National Family Health Survey
(MCH and Family Planning)

West Bengal
1992

International Institute for Population Sciences, Bombay

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PREFACE

The National Family Health Survey (NFHS) is an important component of the Project to Strengthen the Survey Research Capabilities of the Population Research Centres in India, launched by the Ministry of Health and Family Welfare (MOHFW), New Delhi, in 1991. It was undertaken with the principal objective of providing state-level and national-level estimates of fertility, infant and child mortality, the practice of family planning, maternal and child health care and the utilization of services provided for mothers and children. Another important objective of the NFHS was to provide high quality data to academicians and researchers for undertaking analytical research on various population and health topics.

The MOHFW designated the International Institute for Population Sciences (IIPS), Bombay, as the nodal agency for providing coordination and technical guidance to the NFHS. The data collection for the NFHS was undertaken by various Consulting Organizations (COs) in collaboration with the concerned Population Research Centres (PRCs) in each state. The East-West Center/Macro International provided technical assistance for all of the survey operations. Funding for the NFHS was provided by the United States Agency for International Development (USAID), New Delhi.

The NFHS covered 24 states and the National Capital Territory of Delhi (the erstwhile Union Territory of Delhi), which comprise 99 percent of the total population of India. In all, 89,777 ever-married women age 13-49 and 88,562 households were covered, using uniform questionnaires, sample designs and field procedures. The data collection was carried out on a state-by-state basis from April 1992 to September 1993. Preliminary reports with selected results were prepared for each state by the end of 1993 and presented to policymakers and programme administrators responsible for improving family welfare programmes in most states.

The final state-level reports are based on a tabulation plan discussed, finalized and approved at a workshop held at Vadodara during 5-7 December 1992. The workshop was attended by representatives of all of the participating agencies. IIPS finalized the tabulation plan and produced the tables and graphs for the final reports according to the recommendations of the workshop. The final state-level reports are being written by representatives from the concerned PRC for each state, with the assistance of faculty members from IIPS and demographers from the East-West Center/Macro International. Since there is no PRC in West Bengal, this report has been prepared by the faculty of the IIPS in collaboration with the representatives of East-West Centre/Macro International, U.S.A. Each report has been reviewed by an Indian expert in the field of population sciences and revised after taking into consideration the suggestions of the reviewer.

The final reports contain invaluable information on fertility and family planning practices, and the status of health and welfare of Indian mothers and their children. The descriptive text of each final report presents the findings in a clear and thorough manner for use by population and health experts, policymakers and administrators.

Never before in India has such a large population and health survey been undertaken and completed in the stipulated time period. I am, therefore, very happy to present the final NFHS state-level report for West Bengal. I do hope that it will contribute to the knowledge of researchers and analysts in India and that programme administrators and policymakers will find it useful for policy development and implementation of the family welfare programme.

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The National Family Health Survey could not have been successfully completed without cooperation and support from innumerable sources at various stages of the project. Although it is not possible to individually acknowledge everyone involved in the survey, several persons and organizations deserve special mention.

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The NFHS has received immense help for carrying out the entire sampling design for all the states from the Office of the Registrar General, India, New Delhi. Grateful thanks are due to Mr. A.R. Nanda, former Registrar General of India, Mr. K.S. Natarajan, Deputy Registrar General of India and Mr. K.N. Unni, Joint Director (E.D.P.), Office of the Registrar General, India. Thanks are due to the National Sample Survey Organization for making available the urban sampling frames for the first phase of the NFHS. Special mention and thanks are due to Ms. Thanh Lê and Dr. Vijay K. Verma for their participation and help in preparing a very thorough sampling design for all the states.

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A Post-Survey check of 5 percent of the NFHS sample undertaken by the Institute for Research in Medical Statistics (IRMS) reconfirmed the high quality of the NFHS data. Special thanks are due to Dr. Padam Singh, Director, IRMS, New Delhi, for undertaking this tedious task of post-survey check.

Thanks are due to all the members of the Steering Committee, Administrative and Financial Management Committee and Technical Advisory Committee for participating in various meetings and providing valuable guidance to the conducting of the NFHS.

The data collection in West Bengal was successfully completed by MODE Research Private Limited, Calcutta. The efforts put forth by Mr. D. P. Basu, Director, MODE, and his team, consisting of Dr. P.K. Baburajan and Mr. Apurba Majumdar, are very much appreciated.

The unflinching efforts, the interest and the initiative taken by Prof. Tara Kanitkar, Prof. T.K. Roy, Dr. B.M. Ramesh of IIPS and Dr. Fred Arnold and Dr. Pavalavalli Govindasamy of the East-West Center/Macro International in the PRC Project are appreciated and acknowledged. It is only due to their hard work that the NFHS could be completed successfully, according to schedule. The involvement of Dr. Kia Reinis and Mr. Sushil Kumar in providing training to the field staff is highly appreciated. The sincere efforts and involvement of Dr. K.M. Sathyanarayana, Research Officer at IIPS, Bombay, at the time of data collection in West Bengal are acknowledged. The help of Research Officers at IIPS, especially that of Mr. Prakash H. Fulpagare in the preparation of the report, and that of Dr. B.S. Singh in producing the graphs for the report, are acknowledged.

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The complex task of conducting the NFHS in West Bengal could be completed only with the dedicated and unflinching collaborative efforts put forth by IIPS; MODE Research Private Limited, Calcutta; USAID, New Delhi; and the East-West Center/Macro International, United States of America.

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This acknowledgment cannot be concluded without expressing appreciation for the great amount of pains taken by the interviewers, supervisors and editors in collecting data in the state of West Bengal. The interviewing teams, who have been the architects of this important survey, deserve our special thanks.

Last but not least, the credit goes to the 4,322 ever-married women of West Bengal, and the household respondents who spent their time and responded to the rather lengthy questionnaires with tremendous patience and without any expectation from the NFHS.

SUMMARY OF FINDINGS

The National Family Health Survey (NFHS) was carried out as the principal activity of a collaborative project to strengthen the research capabilities of the Population Research Centres (PRCs) in India, initiated by the Ministry of Health and Family Welfare (MOHFW), Government of India, and coordinated by the International Institute for Population Sciences (IIPS), Bombay. Interviews were conducted with a nationally representative sample of 89,777 ever-married women in the age group 13-49, from 24 states and the National Capital Territory of Delhi. The main objective of the survey was to collect reliable and up-to-date information on fertility, family planning, mortality, and maternal and child health.

The NFHS in West Bengal, conducted between 23 April and 30 July, 1992, gathered information on a representative sample of 4,322 ever-married women age 13-49 from 4,238 households. The survey also collected health-related information on 2,189 children of interviewed women born in the four years preceding the survey. In this report, the survey findings are generally presented separately for urban and rural areas, backward districts, and the state as a whole.

An important set of basic sociodemographic data was collected in the survey. According to the NFHS, 36 percent of the population is below age 15, and 7 percent is age 60 or older. The population sex ratio of usual residents is 940 females per 1,000 males, higher than the sex ratio for West Bengal calculated from the 1991 Census of India, which was 917 females per 1,000 males. Slightly over half (51 percent) of all ever-married women age 13-49 are illiterate, and only 10 percent have completed high school. Most respondents are Hindu (76 percent), and most of the remainder are Muslim (22 percent).

Marriage is virtually universal in West Bengal. Women marry almost seven years earlier than men, and both men and women marry younger in rural areas than in urban areas. Forty-two percent of women age 15-19 are ever married, which increases to 93 percent of women age 25-29. The singulate mean age at marriage has risen considerably over the last several decades to a current level of 25.9 years for males and 19.2 years for females, an average increase of two years for males and three years for females since the 1961 Census. Although age at marriage remains on the low side, there has been a sustained decline over time in the proportion of women marrying at young ages. The proportion of women marrying by age 13 declined from 29 percent among women age 45-49 at the time of the survey, to only 4 percent of those age 15-19, and the proportion marrying by age 15 declined from 51 percent of women age 45-49 to 15 percent of those age 15-19. The minimum legal age at marriage of 18 for females, however, is widely ignored. More than half of the women age 20-24 (56 percent) married before reaching age 18. For women age 25-29, the median age at first marriage is 19 in urban areas and 16 in rural areas.

Fertility in West Bengal is declining, and is slightly lower than that of India as a whole. According to the NFHS, at current fertility levels, women age 15-49 will have an average of 2.9 children each during their childbearing years, compared with an average of 3.4 children per

woman for India. The fertility transition has progressed further in urban areas of West Bengal, where the total fertility rate is 2.1 children per woman, compared with 3.3 children per woman in rural areas.

Current fertility in West Bengal is characterized by relatively early childbearing as well as a considerable drop in fertility rates after age 30. Twenty-one percent of total fertility is accounted for by births in the age group 15-19, and only 20 percent of total fertility is contributed by births to women age 30-49. The median age at first birth among women age 20-24 at the time of the survey was 19.3, having increased from 18.1 among women age 40-44 at the time of the survey.

The gap between the TFR of 2.9 and the mean number of children ever born to women age 40-49 (4.7 children), suggests that a substantial fertility decline has occurred in the state, even over a period of thirty years. The survey also shows substantial fertility differentials by the educational attainment of women. The TFR for illiterate women is 3.7 children per woman, compared with only 1.5 for those with at least a high school education. It should be noted that among women who have completed high school, a disproportionate number reside in urban areas.

Contraceptive knowledge is nearly universal in West Bengal. Ninety-nine percent of women know about at least one modern method of family planning. Seventy-three percent of currently married women even know about a traditional method, which is not surprising considering that more couples in West Bengal practise traditional methods of family planning than almost anywhere else in India (the prevalence of traditional method use is greater only in Tripura and Assam). More than 70 percent of currently married women have ever used a method of family planning (of which well over half consisted of traditional method use).

Fifty-seven percent of all currently married women were found to be practising any method of family planning at the time of the survey; 37 percent using a modern method and another 20 percent using traditional methods. The most popular method of family planning is female sterilization, which is the method accepted by 26 percent of all currently married women age 13-49. Periodic abstinence is the next most frequently used method (11 percent). The overall contraceptive prevalence rate among couples in West Bengal (57 percent) is substantially above the NFHS all-India figure of 41 percent. Despite this, the use of spacing methods is low - only 7 percent of currently married women age 13-49 use either the pill, the IUD, an injectable, or a condom. This is consistent with the pattern seen in most states of India.

Contraceptive use in West Bengal does not vary substantially by residence, except that use of traditional methods is higher among urban couples. Current use of any modern method is 38 percent among both urban and rural women, but much lower (27 percent) in the backward districts of the state. Aside from traditional method use being higher in urban (26 percent) than in rural areas (19 percent), urban women are much more likely to use a spacing method of contraception, especially the condom and the pill. Even among urban women, however, the use of spacing methods is on the low side (11 percent). And although contraceptive use is positively associated with women's educational attainment, this is only true because of the tendency for better-educated women to use traditional methods (the association does not hold when considering any modern method of contraception), and because sterilization is more popular

among the less educated women. The religious differential in contraceptive use is substantial. Current use of any method is 61 and 43 percent among Hindus and Muslims, respectively. Current use of contraceptives is lower among women from scheduled tribes (45 percent) compared with scheduled castes (55 percent).

The use of any contraception peaks among women age 35-39, at slightly over 75 percent, and the use of any modern method also peaks at the same age group (57 percent). Current use of any modern method increases steadily from 5 percent among women who have no living children to 15 percent having one child, 42 percent having two children, 61 percent having three, and then down to 49 percent among women having four or more children. There is some evidence of son preference in West Bengal: at each parity, current contraceptive use is lowest among women having no sons, and (except among women with four or more children) highest among women having all sons.

The public sector, predominantly government and municipal hospitals, is the most important source of contraceptives, supplying 80 percent of the current users of modern methods. The private medical sector provides contraceptives to only 16 percent of current users, and 4 percent of current users obtain their contraceptives from shops, friends or relatives. The source of modern contraceptives varies substantially according to the method used. The government sector provides 91 percent of all sterilizations, 82 percent of IUDs, only 16 percent of pills, and 10 percent of condoms. Source of contraceptive supply also differs markedly by residence. The public sector supplies 88 percent of all modern methods in the rural areas, but only 58 percent in the urban areas.

Information was also collected on the relative lengths of postpartum abstinence, and of postpartum amenorrhoea, both of which have important effects on fertility. The median length of postpartum abstinence from sexual intercourse in West Bengal is 2.3 months, and the median length of postpartum amenorrhoea is 9.5 months. These two factors combine to result in a median length of postpartum nonsusceptibility to conception among mothers in West Bengal of 10 months - very close to the NFHS all-India figure of 10.2 months. The median length of postpartum nonsusceptibility, however, varies considerably by education. Among mothers who are illiterate, the median length of nonsusceptibility is 13.2 months, compared to only 3.1 months among mothers with at least a high school education. Almost all of this differential is explained by breastfeeding patterns. Illiterate (and rural) women are far more likely to breastfeed than well-educated (and urban) women, and for longer periods.

Slightly more than half (54 percent) of all currently married nonusers of contraceptives report either intending to use contraception sometime in the future, or an uncertainty about whether or when to use a method in the future. Of those reporting no inclination to use a method in the future, 40 percent want more children, and 21 percent are either in menopause or had undergone a hysterectomy. While only 7 percent of current users have adopted modern spacing methods, 39 percent of women who intend to use contraception in the future prefer modern spacing methods.

Information on the fertility preferences of currently married women was also collected in the NFHS. Twenty-one percent report wanting to wait at least two years before their next birth, and 35 percent want no more children. Only 10 percent expressed a desire to have a child

within two years (an additional 31 percent of women are sterilized). Son preference is strong among women who want an additional child, particularly in the rural areas and among high parity women.

Seventeen percent of currently married women in West Bengal have an unmet need for family planning (that is, they are not using contraception even though they do not want any more children or they want to wait at least two years before having their next child). The unmet need for spacing is slightly higher than the unmet need for limiting, 9 percent compared with 8 percent, although there is a greater total demand for limiting methods of family planning (55 percent) than for spacing methods (20 percent). Current programmes emphasizing terminal methods are therefore failing to meet the expressed needs of young married women who would like to space their births.

The potential for increased contraceptive use is great in West Bengal, considering that, on average, women have almost one child more than they would like to have throughout their reproductive lifetime. The total wanted fertility rate is 2.2 children per woman, compared with the actual total fertility rate of 2.9.

The NFHS also provides information on maternal and child health, and the prevalence of specific medical problems (malaria, blindness, tuberculosis, leprosy and physical impairment of the limbs) among all members of the household. Blindness has the highest prevalence, 9 per 1,000 population (7 per 1,000 partially blind and 2 per 1,000 completely blind), followed by malaria, which afflicted 7 per 1,000 population during the three months prior to the survey. Four persons per 1,000 population are affected by physical impairment of the limbs, which is the same prevalence for tuberculosis. Only five persons in 10,000 are suffering from leprosy.

During the two weeks preceding the survey, 10 percent of children under age four had symptoms of acute respiratory infection (cough accompanied by fast breathing), 29 percent were sick with a fever, and 3 percent had diarrhoea. For each medical condition, a majority of children were taken to a health facility or provider.

Knowledge and use of Oral Rehydration Salt (ORS) packets for the treatment of diarrhoea are not widespread. Overall, 36 percent of mothers are not familiar with ORS and 50 percent have never used ORS. However, three-fourths of children with recent episodes of diarrhoea were treated with ORS or with a recommended home solution.

There was a slight decline in the infant mortality rate in West Bengal during the 15 years prior to the survey, from 89 per 1,000 during 1978-82 to 75 per 1,000 during 1988-92. About one in 13 children still dies within the first year of life, and 1 in 10 children dies before reaching the age of five. Infant mortality rates are higher in rural areas (77 per 1,000) than in urban areas (68 per 1,000). Children born within 24 months after the birth of a previous child have a three times higher risk of dying in infancy than children born 48 months or more after the previous birth. A strong negative correlation is observed between mother's education and infant mortality. The infant mortality rate is 96 per 1,000 live births for children of illiterate mothers, compared with an estimated rate of only 36 per 1,000 live births for children of mothers who completed high school.

For births in the last four years, one-fourth of the mothers did not receive any antenatal care, either at home or outside the home. Seventy percent of the mothers received two doses of tetanus toxoid vaccine, and 56 percent were given iron and folic acid tablets. Delivery services in general are inadequate in West Bengal. Sixty-eight percent of deliveries took place at home, and only 33 percent were attended by a doctor or a nurse/midwife. Traditional birth attendants were used in 36 percent of the cases, and 29 percent of deliveries were assisted by relatives or others. Nevertheless, complications at the time of delivery were not common (15 percent of all births).

The Universal Immunization Programme has met with only limited success in West Bengal. Twenty-two percent of young children (age 12-23 months) have not been vaccinated against any of the six preventable childhood diseases (tuberculosis, diphtheria, pertussis, tetanus, polio and measles). Only 34 percent have been fully vaccinated and another 44 percent have been partly vaccinated. There appears to be no discrimination against female children in the immunization coverage against various types of diseases. The children of higher parity, rural and backward areas, illiterate mothers and Muslim women are less likely to have been fully vaccinated.

The NFHS obtained fairly detailed information on infant feeding and child nutrition. Breastfeeding is nearly universal in West Bengal, with 96 percent of all children born in the four years preceding the survey having been breastfed. On average, children are breastfed for about 33 months, with little variation among different groups of women. However, babies are rarely first breastfed immediately after birth. Among the most recent births, only 11 percent were first breastfed within one hour of birth and 34 percent were breastfed within 24 hours of birth. Although it is recommended that the first breast milk should be given to children because it contains colostrum, which carries to the child the mother's immunities to disease, the majority of women squeeze the first milk from their breast before breastfeeding. It is also recommended that children should be exclusively breastfed through age 4-6 months, but nearly three-fifths (58 percent) of babies as young as 0-3 months are fed water and other supplements, thus jeopardizing their nutritional status and increasing the risk of infection. Solid and semi-solid foods are generally not added to the diet at an early enough stage in the child's development. One in two children is given solid or semi-solid food at the recommended age of 6-9 months.

Undernutrition is quite prevalent among children in West Bengal. More than half of all children are underweight (57 percent). Eighteen percent of children are *severely* undernourished according to international standards of weight-for-age. Undernutrition varies substantially by age of children, being lowest in the first six months of life, when a considerable proportion of children are exclusively breastfed. Variation in the nutritional status of children by the educational level of the mother is also substantial. Twenty-five percent of the children of mothers with at least a high school education are undernourished, compared to 62 percent of children born to illiterate mothers.

Despite a growing number of sero-positive cases of the HIV infection in West Bengal, very few ever-married women age 13-49 have any knowledge of AIDS (only 10 percent). Furthermore, knowledge of AIDS is heavily concentrated among women living in urban areas, and who are regularly exposed to mass media. Among rural women, only 4 percent have heard about AIDS, and among illiterate women, less than 1 percent have heard of AIDS. Women

having no regular exposure to mass media, not surprisingly, also are not likely to have heard about AIDS (only 1 percent). Misinformation and rumours about AIDS are widespread: a majority of those women who have heard of AIDS harbour a number of misconceptions about how the disease is transmitted.

CHAPTER 1

INTRODUCTION

1.1 Background of the Survey

The Ministry of Health and Family Welfare (MOHFW), Government of India, has sponsored the development of 18 Population Research Centres (PRCs) located in universities and institutes of national repute throughout India. In 1991, the MOHFW initiated the Project to Strengthen the Survey Research Capabilities of the PRCs (PRC Project) with financial support from the United States Agency for International Development (USAID). The National Family Health Survey (NFHS) is being undertaken as one important component of the PRC Project.

The NFHS covers the population in 24 states and the National Capital Territory of Delhi (the erstwhile Union Territory of Delhi), which contain 99 percent of the population of India. The NFHS is a household survey with an overall sample size of 89,777 ever-married women in the age group 13-49. Because of the scale of this undertaking, the data collection under the NFHS was carried out in three phases in 1992 and 1993. Andhra Pradesh, Himachal Pradesh, Madhya Pradesh, Tamil Nadu and West Bengal were the states covered in the first phase. The states covered in the second phase of the NFHS were Assam, Goa, Haryana, Karnataka, Kerala, Maharashtra, Rajasthan and Uttar Pradesh. In the third phase of the NFHS, Arunachal Pradesh, Bihar, Gujarat, the Jammu Region of Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Tripura and the National Capital Territory of Delhi were covered.

The NFHS is a collaborative project of the MOHFW, Government of India, New Delhi; the International Institute for Population Sciences (IIPS), Bombay; several Consulting Organizations (COs); all the PRCs; USAID, New Delhi; and the East-West Center/Macro International, U.S.A. The MOHFW designated IIPS, Bombay, as the nodal organization, responsible for providing coordination and technical guidance for the NFHS. The PRCs participated in all stages of survey implementation for the states in which they are located. IIPS and the PRCs collaborated with a number of COs in India for survey implementation. Each CO was responsible for facilitating survey activities in one or more states covered by the NFHS. Technical assistance for the NFHS was provided by the East-West Center/Macro International.

MODE Research, Calcutta, a private research organization in Calcutta, was selected to be the CO for the NFHS in West Bengal. There is no Population Research Centre in West Bengal, and therefore the survey in West Bengal was implemented by MODE, in collaboration with IIPS.

1.2 Origin of the State

According to Hindu legend, King Bali of the lunar race had five sons: namely, Anga, Vanga, Kalinga, Pundra and Suhma. Each of these sons founded a kingdom that was named after him. Vanga (or "Banga") is said to have occupied the deltaic tract south of the river Padma, located between the Bhagirathi and the old course of the Brahmaputra. The land of Rarh, often referred to as "Lala," was located on the western side of the river Bhagirathi. The proper name Bengal, or Bangala, may therefore be a possible combination of the two - Banga

and Lala. In the later period during Islamic rule, the term Bengal was applied to the whole delta, including their conquered parts to the east of the Brahmaputra and north of the Padma (Imperial Gazetteer of India, 1909).

