0.017	594	559	1.651	0.258	0.031	0.098
Currently using IUD	0.004	0.004	594	559	1.442	0.967	0.000	0.011
Currently using condom	0.019	0.008	594	559	1.426	0.423	0.003	0.035
Currently using injectables	0.135	0.021	594	559	1.517	0.158	0.092	0.177
Currently using periodic abstinence	0.043	0.012	594	559	1.490	0.288	0.018	0.068
Currently using withdrawal	0.006	0.004	594	559	1.095	0.567	0.000	0.013
Using public sector source	0.597	0.050	192	176	1.396	0.083	0.497	0.696
Want no more children	0.482	0.031	594	559	1.494	0.064	0.421	0.543
Want to delay at least 2 years	0.305	0.028	594	559	1.498	0.093	0.249	0.362
Ideal number of children	3.990	0.096	975	911	1.637	0.024	3.797	4.183
Mothers received tetanus injection	0.903	0.019	507	470	1.409	0.021	0.866	0.940
Mothers received medical care at birth	0.293	0.036	828	776	1.968	0.124	0.220	0.366
Child had diarrhoea in the last 2 weeks	0.231	0.026	738	691	1.570	0.115	0.178	0.284
Treated with ORS packets	0.183	0.047	165	159	1.389	0.254	0.090	0.277
Consulted medical personnel	0.214	0.038	165	159	1.074	0.176	0.139	0.290
Child having health card, seen	0.597	0.047	167	157	1.186	0.078	0.504	0.690
Child received BCG vaccination	0.906	0.019	167	157	0.837	0.021	0.868	0.944
Child received DPT vaccination (3 doses)	0.667	0.046	167	157	1.223	0.069	0.574	0.759
Child received polio vaccination (3 doses)	0.701	0.043	167	157	1.170	0.061	0.615	0.788
Child received measles vaccination	0.709	0.045	167	157	1.257	0.063	0.620	0.799
Child fully immunized	0.500	0.048	167	157	1.199	0.096	0.404	0.596
Weight-for-height (-2SD)	0.045	0.007	747	739	0.961	0.155	0.031	0.059
Height-for-age (-2SD)	0.302	0.028	747	739	1.516	0.092	0.247	0.358
Weight-for-age (-2SD)	0.190	0.023	747	739	1.456	0.120	0.144	0.236
Total fertility rate (last 3 years)	5.802	0.319	na	2516	1.580	0.055	5.163	6.441
Neonatal mortality (last 10 years)	25.377	4.055	1462	1382	0.899	0.160	17.267	33.486
Postneonatal mortality (last 10 years)	54.342	8.803	1467	1388	1.354	0.162	36.737	71.948
Infant mortality (last 10 years)	79.719	9.339	1467	1388	1.164	0.117	61.042	98.396
Child mortality (last 10 years)	69.958	9.748	1477	1397	1.260	0.139	50.462	89.454
Under 5 mortality (last 10 years)	144.100	13.975	1482	1403	1.308	0.097	116.150	172.050
HIV prevalence (15-49)	0.058	0.013	445	368	1.212	0.232	0.031	0.085
MEN								
No education	0.034	0.010	435	396	1.166	0.300	0.014	0.054
Secondary education or higher	0.322	0.033	435	396	1.470	0.102	0.256	0.388
Never married (in union)	0.474	0.034	435	396	1.425	0.072	0.406	0.543
Currently married (in union)	0.459	0.027	435	396	1.146	0.060	0.404	0.514
Had sex before 18	0.583	0.031	312	276	1.124	0.054	0.520	0.646
Knowing any contraceptive method	1.000	0.000	211	182	na	0.000	1.000	1.000
Knowing any modern contraceptive method	1.000	0.000	211	182	na	0.000	1.000	1.000
Want no more children	0.344	0.032	211	182	0.974	0.093	0.281	0.408
Want to delay at least 2 years	0.435	0.040	211	182	1.175	0.092	0.354	0.515
Ideal number of children	4.326	0.124	412	375	1.148	0.029	4.078	4.574
HIV prevalence (15-49)	0.038	0.012	367	323	1.153	0.302	0.015	0.061
HIV prevalence (15-54)	0.036	0.011	385	339	1.142	0.300	0.015	0.058

na = Not applicable

Table B.12 Sampling errors for North Eastern sample, Kenya 2003

Variable	Value (R)	Stand- ard error (SE)	Number of cases		Design effect (DEFT)	Rela- tive error (SE/R)	Confidence limits	
			Un- weighted (N)	Weight- ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence	0.205	0.037	437	168	1.912	0.180	0.131	0.279
No education	0.934	0.014	437	168	1.194	0.015	0.906	0.962
With secondary education or higher	0.008	0.006	437	168	1.452	0.764	0.000	0.021
Never married (in union)	0.174	0.018	437	168	0.978	0.102	0.139	0.210
Currently married (in union)	0.746	0.021	437	168	1.010	0.028	0.704	0.788
Had first sex before 18	0.509	0.028	336	129	1.033	0.055	0.452	0.565
Children ever born	4.373	0.255	437	168	1.510	0.058	3.863	4.882
Children ever born to women 40-49	8.319	0.289	75	31	1.064	0.035	7.741	8.897
Children surviving	3.684	0.195	437	168	1.348	0.053	3.294	4.075
Knowing any contraceptive method	0.223	0.036	321	125	1.565	0.163	0.150	0.296
Knowing any modern contraceptive method	0.223	0.036	321	125	1.565	0.163	0.150	0.296
Ever used any contraceptive method	0.009	0.002	321	125	0.284	0.166	0.006	0.012
Currently using any method	0.002	0.002	321	125	0.738	1.007	0.000	0.005
Currently using a modern method	0.002	0.002	321	125	0.738	1.007	0.000	0.005
Currently female sterilization	0.000	0.000	321	125	na	na	0.000	0.000
Currently using pill	0.000	0.000	321	125	na	na	0.000	0.000
Currently using IUD	0.000	0.000	321	125	na	na	0.000	0.000
Currently using condom	0.000	0.000	321	125	na	na	0.000	0.000
Currently using injectables	0.002	0.002	321	125	0.738	1.007	0.000	0.005
Currently using periodic abstinence	0.000	0.000	321	125	na	na	0.000	0.000
Currently using withdrawal	0.000	0.000	321	125	na	na	0.000	0.000
Using public sector source	1.000	0.000	1	0	na	0.000	1.000	1.000
Want no more children	0.040	0.009	321	125	0.862	0.235	0.021	0.059
Want to delay at least 2 years	0.233	0.019	321	125	0.814	0.083	0.195	0.272
Ideal number of children	11.146	0.216	417	155	1.154	0.019	10.714	11.578
Mothers received tetanus injection	0.354	0.051	263	102	1.734	0.143	0.252	0.456
Mothers received medical care at birth	0.085	0.016	452	181	1.069	0.190	0.053	0.117
Child had diarrhoea in the last 2 weeks	0.129	0.011	404	163	0.674	0.082	0.108	0.151
Treated with ORS packets	0.342	0.070	49	21	1.082	0.206	0.201	0.483
Consulted medical personnel	0.102	0.023	49	21	0.568	0.224	0.057	0.148
Child having health card, seen	0.184	0.049	69	28	0.997	0.265	0.087	0.282
Child received BCG vaccination	0.297	0.051	69	28	0.913	0.171	0.195	0.399
Child received DPT vaccination (3 doses)	0.250	0.089	69	28	1.749	0.355	0.072	0.428
Child received polio vaccination (3 doses)	0.231	0.087	69	28	1.766	0.378	0.057	0.406
Child received measles vaccination	0.374	0.088	69	28	1.550	0.237	0.197	0.550
Child fully immunized	0.088	0.045	69	28	1.354	0.509	0.000	0.177
Weight-for-height (-2SD)	0.265	0.035	313	127	1.245	0.130	0.196	0.335
Height-for-age (-2SD)	0.243	0.031	313	127	1.236	0.128	0.180	0.305
Weight-for-age (-2SD)	0.337	0.040	313	127	1.470	0.119	0.257	0.418
Total fertility rate (last 3 years)	6.993	0.408	na	474	1.049	0.058	6.177	7.809
Neonatal mortality (last 10 years)	49.892	9.132	970	380	1.080	0.183	31.627	68.156
Postneonatal mortality (last 10 years)	41.115	7.274	971	380	1.059	0.177	26.566	55.664
Infant mortality (last 10 years)	91.007	12.454	971	380	1.137	0.137	66.098	115.915
Child mortality (last 10 years)	78.747	11.917	986	388	0.983	0.151	54.913	102.582
Under 5 mortality (last 10 years)	162.588	15.030	987	388	1.033	0.092	132.529	192.647
HIV prevalence (15-49)	0.000	0.000	152	60	na	na	0.000	0.000
MEN								
No education	0.711	0.046	166	65	1.315	0.065	0.618	0.804
Secondary education or higher	0.103	0.023	166	65	0.958	0.220	0.058	0.148
Never married (in union)	0.345	0.045	166	65	1.207	0.130	0.255	0.434
Currently married (in union)	0.648	0.044	166	65	1.181	0.068	0.561	0.736
Had sex before 18	0.084	0.031	133	51	1.301	0.375	0.021	0.146
Knowing any contraceptive method	0.290	0.051	112	42	1.194	0.177	0.187	0.393
Knowing any modern contraceptive method	0.290	0.051	112	42	1.194	0.177	0.187	0.393
Want no more children	0.000	0.000	112	42	na	na	0.000	0.000
Want to delay at least 2 years	0.487	0.060	112	42	1.269	0.124	0.367	0.608
Ideal number of children	10.902	0.443	164	64	1.359	0.041	10.017	11.788
HIV prevalence (15-49)	0.000	0.000	126	48	na	na	0.000	0.000
HIV prevalence (15-54)	0.000	0.000	146	55	na	na	0.000	0.000

na = Not applicable



Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Kenya 2003

Age	Male		Female		Age	Male		Female	
	Number	Percentage	Number	Percentage		Number	Percentage	Number	Percentage
0	653	3.6	670	3.6	36	164	0.9	160	0.9
1	586	3.2	570	3.0	37	149	0.8	171	0.9
2	557	3.0	551	2.9	38	148	0.8	164	0.9
3	609	3.3	610	3.2	39	154	0.8	156	0.8
4	562	3.1	549	2.9	40	244	1.3	261	1.4
5	500	2.7	473	2.5	41	116	0.6	144	0.8
6	579	3.2	624	3.3	42	128	0.7	129	0.7
7	562	3.1	572	3.0	43	136	0.7	166	0.9
8	548	3.0	500	2.7	44	124	0.7	137	0.7
9	506	2.8	470	2.5	45	169	0.9	169	0.9
10	588	3.2	555	2.9	46	96	0.5	103	0.5
11	482	2.6	445	2.4	47	74	0.4	104	0.6
12	572	3.1	523	2.8	48	93	0.5	88	0.5
13	584	3.2	523	2.8	49	91	0.5	80	0.4
14	516	2.8	519	2.8	50	133	0.7	141	0.7
15	475	2.6	375	2.0	51	87	0.5	133	0.7
16	484	2.6	410	2.2	52	77	0.4	94	0.5
17	364	2.0	385	2.0	53	95	0.5	118	0.6
18	430	2.4	430	2.3	54	79	0.4	103	0.5
19	331	1.8	381	2.0	55	88	0.5	132	0.7
20	440	2.4	425	2.3	56	85	0.5	98	0.5
21	288	1.6	320	1.7	57	72	0.4	71	0.4
22	274	1.5	356	1.9	58	79	0.4	60	0.3
23	320	1.7	339	1.8	59	46	0.2	53	0.3
24	272	1.5	358	1.9	60	113	0.6	128	0.7
25	311	1.7	337	1.8	61	50	0.3	35	0.2
26	244	1.3	267	1.4	62	33	0.2	44	0.2
27	252	1.4	272	1.4	63	48	0.3	47	0.2
28	291	1.6	315	1.7	64	42	0.2	53	0.3
29	188	1.0	270	1.4	65	49	0.3	71	0.4
30	319	1.7	323	1.7	66	23	0.1	19	0.1
31	155	0.8	191	1.0	67	36	0.2	29	0.2
32	219	1.2	214	1.1	68	54	0.3	52	0.3
33	177	1.0	236	1.3	69	29	0.2	36	0.2
34	185	1.0	195	1.0	70+	420	2.3	457	2.4
35	229	1.3	264	1.4	Don't know/ missing	15	0.1	16	0.1
36	164	0.9	160	0.9	Total	18,291	100.0	18,837	100.0

**Table C.2 Age distribution of eligible and interviewed women and men**

De facto household population of women age 10-54 and men age 10-59, interviewed women age 15-49 and men age 15-54, and percentage of eligible women and men who were interviewed (weighted), by five-year age groups, Kenya 2003

Age group	Household population of women age 10-54	Interviewed women age 15-49		Percentage of eligible women interviewed
		Number	Percent	
10-14	2,566	na	na	na
15-19	1,981	1,871	22.7	94.4
20-24	1,797	1,699	20.6	94.5
25-29	1,462	1,389	16.8	95.0
30-34	1,159	1,113	13.5	96.0
25-39	915	867	10.5	94.8
40-44	837	796	9.6	95.1
45-49	543	513	6.2	94.5
50-54	587	na	na	na
15-49	8,695	8,248	100.0	94.9
Age group	Household population of men age 10-59	Interviewed men age 15-54		Percentage of eligible men interviewed
		Number	Percent	
10-14	1,365	na	na	na
15-19	970	870	23.8	89.7
20-24	823	715	19.6	86.9
25-29	623	512	14.0	82.1
30-34	518	433	11.9	83.6
25-39	437	385	10.6	88.2
40-44	358	313	8.6	87.3
45-49	231	204	5.6	88.0
50-54	244	217	6.0	89.0
55-59	183	0	0.0	0.0
15-54	4,204	3,648	100.0	86.8

Note: The de facto population includes all residents and nonresidents who stayed in the household the night before the interview. Weights for both household population of women and men and interviewed women and men are household weights. Age is based on the household schedule.

na = Not applicable

Table C.3 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions (weighted), Kenya 2003

Subject	Reference group	Percentage with missing information	Number of cases
<b>Birth date</b>	Births in the 15 years preceding the survey		
Month only		4.63	15,796
Month and year		0.19	15,796
Age at death	Deceased children born in the 15 years preceding the survey	0.26	1,709
Age/date at first union <sup>1</sup>	Ever-married women age 15-49	0.11	5,752
Respondent's education	All women age 15-49	0.06	8,195
Diarrhoea in last 2 weeks	Living children age 0-59 months	2.63	5,560
<b>Anthropometry</b>	Living children age 0-59 months (from the household questionnaire)		
Height		6.05	5,913
Weight		4.73	5,913
Height or weight		6.06	5,913

<sup>1</sup> Both year and age missing

Table C.4 Births by calendar years

Number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by calendar year, according to living, dead, and total children (weighted), Kenya 2003

Year	Number of births			Percentage with complete birth date <sup>1</sup>			Sex ratio at birth <sup>2</sup>			Calendar year ratio <sup>3</sup>		
	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total
2003	569	16	586	99.9	100.0	99.9	89.4	179.7	91.1	na	na	na
2002	1,257	89	1,346	100.0	100.0	100.0	108.0	148.1	110.3	na	na	na
2001	1,054	119	1,173	100.0	100.0	100.0	97.3	172.3	103.0	90.1	100.9	91.1
2000	1,082	147	1,230	99.9	98.6	99.7	104.0	122.3	106.0	99.9	121.7	102.1
1999	1,113	123	1,236	100.0	98.3	99.8	102.5	119.8	104.1	110.7	93.0	108.6
1998	930	117	1,047	99.7	98.8	99.6	100.5	82.2	98.3	89.5	90.2	89.6
1997	964	136	1,100	97.1	89.6	96.2	98.7	140.7	103.1	100.9	111.9	102.1
1996	981	126	1,107	94.0	85.6	93.1	96.9	116.2	98.9	105.7	98.0	104.8
1995	891	121	1,012	92.7	79.2	91.1	90.6	144.8	95.8	96.4	102.1	97.1
1994	867	112	979	91.7	84.0	90.8	120.8	114.1	120.0	104.7	97.9	103.9
1999-2003	5,076	494	5,570	99.9	99.2	99.9	101.5	138.2	104.3	na	na	na
1994-1998	4,632	612	5,244	95.1	87.4	94.2	100.8	118.1	102.7	na	na	na
1989-1993	3,970	568	4,538	92.2	84.1	91.2	101.5	115.9	103.2	na	na	na
1984-1988	3,169	421	3,590	91.1	80.4	89.9	100.8	111.4	102.0	na	na	na
< 1984	3,026	580	3,606	87.2	75.5	85.4	104.9	107.8	105.4	na	na	na
All	19,874	2,674	22,548	93.9	85.2	92.9	101.7	117.6	103.5	na	na	na

na = Not applicable

<sup>1</sup> Both year and month of birth given

<sup>2</sup>  $(B_m/B_f)*100$ , where  $B_m$  and  $B_f$  are the numbers of male and female births, respectively

<sup>3</sup>  $[2B_x/(B_{x-1}+B_{x+1})]*100$ , where  $B_x$  is the number births in calendar year  $x$

Table C.5 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods of birth preceding the survey (weighted), Kenya 2003

Age at death (days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	81	84	52	44	260
1	31	29	25	20	105
2	19	7	15	8	49
3	18	5	9	10	42
4	9	2	3	6	19
5	6	2	6	3	17
6	2	1	2	0	4
7	8	6	16	8	39
8	3	1	2	2	8
9	0	2	0	2	4
10	2	5	3	2	12
11	1	1	0	0	2
12	1	0	1	0	3
13	0	3	0	0	3
14	10	7	7	4	28
15	0	1	1	0	3
20	2	0	0	0	2
21	1	8	0	0	9
22	1	0	0	0	1
25	3	0	0	0	3
27	3	1	0	0	4
28	1	0	1	0	2
30	0	3	1	0	4
Total 0-30	201	169	143	110	623
Percent early neonatal <sup>1</sup>	82.2	77.3	76.6	82.7	79.7

<sup>1</sup> (0-6 days/0-30 days) \* 100

Table C.6 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, for five-year periods of birth preceding the survey, Kenya 2003

Age at death (months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1 <sup>a</sup>	201	169	143	110	623
1	25	13	19	10	67
2	27	29	18	11	86
3	22	19	20	11	73
4	33	17	13	16	78
5	28	20	14	15	76
6	16	31	19	23	89
7	21	18	19	8	66
8	21	22	15	15	73
9	18	23	24	10	75
10	9	9	11	3	32
11	8	12	11	2	34
12	24	35	25	22	105
13	6	9	6	6	27
14	4	13	11	4	33
15	3	7	7	7	24
16	2	5	5	2	13
17	2	4	1	3	11
18	13	11	10	13	47
19	5	0	1	0	6
20	0	1	2	0	4
21	0	1	2	0	3
23	2	3	2	0	6
24+	1	2	0	0	3
1 Year	2	1	3	0	5
Total 0-11	429	383	327	233	1,372
Percent neonatal <sup>1</sup>	46.9	44.2	43.8	47.0	45.4

<sup>a</sup> Includes deaths under one month reported in days

<sup>1</sup> Under one month/under one year

# PERSONS INVOLVED IN THE 2003 KENYA DEMOGRAPHIC AND HEALTH SURVEY

## APPENDIX *D*

### Administration

David S.O. Nalo	Director, CBS	Vivian Nyarunda	Trainer
A.N.M. Kilele	Director, CBS	Leonard Obitha	Trainer
Kenneth Chebet	Director, NASCOP	Lawrence Marum	HIV/VCT Manager
Francis Munene	Deputy Director, CBS	June Odoyo	VCT Coordinator/Trainer
Fredrick Otieno	Project Manager/Trainer	Carol Ngare	VCT Coordinator
Joshua Musyimi	Coordinator/Trainer	Catherine Mutura	HIV Testing Coordinator/Trainer
Robert C.B. Buluma	Coordinator/Trainer	Peter Tukei	Lab Supervision/Quality Assurance/Trainer
Collins Opiyo	Coordinator/Trainer	Sammy Oyombe	Sampling Statistician
Godfrey Ndeng'e	Coordinator/Trainer	S.K. Ndungu	Coordinator
James Muttunga	Health Coordinator/Trainer	Moses Okelo	Coordinator
Christopher N. Omolo	Coordinator/Trainer	Rose Ndana	Project Accountant
Paul Kizito	Trainer	David Nyasio	Transport Officer
George Kichamu	Trainer	Emma Odhiambo	Cartographer
Vane Nyong'a	Trainer	Sherri E. Onsare	Cartographer
Samuel A. Ogola	Trainer	Boniface K'Oyugi	Report reviewer

### Data Collection Teams

#### Team 1: Meru/Embu

Elias R. Nyaga	Supervisor
Loyford M. Nandi	Editor
Daniel M. Muriithi	Health Worker
Elizabeth Mukami	Female Interviewer
Faith K. Kinyua	Female Interviewer
Pauline K. Kabuga	Female Interviewer
Rosemary Karoki	Female Interviewer
Dominic Maringa	Male Interviewer
Florence Mugendo	VCT Counsellor
Peter Ndabi	VCT Counsellor
David Kinyanjui	Driver

#### Team 2: Kamba

James Munguti	Supervisor
Milka Mwangangi	Editor
Anne Loko Mutiso	Health Worker
Asumpta Mwathe	Female Interviewer
Frida Mutua	Female Interviewer
Joyce N. Musuvi	Female Interviewer
Angelica M. Kioko	Female Interviewer
Joseph Mayoli	Male Interviewer
Charles Kimani	VCT Counsellor
Coleen Koki	VCT Counsellor
Ibrahim Kuria	Driver

#### Team 3: Luo 1

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Aneti Wangkyo	Editor
Margaret A. Mutula	Health Worker
Caroline Atieno Yalla	Female Interviewer
Roseline Oloo	Female Interviewer
June Ochanda	Female Interviewer
Donald Ombim Jaleny	Male Interviewer
George Onyango	VCT Counsellor
Beatrice Ajung'a	VCT Counsellor
C.O. Gibamba	Driver

#### Team 4: Luo 2

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Moses Omwago	Editor
Gilbert Oyugi Opondo	Health Worker
Perez Oyugi	Female Interviewer
Dorcus Tabitha Awuor	Female Interviewer
Linette A. Nyapada	Female Interviewer
Doris Akinyi	Female Interviewer
Mark Buyu Luta	Male Interviewer
Pamela A. Menya	VCT Counsellor
Manase Amolo	VCT Counsellor
Charles O. Ayot	Driver

**Team 5: Kalenjin 1**

Andrew Sigei	Supervisor
Moureen Chepkurui Towett	Editor
Charles Chemjor	Health Worker
Betty C. Tanui	Female Interviewer
Nancy Kosgei	Female Interviewer
Sylvia Chemjor	Female Interviewer
Isaac Kiprono Koskey	Male Interviewer
Tecla Chepkemboi	VCT Counsellor
Abraham Sumukwo	VCT Counsellor
Manasse Kadenge	Driver

**Team 6: Kikuyu 1**

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Elon Wachira	Editor
Jane W. Mwambura	Health Worker
Jane Muthoni Ndana	Female Interviewer
Florence K. Wachira	Female Interviewer
Beatrice Waitherero Maina	Female Interviewer
Beatrice Wairima Kinaiya	Female Interviewer
Julius Githuku	Male Interviewer
Mary Ndirangu	VCT Counsellor
Anastasia Mbithi	VCT Counsellor
Millicent Adhiambo	Driver

**Team 7: Kikuyu 2**

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Margaret W. Kimani	Health Worker
Gladys W. Kibaara	Female Interviewer
Mercy Nyambura	Female Interviewer
Jacinta N. Migui	Female Interviewer
Tabitha W. Mwangi	Female Interviewer
Ezekiel Njuguna Ngure	Male Interviewer
Kezia Kiragu	VCT Counsellor
Margaret Njoroge	VCT Counsellor
E.K Mungai	Driver

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Sophia Sengen	Female Interviewer
Caroline T. Saino	Female Interviewer
Hilary K. Mooke	Male Interviewer
Jane Wairimu	VCT Counsellor
Saida Osman	VCT Counsellor
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Daniel Kongai	Supervisor
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Rose Nigogo Juma	Female Interviewer
Hilda Mahenzo Mweni	Female Interviewer
Onesmus Mlewa Kalama	Male Interviewer
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Damaris Oburu	Female Interviewer
Winfred Kambua Kaluku	Female Interviewer
Regina Mundia	Female Interviewer
Pamela Usagi M	Female Interviewer
Mutetei E. Kavali	Male Interviewer
Maurice Odhiambo	Male Interviewer
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Caroline Kwamboka Onyancha	Female Interviewer
Margaret Kerubo Ndubi	Female Interviewer
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Gladys N. Omwenga	VCT Counsellor
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Bedina T. Lughalia	Female Interviewer
Irene Muhunzu	Female Interviewer
Millicent Dorcas Oluteyo	Female Interviewer
Dunston Lwangas Kwayumba	Male Interviewer
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Robert Wafula	VCT Counsellor
Okelo Gang	Driver

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Jane Khasoa Lusenaka	Female Interviewer
Joan Sarah Koko Were	Female Interviewer
Monica A. Barasa	Female Interviewer
Felix Mulama	Male Interviewer
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Barabara Andisi	VCT Counsellor
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Jayne C. Chaina	Female Interviewer
Lydia Chepkemai	Female Interviewer
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Emmy Cherotich	VCT Counsellor
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Jacqueline Mueni Hamisi	Female Interviewer
Linet Pesa Maloba	Female Interviewer
Hilda Karegi Asirigwa	Female Interviewer
Henry Kuria Ngere	Male Interviewer
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Janet N. Ndila	VCT Counsellor
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**Team 16: Somali 1**

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Farhiya Ibrahim Hanshi	Female Interviewer
Jamila Kulow Aden	Female Interviewer
Issa Dagale Ali	Male Interviewer
Enoch Wanyama	VCT Counsellor
Abdi Roba	VCT Counsellor

**Team 17: Somali 2**

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Agustino Sora	Health Worker
Habow Ibrahim Hassan	Female Interviewer
Nuria Hussein Mohamed	Female Interviewer
Esther Kalake	Female Interviewer
Abdisalan Yussuf Guddow	Male Interviewer
Christopher Odhiambo	VCT Counsellor
Daniel Kagwi	VCT Counsellor

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Eunice Maina	Entry Clerk	Joyce A. Ochieng	Entry Clerk
Johnstone M. Kitema	Entry Clerk	Antony Kamadi Matata	Entry Clerk
Eric Ochieng	Entry Clerk		

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Judy Chege	Tura Galgalo
Catherine Gichimu	Isaac Mbaya
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**VCT Counsellor/Supervisors**

Betty Gathendu	Pamela Menya
Pauline Mwololo	Manase Amolo
Margaret Gitau	Edwin Ochieng

**Administrative Support**

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Jane Kamau
Phylis Kanyagia
Rith Nyambura
Eunice Jakaila
Alice Nderity



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			Z. Jumba (Ms)

### **ORC Macro Staff**

Anne Cross	Country Manager
Alfredo Aliaga	Sampling Statistician
Jeanne Cushing	Data Processing Specialist
Fern Greenwell	Pretest Trainer
Rebecca Stallings	HIV Training
Julius Majale	Data Processing Specialist
Sidney Moore	Editor
Kaye Mitchell	Report Production





**CENTRAL BUREAU OF STATISTICS**  
**KENYA DEMOGRAPHIC AND HEALTH SURVEY 2003**  
**HOUSEHOLD QUESTIONNAIRE**

IDENTIFICATION				
PROVINCE* _____	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
DISTRICT _____	<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>			
LOCATION/TOWN _____				
SUBLOCATION/WARD _____				
NASSEP CLUSTER NUMBER .....	<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>			
KDHS CLUSTER NUMBER .....	<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>			
HOUSEHOLD NUMBER .....	<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>			
NAIROBI/MOMBASA/KISUMU=1; NAKURU/ELDORET/THIKA/NYERI=2; SMALL TOWN=3; RURAL=4				
NAME OF HOUSEHOLD HEAD _____				
IS HOUSEHOLD SELECTED FOR MAN'S SURVEY (YES=1; NO=2).....	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	DAY <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
INTERVIEWER'S NAME	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	MONTH <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
RESULT**	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	YEAR    2   0   0   3 INT.CODE <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
NEXT VISIT:    DATE	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	TOTAL NO. OF VISITS
TIME	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<b>**RESULT CODES:</b>  1    COMPLETED 2    NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT 3    ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4    POSTPONED 5    REFUSED 6    DWELLING VACANT OR ADDRESS NOT A DWELLING 7    DWELLING DESTROYED 8    DWELLING NOT FOUND 9    OTHER _____ <div style="text-align: center;">(SPECIFY)</div>				TOTAL PERSONS IN HOUSEHOLD <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>  TOTAL ELIGIBLE WOMEN <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>  TOTAL ELIGIBLE MEN <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>  LINE NO. OF RESP. TO HOUSEHOLD QUESTION. <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
<b>ENGLISH</b>				
SUPERVISOR	FIELD EDITOR		OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		NAME _____	NAME _____
DATE _____	DATE _____		DATE _____	DATE _____

\* Province: NAIROBI=1; CENTRAL=2; COAST=3; EASTERN=4; NYANZA=5; R.VALLEY=6; WESTERN=7; NORTHEASTERN=8

## HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	ELIGIBILITY		
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	What is the relationship of (NAME) to the head of the household?*	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?	CIRCLE LINE NUMBER OF ALL WOMEN AGE 15-49. STAR * LINE NO. OF THE WOMAN SELECTED FOR Qs. ON VIOLENCE	CIRCLE LINE NUMBER OF ALL CHILDREN UNDER AGE 6	CIRCLE LINE NUMBER OF ALL MEN AGE 15-54. IF HOUSEHOLD NOT SELECTED FOR MAN'S SURVEY, LEAVE BLANK.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(9A)
			M F	YES NO	YES NO	IN YEARS			
01		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	01	01	01
02		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	02	02	02
03		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	03	03	03
04		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	04	04	04
05		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	05	05	05
06		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	06	06	06
07		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	07	07	07
08		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	08	08	08
09		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	09	09	09
10		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	10	10	10

\* CODES FOR Q.3

RELATIONSHIP TO HEAD OF HOUSEHOLD:  
 01 = HEAD  
 02 = WIFE/HUSBAND/PARTNER  
 03 = SON OR DAUGHTER  
 04 = SON-IN-LAW OR DAUGHTER-IN-LAW  
 05 = GRANDCHILD  
 06 = PARENT

07 = PARENT-IN-LAW  
 08 = BROTHER OR SISTER  
 09 = CO-WIFE  
 10 = OTHER RELATIVE  
 11 = ADOPTED/FOSTER/STEPCHILD  
 12 = NOT RELATED  
 98 = DOES NOT KNOW



LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	ELIGIBILITY		
				Does (NAME) usually live here?	Did (NAME) stay here last night?		CIRCLE LINE NUMBER OF ALL WOMEN AGE 15-49. STAR * LINE NO. OF THE WOMAN SELECTED FOR Qs. ON VIOLENCE	CIRCLE LINE NUMBER OF ALL CHILDREN UNDER AGE 6	CIRCLE LINE NUMBER OF ALL MEN AGE 15-54 IF HOUSEHOLD NOT SELECTED FOR MAN'S SURVEY, LEAVE BLANK.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(9A)
			M F	YES NO	YES NO	IN YEARS			
11		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	11	11	11
12		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	12	12	12
13		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	13	13	13
14		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	14	14	14
15		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	15	15	15
16		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	16	16	16
17		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	17	17	17
18		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	18	18	18
19		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	19	19	19
20		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	20	20	20

\* CODES FOR Q.3  
RELATIONSHIP TO HEAD OF HOUSEHOLD:  
01 = HEAD  
02 = WIFE/HUSBAND/PARTNER  
03 = SON OR DAUGHTER  
04 = SON-IN-LAW OR DAUGHTER-IN-LAW  
05 = GRANDCHILD  
06 = PARENT

07 = PARENT-IN-LAW  
08 = BROTHER OR SISTER  
09 = CO-WIFE  
10 = OTHER RELATIVE  
11 = ADOPTED/FOSTER/STEPCHILD  
12 = NOT RELATED  
98 = DOES NOT KNOW

\*\* Q.10 THROUGH Q.13  
THESE QUESTIONS REFER TO THE BIOLOGICAL PARENTS OF THE CHILD.  
  
IN Q.11 AND Q.13, RECORD '00' IF PARENT NOT LISTED IN HOUSEHOLD SCHEDULE.

\*\*\* CODES FOR Qs. 15, 18 AND 20  
EDUCATION LEVEL:  
0 = NURSERY, KINDERGARTEN  
1 = PRIMARY  
2 = POST-PRIMARY, VOCATIONAL  
3 = SECONDARY, A LEVEL  
4 = COLLEGE (MIDDLE LEVEL)  
5 = UNIVERSITY  
8 = DOES NOT KNOW  
  
EDUCATION GRADE:  
00 = LESS THAN 1 YEAR COMPLETED  
98 = DOES NOT KNOW

LINE NO.	PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 15 YEARS OLD**				EDUCATION							
	Is (NAME)'s natural mother alive?	IF ALIVE Does (NAME)'s natural mother live in this household? IF YES: What is her name? RECORD MOTHER'S LINE NUMBER	Is (NAME)'s natural father alive?	IF ALIVE Does (NAME)'s natural father live in this household? IF YES: What is his name? RECORD FATHER'S LINE NUMBER	IF AGE 4 YEARS OR OLDER		IF AGE 4-24 YEARS					
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
	YES NO DK		YES NO DK		YES NO	LEVEL GRADE	YES NO	YES NO	LEVEL GRADE	YES NO	LEVEL GRADE	
11	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
12	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
13	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
14	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
15	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
16	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
17	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
18	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
19	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	
20	1 2 8 ↓ ↓ 12 TO	<input type="text"/>	1 2 8 ↓ ↓ 14 TO	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	1 2 GO TO 1 2 18	1 2 GO TO 1 2 19	<input type="text"/>	1 2 NEXT 1 2 LINE	<input type="text"/>	

TICK HERE IF CONTINUATION SHEET USED ☐

Just to make sure that I have a complete listing:

- Are there any other persons such as small children or infants that we have not listed? YES ☐ 0 ENTER EACH IN TABLE NO ☐
- In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here? YES ☐ 0 ENTER EACH IN TABLE NO ☐
- Are there any guests or temporary visitors staying here, or anyone else who slept here last night, who have not been listed? YES ☐ 0 ENTER EACH IN TABLE NO ☐



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
21	What is the main source of <b>drinking</b> water for members of your household?  		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP		
27	MAIN MATERIAL OF THE FLOOR.  RECORD OBSERVATION.	EARTH/MUD/DUNG/SAND.....11 WOOD PLANKS.....21 PALM, BAMBOO.....22 PARQUET OR POLISHED WOOD.....31 VINYL OR ASPHALT STRIPS.....32 CERAMIC TILES.....33 CEMENT.....34 CARPET.....35  OTHER _____ 96 (SPECIFY)			
27A	MAIN MATERIAL OF THE ROOF.  RECORD OBSERVATION.	GRASS/THATCH/MAKUTI.....11 TIN CANS.....12 CORRUGATED IRON (MABATI).....21 ASBESTOS SHEETS.....22 CONCRETE.....31 TILES.....32  OTHER _____ 96 (SPECIFY)			
27B	STATE OF REPAIR OF THE DWELLING.  RECORD OBSERVATION.	COMPLETELY DILAPIDATED, SHACK....1 NEEDS MAJOR REPAIRS.....2 NEEDS NO OR MINOR REPAIRS.....3 BEING REPAIRED NOW.....4 UNDER CONSTRUCTION.....5			
28	Does any member of your household own: A bicycle? A motorcycle or motor scooter? A car or truck?	<div style="text-align: right; margin-bottom: 5px;"><b>YES    NO</b></div> BICYCLE.....1    2 MOTORCYCLE/SCOOTER.....1    2 CAR/TRUCK.....1    2			
28A	Does your household own this structure (house, flat, shack), do you rent it, or do you live here without paying?	OWNS.....1 PAYS RENT/LEASE.....2 NO RENT, W. CONSENT OF OWNER.....3 NO RENT, SQUATTING.....4			
28B	Does your household own the land on which the structure (house, flat, shack) sits?	OWNS.....1 PAYS RENT/LEASE.....2 NO RENT, W. CONSENT OF OWNER.....3 NO RENT, SQUATTING.....4			
28C	How does this household dispose of kitchen waste and trash?	REGULAR COLLECTION BY GOV'T.....01 INFREQUENT COLLECTION BY GOV'T02 PAYS FOR PRIVATE COLLECTION.....03 COMPOSTED.....04 DUMP, BURY, BURN IN COMPOUND...05 DUMP IN STREET/ EMPTY PLOT.....06  OTHER _____ 96 (SPECIFY)			
29	Does your household have any mosquito nets that can be used while sleeping?	YES.....1 NO.....2	—Op. 9		
30	How many mosquito nets does your household own?	NUMBER OF NETS ..... <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>			

		<b>NET #1</b>	<b>NET #2</b>	<b>NET #3</b>
31	ASK RESPONDENT TO SHOW YOU THE NET(S) IN THE HOUSEHOLD.	SEEN..... 1 NOT SEEN..... 2	SEEN .....1 NOT SEEN.....2	SEEN ..... 1 NOT SEEN ..... 2
32	How long ago did your household obtain the mosquito net?  IF LESS THAN ONE MONTH, WRITE '00'.	MONTHS <input type="text"/> ..... AGO <input type="text"/>  MORE THAN 3 YRS AGO ..... 96 DK ..... 98	MONTHS <input type="text"/> ..... AGO <input type="text"/>  MORE THAN 3 YRS AGO.....96 DK .....98	MONTHS <input type="text"/> ..... AGO <input type="text"/>  MORE THAN 3 YRS AGO ..... 96 DK ..... 98
32A	How did your household obtain the net, was it bought or was it given free of charge?  IF FREE, ASK: Was it from a non-governmental organisation or from the government?	BOUGHT ..... 1 FREE FR.NGO. 2 FREE FR.GOV..3 NOT SURE..... 8	BOUGHT.....1 FREE FR.NGO. 2 FREE FR.GOV..3 NOT SURE .....8	BOUGHT ..... 1 FREE FR.NGO. 2 FREE FR.GOV..3 NOT SURE ..... 8
33	OBSERVE OR ASK THE SHAPE OF THE NET.	CONICAL ..... 1 RECT- ANGULAR ..... 2 OTHER..... 3 NOT SURE..... 8	CONICAL .....1 RECT- ANGULAR .....2 OTHER .....3 NOT SURE .....8	CONICAL..... 1 RECT- ANGULAR..... 2 OTHER ..... 3 NOT SURE ..... 8
33A	OBSERVE OR ASK THE COLOR OF THE NET.	WHITE..... 1 BLUE ..... 2 GREEN..... 3 OTHER..... 6 NOT SURE..... 8	WHITE .....1 BLUE .....2 GREEN .....3 OTHER .....6 NOT SURE .....8	WHITE ..... 1 BLUE ..... 2 GREEN ..... 3 OTHER ..... 6 NOT SURE ..... 8
34	Since you got the mosquito net, was it ever soaked or dipped in <i>dawa</i> or a chemical to repel mosquitoes or insects?	YES ..... 1 NO ..... 2 (GO TO 34B)1- NOT SURE..... 8	YES .....1 NO .....2 (GO TO 34B)1- NOT SURE .....8	YES..... 1 NO ..... 2 (GO TO 34B)1- NOT SURE ..... 8
34A	How long ago was the net last soaked or dipped?  IF LESS THAN 1 MONTH AGO, WRITE '00'.	MONT S <input type="text"/> AGO <input type="text"/>  MORE THAN 3 YRS AGO ..... 96	MONT S <input type="text"/> AGO <input type="text"/>  MORE THAN 3 YRS AGO.....96	MONT S <input type="text"/> AGO <input type="text"/>  MORE THAN 3 YRS AGO ..... 96
34B	Who slept under this mosquito net last night?  Anyone else?  WRITE THE LINE NUMBERS FROM THE HOUSEHOLD SCHEDULE.  IF NO ONE SLEPT UNDER THE NET, WRITE '00'.	LINE .... <input type="text"/> NO. <input type="text"/>  LINE .... <input type="text"/> NO. .... <input type="text"/>  LINE .... <input type="text"/> NO. .... <input type="text"/>	LINE ..... <input type="text"/> NO. <input type="text"/>  LINE ..... <input type="text"/> NO. .... <input type="text"/>  LINE ..... <input type="text"/> NO. .... <input type="text"/>	LINE..... <input type="text"/> NO. <input type="text"/>  LINE..... <input type="text"/> NO. .... <input type="text"/>  LINE..... <input type="text"/> NO. .... <input type="text"/>

### TABLE FOR SELECTION OF WOMEN FOR THE DOMESTIC VIOLENCE QUESTIONS

LOOK AT THE LAST DIGIT OF THE QUESTIONNAIRE NUMBER ON THE COVER PAGE. THIS IS THE NUMBER OF THE ROW YOU SHOULD GO TO. CHECK THE TOTAL NUMBER OF ELIGIBLE WOMEN ON THE COVER SHEET OF THE HOUSEHOLD QUESTIONNAIRE. THIS IS THE NUMBER OF THE COLUMN YOU SHOULD GO TO. FIND THE BOX WHERE THE ROW AND THE COLUMN MEET AND CIRCLE THE NUMBER THAT APPEARS IN THE BOX. THIS IS THE NUMBER OF THE WOMAN WHO WILL BE ASKED THE DOMESTIC VIOLENCE QUESTIONS. THEN, GO TO COLUMN 8 IN THE HOUSEHOLD SCHEDULE AND PUT A STAR \* NEXT TO THE LINE NUMBER OF THE ELIGIBLE WOMAN.

FOR EXAMPLE, IF THE QUESTIONNAIRE NUMBER IS '36716', GO TO ROW '6'. IF THERE ARE THREE ELIGIBLE WOMEN IN THE HOUSEHOLD, GO TO COLUMN '3'. FOLLOW THE ROW AND COLUMN AND FIND THE NUMBER IN THE BOX ('2'). SUPPOSE THE LINE NUMBERS OF THE THREE WOMEN ARE '02', '03', AND '07', THEN THE ELIGIBLE WOMAN FOR DOMESTIC VIOLENCE QUESTIONS IS THE SECOND ONE, I.E., THE ONE ON LINE '03'.

LAST DIGIT OF THE QUESTIONNAIRE NUMBER	TOTAL NUMBER OF ELIGIBLE WOMEN IN THE HOUSEHOLD							
	1	2	3	4	5	6	7	8
0	1	2	2	4	3	6	5	4
1	1	1	3	1	4	1	6	5
2	1	2	1	2	5	2	7	6
3	1	1	2	3	1	3	1	7
4	1	2	3	4	2	4	2	8
5	1	1	1	1	3	5	3	1
6	1	2	2	2	4	6	4	2
7	1	1	3	3	5	1	5	3
8	1	2	1	4	1	2	6	4
9	1	1	2	1	2	3	7	5

## WEIGHT AND HEIGHT MEASUREMENT—WOMEN AND CHILDREN

CHECK COLUMNS (8) AND (9): RECORD LINE NUMBER, NAME AND AGE OF WOMEN AGE 15-49 AND ALL CHILDREN UNDER AGE 6.

WOMEN 15-49				WEIGHT AND HEIGHT MEASUREMENT OF WOMEN 15-49			
LINE NO.	NAME	AGE		WEIGHT (KILOGRAMS)	HEIGHT (CENTIMETRES)		RESULT 1 MEASURED 2 NOT PRESENT 3 REFUSED 6 OTHER
FROM COL.(8)	FROM COL.(2)	FROM COL.(7)					
(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)
		YEARS					
<input type="text"/>		<input type="text"/>		<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>		<input type="text"/>		<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>		<input type="text"/>		<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>		<input type="text"/>		<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>		<input type="text"/>		<input type="text"/>	<input type="text"/>		<input type="text"/>

CHILDREN UNDER AGE 6				WEIGHT AND HEIGHT OF CHILDREN BORN IN 1998 OR LATER			
LINE NO.	NAME	AGE	What is (NAME) s date of birth?	WEIGHT (KILOGRAMS)	HEIGHT (CENTIMETRES)	MEASURED LYING DOWN OR STANDING UP	RESULT 1 MEASURED 2 NOT PRESENT 3 REFUSED 6 OTHER
FROM COL.(9)	FROM COL.(2)	FROM COL.(7)					
			DAY MONTH YEAR			LYING STAND.	
<input type="text"/>		<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	1 2	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	1 2	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	1 2	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	1 2	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	1 2	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>	<input type="text"/>	1 2	<input type="text"/>

TICK HERE IF CONTINUATION SHEET USED ☐

# HIV TESTING—WOMEN AND MEN

Total Number of Samples \_\_\_\_\_

CHECK COLUMNS (8) AND (9A): WRITE LINE NUMBER, NAME, SEX, AND AGE OF WOMEN 15-49 AND MEN 15-54. THIS PAGE TO BE DESTROYED IN OFFICE BEFORE TEST RESULTS ARE ADDED TO DATA FILE.

LINE NO. FROM COL.(8) OR (9A)	NAME FROM COL.(2)	SEX FROM COL.(4)	AGE FROM COL.(7)	CHECK AGE IN COL. (47): 1 2 ↓ TO 51	LINE NO. OF PARENT/ RESPON- SIBLE ADULT	READ THE CONSENT STATEMENT TO THE PARENT OR RESPONSIBLE ADULT CIRCLE CODE (AND SIGN)			READ THE CONSENT STATEMENT TO THE WOMAN OR MAN OR YOUTH CIRCLE CODE (AND SIGN)			SAMPLE RESULT 1 SAMPLE TAKEN 2 REFUSED 3 NOT PRESENT 4 TECH. PROBLEM 6 OTHER (SPECIFY)	SAMPLE BAR CODE
						AGREES 1 ↓ SIGN _____	REFUSES 2	NOT READ 3	AGREES 1 ↓ SIGN _____	REFUSES 2	NOT READ 3		
(44)	(45)	(46)	(47)	(48)	(49)	(50)			(51)			(52)	(53)
		M F 1 2	YEARS 1 2	15-17 18+ 1 2 ↓ TO 51		AGREES 1 ↓ SIGN _____	REFUSES 2	NOT READ 3	AGREES 1 ↓ SIGN _____	REFUSES 2	NOT READ 3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM
		1 2		1 2 ↓ TO 51		1 ↓ SIGN _____			1 ↓ SIGN _____	2	3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM
		1 2		1 2 ↓ TO 51		1 ↓ SIGN _____			1 ↓ SIGN _____	2	3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM
		1 2		1 2 ↓ TO 51		1 ↓ SIGN _____			1 ↓ SIGN _____	2	3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM
		1 2		1 2 ↓ TO 51		1 ↓ SIGN _____			1 ↓ SIGN _____	2	3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM
		1 2		1 2 ↓ TO 51		1 ↓ SIGN _____			1 ↓ SIGN _____	2	3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM
		1 2		1 2 ↓ TO 51		1 ↓ SIGN _____			1 ↓ SIGN _____	2	3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM
		1 2		1 2 ↓ TO 51		1 ↓ SIGN _____			1 ↓ SIGN _____	2	3		PASTE FIRST LABEL HERE PASTE SECOND LABEL ON FILTER PAPER AND THIRD LABEL ON BLOOD SAMPLE TRANSMITTAL FORM

**CONSENT STATEMENT**

Hello, my name is \_\_\_\_\_. I'm from the Ministry of Health and collaborating with Central Bureau of Statistics. As part of this survey, we are studying HIV among women and men. As you know, HIV is the virus that causes AIDS. The government is trying to find out how common HIV and other sexually transmitted diseases are, so that they can develop programs to prevent HIV and care for those who have it.

We request that you participate in this test by giving a few drops of blood from a finger. For this test, I will use clean, sterile instruments that are completely safe. Blood will be tested later in the laboratory.

To ensure the confidentiality of this test result, no individual names will be attached to the blood sample; therefore, we will not be able to give you the result of your test and no one will be able to trace the test back to you. If you want to know whether you have HIV, I can tell you where you can go to get tested.

Do you have any questions?

I hope you will agree to participate in the HIV/STD testing. But if you decide not to have the test done, it is your right and I will respect your decision.

Will you accept to participate in the HIV/STD test? GO BACK TO COLUMN (51). CIRCLE THE APPROPRIATE CODE AND SIGN.

IF RESPONDENT IS AGE 15-17, ASK PARENT/GUARDIAN: Now, will you tell me if you accept for (NAME OF YOUTH) to participate in the HIV/STD test? GO TO COLUMN (50). CIRCLE THE APPROPRIATE CODE AND SIGN. IF PARENT AGREES, READ THE PRECEDING PARAGRAPHS TO YOUTH FOR HIS/HER CONSENT AND RECORD IN COL. (51).

**NOTE FOR THE INTERVIEWER:**

THE RESPONDENT HAS THE RIGHT TO REFUSE THE HIV TEST, AND THEREFORE SHOULD NOT BE FORCED.

IDENTIFICATION					
PROVINCE* _____				<div><div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div></div>	
DISTRICT _____					
LOCATION/TOWN _____					
SUBLOCATION/WARD _____					
NASSEP CLUSTER NUMBER .....					
KDHS CLUSTER NUMBER .....					
HOUSEHOLD NUMBER .....					
NAIROBI/MOMBASA/KISUMU=1; NAKURU/ELDORET/THIKA/NYERI=2; SMALL TOWN=3; RURAL=4					
NAME OF HOUSEHOLD HEAD _____					
NAME AND LINE NUMBER OF WOMAN _____				<div><div></div><div></div></div>	
INTERVIEWER VISITS					
	1	2	3	FINAL VISIT	
DATE	_____	_____	_____	DAY MONTH YEAR INT.CODE RESULT	
INTERVIEWER'S NAME	_____	_____	_____	<div><div></div><div></div><div></div><div></div><div></div></div>	
RESULT**	_____	_____	_____	<div><div></div><div></div><div></div><div></div><div></div></div>	
NEXT VISIT: DATE	_____	_____		TOTAL NO. OF VISITS <div><div></div></div>	
TIME	_____	_____			
<b>** RESULT CODES:</b> 1 COMPLETED      4 REFUSED      7 OTHER _____ 2 NOT AT HOME      5 PARTLY COMPLETED      (SPECIFY) 3 POSTPONED      6 INCAPACITATED					
LANGUAGE					
LANGUAGE OF QUESTIONNAIRE: <b>ENGLISH</b>				<div><div></div><div></div><div></div><div></div><div></div></div>	
LANGUAGE OF INTERVIEW *** _____					
HOME LANGUAGE OF RESPONDENT*** _____					
WAS A TRANSLATOR USED? (YES=1, NO=2).....					
*** LANGUAGE CODES: 01 EMBU    04 KIKUYU    07 LUO    10 MIJIKENDA    13 ENGLISH 02 KALENJIN    05 KISII    08 MAASAI    11 SOMALI    14 OTHER _____ 03 KAMBA    06 LUHYA    09 MERU    12 KISWAHILI					
SUPERVISOR		FIELD EDITOR		OFFICE EDITOR	KEYED BY
NAME _____ <div><div></div><div></div></div>		NAME _____ <div><div></div><div></div></div>		<div><div></div><div></div></div>	<div><div></div><div></div></div>



## SECTION 1. RESPONDENT'S BACKGROUND

### INTRODUCTION AND CONSENT

Hello. My name is \_\_\_\_\_ and I am working with the Central Bureau of Statistics. We are conducting a national survey about the health of women and children. We would very much appreciate your participation in this survey. I would like to ask you about your health (and the health of your children). This information will help the government to plan health services. The interview usually takes between 20 and 60 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

Do you have any questions about the survey? May I begin the interview now?

SIGNATURE OF INTERVIEWER: \_\_\_\_\_ DATE: \_\_\_\_\_

RESPONDENT AGREES TO BE INTERVIEWED .....1      RESPONDENT DOES NOT AGREE TO BE INTERVIEWED .....2 —END  
3

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR ..... <input type="text"/> <input type="text"/> MINUTES..... <input type="text"/> <input type="text"/>	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in Nairobi, Mombasa, in another city or town, or in the countryside?	NAIROBI/MOMBASA/KISUMU..... 1 OTHER CITY/TOWN ..... 2 COUNTRYSIDE..... 3 OUTSIDE KENYA..... 4	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?  IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS..... <input type="text"/> <input type="text"/> ALWAYS.....95 VISITOR .....96	0105
104	Just before you moved here, did you live in Nairobi, Mombasa, in another city or town, or in the countryside?	NAIROBI/MOMBASA/KISUMU..... 1 OTHER CITY/TOWN ..... 2 COUNTRYSIDE..... 3	
105	In what month and year were you born?	MONTH..... <input type="text"/> <input type="text"/> DOES NOT KNOW MONTH.....98 YEAR..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DOES NOT KNOW YEAR.....9998	
106	How old were you at your last birthday?  COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS <input type="text"/> <input type="text"/>	
107	Have you ever attended school?	YES..... 1 NO ..... 2	0111
108	What is the highest level of school you attended: primary, vocational, secondary, or higher?	NURSERY/KINDERGARTEN..... 0 PRIMARY ..... 1 POST-PRIMARY/VOCATIONAL ..... 2 SECONDARY/'A' LEVEL..... 3 COLLEGE (MIDDLE LEVEL)..... 4 UNIVERSITY ..... 5	
109	What is the highest (standard/form/year) you completed at that level?	STANDARD/FORM/YEAR..... <input type="text"/> <input type="text"/>	
110	CHECK 108: PRIMARY, <input type="checkbox"/> POST-PRIMARY, <input type="checkbox"/> VOCATIONAL 3 SECONDARY OR HIGHER <input type="checkbox"/>		0114
111	Now I would like you to read this sentence to me.  SHOW SENTENCES ON NEXT PAGE TO RESPONDENT. IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?	CANNOT READ AT ALL..... 1 CAN ONLY READ PART OF SENTENCE..... 2 CAN READ WHOLE SENTENCE ..... 3 NO SENTENCE IN REQUIRED LANGUAGE..... 4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
112	Have you ever participated in a literacy program or any other program that involves learning to read or write (not including primary school)?	YES.....1 NO.....2	
113	CHECK 111: CODE '2', '3' OR '4' <input type="checkbox"/> CIRCLED 3 CODE '1' CIRCLED <input type="checkbox"/>		—0115
114	Do you read a newspaper or magazine almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY .....1 AT LEAST ONCE A WEEK .....2 LESS THAN ONCE A WEEK .....3 NOT AT ALL .....4	
115	Do you listen to the radio almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY .....1 AT LEAST ONCE A WEEK .....2 LESS THAN ONCE A WEEK .....3 NOT AT ALL .....4	
116	Do you watch television almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY .....1 AT LEAST ONCE A WEEK .....2 LESS THAN ONCE A WEEK .....3 NOT AT ALL .....4	
117	What is your religion?	ROMAN CATHOLIC .....1 PROTESTANT/OTHER CHRISTIAN.....2 MUSLIM.....3 NO RELIGION .....4  OTHER .....6 (SPECIFY)	
118	What is your ethnic group/tribe?	EMBU .....01 KALENJIN .....02 KAMBA .....03 KIKUYU .....04 KISII .....05 LUHYA.....06 LUO .....07 MASAI .....08 MERU .....09 MIJIKENDA/SWAHILI.....10 SOMALI .....11 TAITA/TAVETA.....12 OTHER .....96 (SPECIFY)	

### SENTENCES FOR LITERACY TEST (Q. 111)

#### ENGLISH

1. The child is reading a book.
2. The rains came late this year.
3. Parents must care for their children.
4. Farming is hard work.