Under British rule, "Suba Bangala" included all the lands of Bengal proper, Bihar and Orissa. The term "Bengal proper" applied to the territory east of Bhagirathi and Mahananda, where the prevalent language was Bengali. With the conquering of new areas, British territorial expansion was directed westward toward Agra. In 1863, Agra was detached from Suba Bangala, but after the First Burmese War the territory of Assam was added. At that time the area of Bengal was nearly 500,000 square kilometres. In 1874, Assam was formed into a separate province. In 1905, Bengal was partitioned into two parts, roughly equal in size, and a new province called Assam and Eastern Bengal came into existence, which comprised of Assam and fifteen districts of Bengal, east and north of the rivers Padma (the main tributary of the Ganga) and Madhumati. The remaining part, together with Bihar and part of Orissa, was named Bengal. This led to an outbreak of terrorism, as the division was particularly unpopular.

Six years later, in 1911, the Bengalis were reunited and the new Province of Bengal was formed, spread across 200,570 square kilometres and incorporating most of those regions where the Bengali language was predominate. The Province did not include Assam or Bihar or Orissa. Another partition of Bengal took place in 1947 when India gained independence and, on the basis of Muslim hegemony, Pakistan was formed. The country of Pakistan immediately after Partition consisted of two wings, one in the west (Pakistan), and the other (East Pakistan), located in the eastern part of Bengal which had for the most part a Muslim majority. East Pakistan later became present-day Bangladesh, and the remaining western portion of the old Province of Bengal, with only 78,000 square kilometres, became the state of West Bengal.

1.3 Geographic Features

Physical Characteristics

West Bengal is situated in the Eastern Zone of the Indian Republic, extending from 21° 25′ to 27° 13′ north latitudes and from 85° 50′ to 89° 50′ east longitudes. It is bounded on the north by the neighbouring countries of Nepal and Bhutan and the state of Sikkim, on the east by district Goalpara of Assam and the neighbouring country Bangladesh, on the south by the Bay of Bengal and Orissa, and on the west by Bihar. The area of West Bengal is nearly equal to Portugal, and slightly more than one-third the size of the United Kingdom. The north-south length of the state is approximately 600 kilometres, stretching from the Bay of Bengal in the south to the snow-capped summits of the Himalayas in the north. The east-west spread is about 300 kilometres, from the Mayurbhanj ranges and Chottanagpur in the west to Sunderbans in the east.

Since a large portion of West Bengal forms a part of the Ganga river delta, the state's topography is rather flat and featureless, dominated by the alluvial plain. Only 1 percent of the area in the far north of West Bengal is mountainous. The plateau fringe and the Purulia triangle of the upland region along the western border comprises about six percent of the total area of the state.

The state of West Bengal has two broad natural divisions: the Himalayan, comprising the districts of Darjiling, Jalpaiguri and Koch Bihar in the north; and the sub-Himalayan, which include the Ganga-Bhagirathi delta in the south, and the remaining districts.

The mountainous area in the northern part of the state, though small, is a part of the world's loftiest mountain range, the Himalaya, which rise to well over 7,500 metres among the ranges located in Sikkim, north of Darjiling. The "hill station" of Darjiling is 2,500 metres above sea level. The hill region of West Bengal, concentrated in this northern spur of the state, descends to the south towards Jalpaiguri, Siliguri and Koch Bihar, from which point the land flattens into the plain area, located 75 to 150 metres above sea level. A large number of rivers (the Tista, Jaldhaka, Toosa and Rydak) originate in the Himalaya and traverse the entire region.

The southern plains are formed mainly by the influence of Bhagirathi and its tributaries, namely, the Mayurakshi, Dwarka, Ajay, Damodar and the Jalangi rivers. The Bhagirathi river branches off from the Ganga and enters West Bengal flowing south-east through the districts of Murshidabad, Nadia, Burdhaman, Calcutta, Hugli, Haora, and Twenty Four Parganas before emptying into the Bay of Bengal.

Climate, Rainfall and Seasons

West Bengal has a subtropical hot and humid climate, very much affected by the annual monsoon. However, in the hilly areas of the north, the altitude and the slope become the controlling factors behind climatic variation. The summers in the plains are hot and humid, but are pleasant in the hills of Darjiling. Winters are pleasant all over the state. The Meteorological Department recognizes four seasons for West Bengal. They are: i) the hot season, ii) the advance of the monsoon, iii) the retreat of the monsoon, and iv) the cold season.

The hot season sets in the beginning of March and continues through the middle of June, when the monsoon arrives. The unusually high temperature, 40°C during the day, is felt during the first or second week of April. The plateau fringe is even hotter, where mercury rises as high as 45°C. The heat's intensity declines as one moves southwards, and the southern winds from the Bay of Bengal offer a brief respite from the heat.

Due to the severe heat in May and June, a low pressure area is formed over the Sindh region of Pakistan. The low pressure becomes so deep that the trade winds of the southern hemisphere cross the Equator and advance towards the low pressure region in the north. These winds form the south-west monsoon and bring rain and relief from the scorching heat. By 15 June, the whole of West Bengal is under the influence of these currents. The monsoon's impact is most vigorous in the hills, where the rising currents of moist air produce a level of rainfall which is among the highest in the world. For farmers, the arrival of the monsoon is a festive period, as their productivity and prosperity is largely dependent upon the timing and intensity of the monsoon rains. The average annual rainfall in West Bengal is approximately 175 centimetres, of which 125 cm falls during the four months of monsoon, from June through September. The state can be divided into two broad rainfall regions. The districts of Darjiling, Jalpaiguri and Koch Bihar and the northern portion of West Dinajpur receive heavy rainfalls (above 200 cm), and the remaining districts comprise the second region, which receives relatively light (below 200 cm) annual rainfall.

The cold season begins in the middle of November. The winters are mild as the minimum temperature at night is always above 15°C, except in the Darjiling hills, where the winters are severe and quite often night temperatures fall below 5°C. Snowfall is rare, but the Singalia ridge is covered with snow in December and January, the coldest months in the state. In the plains, the early winter period is generally pleasant, becoming uncomfortable from December onwards because of the dry and chilly winds. In February, the temperature starts rising and the cold gives way to a short-lived spring, followed by the hot season.

1.4 Area and People

Area and Administrative Divisions

The total land area of West Bengal is 88,752 square kilometres, which is only 2.7 percent of the total area of India (3,287,782 square kilometres). Eight percent of the country's population, however, lives in West Bengal, which is the fourth most populous state in India, behind Uttar Pradesh, Bihar, and Maharashtra. Calcutta, which is situated 128 kilometres up the river Hooghly, is the capital of the state. West Bengal is divided into three administrative divisions and at the time of 1991 Census had seventeen districts (in 1992, the district of West Dinajpur was divided into two parts - Uttar Dinajpur and Dakshin Dinajpur).

People, Culture, Religion and Language

Racially, the people of West Bengal are a mix of different blood streams of Austric, Dravidian, Alpodinarian, Aryan and Mongolian peoples. The Austric community taught Bengal how to cultivate land and the Dravidians taught the urban way of life (Government of West Bengal, 1994). At the time of Alexander's invasion, Bengal was ruled over by a powerful kingdom called Gangadirâi. Sasanka played an important role in north-east India in the early half of the seventh century, when he became king of the lands consisting of present-day West Bengal. The Pala dynasty created a huge empire and ruled in the area for centuries. They were followed by the Sena dynasty which was ended by the Muslim rulers of Delhi. Until the sixteenth century Bengal was ruled by various Muslim rulers and governors, with the British gaining a strong foothold in Bengal (initially through the mercantile activities of the private East India Trading C[illegible] in India proper after they won the Battle of Plassey in 1757. After two [illegible]ries of colonial rule, the national struggle for independence was largely sparked in [illegible]. In the early days of nationalism, it was the home of violent anti-British movement, which was among the reasons for the British shifting their capital from Calcutta to Delhi in 1911.

Presently, the state is inhabited by various ethnic and religious groups which have helped in the development of a distinguished Bengali culture. Bengalis are known to be an emotional and artistic people, often called the Irish of India. In part reacting to the intellectual and political stimulus of the West, the state has produced the most articulate writers, philosophers and scientists of India, including Vivekananda and Ramakrishna, who spread the Indian philosophy to the Western World, Noble Laureate Rabindranath Tagore and the scientist J.C. Bose.

According to 1981 Census (Office of the Registrar General and Census Commissioner, 1984a), 77 percent of the total population of the state is Hindu, 21.5 percent is Muslim, and less than 2 percent belongs to Christian, Jain, Buddhist, Sikh and other religions combined. The principal language spoken by the people is Bengali, which is also the official language of the state.

1.5 Economy

Agriculture plays a pivotal role in the economy of West Bengal, which has nearly three percent of the country's cultivable land and contributes to eight percent of the total foodgrain production of the nation. Nearly three-fourths of the workers are directly or indirectly dependent on agriculture. More than 68 percent of the cultivated area of the state is operated by marginal and small farmers. The average size of landholding is less than one hectare (Government of West Bengal, 1994). Less than half of the gross area under agricultural production is irrigated. Other Green Revolution-type measures, however, including the use of quality and high-yield variety seeds, fertilizers, and plant protection measures have assisted in raising overall productivity of the land. The state government's commitment to widespread land reforms[1] have also contributed to raising overall cropping intensity in West Bengal (from 131 percent to 162 percent during the last two decades). The average annual per capita foodgrain production in the state has increased from 126 kg in 1980-83 to 170 in 1988-91 (Centre for Monitoring Indian Economy, 1992). In 1991-92, the state produced 128 million tons of foodgrains. It occupies a leading position in the production of rice and contributes nearly one-sixth of the total rice crop in the country. More than three-fifths of the country's raw jute fibre is produced in West Bengal, which also contributes to slightly more than one-fifth of the tea production in the country (Government of West Bengal, 1994). Note that all the tea production is concentrated in the northern hilly areas, and in particular the district of Darjiling. The other important crops produced in the state are oilseeds, betelvine, tobacco, wheat, barley and maize.

Industrially, West Bengal occupies a leading position in the country. Besides 3 major steel plants (two at Durgapur - one steel and one alloy steel, and one at Burdwan), there are 23 mini steel plants in the state. The other major industries located in the state are engineering, automobiles, chemicals, pharmaceuticals, ceramics, aluminium, leather, jute, cotton textile, paper, glass and timber processing. Several important public sector undertakings located in West Bengal have been set up by the Central Government, such as coal, locomotive, cable, shipbuilding and ordnance. The State Government undertakings include tea, fruit and vegetable processing, sugar, dairy and poultry, plywood and electrochemical plants.

The two important minerals extensively found in the state are coal and china clay. Mining and manufacturing, however, contributed to only 28 percent of the total state income during 1988-89. The average annual per capita income in West Bengal from 1982-83 to 1984-85 was Rs. 2,184. During 1987-88, 30 percent of the rural and 21 percent of the urban population

[1] Land reform measures in the state, (aimed at putting an end to the feudal and semi-feudal system) include the distribution of vested lands among the poor and landless peasantry and safeguarding the rights of the sharecroppers under comprehensive multi purpose programmes.

were estimated to be below the poverty line[2] (Centre for Monitoring of Indian Economy, 1992).

1.6 Basic Demographic Indicators

Table 1.1 presents the basic demographic indicators for the state as well as for the country. With a population of 68 million West Bengal constitutes 8 percent of the country's population. The decadal growth rate of population during the recent decade was slightly higher in the state, 24.7 percent, compared to all-India figure of 23.9 percent. The number of persons living per square km was much higher in the state, about 3 times that of the country. In fact the population density of West Bengal is the highest among all the Indian states (excluding the National Capital Territory of Delhi and other Union Territories). According to the 1991 Census, about 28 percent of the state's population live in cities and towns, compared with 26 percent for

Table 1.1 Basic demographic indicators

Basic demographic indicators for West Bengal and India

Index	West Bengal	India
Population (1991)	68,077,965	846,302,688
Population growth rate (1981-91)	24.7	23.9
Density (Population/Km^2) (1991)	767	273
Percent urban (1991)	27.5	26.1
Sex ratio (1991)	917	927
Percent 0-14 years old (1981)	38.9	39.6
(1991)	34.8	36.3
Percent 65+ years old (1981)	3.3	3.8
(1991)	3.2	3.8
Percent scheduled caste (1991)	23.6	16.7
Percent scheduled tribe (1991)	5.6	8.0
Percent Literate (1991)[1]		
Male	67.8	64.1
Female	46.6	39.3
Total	57.7	52.2
Crude birth rate (1992)	24.8	29.2
Crude death rate (1992)	8.4	10.1
Exponential growth rate (1981-91)	2.21	2.14
Total fertility rate (1992)	2.9	3.6
Infant mortality rate (1992)	65	79
Life expectancy (1986-90)		
Male	60.2	57.7
Female	61.2	58.1
Couple protection rate (1992)	34.1	43.5

[1]Based on population age 7 and above.
Source: Office of the Registrar General (1992, 1993, 1994a, 1994b), Office of the Registrar General and Census Commissioner(1987), Ministry of Health and Family Welfare (1991 and 1992).

[2] The Task Force on "Minimum Needs and Effective Consumption Demand" constituted by the Planning Commission in 1979 defined the poverty line as per capita monthly expenditure of Rs. 49.09 in rural areas and Rs. 56.64 in urban areas at 1973-74 prices, corresponding to the per capita daily calorie requirement of 2,400 in rural areas and 2,100 in urban areas. For subsequent years, the poverty line has been adjusted because of price changes, using the price indices which are implicit in the private consumption expenditure series reported in the National Accounts Statistics. The corresponding levels at 1987-88 price levels are Rs. 131.80 in rural areas and Rs. 152.13 in urban areas.

all India.

The sex ratio of the population of West Bengal indicates that there are 917 females per 1,000 males, which is less than the sex ratio of all-India. A comparison of the age distribution of the state's population with the country as a whole reveals that the percentage of the child population (0-14) has decreased slightly in recent years. This indicates that the birth rate in the state is lower and its rate of decline has been faster than in India as a whole. Only 3 percent of the population in the state, compared with 4 percent in the country, are age 65 and above. About one-fourth of the state population consists of persons belonging to scheduled castes, and another 6 percent consist of those belonging to scheduled tribes[3].

Although the level of literacy in West Bengal is above the national average, the level is still low, particularly among females. The male and female literacy rates are 68 and 47 percent, respectively, and the male-female gap in literacy approximates the all-India sex differential in literacy.

In terms of demographic parameters, the state is ahead of the country as a whole. For the year 1992, the crude death rate estimated by the SRS was 8.4, compared with 10.1 for the country as a whole, and the level of infant mortality for the two regions was 65 and 79 per 1,000 live births, respectively. The life expectancy at birth is higher in West Bengal, and is higher for females than for males. Both the level of the crude birth rate in 1992 (24.8 per 1,000 population) and the TFR in 1992 (2.9 children) indicate that the level of fertility is slightly lower in the state than for all-India. Although the lower fertility in West Bengal suggests a higher level of family planning practice, the couple protection rate (defined as the percentage of couples effectively protected against pregnancy) in 1992 was lower for the state (34.1 percent) than for the country as a whole (43.5 percent). Part of the reason for this, however, as will be seen later in this report, is that an unusually large proportion of couples in West Bengal use traditional methods of family planning, a phenomenon not reflected in the couple protection rate.

Table 1.2 shows major demographic trends in the state between 1971 and 1991. The decadal percent variation in population in West Bengal shows that the net change in population decreased from the 1961-71 intercensal period (27 percent) to the 1971-81 period (23 percent), but rose by two percentage points over the most recent intercensal period (25 percent). It would appear that growth has slowed slightly since the high growth rates of the late 1960s, but West Bengal continues to attract huge numbers of migrants from other states; over the 1971-81 intercensal period the estimated number of net in-migrants in West Bengal (2,776,297) was substantially more than the second-largest receiving state, Maharashtra (1,999,709). The average population increase over ten years would imply a total state population in the year 2001 of approximately 82 million persons, almost the size of present-day Bihar. A population of this size in West Bengal, which already has the highest population density in the country, is a sobering thought.

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[3] Under the Indian Constitution, scheduled castes and scheduled tribes mean such castes, races or tribes or part of or groups within castes, races or tribes as are declared by the President of India to be scheduled caste under Article 341 and scheduled tribe under Article 342 of the constitution (Office of the Registrar General and Census Commissioner, 1992).

Table 1.2 Trends in basic demographic indicators

Trends in basic demographic indicators, West Bengal, 1971-91

Index	1971	1981	1991
Population	44,312,011	54,580,647	68,077,965
Percent Population increase (previous decade)	26.9	23.2	24.7
Density (Population/Km^2)	504	615	767
Percent urban	24.8	26.4	27.5
Sex ratio	891	911	917
Percent 0-14 years old	42.9	38.9	34.8
Percent 65+ years old	3.0	3.3	3.2
Percent scheduled caste	19.9	22.0	23.6
Percent scheduled tribe	5.7	5.6	5.6
Percent literate[a]			
Male	42.8	50.7	67.8
Female	22.4	30.3	46.6
Total	33.2	40.9	57.7
Crude birth rate	U	33.2	24.8[b]
Crude death rate	U	11.0	8.4[b]
Exponential growth rate	2.38	2.08	2.21
Total fertility rate	U	4.2	2.9[b]
Infant mortality rate	U	91	65[b]
Life expectancy			
Male	U	56.9[c]	60.2[d]
Female	U	56.3[c]	61.2[d]
Couple protection rate	9.7	22.2	34.1[b]

U:Not available
[a]Based on the population age 5 and above for 1971 and 1981, and the population age 7 and above for 1991.
[b]1992
[c]1981-86
[d]1986-90
Source: Office of the Registrar General (1982, 1985, 1992, 1993, 1994a,1994b), Office of the Registrar General and Census Commissioner (1974, 1976, 1984b, 1987, 1992), Ministry of Health and Family Welfare (1989, 1991, 1992)

Indeed the population increase from 44 million in 1971 to 68 million in 1991 resulted in a 50 percent increase in the population density over the same period. This increase, however, was not matched by a concomitant increase in the number of people living in urban areas; the percentage urban in West Bengal increased by only 2.7 percentage points between 1971 and 1991 (24.8 to 27.5). The sex ratio of the population has also increased, from 891 in 1971, to 911 in 1981 and 917 in 1991. The child population (0-14 years) has shown a consistent declining trend, but the old age population (65+ years) has remained more or less constant at 3 percent. The scheduled tribe population showed no increase over the years, remaining at the low level of 6 percent, but the percentage of West Bengal's population belonging to scheduled castes has increased slightly, from 20 percent in 1971 to 24 percent in 1991.

There has been a significant increase in the level of literacy during the past two decades. Both male and female literacy rates more than doubled from 43 percent in 1981 to 68 percent in 1991 in the case of males, and from 22 percent to 47 percent in the case of females, during the same period. Although the percentage of literate females has risen considerably, the gap

between male and female literacy rates has not narrowed over time.

The crude birth rate in West Bengal declined from 33 per 1,000 population in 1981 to 25 per 1,000 in 1992, a 25 percent decline. Similarly, the crude death rate declined from 11 per 1,000 to 8 per 1,000 population over the same period. The total fertility rate fell by more than one child from 4.2 children per woman in 1981 to 2.9 children per woman in 1992. During the same period, there was also a considerable decline in infant mortality rate from 91 deaths per 1,000 live births in 1981 to 65 deaths per 1,000 live births in 1992.

Both male and female life expectancy increased over the 10-year period, 1981-90. However, in contrast to the period 1981-86, female life expectancy exceeded male life expectancy by over one year during the period 1986-90.

According to government service statistics, the percentage of couples effectively protected by various methods of family planning in West Bengal increased from 22 percent in 1981 to 34 percent in 1992. However, the couple protection rate continues to remain below the national average.

1.7 Population and Family Welfare Policies and Programmes

The family welfare programme in India promotes responsible parenthood, with a two-child family norm (regardless of the sex of children) through the voluntary use of contraceptive methods best suited to each couple (Ministry of Health and Family Welfare, 1991). Health and family planning services in West Bengal, as in other states, are provided through a network of sub-centres, Primary Health Centres, Community Health Centres, postpartum centres, urban family welfare centres, health centres run by nongovernmental organizations (NGOs), Employees' State Insurance (ESI) hospitals, hospitals of other semi-governmental and autonomous institutions, voluntary organizations, and a vast network of private hospitals and clinics, in accordance with the national family welfare policy and the guidelines provided under the family welfare programme of the country. Additionally, in most villages of the state, private practitioners of the homeopathic, Ayurvedic, and Unani schools of medicine provide some health and family planning services, although of highly variable scope and quality.

The national family planning programme started in 1951 with a very small-scale clinical approach. This was followed by the extension education approach, which was introduced in 1963-64. Mass vasectomy camps were organized during 1970-73, and during the 1970s, a community-oriented service network was developed, in which family planning services were offered as part of the overall package of health services. An important political backlash followed the intensive delivery of vasectomy services in the late 1970s (in which incentives were offered to rural families accepting the procedure), largely fuelled by widespread complaints of poor quality of services, side effects, and coercive techniques on the part of providers. Thus, while just 15 years ago vasectomy was the most common method used in India, today it has virtually disappeared.