#### KISWAHILI

1. Mtoto anasoma kitabu.
2. Mvua ilichelewa mwaka huu
3. Nilazima wazazi watunze watoto wao.
4. Ukilima ni kazi ngumu.

## SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES.....1 NO .....2	—C206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES.....1 NO .....2	—C204
203	How many sons live with you?  And how many daughters live with you?  IF NONE, RECORD '00'.	SONS AT HOME ..... DAUGHTERS AT HOME.....	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES.....1 NO .....2	—C206
205	How many sons are alive but do not live with you?  And how many daughters are alive but do not live with you?  IF NONE, RECORD '00'.	SONS ELSEWHERE..... DAUGHTERS ELSEWHERE...	
206	Sometimes it happens that children die. It may be painful to talk about and I am sorry to ask you about painful memories, but it is important to get correct information. Have you ever given birth to a son or daughter who was born alive but later died?  IF NO, PROBE: Any baby who cried or showed signs of life but survived only a few hours or days?	YES.....1 NO .....2	—C208
207	How many sons have died?  And how many daughters have died?  IF NONE, RECORD '00'.	SONS DEAD..... DAUGHTERS DEAD .....	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL.  IF NONE, RECORD '00'.	TOTAL .....	
209	CHECK 208:  Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct?  YES <input type="checkbox"/> 3 NO <input type="checkbox"/> 0 PROBE AND CORRECT 201-208 AS NECESSARY.		
210	CHECK 208:  ONE OR MORE BIRTHS <input type="checkbox"/> 3 NO BIRTHS <input type="checkbox"/> _____		—C226

211 Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had. RECORD NAMES OF ALL THE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.									
212  What name was given to your (first/next) baby?  (NAME)	213  Were any of these births twins?	214  Is (NAME) a boy or a girl?	215  In what month and year was (NAME) born?  PROBE: What is his/her birthday?	216  Is (NAME) still alive?	217 IF ALIVE:  How old was (NAME) at his/her last birthday?  RECORD AGE IN COMPLETED YEARS.	218 IF ALIVE  Is (NAME) living with you?	219 IF ALIVE:  RECORD <b>HOUSEHOLD</b> LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	220 IF DEAD:  How old was (NAME) when he/she died? IF '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221  Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME)?
01	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (NEXT BIRTH)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	
02	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2
03	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2
04	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2
05	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2
06	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2
07	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2
08	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES .... 1 NO ..... 2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS ..... 1 <input type="text"/> <input type="text"/> MONTHS . 2 <input type="text"/> <input type="text"/> YEARS..... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2

212	213	214	215	216	217 IF ALIVE:	218 IF ALIVE	219 IF ALIVE:	220 IF DEAD:	221
What name was given to your next baby?  (NAME)	Were any of these births twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born?  PROBE: What is his/her birthday?	Is (NAME) still alive?	How old was (NAME) at his/her last birthday?  RECORD AGE IN COMPLETED YEARS.	Is (NAME) living with you?	RECORD <b>HOUSEHOLD</b> LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	How old was (NAME) when he/she died?  IF '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME)?
09	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES...1 NO...2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES...1 NO...2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS...1 <input type="text"/> <input type="text"/> MONTHS...2 <input type="text"/> <input type="text"/> YEARS...3 <input type="text"/> <input type="text"/>	YES...1 NO...2
10	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES...1 NO...2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES...1 NO...2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS...1 <input type="text"/> <input type="text"/> MONTHS...2 <input type="text"/> <input type="text"/> YEARS...3 <input type="text"/> <input type="text"/>	YES...1 NO...2
11	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES...1 NO...2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES...1 NO...2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS...1 <input type="text"/> <input type="text"/> MONTHS...2 <input type="text"/> <input type="text"/> YEARS...3 <input type="text"/> <input type="text"/>	YES...1 NO...2
12	SING...1 MULT...2	BOY...1 GIRL...2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES...1 NO...2 3 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES...1 NO...2	LINE NUMBER <input type="text"/> <input type="text"/> 3 (GO TO 221)	DAYS...1 <input type="text"/> <input type="text"/> MONTHS...2 <input type="text"/> <input type="text"/> YEARS...3 <input type="text"/> <input type="text"/>	YES...1 NO...2

222	Have you had any live births since the birth of (NAME OF LAST BIRTH)?	YES .....1 NO .....2	
223	<p>COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK:</p> <p>NUMBERS ARE SAME <input type="checkbox"/> NUMBERS ARE DIFFERENT <input type="checkbox"/> 0 (PROBE AND RECONCILE)</p> <p>3</p> <p>CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED.</p> <p>FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED.</p> <p>FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED.</p> <p>FOR AGE AT DEATH 12 MONTHS OR 1 YR.: PROBE TO DETERMINE EXACT NUMBER OF MONTHS.</p>		
224	CHECK 215 AND ENTER THE NUMBER OF BIRTHS IN 1998 OR LATER. IF NONE, RECORD '0'.		<input type="text"/>
225	FOR EACH BIRTH SINCE JANUARY 1998, ENTER 'B' IN THE MONTH OF BIRTH IN COLUMN 1 OF THE CALENDAR. FOR EACH BIRTH, ASK THE NUMBER OF MONTHS THE PREGNANCY LASTED AND RECORD 'P' IN EACH OF THE PRECEDING MONTHS ACCORDING TO THE DURATION OF PREGNANCY. THE NUMBER OF 'P'S MUST BE ONE LESS THAN THE NUMBER OF MONTHS THAT THE PREGNANCY LASTED. WRITE THE NAME OF THE CHILD TO THE LEFT OF THE 'B' CODE.		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP								
226	Are you pregnant now?	YES..... 1 NO..... 2 UNSURE..... 8	<input type="checkbox"/> 0229								
227	How many months pregnant are you? WRITE NUMBER OF COMPLETED MONTHS. ENTER 'P'S IN COLUMN 1 OF CALENDAR, BEGINNING WITH THE MONTH OF INTERVIEW AND FOR THE TOTAL NUMBER OF COMPLETED MONTHS	MONTHS..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>									
228	At the time you became pregnant did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you <u>not want</u> to have any (more) children at all?	THEN..... 1 LATER..... 2 NOT AT ALL..... 3									
229	Have you ever had a pregnancy that miscarried, was aborted, or ended in a stillbirth?	YES..... 1 NO..... 2	—0237								
230	When did the last such pregnancy end?	MONTH..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> YEAR..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td></tr></table>									
231	CHECK 230: LAST PREGNANCY ENDED IN <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table> JAN. 1998 OR LATER 3' LAST PREGNANCY ENDED BEFORE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table> JAN. 1998				—0237						
232	How many months pregnant were you when the last such pregnancy ended? WRITE NUMBER OF COMPLETED MONTHS. ENTER 'T' IN COLUMN 1 OF CALENDAR IN THE MONTH THAT THE PREGNANCY ENDED AND 'P' FOR THE REMAINING NUMBER OF COMPLETED MONTHS.	MONTHS..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>									
233	Have you ever had any other pregnancies that did not end in a live birth?	YES..... 1 NO..... 2	—0237								
234	ASK THE DATE AND THE DURATION OF PREGNANCY FOR EACH EARLIER PREGNANCY THAT DID NOT END IN A LIVE BIRTH BACK TO JANUARY 1998. ENTER 'T' IN COLUMN 1 OF CALENDAR IN THE MONTH THAT EACH PREGNANCY TERMINATED AND 'P' FOR THE REMAINING NUMBER OF COMPLETED MONTHS.										
235	Did you have any pregnancies that ended before 1998 that did not end in a live birth?	YES..... 1 NO..... 2	—0237								
236	When did the last such pregnancy that ended before 1998 end?	MONTH..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> YEAR..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td></tr></table>									
237	When did your last menstrual period start?  _____ (DATE, IF GIVEN)	DAYS AGO..... 1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> WEEKS AGO..... 2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> MONTHS AGO..... 3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> YEARS AGO..... 4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> MENOPAUSE/HAD HYSTERECTOMY 994 BEFORE LAST BIRTH..... 995 NEVER MENSTRUATED..... 996									
238	From one menstrual period to the next, are there certain days when a woman is more likely to get pregnant if she has sexual relations?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	<input type="checkbox"/> 0301								
239	Is this time just before her period begins, during her period, right after her period has ended, or half way between two periods?	JUST BEFORE HER PERIOD BEGINS ... 1 DURING HER PERIOD..... 2 JUST AFTER HER PERIOD ENDS..... 3 HALF WAY BETWEEN 2 PERIODS..... 4 OTHER..... 6 (SPECIFY) DOES NOT KNOW..... 8									

### SECTION 3. CONTRACEPTION

<p>Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF SHE HAS HEARD OF THE METHOD AND CODE 2 IF SHE HAS NOT HEARD OF IT. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 301, ASK 302.</p>			
301	Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)?		302 Have you ever used (METHOD)?
01	FEMALE STERILISATION Women can have an operation to avoid having any more children.	YES ..... 1 NO ..... 2 3	Have you ever had an operation to avoid having any more children? YES ..... 1 NO ..... 2
02	MALE STERILISATION Men can have an operation to avoid having any more children.	YES ..... 1 NO ..... 2 3	Have you ever had a partner who had an operation to avoid having any more children? YES ..... 1 NO ..... 2
03	PILL Women can take a pill every day to stop them from becoming pregnant.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
05	INJECTIONS Women can have an injection by a health provider which stops them from becoming pregnant for one or more months.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
06	IMPLANTS, NORPLANT Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
07	CONDOM Men can put a rubber sheath on their penis before sexual intercourse.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
08	FEMALE CONDOM Women can place a sheath in their vagina before sexual intercourse.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
09	RHYTHM OR NATURAL METHODS Every month that a woman is sexually active she can avoid pregnancy by not having sexual intercourse on the days of the month she is most likely to get pregnant.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
10	WITHDRAWAL Men can be careful and pull out before climax.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
11	EMERGENCY CONTRACEPTION Women can take pills up to three days after sexual intercourse to avoid becoming pregnant.	YES ..... 1 NO ..... 2 3	YES ..... 1 NO ..... 2
12	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES ..... 1 _____ (SPECIFY) _____ (SPECIFY) NO ..... 2 3	YES ..... 1 NO ..... 2 YES ..... 1 NO ..... 2
303	CHECK 302:  NOT A SINGLE 'YES' <input type="checkbox"/> AT LEAST ONE 'YES' <input type="checkbox"/> (NEVER USED) 3 (EVER USED)		—0307

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
304	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES..... 1 NO ..... 2	—0306
305	ENTER '0' IN COLUMN 1 OF CALENDAR IN EACH BLANK MONTH-----		—0329
306	What have you used or done?  CORRECT 302 AND 303 (AND 301 IF NECESSARY).		
307	Now I would like to ask you about the first time that you did something or used a method to avoid getting pregnant. How many children did you have at that time, if any?  IF NONE, WRITE '00'.	NUMBER OF CHILDREN..... <input type="text"/> <input type="text"/>	
308	CHECK 302 (01):  WOMAN NOT STERILISED <input type="checkbox"/> 3 WOMAN STERILISED <input type="checkbox"/>		—0311A
309	CHECK 226:  NOT PREGNANT OR UNSURE <input type="checkbox"/> 3 PREGNANT <input type="checkbox"/>		—0318
310	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES..... 1 NO ..... 2	—0318
311	Which method are you using?  IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD ON LIST.	FEMALE STERILISATION ..... A MALE STERILISATION ..... B PILL ..... C IUD ..... D INJECTIONS ..... E IMPLANTS ..... F CONDOM ..... G FEMALE CONDOM ..... H RHYTHM, NATURAL METHODS ..... I WITHDRAWAL ..... J  OTHER ..... X (SPECIFY)	0313  0316A
311A	CIRCLE 'A' FOR FEMALE STERILISATION.		
312	What brand of pills do you usually use?	MICROGYNON ..... 1 OVULON ..... 2 FEMIPLAN ..... 3  OTHER ..... 6 (SPECIFY) DOES NOT KNOW BRAND ..... 8	0316A
313	In what facility did the sterilisation take place?  IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE '21'.	<b>PUBLIC SECTOR</b> GOVERNMENT HOSPITAL ..... 11 GOVERNMENT HEALTH CENTRE ..... 12 GOVERNMENT DISPENSARY ..... 13  OTHER PUBLIC ..... 16 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION, CHURCH HOSP./CLINIC... 21 FPAK HEALTH CENTRE/CLINIC ..... 22 PRIVATE HOSPITAL OR CLINIC ..... 23 NURSING/MATERNITY HOME ..... 26  MOBILE CLINIC ..... 31 OTHER ..... 96 (SPECIFY) DOES NOT KNOW ..... 98	



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
314	<p>CHECK 311:</p> <div style="display: flex; justify-content: space-around;"> <div> <p>CODE 'A' CIRCLED <input type="checkbox"/></p> <p>3</p> <p>Before your sterilisation operation, were you told that you would not be able to have any (more) children because of the operation?</p> </div> <div> <p>CODE 'B' CIRCLED <input type="checkbox"/></p> <p>3</p> <p>Before the sterilisation operation, was your husband/partner told that he would not be able to have any (more) children because of the operation?</p> </div> </div>	<p>YES..... 1</p> <p>NO ..... 2</p> <p>DOES NOT KNOW..... 8</p>	
316	In what month and year was the sterilisation performed?	<p>MONTH ..... <input type="text"/></p> <p>YEAR..... <input type="text"/></p>	
316A	<p>In what month and year did you start using (CURRENT METHOD) continuously?</p> <p>PROBE: For how long have you been using (CURRENT METHOD) now without stopping?</p>	<p>MONTH ..... <input type="text"/></p> <p>YEAR..... <input type="text"/></p>	
316B	<p>CHECK 316/316A, 215 AND 230:</p> <p>ANY BIRTH OR PREGNANCY TERMINATION AFTER MONTH AND YEAR OF START OF USE OF CONTRACEPTION IN 316/316A?</p> <p>GO BACK TO 316/316A, PROBE AND RECORD MONTH AND YEAR AT START OF CONTINUOUS USE OF CURRENT METHOD (MUST BE AFTER LAST BIRTH OR PREGNANCY TERMINATION).</p>	<p>YES <input type="checkbox"/></p> <p>NO <input type="checkbox"/></p> <p>3</p>	
317	<p><b>CHECK 316/316A:</b></p> <div style="display: flex; justify-content: space-around;"> <div> <p>YEAR IS 1998 OR LATER <input type="checkbox"/></p> <p>3</p> <p>ENTER THE CODE FOR THE METHOD USED IN MONTH OF INTERVIEW IN COLUMN 1 OF THE CALENDAR AND IN EACH MONTH BACK TO THE DATE SHE STARTED USING (Q.316).</p> <p>ENTER METHOD SOURCE CODE IN COLUMN 2 OF THE CALENDAR IN THE MONTH SHE STARTED USING.</p> <p>THEN CONTINUE WITH 318</p> </div> <div> <p>YEAR IS 1997 OR EARLIER <input type="checkbox"/></p> <p>3</p> <p>ENTER THE CODE FOR THE METHOD USED IN MONTH OF INTERVIEW IN COLUMN 1 OF THE CALENDAR AND IN EACH MONTH BACK TO JANUARY 1998.</p> <p>THEN SKIP TO 0327</p> </div> </div>		
318	<p>I would like to ask you some questions about the times you or your partner may have used a method to avoid getting pregnant during the last few years.</p> <p>USE CALENDAR TO PROBE FOR EARLIER PERIODS OF USE AND NONUSE, STARTING WITH MOST RECENT USE, BACK TO JANUARY 1998. USE NAMES OF CHILDREN AND DATES OF BIRTH AND PREGNANCIES AS REFERENCE POINTS.</p> <p><b>IN COLUMN 1, ENTER METHOD USE CODE OR '0' FOR NONUSE IN EACH BLANK MONTH.</b></p> <p>ILLUSTRATIVE QUESTIONS:</p> <p>COLUMN 1:</p> <ul style="list-style-type: none"> <li>When was the last time you used a method? Which method was that?</li> <li>When did you start using that method? How long after the birth of (NAME)?</li> <li>How long did you use the method then?</li> </ul> <p><b>IN COLUMN 2, ENTER METHOD SOURCE CODE IN FIRST MONTH OF EACH USE.</b></p> <p>ILLUSTRATIVE QUESTIONS:</p> <p>COLUMN 2:</p> <ul style="list-style-type: none"> <li>Where did you get the method when you started using it?</li> <li>Where did you get advice on how to use the method [for rhythm or withdrawal]?</li> </ul> <p><b>IN COLUMN 3, ENTER CODE FOR REASON SHE STOPPED USING NEXT TO LAST MONTH OF USE. NUMBER OF CODES IN COLUMN 3 MUST BE SAME AS NUMBER OF INTERRUPTIONS OF METHOD USE IN COLUMN 1.</b></p> <p>ILLUSTRATIVE QUESTIONS:</p> <p>COLUMN 3:</p> <ul style="list-style-type: none"> <li>Why did you stop using (METHOD)?</li> </ul> <p>IF SHE STOPPED BECAUSE OF PREGNANCY, ASK WHETHER SHE BECAME PREGNANT UNINTENTIONALLY WHILE USING THE METHOD OR IF SHE DELIBERATELY STOPPED TO GET PREGNANT.</p> <ul style="list-style-type: none"> <li>Did you become pregnant while using (METHOD), or did you stop using in order to get pregnant, or did you stop for some other reason?</li> </ul> <p>IF SHE DELIBERATELY STOPPED TO BECOME PREGNANT, ASK:</p> <ul style="list-style-type: none"> <li>How many months did it take you to get pregnant after you stopped using (METHOD)? AND ENTER '0' IN EACH SUCH MONTH IN COLUMN 1.</li> </ul>		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
321	CHECK 311/311A:  CIRCLE METHOD CODE:  IF MORE THAN ONE METHOD CODE CIRCLED IN 311/311A, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	NO CODE CIRCLED ..... 00 FEMALE STERILISATION ..... 01 MALE STERILISATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 RHYTHM, NATURAL METHOD ..... 09 WITHDRAWAL ..... 10 OTHER METHOD ..... 96	—0329 —0331 —0328 —0325 —0331 —0331
322	You obtained (CURRENT METHOD) from (SOURCE OF METHOD FROM CALENDAR) in (DATE). At that time, were you told about side effects or problems you might have with the method?	YES ..... 1 NO ..... 2	—0325
323	Were you ever told by a health or family planning worker about side effects or problems you might have with the method?	YES ..... 1 NO ..... 2	
325	CHECK 322:  CODE '1' CIRCLED <input type="checkbox"/> CODE '1' NOT CIRCLED <input type="checkbox"/> 3' 3  When you obtained (CURRENT METHOD) from (SOURCE OF METHOD FROM CALENDAR) in (DATE), were you told about other methods of family planning that you could use?	YES ..... 1 NO ..... 2	—0327
326	Were you ever told by a health or family planning worker about other methods of family planning that you could use?	YES ..... 1 NO ..... 2	
327	CHECK 311/311A:  CIRCLE METHOD CODE:  IF MORE THAN ONE METHOD CODE CIRCLED IN 311/311A, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	FEMALE STERILISATION ..... 01 MALE STERILISATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTABLES ..... 05 IMPLANTS/NORPLANT ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 RHYTHM, NATURAL METHOD ..... 09 WITHDRAWAL ..... 10 OTHER ..... 96	—0331 —0331 —0331 —0331 —0331 —0331 —0331 —0331 —0331
328	Where did you obtain (CURRENT METHOD) the last time?  IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE '21'.	<b>PUBLIC SECTOR</b> GOVERNMENT HOSPITAL ..... 11 GOVERNMENT HEALTH CENTRE ..... 12 GOVERNMENT DISPENSARY ..... 13  OTHER PUBLIC ..... 16 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION, CHURCH HOSP./CLINIC ..... 21 FPAK HEALTH CENTRE/CLINIC ..... 22 PRIVATE HOSPITAL OR CLINIC ..... 23 PHARMACY/CHEMIST ..... 24 NURSING/MATERNITY HOME ..... 26  <b>OTHER SOURCE</b> MOBILE CLINIC ..... 31 COMMUNITY-BASED DISTRIBUTOR ..... 41 SHOP ..... 51 FRIEND/RELATIVE ..... 61 OTHER ..... 96 (SPECIFY)	—0331 —0331 —0331
329	Do you know of a place where you can obtain a method of family planning?	YES ..... 1 NO ..... 2	—0331

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
330	<p>Where is that?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p> <p>Any other place?</p> <p>RECORD ALL PLACES MENTIONED.</p> <p>IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE 'F'.</p>	<p>PUBLIC SECTOR</p> <p>GOVERNMENT HOSPITAL .....B</p> <p>GOVERNMENT HEALTH CENTRE .....C</p> <p>GOVERNMENT DISPENSARY.....D</p> <p>OTHER PUBLIC .....E</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>MISSION, CHURCH HOSP./CLINIC..... F</p> <p>FPAK HEALTH CENTRE/CLINIC ..... G</p> <p>PRIVATE HOSPITAL OR CLINIC .....H</p> <p>PHARMACY/CHEMIST .....I</p> <p>NURSING/MATERNITY HOME .....K</p> <p>OTHER PRIV.MEDICAL ..... L</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>MOBILE CLINIC ..... M</p> <p>COMMUNITY-BASED DISTRIBUTOR..N</p> <p>SHOP .....O</p> <p>FRIEND/RELATIVE.....P</p> <p>OTHER .....X</p> <p>(SPECIFY)</p>	
331	<p>In the last 12 months, were you visited by a fieldworker who talked to you about family planning?</p>	<p>YES..... 1</p> <p>NO ..... 2</p>	

## SECTION 4A. PREGNANCY, POSTNATAL CARE AND BREASTFEEDING

401	CHECK 224: <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">           ONE OR MORE BIRTHS IN 1998 OR LATER           <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="checkbox"/> <span style="margin-left: 5px;">3</span> </div> </div> <div style="text-align: center;">           NO BIRTHS IN 1998 OR LATER           <div style="display: flex; align-items: center;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="checkbox"/> <span style="margin-left: 5px;">_____</span> </div> </div> </div>	-0487
402	ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 1998 OR LATER. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, USE LAST COLUMN OF ADDITIONAL QUESTIONNAIRES).  Now I would like to ask you some questions about the health of all your children born in the last five years. We will talk about each separately.	
403	<b>LAST BIRTH</b>  LINE NUMBER <u>FROM 212</u>	<b>NEXT-TO-LAST BIRTH</b>  LINE NUMBER .....
404	FROM 212 AND 216	NAME ..... LIVING <input style="width: 20px; height: 20px; border: 1px solid black;" type="checkbox"/> <span style="margin-left: 20px;">DEAD <input style="width: 20px; height: 20px; border: 1px solid black;" type="checkbox"/></span> <span style="margin-left: 40px;">3 <span style="margin-left: 20px;">3</span></span>
405	At the time you became pregnant with (NAME), did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you <u>not want</u> to have any (more) children at all?	THEN ..... 1 (SKIP TO 407)1_____ ] LATER ..... 2 NOT AT ALL ..... 3 (SKIP TO 407)1_____ ]
406	How much longer would you like to have waited?	MONTHS ..... 1 <div style="display: inline-block; width: 30px; height: 30px; border: 1px solid black; vertical-align: middle;"></div> YEARS ..... 2 <div style="display: inline-block; width: 30px; height: 30px; border: 1px solid black; vertical-align: middle;"></div> DON'T KNOW ..... 998
407	Did you see anyone for antenatal care for this pregnancy?  IF YES: Whom did you see? Anyone else?  PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS SEEN.	DOCTOR..... A NURSE/MIDWIFE ..... B TRADITION'L BIRTH ATTENDANT. D  OTHER ..... X (SPECIFY) NO ONE ..... Y (SKIP TO 415)1_____ ]
407A	Where did you receive antenatal care for this pregnancy?  IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE, PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE 'F'	HOME ..... A <b>PUBLIC SECTOR</b> GOVT. HOSPITAL ..... B GOVT. HEALTH CENTRE ..... C GOVT. DISPENSARY ..... D OTHER PUBLIC ..... E (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSPITAL/CLINIC ..... F PRIVATE HOSPITAL/CLINIC ..... H NURSING/MATERNITY HOME ... K OTHER PVT. MEDICAL ..... L (SPECIFY) OTHER ..... X (SPECIFY)
408	How many months pregnant were you when you first received antenatal care for this pregnancy?	MONTHS..... <div style="display: inline-block; width: 30px; height: 30px; border: 1px solid black; vertical-align: middle;"></div> DON'T KNOW ..... 98
409	How many times did you receive antenatal care during this pregnancy?	NO. OF TIMES..... <div style="display: inline-block; width: 30px; height: 30px; border: 1px solid black; vertical-align: middle;"></div> DON'T KNOW ..... 98

		LAST BIRTH		NEXT-TO-LAST BIRTH
		NAME _____		NAME _____
410	During this pregnancy, were any of the following done to you at least once? Were you weighed? Was your height measured? Was your blood pressure measured? Did you give a urine sample? Did you give a blood sample?	<p style="text-align: center;"><b>YES    NO</b></p> WEIGHT ..... 1    2 HEIGHT ..... 1    2 BLOOD PRESSURE ..... 1    2 URINE SAMPLE ..... 1    2 BLOOD SAMPLE ..... 1    2		
411	During any of the antenatal care visits for this pregnancy, were you given any information or counseled about AIDS or the AIDS virus?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8		
412	Were you given any information or counseled about breastfeeding?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8		
413	Were you told about the signs of pregnancy complications?	YES ..... 1 NO ..... 2 (SKIP TO 415) 1 _____ DOES NOT KNOW ..... 8		
414	Were you told where to go if you had these complications?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8		
415	During this pregnancy, were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth?	YES ..... 1 NO ..... 2 (SKIP TO 417) 1 _____ DOES NOT KNOW ..... 8		
416	During this pregnancy, how many times did you get this injection?	TIMES ..... <input type="text"/> DOES NOT KNOW ..... 8		
417	During this pregnancy, were you given or did you buy any iron tablets or iron syrup?  SHOW TABLET/SYRUP.	YES ..... 1 NO ..... 2 (SKIP TO 419) 1 _____ DOES NOT KNOW ..... 8		
418	During the whole pregnancy, for how many days did you take the tablets or syrup?  IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	NUMBER OF DAYS ..... <input type="text"/> <input type="text"/> <input type="text"/> DOES NOT KNOW ..... 998		
419	During this pregnancy, did you take any drugs to prevent you from getting malaria?	YES ..... 1 NO ..... 2 (SKIP TO 423) 1 _____ DOES NOT KNOW ..... 8		
420	What antimalarial drugs did you take?  RECORD ALL MENTIONED. IF TYPE OF DRUG IS NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.	SP, FANSIDAR, METAKELFIN ..... A CHLOROQUINE ..... B DOES NOT KNOW ..... Z OTHER ..... X (SPECIFY)		
421	CHECK 420:  DRUGS TAKEN FOR MALARIA PREVENTION	CODE 'A' CIRCLED  <input type="checkbox"/> 3	CODE 'A' NOT CIRCLED  <input type="checkbox"/> 3 (SKIP TO 423)	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
422	During the whole pregnancy, how many times did you take SP (Fansidar)? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	NUMBER OF TIMES ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98	
422A	CHECK 407:  ANTENATAL CARE RECEIVED DURING THIS PREGNANCY?	CODE 'A', 'B', OR 'D' CIRCLED <input type="text"/> 3 OTHER <input type="text"/> 3 (SKIP TO 423)	
422B	Did you get the SP during an antenatal visit, during another visit to a health facility or from some other source?	ANTENATAL VISIT ..... 1 ANOTHER FACILITY VISIT ..... 2 OTHER SOURCE ..... 3	
423	When (NAME) was born, was he/she very large, larger than average, average, smaller than average, or very small?	VERY LARGE ..... 1 LARGER THAN AVERAGE ..... 2 AVERAGE ..... 3 SMALLER THAN AVERAGE ..... 4 VERY SMALL ..... 5 DON'T KNOW ..... 8	VERY LARGE ..... 1 LARGER THAN AVERAGE ..... 2 AVERAGE ..... 3 SMALLER THAN AVERAGE ..... 4 VERY SMALL ..... 5 DON'T KNOW ..... 8
424	Was (NAME) weighed at birth?	YES ..... 1 NO ..... 2 (SKIP TO 426) 1 _____ DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 426) 1 _____ DON'T KNOW ..... 8
425	How much did (NAME) weigh?  RECORD WEIGHT FROM HEALTH CARD, IF AVAILABLE.	GRAMS FROM CARD ..... 1 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> GRAMS FROM RECALL ..... 2 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW ..... 99998	GRAMS FROM CARD ..... 1 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> GRAMS FROM RECALL ..... 2 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW ..... 99998
426	Who assisted with the delivery of (NAME)?  Anyone else?  PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS ASSISTING.  IF RESPONDENT SAYS 'NO ONE', PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY.	HEALTH PROFESSIONAL DOCTOR ..... A NURSE/MIDWIFE ..... B OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... D RELATIVE/FRIEND ..... E OTHER ..... X (SPECIFY) NO ONE ..... Y	HEALTH PROFESSIONAL DOCTOR ..... A NURSE/MIDWIFE ..... B OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... D RELATIVE/FRIEND ..... E OTHER ..... X (SPECIFY) NO ONE ..... Y
427	Where did you give birth to (NAME)?  IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE, PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE '31'.	<b>HOME</b> YOUR HOME ..... 11 (SKIP TO 429) 1 _____ OTHER HOME ..... 12 <b>PUBLIC SECTOR</b> GOVT. HOSPITAL ..... 21 GOVT. HEALTH CENTRE ..... 22 GOVT. DISPENSARY ..... 23  OTHER PUBLIC ..... 26 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSPITAL/CLINIC ..... 31 PRIVATE HOSPITAL/CLINIC ..... 33 NURSING/MATERNITY HOME ..... 35 OTHER PVT. MEDICAL ..... 36 (SPECIFY) OTHER ..... 96 (SPECIFY) (SKIP TO 429) 1 _____	<b>HOME</b> YOUR HOME ..... 11 (SKIP TO 429) 1 _____ OTHER HOME ..... 12 <b>PUBLIC SECTOR</b> GOVT. HOSPITAL ..... 21 GOVT. HEALTH CENTRE ..... 22 GOVT. DISPENSARY ..... 23  OTHER PUBLIC ..... 26 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSPITAL/CLINIC ..... 31 PRIVATE HOSPITAL/CLINIC ..... 33 NURSING/MATERNITY HOME ..... 35 OTHER PVT. MEDICAL ..... 36 (SPECIFY) OTHER ..... 96 (SPECIFY) (SKIP TO 429) 1 _____
428	Was (NAME) delivered by caesarian section?	YES ..... 1 NO ..... 2	YES ..... 1 NO ..... 2