The integrated and coordinated approach, where family planning services were part of a larger health package, was implemented during the period 1974-77. The mother and child care approach, which began in 1977-78, continues to this day. A conference of the Health Ministers

of all states was held in 1992 by the Government of India with the purpose of revamping the Family Welfare Programme, from which an action plan was finalized. The plan recommended that the network of cooperative sector institutions, the organized sector, trade unions, Zilla Parishads (district councils), Municipal Corporations, Panchayats (village councils), and so on, should be fully involved in the implementation of the family welfare programme in a systematic manner. Under the Maternal and Child Health (MCH) programme of the Ministry of Health, the Expanded Programme on Immunization (EPI) was introduced in 1978 with the objective of providing free vaccination services to all eligible children and expectant mothers. In this same programme, the involvement of Panchayats and other local bodies is encouraged, although how much integration takes place during actual implementation is not clear. In order to step up the pace of immunization, the Universal Immunization Programme (UIP) was introduced in 1985-86 and is being implemented through the existing network of the primary health care infrastructure.

In West Bengal, as in other states, the family welfare programme is in theory voluntary, leaving the choice of the method to the individual couple. Although the programme has relied principally on sterilization, modern spacing methods such as the IUD, condom, and pill, are offered under a "cafeteria" approach. The existing system of state-specific and method-specific targets, however, does place pressure on family planning workers at the PHC level to achieve the targeted levels of acceptors, as failure to do so often results in financial and professional disincentives. Thus, in practice, because it is relatively easy to account for the distribution of spacing methods, at the end of the fiscal year the family planning workers are under considerable pressure to round-up the targeted number of sterilization acceptors. This target-driven system thus distorts the so-called cafeteria approach, and to some extent forces the family planning providers to rely on the "mass camp" approach to achieve the specified targets for sterilization. A common criticism of the camp approach is poor quality of services, lack of proper medical screening and follow-up, and a slowdown of other primary health services during the end of the fiscal year while the clinic is fully geared toward achieving its targets.

The national government's long term goal is to reach a net reproduction rate of unity by the year 2011-2016, although many experts feel this is overly optimistic. Mass media channels are used in West Bengal to promote family planning and to help remove the sociocultural barriers existing among many groups of the population, although overall levels of media exposure in the state are low, especially in the rural areas, and among those who are illiterate. The Government of West Bengal continues to place high priority on providing a basket of appropriate health and other social services to the people, depending to a large extent upon the existing public sector delivery system.

The India Population Project IV (IPP,IV), a project in the series of Area Projects undertaken by the Government of India with assistance from the World Bank, was initiated in West Bengal in 1985. The major emphasis of the project has been to improve service delivery by strengthening infrastructural facilities, and to enhance demand generation through a series of training and IEC activities. The project also aimed at strengthening the monitoring and evaluation of the programme. IPP,IV covered four districts, namely Burdwan, Birbhum, Bankura and Purulia. However, monitoring, evaluation and IEC components of the project were extended to the entire state. The project was initiated for a period of five years, but its duration was extended to March, 1994.

As mentioned above, sterilization, particularly female sterilization, has been the most widely used method of family planning. As of March 1991, 87 percent of all couples effectively protected by the family welfare programme were protected by sterilization. West Bengal is one of three states in India, however (the other two are Assam and Tripura), where the use of traditional methods of family planning is over 20 percent of all method use and approximates the level of female sterilization. Because traditional methods are often more difficult to use, less convenient, and less effective than most modern methods of contraception, and are primarily used for purposes of spacing births, its widespread practice in West Bengal could indicate substantial demand for a family planning programme emphasizing the quality delivery of all methods, not just female sterilization.

1.8 Health Priorities and Programmes

The delivery of health services is mainly governed by the National Health Policy, which was approved by the Parliament in 1983. Although the National Health Policy places a major emphasis on ensuring primary health care to all by the year 2000, it nevertheless identifies certain areas which need special attention. These areas are: (1) nutrition for all segments of the population, (2) the immunization programme, (3) maternal and child health care, (4) the prevention of food adulteration and maintenance of the quality of drugs, (5) water supply and sanitation, (6) environmental protection, (7) school health programmes, (8) occupational health services, and (9) prevention and control of locally endemic diseases. Active community participation has been considered to be one of the most important supportive activities for successful implementation of the health programmes.

After India became a signatory to the Alma Ata Declaration of 1978 by committing itself to attain the goal of "Health for All" by 2000 A.D., the government started to concentrate on the development of the rural health infrastructure. This was done to provide health care services to the rural population which had, by and large, remained neglected. As of April, 1991, there were 87 Community Health Centres, 1,544 Primary Health Centres and 7,873 sub-centres in the state providing health and family welfare services to the rural population (Ministry of Health and Family Welfare, 1992). The service system was designed so that one PHC generally serves as the central clinic to six sub-centres, and while a PHC is staffed and equipped to serve the needs of one lakh population, a subcentre fulfils only limited health and family planning services, is staffed mainly by one Auxiliary Nurse-Midwife (ANM), and is designed to serve a smaller "catchment" population of 30,000.

CHAPTER 2

SURVEY DESIGN AND IMPLEMENTATION

2.1 Objectives of the NFHS

The primary objective of the NFHS is to provide national-level and state-level data on fertility, nuptiality, family size preferences, knowledge and practice of family planning, the potential demand for contraception, the level of unwanted fertility, utilization of antenatal services, breastfeeding and food supplementation practices, child nutrition and health, immunizations, and infant and child mortality. The NFHS is also designed to explore the demographic and socioeconomic determinants of fertility, family planning, and maternal and child health. This information is intended to assist policymakers, administrators and researchers in assessing and evaluating population and family welfare programmes and strategies. The NFHS used uniform questionnaires and uniform methods of sampling, data collection and analysis with the primary objective of providing a source of demographic and health data for inter-state comparisons. The data collected in the NFHS are also comparable with those of the Demographic and Health Surveys (DHS)[1] conducted in many other countries.

2.2 Questionnaires

Three types of questionnaires were used in the West Bengal NFHS: The Household Questionnaire, the Women's Questionnaire, and the Village-Level Questionnaire (See Appendix D), all of which were pretested. The overall content and format of the questionnaires were determined in a Questionnaire Design Workshop in Pune in September, 1991. The workshop was attended by representatives from PRCs, the Consulting Organizations, the Ministry of Health and Family Welfare (MOHFW), IIPS, USAID, and the East-West Center/Macro International. The contents and design of the questionnaire were based broadly on the DHS Model B Questionnaire, which is designed for use in countries with low contraceptive prevalence. Keeping in view the Indian sociocultural milieu and the objectives of the NFHS, additions and modifications were made to the model questionnaire after extensive deliberations at the workshop. In addition to this standard set of questionnaires for all states of the NFHS, it was decided at the workshop that individual states could recommend a number of state-specific questions which would be formulated after considering the issues of importance in each state. Based on the recommendations of this workshop, the questionnaires were finalized at IIPS, Bombay. The questionnaires were largely precoded, with fixed response categories.

A pretest of the questionnaires was carried out by IIPS with the help of the PRC, Bhopal, in October, 1991. A 10-day training session for the interviewers and supervisors was conducted at the PRC. For the pretesting of the questionnaire, a total of 150 pretest interviews were completed in two villages near Bhopal and a few urban blocks within Bhopal city. After the pretest, appropriate changes were made in the questionnaires, based on the experience of the pretest. The NFHS in West Bengal used the standard Household Questionnaire, Woman's

[1] The Demographic and Health Surveys (DHS) programme is an international project designed to collect comparable survey data across countries on fertility, family planning, and maternal and child health.

Questionnaire, and Village Questionnaire which had been pretested. A set of questions related to knowledge and awareness on the topic of the Acquired Immune Deficiency Syndrome (AIDS) was added to the basic NFHS questionnaire for women in West Bengal. The questionnaires used in West Bengal were bilingual, consisting of questions in both Bengali and English.

For the pretest of Bengali version of the questionnaires, 22 female investigators and 6 male supervisors were trained at MODE Research headquarters in Calcutta, over the period 19-28 February, 1992. This team conducted the pretesting in one village and one town in North Twenty-four Parganas district, over the period 2-4 March, 1992.

The Household Questionnaire was used to list all usual residents of each sample household, plus all visitors who slept in that household the night before the interview. Some basic information was collected on the characteristics of each person listed, including age, sex, marital status, education, occupation and relationship to the head of the household, as well as health status. The main purpose of this section of the Household Questionnaire was to identify women who were eligible for the Woman's Questionnaire (ever-married women age 13-49 years). In addition, the Household Questionnaire collected information on the household itself, such as the source of water for both drinking and for washing and bathing, the type of toilet facilities, materials used in the construction of the house, source of lighting, cooking fuel, ownership of agricultural land and livestock, ownership of various consumer durable goods, and characteristics of the head of the household such as religion, caste or tribe. The Household Questionnaire also includes household birth and death records, wherein all the live births and deaths that took place within the last two years in the household were recorded.

The Woman's Questionnaire was used to collect information from eligible women, that is, all ever-married women, usual residents as well as visitors, age 13-49 years. The Woman's Questionnaire consisted of seven sections:

Section 1. Respondent's Background: Questions on age, marital status, age at marriage and education of the eligible women were included. If the respondent was a visitor, information about her own household was also collected.

Section 2. Reproduction: In this section, information was collected about the births that a woman had during her life. The information collected included the total number of sons and daughters that a woman has given birth to, information about stillbirths and abortions, a complete birth history including month and year of birth, current age, sex, survival status, and if dead, age at death for each of the live births, and information about current pregnancy and menstruation.

Section 3. Contraception: This section collected information on the knowledge, ever use and current use of various family planning methods, intentions for future use, and for current users, the duration of use, source of the method, and problems experienced with use.

Section 4. Health of Children: The questions in this section related to births in the year of the survey as well as to all the births in the previous four calendar years. The objective of this section was to obtain information related to the health of children. The topics included antenatal care, breastfeeding, vaccinations and recent illnesses of young

children. The questions were organized into two subsections: Section 4A containing questions on pregnancy and breastfeeding, and Section 4B containing questions on immunization and health of children.

Section 5, Fertility Preferences: This section gathered information on the desire for additional children, ideal family size and sex composition of children, preferred and ideal birth intervals, and husband's attitude towards family size. A subsection (Section 5A) included a set of state-specific questions on awareness and knowledge about AIDS.

Section 6, Husband's Background and Woman's Work: Questions related to age, education and work status of the husband as well as questions on the work status of the woman herself were included.

Section 7, Weight: The anthropometric measurements taken in the NFHS in most of the states included both the height and weight of children under age 4 years. However, due to nonavailability of measuring instruments during the first phase of data collection, measurement of height/length of children was not undertaken in West Bengal and other first phase states. In these states only the weight was taken as a measure of the child's nutritional status. All living children born since 1 January 1988 to the eligible women interviewed were weighed. The results were recorded in this section of the Woman's Questionnaire. The NFHS is the first national survey that collected demographic, health and anthropometric data simultaneously. The measurement of weight was a separate operation that was conducted after the individual interview was completed. All interviewers, editors and supervisors were trained in taking anthropometric measurements. For the measurement of weight of the children, standard spring balance weighing machines (Salter Scales) were used.

The village questionnaire was used to collect information on the villages selected in the NFHS sample. The village questionnaire collected information on various amenities available in the village including electricity, water, transportation and educational and health facilities.

2.3 Sample Design

The sample design adopted for the NFHS was a systematic, multi-stage stratified sample of households. The sample for the West Bengal survey was designed to provide statistical estimates for the state as a whole, for urban and rural areas and for backward districts of the state (Malda and Murshidabad)[2]. The universe consists of all urban and rural areas of the state.

Sample Size and Allocation

The overall target sample size for West Bengal was 4,000 completed interviews with eligible women. The target sample size was set considering the large size of the state, the time

[2] The MOHFW, Government of India, has defined backward districts as those having a crude birth rate of 39 per 1,000 population or higher as estimated on the basis of data from the 1981 Census. Out of a total of 17 districts in West Bengal, 2 districts are classified as backward according to this definition.

and resources available for the survey and the need for separate estimates for regions consisting of backward districts. In order to allow for nonresponse at the household and individual respondent levels, the target sample of women (ever-married women age 13-49 years) was increased to a total of 4,400 women. The required sampling rates were determined separately for the backward and nonbackward regions, as well as for the urban and rural areas in each region. All the districts in West Bengal were subdivided into five contiguous regions according to their geophysical characteristics, each representing one or more of the 1981 Census regions. Within each geophysical region, districts were classified into backward and nonbackward districts, as defined by the MOHFW. The district composition of the regions is as follows:

Region I:	Jalpaiguri and Darjiling
Region II:	Koch Bihar, West Dinajpur, Maldah, and Murshidabad
Region III:	Nadia, Calcutta, Haorah, Hugli, North and South Twentyfour Parganas, and Burdwan
Region IV:	Medinipur, Bankura, and Birbhum
Region V:	Puruliya

This design resulted in four sampling domains: backward urban, backward rural, nonbackward urban, and nonbackward rural. Within each domain, the sample is self-weighting.

The table below summarizes the allocation of the target sample size of 4,000 eligible women along with the number of women to be interviewed (adjusted for nonresponse and other loss).

Domain	Eligible women	Number of women to be interviewed adjusted for nonresponse (other loss)	Primary Sampling Units (PSUs)	Sampling fraction
Domain 1 (nonbackward rural)	2181	2400	80	0.000283
Domain 2 (backward rural)	818	900	30	0.000678
Domain 3 (nonbackward urban)	918	1010	25	0.000305
Domain 4 (backward urban)	83	90	2	0.000727
Total	4000	4400	137	

The Rural Sample: The Frame, Stratification and Selection

In rural areas, the 1981 Census list of villages served as the sampling frame. A two-stage design was adopted with selection of villages in the first stage and households in selected villages in the second stage. The first level of stratification was geographic, with the districts being subdivided into five regions and according to their geophysical characteristics, as mentioned earlier.

Within each of these five regions, villages were arranged according to district. The next level of stratification was implicit, and consisted of ordering the villages within each district by the level of female literacy in the village.

The overall sampling fraction (the probability, f, of selecting a woman from a domain) for each domain was computed as:

$$f = \frac{n \times 1.10}{N}$$

where n = number of women to be interviewed in a domain, adjusted by a factor of 1.10 to account for nonresponse and other loss; and

N = projected population of eligible women in West Bengal in November, 1992.

A total of 110 rural Primary Sampling Units (PSUs) were selected in the state. The selection of PSUs was systematic with probability proportional to size (PPS). On average, 30 households were selected from each selected PSU.

The probability of selecting a PSU from a domain (f_1) was computed as:

$$f_1 = \frac{a \times s_i}{\Sigma s_i}$$

where a = number of PSUs selected from the domain
s_i = the population size of the selected PSU
Σs_i = the population size of the domain

A household listing operation carried out in each of the selected PSUs about two weeks prior to the data collection provided the necessary frame for selecting households at the second sampling stage. The household listing operation consisted of preparing up-to-date notional and layout sketch maps of each selected PSU, assigning numbers to structures, recording addresses of these structures, identifying the residential structures, and listing the names of heads of all the households in the residential structures in the selected PSU. If PSUs had fewer than 300 households, a complete household listing was done. If PSUs had 300 or more households, segmentation of the PSU was done on the basis of existing wards in the PSU, and two segments were selected using either systematic sampling or PPS sampling. The household listing in such PSUs was carried out in the selected segments. Ten houselisting teams, each comprising a lister and a mapper, were trained during 20-21 March 1992 at Calcutta. The household listing operation started on 22 March 1992. This operation was supervised by two field supervisors and a senior field executive. The households to be interviewed were selected from the household lists using systematic sampling with equal probability.

The probability of selecting a household from a selected PSU (f_2) was computed as:

$$f_2 = \frac{f}{f_1}$$

All the households which were selected were contacted during data collection, and no replacement was made if a selected household was absent during data collection.

The Urban Sample: The Frame, Stratification and Selection

In the urban areas, the frame of urban blocks provided by the National Sample Survey Organization (NSSO) served as the sampling frame. The NSSO, which conducts regular socioeconomic surveys in the country, has subdivided each of the cities/towns into blocks consisting of approximately 150-200 households. In the first level of stratification, all cities and towns were subdivided into three strata: self-selecting cities, district headquarter towns and other towns. A self-selecting city was defined as one whose selection probability was equal to 1.0. Such cities had a 1991 population larger than the sampling interval. Within each stratum, the cities/towns were arranged following the same geographic stratification used in the rural areas. In self-selecting cities, the sample design adopted was two-stage: selection of NSS urban blocks followed by selection of households in each of the selected blocks. In the other two strata, a three-stage sample was adopted: cities/towns, NSS urban blocks, and households being selected at each successive stage. The cities/towns were selected with probability proportional to their population size in 1991. In West Bengal, the following 13 cities/towns (and 54 blocks within these cities/towns) were selected.

Self-selected cities	:	Calcutta, Barddhaman
District capitals	:	Kuch Bihar, Bankura
Other towns	:	Siliguri, Nabadwip, Habra, Kharagpur, Bishnupur, Durgapur, Rampurrhat, English Bazar, Farrakka Barrage

The household listing operation in the selected urban blocks was the same used in the rural sample, although the average number of households per block selected was only 20, compared with 30 in the rural PSUs. Probabilities for the selection of the urban sample are shown below.

The probability of selecting a city/town (f_1) was computed as:

$$f_1 = \frac{a \times s_i}{\Sigma s_i}$$

where a = number of cities/towns selected from the domain
s_i = the population size of the selected city/town
Σs_i = the population size of the domain

The probability of selecting a block from a selected city/town (f_2) was computed as:

$$f_2 = \frac{b}{p}$$

where b = number of blocks to be selected from the city/town.
p = total number of blocks in city.

The probability of selecting a household from a selected block (f_3) was computed as:

$$f_3 = \frac{f}{f_1 \times f_2}$$

Sample Weights

In West Bengal, the sample was weighted at the level of sampling domains in the state. The final weights included in the state data sets are design weights (as per the sample design) adjusted for nonresponse, and normalized so that the total number of weighted cases is equal to the total number of unweighted cases.

Design Weights

Let w_{Di} be the design weight for the i^{th} domain. Then

$$w_{Di} = \frac{f}{f_i}$$

in which

$$f = \frac{n}{N}$$

and

$$f_i = \frac{n_i}{N_i}$$

where f is the overall sampling fraction (i.e., for the entire sample in the state) and f_i is the domain sampling fraction. Note that $n = \Sigma n_i$ and $N = \Sigma N_i$, where n is the number of women selected for the survey, and N is the total number of women age 13-49.

Adjustment for Nonresponse

Let R_{Hi} and R_{Wi} be the household response rate and the individual (women's) response rate, respectively. Then the household weight w_{Hi} is calculated as follows:

$$w_{Hi} = \frac{w_{Di}}{R_{Hi}} \quad .$$

The individual weight w_{Wi} is calculated as follows:

$$w_{Wi} = \frac{w_{Di}}{R_{Hi} \times R_{Wi}}$$

Normalized Weights for Households and Women

After adjustment for nonresponse, the weights are normalized so that the total number of weighted cases is equal to the total number of unweighted cases. The final household weight is:

$$W_{Hi} = \frac{\Sigma n_i}{\Sigma w_{Hi} . n_i} \times w_{Hi}$$

Similarly for the individual weight:

$$W_{Wi} = \frac{\Sigma n_i}{\Sigma w_{Wi} . n_i} \times w_{Wi}$$

Village Weights

Let f_{1hi} be the selection probability of the i^{th} village in the h^{th} stratum[3], and let W_D be the design weight for the domain in which the village is located. Then the village weights are calculated as follows:

$$w_{hi}' = \frac{1}{f_{1hi}} \times W_D$$

These weights are then normalized so that the weighted number of villages is equal to the unweighted number of villages. The normalized village weights are calculated as follows:

$$w_{hi} = w_{hi}' \times \frac{A}{\sum_{h,i} w_{hi}'}$$

where A is the total number of villages selected in the state.

[3] Within each sampling domain in the state, the villages were ordered according to a specified stratification scheme prior to selection.

2.4 Recruitment, Training and Fieldwork

In order to maintain uniform survey procedures across the states, four manuals dealing with different aspects of the survey were prepared at IIPS. The *Interviewer's Manual* consisted of instructions for the interviewers regarding interviewing techniques, field procedures, and instructions on the method of asking each question and recording answers. The *Manual for Field Editors and Supervisors* contained a detailed description of the role of field editors and supervisors in the survey. A list of checks to be made by the field editor in the completed questionnaires was also provided in this manual. The *Household Listing Manual* was meant for household listing teams, and contained procedures to be adopted for household listing. The guidelines for the training of the field staff were described in the manual entitled *Training Guidelines*. The representatives of each of the COs and the PRCs were trained in a series of Training of the Trainers Workshops organized by IIPS at the beginning of each phase of data collection. The purpose of these workshops was to ensure uniformity in data collection procedures in different states. Persons who were trained in each workshop subsequently trained the field staff in each state according to the standard procedures discussed in the Training of Trainers Workshops. In these workshops, detailed discussions were held on the objectives of the NFHS, different aspects of the survey, roles of various organizations participating in the survey, details of each of the three questionnaires used in the survey, methods of data collection and field supervision, and guidelines for the training of the field staff. Two persons from MODE Research, Calcutta were trained at a workshop held in Lonavala during December, 1991.

All the field investigators were females and most of them had obtained a master's degree. The field editors were females and supervisors were males, most of whom had some working experience after the Masters or M. Phil degree. The training of field staff for the main survey was conducted at the office of MODE Research, Calcutta. A total of 41 persons were trained (34 females and 7 males). Classroom training was conducted during the period 9-23 March 1992 by staff from MODE Research and IIPS. Field practice was arranged from 24-31 March in and around Calcutta city.