		LAST BIRTH	NEXT-TO-LAST BIRTH								
		NAME _____	NAME _____								
428A	After you delivered, did the health facility give you a birth notification form for the baby?	YES ..... 1 (SKIP TO 433A)1_____ NO ..... 2 (SKIP TO 433)1_____ DOES NOT KNOW ..... 8	YES ..... 1 (SKIP TO 433A)1_____ NO ..... 2 (SKIP TO 433)1_____ DOES NOT KNOW ..... 8								
429	After (NAME) was born, did a health professional or a traditional birth attendant check on your health?	YES ..... 1 NO ..... 2 (SKIP TO 433)1_____	YES ..... 1 NO ..... 2 (SKIP TO 433)1_____								
430	How many days or weeks after the delivery did the first check take place?  RECORD '00' DAYS IF SAME DAY.	DAYS AFTER DEL..... 1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table> WEEKS AFTER DEL .. 2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table> DON'T KNOW .....998									
431	Who checked on your health at that time?  PROBE FOR MOST QUALIFIED PERSON.	DOCTOR.....11 NURSE/MIDWIFE .....12 TRADIT'L BIRTH ATTENDANT.....21 OTHER _____ 96 (SPECIFY)									
432	Where did this first check take place?  IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE '31'.	<b>HOME</b> YOUR HOME .....11 OTHER HOME .....12 <b>PUBLIC SECTOR</b> GOVT. HOSPITAL .....21 GOVT. HEALTH CENTRE .....22 GOVT. DISPENSARY .....23 OTHER PUBLIC _____ 26 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSPITAL/CLINIC .....31 PRIVATE HOSPITAL/CLINIC .....33 NURSING/MATERNITY HOME ..35 OTHER PVT. MEDICAL _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY)									
433	After (NAME) was born, did you go to the assistant chief or to a village elder or to a registrar's office to get a birth notification form?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8								
433A	Do you have a birth certificate for (NAME)?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8								
433B	In the first two months after delivery, did you receive a vitamin A dose like this?  SHOW CAPSULE.	YES ..... 1 NO ..... 2									
434	Has your menstrual period returned since the birth of (NAME)?	YES .....1 (SKIP TO 436)1_____ NO .....2 (SKIP TO 437)1_____									
435	Did your period return between the birth of (NAME) and your next pregnancy?		YES ..... 1 NO ..... 2 (SKIP TO 439)1_____								

		LAST BIRTH	NEXT-TO-LAST BIRTH
		NAME _____	NAME _____
436	For how many months after the birth of (NAME) did you <u>not</u> have a period?	MONTHS..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98
437	CHECK 226: IS RESPONDENT PREGNANT?	NOT PREG- <input type="checkbox"/> PREGNANT <input type="checkbox"/> NANT 3' OR UNSURE (SKIP TO 439) 1	
438	Have you resumed sexual relations since the birth of (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 440) 1	
439	For how many months after the birth of (NAME) did you <u>not</u> have sexual relations?	MONTHS..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98
440	Did you ever breastfeed (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 447) 1	YES ..... 1 NO ..... 2 (SKIP TO 447) 1
441	How long after birth did you first put (NAME) to the breast?  IF LESS THAN 1 HOUR, WRITE '00' HOURS. IF LESS THAN 24 HOURS, WRITE HOURS. OTHERWISE, WRITE DAYS.	IMMEDIATELY ..... 000  HOURS ..... 1 <input type="text"/> <input type="text"/> DAYS ..... 2 <input type="text"/> <input type="text"/>	IMMEDIATELY ..... 000  HOURS ..... 1 <input type="text"/> <input type="text"/> DAYS ..... 2 <input type="text"/> <input type="text"/>
442	In the first three days after delivery, before your milk began flowing regularly, was (NAME) given anything to drink other than breast milk?	YES ..... 1 NO ..... 2 (SKIP TO 444) 1	YES ..... 1 NO ..... 2 (SKIP TO 444) 1
443	What was (NAME) given to drink before your milk began flowing regularly?  Anything else?  RECORD ALL LIQUIDS MENTIONED	MILK (OTHER THAN BREAST MILK) ..... A PLAIN WATER ..... B SUGAR OR GLUCOSE WATER ..... C GRIPE WATER ..... D SUGAR-SALT-WATER SOLUTION ..... E FRUIT JUICE ..... F INFANT FORMULA ..... G TEA ..... H HONEY ..... I  OTHER ..... X (SPECIFY)	MILK (OTHER THAN BREAST MILK) ..... A PLAIN WATER ..... B SUGAR OR GLUCOSE WATER ..... C GRIPE WATER ..... D SUGAR-SALT-WATER SOLUTION ..... E FRUIT JUICE ..... F INFANT FORMULA ..... G TEA ..... H HONEY ..... I  OTHER ..... X (SPECIFY)
444	CHECK 404: IS CHILD LIVING?	LIVING <input type="checkbox"/> DEAD <input type="checkbox"/> 3 3 (SKIP TO 446)	LIVING <input type="checkbox"/> DEAD <input type="checkbox"/> 3 3 (SKIP TO 446)
445	Are you still breastfeeding (NAME)?	YES ..... 1 (SKIP TO 448) 1 NO ..... 2	YES ..... 1 (SKIP TO 448) 1 NO ..... 2
446	For how many months did you breastfeed (NAME)?	MONTHS..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98



		LAST BIRTH	NEXT-TO-LAST BIRTH
		NAME _____	NAME _____
447	CHECK 404:  IS CHILD LIVING?	LIVING <input type="checkbox"/> . . . 3 (SKIP TO 450)	DEAD <input type="checkbox"/> 3' (GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 454)
448	How many times did you breastfeed last night between sunset and sunrise?  IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF NIGHTTIME FEEDINGS. <input type="text"/> <input type="text"/>	NUMBER OF NIGHTTIME FEEDINGS. <input type="text"/> <input type="text"/>
449	How many times did you breastfeed yesterday during the daylight hours?  IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF DAYLIGHT FEEDINGS.. <input type="text"/> <input type="text"/>	NUMBER OF DAYLIGHT FEEDINGS... <input type="text"/> <input type="text"/>
450	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8
451	Was sugar added to any of the foods or liquids (NAME) ate yesterday?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8
452	How many <u>times</u> did (NAME) eat solid, semi-solid, or soft foods other than liquids yesterday during the day or at night?  IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES ..... <input type="text"/> DON'T KNOW ..... 8	NUMBER OF TIMES ..... <input type="text"/> DON'T KNOW ..... 8
453		GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 454.	GO BACK TO 405 IN LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 454.

## SECTION 4B. IMMUNISATION, HEALTH AND NUTRITION

454	ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 1998 OR LATER. (IF THERE ARE MORE THAN 2 BIRTHS, USE LAST COLUMN OF ADDITIONAL QUESTIONNAIRES).		
455	LINE NUMBER FROM 212	LAST BIRTH LINE NUMBER ..... <div style="display: inline-block; width: 20px; height: 20px; border: 1px solid black; vertical-align: middle;"></div> <div style="display: inline-block; width: 20px; height: 20px; border: 1px solid black; vertical-align: middle;"></div>	NEXT-TO-LAST BIRTH LINE NUMBER ..... <div style="display: inline-block; width: 20px; height: 20px; border: 1px solid black; vertical-align: middle;"></div> <div style="display: inline-block; width: 20px; height: 20px; border: 1px solid black; vertical-align: middle;"></div>
456	FROM 212 AND 216	NAME _____ LIVING <div style="display: inline-block; width: 20px; height: 20px; border: 1px solid black; vertical-align: middle;"></div> DEAD <div style="display: inline-block; width: 20px; height: 20px; border: 1px solid black; vertical-align: middle;"></div> <div style="text-align: center;"> <div style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="text-align: center;"> <div style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="text-align: center;"> <div style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; 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		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
462	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunisation day campaign?	YES..... 1 NO..... 2 (SKIP TO 466)1____  DON'T KNOW..... 8	YES..... 1 NO..... 2 (SKIP TO 466)1____  DON'T KNOW..... 8
463	Please tell me if (NAME) received any of the following vaccinations:		
463A	A BCG vaccination against tuberculosis, that is, an injection in the left arm that usually causes a scar?	YES..... 1 NO..... 2 DON'T KNOW..... 8	YES..... 1 NO..... 2 DON'T KNOW..... 8
463B	Polio vaccine, that is, drops in the mouth?	YES..... 1 NO..... 2 (SKIP TO 463E)1____  DON'T KNOW..... 8	YES..... 1 NO..... 2 (SKIP TO 463E)1____  DON'T KNOW..... 8
463C	When was the first polio vaccine received, just after birth or later?	JUST AFTER BIRTH..... 1 LATER..... 2	JUST AFTER BIRTH..... 1 LATER..... 2
463D	How many times was the polio vaccine received?	NUMBER OF TIMES..... <input type="text"/>	NUMBER OF TIMES..... <input type="text"/>
463E	A DPT vaccination, that is, an injection in the thigh, sometimes at the same time as polio drops?	YES..... 1 NO..... 2 (SKIP TO 463G)1____  DON'T KNOW..... 8	YES..... 1 NO..... 2 (SKIP TO 463G)1____  DON'T KNOW..... 8
463F	How many times?	NUMBER OF TIMES..... <input type="text"/>	NUMBER OF TIMES..... <input type="text"/>
463G	An injection in the right upper arm to prevent measles?	YES..... 1 NO..... 2 DON'T KNOW..... 8	YES..... 1 NO..... 2 DON'T KNOW..... 8
464	Were any of the vaccinations (NAME) received during the last two years given as a part of a national immunisation day campaign?	YES..... 1 NO..... 2 (SKIP TO 466)1____  NO VACCINATION IN THE LAST 2 YEARS..... 3 (SKIP TO 466)1____  DON'T KNOW..... 8 (SKIP TO 466)1____	YES..... 1 NO..... 2 (SKIP TO 466)1____  NO VACCINATION IN THE LAST 2 YEARS..... 3 (SKIP TO 466)1____  DON'T KNOW..... 8 (SKIP TO 466)1____
465	At which national immunisation day campaigns did (NAME) receive vaccinations?  RECORD ALL CAMPAIGNS MENTIONED.	JULY 2002..... A JUNE 2002..... B SEPTEMBER 2001..... C AUGUST 2001..... D	JULY 2002..... A JUNE 2002..... B SEPTEMBER 2001..... C AUGUST 2001..... D
466	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES..... 1 NO..... 2 (SKIP TO 467)1____  DOES NOT KNOW..... 8	YES..... 1 NO..... 2 (SKIP TO 467)1____  DOES NOT KNOW..... 8
466A	Does (NAME) have a fever now?	YES..... 1 NO..... 2 DON'T KNOW..... 8	YES..... 1 NO..... 2 DON'T KNOW..... 8
467	Has (NAME) had an illness with a cough at any time in the last 2 weeks?	YES..... 1 NO..... 2 (SKIP TO 469)1____  DON'T KNOW..... 8	YES..... 1 NO..... 2 (SKIP TO 469)1____  DON'T KNOW..... 8
468	When (NAME) had an illness with a cough, did he/she breathe faster than usual with short, fast breaths?	YES..... 1 NO..... 2 DON'T KNOW..... 8	YES..... 1 NO..... 2 DON'T KNOW..... 8

		LAST BIRTH		NEXT-TO-LAST BIRTH	
		NAME _____		NAME _____	
469	CHECK 466 AND 467: FEVER OR COUGH?	"YES" IN 466 OR 467 <input type="checkbox"/> 3	OTHER <input type="checkbox"/> 3 (SKIP TO 471A)	"YES" IN 466 OR 467 <input type="checkbox"/> 3	OTHER <input type="checkbox"/> 3 (SKIP TO 471A)
470	Did you seek advice or treatment for the fever/cough?	YES..... 1 NO..... 2 (SKIP TO 471A)1_____		YES..... 1 NO..... 2 (SKIP TO 471A)1_____	
471	Where did you seek advice or treatment?  Anywhere else?  RECORD ALL SOURCES MENTIONED.	<b>PUBLIC SECTOR</b> GOVT. HOSPITAL..... A GOVT. HEALTH CENTRE..... B GOVT. DISPENSARY..... C  OTHER PUBLIC _____ D (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSP./CLINIC..... F PVT. HOSPITAL/CLINIC..... H PHARMACY/CHEMIST..... I OTHER PVT. MEDICAL _____ K (SPECIFY) MOBILE CLINIC..... L COMMUNITY HEALTH WORKER... M OTHER SOURCE SHOP/KIOSK..... N TRAD. PRACTITIONER..... O RELATIVE/FRIEND..... P  OTHER _____ X (SPECIFY)		<b>PUBLIC SECTOR</b> GOVT. HOSPITAL..... A GOVT. HEALTH CENTRE..... B GOVT. DISPENSARY..... C  OTHER PUBLIC _____ D (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSP./CLINIC..... F PVT. HOSPITAL/CLINIC..... H PHARMACY/CHEMIST..... I OTHER PVT. MEDICAL _____ K (SPECIFY) MOBILE CLINIC..... L COMMUNITY HEALTH WORKER... M OTHER SOURCE SHOP/KIOSK..... N TRAD. PRACTITIONER..... O RELATIVE/FRIEND..... P  OTHER _____ X (SPECIFY)	
471A	Has (NAME) been ill with convulsions at any time during the last two weeks?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8		YES..... 1 NO..... 2 DOES NOT KNOW..... 8	
472	CHECK 466 AND 471A : HAD FEVER OR CONVULSIONS?	"YES" IN 466 OR 471A <input type="checkbox"/> 3	OTHER <input type="checkbox"/> 3 (SKIP TO 475)	"YES" IN 466 OR 471A <input type="checkbox"/> 3	OTHER <input type="checkbox"/> 3 (SKIP TO 475)
473	Did (NAME) take any drugs for the fever/convulsions?	YES..... 1 NO..... 2 (SKIP TO 474G)1_____   DON'T KNOW..... 8		YES..... 1 NO..... 2 (SKIP TO 474G)1_____   DON'T KNOW..... 8	
474	What drugs did (NAME) take?  RECORD ALL MENTIONED.  ASK TO SEE DRUG IF TYPE OF DRUG IS NOT KNOWN. IF TYPE OF DRUG IS STILL NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.	<b>ANTI-MALARIAL</b> CHLOROQUINE..... A SP, FANSIDAR, METAKELFIN .... B AMODIAQUINE..... C QUININE..... D PANADOL/PARACETAMOL/ ASPIRIN/ CALPOL..... E  OTHER _____ X (SPECIFY) DOES NOT KNOW ..... Z		<b>ANTI-MALARIAL</b> CHLOROQUINE..... A SP, FANSIDAR, METAKELFIN .... B AMODIAQUINE..... C QUININE..... D PANADOL/PARACETAMOL/ ASPIRIN/CALPOL..... E  OTHER _____ X (SPECIFY) DOES NOT KNOW ..... Z	
474A	CHECK 474: WHICH MEDICINES?	CODE 'B' CIRCLED <input type="checkbox"/> 3	CODE 'B' NOT CIRCLED <input type="checkbox"/> 3 (SKIP TO 474D)	CODE 'B' CIRCLED <input type="checkbox"/> 3	CODE 'B' NOT CIRCLED <input type="checkbox"/> 3 (SKIP TO 474D)
474B	How long after the fever/convulsions started did (NAME) first take SP (Fansidar)?	SAME DAY ..... 0 NEXT DAY ..... 1 2 DAYS AFTER FEVER STARTED.. 2 3 OR MORE DAYS AFTER FEVER . 3 DOES NOT KNOW ..... 8		SAME DAY..... 0 NEXT DAY ..... 1 2 DAYS AFTER FEVER STARTED.. 2 3 OR MORE DAYS AFTER FEVER . 3 DOES NOT KNOW ..... 8	

		LAST BIRTH		NEXT-TO-LAST BIRTH	
		NAME _____		NAME _____	
474C	For how many days did (NAME) take the SP? IF 7 OR MORE DAYS, WRITE '7'.	DAYS ..... <input type="checkbox"/> DOES NOT KNOW .....8		DAYS ..... <input type="checkbox"/> DOES NOT KNOW .....8	
474D	CHECK 474: WHICH MEDICINES?	CODE 'C' CIRCLED <input type="checkbox"/> 3	CODE 'C' NOT CIRCLED <input type="checkbox"/> 3 (SKIP TO 474G)	CODE 'C' CIRCLED <input type="checkbox"/> 3	CODE 'C' NOT CIRCLED <input type="checkbox"/> 3 (SKIP TO 474G)
474E	How long after the fever/convulsions started did (NAME) first take Amodiaquine?	SAME DAY .....0 NEXT DAY .....1 2 DAYS AFTER FEVER STARTED..2 3 OR MORE DAYS AFTER FEVER..3 DOES NOT KNOW .....8		SAME DAY .....0 NEXT DAY .....1 2 DAYS AFTER FEVER STARTED..2 3 OR MORE DAYS AFTER FEVER..3 DOES NOT KNOW .....8	
474F	For how many days did (NAME) take the Amodiaquine? IF 7 OR MORE DAYS, WRITE '7'.	DAYS ..... <input type="checkbox"/> DOES NOT KNOW .....8		DAYS ..... <input type="checkbox"/> DOES NOT KNOW .....8	
474G	Was anything else done about (NAME)'s fever/convulsions?	YES .....1 NO .....2 (SKIP TO 475)1----- DOES NOT KNOW .....8		YES .....1 NO .....2 (SKIP TO 475)1----- DOES NOT KNOW .....8	
474H	What was done about (NAME)'s fever/convulsions?	CONSULTED TRAD'L HEALER..... A GAVE WARM SPONGING ..... B GAVE HERBS..... C OTHER ..... X		CONSULTED TRAD'L HEALER..... A GAVE WARM SPONGING ..... B GAVE HERBS..... C OTHER..... X	
475	Has (NAME) had diarrhoea in the last 2 weeks?	YES .....1 NO .....2 (SKIP TO 483)1----- DON'T KNOW .....8		YES .....1 NO .....2 (SKIP TO 483)1----- DON'T KNOW .....8	
476	Now I would like to know how much (NAME) was offered to drink during the diarrhoea. Was he/she offered less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was he/she offered much less than usual to drink or somewhat less?	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 NOTHING TO DRINK ..... 5 DON'T KNOW ..... 8		MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 NOTHING TO DRINK ..... 5 DON'T KNOW ..... 8	
477	When (NAME) had diarrhoea, was he/she offered less than usual to eat, about the same amount, more than usual, or nothing to eat? IF LESS, PROBE: Was he/she offered much less than usual to eat or somewhat less?	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 STOPPED FOOD ..... 5 NEVER GAVE FOOD ..... 6 DON'T KNOW ..... 8		MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 STOPPED FOOD ..... 5 NEVER GAVE FOOD ..... 6 DON'T KNOW ..... 8	
478	Was he/she given a fluid made from a special packet called Oralite or ORS?	YES .....1 NO .....2 DON'T KNOW .....8		YES .....1 NO .....2 DON'T KNOW .....8	
479	Was anything (else) given to treat the diarrhoea?	YES ..... 1 NO ..... 2 (SKIP TO 481)1----- DON'T KNOW ..... 8		YES ..... 1 NO ..... 2 (SKIP TO 481)1----- DON'T KNOW ..... 8	
480	What (else) was given to treat the diarrhoea?  Anything else?  RECORD ALL TREATMENTS MENTIONED.	TABLET OR SYRUP ..... A INJECTION ..... B (I.V.) INTRAVENOUS ..... C HOME REMEDIES/ HERBAL MEDICINES ..... D  OTHER ..... X (SPECIFY)		TABLET OR SYRUP ..... A INJECTION ..... B (I.V.) INTRAVENOUS ..... C HOME REMEDIES/ HERBAL MEDICINES ..... D  OTHER ..... X (SPECIFY)	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
481	Did you seek advice or treatment for the diarrhoea?	YES..... 1 NO..... 2 (SKIP TO 483)1_____	YES..... 1 NO..... 2 (SKIP TO 483)1_____
482	Where did you seek advice or treatment?  IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  Anywhere else?  RECORD ALL PLACES MENTIONED.	<b>PUBLIC SECTOR</b> GOVT. HOSPITAL..... A GOVT. HEALTH CENTRE..... B GOVT. DISPENSARY..... C  OTHER PUBLIC..... D <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSP./CLINIC..... F PVT. HOSPITAL/CLINIC..... H PHARMACY/CHEMIST..... I OTHER PVT. MEDICAL..... L MOBILE CLINIC..... M COMMUNITY HEALTH WORKER... N OTHER SOURCE SHOP/KIOSK..... O TRAD. PRACTITIONER..... P RELATIVE/FRIEND..... Q  OTHER..... X (SPECIFY)	<b>PUBLIC SECTOR</b> GOVT. HOSPITAL..... A GOVT. HEALTH CENTRE..... B GOVT. DISPENSARY..... C  OTHER PUBLIC..... D <b>PRIVATE MEDICAL SECTOR</b> MISSION HOSP./CLINIC..... F PVT. HOSPITAL/CLINIC..... H PHARMACY/CHEMIST..... I OTHER PVT. MEDICAL..... L MOBILE CLINIC..... M COMMUNITY HEALTH WORKER... N OTHER SOURCE SHOP/KIOSK..... O TRAD. PRACTITIONER..... P RELATIVE/FRIEND..... Q  OTHER..... X (SPECIFY)
483		GO BACK TO 456 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 484.	GO BACK TO 456 IN LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 484.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
484	CHECK 215 AND 218, ALL ROWS: NUMBER OF CHILDREN BORN IN 1998 OR LATER LIVING WITH MOTHER  ONE OR MORE <input type="checkbox"/> NONE <input type="checkbox"/> 3		0487
485	What is usually done to dispose of your (youngest) child's stools when he/she does not use any toilet facility?	CHILD ALWAYS USES TOILET/LATR. . 01 THROW IN THE TOILET/LATRINE..... 02 THROW OUTSIDE THE DWELLING .... 03 THROW OUTSIDE THE COMPOUND... 04 BURY IN THE COMPOUND..... 05 RINSE AWAY ..... 06 USE DISPOSABLE DIAPERS..... 07 USE WASHABLE DIAPERS..... 08 NOT DISPOSED OF ..... 09  OTHER ..... 96	
486	CHECK 478, ALL COLUMNS:  NO CHILD RECEIVED FLUID FROM ORS PACKET <input type="checkbox"/> 3 ANY CHILD RECEIVED FLUID FROM ORS PACKET <input type="checkbox"/>		0488
487	Have you ever heard of a special product called Oralite or ORS you can get for the treatment of diarrhoea?	YES..... 1 NO ..... 2	
488	CHECK 218:  HAS ONE OR MORE CHILDREN LIVING WITH HER <input type="checkbox"/> 3 HAS NO CHILDREN LIVING WITH HER <input type="checkbox"/>		0491

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
489	<p>When a child is ill, what signs of illness would tell you that he or she should be taken to a health facility or health worker?</p> <p>CIRCLE ALL MENTIONED.</p>	<p>NOT ABLE TO DRINK/BREASTFEED .....A  FEVER, SHIVERING .....B  REPEATED VOMITING .....C  DIARRHOEA .....D  BLOOD IN STOOLS .....E  FAST BREATHING .....F  CONVULSIONS .....G  WEAKNESS .....H  GETTING SICKER .....I    OTHER _____ X  (SPECIFY)</p>	
491	<p>CHECK 215 AND 218:</p> <p>HAS AT LEAST ONE CHILD BORN IN 2000 OR LATER AND LIVING WITH HER <input type="checkbox"/> 3</p> <p>DOES NOT HAVE ANY CHILDREN BORN IN 2000 OR LATER AND LIVING WITH HER <input type="checkbox"/> _____</p> <p>WRITE NAME OF YOUNGEST CHILD LIVING WITH HER (AND CONTINUE TO 492)</p> <p>_____ (NAME)</p>		0496
492	<p>Now I would like to ask you about liquids (NAME FROM Q. 491) drank over the last 24 hours.</p> <p>In total, how many <u>times</u> yesterday during the day or at night did (NAME) drink (ITEM)?</p> <p>a Plain water?</p> <p>b Commercially produced infant formula?</p> <p>c Any other milk such as tinned, powdered, or fresh animal milk?</p> <p>d Fruit juice?</p> <p>e Any other liquids?</p> <p>IF 7 OR MORE TIMES, RECORD '7'. IF DON'T KNOW, RECORD '8'.</p>	<p>YESTERDAY/ LAST NIGHT NUMBER OF TIMES</p> <p>a <input type="text"/></p> <p>b <input type="text"/></p> <p>c <input type="text"/></p> <p>d <input type="text"/></p> <p>e <input type="text"/></p>	
493	<p>Now I would like to ask you about the types of foods (NAME FROM Q. 491) ate over the last 24 hours.</p> <p>In total, how many <u>times</u> yesterday during the day or at night did (NAME) eat (ITEM)?</p> <p>a Any food made from grains, like maize, rice, wheat, porridge, sorghum, or other local grains?</p> <p>b Pumpkin, red or yellow yams or squash, carrots, or yellow sweet potatoes?</p> <p>c Any other food made from roots or tubers, like white potatoes, white yams, arrowroot, cassava, or other local roots or tubers?</p> <p>d Any green leafy vegetables?</p> <p>e Mango, papaya, guava?</p> <p>f Any other fruits and vegetables like bananas, apples, green beans, avocados, tomatoes, oranges, pineapples, passion fruit?</p> <p>g Meat, chicken, fish, liver, kidney, blood, termites, seafood, or eggs?</p> <p>h Any food made from legumes, e.g. lentils, beans, soybeans, pulses, or peanuts?</p> <p>i Sour milk, cheese or yoghurt?</p> <p>j Any solid or semi-solid food?</p> <p>IF 7 OR MORE TIMES, RECORD '7'. IF DON'T KNOW, RECORD '8'.</p>	<p>YESTERDAY/ LAST NIGHT NUMBER OF TIMES</p> <p>a <input type="text"/></p> <p>b <input type="text"/></p> <p>c <input type="text"/></p> <p>d <input type="text"/></p> <p>e <input type="text"/></p> <p>f <input type="text"/></p> <p>g <input type="text"/></p> <p>h <input type="text"/></p> <p>i <input type="text"/></p> <p>j <input type="text"/></p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
496	Do you currently smoke cigarettes or use tobacco? IF YES: what type of tobacco do you smoke? RECORD ALL TYPES MENTIONED.	YES, CIGARETTES.....A YES, PIPE .....B YES, OTHER TOBACCO .....C NO .....Y	
497	CHECK 496:  CODE 'A' CIRCLED <input type="checkbox"/> 3	CODE 'A' NOT CIRCLED <input type="checkbox"/>	—0499
498	In the last 24 hours, how many cigarettes did you smoke?	CIGARETTES ..... <input type="text"/>	
499	Have you ever drunk any kind of alcohol like beer, wine, chang'aa, palm wine, etc.?	YES .....1 NO .....2	—0501
499A	In the last month, on how many days did you drink any alcohol-containing beverage?  IF EVERY DAY, RECORD '30'.	NUMBER OF DAYS ..... <input type="text"/> NONE .....95	