The three-week training course consisted of instruction in interviewing techniques and field procedures for the survey, a detailed review of each item in the questionnaire, instruction and practice in weighing children, mock interviews between participants in the classroom, and practice interviews in the field. In addition, three special lectures were arranged: one on the topic of family planning at the beginning of the section on contraception in the Woman's Questionnaire; another one on maternal and child health practices, including immunizations, at the beginning of the section on health of children; and one on the organization of Health and Family Welfare service delivery. Medical doctors conversant with the state's Maternal and Child Health (MCH) programme were the resource persons for these lectures. In addition to the regular training, training on alternate days was specially arranged for field editors and supervisors. The editors were trained to detect errors in the filled-in questionnaires and to solve problems. A list of checks to be made while editing the filled-in questionnaires was also supplied to them. Each participant filled in more than 20 questionnaires during the field practice.

The fieldwork for the NFHS in West Bengal was carried out by six interviewing teams, each team consisting of one field supervisor, one field editor, and four female interviewers (see

Appendix C for a complete list of survey staff). Due to the drop out of some of the interviewers, there were only five teams during the middle of data collection. The fieldwork was carried out between 23 April and 30 July 1992. Assignment of Primary Sampling Units (PSUs) to the teams and various logistical decisions were made by the staff of MODE designated as coordinators. Each team was allowed a fixed period of time to complete fieldwork in a PSU before moving to the next PSU. Each interviewer was instructed not to conduct more than three individual interviews a day and was required to make a minimum of three callbacks if the eligible woman identified in the selected household was not present at the time of the household interview.

The main duty of the field editor was to examine the completed questionnaires in the field for completeness, consistency and legibility of the information collected, and to ensure that all necessary corrections were made. Special attention was paid to missing information, skip instructions, filter questions, age information, and completeness of the birth history and the health section. If the problems were major, such as discrepancies between the birth history and the health section, the interviewers were required to revisit the respondent to correct the errors. If a return visit was not possible, the editor tried to establish, with the interviewer's assistance, the correct response. If either of these options was not possible, the editor designated the response as either "missing" or "inconsistent". An additional duty of the field editor was to observe ongoing interviews and verify the accuracy of the method of asking questions, recording answers, and following skip instructions correctly. The field supervisor collected information on the village using the Village Questionnaire. In addition, the field supervisor conducted spot-checks to verify the accuracy of information collected on the eligibility of respondents.

The monitoring and supervision of the data collection operations were carried out by the coordinators and senior staff of MODE and IIPS. During this period IIPS assigned one Research Officer to the Survey for ensuring correct survey procedure and maintaining quality of the data. Throughout the survey, the staff from MODE and IIPS maintained close contacts with all the teams through direct communication and spot-checking. The objective was to provide support and advice to staff in the field and to enhance data quality and the efficiency of interviewers. This objective was accomplished by communicating data problems and possible solutions to the interviewing teams, reminding interviewers about proper probing techniques and examining the fieldwork of the supervisors. In addition, data from the field were simultaneously entered into microcomputers, and field check tables were produced during the fieldwork to assess the quality of the data and identify problem areas. These tables were discussed with the interviewing teams and supervisors during the fieldwork so that they could improve their performance if needed. Each team supervisor was provided with the original household listing, layout sketch map and the household sample selected for each PSU.

2.5 Field Problems

Every survey is subject to a variety of field problems, which cannot be fully anticipated. However, there were no major problems encountered in the West Bengal NFHS.

2.6 Data Processing

All completed questionnaires for the Andhra Pradesh NFHS were sent to the office of MODE, Calcutta, for data processing. This process consisted of office editing, coding, data entry and machine editing. Although field editors examined the completed questionnaires in the field, the questionnaires were re-edited at the ASCI office by specially trained office editors. This re-examination covered checking all skip sequences, checking circled response codes, and checking the information recorded in the filter questions. Special attention was paid to the consistency of responses to age questions and the accurate completion of the birth history. A second stage of office editing comprised the assignment of appropriate codes for the information on occupation, caste and cause of death, and the addition of commonly mentioned "other" responses to the coding scheme. One supervisor and two data entry operators were responsible for data entry and computer editing operations. The data were processed with two microcomputers using the data entry and editing software known as the Integrated System for Survey Analysis (ISSA). The data entry, done directly from the precoded questionnaires, started within one week of the receipt of the first set of completed questionnaires. Computer-based checks were done to clean the data and remove inconsistencies. Age imputation was also completed at this stage. Age variables such as current age, age at first marriage, age of the woman when she started living with her husband, and the ages of all children were imputed for those cases in which information was missing or incorrect entries were detected.

A preliminary report highlighting the important findings of the survey in West Bengal was prepared in November, 1993. The preliminary report was primarily meant for disseminating the data on basic demographic and health parameters among programme planners, policymakers and administrators soon after the data collection was over. The report contained sixteen tables and a short description of the findings on fertility, knowledge and use of contraception, utilization of antenatal services, immunization, feeding practices and health of children, infant and child mortality, and knowledge of AIDS.

In order to maintain comparability with all the states, the tabulation plan for the detailed state reports was finalized at a workshop held in Vadodara in December, 1992. The final tables for West Bengal were produced at IIPS based on this tabulation plan.

2.7 Areas for Reporting Survey Results

In this report, survey results are reported for West Bengal as a whole, as well as separately for the urban and rural areas and for the backward districts. It should be noted that urban and rural areas are non-overlapping and between them include all districts of the state. On the other hand, the backward districts overlap with and are represented in the statistics reported for the urban and rural areas.

2.8 Sample Implementation

Table 2.1 shows response rates for the survey as well as reasons for nonresponse. Of the 4,463 households selected in West Bengal, interviews were completed in 95 percent of the cases. In one percent of the cases, the selected households were found to be no longer existing (the dwelling was vacant or destroyed). The overall response rate -- the number of households

interviewed per 100 occupied households was 96 percent. The response rate varied from one domain to another, being lowest in the urban areas (93 percent), intermediate in the rural areas (97 percent) and highest in the backward districts (98 percent).

The average number of eligible women per household interviewed is 1.02. In all, 4,322 eligible women were interviewed resulting in an individual response rate of 96 percent. The individual response rates by study domain follow the same pattern as the household response rates.

Nonresponse at both the household and individual levels was principally due to the failure to find an adult household member or an eligible female respondent at home despite repeated household visits. Cases where an eligible woman refused to give the interview were few (overall, less than one percent), although refusals were higher in the urban areas than in the rural areas or the backward districts.

Table 2.1 Sample results

Sample results for households and eligible women (unweighted), West Bengal, 1992

Result	Urban		Rural		Total		Backward districts	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Households selected	1194	100.0	3269	100.0	4463	100.0	998	100.0
Households completed (C)	1086	91.0	3152	96.4	4238	95.0	969	97.1
Households with no competent respondent (HP)	12	1.0	3	0.1	15	0.3	2	0.2
Households absent (HA)	57	4.8	58	1.8	115	2.6	11	1.1
Households refused (R)	14	1.2	7	0.2	21	0.5	1	0.1
Households vacant/no dwelling (DV)	19	1.6	20	0.6	39	0.9	7	0.7
Dwellings destroyed (DD)	0	--	7	0.2	7	0.2	4	0.4
Dwellings not found (DNF)	4	0.3	20	0.6	24	0.5	3	0.3
Other (O)	2	0.2	2	0.1	4	0.1	1	0.1
Households occupied	1173	100.0	3240	100.0	4413	100.0	986	100.0
Households interviewed	1086	92.6	3152	97.3	4238	96.0	969	98.3
Households not interviewed	87	7.4	88	2.7	175	4.0	17	1.7
Household response rate (HHR)[1]	NA	92.6	NA	97.3	NA	96.0	NA	98.3
Eligible women	968	100.0	3538	100.0	4506	100.0	1064	100.0
Women interviewed (EWC)	898	92.8	3424	96.8	4322	95.9	1036	97.4
Women not at home (EWNH)	34	3.5	80	2.3	114	2.5	20	1.9
Women postponed (EWP)	0	--	1	--	1	--	0	--
Women refused (EWR)	25	2.6	17	0.5	42	0.9	4	0.4
Women partly interviewed (EWPC)	7	0.7	8	0.2	15	0.3	0	--
Other (EWO)	4	0.4	8	0.2	12	0.3	4	0.4
Individual response rate (EWRR)[2]	NA	93.2	NA	97.0	NA	96.2	NA	97.7
Overall response rate (ORR)[3]	NA	86.2	NA	94.4	NA	92.4	NA	96.1

NA: Not applicable
-- Less than 0.05 percent

[1]Using the number of households falling into specific response categories, the household response rate (HHR) is calculated as:

$$HHR = \frac{C}{C + HP + HA + R + DNF} \times 100$$

[2]Using the number of eligible women falling into specific response categories, the individual response rate (EWRR) is calculated as:

$$EWRR = \frac{EWC}{EWC + EWNH + EWP + EWR + EWPC} \times 100$$

[3]The overall response rate (ORR) is calculated as:

$$ORR = (HHR \times EWRR) / 100$$

CHAPTER 3

HOUSEHOLD AND RESPONDENT BACKGROUND CHARACTERISTICS

This chapter presents a profile of the demographic and socioeconomic characteristics of households and individual respondents in the NFHS. The chapter also includes some comparisons of the NFHS results with results from the 1991 Census of India and the Sample Registration System.

3.1 Age-Sex Distribution of the Household Population

The NFHS household population can be tabulated in two ways: *de facto* (the place each person slept the night before the survey interview) or *de jure* (the place of usual residence). The *de facto* population in the NFHS household sample, classified by age, sex and residence, is reflected in Table 3.1. In this table, the total population is divided into urban and rural areas. Backward districts, officially defined by the government as districts in which the estimated crude birth rate was 39 per 1,000 or higher in 1981, include both urban and rural areas. The total weighted *de facto* sample population is 22,635. The sample is 30 percent urban, and 11 percent of the sample population resided in backward districts.

As far as the age distribution is concerned the data suggest that 36 percent of the West Bengal population is below age 15, and 7 percent is age 60 and above. The child population (below age 15) is 30 percent in urban areas, 39 percent in rural areas, and 41 percent in the backward districts.

Examination of the single-year age distributions (see Appendix Table B.1 and Figure 3.1) indicates substantial distortions of the data due to misreporting of age and preference for particular digits. One of the most commonly used measures of digit preference in age reporting is the Myers' Index (United Nations, 1955). This index provides an overall summary of preferences for, or avoidance of, each of the ten digits from 0 to 9. The index is equal to half of the sum of the absolute deviations from an expected value of the number of persons reported at ages ending with each digit. The expected distribution of final digits is based on a distribution which takes into account the effects of mortality and differences in cohort size. The Myers' Indices computed for male and female populations in the NFHS sample of West Bengal are 35.5 and 21.3, respectively. The corresponding indices for males and females from the 1981 Census are 55.1 and 59.9, respectively. Although the method of collecting information on the age of household members was almost the same in the Census and the NFHS, age reporting in the NFHS seems to be considerably better for females. In the NFHS, as in the Census, the interviewer collected information on the age of household members from the head of the household or any responsible adult member of the household. The Myers' Indices for males and females in the NFHS indicate that age reporting is better for females than males.

Figure 3.1 also indicates that the age distribution is smoother for women in the age group 20-45 compared with other males or females. The better age reporting for females in the age group 20-45 in the NFHS is mainly due to differences in the method of collecting and tabulating information on age for males and females in the reproductive ages. In the Household

Table 3.1 Household population by age and sex

Percent distribution of the *de facto* household population by age, according to sex and residence, West Bengal, 1992

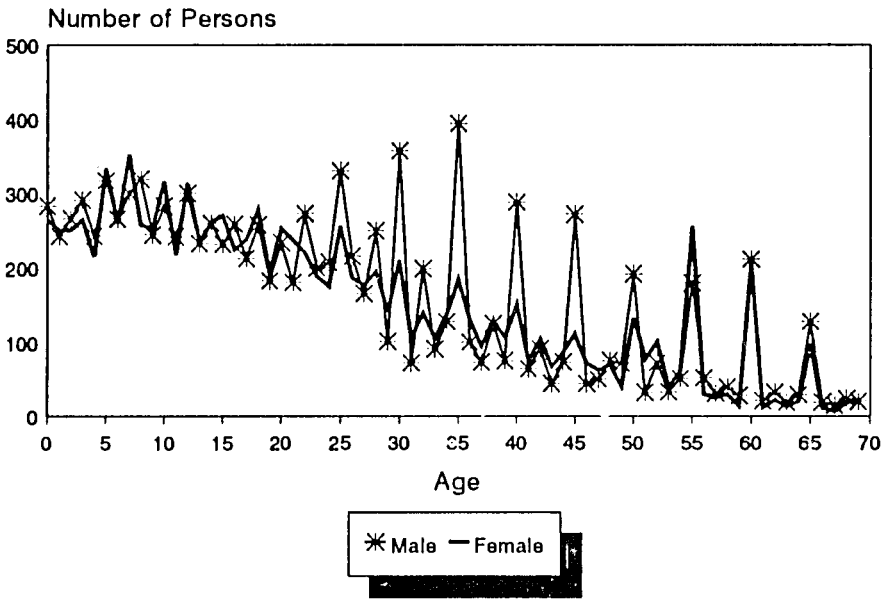
	Urban			Rural			Total			Backward districts		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
< 1	1.7	2.0	1.8	2.8	2.5	2.7	2.4	2.4	2.4	3.1	3.0	3.1
1 - 4	6.8	7.4	7.1	9.9	9.6	9.7	9.0	8.9	8.9	10.7	10.6	10.6
5 - 9	9.7	10.0	9.9	13.6	14.5	14.1	12.4	13.3	12.8	15.3	13.9	14.6
10-14	10.6	10.8	10.7	11.6	12.8	12.2	11.3	12.3	11.8	11.7	13.7	12.7
15-19	8.6	11.2	9.9	10.4	10.9	10.6	9.8	11.0	10.4	9.6	11.8	10.6
20-24	10.3	9.0	9.7	9.0	10.1	9.6	9.4	9.8	9.6	8.1	9.5	8.8
25-29	9.6	9.8	9.7	8.9	8.3	8.6	9.1	8.7	8.9	8.3	7.7	8.0
30-34	8.0	7.1	7.6	7.0	6.1	6.5	7.3	6.4	6.8	7.0	5.9	6.4
35-39	7.5	6.8	7.2	6.2	5.5	5.8	6.6	5.9	6.2	6.0	5.5	5.7
40-44	5.8	5.3	5.6	4.4	4.0	4.2	4.8	4.4	4.6	4.5	3.7	4.1
45-49	5.9	4.0	5.0	3.7	2.9	3.3	4.4	3.2	3.8	3.3	3.0	3.2
50-54	4.4	4.9	4.6	2.8	3.3	3.0	3.3	3.8	3.5	2.8	3.4	3.1
55-59	3.5	3.5	3.5	2.5	3.1	2.8	2.8	3.2	3.0	2.3	3.0	2.6
60-64	2.5	3.2	2.8	2.8	2.2	2.5	2.7	2.5	2.6	2.9	2.7	2.8
65-69	2.1	1.5	1.8	1.7	1.3	1.5	1.8	1.4	1.6	1.6	1.0	1.3
70-74	1.5	1.6	1.5	1.4	1.3	1.4	1.4	1.4	1.4	1.4	0.8	1.1
75-79	0.7	0.5	0.6	0.6	0.5	0.6	0.6	0.5	0.6	0.7	0.4	0.5
80+	0.6	1.2	0.9	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.6	0.7
DK/missing	--	--	--	--	0.1	0.1	--	0.1	--	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3566	3138	6704	8078	7853	15931	11644	10991	22635	1226	1186	2412
Sex ratio	NA	NA	880	NA	NA	972	NA	NA	944	NA	NA	967

NA: Not applicable
DK: Don't know
-- Less than 0.05 percent

Questionnaire, the ages of all males and females were reported by the head of the household or other qualified household respondent. No extensive probing techniques were adopted for obtaining age information in the Household Questionnaire. For eligible women who were interviewed using the Woman's Questionnaire, the age reported by the woman herself replaces the age reported in the Household Questionnaire if there is a discrepancy. Female age on the Woman's Questionnaire is based on her month and year of birth, if known, or on her reported age otherwise. During the interview using the Woman's Questionnaire, a variety of probing techniques were used to elicit accurate age information from the respondent. The data suggest that probing and other interviewer techniques used for arriving at the age of eligible women have helped in reducing the biases in age reporting due to digit preference, as seen in the much more smoothed age distribution of females from the Woman's Questionnaire, compared to the corresponding age distribution of males based on the Household Questionnaire (Figure 3.1).

Age of the woman is one of the most important items of information collected in any demographic survey, because many demographic statistics, and especially fertility estimates, depend on accurate reporting of women's ages. Recognizing the difficulties of obtaining accurate age data in India, the NFHS made special efforts to minimize age reporting errors. The training of interviewers placed great emphasis on procedures for obtaining as accurate

Figure 3.1
Number of Persons Reported at Each Age .
by Sex

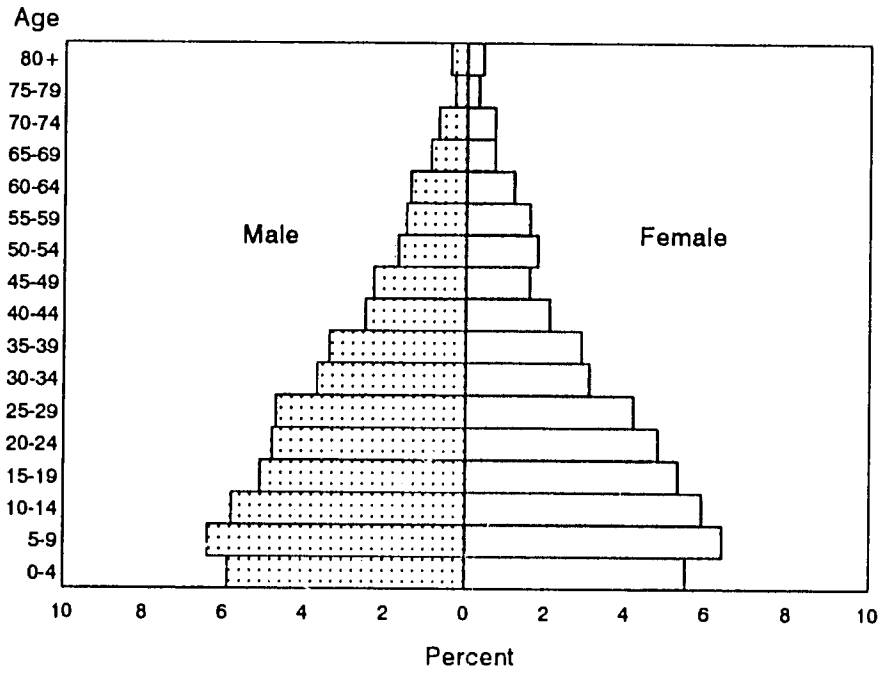


NFHS, West Bengal, 1992

information as possible on women's ages. For women who did not know their age or date of birth, several procedures for probing for age were used. One method was based on the age of the woman at different significant events in her life, such as the birth of her first child, her age at marriage, age at menarche, and on the time gap between these events. Reference calendars were also used to try to locate the woman's birth in relation to the dates of major national events. Although age errors cannot be totally eliminated, the comparisons with the Census suggest that probing and other interviewer techniques used for more accurately eliciting the ages of eligible women have indeed helped in reducing the biases in age reporting due to digit preference.

The distribution by five-year age groups is shown in the population pyramid in Figure 3.2. The irregular dip in the proportion of women at age 45-49 is indicative of a possible shifting of the age of women from 45-49 to age 50-54 presumably to reduce the work load of the interviewer (Rutstein and Bicego, 1990). It was emphasized, however, during the training of interviewers in the NFHS, that such a tendency to shift the age will be carefully scrutinised. The impact of this apparent shifting of age on the quality of data is minimal because the shifting is not pronounced. The fact that the bottom row of the population pyramid (the percentage distribution of males and females age 0-4) is slightly more narrow than the second row (the percentage distribution of males and females age 5-9), is indicative of recent fertility decline in West Bengal.

Figure 3.2
Population Pyramid of West Bengal



The *de facto* population sex ratio (females per 1,000 males) is 880 in urban areas, 972 in rural areas, and 944 for the state as a whole. Roughly comparable figures from the 1991 Census are 858 for urban areas, 940 for rural areas and 917 for the state as a whole (Office of the Registrar General and Census Commissioner, 1991). The discrepancy between the two sources is 2 percentage points (22 per 1,000) in urban areas and 3 percentage points (32 per 1,000) in rural areas, with the sex ratio consistently higher in the NFHS. Possible reasons for this pattern of differences are discussed later.

Table 3.2 compares the age distributions by sex from the NFHS *de jure* sample with the 1991 Sample Registration System (SRS). The SRS baseline survey counts all usual residents of the sample area (Office of the Registrar General, 1993). By and large, the age distributions by sex are quite similar for the 1991 SRS and the NFHS.

Table 3.2 also provides information on sex ratios by age for the NFHS. The Sample Registration System publishes percentage age distributions for the sample registration areas but not absolute numbers of population, so no population sex ratios can be computed from the SRS publication. The total population sex ratio for West Bengal was 911 in the 1981 Census, 917 in the 1991 Census and 940 in the NFHS *de jure* sample. The two census values are quite close, but the NFHS *de jure* value is about two percentage points (23 per 1,000) higher and the NFHS *de facto* value (Table 3.1) is about three percentage points higher than the 1991 Census value (Office of the Registrar General and Census Commissioner, 1991). Since the 1991 Census and the NFHS were conducted about a year apart, sex ratios from the two sources should

Table 3.2 Population by age and sex from SRS and NFHS

Percent distribution of the *de jure* population by age and sex from SRS and NFHS, West Bengal, 1991-92

	SRS (1991)		NFHS (1992)		
Age	Male	Female	Male	Female	Sex ratio
0 - 4	12.7	13.3	11.0	11.4	975
5 -14	21.6	22.1	23.6	25.5	1018
15-29	28.9	29.5	28.5	28.7	947
30-49	25.4	23.3	23.3	20.6	832
50-64	8.4	8.3	9.0	9.6	997
65+	2.9	3.5	4.6	4.2	851
Total	100.0	100.0	100.0	100.0	940
Median age	U	U	22.8	21.1	NA

NA: Not applicable
U: Not available
Source for SRS: Office of the Registrar General (1993)

be about the same.