## SECTION 5. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	Are you currently married or living with a man?	YES, CURRENTLY MARRIED WITH CERTIFICATE ..... 1 YES, MARRIED BY CUSTOM ..... 2 YES, LIVING WITH A MAN ..... 3 NO, NOT IN UNION ..... 4	} -0505
502	Have you ever been married or lived with a man?	YES, FORMERLY MARRIED WITH CERTIFICATE ..... 1 YES, FORMERLY MARRIED BY CUSTOM ..... 2 YES, LIVED WITH A MAN ..... 3 NO ..... 4	-0504 -0504 -0510
503	ENTER '0' IN COLUMN 4 OF CALENDAR IN THE MONTH OF INTERVIEW AND IN EACH MONTH BACK TO JANUARY 1998 _____		-0514
504	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED ..... 1 DIVORCED ..... 2 SEPARATED ..... 3	} -0510
505	Is your husband/partner living with you now or is he staying elsewhere?	LIVING WITH HER ..... 1 STAYING ELSEWHERE ..... 2	
506	RECORD THE HUSBAND'S NAME AND LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE. IF HE IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.  NAME _____  LINE NO. _____ <span style="border: 1px solid black; padding: 0 5px;">  </span>		
507	Does your husband/partner have any other wives besides yourself?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8	-0510 -0510
508	How many <u>other</u> wives does he have?	NUMBER ..... <span style="border: 1px solid black; padding: 0 5px;">  </span> DOES NOT KNOW ..... 8	
510	Have you been married or lived with a man only once, or more than once?	ONCE ..... 1 MORE THAN ONCE ..... 2	
511	CHECK 510:  <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">             MARRIED/ LIVED WITH A MAN ONLY ONCE   <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>              3              In what month and year did you start living with your husband/partner?           </div> <div style="text-align: center;">             MARRIED/ LIVED WITH A MAN MORE THAN ONCE   <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>              3              Now we will talk about your first husband/partner. In what month and year did you start living with him?           </div> </div>	MONTH ..... <span style="border: 1px solid black; padding: 0 5px;">  </span> DOES NOT KNOW MONTH ..... 98 YEAR ..... <span style="border: 1px solid black; padding: 0 5px;">  </span> <span style="border: 1px solid black; padding: 0 5px;">  </span> <span style="border: 1px solid black; padding: 0 5px;">  </span> <span style="border: 1px solid black; padding: 0 5px;">  </span> DOES NOT KNOW YEAR ..... 9998	-0513
512	How old were you when you started living with him?	AGE ..... <span style="border: 1px solid black; padding: 0 5px;">  </span> <span style="border: 1px solid black; padding: 0 5px;">  </span>	
513	DETERMINE MONTHS MARRIED OR LIVING WITH A MAN SINCE JANUARY 1998. ENTER 'X' IN COLUMN 4 OF CALENDAR FOR EACH MONTH MARRIED OR LIVING WITH A MAN, AND ENTER 'O' FOR EACH MONTH NOT MARRIED/NOT LIVING WITH A MAN, SINCE JANUARY 1998.  FOR WOMEN WITH MORE THAN ONE UNION: PROBE FOR DATE WHEN CURRENT UNION STARTED AND, IF APPROPRIATE, FOR STARTING AND TERMINATION DATES OF ANY PREVIOUS UNIONS.  FOR WOMEN NOT CURRENTLY IN UNION: PROBE FOR DATE WHEN LAST UNION STARTED AND FOR TERMINATION DATE AND, IF APPROPRIATE, FOR THE STARTING AND TERMINATION DATES OF ANY PREVIOUS UNIONS.		
513A	When you first got married or lived with a man, was it your choice or was it arranged by your family?	OWN CHOICE ..... 1 ARRANGED ..... 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
513B	When you first got married or lived with a man, was the man younger, about the same age or older than you?  IF OLDER: Do you think he was less than 10 years older than you or 10 or more years older than you?	YOUNGER.....1 ABOUT THE SAME AGE .....2 OLDER: LESS THAN 10 YEARS.....3 OLDER: 10 YEARS OR MORE.....4 OLDER: DON'T KNOW HOW MUCH.....5 DOES NOT KNOW.....8	
514	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family life issues.  How old were you when you first had sexual intercourse (if ever)?	NEVER .....00 AGE IN YEARS ..... FIRST TIME WHEN STARTED LIVING WITH (FIRST) HUSBAND/PARTNER....95	-0525
514A	CHECK 106: 15-24 YEARS OLD <input type="checkbox"/> 25-49 YEARS OLD <input type="checkbox"/> 3		
514B	The first time you had sexual intercourse, was a condom used?	YES .....1 NO .....2	
514C	The first time you had sex, was the man younger, about the same age or older than you?  IF OLDER: Do you think he was less than 10 years older than you or 10 or more years older than you?	YOUNGER.....1 ABOUT THE SAME AGE .....2 OLDER: LESS THAN 10 YEARS.....3 OLDER: 10 YEARS OR MORE.....4 OLDER: DON'T KNOW HOW MUCH.....5 DOES NOT KNOW.....8	
515	When was the last time you had sexual intercourse?  RECORD 'YEARS AGO' ONLY IF LAST INTERCOURSE WAS ONE OR MORE YEARS AGO.  IF 12 MONTHS OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO .....1 WEEKS AGO.....2 MONTHS AGO .....3 YEARS AGO .....4	-0525
516	The last time you had sexual intercourse, was a condom used?	YES .....1 NO .....2	-0517
516A	What is the main reason you used a condom on that occasion?	RESPONDENT WANTED TO PREVENT STD/HIV .....1 RESPONDENT WANTED TO PREVENT PREGNANCY .....2 RESPONDENT WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY .....3 DID NOT TRUST PARTNER/HE MAY HAVE OTHER PARTNERS .....4 PARTNER INSISTED .....5 OTHER .....6 (SPECIFY)	
517	What is your relationship to the man with whom you last had sex?  IF MAN IS "BOYFRIEND" OR "FIANCE", ASK: Was your boyfriend/fiance living with you when you last had sex?  IF YES, RECORD '01'. IF NO, RECORD '02'.	HUSBAND/LIVE-IN PARTNER .....01 MAN IS BOYFRIEND/FIANCE .....02 OTHER FRIEND.....03 CASUAL ACQUAINTANCE.....04 RELATIVE .....05 COMMERCIAL SEX WORKER.....06 OTHER .....96 (SPECIFY)	-0519
517A	CHECK 106: 15-19 YEARS OLD <input type="checkbox"/> 20-49 YEARS OLD <input type="checkbox"/> 3		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																
517B	Was this man younger, about the same age or older than you?  IF OLDER: Do you think he was less than 10 years older than you or 10 or more years older than you?	YOUNGER.....1 ABOUT THE SAME AGE .....2 OLDER: LESS THAN 10 YEARS.....3 OLDER: 10 YEARS OR MORE.....4 OLDER: DON'T KNOW HOW MUCH.....5 DOES NOT KNOW.....8																																	
518	For how long have you had a sexual relationship with this man?	DAYS .....1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> WEEKS.....2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MONTHS .....3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEARS .....4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>																																	
519	Have you had sex with any other man in the last 12 months?	YES .....1 NO .....2	–0524																																
520	The last time you had sexual intercourse with another man, was a condom used?	YES .....1 NO .....2	–0521																																
520A	What is the main reason you used a condom on that occasion?	RESPONDENT WANTED TO PREVENT STD/HIV .....1 RESPONDENT WANTED TO PREVENT PREGNANCY .....2 RESPONDENT WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY.....3 DID NOT TRUST PARTNER/HE MAY HAVE OTHER PARTNERS .....4 PARTNER INSISTED .....5 OTHER .....6 (SPECIFY)																																	
521	What is your relationship to this other man?  IF MAN IS "BOYFRIEND" OR "FIANCE", ASK: Was your boyfriend/fiance living with you when you last had sex?  IF YES, RECORD '01'. IF NO, RECORD '02'.	HUSBAND/LIVE-IN PARTNER .....01 MAN IS BOYFRIEND/FIANCE .....02 OTHER FRIEND.....03 CASUAL ACQUAINTANCE.....04 RELATIVE .....05 COMMERCIAL SEX WORKER.....06 OTHER .....96 (SPECIFY)	–0522A																																
521A	CHECK 106: 15-19 YEARS OLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table> 20-49 YEARS OLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table> 3 ..... –0522																																		
521B	Was this man younger, about the same age or older than you?  IF OLDER: Do you think he was less than 10 years older than you or 10 or more years older than you?	YOUNGER.....1 ABOUT THE SAME AGE .....2 OLDER: LESS THAN 10 YEARS.....3 OLDER: 10 YEARS OR MORE.....4 OLDER: DON'T KNOW HOW MUCH.....5 DOES NOT KNOW.....8																																	
522	For how long have you had a sexual relationship with this man?	DAYS .....1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> WEEKS.....2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MONTHS .....3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEARS .....4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>																																	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
522A	Other than these two men, have you had sexual intercourse with anyone else in the last 12 months?	YES .....1 NO .....2	–0524
522B	The last time you had sexual intercourse with this other man, was a condom used?	YES .....1 NO .....2	–0522D
522C	What is the main reason you used a condom on that occasion?	RESPONDENT WANTED TO PREVENT STD/HIV .....1 RESPONDENT WANTED TO PREVENT PREGNANCY .....2 RESPONDENT WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY .....3 DID NOT TRUST PARTNER/HE MAY HAVE OTHER PARTNERS .....4 PARTNER INSISTED .....5 OTHER .....6 (SPECIFY)	
522D	What is your relationship to this other man?  IF MAN IS "BOYFRIEND" OR "FIANCE", ASK: Was your boyfriend/fiance living with you when you last had sex?  IF YES, RECORD '01'. IF NO, RECORD '02'.	HUSBAND/LIVE-IN PARTNER .....01 MAN IS BOYFRIEND/FIANCE .....02 OTHER FRIEND .....03 CASUAL ACQUAINTANCE .....04 RELATIVE .....05 COMMERCIAL SEX WORKER .....06 OTHER .....96 (SPECIFY)	–0523
522D1	CHECK 106: <div style="display: flex; justify-content: space-around; align-items: center;"> <div>15-19 YEARS OLD <input type="text"/></div> <div>20-49 YEARS OLD <input type="text"/></div> </div> <div style="text-align: center; margin-top: 5px;">3</div>		–0522E
522D2	Was this man younger, about the same age or older than you?  IF OLDER: Do you think he was less than 10 years older than you or 10 or more years older than you?	YOUNGER .....1 ABOUT THE SAME AGE .....2 OLDER: LESS THAN 10 YEARS .....3 OLDER: 10 YEARS OR MORE .....4 OLDER: DON'T KNOW HOW MUCH .....5 DOES NOT KNOW .....8	
522E	For how long have you had a sexual relationship with this man?	DAYS .....1 <input type="text"/> <input type="text"/> WEEKS .....2 <input type="text"/> <input type="text"/> MONTHS .....3 <input type="text"/> <input type="text"/> YEARS .....4 <input type="text"/> <input type="text"/>	
523	In total, how many different men have you had sex with in the last 12 months? IF MORE THAN 95, WRITE '95'.	NUMBER OF PARTNERS ..... <input type="text"/> <input type="text"/>	
524	In the last 12 months, have you ever given or received money, gifts, or favours in return for sex?	YES .....1 NO .....2	
525	Do you know a place where one can get condoms?	YES .....1 NO .....2	–0531

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																
526	<p>Where is that?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p> <p>Any other place?</p> <p>CIRCLE ALL MENTIONED.</p> <p>IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE 'F'.</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL .....A</p> <p>GOVERNMENT HEALTH CENTRE .....B</p> <p>GOVERNMENT DISPENSARY ..... C</p> <p>OTHER PUBLIC _____ D</p> <p>(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>MISSION, CHURCH HOSP./CLINIC.....F</p> <p>FPAK HEALTH CENTRE/CLINIC ..... G</p> <p>PRIVATE HOSPITAL OR CLINIC ..... H</p> <p>PHARMACY/CHEMIST.....I</p> <p>NURSING/MATERNITY HOME .....K</p> <p>OTHER PRIVATE MEDICAL _____L</p> <p>(SPECIFY)</p> <p>MOBILE CLINIC .....M</p> <p>COMMUNITY-BASED DISTRIBUTOR.... N</p> <p>SHOP/KIOSK ..... O</p> <p>FRIENDS/RELATIVES ..... Q</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>																	
527	If you wanted to, could you yourself get a condom?	YES ..... 1 NO ..... 2 DOES NOT KNOW/UNSURE ..... 8																	
528	Do you know of a place where one can get female condoms?	YES ..... 1 NO ..... 2	0531																
529	<p>Where is that?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p> <p>Any other place?</p> <p>CIRCLE ALL SOURCES MENTIONED.</p> <p>IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE 'F'.</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL .....A</p> <p>GOVERNMENT HEALTH CENTRE .....B</p> <p>GOVERNMENT DISPENSARY ..... C</p> <p>OTHER PUBLIC _____ D</p> <p>(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>MISSION, CHURCH HOSP./CLINIC.....F</p> <p>FPAK HEALTH CENTRE/CLINIC ..... G</p> <p>PRIVATE HOSPITAL OR CLINIC ..... H</p> <p>PHARMACY/CHEMIST.....I</p> <p>NURSING/MATERNITY HOME .....K</p> <p>OTHER PRIVATE MEDICAL _____L</p> <p>(SPECIFY)</p> <p>MOBILE CLINIC .....M</p> <p>COMMUNITY-BASED DISTRIBUTOR.... N</p> <p>SHOP/KIOSK ..... O</p> <p>FRIENDS/RELATIVES ..... Q</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>																	
530	If you wanted to, could you yourself get a female condom?	YES ..... 1 NO ..... 2 DON'T KNOW/UNSURE ..... 8																	
531	<p>In the last few months have you heard about condoms:</p> <p>On the radio?</p> <p>On the television?</p> <p>In a newspaper or magazine?</p>	<table><thead><tr><th></th><th><u>YES</u></th><th><u>NO</u></th></tr></thead><tbody><tr><td>RADIO.....</td><td>1</td><td>2</td></tr><tr><td>TELEVISION.....</td><td>1</td><td>2</td></tr><tr><td>NEWSPAPER OR MAGAZINE.....</td><td>1</td><td>2</td></tr></tbody></table>		<u>YES</u>	<u>NO</u>	RADIO.....	1	2	TELEVISION.....	1	2	NEWSPAPER OR MAGAZINE.....	1	2					
	<u>YES</u>	<u>NO</u>																	
RADIO.....	1	2																	
TELEVISION.....	1	2																	
NEWSPAPER OR MAGAZINE.....	1	2																	
532	<p>In your opinion, is it acceptable or unacceptable for condoms to be advertised:</p> <p>on the radio?</p> <p>on the TV?</p> <p>in newspapers?</p>	<table><thead><tr><th></th><th><u>ACCEP- TABLE</u></th><th><u>NOT ACCEP- TABLE</u></th><th><u>DK/ UN- SURE</u></th></tr></thead><tbody><tr><td>ON THE RADIO.....</td><td>1</td><td>2</td><td>8</td></tr><tr><td>ON THE TV.....</td><td>1</td><td>2</td><td>8</td></tr><tr><td>NEWSPAPERS.....</td><td>1</td><td>2</td><td>8</td></tr></tbody></table>		<u>ACCEP- TABLE</u>	<u>NOT ACCEP- TABLE</u>	<u>DK/ UN- SURE</u>	ON THE RADIO.....	1	2	8	ON THE TV.....	1	2	8	NEWSPAPERS.....	1	2	8	
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ON THE RADIO.....	1	2	8																
ON THE TV.....	1	2	8																
NEWSPAPERS.....	1	2	8																

## SECTION 6. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	CHECK 311/311A: NEITHER <input type="checkbox"/> HE OR SHE <input type="checkbox"/> STERILISED 3 STERILISED		-0614
602	CHECK 226:  NOT PREGNANT <input type="checkbox"/> PREGNANT <input type="checkbox"/> OR UNSURE 3  Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?  Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD .....1 NO MORE/NONE .....2 SAYS SHE CANNOT GET PREGNANT ....3 UNDECIDED/DON'T KNOW: AND PREGNANT .....4 NOT PREGNANT OR UNSURE .....5	-0604 -0614 -0610 -0608
603	CHECK 226:  NOT PREGNANT <input type="checkbox"/> PREGNANT <input type="checkbox"/> OR UNSURE 3  How long would you like to wait from now before the birth of (a/another) child?  After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> YEARS ..... 2 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>  SOON/NOW .....993 SAYS SHE CANNOT GET PREGNANT994 AFTER MARRIAGE .....995  OTHER ..... 996 (SPECIFY) DOES NOT KNOW .....998	-0609 -0614 -0609
604	CHECK 226: NOT PREGNANT <input type="checkbox"/> PREGNANT <input type="checkbox"/> OR UNSURE 3		-0610
605	CHECK 310: USING A METHOD? NOT <input type="checkbox"/> NOT <input type="checkbox"/> CURRENTLY <input type="checkbox"/> CURRENTLY <input type="checkbox"/> ASKED 3 USING 3 USING		-0608
606	CHECK 603: NOT <input type="checkbox"/> 24 OR MORE MONTHS <input type="checkbox"/> 00-23 MONTHS <input type="checkbox"/> ASKED 3 OR 02 OR MORE YEARS 3 OR 00-01 YEAR		-0610
607	CHECK 602:  WANTS <input type="checkbox"/> WANTS NO (MORE) <input type="checkbox"/> A/ANOTHER CHILD 3 CHILDREN 3  You have said that you do not want (a/another) child soon, but you are not using any method to avoid pregnancy. Can you tell me why?  You have said that you do not want any (more) children, but you are not using any method to avoid pregnancy. Can you tell me why?  RECORD ALL MENTIONED.	<b>FERTILITY-RELATED REASONS</b> NOT HAVING SEX .....B INFREQUENT SEX .....C MENOPAUSAL/HYSTERECTOMY .....D INFERTILE .....E POSTPARTUM AMENORRHEIC .....F BREASTFEEDING .....G FATALISTIC .....H <b>OPPOSITION TO USE</b> RESPONDENT OPPOSED .....I HUSBAND/PARTNER OPPOSED .....J OTHERS OPPOSED .....K RELIGIOUS PROHIBITION .....L <b>LACK OF KNOWLEDGE</b> KNOWS NO METHOD .....M KNOWS NO SOURCE .....N <b>METHOD-RELATED REASONS</b> HEALTH CONCERNS .....O FEAR OF SIDE EFFECTS .....P LACK OF ACCESS/TOO FAR .....Q COST TOO MUCH .....R INCONVENIENT TO USE .....S INTERFERES WITH BODY'S NORMAL PROCESSES .....T  OTHER .....X DOES NOT KNOW .....Z	



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																				
615	How many of these children would you like to be boys, how many would you like to be girls and for how many would the sex not matter?	BOYS    GIRLS    EITHER NUMBER.... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> OTHER _____ 96 (SPECIFY)																					
616	Would you say that you approve or disapprove of couples using a method to avoid getting pregnant?	APPROVE .....1 DISAPPROVE .....2 DOES NOT KNOW/UNSURE .....8																					
621	CHECK 501: YES, CURRENTLY <input type="checkbox"/> 3    YES, LIVING WITH A MAN <input type="checkbox"/> 3    NO, NOT IN UNION <input type="checkbox"/> _____		-0628																				
622	CHECK 311/311A: ANY CODE CIRCLED <input type="checkbox"/> 3    NO CODE CIRCLED <input type="checkbox"/> _____		-0624																				
623	You have told me that you are currently using contraception. Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision or did you both decide together?	MAINLY RESPONDENT .....1 MAINLY HUSBAND/PARTNER .....2 JOINT DECISION .....3 OTHER _____ 6 (SPECIFY)																					
624	Now I want to ask you about your husband's/partner's views on family planning. Do you think that your husband/partner approves or disapproves of couples using a method to avoid pregnancy?	APPROVES .....1 DISAPPROVES .....2 DOES NOT KNOW .....8																					
625	How often have you talked to your husband/partner about family planning in the past year?	NEVER .....1 ONCE OR TWICE .....2 MORE OFTEN .....3																					
626	CHECK 311/311A: NEITHER STERILISED <input type="checkbox"/> 3    HE OR SHE STERILISED <input type="checkbox"/> _____		-0628																				
627	Do you think your husband/partner wants the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER .....1 MORE CHILDREN .....2 FEWER CHILDREN .....3 DON'T KNOW .....8																					
628	Husbands and wives do not always agree on everything. Please tell me if you think a wife is justified in refusing to have sex with her husband when:  She knows her husband has a sexually transmitted disease? She knows her husband has sex with other women? She has recently given birth? She is tired or not in the mood?	<table border="1"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>HAS STD.....1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>OTHER WOMEN .....1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>RECENT BIRTH.....1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>TIRED/MOOD .....1</td> <td>2</td> <td>8</td> <td></td> </tr> </tbody> </table>		YES	NO	DK	HAS STD.....1	2	8		OTHER WOMEN .....1	2	8		RECENT BIRTH.....1	2	8		TIRED/MOOD .....1	2	8		
	YES	NO	DK																				
HAS STD.....1	2	8																					
OTHER WOMEN .....1	2	8																					
RECENT BIRTH.....1	2	8																					
TIRED/MOOD .....1	2	8																					
629	Do you think a wife is justified in asking that they use a condom when she knows her husband has a sexually transmitted disease?	YES .....1 NO .....2 DOES NOT KNOW .....8																					



## SECTION 7. HUSBAND'S BACKGROUND AND WOMAN'S WORK

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	<p>CHECK 501 AND 502:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>CURRENTLY MARRIED/ LIVING WITH A MAN</p> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> <p>3</p> </div> <div style="text-align: center;"> <p>FORMERLY MARRIED/ LIVED WITH A MAN</p> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> <p>3</p> </div> <div style="text-align: center;"> <p>NEVER MARRIED AND NEVER LIVED WITH A MAN</p> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> <p>3</p> </div> </div>	<p>—0703</p> <p>—0707</p>	
702	How old was your husband/partner on his last birthday?	AGE IN COMPLETED YEARS. <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>	
703	Did your (last) husband/partner ever attend school?	<p>YES..... 1</p> <p>NO..... 2</p>	—0706
704	What was the highest level of school he attended: primary, vocational, secondary, or higher?	<p>NURSERY/KINDERGARTEN.....0</p> <p>PRIMARY.....1</p> <p>POST-PRIMARY/VOCATIONAL.....2</p> <p>SECONDARY/'A' LEVEL.....3</p> <p>COLLEGE (MIDDLE LEVEL).....4</p> <p>UNIVERSITY.....5</p> <p>DOES NOT KNOW.....8</p>	—0706
705	What was the highest (grade/form/year) he completed at that level?	<p>STANDARD/FORM/YEAR..... <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/></p> <p>DOES NOT KNOW..... 98</p>	
706	<p>CHECK 701:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>CURRENTLY MARRIED/ LIVING WITH A MAN</p> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> <p>3</p> <p>What is your husband's/partner's occupation? What kind of work does he mainly do?</p> </div> <div style="text-align: center;"> <p>FORMERLY MARRIED/ LIVED WITH A MAN</p> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> <p>3</p> <p>What was your (last) husband's/ partner's occupation? What kind of work did he mainly do?</p> </div> </div>	<div style="text-align: center;"> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> </div> <p>_____</p> <p>_____</p> <p>_____</p>	
707	Aside from your own housework, are you currently working?	<p>YES..... 1</p> <p>NO..... 2</p>	—0710
708	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. Are you currently doing any of these things or any other work?	<p>YES..... 1</p> <p>NO..... 2</p>	—0710
709	Have you done any work in the last 12 months?	<p>YES..... 1</p> <p>NO..... 2</p>	—0719
710	What is your occupation, that is, what kind of work do you mainly do?	<div style="text-align: center;"> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> </div> <p>_____</p> <p>_____</p> <p>_____</p>	
711	<p>CHECK 710:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>WORKS IN AGRICULTURE</p> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> <p>3</p> </div> <div style="text-align: center;"> <p>DOES NOT WORK IN AGRICULTURE</p> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> <p>3</p> </div> </div>	—0713	
712	Do you work mainly on your own land or on family land, or do you work on land that you rent from someone else, or do you work on someone else's land?	<p>OWN LAND..... 1</p> <p>FAMILY LAND..... 2</p> <p>RENTED LAND..... 3</p> <p>SOMEONE ELSE'S LAND..... 4</p>	



## SECTION 8. AIDS AND OTHER SEXUALLY TRANSMITTED DISEASES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES .....1 NO .....2	0817
802	Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?	YES .....1 NO .....2 DOES NOT KNOW .....8	10809
803	What can a person do?  Anything else?  CIRCLE ALL MENTIONED.	ABSTAIN FROM SEX ..... A USE CONDOMS ..... B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER ..... C LIMIT NUMBER OF SEX PARTNERS ..... D AVOID SEX WITH PROSTITUTES ..... E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS ..... F AVOID SEX WITH HOMOSEXUALS ..... G AVOID SEX WITH DRUG USERS ..... H AVOID BLOOD TRANSFUSIONS ..... I AVOID INJECTIONS ..... J AVOID SHARING RAZORS/BLADES ..... K AVOID KISSING ..... L AVOID MOSQUITO BITES ..... M SEEK PROTECTION FROM TRADITIONAL HEALER ..... N  OTHER ..... W (SPECIFY)  OTHER ..... X (SPECIFY) DOES NOT KNOW ..... Z	
804	Can people reduce their chances of getting the AIDS virus by having just one sex partner who has no other partners?	YES .....1 NO .....2 DOES NOT KNOW .....8	
805	Can people get the AIDS virus from mosquito or other insect bites?	YES .....1 NO .....2 DOES NOT KNOW .....8	
806	Can people reduce their chances of getting the AIDS virus by using a condom every time they have sex?	YES .....1 NO .....2 DOES NOT KNOW .....8	
807	Can people get the AIDS virus by sharing utensils with a person who has AIDS?	YES .....1 NO .....2 DOES NOT KNOW .....8	
808	Can people reduce their chances of getting the AIDS virus by not having sex at all?	YES .....1 NO .....2 DOES NOT KNOW .....8	
809	Is it possible for a healthy-looking person to have the AIDS virus?	YES, POSSIBLE .....1 NO, NOT POSSIBLE .....2 DOES NOT KNOW .....8	
810	Do you know someone personally who has the virus that causes AIDS or someone who died of AIDS?	YES .....1 NO .....2	
811	Can the virus that causes AIDS be transmitted from a mother to a child?	YES .....1 NO .....2 DOES NOT KNOW .....8	10813
812	When can the virus that causes AIDS be transmitted from a mother to a child? Can it be transmitted...  During pregnancy? During delivery? During breastfeeding?	<b>YES NO DK</b>  DURING PREGNANCY .....1 2 8 DURING DELIVERY .....1 2 8 DURING BREASTFEEDING .....1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
812A	Can a mother who is infected with the AIDS virus reduce the risk of giving the virus to the baby by taking certain drugs during pregnancy?	YES .....1 NO .....2 DOES NOT KNOW .....8	
813	CHECK 501:  CURRENTLY MARRIED/ LIVING WITH A MAN <input type="checkbox"/> NOT CURRENTLY MARRIED/ NOT LIVING WITH A MAN <input type="checkbox"/> 3		-0814A
814	Have you ever talked with (your husband/the man you are living with) about ways to prevent getting the virus that causes AIDS?	YES .....1 NO .....2	
814A	Would you buy fresh vegetables from a vendor who has the AIDS virus?	YES .....1 NO .....2 DOES NOT KNOW .....8	
815	If a member of your family got infected with the virus that causes AIDS, would you want it to remain a secret or not?	YES, KEEP SECRET .....1 NO .....2 DOES NOT KNOW/NOT SURE .....8	
816	If a relative of yours became sick with the virus that causes AIDS, would you be willing to care for her or him in your own household?	YES .....1 NO .....2 DK/NOT SURE/DEPENDS .....8	
816A	If a female teacher has the AIDS virus, should she be allowed to continue teaching in school?	YES, CAN CONTINUE .....1 NO, SHOULD NOT CONTINUE .....2 DOES NOT KNOW .....8	
816B	Should children aged 12-14 be taught about using a condom to avoid AIDS?	YES .....1 NO .....2 DK/NOT SURE/DEPENDS .....8	
816B1	Do you think your chances of getting AIDS are small, moderate, great, or no risk at all?	SMALL .....1 MODERATE .....2 GREAT .....3 NO RISK AT ALL .....4 HAS AIDS .....5	1-0816B3 -0816B4
816B2	Why do you think that you have (no risk/a small chance) of getting AIDS?  Any other reasons?  CIRCLE ALL MENTIONED.	IS NOT HAVING SEX .....A USES CONDOMS .....B HAS ONLY ONE PARTNER .....C LIMITS THE NUMBER OF PARTNERS .....D PARTNER HAS NO OTHER PARTNERS .....E OTHER .....X (SPECIFY)	-0816B4
816B3	Why do you think that you have a (moderate, great) chance of getting AIDS?  Any other reasons?  CIRCLE ALL MENTIONED.	DOES NOT USE CONDOMS .....A HAS MORE THAN 1 SEX PARTNER .....B PARTNER HAS OTHER PARTNERS .....C HOMOSEXUAL CONTACTS .....D HAD BLOOD TRANSFUSION/INJECTION .....E OTHER .....X (SPECIFY)	
816B4	Have you ever heard of VCT?	YES .....1 NO .....2	
816C	I do not want to know the results, but have you ever been tested to see if you have the AIDS virus?	YES .....1 NO .....2	-0816D
816C1	When was the last time you were tested?	LESS THAN 12 MONTHS AGO .....1 12-23 MONTHS AGO .....2 2 YEARS OR MORE AGO .....3	
816C2	The last time you were tested, did you ask for the test, was it offered to you and you accepted, or was it required?	ASKED FOR THE TEST .....1 OFFERED AND ACCEPTED .....2 REQUIRED .....3	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
816C3	I do not want to know the results, but did you get the results of the test?	YES .....1 NO .....2	-0816FX -0816FX
816D	Would you want to be tested for the AIDS virus?	YES .....1 NO .....2 DO NOT KNOW/UNSURE .....8	
816E	Do you know a place where you could go to get an AIDS test?	YES .....1 NO .....2	-0817
816F	Where can you go for the test?	<b>PUBLIC SECTOR</b> GOVERNMENT HOSPITAL .....11 GOVT. HEALTH CENTRE/CLINIC .....12 GOVERNMENT DISPENSARY .....13  OTHER PUBLIC .....16 (SPECIFY)	
816F X	Where did you go for the test?  IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE '21'.	<b>PRIVATE MEDICAL SECTOR</b> MISSION/CHURCH HOSP. CLINIC .....21 FPAK HEALTH CENTRE/CLINIC .....22 PRIVATE HOSPITAL/CLINIC .....23 VCT CENTRE .....24 NURSING/MATERNITY HOME .....26 BLOOD TRANSFUSION SERVICE .....31  OTHER .....96 (SPECIFY)	
817	Apart from AIDS, have you heard about other infections that can be transmitted through sexual contact?	YES .....1 NO .....2	-0819A
818	If a man has a sexually transmitted disease, what symptoms might he have?  Any others?  RECORD ALL MENTIONED.	ABDOMINAL PAIN .....A GENITAL DISCHARGE/DRIPPING .....B FOUL SMELLING DISCHARGE .....C BURNING PAIN ON URINATION .....D REDNESS/INFLAMMATION IN GENITAL AREA .....E SWELLING IN GENITAL AREA .....F GENITAL SORES/ULCERS .....G GENITAL WARTS .....H GENITAL ITCHING .....I BLOOD IN URINE .....J LOSS OF WEIGHT .....K IMPOTENCE/NO ERECTION .....L  OTHER .....W (SPECIFY) OTHER .....X (SPECIFY) NO SYMPTOMS .....Y DOES NOT KNOW .....Z	
819	If a woman has a sexually transmitted disease, what symptoms might she have?  Any others?  RECORD ALL MENTIONED.	ABDOMINAL PAIN .....A GENITAL DISCHARGE .....B FOUL SMELLING DISCHARGE .....C BURNING PAIN ON URINATION .....D REDNESS/INFLAMMATION IN GENITAL AREA .....E SWELLING IN GENITAL AREA .....F GENITAL SORES/ULCERS .....G GENITAL WARTS .....H GENITAL ITCHING .....I BLOOD IN URINE .....J LOSS OF WEIGHT .....K HARD TO GET PREGNANT .....L  OTHER .....W (SPECIFY) OTHER .....X (SPECIFY) NO SYMPTOMS .....Y DOES NOT KNOW .....Z	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP															
819A	CHECK 514: HAS HAD SEXUAL INTERCOURSE <input type="checkbox"/> 3 HAS NOT HAD SEXUAL INTERCOURSE <input type="checkbox"/>		-0820															
819B	Now I would like to ask you some questions about your health in the last 12 months. During the last 12 months, have you had a sexually transmitted disease?	YES .....1 NO .....2 DON'T KNOW .....8																
819C	Sometimes, women experience an abnormal vaginal discharge. During the last 12 months, have you had a bad-smelling unusual discharge from your vagina?	YES .....1 NO .....2 DON'T KNOW .....8																
819D	Sometimes women have a genital sore or ulcer. During the last 12 months, have you had a genital sore or ulcer?	YES .....1 NO .....2 DON'T KNOW .....8																
819E	CHECK 819B, 819C, AND 819D: HAS HAD AN INFECTION <input type="checkbox"/> 3 HAS NOT HAD AN INFECTION OR DOES NOT KNOW <input type="checkbox"/>		-0820															
819F	The last time you had (PROBLEM(S) FROM 819B/819C/819D), did you seek any kind of advice or treatment?	YES .....1 NO .....2	-0819H															
819G	The last time you had (PROBLEM(S) FROM 819B/819C/819D), did you do any of the following? Did you....  Go to a clinic, hospital or private doctor? Consult a traditional healer? Seek advice or buy medicines in a shop or pharmacy? Ask for advice from friends or relatives?	<table border="0"> <thead> <tr> <th></th><th>YES</th><th>NO</th></tr> </thead> <tbody> <tr> <td>CLINIC/HOSPITAL.....</td><td>1</td><td>2</td></tr> <tr> <td>TRADITIONAL HEALER ...</td><td>1</td><td>2</td></tr> <tr> <td>SHOP/PHARMACY.....</td><td>1</td><td>2</td></tr> <tr> <td>FRIENDS/RELATIVES.....</td><td>1</td><td>2</td></tr> </tbody> </table>		YES	NO	CLINIC/HOSPITAL.....	1	2	TRADITIONAL HEALER ...	1	2	SHOP/PHARMACY.....	1	2	FRIENDS/RELATIVES.....	1	2	
	YES	NO																
CLINIC/HOSPITAL.....	1	2																
TRADITIONAL HEALER ...	1	2																
SHOP/PHARMACY.....	1	2																
FRIENDS/RELATIVES.....	1	2																
819H	When you had (PROBLEM(S) FROM 819B/819C/819D), did you tell the person with whom you were having sex?	YES .....1 NO .....2 SOME/NOT AT ALL .....3 DID NOT HAVE A PARTNER .....4	-0820															
819I	When you had (PROBLEM(S) FROM 819B/819C/819D), did you do anything to avoid infecting your sexual partner(s)?	YES .....1 NO .....2 PARTNER(S) ALREADY INFECTED.....3	1-0820															
819J	What did you do to avoid infecting your partner(s)? Did you....  Use medicine? Stop having sex? Use a condom when having sex?	<table border="0"> <thead> <tr> <th></th><th>YES</th><th>NO</th></tr> </thead> <tbody> <tr> <td>USE MEDICINE .....</td><td>1</td><td>2</td></tr> <tr> <td>STOP SEX .....</td><td>1</td><td>2</td></tr> <tr> <td>USE CONDOM.....</td><td>1</td><td>2</td></tr> </tbody> </table>		YES	NO	USE MEDICINE .....	1	2	STOP SEX .....	1	2	USE CONDOM.....	1	2				
	YES	NO																
USE MEDICINE .....	1	2																
STOP SEX .....	1	2																
USE CONDOM.....	1	2																
820	In many communities, girls are introduced to womanhood by participating in some ceremonies and undergoing specific procedures. I want to discuss with you the circumcision of girls. In this community, is female circumcision practiced?	YES .....1 NO .....2																
821	Are you circumcised?	YES .....1 NO .....2																
822	CHECK 214 AND 217: HAS AT LEAST ONE LIVING DAUGHTER <input type="checkbox"/> 3 HAS NO LIVING DAUGHTER <input type="checkbox"/>		-0901															
823	Has your eldest daughter been circumcised?	YES .....1 NO .....2 NOT SURE.....8	-0901															
824	Do you plan to have your eldest daughter circumcised?	YES .....1 NO .....2 NOT SURE.....8																

## SECTION 9. MATERNAL MORTALITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
901	Now I would like to ask you about your brothers and sisters, that is, all of the children born to your natural mother, including those who are living with you, those living elsewhere and those who have died.  How many children did your mother give birth to, including you?	NUMBER OF BIRTHS TO NATURAL MOTHER ..... <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	
902	CHECK 901: TWO OR MORE BIRTHS <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> ONLY ONE BIRTH <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> 3 (RESPONDENT ONLY)		-01000
903	How many of these births did your mother have before you were born?	NO. OF PRECEDING BIRTHS.... <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	
904	What was the name given to your oldest (next oldest) brother or sister?	[1] [2] [3] [4] [5] [6]	
905	Is (NAME) male or female?	MALE ..... 1 FEMALE ..... 2	MALE ..... 1 FEMALE ..... 2
906	Is (NAME) still alive?	YES ..... 1 NO ..... 2 GO TO 908 1J DK ..... 8 GO TO [2] 1J	YES ..... 1 NO ..... 2 GO TO 908 1J DK ..... 8 GO TO [7] 1J
907	How old is (NAME)?	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> GO TO [2]	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> GO TO [7]
908	How many years ago did (NAME) die?	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>
909	How old was (NAME) when he/she died?	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [2]	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [7]
910	Was (NAME) pregnant when she died?	YES ..... 1 GO TO 913 1J NO ..... 2	YES ..... 1 GO TO 913 1J NO ..... 2
911	Did (NAME) die during childbirth?	YES ..... 1 GO TO 913 1J NO ..... 2	YES ..... 1 GO TO 913 1J NO ..... 2
912	Did (NAME) die within two months after the end of a pregnancy or childbirth?	YES ..... 1 NO ..... 2	YES ..... 1 NO ..... 2
913	How many live born children did (NAME) give birth to during her lifetime (before this pregnancy)?	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>

904	What was the name given to your oldest (next oldest) brother or sister?	[7] _____	[8] _____	[9] _____	[10] _____	[11] _____	[12] _____
905	Is (NAME) male or female?	MALE..... 1 FEMALE..... 2	MALE..... 1 FEMALE..... 2	MALE..... 1 FEMALE..... 2	MALE..... 1 FEMALE..... 2	MALE..... 1 FEMALE..... 2	MALE..... 1 FEMALE..... 2
906	Is (NAME) still alive?	YES..... 1 NO..... 2 GO TO 908 1J DK..... 8 GO TO [8] 1J	YES..... 1 NO..... 2 GO TO 908 1J DK..... 8 GO TO [9] 1J	YES..... 1 NO..... 2 GO TO 908 1J DK..... 8 GO TO [10] 1J	YES..... 1 NO..... 2 GO TO 908 1J DK..... 8 GO TO [11] 1J	YES..... 1 NO..... 2 GO TO 908 1J DK..... 8 GO TO [12] 1J	YES..... 1 NO..... 2 GO TO 908 1J DK..... 8 GO TO [13] 1J
907	How old is (NAME)?	<div>  </div> <div>  </div> GO TO [8]	<div>  </div> <div>  </div> GO TO [9]	<div>  </div> <div>  </div> GO TO [10]	<div>  </div> <div>  </div> GO TO [11]	<div>  </div> <div>  </div> GO TO [12]	<div>  </div> <div>  </div> GO TO [13]
908	How many years ago did (NAME) die?	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>
909	How old was (NAME) when he/she died?	<div>  </div> <div>  </div> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [8]	<div>  </div> <div>  </div> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [9]	<div>  </div> <div>  </div> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [10]	<div>  </div> <div>  </div> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [11]	<div>  </div> <div>  </div> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [12]	<div>  </div> <div>  </div> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [13]
910	Was (NAME) pregnant when she died?	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2
911	Did (NAME) die during childbirth?	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2	YES..... 1 GO TO 913 1J NO..... 2
912	Did (NAME) die within two months after the end of a pregnancy or childbirth?	YES..... 1 NO..... 2	YES..... 1 NO..... 2	YES..... 1 NO..... 2	YES..... 1 NO..... 2	YES..... 1 NO..... 2	YES..... 1 NO..... 2
913	How many live born children did (NAME) give birth to during her lifetime (before this pregnancy)?	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>	<div>  </div> <div>  </div>
IF NO MORE BROTHERS OR SISTERS, GO TO 1000							



## SECTION 10. DOMESTIC VIOLENCE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1000	<p>CHECK HOUSEHOLD QUESTIONNAIRE, COLUMN (8):</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <p>WOMAN SELECTED FOR THIS SECTION</p> <input type="checkbox"/> <p>3</p> </div> <div style="text-align: center;"> <p>WOMAN NOT SELECTED</p> <input type="checkbox"/> </div> </div>		-01019
1001	<p>IS THERE PRIVACY?:</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <p>NO ONE OVER 3 YEARS PRESENT OR LISTENING</p> <input type="checkbox"/> <p>3</p> </div> <div style="text-align: center;"> <p>OTHERS PRESENT OR LISTENING</p> <input type="checkbox"/> </div> </div>		-01018
	<p>READ TO ALL RESPONDENTS:</p> <p>Now I would like to ask you questions about some other important aspects of a woman's life. I know that some of these questions are very personal. However, your answers are crucial for helping to understand the condition of women in Kenya. Let me assure you that your answers are completely confidential and will not be told to anyone.</p>		
1002	<p>CHECK 501, 502, AND 504:</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <p>CURRENTLY MARRIED/ LIVING WITH A MAN</p> <input type="checkbox"/> <p>3</p> </div> <div style="text-align: center;"> <p>SEPARATED/ DIVORCED</p> <input type="checkbox"/> <p>(READ IN PAST TENSE) 3</p> </div> <div style="text-align: center;"> <p>WIDOWED/ NEVER MARRIED/ NEVER LIVED WITH A MAN</p> <input type="checkbox"/> </div> </div>		-01014
1005	<p>Now I need to ask some more questions about your relationship with your (last) husband/partner.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>5A. (Does/did) your (last) husband/partner ever:</p> <div style="margin-top: 10px;"> <p>a) Say or do something to humiliate you in front of others?</p> <p>YES 1-0 NO 2-3</p> </div> <div style="margin-top: 10px;"> <p>b) Threaten you or someone close to you with harm?</p> <p>YES 1-0 NO 2-3</p> </div> </div> <div style="width: 50%;"> <p>5B. How many times did this happen during the last 12 months?</p> <div style="margin-top: 10px;"> <p>TIMES IN LAST 12 MONTHS..... <input type="text"/> <input type="text"/></p> <p>TIMES IN LAST 12 MONTHS..... <input type="text"/> <input type="text"/></p> </div> </div> </div>		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																				
1006	<p>6A. (Does/did) your (last) husband/partner ever:</p> <table border="1"> <tr> <td>a) Push you, shake you, or throw something at you?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>b) Slap you or twist your arm?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>c) Punch you with his fist or with something that could hurt you?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>d) Kick you or drag you?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>e) Try to strangle you or burn you?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>f) Threaten you with a knife, gun, or other type of weapon?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>g) Attack you with a knife, gun, or other type of weapon?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>h) Physically force you to have sexual intercourse with him even when you did not want to?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>i) Force you to perform other sexual acts you did not want to?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> </table>	a) Push you, shake you, or throw something at you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	b) Slap you or twist your arm?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	c) Punch you with his fist or with something that could hurt you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	d) Kick you or drag you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	e) Try to strangle you or burn you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	f) Threaten you with a knife, gun, or other type of weapon?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	g) Attack you with a knife, gun, or other type of weapon?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	h) Physically force you to have sexual intercourse with him even when you did not want to?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	i) Force you to perform other sexual acts you did not want to?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	<p>6B. How many times did this happen during the last 12 months?</p>	
a) Push you, shake you, or throw something at you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
b) Slap you or twist your arm?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
c) Punch you with his fist or with something that could hurt you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
d) Kick you or drag you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
e) Try to strangle you or burn you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
f) Threaten you with a knife, gun, or other type of weapon?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
g) Attack you with a knife, gun, or other type of weapon?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
h) Physically force you to have sexual intercourse with him even when you did not want to?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
i) Force you to perform other sexual acts you did not want to?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
1007	<p>CHECK 1006:</p> <p>AT LEAST ONE 'YES' <input type="checkbox"/> 3 NOT A SINGLE 'YES' <input type="checkbox"/></p>		-01009																																				
1008	<p>How long after you first got married to/started living with your (last) husband/partner did (this/any of these things) first happen?</p> <p>IF LESS THAN ONE YEAR, RECORD '00'.</p>	<p>NUMBER OF YEARS ..... <input type="text"/></p> <p>BEFORE MARRIAGE/BEFORE LIVING TOGETHER .....95</p> <p>AFTER SEPARATION/DIVORCE.....96</p>																																					
1009	<p>Did the following ever happen because of something your (last) husband/partner did to you:</p> <table border="1"> <tr> <td>a) You had bruises and aches?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>b) You had an injury or a broken bone?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> <tr> <td>c) You went to the doctor or health centre as a result of something your husband/partner did to you?</td><td>YES 1-0 NO 2 1 3</td><td>TIMES IN LAST 12 MONTHS.....</td><td><input type="text"/></td></tr> </table>	a) You had bruises and aches?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	b) You had an injury or a broken bone?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	c) You went to the doctor or health centre as a result of something your husband/partner did to you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>	<p>9B. How many times did this happen during the last 12 months?</p>																									
a) You had bruises and aches?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
b) You had an injury or a broken bone?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
c) You went to the doctor or health centre as a result of something your husband/partner did to you?	YES 1-0 NO 2 1 3	TIMES IN LAST 12 MONTHS.....	<input type="text"/>																																				
1010	<p>Have you ever hit, slapped, kicked or done anything else to physically hurt your (last) husband/partner at times when he was not already beating or physically hurting you?</p>	<p>YES.....1 NO.....2</p>	-01012																																				
1011	<p>In the last 12 months, how many times have you hit, slapped, kicked or done something to physically hurt your (last) husband/partner at a time when he was not already beating or physically hurting you?</p>	<p>NUMBER OF TIMES ..... <input type="text"/></p>																																					
1012	<p>Does (did) your husband/partner drink alcohol or take illegal drugs?</p>	<p>YES.....1 NO.....2</p>	-01014																																				
1013	<p>How often does (did) he get drunk or take drugs: very often, only sometimes, or never?</p>	<p>VERY OFTEN .....1 SOMETIMES .....2 NEVER.....3</p>																																					

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1014	<p>CHECK 501, 502 &amp; 504:</p> <p>MARRIED/LIVING WITH A MAN/SEPARATED/DIVORCED <input type="checkbox"/> 3</p> <p>WIDOWED/NEVER MARRIED/NEVER LIVED WITH A MAN <input type="checkbox"/> 3</p> <p>From the time you were 15 years old has anyone other than your (current/last) husband/partner hit, slapped, kicked, or done anything else to hurt you physically?</p> <p>From the time you were 15 years old has anyone ever hit, slapped, kicked, or done anything else to hurt you physically?</p>	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>NO ANSWER ..... 6</p>	101017
1015	<p>Who has physically hurt you in this way?</p> <p>Anyone else?</p> <p>CIRCLE ALL MENTIONED.</p>	<p>MOTHER ..... A</p> <p>FATHER ..... B</p> <p>STEP-MOTHER ..... C</p> <p>STEP-FATHER ..... D</p> <p>SISTER ..... E</p> <p>BROTHER ..... F</p> <p>DAUGHTER ..... G</p> <p>SON ..... H</p> <p>LATE/EX-HUSBAND/EX-PARTNER ..... I</p> <p>CURRENT BOYFRIEND ..... J</p> <p>FORMER BOYFRIEND ..... K</p> <p>MOTHER-IN-LAW ..... L</p> <p>FATHER-IN-LAW ..... M</p> <p>OTHER FEMALE RELATIVE/IN-LAW ..... N</p> <p>OTHER MALE RELATIVE/ IN-LAW ..... O</p> <p>FEMALE FRIEND/ACQUAINTANCE ..... P</p> <p>MALE FRIEND/ACQUAINTANCE ..... Q</p> <p>TEACHER ..... R</p> <p>EMPLOYER ..... S</p> <p>STRANGER ..... T</p> <p>OTHER ..... X</p> <p>(SPECIFY)</p>	
1016	<p>In the last 12 months, how many times has this person (these people) hit, slapped, kicked, or done anything else to physically hurt you?</p>	<p>NUMBER OF TIMES ..... <input type="text"/></p>	

THANK THE RESPONDENT FOR HER COOPERATION AND REASSURE HER ABOUT THE CONFIDENTIALITY OF HER ANSWERS. FILL OUT THE QUESTIONS BELOW WITH REFERENCE TO THE DOMESTIC VIOLENCE SECTION ONLY.

1017	<p>DID YOU HAVE TO INTERRUPT THE INTERVIEW BECAUSE SOME ADULT WAS TRYING TO LISTEN, OR CAME INTO THE ROOM, OR INTERFERED IN ANY OTHER WAY?</p>	<table> <thead> <tr> <th></th> <th>YES ONCE</th> <th>YES, MORE THAN ONCE</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>HUSBAND .....</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>OTHER MALE ADULT .....</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>FEMALE ADULT .....</td> <td>1</td> <td>2</td> <td>3</td> </tr> </tbody> </table>		YES ONCE	YES, MORE THAN ONCE	NO	HUSBAND .....	1	2	3	OTHER MALE ADULT .....	1	2	3	FEMALE ADULT .....	1	2	3
	YES ONCE	YES, MORE THAN ONCE	NO															
HUSBAND .....	1	2	3															
OTHER MALE ADULT .....	1	2	3															
FEMALE ADULT .....	1	2	3															

1018 INTERVIEWER'S COMMENTS / EXPLANATION FOR NOT COMPLETING THE DOMESTIC VIOLENCE SECTION

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1019	<p>RECORD THE TIME.</p> <p>HOUR ..... <input type="text"/></p> <p>MINUTES ..... <input type="text"/></p>
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## INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

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COMMENTS ON SPECIFIC QUESTIONS:

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ANY OTHER COMMENTS:

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### SUPERVISOR'S OBSERVATIONS

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NAME OF THE SUPERVISOR: \_\_\_\_\_ DATE: \_\_\_\_\_

### EDITOR'S OBSERVATIONS

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NAME OF EDITOR: \_\_\_\_\_ DATE: \_\_\_\_\_

INSTRUCTIONS:		1		2		3		4	
ONLY ONE CODE SHOULD APPEAR IN ANY BOX.		12 DEC	01					01	DEC
FOR COLUMNS 1 AND 4, ALL MONTHS SHOULD BE FILLED IN.		11 NOV	02					02	NOV
		10 OCT	03					03	OCT
INFORMATION TO BE CODED FOR EACH COLUMN		09 SEP	04					04	SEP
COL.1: <u>BIRTHS, PREGNANCIES, CONTRACEPTIVE USE</u>	2 08 AUG 05							05	AUG 2
B BIRTHS	0 07 JUL 06							06	JUL 0
P PREGNANCIES	0 06 JUN 07							07	JUN 0
T TERMINATIONS	3 05 MAY 08							08	MAY 3
	04 APR 09							09	APR
0 NO METHOD	03 MAR 10							10	MAR
1 FEMALE STERILISATION	02 FEB 11							11	FEB
2 MALE STERILISATION	01 JAN 12							12	JAN
3 PILL									
4 IUD									
5 INJECTABLES									
6 IMPLANTS, NORPLANT									
7 CONDOM									
8 FEMALE CONDOM									
L RHYTHM OR NATURAL METHODS									
M WITHDRAWAL									
X OTHER _____									
	(SPECIFY)								
COL 2: <u>SOURCE OF CONTRACEPTION</u>									
1 GOVT. HOSPITAL									
2 GOVT. HEALTH CENTRE									
3 GOVT. DISPENSARY									
4 OTHER PUBLIC (GOVT.)									
5 MISSION, CHURCH HOSPITAL, CLINIC									
6 FPAK HEALTH CENTRE, CLINIC									
7 PVT. HOSPITAL/CLINIC									
8 PHARMACY, CHEMIST									
A NURSING/MATERNITY HOME									
B MOBILE CLINIC									
C COMMUNITY-BASED DISTRIBUTOR									
D SHOP									
E FRIENDS/RELATIVES									
X OTHER _____									
	(SPECIFY)								
COL 3: <u>DISCONTINUATION OF CONTRACEPTIVE USE</u>									
0 INFREQUENT SEX/HUSBAND AWAY									
1 BECAME PREGNANT WHILE USING									
2 WANTED TO BECOME PREGNANT									
3 HUSBAND/PARTNER DISAPPROVED									
4 WANTED MORE EFFECTIVE METHOD									
5 HEALTH CONCERNS									
6 SIDE EFFECTS									
7 LACK OF ACCESS/TOO FAR									
8 COSTS TOO MUCH									
9 INCONVENIENT TO USE									
F FATALISTIC									
A DIFFICULT TO GET PREGNANT/MENOPAUSAL									
D MARITAL DISSOLUTION/SEPARATION									
X OTHER _____									
	(SPECIFY)								
Z DON'T KNOW									
COL.4: <u>MARRIAGE/UNION</u>									
X IN UNION (MARRIED OR LIVING TOGETHER)									
0 NOT IN UNION									

**CENTRAL BUREAU OF STATISTICS  
KENYA DEMOGRAPHIC AND HEALTH SURVEY 2003  
MAN'S QUESTIONNAIRE**

IDENTIFICATION				
PROVINCE* _____	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
DISTRICT _____	<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>			
LOCATION/TOWN _____				
SUBLOCATION/WARD _____				
NASSEP CLUSTER NUMBER .....	<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>			
KDHS CLUSTER NUMBER .....	<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>			
HOUSEHOLD NUMBER .....	<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>			
NAIROBI/MOMBASA/KISUMU=1; NAKURU/ELDORET/THIKA/NYERI=2; SMALL TOWN=3; RURAL=4				
NAME OF HOUSEHOLD HEAD _____				
NAME AND LINE NUMBER OF MAN _____	<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>			
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY MONTH YEAR <div style="display: inline-block; border: 1px solid black; padding: 2px;">2 0 0 3</div> INT.CODE RESULT
INTERVIEWER'S NAME	_____	_____	_____	
RESULT**	_____	_____	_____	
NEXT VISIT:      DATE	_____	_____		TOTAL NO. OF VISITS <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div>
TIME	_____	_____		
<b>** RESULT CODES:</b> <div style="display: flex; justify-content: space-between;"> <div>           1 COMPLETED            2 NOT AT HOME            3 POSTPONED         </div> <div>           4 REFUSED            5 PARTLY COMPLETED            6 INCAPACITATED         </div> <div>           7 OTHER _____            (SPECIFY)         </div> </div>				
LANGUAGE				
LANGUAGE OF QUESTIONNAIRE: <b>ENGLISH</b>			<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>	
LANGUAGE OF INTERVIEW *** _____			<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>	
HOME LANGUAGE OF RESPONDENT*** _____			<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div> <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px; margin-left: 5px;"></div>	
WAS A TRANSLATOR USED? (YES=1, NO=2)..... <b>*** LANGUAGE CODES:</b> 01 EMBU    04 KIKUYU    07 LUO    10 MIJIKENDA    13 ENGLISH 02 KALENJIN    05 KISII    08 MASAI    11 SOMALI    14 OTHER _____ 03 KAMBA    06 LUHYA    09 MERU    12 KISWAHILI				
SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY	
NAME _____ <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div>	NAME _____ <div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div>	<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div>	<div style="display: inline-block; border: 1px solid black; width: 20px; height: 20px;"></div>	

\*Province: NAIROBI=1; CENTRAL=2; COAST=3; EASTERN=4; NYANZA=5; R.VALLEY=6; WESTERN=7; NORTHEASTERN=8

## SECTION 1. RESPONDENT'S BACKGROUND

### INTRODUCTION AND CONSENT

Hello. My name is \_\_\_\_\_ and I am working with the Central Bureau of Statistics. We are conducting a national survey about the health of men, women and children. We would very much appreciate your participation in this survey. I would like to ask you some questions about yourself and your family. This information will help the government to plan health services. The survey usually takes between 30 and 40 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

Do you have any questions about the survey? May I begin the interview now?