One difference between the two sources of data is the population coverage. The Census includes the institutional population, which is overwhelmingly male, whereas the NFHS excludes the institutional population. Aside from the difference in the coverage, the discrepancies in population sex ratios between the NFHS and the 1991 Census in West Bengal could occur if the NFHS missed more males than females, or if the Census missed more females than males, or if both of these errors occurred. The sampling error for the *de facto* NFHS sex ratio is only 13.9, yielding a confidence interval of 916-972. The census value falls in this range but is only slightly higher than the lowest value in the range. Moreover, both urban and rural sex ratios are higher in the NFHS than in the 1991 Census, suggesting a systematic rather than a random pattern of differences.

Given the comparatively low status of women in West Bengal, it seems unlikely that the NFHS missed more males than females. Moreover, the training and supervision of interviewers was much more thorough in the NFHS than in the Census. Therefore, the most likely source of the discrepancy in the estimated sex ratio is the relative underenumeration of females in the 1991 Census, a possibility that has been mentioned by Premi (1991), among others. In general, according to post-enumeration checks, Indian censuses have consistently underenumerated females more than males, although the gap is narrowing with each successive census. Not yet published findings from the 1991 Census post-enumeration check for West Bengal may shed some light on the discrepancy in sex ratios between the NFHS and the 1991 Census. Possible underenumeration of females in the 1991 Census should therefore explain much of the differences in the sex ratios between the two data sources.

3.2 Marital Status

The NFHS gathered information on the marital status of all household members age 6 and over. Table 3.3 shows the marital status distribution of the *de facto* household population

Table 3.3 Marital status of the household population

Percent distribution of the *de facto* household population age 6 and above by marital status, according to age, sex and residence, West Bengal, 1992

Age	Marital status						Total percent
	Never married	Currently married	Widowed	Divorced	Separated	DK/ missing	
			URBAN Male				
6 -12	99.5	0.3	--	--	0.3	--	100.0
13-14	100.0	--	--	--	--	--	100.0
15-19	94.6	4.9	--	--	0.4	--	100.0
20-24	78.6	21.4	--	--	--	--	100.0
25-29	52.5	47.5	--	--	--	--	100.0
30-34	22.7	76.3	0.5	--	0.5	--	100.0
35-39	10.1	89.4	--	--	0.5	--	100.0
40-44	4.5	95.5	--	--	--	--	100.0
45-49	5.9	90.2	2.6	0.6	0.6	--	100.0
50-54	--	96.6	2.6	--	0.9	--	100.0
55-59	3.3	93.5	3.3	--	--	--	100.0
60+	8.3	78.1	13.1	--	0.5	--	100.0
Total	48.6	49.5	1.5	--	0.3	--	100.0
			Female				
6 -12	99.4	0.6	--	--	--	--	100.0
13-14	93.4	6.6	--	--	--	--	100.0
15-19	76.1	23.5	--	--	0.4	--	100.0
20-24	42.0	55.6	1.0	--	1.4	--	100.0
25-29	17.0	78.9	2.2	0.4	1.4	--	100.0
30-34	6.8	84.2	4.8	0.6	3.6	--	100.0
35-39	2.5	90.0	5.6	--	1.9	--	100.0
40-44	4.9	83.8	8.1	--	3.2	--	100.0
45-49	1.4	86.4	10.0	--	2.2	--	100.0
50-54	2.7	64.1	30.6	0.9	1.8	--	100.0
55-59	--	59.5	39.3	1.2	--	--	100.0
60+	2.2	27.3	69.5	0.5	0.5	--	100.0
Total	38.1	48.9	11.6	0.2	1.2	--	100.0
			RURAL Male				
6 -12	99.8	0.1	--	--	0.1	--	100.0
13-14	99.7	0.3	--	--	--	--	100.0
15-19	95.7	4.2	--	0.1	--	--	100.0
20-24	66.2	33.5	0.1	0.1	0.1	--	100.0
25-29	29.4	69.5	0.6	--	0.4	--	100.0
30-34	10.3	89.7	--	--	--	--	100.0
35-39	1.8	96.0	1.4	0.2	0.5	--	100.0
40-44	1.1	97.0	1.6	--	0.3	--	100.0
45-49	2.0	96.3	1.0	--	0.7	--	100.0
50-54	1.0	94.0	4.4	0.5	0.2	--	100.0
55-59	2.9	88.6	8.4	--	0.2	--	100.0
60+	2.2	81.3	15.3	0.1	1.1	--	100.0
Total	49.7	47.9	2.0	0.1	0.3	--	100.0

Table 3.3 Marital status of the household population (Contd.)

Percent distribution of the *de facto* household population age 6 and above by marital status, according to age, sex and residence, West Bengal, 1992

Age	Marital status						Total percent
	Never married	Currently married	Widowed	Divorced	Separated	DK/ missing	
			RURAL Female				
6 -12	99.3	0.4	0.2	--	0.1	--	100.0
13-14	91.3	8.7	--	--	--	--	100.0
15-19	50.3	47.7	0.2	0.5	1.3	--	100.0
20-24	11.7	85.1	1.1	0.4	1.7	--	100.0
25-29	2.7	93.1	1.5	0.2	2.6	--	100.0
30-34	1.0	90.1	5.4	0.5	2.9	--	100.0
35-39	0.9	88.6	7.9	0.1	2.5	--	100.0
40-44	1.4	86.1	9.3	--	3.2	--	100.0
45-49	1.4	82.0	15.3	0.2	1.1	--	100.0
50-54	1.0	69.4	28.6	--	1.0	--	100.0
55-59	1.1	56.8	41.7	--	0.4	--	100.0
60+	0.5	23.4	75.4	0.2	0.4	--	100.0
Total	36.3	51.8	10.5	0.2	1.3	--	100.0
			TOTAL Male				
6 -12	99.7	0.2	--	--	0.1	--	100.0
13-14	99.8	0.2	--	--	--	--	100.0
15-19	95.4	4.4	--	0.1	0.1	--	100.0
20-24	70.4	29.4	0.1	--	0.1	--	100.0
25-29	36.9	62.4	0.4	--	0.3	--	100.0
30-34	14.5	85.2	0.2	--	0.2	--	100.0
35-39	4.7	93.7	0.9	0.1	0.5	--	100.0
40-44	2.3	96.4	1.0	--	0.2	--	100.0
45-49	3.6	93.8	1.7	0.3	0.7	--	100.0
50-54	0.6	95.0	3.6	0.3	0.5	--	100.0
55-59	3.0	90.4	6.4	--	0.1	--	100.0
60+	4.1	80.3	14.6	0.1	0.9	--	100.0
Total	49.4	48.4	1.9	0.1	0.3	--	100.0
			Female				
6 -12	99.3	0.4	0.2	--	0.1	--	100.0
13-14	91.9	8.1	--	--	--	--	100.0
15-19	57.8	40.6	0.2	0.3	1.0	--	100.0
20-24	19.6	77.4	1.1	0.3	1.6	--	100.0
25-29	7.3	88.5	1.7	0.3	2.2	--	100.0
30-34	2.9	88.2	5.2	0.6	3.1	--	100.0
35-39	1.4	89.1	7.2	0.1	2.3	--	100.0
40-44	2.6	85.3	8.9	--	3.2	--	100.0
45-49	1.4	83.5	13.4	0.1	1.5	--	100.0
50-54	1.6	67.4	29.3	0.3	1.3	--	100.0
55-59	0.7	57.7	40.9	0.4	0.3	--	100.0
60+	1.1	24.7	73.4	0.3	0.5	--	100.0
Total	36.8	50.9	10.8	0.2	1.3	--	100.0

Table 3.3 Marital status of the household population (Contd.)

Percent distribution of the *de facto* household population age 6 and above by marital status, according to age, sex and residence, West Bengal, 1992

Age	Marital status: Never married	Currently married	Widowed	Divorced	Separated	DK/ missing	Total percent
			BACKWARD DISTRICTS				
			Male				
6 -12	100.0	--	--	--	--	--	100.0
13-14	100.0	--	--	--	--	--	100.0
15-19	93.9	5.4	--	0.8	--	--	100.0
20-24	62.8	35.8	--	0.5	0.9	--	100.0
25-29	31.7	67.4	--	--	0.9	--	100.0
30-34	12.5	87.5	--	--	--	--	100.0
35-39	0.6	98.1	0.6	--	0.6	--	100.0
40-44	0.8	96.7	2.4	--	--	--	100.0
45-49	2.1	95.7	2.2	--	--	--	100.0
50-54	--	98.7	--	--	1.3	--	100.0
55-59	1.6	93.6	3.2	--	1.6	--	100.0
60+	1.5	83.6	14.4	0.5	--	--	100.0
Total	50.2	47.7	1.6	0.2	0.3	--	100.0
			Female				
6 -12	99.6	0.2	0.2	--	--	--	100.0
13-14	90.0	10.0	--	--	--	--	100.0
15-19	49.1	48.0	0.6	0.6	1.6	--	100.0
20-24	12.8	82.7	1.2	--	3.2	--	100.0
25-29	2.4	94.2	1.0	--	2.4	--	100.0
30-34	1.2	92.3	4.5	0.6	1.3	--	100.0
35-39	0.7	87.8	9.5	0.7	1.4	--	100.0
40-44	--	85.8	13.2	--	1.0	--	100.0
45-49	1.2	81.2	15.1	1.3	1.3	--	100.0
50-54	1.1	69.0	28.8	--	1.1	--	100.0
55-59	1.3	61.5	37.2	--	--	--	100.0
60+	0.7	35.1	64.2	--	--	--	100.0
Total	37.4	52.0	9.2	0.2	1.1	--	100.0

DK: Don't know
-- Less than 0.05 percent

by age, sex and residence. Among females age 6 or more years, 51 percent are currently married, and 37 percent have never been married. The percentage never married is higher for males (49 percent) than females. The proportion of females never married is, however, lower in rural areas (36 percent) than in urban areas (38 percent). The proportion divorced or separated is small in West Bengal, and the impact of widowhood is quite limited until the older ages. However, two-fifths of women age 55-59 and slightly less than three-fourths of women age 60 and over are widows.

Of more interest is the proportion of persons who marry young. At age 15-19, the proportions ever married are 5 percent of males and 24 percent of females in urban areas, 4 percent of males and 50 percent of females in rural areas, and 5 percent of males and 42 percent of females in the state as a whole. By age 30-34, marriage is nearly universal for females, and the proportions of males ever married by age 30-34 reach 77 percent in urban areas, 90 percent in rural areas, and 86 percent in the state as a whole. Overall, the table shows that women

marry at younger ages than men, and that both men and women in rural areas marry at much younger ages than in urban areas. A more comprehensive discussion of marriage patterns is found in the next chapter.

3.3 Household Composition

The percent distribution of households by various characteristics of the household head (sex, age, marital status, religion and caste/tribe) as well as the number of usual household members is shown in Table 3.4.

Table 3.4 Household composition

Percent distribution of households by selected characteristics of household head and size, according to residence, West Bengal, 1992

Characteristic	Residence			
	Urban	Rural	Total	Backward districts
Sex of household head				
Male	88.0	90.1	89.5	90.1
Female	12.0	9.9	10.5	9.9
Age of household head				
Less than 30	7.3	15.0	12.5	13.9
30-44	36.4	39.6	38.6	39.4
45-59	36.5	26.7	29.9	27.1
60+	19.8	18.6	19.0	19.6
Median age	46.0	41.8	44.4	41.9
Marital status of household head				
Never married	4.6	2.9	3.4	2.8
Currently married	83.6	86.2	85.3	87.2
Widowed	10.9	9.7	10.1	9.2
Divorced	0.4	0.1	0.2	0.3
Separated	0.6	1.1	1.0	0.5
Religion				
Hindu	85.1	73.5	77.2	43.1
Muslim	13.5	24.1	20.7	56.3
Other	1.4	2.4	2.1	0.6
Caste/tribe				
Scheduled caste	4.6	10.6	8.7	6.8
Scheduled tribe	1.1	6.6	4.8	5.4
Other	94.3	82.8	86.5	87.8
Number of usual members				
1	5.7	1.8	3.0	3.4
2	8.6	6.2	7.0	5.4
3	15.5	12.0	13.1	12.3
4	17.9	16.7	17.1	15.9
5	16.1	18.3	17.6	17.7
6	12.6	16.4	15.2	15.5
7	7.6	10.3	9.4	9.5
8	6.0	7.0	6.7	9.1
9+	10.1	11.2	10.8	11.2
Mean size	5.1	5.6	5.4	5.6
Total percent	100.0	100.0	100.0	100.0
Number of households	1363	2876	4238	433

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

Regardless of the type of residence, the majority of the household heads are males. The percentage of households with a male as the head varies between 88 and 90. The majority of the heads are currently married (84 percent in urban areas, 86 percent in rural areas). In the case of backward districts, 87 percent are currently married. The majority of household heads are Hindus (77 percent), followed by Muslims (21 percent). In the backward districts, however, the proportion of household heads that are Muslim is higher - 56 and 43 percent, respectively, for Muslims and Hindus. Also consistent with the distribution of religious groups by residence in West Bengal, the proportion of households headed by Muslims is higher in rural than in urban areas.

Nine percent of all household heads were scheduled caste and 5 percent scheduled tribe. According to the 1991 Census (Office of the Registrar General and Census Commissioner, 1992), the percentages of the population belonging to scheduled castes and scheduled tribes in West Bengal were 23.6 and 5.6 percent, respectively. The mean NFHS household size is 5.4 persons per household. It is somewhat lower in urban areas (5.1 persons per household) than in rural areas (5.6 persons per household). According to the NFHS results, the median ages of household heads ranges from 41.8 among rural households, to 46.0 among urban households.

Table 3.5 shows the percent distribution of the *de facto* household population by age, resident status and sex. All subsequent tables in this chapter and in the following chapters are based on the *de facto* sample, unless otherwise specified[1]. Overall, five percent of the *de facto* population listed in the sample households at the time of the interview were visitors who did not usually live in the household. Visiting was relatively common among young women in the childbearing years and their children. This pattern probably results from the common practice of women returning to their natal home to bear their children (particularly the first one or two children) and remaining there for a portion of the postpartum period. Visits occur at approximately the same rate in urban and rural areas and backward districts.

3.4 Educational Attainment

The educational level of household members is an important characteristic because educational attainment often affects reproductive behaviour, the use of contraceptives, the health of children, and proper hygienic practices. Table 3.6 shows the extent of literacy and educational attainment of the *de facto* male and female household population age 6 and above by age and residence. Forty-five percent of females age 6 and above are illiterate, compared with 25 percent of males. The NFHS levels of illiteracy are somewhat lower than the 1991 Census rates of 53 percent for females and 32 percent for males age 7 and above (Table 1.1). With respect to educational attainment, a higher percentage of males than females have completed each level of schooling. An examination of the median number of years spent in school by sex of student is strongly indicative of both the overall low level of education in West

[1] It is expected that the *de facto* sample will be more representative of women in the state as a whole since all women are interviewed where they are staying at the time of the survey. A *de jure* sample, on the other hand, would miss usual residents who are temporarily staying elsewhere at the time of the survey.

Table 3.5 Usual residents and visitors

Percent distribution of the *de facto* household population by resident status in the household according to age, residence and sex, West Bengal, 1992

Characteristic	Resident status		Total percent	Number
	Usual resident	Visitor		
MALE				
Age				
< 1	84.2	15.8	100.0	283
1 - 4	92.0	8.0	100.0	1043
5 -14	97.4	2.6	100.0	2765
15-19	96.7	3.3	100.0	1145
20-24	95.1	4.9	100.0	1097
25-29	95.4	4.6	100.0	1063
30-34	96.6	3.4	100.0	848
35-39	96.7	3.3	100.0	767
40-44	96.5	3.5	100.0	561
45-49	96.8	3.2	100.0	512
50+	98.5	1.5	100.0	1558
Residence				
Urban	96.4	3.6	100.0	3566
Rural	96.0	4.0	100.0	8078
Backward districts	96.5	3.5	100.0	1226
Total	96.1	3.9	100.0	11644
FEMALE				
Age				
< 1	92.4	7.6	100.0	264
1 - 4	93.8	6.2	100.0	983
5 -14	96.7	3.3	100.0	2803
15-19	90.5	9.5	100.0	1209
20-24	90.4	9.6	100.0	1076
25-29	93.8	6.2	100.0	957
30-34	97.5	2.5	100.0	701
35-39	96.0	4.0	100.0	646
40-44	96.3	3.7	100.0	483
45-49	98.8	1.2	100.0	356
50+	96.0	4.0	100.0	1504
Residence				
Urban	95.4	4.6	100.0	3138
Rural	94.5	5.5	100.0	7853
Backward districts	95.2	4.8	100.0	1186
Total	94.7	5.3	100.0	10991
TOTAL				
Age				
< 1	88.1	11.9	100.0	547
1 - 4	92.9	7.1	100.0	2026
5 -14	97.0	3.0	100.0	5568
15-19	93.5	6.5	100.0	2354
20-24	92.8	7.2	100.0	2173
25-29	94.6	5.4	100.0	2020
30-34	97.0	3.0	100.0	1550
35-39	96.4	3.6	100.0	1413
40-44	96.4	3.6	100.0	1043
45-49	97.6	2.4	100.0	868
50+	97.3	2.7	100.0	3063
Residence				
Urban	95.9	4.1	100.0	6704
Rural	95.2	4.8	100.0	15931
Backward districts	95.8	4.2	100.0	2412
Total	95.4	4.6	100.0	22635

Note: Total includes 2 males and 9 females with missing information on age, who are not shown separately.

Table 3.6 Educational level of the household population

Percent distribution of the *de facto* household population age 6 and above by literacy and level of education, and median number of completed years of schooling, according to age, sex and residence, West Bengal, 1992

Age	Educational level							Total percent	Number	Median number of years of schooling
	Illiterate	Literate, <primary complete	Primary school complete	Middle school complete	High school complete	Above high school	Missing			
					URBAN					
					Male					
6 - 9	13.7	85.3	1.0	--	--	--	--	100.0	270	1.6
10-14	9.8	35.5	43.2	11.1	0.4	--	--	100.0	379	5.3
15-19	9.9	14.0	13.8	36.6	22.1	3.6	--	100.0	308	8.7
20-24	11.5	9.5	17.2	19.1	21.9	20.7	--	100.0	369	9.1
25-29	14.0	12.0	11.0	17.9	19.4	25.3	0.4	100.0	344	9.5
30-34	17.0	10.2	10.4	14.3	22.6	25.1	0.5	100.0	286	9.8
35-39	15.0	14.3	8.6	13.3	20.0	28.8	--	100.0	267	9.9
40-44	12.3	19.2	9.7	14.3	19.0	25.6	--	100.0	208	9.3
45-49	16.7	17.9	12.8	13.4	15.3	22.6	1.3	100.0	211	8.3
50+	17.0	17.1	12.3	13.8	23.3	16.1	0.3	100.0	546	8.6
Total	13.7	22.7	15.0	15.6	16.7	16.1	0.2	100.0	3188	7.7
					Female					
6 - 9	19.1	78.7	2.2	--	--	--	--	100.0	250	1.3
10-14	17.6	40.6	32.7	8.3	0.8	--	--	100.0	340	4.5
15-19	19.8	12.8	22.4	26.1	16.7	2.1	--	100.0	353	7.4
20-24	22.4	10.5	13.4	16.2	20.3	17.2	--	100.0	282	8.5
25-29	24.4	11.8	7.9	21.1	16.0	18.9	--	100.0	309	8.7
30-34	28.9	12.8	10.8	16.4	13.4	17.6	--	100.0	224	7.5
35-39	23.4	20.3	10.7	14.2	19.2	12.3	--	100.0	215	6.5
40-44	27.5	15.4	14.0	16.5	13.9	12.6	--	100.0	166	6.9
45-49	29.5	19.4	20.1	12.2	12.1	6.7	--	100.0	125	5.2
50+	46.1	24.0	11.3	9.6	5.8	3.0	0.3	100.0	512	0.9
Total	27.0	24.9	14.8	14.1	11.1	8.1	--	100.0	2275	4.8
					Total					
6 - 9	16.3	82.2	1.6	--	--	--	--	100.0	520	1.5
10-14	13.5	37.9	38.3	9.8	0.6	--	--	100.0	719	4.9
15-19	15.2	13.4	18.4	31.0	19.2	2.8	--	100.0	661	8.2
20-24	16.2	9.9	15.5	17.9	21.2	19.2	--	100.0	651	8.9
25-29	18.9	11.9	9.5	19.4	17.8	22.3	0.2	100.0	652	9.1
30-34	22.2	11.3	10.6	15.2	18.5	21.8	0.3	100.0	510	9.0
35-39	18.7	17.0	9.5	13.7	19.7	21.4	--	100.0	481	8.8
40-44	19.0	17.5	11.6	15.2	16.7	19.8	--	100.0	374	8.3
45-49	21.5	18.5	15.5	13.0	14.1	16.7	0.8	100.0	336	7.1
50+	31.1	20.5	11.8	11.8	14.8	9.7	0.3	100.0	1057	4.8
Total	19.9	23.7	14.9	14.9	14.1	12.4	0.1	100.0	5963	6.2
					RURAL					
					Male					
6 - 9	32.0	67.8	0.2	--	--	--	--	100.0	860	0.8
10-14	22.1	46.4	27.0	4.4	--	--	--	100.0	939	3.6
15-19	22.5	21.0	25.5	20.4	9.3	1.2	0.1	100.0	837	5.9
20-24	23.3	18.3	18.0	18.0	16.6	5.8	--	100.0	729	6.4
25-29	32.5	17.8	15.2	16.0	12.3	6.3	--	100.0	719	5.0
30-34	28.2	21.9	16.4	14.9	12.3	6.0	0.4	100.0	562	5.0
35-39	34.1	21.0	14.0	10.6	11.6	8.7	--	100.0	500	4.2
40-44	33.0	22.4	14.0	11.9	9.1	9.3	0.3	100.0	352	4.4
45-49	28.6	26.4	15.3	17.1	6.7	5.2	0.7	100.0	301	4.5
50+	41.1	26.0	13.4	9.7	7.2	2.2	0.3	100.0	1013	2.9
Total	29.7	30.9	16.2	11.6	7.9	3.6	0.1	100.0	6811	3.7

Table 3.6 Educational level of the household population (Contd.)