Signature of interviewer: \_\_\_\_\_

Date: \_\_\_\_\_

RESPONDENT AGREES TO BE INTERVIEWED .....1      RESPONDENT DOES NOT AGREE TO BE INTERVIEWED .....2 —END  
3

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, in a town, or in the countryside?	NAIROBI/MOMBASA/KISUMU.....1 OTHER CITY/TOWN .....2 COUNTRYSIDE .....3 OUTSIDE KENYA.....4	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?  IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> ALWAYS .....95 VISITOR .....96	0105
104	Just before you moved here, did you live in a city, in a town, or in the countryside?	NAIROBI/MOMBASA/KISUMU.....1 OTHER CITY/TOWN .....2 COUNTRYSIDE .....3	
105	In the last 12 months, on how many separate occasions have you traveled away from your home community and slept away?	NUMBER OF TRIPS AWAY ... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> NONE .....00	0107
106	In the last 12 months, have you been away from your home community for more than 1 month at a time?	YES.....1 NO .....2	
107	In what month and year were you born?	MONTH..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> DOES NOT KNOW MONTH.....98 YEAR ..... <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table> DOES NOT KNOW YEAR .....9998	
108	How old were you at your last birthday?  COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
109	Have you ever attended school?	YES.....1 NO .....2	0113
110	What is the highest level of school you attended: primary, vocational, secondary, or higher?	NURSERY/KINDERGARTEN.....0 PRIMARY .....1 POST-PRIMARY/VOCATIONAL .....2 SECONDARY/'A' LEVEL.....3 COLLEGE (MIDDLE LEVEL).....4 UNIVERSITY .....5	
111	What is the highest (standard/form/year) you completed at that level?	STANDARD/FORM/YEAR..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
112	CHECK 110: <div> <div>PRIMARY</div> <div>POST-PRIMARY</div> <div>VOCATIONAL</div> </div> <div> <input type="checkbox"/> </div> <div>3</div> <div>SECONDARY</div> <div>OR HIGHER</div> <div> <input type="checkbox"/> </div>		—0116
113	Now I would like you to read this sentence to me.  SHOW SENTENCES TO RESPONDENT. IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?	CANNOT READ AT ALL ..... 1 CAN ONLY READ PART OF SENTENCE ..... 2 CAN READ WHOLE SENTENCE ..... 3 NO CARD WITH REQUIRED LANGUAGE ..... 4	
114	Have you ever participated in a literacy program or any other program that involves learning to read or write (not including primary school)?	YES ..... 1 NO ..... 2	
115	CHECK 113: <div> <div>CODE '2', '3'</div> <div>OR '4'</div> <div>CIRCLED</div> </div> <div> <input type="checkbox"/> </div> <div>3</div> <div>CODE '1'</div> <div>CIRCLED</div> <div> <input type="checkbox"/> </div>		—0117
116	Do you read a newspaper or magazine almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY ..... 1 AT LEAST ONCE A WEEK ..... 2 LESS THAN ONCE A WEEK ..... 3 NOT AT ALL ..... 4	
117	Do you listen to the radio almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY ..... 1 AT LEAST ONCE A WEEK ..... 2 LESS THAN ONCE A WEEK ..... 3 NOT AT ALL ..... 4	
118	Do you watch television almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY ..... 1 AT LEAST ONCE A WEEK ..... 2 LESS THAN ONCE A WEEK ..... 3 NOT AT ALL ..... 4	
119	Are you currently working?	YES ..... 1 NO ..... 2	—0122
120	Have you done any work in the last 12 months?	YES ..... 1 NO ..... 2	—0122
121	What have you been doing for most of the time over the last 12 months?	GOING TO SCHOOL/STUDYING ..... 1 LOOKING FOR WORK ..... 2 INACTIVE ..... 3 COULD NOT WORK/HANDICAPPED ..... 4  OTHER ..... 6 (SPECIFY)	—0129
122	What is your occupation, that is, what kind of work do you mainly do?	<div> <input type="text"/> <input type="text"/> </div> <div> <input type="text"/> </div> <div> <input type="text"/> </div>	
123	CHECK 122: <div> <div>WORKS IN</div> <div>AGRICULTURE</div> </div> <div> <input type="checkbox"/> </div> <div>3</div> <div>DOES NOT WORK</div> <div>IN AGRICULTURE</div> <div> <input type="checkbox"/> </div>		—0125
124	Do you work mainly on your own land or on family land, or do you work on land that you rent from someone else, or do you work on someone else's land?	OWN LAND ..... 1 FAMILY LAND ..... 2 RENTED LAND ..... 3 SOMEONE ELSE'S LAND ..... 4	
125	During the last 12 months, how many months did you work?	NUMBER OF MONTHS..... <div> <input type="text"/> <input type="text"/> </div>	



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
126	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY ..... 1 CASH AND KIND..... 2 IN KIND ONLY..... 3 NOT PAID..... 4	10129
127	Who mainly decides how the money you earn will be used?	RESPONDENT..... 1 WIFE/PARTNER..... 2 RESPONDENT AND WIFE/PARTNER JOINTLY..... 3 SOMEONE ELSE..... 4 RESPONDENT AND SOMEONE ELSE JOINTLY..... 5	
128	On average, how much of your household's expenditures do your earnings pay for: almost none, less than half, about half, more than half, or all?	ALMOST NONE..... 1 LESS THAN HALF..... 2 ABOUT HALF..... 3 MORE THAN HALF..... 4 ALL..... 5 NONE, HIS INCOME IS ALL SAVED..... 6	
129	What is your religion?	ROMAN CATHOLIC..... 1 PROTESTANT/OTHER CHRISTIAN..... 2 MUSLIM..... 3 NO RELIGION..... 4  OTHER..... 6 (SPECIFY)	
130	What is your ethnic group/tribe?	EMBU .....01 KALENJIN .....02 KAMBA .....03 KIKUYU .....04 KISII .....05 LUHYA.....06 LUO .....07 MASAI .....08 MERU .....09 MIJIKENDA/SWAHILI.....10 SOMALI .....11 TAITA/TAVETA.....12 OTHER..... 96 (SPECIFY)	

### SENTENCES FOR LITERACY TEST (Q. 113)

#### **ENGLISH**

1. The child is reading a book.
2. The rains came late this year.
3. Parents must care for their children.
4. Farming is hard work.

#### **KISWAHILI**

1. Mtoto anasoma kitabu.
2. Mvua ilichelewa mwaka huu.
3. Nilazima wazazi watunze watoto wao.
4. Ukilima ni kazi ngumu.

## SECTION 2. REPRODUCTION AND PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP				
201	Now I would like to ask about any children you have had. I am interested only in the children that are biologically yours. Have you ever fathered any children with any woman?	YES.....1 NO.....2 DON'T KNOW.....8	<input type="checkbox"/> —C206				
202	Do you have any sons or daughters that you have fathered who are now living with you?	YES.....1 NO.....2	—C204				
203	How many sons live with you?  And how many daughters live with you?  IF NONE, WRITE '00'.	SONS AT HOME ..... DAUGHTERS AT HOME.....	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>				
204	Do you have any sons or daughters you have fathered who are alive but do not live with you?	YES.....1 NO.....2	—C206				
205	How many sons are alive but do not live with you?  And how many daughters are alive but do not live with you?  IF NONE, WRITE '00'.	SONS ELSEWHERE ..... DAUGHTERS ELSEWHERE...	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>				
206	Have you ever fathered a son or a daughter who was born alive but later died?  IF NO, PROBE:      Any baby who cried or showed signs of life but survived only a few hours or days?	YES.....1 NO.....2 DON'T KNOW.....8	<input type="checkbox"/> —C208				
207	How many boys have died?  And how many girls have died?  IF NONE, WRITE '00'.	BOYS DEAD..... GIRLS DEAD.....	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>				
208	(In addition to the children that you have just told me about), do you have any (other) sons or daughters who are biologically your children but who are not legally yours or do not have your name?  Did you have any children who died who were biologically your children but who were not legally yours or did not have your name?  IF YES, CORRECT 201-207.	YES.....1 NO.....2					
209	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL.  IF NONE, WRITE '00'.	TOTAL ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>					
210	CHECK 209:  HAS HAD MORE THAN ONE CHILD <input type="checkbox"/> 3  HAS HAD ONLY ONE CHILD <input type="checkbox"/> HAS NOT HAD ANY CHILDREN <input type="checkbox"/>		—C213  —C301				
211	Do the children that you have fathered all have the same biological mother?	YES.....1 NO.....2	—C213				
212	In all how many women have you fathered children with?	NUMBER OF WOMEN..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>					
213	How old were you when your (first) child was born?	AGE IN YEARS..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>					

### SECTION 3. CONTRACEPTION

Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.

CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNISED, AND CODE 2 IF NOT RECOGNISED. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 301, ASK 302.

301	Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)?	302	Have you ever used (METHOD)?
01	FEMALE STERILISATION Women can have an operation to avoid having any more children. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3		
02	MALE STERILISATION Men can have an operation to avoid having any more children. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3	Have you ever had an operation to avoid having any more children? YES ..... 1 NO ..... 2	
03	PILL Women can take a pill every day to stop them from becoming pregnant. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3		
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3		
05	INJECTABLES Women can have an injection by a health provider which stops them from becoming pregnant for one or more months. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3		
06	IMPLANTS, NORPLANT Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3		
07	CONDOM Men can put a rubber sheath on their penis before sexual intercourse. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3	YES ..... 1 NO ..... 2	
08	FEMALE CONDOM Women can place a sheath in their vagina before sexual intercourse. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3		
09	RHYTHM OR NATURAL METHODS Every month that a woman is sexually active she can avoid pregnancy by not having sexual intercourse on the days of the month she is most likely to get pregnant. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
10	WITHDRAWAL Men can be careful and pull out before climax. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3	YES ..... 1 NO ..... 2	
11	EMERGENCY CONTRACEPTION Women can take pills up to three days after sexual intercourse to avoid becoming pregnant. YES ..... 1 NO ..... 2 <input type="checkbox"/> 3		
12	Have you heard of any other ways or methods that women or men can use to avoid pregnancy? YES ..... 1 _____ (SPECIFY) _____ (SPECIFY) NO ..... 2 <input type="checkbox"/> 3		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																
303	Now I would like to ask you about when a woman is most likely to get pregnant. From one menstrual period to the next, are there certain days when a woman is more likely to get pregnant if she has sexual relations?	YES.....1 NO.....2 DOES NOT KNOW.....8	0305																
304	Is this time just before her period begins, during her period, right after her period has ended, or half way between two periods?	JUST BEFORE HER PERIOD BEGINS....1 DURING HER PERIOD.....2 JUST AFTER HER PERIOD ENDS.....3 HALF WAY BETWEEN 2 PERIODS.....4 OTHER.....6 (SPECIFY) DOES NOT KNOW.....8																	
305	Do you think that a woman who is breastfeeding her baby can get pregnant?	YES.....1 NO.....2 DEPENDS.....3 DOES NOT KNOW.....8																	
306	I will now read you some statements about contraception. Please tell me if you agree or disagree with each one. a) Contraception is women's business and a man should not have to worry about it. b) Women who use contraception may become promiscuous. c) A woman is the one who gets pregnant so she should be the one to get sterilised.	<table border="1"> <thead> <tr> <th></th><th>AGREE</th><th>DISAGREE</th><th>DK</th></tr> </thead> <tbody> <tr> <td>a)</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>b)</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>c)</td><td>1</td><td>2</td><td>8</td></tr> </tbody> </table>		AGREE	DISAGREE	DK	a)	1	2	8	b)	1	2	8	c)	1	2	8	
	AGREE	DISAGREE	DK																
a)	1	2	8																
b)	1	2	8																
c)	1	2	8																
307	CHECK 301(02) AND 302(02): KNOWLEDGE AND USE OF MALE STERILISATION  HAS HEARD OF MALE STERILISATION BUT IS NOT STERILISED <input type="checkbox"/> 3 OTHER <input type="checkbox"/> _____		0401																
308	Once you have had all the children you want, would you yourself ever consider getting sterilised?	WOULD CONSIDER.....1 WOULD NOT CONSIDER.....2 UNSURE/DEPENDS.....3 WIFE ALREADY STERILIZED.....4	0401																
309	Why would you never consider getting sterilised?  PROBE: Any other reasons?  RECORD ALL REASONS MENTIONED.	AGAINST RELIGION.....A BAD FOR MAN'S HEALTH.....B OPERATION NOT SAFE.....C LESS INTRUSIVE WAYS AVAILABLE.....D MAY WANT MORE CHILDREN/MAY WANT TO REPLACE CHILD WHO DIED.....E MAY REMARRY SOME DAY.....F LOSS OF WAGES.....G LOSS OF SEXUAL FUNCTION.....H LOSS OF MANLINESS.....I OTHER.....X (SPECIFY)																	

## SECTION 4. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	Are you currently married or living with a woman?	YES, CURRENTLY MARRIED..... 1 YES, LIVING WITH A WOMAN ..... 2 NO, NOT IN UNION ..... 3	—0404 —0406
402	Do you have one wife or more than one wife?  IF ONLY ONE WIFE, ENTER '01' .  IF MORE THAN ONE, ASK: How many wives do you currently have?	NUMBER OF WIVES ..... <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	
403	Are there any other women with whom you live as if married?	YES ..... 1 NO ..... 2	—0405
404	Are you living with one (other) woman or more than one (other) woman as if married?  IF ONE LIVE-IN PARTNER, ENTER '01'.  IF MORE THAN ONE, ASK: How many women are you living with as if you were married?	NUMBER OF LIVE-IN PARTNERS ..... <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/>	
405	Apart from the woman/women you have already mentioned, do you currently have any other regular or occasional sexual partners?	REGULAR PARTNER(S) ONLY ..... 1 OCCASIONAL PARTNER(S) ONLY ..... 2 REGULAR AND OCCASIONAL PARTNERS ..... 3 NO OTHER PARTNER ..... 4	} —0409
406	Do you currently have regular, occasional, or no sexual partners?	REGULAR PARTNER(S) ONLY ..... 1 OCCASIONAL PARTNER(S) ONLY ..... 2 REGULAR AND OCCASIONAL PARTNERS ..... 3 NO SEXUAL PARTNER ..... 4	
407	Have you ever been married or lived with a woman?	YES, USED TO BE MARRIED..... 1 YES, LIVED WITH A WOMAN ..... 2 YES, BOTH ..... 3 NO ..... 4	—0416
408	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED ..... 1 DIVORCED ..... 2 SEPARATED ..... 3	} —0411
409	<p>WRITE THE LINE NUMBERS FROM THE HOUSEHOLD QUESTIONNAIRE FOR EACH WIFE/PARTNER REPORTED IN QUESTIONS 402 AND 404 ONLY. IF A WIFE/PARTNER IS NOT LISTED IN THE HOUSEHOLD SCHEDULE, ENTER '00' IN THE LINE NUMBER BOXES. THE NUMBER OF LINES FILLED IN MUST BE EQUAL TO THE NUMBER OF WIVES AND PARTNERS. (IF RESPONDENT HAS MORE THAN FIVE WIVES/PARTNERS USE ADDITIONAL QUESTIONNAIRE(S)).</p> <p>CHECK 402 AND 404</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>SUM OF 402 AND 404 = 01</p> <div style="border: 1px solid black; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> <p>3</p> </div> <div style="text-align: center;"> <p>SUM OF 402 AND 404 &gt; 01</p> <div style="border: 1px solid black; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> <p>3</p> </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Please tell me the name of your wife/partner.</p> <p>NAME</p> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> </div> <div style="width: 45%;"> <p>Please tell me the name of each wife/partner that you live with as if married, starting with the one you lived with first.</p> <p>LINE NUMBER IN HHD. QUEST</p> <div style="display: flex; align-items: center;"> <div style="width: 40px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px; margin-left: 5px; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> </div> <div style="display: flex; align-items: center;"> <div style="width: 40px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px; margin-left: 5px; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> </div> <div style="display: flex; align-items: center;"> <div style="width: 40px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px; margin-left: 5px; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> </div> <div style="display: flex; align-items: center;"> <div style="width: 40px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px; margin-left: 5px; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> </div> <div style="display: flex; align-items: center;"> <div style="width: 40px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px; margin-left: 5px; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> <div style="width: 10px; height: 10px; border: 1px solid black;"></div> </div> </div> </div> </div>		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
410	CHECK 409:  ONLY ONE WIFE/ PARTNER <input type="checkbox"/> 3  MORE THAN ONE WIFE/PARTNER <input type="checkbox"/>		—0412
411	Have you been married or lived with a woman only once, or more than once?	ONCE ..... 1 MORE THAN ONCE ..... 2	—0414 —0413
412	Have you ever been married to or lived as if married to any woman other than those you have just mentioned?	YES ..... 1 NO ..... 2	—0414
413	In total, how many women have you been married to or lived with as if married in your whole life?	NUMBER OF WOMEN ..... <input type="text"/>	
414	CHECK 409 AND 411:  ONLY ONE WIFE/ PARTNER <input type="checkbox"/> AND 411=ONCE 3  In what month and year did you start living with your wife/partner?  OTHER <input type="checkbox"/> 3  Now we will talk about your first wife/partner. In what month and year did you start living with her?	MONTH ..... <input type="text"/> DOES NOT KNOW MONTH ..... 98 YEAR ..... <input type="text"/> DOES NOT KNOW YEAR ..... 9998	—0416
415	How old were you when you started living with her?	AGE ..... <input type="text"/>	
416	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family life issues.  How old were you when you first had sexual intercourse with a woman (if ever)?	NEVER ..... 00 AGE IN YEARS ..... <input type="text"/> FIRST TIME WHEN STARTED LIVING WITH (FIRST) WIFE/PARTNER ..... 95	—0448
416A	CHECK 108:  15-24 YEARS OLD <input type="checkbox"/> 3  25-54 YEARS OLD <input type="checkbox"/>		—0417
416B	The first time you had sexual intercourse, did you use a condom?	YES ..... 1 NO ..... 2	
417	When was the last time you had sexual intercourse with a woman?  RECORD 'YEARS AGO' ONLY IF LAST INTERCOURSE WAS ONE OR MORE YEARS AGO.  IF 12 MONTHS OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO ..... 1 <input type="text"/> WEEKS AGO ..... 2 <input type="text"/> MONTHS AGO ..... 3 <input type="text"/> YEARS AGO ..... 4 <input type="text"/>	—0445
418	The last time you had sexual intercourse with a woman, did you use a condom?	YES ..... 1 NO ..... 2	—0420
419	What was the main reason you used a condom on that occasion?	WANTED TO PREVENT DISEASE ..... 1 WANTED TO PREVENT PREGNANCY.. 2 WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNER/THOUGHT SHE HAD OTHER PARTNERS ..... 4 PARTNER REQUESTED/INSISTED ..... 5 OTHER ..... 6 (SPECIFY)	—0424

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
420	CHECK 302(02):  <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> RESPONDENT NOT STERILISED <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-top: 5px;"> 3 </div> </div> <div style="text-align: center;"> RESPONDENT STERILISED <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-top: 5px;"> </div> </div> </div>		—0424
421	The last time you had sexual intercourse with a woman, did you or she do something or use any method to avoid a pregnancy?	YES ..... 1 NO ..... 2 UNSURE/DON'T KNOW ..... 8	—0423 —0424
422	What method was used?  IF MORE THAN ONE METHOD USED, RECORD THE HIGHEST METHOD ON THE LIST.	FEMALE STERILISATION ..... 01 PILL ..... 03 IUD ..... 04 INJECTABLES ..... 05 IMPLANTS ..... 06 FEMALE CONDOM ..... 08 RHYTHM, NATURAL METHOD ..... 09 WITHDRAWAL ..... 10  OTHER ..... 96 (SPECIFY) DON'T KNOW ..... 98	—0424
423	What is the main reason a method was not used?	CASUAL PARTNER, DOESN'T CARE .. 11 CONTRACEPTION IS WOMEN'S BUSINESS ..... 12 WOMAN IS MENOPAUSAL/ HAD HYSTERECTOMY ..... 23 COUPLE INFERTILE/SUB-FERTILE ..... 24 WOMAN WAS PREGNANT ..... 25 WOMAN WAS AMENORRHEIC ..... 26 WOMAN WAS BREASTFEEDING ..... 27 WANTED (MORE) CHILDREN ..... 28  RESPONDENT OPPOSED ..... 31 WOMAN OPPOSED ..... 32 OTHERS OPPOSED ..... 33 RELIGIOUS PROHIBITION ..... 34  KNOWS NO METHOD ..... 41 KNOWS NO SOURCE ..... 42  HEALTH CONCERNS ..... 51 FEAR OF SIDE EFFECTS ..... 52 LACK OF ACCESS/TOO FAR ..... 53 COST TOO MUCH ..... 54 INCONVENIENT TO USE ..... 55 INTERFERES WITH BODY'S NORMAL PROCESSES ..... 56  OTHER ..... 96 (SPECIFY) DOES NOT KNOW ..... 98	
424	What is your relationship to the woman with whom you last had sex?  IF WOMAN IS "GIRLFRIEND" OR "FIANCÉE", ASK: Was your girlfriend/fiancée living with you when you last had sex?  IF YES, RECORD '01'. IF NO, RECORD '02'.	WIFE/LIVE-IN PARTNER ..... 01 WOMAN IS GIRLFRIEND/FIANCÉE ..... 02 OTHER FRIEND ..... 03 CASUAL ACQUAINTANCE ..... 04 RELATIVE ..... 05 COMMERCIAL SEX WORKER ..... 06  OTHER ..... 96 (SPECIFY)	—0426
425	For how long have you had (or did you have) a sexual relationship with this woman?  IF ONLY HAD SEX WITH THIS WOMAN ONCE, WRITE '01' DAYS.	DAYS ..... 1 WEEKS ..... 2 MONTHS ..... 3 YEARS ..... 4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
426	Have you had sex with any other woman in the last 12 months?	YES ..... 1 NO ..... 2	—0445
427	The last time you had sexual intercourse with another woman, did you use a condom?	YES ..... 1 NO ..... 2	—0429
428	What is the main reason you used a condom on that occasion?	WANTED TO PREVENT DISEASE ..... 1 WANTED TO PREVENT PREGNANCY.. 2 WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNER/THOUGHT SHE HAD OTHER PARTNERS ..... 4 PARTNER REQUESTED/INSISTED ..... 5 OTHER ..... 6 (SPECIFY)	—0433
429	CHECK 302(02):  RESPONDENT NOT STERILISED <input type="checkbox"/> 3 RESPONDENT STERILISED <input type="checkbox"/>		—0433
430	The last time you had sexual intercourse with this woman, did you or she do something or use any method to avoid a pregnancy?	YES ..... 1 NO ..... 2 UNSURE/DON'T KNOW ..... 8	—0432 —0433
431	What method was used?  IF MORE THAN ONE METHOD USED, CIRCLE THE HIGHEST METHOD ON THE LIST.	FEMALE STERILISATION ..... 01 PILL ..... 03 IUD ..... 04 INJECTABLES ..... 05 IMPLANTS ..... 06 FEMALE CONDOM ..... 08 RHYTHM, NATURAL METHOD ..... 09 WITHDRAWAL ..... 10 OTHER ..... 96 (SPECIFY) DON'T KNOW ..... 98	—0433
432	What is the main reason a method was not used?	CASUAL PARTNER, DOESN'T CARE.. 11 CONTRACEPTION IS WOMEN'S BUSINESS ..... 12 WOMAN IS MENOPAUSAL/ HAD HYSTERECTOMY ..... 23 COUPLE INFERTILE/SUB-FERTILE ..... 24 WOMAN WAS PREGNANT ..... 25 WOMAN WAS AMENORRHEIC ..... 26 WOMAN WAS BREASTFEEDING ..... 27 WANTED (MORE) CHILDREN ..... 28  RESPONDENT OPPOSED ..... 31 WOMAN OPPOSED ..... 32 OTHERS OPPOSED ..... 33 RELIGIOUS PROHIBITION ..... 34  KNOWS NO METHOD ..... 41 KNOWS NO SOURCE ..... 42  HEALTH CONCERNS ..... 51 FEAR OF SIDE EFFECTS ..... 52 LACK OF ACCESS/TOO FAR ..... 53 COST TOO MUCH ..... 54 INCONVENIENT TO USE ..... 55 INTERFERES WITH BODY'S NORMAL PROCESSES ..... 56 OTHER ..... 96 (SPECIFY) DOES NOT KNOW ..... 98	



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																
433	What is your relationship to this other woman?  IF WOMAN IS "GIRLFRIEND" OR "FIANCÉE", ASK: Was your girlfriend/fiancée living with you when you last had sex?  IF YES, RECORD '01'. IF NO, RECORD '02'.	WIFE/LIVE-IN PARTNER ..... 01 WOMAN IS GIRLFRIEND/FIANCÉE ..... 02 OTHER FRIEND ..... 03 CASUAL ACQUAINTANCE ..... 04 RELATIVE ..... 05 COMMERCIAL SEX WORKER ..... 06  OTHER ..... 96 (SPECIFY)	—0435																
434	For how long have you had (or did you have) a sexual relationship with this woman?  IF ONLY HAD SEX WITH THIS WOMAN ONCE, WRITE '01' DAYS.	DAYS ..... 1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> WEEKS ..... 2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MONTHS ..... 3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEARS ..... 4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>																	
435	Other than these two women, have you had sex with any other woman in the last 12 months?	YES ..... 1 NO ..... 2	—0445																
436	The last time you had sexual intercourse with this third woman, did you use a condom?	YES ..... 1 NO ..... 2	—0438																
437	What is the main reason you used a condom on that occasion?	WANTED TO PREVENT DISEASE ..... 1 WANTED TO PREVENT PREGNANCY... 2 WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNER/THOUGHT SHE HAD OTHER PARTNERS ..... 4 PARTNER REQUESTED/INSISTED ..... 5  OTHER ..... 6 (SPECIFY)	—0442																
438	CHECK 302(02):  RESPONDENT NOT STERILISED <input type="checkbox"/> 3      RESPONDENT STERILISED <input type="checkbox"/>		—0442																
439	The last time you had sexual intercourse with this third woman, did you or she do something or use any method to avoid a pregnancy?	YES ..... 1 NO ..... 2 UNSURE/DON'T KNOW ..... 8	—0441 —0442																
440	What method was used?          IF MORE THAN ONE METHOD USED, RECORD THE HIGHEST METHOD ON THE LIST.	FEMALE STERILISATION ..... 01 PILL ..... 03 IUD ..... 04 INJECTABLES ..... 05 IMPLANTS ..... 06 FEMALE CONDOM ..... 08 RHYTHM, NATURAL METHOD ..... 09 WITHDRAWAL ..... 10  OTHER ..... 96 (SPECIFY) DON'T KNOW ..... 98	—0442																

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
441	What is the main reason a method was not used?	CASUAL PARTNER, DOESN'T CARE.. 11 CONTRACEPTION IS WOMEN'S BUSINESS ..... 12 WOMAN IS MENOPAUSAL/ HAD HYSTERECTOMY ..... 23 COUPLE INFERTILE/SUB-FERTILE..... 24 WOMAN WAS PREGNANT ..... 25 WOMAN WAS AMENORRHEIC ..... 26 WOMAN WAS BREASTFEEDING ..... 27 WANTED (MORE) CHILDREN ..... 28  RESPONDENT OPPOSED ..... 31 WOMAN OPPOSED ..... 32 OTHERS OPPOSED ..... 33 RELIGIOUS PROHIBITION ..... 34  KNOWS NO METHOD..... 41 KNOWS NO SOURCE ..... 42  HEALTH CONCERNS ..... 51 FEAR OF SIDE EFFECTS ..... 52 LACK OF ACCESS/TOO FAR ..... 53 COST TOO MUCH..... 54 INCONVENIENT TO USE ..... 55 INTERFERES WITH BODY'S NORMAL PROCESSES ..... 56  OTHER ..... 96 (SPECIFY) DOES NOT KNOW ..... 98	
442	What is your relationship to this woman?  IF WOMAN IS "GIRLFRIEND" OR "FIANCÉE", ASK: Was your girlfriend/fiancée living with you when you last had sex?  IF YES, RECORD '01'. IF NO, RECORD '02'.	WIFE/LIVE-IN PARTNER ..... 01 WOMAN IS GIRLFRIEND/FIANCÉE ..... 02 OTHER FRIEND ..... 03 CASUAL ACQUAINTANCE ..... 04 RELATIVE..... 05 COMMERCIAL SEX WORKER ..... 06  OTHER ..... 96 (SPECIFY)	—044
443	For how long have you had (or did you have) a sexual relationship with this woman?  IF ONLY HAD SEX WITH THIS WOMAN ONCE, WRITE '01' DAYS.	DAYS ..... 1 WEEKS ..... 2 MONTHS..... 3 YEARS ..... 4	
444	In total, with how many different women have you had sex in the last 12 months?	NUMBER OF PARTNERS .....	
445	Have you ever paid for sex?	YES ..... 1 NO..... 2	—048
446	How long ago was the last time you paid for sex?	DAYS AGO ..... 1 WEEKS AGO ..... 2 MONTHS AGO..... 3 YEARS AGO ..... 4	
447	The last time that you paid for sex, did you use a condom on that occasion?	YES ..... 1 NO ..... 2	
448	Do you know of a place where one can get condoms?	YES ..... 1 NO..... 2	—045