Percent distribution of the *de facto* household population age 6 and above by literacy and level of education, and median number of completed years of schooling, according to age, sex and residence, West Bengal, 1992

Age	Educational level: Illiterate	Literate, <primary complete	Primary school complete	Middle school complete	High school complete	Above high school	Missing	Total percent	Number	Median number of years of schooling
				RURAL Female						
6 - 9	41.6	58.0	0.4	--	--	--	--	100.0	874	0.7
10-14	31.3	43.0	21.5	3.8	0.1	--	0.3	100.0	1007	2.7
15-19	39.1	18.6	21.4	16.7	3.9	0.3	--	100.0	856	4.2
20-24	47.2	17.0	15.9	11.3	6.2	2.3	--	100.0	793	2.4
25-29	55.9	14.8	11.9	11.7	4.3	1.4	--	100.0	648	0.0
30-34	56.5	19.8	9.5	9.1	3.8	1.3	--	100.0	477	0.0
35-39	61.8	17.5	9.2	7.3	4.2	0.1	--	100.0	431	0.0
40-44	67.3	19.6	5.3	5.6	1.5	0.7	--	100.0	316	0.0
45-49	69.2	19.9	7.9	1.9	1.1	--	--	100.0	231	0.0
50+	81.1	14.0	4.0	0.6	0.2	0.1	--	100.0	993	0.0
Total	52.3	26.3	11.6	6.8	2.4	0.6	--	100.0	6628	0.0
				Total						
6 - 9	36.8	62.9	0.3	--	--	--	--	100.0	1734	0.8
10-14	26.9	44.6	24.2	4.1	--	--	0.2	100.0	1947	3.2
15-19	30.9	19.8	23.4	18.5	6.6	0.7	0.1	100.0	1693	4.9
20-24	35.8	17.6	16.9	14.5	11.2	4.0	--	100.0	1522	4.6
25-29	43.6	16.4	13.6	13.9	8.5	4.0	--	100.0	1367	3.2
30-34	41.2	20.9	13.2	12.3	8.4	3.8	0.2	100.0	1039	3.2
35-39	46.9	19.4	11.8	9.1	8.2	4.7	--	100.0	931	1.3
40-44	49.2	21.1	9.9	8.9	5.5	5.2	0.2	100.0	669	1.0
45-49	46.2	23.6	12.1	10.5	4.3	2.9	0.4	100.0	532	2.2
50+	60.9	20.0	8.7	5.2	3.8	1.2	0.2	100.0	2005	0.0
Total	40.8	28.7	13.9	9.2	5.2	2.1	0.1	100.0	13440	1.8
				TOTAL Male						
6 - 9	27.6	72.0	0.4	--	--	--	--	100.0	1130	0.9
10-14	18.6	43.3	31.7	6.3	0.1	--	--	100.0	1318	2.1
15-19	19.1	19.1	22.4	24.8	12.7	1.8	0.1	100.0	1145	6.6
20-24	19.4	15.4	17.7	18.4	18.4	10.8	--	100.0	1097	7.6
25-29	26.5	15.9	13.8	16.6	14.6	12.5	0.1	100.0	1063	6.7
30-34	24.4	17.9	14.4	14.7	15.7	12.4	0.4	100.0	848	6.7
35-39	27.4	18.7	12.1	11.6	14.5	15.7	--	100.0	767	5.8
40-44	25.3	21.2	12.4	12.8	12.8	15.4	0.2	100.0	561	5.9
45-49	23.7	22.9	14.3	15.6	10.2	12.4	1.0	100.0	512	5.7
50+	32.7	22.9	13.0	11.2	12.8	7.1	0.3	100.0	1558	4.3
Total	24.6	28.3	15.8	12.8	10.7	7.6	0.2	100.0	9999	4.6
				Female						
6 - 9	36.6	62.6	0.8	--	--	--	--	100.0	1124	0.8
10-14	27.8	42.4	24.3	4.9	0.3	--	0.2	100.0	1347	3.3
15-19	33.5	16.9	21.7	19.4	7.6	0.8	--	100.0	1209	5.0
20-24	40.7	15.3	15.3	12.6	9.9	6.2	--	100.0	1076	4.2
25-29	45.7	13.9	10.6	14.7	8.1	7.0	--	100.0	957	2.9
30-34	47.7	17.5	9.9	11.5	6.9	6.5	--	100.0	701	1.0
35-39	49.0	18.4	9.7	9.6	9.2	4.2	--	100.0	646	1.0
40-44	53.6	18.2	8.3	9.4	5.8	4.8	--	100.0	483	0.0
45-49	55.2	19.7	12.2	5.5	5.0	2.4	--	100.0	356	0.0
50+	69.2	17.4	6.5	3.7	2.1	1.1	0.1	100.0	1504	0.0
Total	44.8	25.9	12.5	8.9	4.9	2.8	--	100.0	9403	1.0

Table 3.6 Educational level of the household population (Contd.)

Percent distribution of the *de facto* household population age 6 and above by literacy and level of education, and median number of completed years of schooling, according to age, sex and residence, West Bengal, 1992

Age	Educational level: Illiterate	Literate, <primary complete	Primary school complete	Middle school complete	High school complete	Above high school	Missing	Total percent	Number	Median number of years of schooling
TOTAL										
Total										
6 - 9	32.1	67.3	0.6	--	--	--	--	100.0	2254	0.9
10-14	23.3	42.8	28.0	5.6	0.2	--	0.1	100.0	2666	3.8
15-19	26.5	18.0	22.0	22.0	10.1	1.3	--	100.0	2354	5.8
20-24	29.9	15.3	16.5	15.5	14.2	8.5	--	100.0	2173	5.8
25-29	35.6	14.9	12.3	15.7	11.5	9.9	0.1	100.0	2020	4.9
30-34	34.9	17.8	12.4	13.2	11.7	9.8	0.2	100.0	1550	4.5
35-39	37.3	18.6	11.0	10.7	12.1	10.4	--	100.0	1413	4.1
40-44	38.4	19.8	10.5	11.2	9.5	10.5	0.1	100.0	1043	4.1
45-49	36.6	21.6	13.4	11.4	8.1	8.3	0.6	100.0	868	4.0
50+	50.6	20.2	9.8	7.5	7.6	4.1	0.2	100.0	3063	0.0
Total	34.4	27.1	14.2	11.0	7.9	5.3	0.1	100.0	19403	3.3
BACKWARD DISTRICTS										
Male										
6 - 9	42.0	57.4	0.6	--	--	--	--	100.0	148	0.7
10-14	33.8	41.7	19.6	4.9	--	--	--	100.0	143	2.5
15-19	34.5	14.2	20.7	19.4	10.9	0.4	--	100.0	117	5.3
20-24	33.5	16.4	10.5	13.6	14.8	11.1	--	100.0	99	5.1
25-29	41.7	17.7	9.3	13.7	11.5	6.0	--	100.0	102	3.7
30-34	44.1	14.2	10.0	11.0	12.4	8.3	--	100.0	85	3.0
35-39	36.9	16.6	11.1	11.1	13.5	10.8	--	100.0	73	4.3
40-44	39.7	18.6	12.8	9.0	9.7	10.3	--	100.0	55	4.1
45-49	41.5	24.2	6.6	8.8	9.7	9.2	--	100.0	41	2.2
50+	57.8	17.1	8.8	7.0	5.1	3.9	0.3	100.0	153	0.0
Total	41.1	26.2	11.1	9.2	7.5	4.7	--	100.0	1017	1.7
Female										
6 - 9	53.0	47.0	--	--	--	--	--	100.0	124	0.0
10-14	38.7	37.7	18.7	4.4	0.6	--	--	100.0	162	2.3
15-19	46.1	18.3	15.5	12.1	7.4	0.6	--	100.0	139	2.7
20-24	48.8	14.9	14.9	9.5	6.2	5.7	--	100.0	112	1.4
25-29	66.7	7.9	9.4	10.8	1.9	3.3	--	100.0	91	0.0
30-34	63.0	20.6	5.8	3.8	3.2	3.7	--	100.0	70	0.0
35-39	61.6	13.0	9.0	3.2	9.4	3.9	--	100.0	65	0.0
40-44	73.2	10.3	2.0	2.0	7.7	4.8	--	100.0	44	0.0
45-49	75.8	7.6	4.9	1.2	5.9	4.7	--	100.0	36	0.0
50+	85.6	10.4	1.9	0.9	0.9	0.3	--	100.0	140	0.0
Total	58.1	21.7	9.4	5.3	3.5	2.0	--	100.0	985	0.0
Total										
6 - 9	47.0	52.7	0.3	--	--	--	--	100.0	273	0.7
10-14	36.4	39.6	19.1	4.6	0.3	--	--	100.0	305	2.4
15-19	40.8	16.4	17.9	15.4	9.0	0.5	--	100.0	257	3.9
20-24	41.7	15.6	12.8	11.5	10.2	8.2	--	100.0	211	3.7
25-29	53.6	13.1	9.4	12.3	7.0	4.7	--	100.0	193	0.0
30-34	52.6	17.1	8.1	7.8	8.3	6.2	--	100.0	155	0.0
35-39	48.6	14.9	10.1	7.3	11.5	7.5	--	100.0	139	1.0
40-44	54.4	15.0	8.1	5.9	8.8	7.8	--	100.0	99	0.0
45-49	57.5	16.5	5.8	5.3	7.9	7.1	--	100.0	77	0.0
50+	71.1	13.9	5.5	4.1	3.1	2.2	0.1	100.0	293	0.0
Total	49.5	24.0	10.3	7.3	5.6	3.4	--	100.0	2002	0.9

-- Less than 0.05 percent

Bengal, and in particular the acute educational disadvantage among women: the median number of years of education for males is 4.6, compared to only 1.0 for females.

On comparing the educational attainment by sex in urban and rural areas, urban residents tend to outperform their rural counterparts, as expected. Fourteen percent of males in urban areas are illiterate, compared to 30 percent of rural males, and while 33 percent of urban males have completed high school, only 12 percent have in the rural areas. The majority of rural females are illiterate (52 percent), compared to 27 percent of urban females. Nineteen percent of urban females have completed high school, compared to only 3 percent of rural females. Males have completed a median of 7.7 years of education in the urban areas, compared to only 3.7 years in the rural areas, but even these low levels are relatively high compared with females, who spent a median of 4.8 years in school if they lived in urban areas, and less than one year if they lived in rural areas. Educational attainment is lower in the two backward districts than in the state as a whole.

There has been steady progress over time in literacy for females, but not necessarily for males (Figure 3.3). For example, while 31 percent of women age 50 and over are literate, the literacy rate for females climbs to 46 percent for those age 40-44, 54 percent for those age 25-29, and 72 percent for those age 10-14. The trend line among the male cohorts is relatively flat, showing little advancement in the percentage literate over time. The literacy gap between males and females has narrowed over time, but even at age 10-14, males are more likely to be literate (81 percent) than females (72 percent).

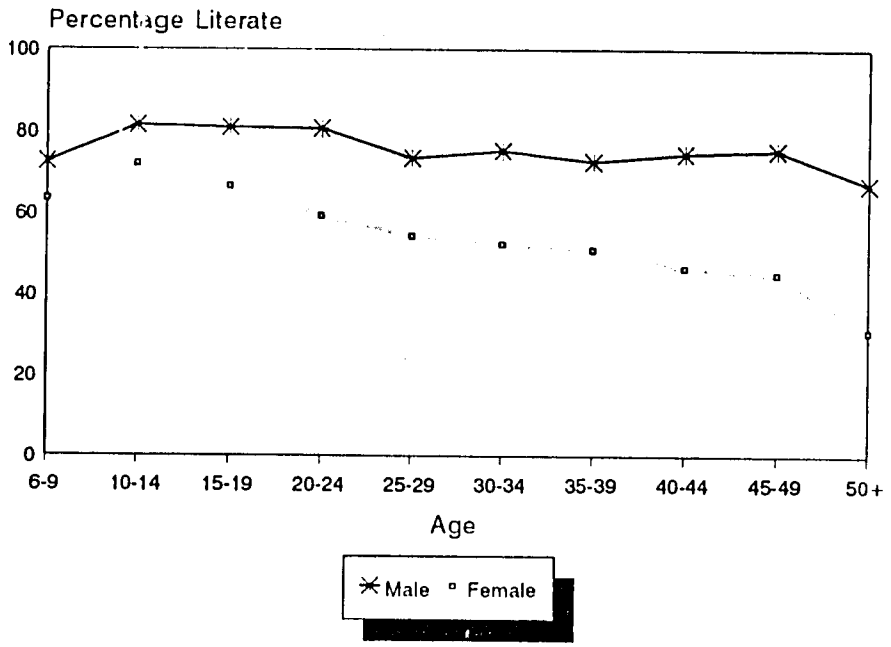
Table 3.7 and Figure 3.4 show school attendance rates for the school-age household population by age, sex, and residence. The table focuses on children age 6-14, because the Indian Constitution established a goal of providing free and compulsory education for children through age 14. In West Bengal as a whole, only 68 percent of children age 6-14 are attending school. Urban attendance (78 percent) is substantially higher than rural attendance (64 percent), and in backward districts, the attendance rate (57 percent) is well below that for the state as a whole. As expected, the attendance rate is much higher for males than for females (Figure 3.4). Male attendance rates for the state as a whole are 10 percentage points higher than the female rate - 73 percent for males and 63 percent for females age 6-14. The interesting feature of Table 3.7 is that attendance rates for males by age group (6-10 and 11-14) do not change, that is, as the male children get older they tend to stay in school. By comparison, the table points

Table 3.7 School attendance

Percentage of the *de facto* household population 6-14 years of age attending school by age, sex and residence, West Bengal, 1992

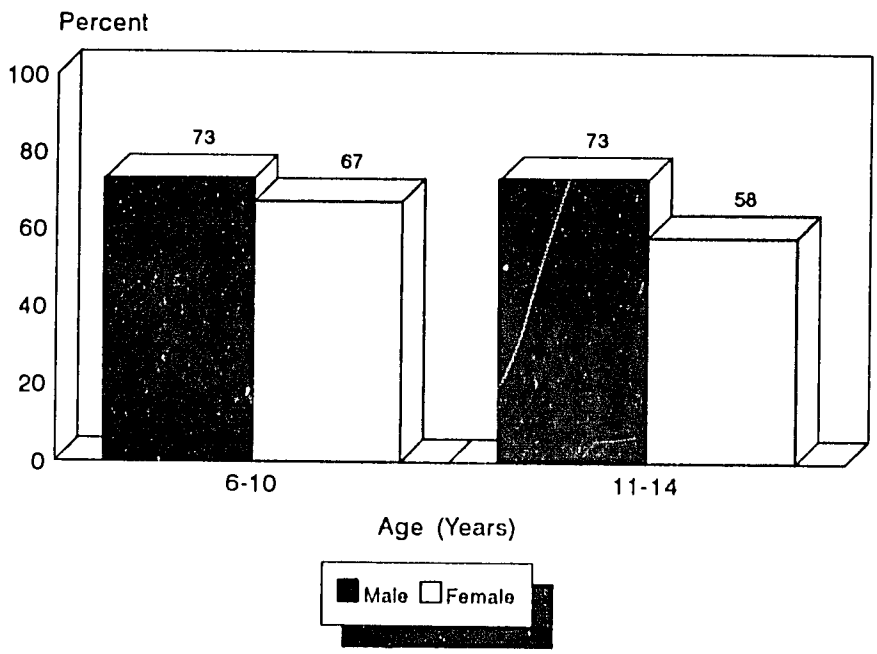
	Male				Female				Total			
Age	Urban	Rural	Total	Backward districts	Urban	Rural	Total	Backward districts	Urban	Rural	Total	Backward districts
6 -10	83.3	68.9	72.5	62.3	77.5	63.5	66.6	50.8	80.5	66.1	69.5	56.8
11-14	83.4	68.1	72.5	57.9	65.0	55.0	57.6	57.0	74.7	61.5	65.1	57.4
6 -14	83.3	68.6	72.5	60.7	71.8	60.1	62.9	53.4	77.9	64.2	67.7	57.1

Figure 3.3
Percentage Literate by Age and Sex



NFHS, West Bengal, 1992

Figure 3.4
School Attendance by Age and Sex



NFHS, West Bengal, 1992

out a serious problem for females by indicating that attendance rates decline, in both urban and rural areas, as females move from age 6-10 to age 11-14. Urban females experience a 16 percent decline in attendance as they move between these two age groups, and rural females, whose level of education is much lower to begin with, experience a 13 percent decline in attendance from age 6-10 to age 11-14. Despite considerable educational advances over time, 28 and 40 percent of the school age females in urban and rural areas, respectively, are not attending school.

3.5 Housing Characteristics

The NFHS gathered information on the following housing characteristics: electricity, source of bathing/washing water and drinking water, sanitation facility, type of cooking fuel, place where livestock is kept, number of rooms in the house and the materials used for construction of walls, roof and floor. Table 3.8 provides information on these housing characteristics by residence. A large majority of urban households have electricity (72 percent), compared to only 14 percent in the rural areas. In the state as a whole, one-third of all households have electricity, with backward districts far behind at only 18 percent.

The types of water and sanitary facilities are important determinants of the health status of household members, particularly of children. The NFHS contained questions on sanitary facilities and the source of water the household uses for bathing and washing as well as the source of drinking water. Regarding the source of drinking water, 22 percent of households have piped water, 63 percent get water from a handpump, and 12 percent from open wells. As in the case of electricity, there are large urban-rural differences in the source of drinking water. The proportion of households with piped drinking water is 59 percent in urban areas but only 5 percent in rural areas. The majority of rural households obtain their drinking water from handpumps (77 percent). For washing and bathing, the majority of urban residents use piped water (50 percent), with roughly equal percentages divided between the use of handpumps (15 percent), well water (18 percent), and surface water (16 percent). In rural households, 66 percent of the residents use surface water for washing and bathing, most of the remainder (22 percent) using handpumps.

Regarding sanitation facilities, 29 percent of all households in West Bengal have a flush toilet (using either piped water or bucket water for flushing), 12 percent have a pit toilet or latrine, and 60 percent have no facility. Again there are large urban-rural differences. While the majority of households in urban areas have a flush toilet (69 percent), only 9 percent of rural households have flush toilets - 80 percent of rural households have no sanitation facilities at all. The situation in the backward districts is same as in rural areas.

Several types of fuel are used for cooking in West Bengal, including wood, cow dung cakes, coal/coke/lignite or charcoal, kerosene, electricity, liquid petroleum gas, and "other." Overall, however, wood is the most common fuel used. In the state as a whole, 32 percent of households rely on wood, 24 percent on coal/coke/lignite/charcoal and 14 percent on cow dung cakes. Again, the urban-rural differences are substantial, with the majority of urban households (46 percent) relying on coal/coke/lignite/charcoal, compared to more than two-fifths of rural households using wood for cooking. West Bengal reported unusually large use (25 percent) of

Table 3.8 Housing characteristics

Percent distribution of households by housing characteristics, according to residence, West Bengal, 1992

Housing characteristic	Residence			
	Urban	Rural	Total	Backward districts
Electricity				
Yes	71.9	14.4	32.9	17.6
No	28.1	85.6	67.1	82.4
Source of bathing/washing water				
Piped	50.2	2.7	18.0	8.3
Handpump	15.1	22.3	20.0	33.5
Well water	17.8	7.7	11.0	5.9
Surface water	16.2	66.2	50.1	52.1
Other	0.8	1.0	0.9	0.2
Source of drinking water				
Piped	59.1	4.9	22.4	8.3
Handpump	31.7	77.1	62.5	77.6
Well water	8.1	13.1	11.5	12.8
Surface water	0.3	2.9	2.1	0.8
Other	0.8	1.9	1.6	0.4
Sanitation facility				
Flush	68.8	9.4	28.5	12.6
Pit toilet/latrine	14.9	10.4	11.8	6.8
Other	0.2	--	0.1	--
No facility	16.2	80.1	59.6	80.6
Type of fuel for cooking				
Wood	10.7	41.5	31.6	33.0
Cow dung cakes	1.8	19.3	13.6	17.2
Coal/coke/lignite/charcoal	46.2	13.3	23.8	12.4
Kerosene	16.7	0.8	5.9	1.0
Electricity	0.1	0.1	0.1	0.4
Liquid petroleum gas	21.7	0.5	7.3	4.7
Other	2.8	24.6	17.6	31.4
Type of house				
Kachcha	23.1	82.5	63.4	78.8
Semi-pucca	26.8	8.1	14.1	4.4
Pucca	50.2	9.4	22.5	16.8
Place where livestock is kept				
Inside the house	4.6	24.7	18.3	30.5
Outside the house	10.9	52.2	38.9	44.2
No livestock	84.5	23.1	42.8	25.3
Persons per room				
< 3.0	61.3	58.7	59.5	60.0
3.0-4.9	21.0	25.3	23.9	24.1
5.0-6.9	11.7	11.4	11.5	11.8
7.0 +	6.0	4.7	5.1	4.0
Mean	2.8	2.9	2.8	2.8
Total percent	100.0	100.0	100.0	100.0
Number of households	1362	2876	4238	433

-- Less than 0.05 percent

"other" fuel sources in rural areas, which in this case refers to those materials grouped under the term biomass, or more specifically: jute stick, straw, leaves and creepers, wood dust, bamboo, and sugarcane fiber.

Regarding the type of materials used for housing construction, 63 percent of houses are *kachcha* (made from mud, thatch, or other low-quality materials), 23 percent are *pucca* (high-quality materials throughout, including roof, walls, and floor) and 14 percent are semi-*pucca* (partly low-quality and partly high-quality materials). Eighty-three percent of the houses in rural areas are classified as *kachcha*, compared to less than one-quarter of houses in urban areas, where 50 percent of houses are classified as *pucca*.

The NFHS also collected information on whether households own any livestock. Fifty-seven percent of all households in West Bengal own livestock - 77 percent in rural areas and 15 percent in urban areas. A follow-up question was asked on where the livestock are kept at night, since keeping them inside the house may adversely affect the health of the residents. As expected, the percentage of urban households in which animals are kept inside is small (5 percent), and correspondingly large (25 percent) for rural households. The proportion of such households in the backward districts is 31 percent.

Crowded conditions may also be related to health as well as to the quality of life. Congestion in the household is virtually the same in all residence categories at 2.8 or 2.9 persons per room overall. A majority of households have fewer than three persons per room. Twelve percent of households, however, have five or six persons per room and five percent of households are very crowded with seven or more persons per room.

Table 3.9 contains a number of measures related to the socioeconomic status of the household, for example, household ownership of land, livestock by type, and durable goods by type. Overall, 55 percent of households are landless; urban households are nearly two times as likely to be landless as rural households. In rural areas, among those who have land, only 51 percent irrigate at least some of their land. Among rural households owning land in West Bengal, the largest single category of land size and land type consists of one to five acres of non-irrigated land, owned by 24 percent of landed households. This is followed closely by another 22 percent of landed households which report owning less than one acre of non-irrigated land. Overall, almost half of all land ownership consists of exclusively non-irrigated land. The other half consists of roughly equal parts exclusively irrigated and mixed (some part irrigated and some part non-irrigated). Ownership of livestock is closely associated with ownership of land, as shown in Table 3.9. More than half of rural households have one or more heads of cattle, 35 percent have a goat, 13 percent have a bullock, and a little more than 6 percent have other kinds of livestock. As expected, livestock ownership among urban households is quite limited (15 percent).

The possession of durable goods is another indicator of a household's socioeconomic level, and as such provides some measure of the many advantages that are derived from these goods. For example, having access to a radio or television may expose household members to innovative ideas; a refrigerator prolongs the wholesomeness of food; and a means of transportation allows greater access to many services outside the local area.

Table 3.9 Household ownership of land, livestock and durable goods

Percentage of households owning agricultural land, livestock and various consumer durable goods according to residence, West Bengal, 1992

Item owned	Residence			
	Urban	Rural	Total	Backward districts
Agricultural land				
No land	81.4	41.8	54.5	44.9
Irrigated land only				
< 1 Acre	3.7	8.3	6.8	6.3
1-5 Acres	3.9	5.9	5.2	5.9
6+ Acres	0.5	0.7	0.6	0.7
Non-irrigated land only				
< 1 Acre	3.8	12.9	10.0	11.7
1-5 Acres	3.5	14.1	10.7	13.1
6+ Acres	0.4	1.6	1.2	1.7
Irrigated and non-irrigated land				
< 1 Acre	0.9	4.9	3.6	3.8
1-5 Acres	1.0	7.9	5.7	9.3
6+ Acres	0.8	1.9	1.6	2.5
Total Percent	100.0	100.0	100.0	100.0
Livestock				
Bullock	1.0	12.7	8.9	9.5
Cow	8.4	51.1	37.4	37.8
Buffalo	0.9	3.8	2.9	10.0
Goat	5.3	35.3	25.7	43.6
Sheep	0.1	2.1	1.5	2.0
Camel	--	--	--	--
Other	0.2	0.5	0.4	0.7
No livestock	84.5	23.1	42.8	25.3
Consumer durable goods				
Sewing machine	25.4	4.4	11.1	6.8
Clock/watch	80.4	47.4	58.0	48.2
Radio	54.4	38.6	43.7	34.8
Television	44.2	7.1	19.1	10.3
Refrigerator	15.6	0.5	5.4	3.9
Bicycle	45.4	48.3	47.4	49.3
Motorcycle/scooter	8.2	1.7	3.8	2.7
Car	2.3	0.2	0.8	0.1
Number of households	13620	28760	4238	433

-- Less than 0.05 percent

Table 3.9 shows that in the state as a whole, the most common consumer durables reportedly owned by the household are a clock or watch (58 percent), a bicycle (47 percent), a radio (44 percent), television (19 percent), and a sewing machine (11 percent). Smaller percentages report owning a refrigerator (5 percent), a motorcycle or scooter (4 percent), and, most infrequently mentioned are cars (1 percent). Urban households are much more likely to have each of these durable goods than are rural households, except for bicycles, where the urban percentage (45) is smaller than the rural percentage (48).

3.6 Background Characteristics of Respondents

Whereas the previous tables considered characteristics of households, based on results from the NFHS Household Questionnaire, this section examines selected background characteristics of primary respondents (ever-married women age 13-49), based on the NFHS Woman's Questionnaire.

Table 3.10 shows several important background characteristics of respondents: age, marital status, educational attainment, religion, caste/tribe, employment status, and husband's education. The table also provides the number of women interviewed, weighted and unweighted, in each of the categories of background characteristics. From age 13-14 through age 25-29, the percentage of ever-married women in each age group increases, reflecting the increase in the proportion married in successive age groups. The decline after age 25-29, by which time most women have already married, reflects the normal pyramidal shape of the age distribution. This age pattern is only slightly differentiated by residence (Figure 3.5), although the percentages in the younger age groups are smaller in urban areas, reflecting the somewhat later age at marriage in urban areas (see the earlier discussion of Table 3.3.). Ninety-three percent of respondents (ever-married women) are currently married, and among the remainder most are widowed. Nearly 3 percent are divorced or separated. Fifty-one percent of the ever-married women are illiterate, and only 10 percent have completed high school. The distribution of respondents by religion shows that the majority (76 percent) are Hindus, followed by Muslims (22 percent). The proportion of scheduled castes is 9 percent, and of scheduled tribes only 5 percent.

Table 3.10 also shows the distribution of respondents by respondent's work status and husband's education. In the NFHS, work includes any kind of job for which the woman is paid in cash or in kind as well as unpaid work on a family farm or business. Overall, 77 percent of respondents report that they are not working. The proportion currently working is quite low -- 6 percent of women report that they are working on a family farm or in some other family business, 13 percent are employed in non-family businesses, and 4 percent report that they are self-employed. The low level of outside employment is consistent with the belief among some groups, particularly in western West Bengal, that it is a social disgrace for women to work for wages or profit (Jejeebhoy, 1991). Women's employment, however, is differentiated by residence. Substantially more rural women (25 percent) are employed than urban women (17 percent). Of those rural women working, most are employed by someone else, implying work outside of the household and apart from the family business or farm.

As measured by the wife's report of her husband's educational level, 70 percent of all husbands are literate (83 percent in urban areas, 64 percent in rural areas and 52 percent in backward districts). The percentage of husbands with at least a high school education is about three times as high in urban areas (41 percent) as in rural areas (14 percent).

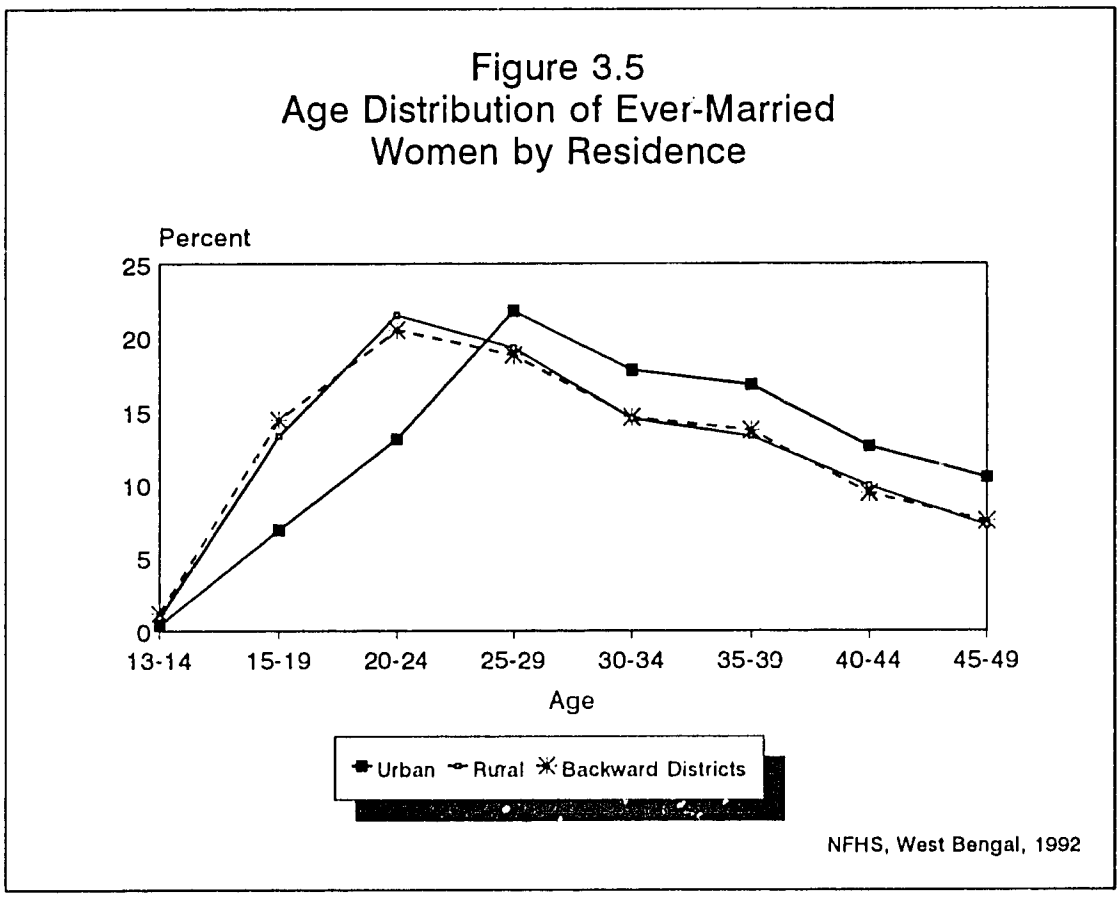
Table 3.11 shows further details about the respondent's education, tabulated by selected background characteristics. The association between proportion illiterate and age of ever-married women is unclear, but the highest percentages of illiterates are in the youngest (age 15-19) and the older (age 35 and above) age groups. Those women age 20-29 have relatively lower

Table 3.10 Background characteristics of respondents

Percent distribution of ever-married women age 13-49, by selected background characteristics, according to residence, West Bengal, 1992

Background characteristic	Residence				Total number of women	
	Urban	Rural	Total	Backward districts	Weighted	Unweighted
Age						
13-14	0.4	0.9	0.8	1.2	35	38
15-19	6.9	13.3	11.5	14.4	499	527
20-24	13.1	21.5	19.2	20.5	832	854
25-29	21.8	19.3	20.0	18.8	865	852
30-34	17.8	14.5	15.4	14.6	667	655
35-39	16.8	13.3	14.2	13.7	616	607
40-44	12.6	9.9	10.6	9.4	459	448
45-49	10.5	7.2	8.1	7.5	350	341
Marital status						
Currently married	92.9	92.6	92.7	91.7	4004	3998
Widowed	4.7	4.5	4.5	5.1	196	199
Divorced	--	0.4	0.3	0.5	11	13
Separated	2.4	2.6	2.6	2.7	111	112
Education						
Illiterate	29.9	58.3	50.6	63.9	2185	2315
Literate, < primary complete	15.8	17.7	17.2	13.6	743	722
Primary school complete	14.1	11.8	12.4	9.8	535	514
Middle school complete	15.0	8.5	10.3	6.2	444	407
High school complete	13.5	3.1	5.9	4.0	255	228
Above high school	11.7	0.7	3.7	2.6	160	136
Religion						
Hindu	83.6	73.4	76.2	41.6	3292	3068
Muslim	15.2	24.2	21.7	57.6	939	1169
Buddhist	0.1	0.6	0.5	--	19	17
Christian	0.6	0.5	0.5	--	24	20
Jain	0.2	0.2	0.2	--	8	7
Zoroastrian	0.0	0.0	0.0	0.1	0	1
Other	0.4	1.2	1.0	0.7	41	41
Caste/tribe						
Scheduled caste	4.9	11.1	9.4	7.0	408	403
Scheduled tribe	1.2	6.6	5.1	5.4	221	232
Other	93.9	82.3	85.5	87.6	3693	3687
Work status						
Not working	82.5	74.9	77.0	76.3	3329	3311
Working in family farm/business	2.9	7.6	6.3	3.1	272	260
Employed by someone else	9.9	14.4	13.1	16.9	568	599
Self-employed	4.6	3.2	3.6	3.6	153	152
Husband's education						
Illiterate	17.0	35.6	30.5	47.7	1319	1456
Literate, < primary complete	14.9	21.5	19.7	17.5	851	848
Primary school complete	12.6	14.9	14.3	8.9	616	586
Middle school complete	14.8	13.6	13.9	9.8	603	574
High school complete	18.6	8.9	11.5	9.4	499	470
Above high school	22.0	5.3	9.8	6.7	425	380
Don't know/missing	0.1	0.2	0.2	--	9	8
Total percent	100.0	100.0	100.0	100.0	NA	NA
Number of women						
Weighted	1180	3142	4322	464	4322	NA
Unweighted	898	3424	4322	1036	NA	4322

NA: Not applicable
-- Less than 0.05 percent



rates of illiteracy. The notably high proportion of women age 15-19 who are illiterate (52 percent) is in part because about 42 percent of those age 15-19 are married (Table 3.3) and women who marry young tend to be drawn selectively from among the less educated. Regarding religion, the percentage illiterate is 47 percent among Hindus, and 62 percent among Muslims. The gap in the level of literacy between Hindus and Muslims is wider in urban areas than in rural areas. The levels of illiteracy among women belonging to scheduled castes and scheduled tribes is very high in West Bengal, with 77 percent of the women belonging to scheduled castes illiterate, and 86 percent illiterate among scheduled tribes. With respect to husband's literacy, 85 percent of women with illiterate husbands are illiterate themselves. Even among men who have completed high school (but have not gone on to a higher level of education), a large number (46 percent) have married women who have not completed middle school, reflecting the general tendency of men to marry women with less education than themselves.

Table 3.12 provides information on the respondents' exposure to mass media. The information is tabulated by woman's age, residence, education, religion, and caste/tribe. Overall, nearly 40 percent of women are not regularly exposed to any kind of mass media (television, radio or cinema). The effect of residence on media exposure, however, is strong; in urban areas fewer than 20 percent are not regularly exposed to any media, compared to nearly 50 percent of women in rural West Bengal. This is not surprising, considering that 54 percent of urban households own a radio, compared to 39 percent of rural households, and that 44 percent of urban households own a television, compared to only 7 percent of rural households (Table 3.9). The relatively poor exposure to mass media among rural women highlights the

Table 3.11 Respondent's level of education by background characteristics

Percent distribution of ever-married women age 13-49 by highest level of education attained, according to selected background characteristics and residence, West Bengal, 1992

Background characteristic	Respondent's level of education						Total percent	Number
	Illiterate	Literate, < primary complete	Primary school complete	Middle school complete	High school complete	Above high school		
URBAN								
Age								
15-19	35.0	19.2	29.6	10.5	4.0	1.7	100.0	82
20-24	31.9	16.5	13.7	13.1	18.8	6.0	100.0	155
25-29	27.5	12.2	8.8	21.2	15.3	15.1	100.0	257
30-34	30.4	12.9	11.5	14.4	13.1	17.7	100.0	210
35-39	25.6	19.1	13.6	14.7	15.4	11.6	100.0	198
40-44	33.2	13.3	14.6	15.5	11.5	11.9	100.0	149
45-49	30.1	22.9	19.0	9.5	10.2	8.2	100.0	124
Religion								
Hindu	26.2	14.1	14.0	17.0	15.0	13.8	100.0	987
Muslim	49.9	26.1	15.8	4.2	4.0	--	100.0	179
Caste/tribe								
Scheduled caste	72.9	19.7	--	4.9	2.5	--	100.0	58
Other (Non-SC/ST)	27.5	15.7	14.7	15.6	14.0	12.4	100.0	1108
Husband's education								
Illiterate	76.6	16.3	6.4	0.7	--	--	100.0	200
Lit., <primary complete	52.9	29.3	12.1	5.7	--	--	100.0	176
Primary school complete	31.1	29.8	23.8	12.4	2.9	--	100.0	149
Middle school complete	16.8	15.5	31.2	30.1	4.1	2.4	100.0	175
High school complete	12.0	11.0	16.5	28.1	25.6	6.8	100.0	220
Above high school	1.6	2.2	2.2	12.9	35.4	45.7	100.0	259
Total	29.9	15.8	14.1	15.0	13.5	11.7	100.0	1180
RURAL								
Age								
13-14	(52.7)	(22.1)	(25.2)	(--)	(--)	(--)	100.0	30
15-19	55.1	15.8	18.1	9.1	1.8	--	100.0	417
20-24	51.3	17.3	15.9	10.3	4.4	0.8	100.0	677
25-29	57.3	15.5	11.5	10.6	3.7	1.4	100.0	608
30-34	56.9	21.3	7.9	9.3	3.3	1.4	100.0	457
35-39	61.7	17.8	9.1	7.4	3.9	0.1	100.0	417
40-44	69.3	17.9	5.6	5.6	1.2	0.4	100.0	310
45-49	70.5	19.9	7.7	1.5	0.5	--	100.0	226
Religion								
Hindu	56.5	17.2	12.5	9.6	3.5	0.7	100.0	2306
Muslim	64.4	19.1	9.8	5.2	0.8	0.7	100.0	759
Other	53.9	17.7	7.1	7.1	12.8	1.4	100.0	77
Caste/tribe								
Scheduled caste	77.9	10.5	6.4	4.3	0.9	--	100.0	350
Scheduled tribe	88.7	7.4	2.3	0.5	1.1	--	100.0	207
Other	53.2	19.5	13.2	9.7	3.5	0.9	100.0	2585
Husband's education								
Illiterate	87.0	9.3	3.0	0.7	--	--	100.0	1119
Lit., <primary complete	66.9	23.5	6.9	2.3	0.3	--	100.0	675
Primary school complete	49.2	26.0	17.5	6.9	0.5	--	100.0	467
Middle school complete	28.8	27.4	26.5	15.8	1.5	--	100.0	428
High school complete	15.2	16.6	19.6	31.6	15.5	1.5	100.0	279
Above high school	2.9	4.8	23.4	32.9	25.2	10.8	100.0	166
Total	58.3	17.7	11.8	8.5	3.1	0.7	100.0	3142

Table 3.11 Respondent's level of education by background characteristics (Contd.)

Percent distribution of ever-married women age 13-49 by highest level of education attained, according to selected background characteristics and residence, West Bengal, 1992

Background characteristic	Respondent's level of education						Total percent	Number
	Illiterate	Literate, < primary complete	Primary school complete	Middle school complete	High school complete	Above high school		
				TOTAL				
Age								
13-14	(51.5)	(23.0)	(25.6)	(--)	(--)	(--)	100.0	35
15-19	51.8	16.4	20.0	9.3	2.2	0.3	100.0	499
20-24	47.7	17.1	15.5	10.8	7.1	1.8	100.0	832
25-29	48.4	14.5	10.7	13.7	7.2	5.5	100.0	865
30-34	48.5	18.6	9.0	10.9	6.4	6.5	100.0	667
35-39	50.1	18.2	10.5	9.8	7.6	3.8	100.0	616
40-44	57.6	16.4	8.5	8.9	4.5	4.1	100.0	459
45-49	56.2	21.0	11.7	4.3	3.9	2.9	100.0	350
Religion								
Hindu	47.4	16.3	13.0	11.8	6.9	4.6	100.0	3292
Muslim	61.7	20.5	10.9	5.0	1.4	0.5	100.0	939
Other	50.2	16.5	6.0	9.1	15.5	2.8	100.0	92
Caste/tribe								
Scheduled caste	77.2	11.8	5.5	4.4	1.2	--	100.0	408
Scheduled tribe	85.5	7.6	3.5	1.1	2.3	--	100.0	221
Other	45.5	18.4	13.7	11.5	6.7	4.3	100.0	3693
Husband's education								
Illiterate	85.4	10.4	3.5	0.7	--	--	100.0	1319
Lit., <primary complete	64.0	24.7	8.0	3.0	0.3	--	100.0	851
Primary school complete	44.8	26.9	19.1	8.2	1.0	--	100.0	616
Middle school complete	25.3	23.9	27.9	19.9	2.3	0.7	100.0	603
High school complete	13.8	14.1	18.3	30.0	19.9	3.9	100.0	499
Above high school	2.1	3.2	10.5	20.7	31.4	32.1	100.0	425
Total	50.6	17.2	12.4	10.3	5.9	3.7	100.0	4322

difficulty of diffusing messages on family planning, health and other topics through these potentially powerful media channels. Overall, only 48 percent of women normally listen to the radio at least once a week; 33 percent watch television at least once a week; and 16 percent go to a cinema hall or theatre to see a movie at least once a month.