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
449	<p>What places do you know of where a person can get condoms?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p> <p>Any other place?</p> <p>RECORD ALL MENTIONED.</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL .....A</p> <p>GOVERNMENT HEALTH CENTRE .....B</p> <p>GOVERNMENT DISPENSARY .....C</p> <p>OTHER PUBLIC .....D</p> <p>(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>MISSION, CHURCH HOSP./CLINIC ....F</p> <p>FPAK HEALTH CENTRE/CLINIC .....G</p> <p>PRIVATE HOSPITAL OR CLINIC .....H</p> <p>PHARMACY/CHEMIST .....I</p> <p>NURSING/MATERNITY HOME .....K</p> <p>OTHER PRIVATE MEDICAL .....L</p> <p>(SPECIFY)</p> <p>MOBILE CLINIC .....M</p> <p>COMMUNITY-BASED DISTRIBUTOR ....N</p> <p>SHOP/KIOSK .....O</p> <p>FRIENDS/RELATIVES .....Q</p> <p>OTHER .....X</p> <p>(SPECIFY)</p>	
450	If you wanted to, could you yourself get a condom?	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>DOES NOT KNOW/UNSURE ..... 8</p>	
451	<p>CHECK 302(07), 416B, 418, 427, 436, AND 447: EVER USED A CONDOM?</p> <p>AT LEAST ONE 'YES' <input type="checkbox"/> HAS USED CONDOM 3</p> <p>NO 'YES' <input type="checkbox"/> NEVER USED CONDOMS</p>		-0460
452	How old were you when you used a condom for the first time?	<p>AGE AT FIRST USE ..... <input type="text"/> <input type="text"/></p> <p>DOES NOT REMEMBER ..... 98</p>	
453	<p>Why did you use a condom that first time?</p> <p>PROBE: Any other reason?</p> <p>RECORD ALL REASONS MENTIONED.</p>	<p>TO AVOID PREGNANCY .....A</p> <p>TO AVOID GETTING AIDS/HIV .....B</p> <p>TO AVOID GETTING AN STD .....C</p> <p>TO AVOID INFECTING PARTNER .....D</p> <p>TO EXPERIMENT/TRY A CONDOM .....E</p> <p>OTHER .....X</p> <p>(SPECIFY)</p>	
454	<p>Have you ever experienced any problems with using condoms?</p> <p>IF YES: What problems have you experienced?</p> <p>PROBE: Any other problems?</p> <p>CIRCLE ALL PROBLEMS MENTIONED.</p>	<p>TOO EXPENSIVE .....A</p> <p>EMBARRASSING TO BUY/OBTAIN .....B</p> <p>DIFFICULT TO DISPOSE OF .....C</p> <p>DIFFICULT TO PUT ON/TAKE OFF .....D</p> <p>SPOILS THE MOOD .....E</p> <p>DIMINISHES PLEASURE .....F</p> <p>WIFE PARTNER OBJECTS/DOES NOT LIKE .....G</p> <p>WIFE/PARTNER GOT PREGNANT .....H</p> <p>INCONVENIENT TO USE/MESSY .....I</p> <p>CONDOM BROKE .....J</p> <p>OTHER .....X</p> <p>(SPECIFY)</p> <p>NO PROBLEM .....Y</p>	
455	<p>What brand of condom do you usually use?</p> <p>ASK TO SEE CONDOM PACKET IF BRAND NOT KNOWN.</p>	<p>DUREX ..... 1</p> <p>ROUGH RIDER ..... 2</p> <p>SURE ..... 3</p> <p>TRUST ..... 4</p> <p>NO BRAND ..... 5</p> <p>OTHER ..... 6</p> <p>(SPECIFY)</p> <p>DON'T KNOW BRAND ..... 8</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																												
456	<p>Where do you usually get the condoms?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL.....A</p> <p>GOVERNMENT HEALTH CENTRE .....B</p> <p>GOVERNMENT DISPENSARY .....C</p> <p>OTHER PUBLIC ..... D</p> <p>(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>MISSION, CHURCH HOSP./CLINIC .... F</p> <p>FPAK HEALTH CENTRE/CLINIC ..... G</p> <p>PRIVATE HOSPITAL OR CLINIC.....H</p> <p>PHARMACY/CHEMIST.....I</p> <p>NURSING/MATERNITY HOME .....K</p> <p>OTHER PRIVATE MEDICAL .....L</p> <p>(SPECIFY)</p> <p>MOBILE CLINIC ..... M</p> <p>COMMUNITY-BASED DISTRIBUTOR.....N</p> <p>SHOP/KIOSK ..... O</p> <p>FRIENDS/RELATIVES.....Q</p> <p>OFFICE .....R</p> <p>OTHER ..... X</p> <p>(SPECIFY)</p>																													
457	How much do you usually pay for a packet of condoms?	<p>COST PER PACKET..... <input type="text"/> <input type="text"/> <input type="text"/></p> <p>FREE ..... 995</p> <p>DOES NOT KNOW ..... 998</p>	<input type="checkbox"/> 0460																												
458	How many condoms are in each packet?	NUMBER..... <input type="text"/> <input type="text"/>																													
459	Do you think that at this price condoms are inexpensive, just affordable, or too expensive?	<p>INEXPENSIVE ..... 1</p> <p>JUST AFFORDABLE ..... 2</p> <p>TOO EXPENSIVE ..... 3</p>																													
460	<p>I will now read you some statements about condom use. Please tell me if you agree or disagree with each.</p> <p>a) Condoms diminish a man's sexual pleasure.</p> <p>b) It's okay to re-use a condom if you wash it.</p> <p>c) Condoms protect against disease.</p> <p>d) Buying condoms is embarrassing.</p> <p>e) A woman has no right to tell a man to use a condom.</p> <p>f) Condoms contain HIV.</p>	<table border="1"> <thead> <tr> <th></th><th><u>AGREE</u></th><th><u>DISAGREE</u></th><th><u>DK</u></th></tr> </thead> <tbody> <tr> <td>a)</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>b)</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>c)</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>d)</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>e)</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>f)</td><td>1</td><td>2</td><td>8</td></tr> </tbody> </table>		<u>AGREE</u>	<u>DISAGREE</u>	<u>DK</u>	a)	1	2	8	b)	1	2	8	c)	1	2	8	d)	1	2	8	e)	1	2	8	f)	1	2	8	
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e)	1	2	8																												
f)	1	2	8																												
461	<p>In your opinion, is it acceptable or unacceptable for condoms to be advertised:</p> <p>on the radio?</p> <p>on the TV?</p> <p>in newspapers?</p>	<table border="1"> <thead> <tr> <th></th><th><u>ACCEP-</u> <u>TABLE</u></th><th><u>NOT ACCEP-</u> <u>TABLE</u></th><th><u>DK/ UN-</u> <u>SURE</u></th></tr> </thead> <tbody> <tr> <td>ON THE RADIO.....</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>ON THE TV .....</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>NEWSPAPERS .....</td><td>1</td><td>2</td><td>8</td></tr> </tbody> </table>		<u>ACCEP-</u> <u>TABLE</u>	<u>NOT ACCEP-</u> <u>TABLE</u>	<u>DK/ UN-</u> <u>SURE</u>	ON THE RADIO.....	1	2	8	ON THE TV .....	1	2	8	NEWSPAPERS .....	1	2	8													
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NEWSPAPERS .....	1	2	8																												

## SECTION 5. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	<b>CHECK 401:</b>  <div style="display: flex; justify-content: space-around;"> <div> <b>CURRENTLY MARRIED OR LIVING TOGETHER</b> <input type="checkbox"/> </div> <div> <b>NOT MARRIED</b> <input type="checkbox"/> </div> </div> <div style="text-align: center; margin-top: -10px;"> <div style="display: inline-block; text-align: left; margin-right: 10px;">3</div> <div style="display: inline-block; text-align: left;">3</div> </div>		—0505
502	Is your wife/partner currently pregnant? IF MORE THAN ONE WIFE/PARTNER, ASK: Are any of your wives/partners currently pregnant?	YES..... 1 NO ..... 2 NOT SURE ..... 3	
503	<b>CHECK 502:</b>  <div style="display: flex; justify-content: space-around;"> <div> <b>WIFE NOT PREG- NANT/ NOT SURE</b> <input type="checkbox"/>  (CODE '2' OR '3') </div> <div> <b>YES, WIFE PREGNANT</b> <input type="checkbox"/>  (CODE '1') </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children? </div> <div style="width: 45%;"> Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children? </div> </div>	<div style="display: flex; justify-content: space-between;"> <div> HAVE (A/ANOTHER) CHILD ..... 1  NO MORE/NONE ..... 2  WIFE CANNOT GET PREGNANT ..... 3  UNDECIDED/DON'T KNOW ..... 8 </div> <div style="font-size: 2em; line-height: 1;">}</div> <div>0505</div> </div>	
504	How long would you like to wait from now before the birth of (a/another) child?	MONTHS ..... 1 <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> YEARS..... 2 <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>  SOON/NOW ..... 993 WIFE CANNOT GET PREGNANT ..... 994 AFTER MARRIAGE..... 995  OTHER ..... 996 (SPECIFY) DOES NOT KNOW ..... 998	
505	<b>CHECK 203 AND 205:</b>  <div style="display: flex; justify-content: space-around;"> <div> <b>HAS LIVING CHILDREN</b> <input type="checkbox"/>  3   If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? </div> <div> <b>NO LIVING CHILDREN</b> <input type="checkbox"/>  3   If you could choose exactly the number of children to have in your whole life, how many would that be? </div> </div> PROBE FOR A NUMERIC RESPONSE.	NONE ..... 00  NUMBER ..... <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>  OTHER ..... 96 (SPECIFY)	—0507   —0507
506	How many of these children would you like to be boys, how many would you like to be girls and for how many would the sex not matter?	<div style="display: flex; justify-content: space-around; margin-bottom: 5px;"> <b>BOYS</b> <b>GIRLS</b> <b>EITHER</b> </div> NUMBER .... <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>  OTHER ..... 96 (SPECIFY)	
507	Would you say that you approve or disapprove of couples using a method to avoid getting pregnant?	APPROVE ..... 1 DISAPPROVE ..... 2 DON'T KNOW/UNSURE ..... 8	
508	In the last few months have you heard about family planning:  On the radio? On the television? In a newspaper or magazine?	<div style="display: flex; justify-content: space-around; margin-bottom: 5px;"> <b>YES</b> <b>NO</b> </div> RADIO ..... 1      2 TELEVISION..... 1      2 NEWSPAPER OR MAGAZINE..... 1      2	
509	In the last few months, have you discussed family planning with a health worker or health professional?	YES..... 1 NO ..... 2	

## SECTION 6. HEALTH ISSUES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	Now I would like to ask you some questions about health. When a child has diarrhoea, should he or she be given less to drink than usual, about the same amount, or more to drink than usual?	LESS..... 1 ABOUT THE SAME..... 2 MORE..... 3 DOES NOT KNOW..... 8	
602	Have you ever heard of a special product called [LOCAL NAME FOR ORS] you can get for the treatment of diarrhoea?	YES..... 1 NO..... 2	
603	Now please tell me about yourself. Do you smoke cigarettes or use tobacco?  IF YES: What type of tobacco do you smoke?  CIRCLE ALL TYPES MENTIONED.	YES, CIGARETTES.....A YES, PIPE.....B YES, OTHER TOBACCO.....C NO.....Y	
604	CHECK 603: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">                         CODE 'A' CIRCLED <input type="checkbox"/> </div> <div style="text-align: center;">                         CODE 'A' NOT CIRCLED <input type="checkbox"/> </div> </div> <div style="text-align: center; margin-top: 5px;"> <span style="border: 1px solid black; padding: 2px 5px;">3</span> </div>	_____	—0606
605	In the last 24 hours, how many cigarettes did you smoke?	CIGARETTES ..... <span style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; vertical-align: middle;"></span>	
606	Have you ever drunk any kind of alcohol like beer, wine, whiskey, gin, vodka, etc.?	YES..... 1 NO..... 2	—0701
607	In the last month, on how many days did you drink any alcohol-containing beverage?  IF EVERY DAY, RECORD '30'.	NUMBER OF DAYS ..... <span style="border: 1px solid black; display: inline-block; width: 20px; height: 20px; vertical-align: middle;"></span>  NONE.....95	

## SECTION 7. AIDS AND OTHER SEXUALLY-TRANSMITTED DISEASES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES..... 1 NO..... 2	-0720
702	Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	1-0709
703	What can a person do?  Anything else?  RECORD ALL MENTIONED.	ABSTAIN FROM SEX..... A USE CONDOMS..... B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER..... C LIMIT NUMBER OF SEX PARTNERS..... D AVOID SEX WITH PROSTITUTES..... E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS..... F AVOID SEX WITH HOMOSEXUALS..... G AVOID SEX WITH DRUG USERS..... H AVOID BLOOD TRANSFUSIONS..... I AVOID INJECTIONS..... J AVOID SHARING RAZORS/BLADES..... K AVOID KISSING..... L AVOID MOSQUITO BITES..... M SEEK PROTECTION FROM TRADITIONAL HEALER..... N  OTHER..... W (SPECIFY)  OTHER..... X (SPECIFY) DOES NOT KNOW..... Z	
704	Can people reduce their chances of getting the AIDS virus by having just one sex partner who has no other partners?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	
705	Can a person get the AIDS virus from mosquito or other insect bites?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	
706	Can people reduce their chances of getting the AIDS virus by using a condom every time they have sex?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	
707	Can a person get the AIDS virus by sharing utensils with a person who has AIDS?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	
708	Can people reduce their chances of getting the AIDS virus by not having sex at all?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	
709	Is it possible for a healthy-looking person to have the AIDS virus?	YES, POSSIBLE..... 1 NO, NOT POSSIBLE..... 2 DOES NOT KNOW..... 8	
710	Do you know someone personally who has the virus that causes AIDS or someone who died of AIDS?	YES..... 1 NO..... 2	
711	Can the virus that causes AIDS be transmitted from a mother to a child?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8	1-0713
712	Can the virus that causes AIDS be transmitted from a mother to her child...  During pregnancy? During delivery? By breastfeeding?	<div style="text-align: right;"><b>YES NO DK</b></div> DURING PREGNANCY..... 1 2 8 DURING DELIVERY..... 1 2 8 BY BREASTFEEDING..... 1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
712A	Can a mother who is infected with the AIDS virus reduce the risk of giving the virus to the baby by taking certain drugs during pregnancy?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8	
713	CHECK 401:  YES, CURRENTLY MARRIED/LIVING WITH A WOMAN <input type="checkbox"/> 3 OR NO, NOT MARRIED OR LIVING WITH A WOMAN <input type="checkbox"/>		—0714A
714	Have you ever talked with (your wife/woman you are living with) about ways to prevent getting the virus that causes AIDS? IF MORE THAN ONE WIFE/PARTNER, ASK ABOUT ANY OF HIS WIVES/PARTNERS.	YES ..... 1 NO ..... 2	
714A	Would you buy fresh vegetables from a vendor who has the AIDS virus?	YES ..... 1 NO ..... 2 DOES NOT KNOW/UNSURE ..... 8	
715	If a member of your family got infected with the virus that causes AIDS, would you want it to remain a secret or not?	YES, KEEP IT SECRET ..... 1 NO ..... 2 DOES NOT KNOW/UNSURE ..... 8	
716	If a relative of yours became sick with the virus that causes AIDS, would you be willing to care for her or him in your own household?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS ..... 8	
716A	If a female teacher has the AIDS virus, should she be allowed to continue teaching in school?	CAN CONTINUE ..... 1 SHOULD NOT CONTINUE ..... 2 DON'T KNOW /UNSURE/DEPENDS ..... 8	
716B	Should children aged 12-14 be taught about using a condom to avoid AIDS?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS ..... 8	
716B1	Do you think your chances of getting AIDS are small, moderate, great, or no risk at all?	SMALL ..... 1 MODERATE ..... 2 GREAT ..... 3 NO RISK AT ALL ..... 4 HAS AIDS ..... 5	0716B3 —0716B4
716B2	Why do you think that you have (no risk/a small chance) of getting AIDS?  Any other reasons?  CIRCLE ALL MENTIONED.	IS NOT HAVING SEX ..... A USES CONDOMS ..... B HAS ONLY ONE PARTNER ..... C LIMITS THE NUMBER OF PARTNERS... D PARTNER HAS NO OTHER PARTNERS. E  OTHER _____ X (SPECIFY)	0716B4
716B3	Why do you think that you have a (moderate, great) chance of getting AIDS?  Any other reasons?  CIRCLE ALL MENTIONED.	DOES NOT USE CONDOMS ..... A HAS MORE THAN 1 SEX PARTNER ..... B PARTNER HAS OTHER PARTNERS ..... C HOMOSEXUAL CONTACTS ..... D HAD BLOOD TRANSFUSION/INJECTION E  OTHER _____ X (SPECIFY)	
716B4	Have you ever heard of VCT?	YES ..... 1 NO ..... 2	
716C	I do not want to know the results, but have you ever been tested to see if you have the AIDS virus?	YES ..... 1 NO ..... 2	—0716D
716C1	When was the last time you were tested?	LESS THAN 12 MONTHS AGO ..... 1 12-23 MONTHS AGO ..... 2 2 YEARS OR MORE AGO ..... 3	



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
716C2	The last time you were tested, did you ask for the test, was it offered to you and you accepted, or was it required?	ASKED FOR THE TEST ..... 1 OFFERED AND ACCEPTED ..... 2 REQUIRED ..... 3	
716C3	I do not want to know the results, but did you get the results of the test?	YES ..... 1 NO ..... 2	—0716FX —0716FX
716D	Would you want to be tested for the AIDS virus?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS ..... 8	
716E	Do you know a place where you could go to get an AIDS test?	YES ..... 1 NO ..... 2	—0717
716F	Where can you go for the test?	<b>PUBLIC SECTOR</b> GOVERNMENT HOSPITAL ..... 11 GOVT. HEALTH CENTRE/CLINIC ..... 12 GOVERNMENT DISPENSARY ..... 13  OTHER PUBLIC ..... 16 (SPECIFY)	
716F X	Where did you go for the test?  IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)	<b>PRIVATE MEDICAL SECTOR</b> MISSION/CHURCH HOSP. CLINIC ..... 21 FPAK HEALTH CENTRE/CLINIC ..... 22 PRIVATE HOSPITAL/CLINIC ..... 23 VCT CENTRE ..... 24 NURSING/MATERNITY HOME ..... 26 BLOOD TRANSFUSION SERVICE ..... 31  OTHER ..... 96 (SPECIFY)	
717	(Apart from AIDS), have you heard about (other) infections that can be transmitted through sexual contact?	YES ..... 1 NO ..... 2	—0719A
718	If a man has a sexually transmitted disease, what symptoms might he have?  Any others?  CIRCLE ALL MENTIONED.	ABDOMINAL PAIN ..... A GENITAL DISCHARGE/DRIPPING ..... B FOUL SMELLING DISCHARGE ..... C BURNING PAIN ON URINATION ..... D REDNESS/INFLAMMATION IN GENITAL AREA ..... E SWELLING IN GENITAL AREA ..... F GENITAL SORES/ULCERS ..... G GENITAL WARTS ..... H GENITAL ITCHING ..... I BLOOD IN URINE ..... J LOSS OF WEIGHT ..... K IMPOTENCE/NO ERECTION ..... L  OTHER ..... W (SPECIFY)  OTHER ..... X (SPECIFY) NO SYMPTOMS ..... Y DON'T KNOW ..... Z	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
719	<p>If a woman has a sexually transmitted disease, what symptoms might she have?</p> <p>Any others?</p> <p>CIRCLE ALL MENTIONED.</p>	ABDOMINAL PAIN .....A GENITAL DISCHARGE .....B FOUL SMELLING DISCHARGE .....C BURNING PAIN ON URINATION .....D REDNESS/INFLAMMATION IN GENITAL AREA .....E SWELLING IN GENITAL AREA .....F GENITAL SORES/ULCERS .....G GENITAL WARTS .....H GENITAL ITCHING .....I BLOOD IN URINE .....J LOSS OF WEIGHT .....K HARD TO GET PREGNANT/HAVE A CHILD .....L OTHER .....W (SPECIFY) OTHER .....X (SPECIFY) NO SYMPTOMS .....Y DON'T KNOW .....Z	
719A	CHECK 416: <div style="display: flex; justify-content: space-around; align-items: center;"> <div>             HAS HAD SEXUAL INTERCOURSE <input type="checkbox"/> </div> <div>             HAS NOT HAD SEXUAL INTERCOURSE <input type="checkbox"/> </div> </div> <div style="text-align: center; margin-top: 5px;">3</div>		-0720
719B	Now I would like to ask you some questions about your health in the last 12 months. During the last 12 months, have you had a sexually-transmitted disease?	YES .....1 NO .....2 DON'T KNOW .....8	
719C	Sometimes, men experience an abnormal discharge from their penis. During the last 12 months, have you had an abnormal discharge from your penis?	YES .....1 NO .....2 DON'T KNOW .....8	
719D	Sometimes men have a sore or ulcer on or near their penis. During the last 12 months, have you had a sore or ulcer on or near your penis?	YES .....1 NO .....2 DON'T KNOW .....8	
719E	CHECK 719B/719C/719D: <div style="display: flex; justify-content: space-around; align-items: center;"> <div>             HAS HAD AN INFECTION <input type="checkbox"/> </div> <div>             HAS NOT HAD AN INFECTION OR DOES NOT KNOW <input type="checkbox"/> </div> </div> <div style="text-align: center; margin-top: 5px;">3</div>		-0720
719F	The last time you had (PROBLEM(S) FROM 719B/719C/719D), did you seek any kind of advice or treatment?	YES .....1 NO .....2	-0719H
719G	The last time you had (PROBLEM(S) FROM 719B/719C/719D), did you do any of the following? Did you....  Go to a clinic, hospital or private doctor? Consult a traditional healer? Seek advice or buy medicines in a shop or pharmacy? Ask for advice from friends or relatives?	<div style="display: flex; justify-content: space-around; font-weight: bold;"> <span>YES</span> <span>NO</span> </div> CLINIC/HOSPITAL .....1      2 TRADITIONAL HEALER...1      2 SHOP/PHARMACY .....1      2 FRIENDS/RELATIVES ....1      2	
719H	When you had (PROBLEM(S) FROM 719B/719C/719D), did you tell the person(s) with whom you were having sex?	YES .....1 NO .....2 SOME/NOT AT ALL .....3 DID NOT HAVE A PARTNER .....4	-0720
719I	When you had (PROBLEM(S) FROM 719B/719C/719D), did you do anything to avoid infecting your sexual partner(s)?	YES .....1 NO .....2 PARTNER(S) ALREADY INFECTED .....3	-0720
719J	What did you do to avoid infecting your partner(s)? Did you....  Use medicine? Stop having sex? Use a condom when having sex?	<div style="display: flex; justify-content: space-around; font-weight: bold;"> <span>YES</span> <span>NO</span> </div> USE MEDICINE .....1      2 STOP SEX .....1      2 USE CONDOM .....1      2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
720	Are you circumcised?	YES..... 1 NO..... 2	
721	In many communities, girls are also circumcised. In your community, is female circumcision practiced?	YES..... 1 NO..... 2	
722	CHECK 203 AND 205:  HAS AT LEAST ONE LIVING DAUGHTER <input type="checkbox"/> 3  HAS NO LIVING DAUGHTER <input type="checkbox"/>		-0801
723	Has your eldest daughter been circumcised?	YES..... 1 NO..... 2 DOES NOT KNOW ..... 8	-0801 -0801
724	Do you plan to have your eldest daughter circumcised?	YES..... 1 NO..... 2 DOES NOT KNOW ..... 8	

## SECTION 8. ATTITUDES TOWARDS WOMEN

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																														
801	In a couple, who do you think should have the greater say in each of the following decisions: the husband, the wife or both equally:	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th><th style="width: 10%;">HUS-BAND</th><th style="width: 10%;">WIFE</th><th style="width: 10%;">BOTH EQUALLY</th><th style="width: 10%;">DK/DEPENDS</th></tr> </thead> <tbody> <tr><td>a) making large household purchases?</td><td>a) 1</td><td>2</td><td>3</td><td>8</td></tr> <tr><td>b) making small daily household purchases?</td><td>b) 1</td><td>2</td><td>3</td><td>8</td></tr> <tr><td>c) deciding when to visit family, friends or relatives?</td><td>c) 1</td><td>2</td><td>3</td><td>8</td></tr> <tr><td>d) deciding what to do with the money she earns for her work?</td><td>d) 1</td><td>2</td><td>3</td><td>8</td></tr> <tr><td>e) deciding how many children to have and when to have them?</td><td>e) 1</td><td>2</td><td>3</td><td>8</td></tr> </tbody> </table>		HUS-BAND	WIFE	BOTH EQUALLY	DK/DEPENDS	a) making large household purchases?	a) 1	2	3	8	b) making small daily household purchases?	b) 1	2	3	8	c) deciding when to visit family, friends or relatives?	c) 1	2	3	8	d) deciding what to do with the money she earns for her work?	d) 1	2	3	8	e) deciding how many children to have and when to have them?	e) 1	2	3	8	
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802	Sometimes a husband is annoyed or angered by things that his wife/partner does. In your opinion, is a husband justified in hitting or beating his wife in the following situations...	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th><th style="width: 10%;"><u>YES</u></th><th style="width: 10%;"><u>NO</u></th><th style="width: 10%;"><u>DK/DEPENDS</u></th></tr> </thead> <tbody> <tr><td>a) If she goes out without telling him?</td><td>a) 1</td><td>2</td><td>8</td></tr> <tr><td>b) If she neglects the children?</td><td>b) 1</td><td>2</td><td>8</td></tr> <tr><td>c) If she argues with him?</td><td>c) 1</td><td>2</td><td>8</td></tr> <tr><td>d) If she refuses to have sex with him?</td><td>d) 1</td><td>2</td><td>8</td></tr> <tr><td>e) If she burns the food?</td><td>e) 1</td><td>2</td><td>8</td></tr> </tbody> </table>		<u>YES</u>	<u>NO</u>	<u>DK/DEPENDS</u>	a) If she goes out without telling him?	a) 1	2	8	b) If she neglects the children?	b) 1	2	8	c) If she argues with him?	c) 1	2	8	d) If she refuses to have sex with him?	d) 1	2	8	e) If she burns the food?	e) 1	2	8							
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803	When a wife knows her husband has a sexually transmitted disease, is she justified in asking her husband to use a condom?	YES..... 1 NO..... 2 DOES NOT KNOW ..... 8																															
804	Husbands and wives do not always agree on everything. Please tell me if you think a wife is justified in refusing to have sex with her husband if...	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th><th style="width: 10%;"><u>YES</u></th><th style="width: 10%;"><u>NO</u></th><th style="width: 10%;"><u>DK/DEPENDS</u></th></tr> </thead> <tbody> <tr><td>a) She is tired and not in the mood?</td><td>a) 1</td><td>2</td><td>8</td></tr> <tr><td>b) She has recently given birth?</td><td>b) 1</td><td>2</td><td>8</td></tr> <tr><td>c) She knows her husband has sex with other women?</td><td>c) 1</td><td>2</td><td>8</td></tr> <tr><td>d) She knows her husband has a sexually transmitted disease?</td><td>d) 1</td><td>2</td><td>8</td></tr> </tbody> </table>		<u>YES</u>	<u>NO</u>	<u>DK/DEPENDS</u>	a) She is tired and not in the mood?	a) 1	2	8	b) She has recently given birth?	b) 1	2	8	c) She knows her husband has sex with other women?	c) 1	2	8	d) She knows her husband has a sexually transmitted disease?	d) 1	2	8											
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805	Do you think that if a woman refuses to have sex with her husband when he wants her to, he has the right to...	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th><th style="width: 10%;"><u>YES</u></th><th style="width: 10%;"><u>NO</u></th><th style="width: 10%;"><u>DK/DEPENDS</u></th></tr> </thead> <tbody> <tr><td>a) Get angry and reprimand her?</td><td>a) 1</td><td>2</td><td>8</td></tr> <tr><td>b) Refuse to give her money or other means of financial support?</td><td>b) 1</td><td>2</td><td>8</td></tr> <tr><td>c) Use force and have sex with her even if she does not want to?</td><td>c) 1</td><td>2</td><td>8</td></tr> <tr><td>d) Go and have sex with another woman</td><td>d) 1</td><td>2</td><td>8</td></tr> </tbody> </table>		<u>YES</u>	<u>NO</u>	<u>DK/DEPENDS</u>	a) Get angry and reprimand her?	a) 1	2	8	b) Refuse to give her money or other means of financial support?	b) 1	2	8	c) Use force and have sex with her even if she does not want to?	c) 1	2	8	d) Go and have sex with another woman	d) 1	2	8											
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806	RECORD THE TIME.	HOUR..... <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> MINUTES ..... <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>																															

## INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

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COMMENTS ON SPECIFIC QUESTIONS:

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ANY OTHER COMMENTS:

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### SUPERVISOR'S OBSERVATIONS

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NAME OF THE SUPERVISOR: \_\_\_\_\_ DATE: \_\_\_\_\_

### EDITOR'S OBSERVATIONS

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NAME OF EDITOR: \_\_\_\_\_ DATE: \_\_\_\_\_