The proportion who watch television at least once a week varies little by age of respondent. However, the younger women are less likely to watch television in comparison with women age 25 and above. This is also a bit surprising in that the bulk of network programming for television in India is targeted towards relatively young persons. This targeting, of course, is almost exclusively focused on urban residents. The variation in the proportion of women listening to radio at least once a week by age is smaller. Younger women, however, particularly women age 15-19, are more likely to visit the cinema or theatre at least once a month.

Exposure to all types of media is much greater in urban than in rural areas. Backward districts differ little in media exposure from the state as a whole. The association between regular exposure to television and radio and women's educational attainment is strong and positive, in part a reflection of the fact that urban women are better-educated than their rural counterparts. Among illiterate women, only 14 percent have watched television at least once

Table 3.11 Respondent's level of education by background characteristics (Contd.)

Percent distribution of ever-married women age 13-49 by highest level of education attained, according to selected background characteristics and residence, West Bengal, 1992

Background characteristic	Respondent's level of education: Illiterate	Literate, < primary complete	Primary school complete	Middle school complete	High school complete	Above high school	Total percent	Number
			BACKWARD DISTRICTS					
Age								
15-19	61.7	16.8	14.8	6.1	0.6	--	100.0	67
20-24	52.4	16.1	15.6	9.0	4.6	2.3	100.0	95
25-29	68.6	7.8	9.8	10.3	2.0	1.5	100.0	87
30-34	62.4	20.6	4.7	5.3	3.3	3.8	100.0	68
35-39	61.6	14.8	7.8	4.0	8.3	3.4	100.0	63
40-44	(74.1)	(9.3)	(3.0)	(1.0)	(7.8)	(4.8)	100.0	44
45-49	(78.8)	(6.5)	(5.0)	(1.2)	(3.6)	(4.8)	100.0	35
Religion								
Hindu	58.2	12.1	8.8	7.8	7.8	5.3	100.0	193
Muslim	67.6	14.7	10.6	5.0	1.3	0.7	100.0	267
Caste/tribe								
Scheduled caste	(80.5)	(8.3)	(8.3)	(2.8)	(--)	(--)	100.0	32
Scheduled tribe	(98.2)	(--)	(1.8)	(--)	(--)	(--)	100.0	25
Other	60.4	14.8	10.4	6.8	4.6	3.0	100.0	406
Husband's education								
Illiterate	89.4	7.1	3.3	0.2	--	--	100.0	221
Lit., <primary complete	71.2	20.5	7.8	0.6	--	--	100.0	81
Primary school complete	(54.3)	(27.2)	(15.2)	(3.3)	(--)	(--)	100.0	41
Middle school complete	(27.6)	(26.8)	(31.7)	(13.9)	(--)	(--)	100.0	45
High school complete	(11.3)	(13.5)	(19.6)	(28.7)	(23.0)	(4.0)	100.0	43
Above high school	(1.5)	(4.4)	(8.7)	(24.3)	(28.0)	(33.2)	100.0	31
Total	63.9	13.6	9.8	6.2	4.0	2.6	100.0	464

Note: Urban total includes 5 women age 13-14; 14 women belonging to other religions, and 1 woman with missing information on husband's education, who are not shown separately.
( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent

a week, compared with 88 percent of women who have completed high school. Regular exposure to cinema is not as strongly associated with education, although a surprisingly small percentage of illiterate women visit the cinema or theatre once a month (10 percent). According to NFHS findings from other states in India, it is apparent that regular exposure to cinema or theatre is much higher among illiterate women in the south. In Tamil Nadu, for example, 38 percent of illiterate women attend the cinema at least once a month, and in Andhra Pradesh the figure is 40 percent.

Hindu-Muslim differences in media exposure are also substantial, with the latter having less exposure to the different channels of mass media. Fifty-one percent of Muslim women are not regularly exposed to any media, compared to 35 percent of Hindu women. Women from scheduled tribes have very low levels of exposure to mass media, particularly to television broadcasts. The percentage of women belonging to scheduled tribes not regularly exposed to any media (61 percent) is the highest among any group shown in the table, and only 10 percent of these women are regularly exposed to television, the lowest in the state. Media exposure

Table 3.12 Exposure to mass media

Percent of ever-married women age 13-49 who usually watch television or listen to the radio at least once a week or visit a cinema at least once a month or who are not regularly exposed to any of these media, by selected background characteristics, West Bengal, 1992

Background characteristic	Exposure to mass media				Number of women
	Watches television at least once a week	Listens to the radio at least once a week	Visits cinema/theatre at least once a month	Not regularly exposed to any media	
Age					
13-14	(20.2)	(48.0)	(27.1)	(38.5)	35
15-19	23.2	43.8	25.3	41.7	499
20-24	27.9	48.8	18.0	41.4	832
25-29	35.2	48.0	19.1	38.1	865
30-34	38.9	51.5	14.1	33.8	667
35-39	38.5	47.1	12.4	38.0	616
40-44	35.0	48.4	10.4	40.4	459
45-49	34.9	49.7	8.0	37.6	350
Residence					
Urban	67.8	54.3	29.7	17.5	1180
Rural	20.3	46.0	11.0	46.7	3142
Backward districts	20.7	39.1	9.5	52.0	464
Education					
Illiterate	14.0	37.0	9.5	55.9	2185
Lit., < middle complete	38.3	54.3	20.2	29.9	1278
Middle school complete	62.4	66.1	27.8	12.6	444
High school and above	88.2	70.3	25.8	3.1	415
Religion					
Hindu	36.8	50.8	17.8	35.1	3292
Muslim	20.6	39.7	10.8	50.9	939
Other	37.7	46.0	11.9	44.5	92
Caste/tribe					
Scheduled caste	21.7	44.2	16.8	45.5	408
Scheduled tribe	10.1	34.0	8.1	60.8	221
Other	35.9	49.6	16.5	36.6	3693
Total	33.3	48.3	16.1	38.7	4322

() Based on 25-49 unweighted cases

among women belonging to scheduled castes is lower than the overall state average, but approximates the levels seen among rural inhabitants.

CHAPTER 4

NUPTIALITY

This chapter presents findings on marriage patterns from the National Family Health Survey. The study of nuptiality has interested demographers primarily because of its impact on fertility and population growth, but increasingly the demographic study of marriage patterns has focused on more sociological aspects, such as the effect of marriage on the changing nature of household formation and family relationships, and the association between marriage and the status of women. After examining current marital status distributions, this chapter presents data on age at first marriage, age at first cohabitation, and marriage between relatives.

4.1 Current Marital Status

Table 4.1 shows the current marital status of women by residence and age. Information on marital status comes from the Woman's Questionnaire, except for information on never-married women which comes from the Household Questionnaire. Table 4.1 repeats some of the information in Table 3.3, which also includes information for males and covers a wider range of ages. The percentages never married in the two tables differ slightly due to differential nonresponse among eligible women.

It is evident from Table 4.1 that marriage is more or less universal in West Bengal and that marriages in rural areas take place at relatively younger ages. In the age group 15-19, 41 percent of women are ever-married. By the time women reach age 20-24, however, most of them are ever-married (80 percent). The proportions ever-married at age 15-19 are lower in urban areas (22 percent) than in rural areas (49 percent). Backward districts have more or less the same marriage patterns as the state as a whole. It is also evident from table 4.1 that only a very small percentage of women in West Bengal are divorced and separated (2 percent).

4.2 Age at First Marriage

The description of marriage patterns can be sharpened by examining values of the Singulate Mean Age at Marriage (SMAM), which is calculated from the age-specific proportions never married for age groups 15-19 through 45-49 (Hajnal, 1953; Shryock and Siegel, 1980). The singulate mean age at marriage computed from various sources is presented in Table 4.2. Female values of SMAM from the NFHS are 21.8 years in urban areas and 18.1 in rural areas. On average, males marry 6.7 years later than females. Marriage ages are consistently higher in urban areas, with men and women marrying, respectively, 2.6 and 3.7 years later than in rural areas. Marriage patterns over time are also evident from an examination of changes in the SMAM, using data from the Census of India. The SMAM for females has risen by 3.3 years during the last three decades (from 15.9 years in 1961 to 19.2 years in 1992). The SMAM for males rose by 1.6 years over the same period.

More detailed information on the age at first marriage is shown in Table 4.3. The table shows the percentage of all women who got married by specified exact ages and the median age

Table 4.1 Current marital status

Percent distribution of women age 15-49 by current marital status according to age and residence, West Bengal, 1992

Age	Marital status: Never married	Currently married	Widowed	Divorced	Separated	Total percent
			URBAN			
15-19	77.9	22.1	--	--	--	100.0
20-24	42.4	55.5	1.1	--	1.1	100.0
25-29	16.9	79.3	1.8	--	2.0	100.0
30-34	7.0	86.1	3.1	--	3.8	100.0
35-39	2.4	89.3	6.2	--	2.1	100.0
40-44	4.9	83.4	9.0	--	2.7	100.0
45-49	1.5	85.7	10.5	--	2.3	100.0
Total	29.2	65.7	3.3	--	1.7	100.0
			RURAL			
15-19	50.9	47.2	0.2	0.5	1.3	100.0
20-24	11.7	85.2	1.0	0.3	1.7	100.0
25-29	2.7	92.8	1.5	0.2	2.7	100.0
30-34	1.1	89.6	5.2	0.6	3.5	100.0
35-39	1.0	88.7	7.9	0.1	2.3	100.0
40-44	1.4	86.1	9.1	--	3.4	100.0
45-49	1.5	81.5	15.2	--	1.8	100.0
Total	15.1	78.5	3.8	0.3	2.2	100.0
			TOTAL			
15-19	58.6	40.0	0.1	0.3	0.9	100.0
20-24	19.7	77.5	1.0	0.3	1.6	100.0
25-29	7.1	88.6	1.6	0.1	2.5	100.0
30-34	2.8	88.7	4.5	0.4	3.6	100.0
35-39	1.4	88.9	7.4	0.1	2.2	100.0
40-44	2.6	85.1	9.0	--	3.2	100.0
45-49	1.4	83.1	13.6	--	2.0	100.0
Total	19.2	74.8	3.7	0.2	2.1	100.0
			BACKWARD DISTRICTS			
15-19	51.4	46.0	0.3	0.7	1.6	100.0
20-24	13.0	81.2	1.2	0.4	4.1	100.0
25-29	2.3	94.2	1.0	--	2.5	100.0
30-34	1.3	92.1	4.6	0.7	1.3	100.0
35-39	0.7	87.5	9.8	0.7	1.4	100.0
40-44	--	84.7	13.2	--	2.1	100.0
45-49	1.1	79.8	16.5	--	2.6	100.0
Total	16.2	76.7	4.3	0.4	2.3	100.0

-- Less than 0.05 percent

at first marriage[1].

[1] Median age at first marriage is not calculated for age cohorts in which 50 percent of the women have not married by the start of the age group. The computation can not be made because the latest age that all women in the age group have attained by the time of the survey is the starting age. This means that, in order to avoid selectivity bias, the last exact age that can be considered for a particular age group is the lower boundary of that age group.

Table 4.2 Singulate mean age at marriage

Singulate mean age at marriage from selected sources, West Bengal, 1961-1992

Source	Singulate mean age at marriage		
	Male	Female	Difference
1961 Census	24.3	15.9	8.4
1971 Census	24.6	18.0	6.6
1981 Census	26.0	19.3	6.7
1992 NFHS			
Urban	27.6	21.8	5.8
Rural	25.0	18.1	6.9
Total	25.9	19.2	6.7
Backward districts	24.9	17.9	7.0

The median age at first marriage is used in place of the mean age at marriage (where both are calculated directly from reported ages at marriage) because the median, unlike the mean, is not biased by age truncation. (The survey interview marks the point of age truncation.) The mean age at first marriage for the cohort of women age 20-24 at the time of the survey, for example, will be affected by marriages that occur after the survey, but the median age at first marriage for this cohort will not be so affected as long as at least half of the women have married by age 20. This means that changes in the median age at first marriage by age cohort (from oldest to youngest) can meaningfully be interpreted as a trend over time.

Table 4.3 shows some dramatic trends, especially for marriages at very young ages. The proportion marrying by age 13 declined from 29 percent in the 45-49 cohort to 4 percent in the 15-19 cohort, and the proportion marrying by age 15 declined from 51 percent in the 45-49 cohort to 15 percent in the 15-19 cohort. Marriages below age 15 have been virtually eliminated in the urban areas - only 8 percent of women age 15-19 married before age 15, compared to 16 percent of urban women age 20-24. Overall, the median age at first marriage in West Bengal correspondingly increased from 14.9 years in the 45-49 cohort to 17.3 years in the 20-24 age cohort, a rise of 2.4 years. Although the median cannot be calculated for the 15-19 age group, it is almost certain to rise above the 17.3 year median observed for the 20-24 age group. The median age at marriage has been rising gradually in both urban and rural areas. Marriage patterns in the backward districts are similar to the marriage patterns in the rural areas of the state.

Table 4.4 shows median ages at first marriage for women by age group and selected background characteristics. As already noted, the median age at first marriage is considerably higher in urban areas than in rural areas. In backward districts, the median age at first marriage is slightly lower than its value in the rural areas. Age at first marriage is also considerably higher among more educated women. In fact, within each age group between 25-49, the median age at first marriage is 6-9 years higher for women having completed high school than among illiterate women. Differences by religion are also notable, with Muslims marrying about two years earlier than Hindus. Among all women age 20-49, the lowest median age at marriage is exhibited by illiterate women (14.8), Muslim women (14.9), and women belonging to scheduled castes (15.0).

Table 4.3 Age at first marriage

Percentage of women married by specific exact ages, and median age at first marriage, by current age and residence, West Bengal, 1992

Current age[1]	Percentage ever married before age: 13	15	18	20	22	25	Percent never married	Median age at first marriage
				URBAN				
15-19	1.9	7.5	NA	NA	NA	NA	77.9	NC
20-24	6.1	15.8	34.6	45.8	NA	NA	42.4	NC
25-29	4.3	17.2	37.8	51.8	62.9	77.0	16.9	19.3
30-34	7.1	19.9	48.4	63.1	73.5	84.2	7.0	18.2
35-39	11.8	28.3	57.8	73.8	80.9	89.9	2.4	16.8
40-44	17.7	33.7	62.1	74.2	84.3	90.3	4.9	16.5
45-49	16.1	32.3	56.0	73.2	82.1	89.1	1.5	17.0
20-49	9.1	22.6	46.9	60.8	70.2	79.0	15.3	18.3
25-49	9.9	24.4	50.1	64.7	74.5	84.7	8.1	18.0
				RURAL				
15-19	5.4	18.4	NA	NA	NA	NA	50.9	NC
20-24	9.3	27.7	64.1	80.6	NA	NA	11.7	16.6
25-29	13.0	33.9	71.6	84.3	92.1	96.4	2.7	16.0
30-34	16.8	35.7	73.9	87.8	93.5	97.1	1.1	16.0
35-39	25.6	44.6	81.7	90.1	95.2	97.0	1.0	15.3
40-44	29.6	54.3	86.1	92.8	96.1	97.9	1.4	14.6
45-49	36.4	61.9	88.9	91.9	95.0	98.0	1.5	14.0
20-49	18.3	38.6	74.5	86.3	91.9	94.7	4.4	15.7
25-49	21.6	42.7	78.3	88.4	94.0	97.1	1.6	15.5
				TOTAL				
15-19	4.4	15.3	NA	NA	NA	NA	58.6	NC
20-24	8.5	24.6	56.4	71.6	NA	NA	19.7	17.3
25-29	10.2	28.4	60.6	73.8	82.7	90.2	7.1	16.6
30-34	13.7	30.6	65.7	79.9	87.2	93.1	2.8	16.4
35-39	21.1	39.3	74.0	84.8	90.5	94.8	1.4	15.8
40-44	25.6	47.4	78.1	86.5	92.1	95.3	2.6	15.2
45-49	29.3	51.4	77.3	85.4	90.5	95.0	1.4	14.9
20-49	15.4	33.6	65.9	78.4	85.2	89.9	7.7	16.3
25-49	17.8	36.7	69.1	80.7	87.7	93.1	3.6	16.0
				BACKWARD DISTRICTS				
15-19	6.2	21.5	NA	NA	NA	NA	51.4	NC
20-24	14.0	32.1	66.6	79.6	NA	NA	13.0	16.1
25-29	15.6	40.8	72.1	85.7	90.7	95.7	2.3	15.5
30-34	16.4	41.9	77.9	86.4	92.2	96.1	0.7	15.5
35-39	25.3	44.3	77.9	85.5	92.4	96.5	--	15.4
40-44	31.9	56.5	85.1	89.1	96.1	99.0	1.1	14.6
45-49	46.0	63.8	84.3	86.7	91.6	97.7	4.4	13.5
20-49	21.2	42.8	75.0	84.6	90.3	94.1	4.4	15.4
25-49	23.8	46.8	78.0	86.4	92.3	96.7	1.3	15.2

NA: Not applicable
NC: Not calculated because less than 50 percent of women in the age group x to x+n have married by age x.
-- Less than 0.05 percent
[1]The current age groups include both never-married and ever-married women.

Table 4.4 Median age at first marriage

Median age at first marriage among women age 20-49 years, by current age and selected background characteristics, West Bengal, 1992

Background characteristic	Current age						
	20-24	25-29	30-34	35-39	40-49	20-49	25-49
Residence							
Urban	NC	19.3	18.2	16.8	16.7	18.3	18.0
Rural	16.6	16.0	16.0	15.3	14.4	15.7	15.5
Backward districts	16.1	15.5	15.5	15.4	14.3	15.4	15.2
Education							
Illiterate	15.3	15.3	15.2	14.5	13.6	14.8	14.6
Lit., < middle complete	17.3	16.3	16.3	16.1	15.6	16.3	16.1
Middle school complete	19.7	18.8	18.6	17.4	18.3	18.8	18.5
High school and above	NC	23.0	21.5	20.6	22.7	NC	22.3
Religion							
Hindu	17.9	17.1	16.8	16.0	15.3	16.6	16.3
Muslim	15.6	15.2	14.9	14.1	13.6	14.9	14.6
Other	(18.1)	*	*	*	*	17.9	17.9
Caste/tribe							
Scheduled caste	16.1	15.2	15.5	13.4	13.6	15.0	14.4
Scheduled tribe	15.6	(15.9)	(15.6)	(15.8)	(15.4)	15.7	15.7
Other	17.6	16.9	16.6	16.0	15.2	16.5	16.2
Total	17.3	16.6	16.4	15.8	15.1	16.3	16.0

NC: Not calculated because less than 50 percent of the women have married for the first time by age 20
() Based on 25-49 unweighted cases
* Median not shown; based on fewer than 25 unweighted cases

According to the 1978 amendment to the Child Marriage Restraint Act, 1929 (called the Sharda Act, applicable at that time only to British India), and the Hindu Marriage Act, 1955, the minimum legal age at marriage in India is 18 years for women and 21 years for men[2]. Before this amendment, the minimum age limit was 18 for the groom and 15 for the bride, subject to the condition that if the bride was younger than 18, parental consent was necessary. In West Bengal, however, as in most states of India, the majority of brides were younger than 18 on their wedding day. Nearly 60 percent of women in West Bengal who were age 20-24 at the time of the survey, for example, were married before the minimum legal age. One reason that the Child Marriage Restraint Act appears ineffective is that few women are aware of what the legal minimum age at marriage is, a finding which points to poor implementation of the law. It should be noted that there is no provision within the Child Marriage Restraint Act, 1978, to deem null or void any marriage occurring in which one or both marriage partners are below the legal age. Marriage below the specified ages is, however, a penal offence, punishable by fine or imprisonment. The extent to which the responsible parties for marriages involving minors are actually prosecuted is not known, although the widespread prevalence of "child" marriages would indicate weak implementation of the law in most states of India.

[2] Following the 1978 amendment, The Child Marriage Restraint Act, 1929 became officially recognized as the Child Marriage Restraint Act, 1978.

Table 4.5 Knowledge of minimum legal age at marriage

Percentage of ever-married women age 13-49 who correctly know the minimum legal age at marriage for males and females, by selected background characteristics, West Bengal, 1992

Background characteristic	Percentage who correctly know legal minimum age at marriage: For males	For females	Number of women
Age			
13-19	8.7	27.5	533
20-29	12.3	31.9	1697
30-39	10.2	34.4	1282
40-49	9.5	29.3	809
Residence			
Urban	19.0	46.8	1180
Rural	7.6	25.9	3142
Backward districts	7.2	21.3	464
Education			
Illiterate	4.3	16.3	2185
Lit., < middle complete	11.1	42.0	1278
Middle school complete	19.6	51.3	444
High school and above	33.6	59.0	415
Religion			
Hindu	12.4	33.8	3292
Muslim	4.9	23.7	939
Other	10.3	34.6	91
Caste/tribe			
Scheduled caste	4.7	18.2	408
Scheduled tribe	4.5	17.5	221
Other	11.7	33.9	3693
Total	10.7	31.6	4322

Overall, only 32 percent of respondents could correctly identify age 18 as the legal minimum age at marriage for females and only 11 percent could correctly identify age 21 as the legal minimum age at marriage for males (Table 4.5). The provisions of the law are much better known in urban areas, where 47 percent of women can correctly identify the legal minimum age at marriage for females. Accurate knowledge of the legal minimum age requirements is also closely tied to literacy and educational attainment. Nearly 60 percent of women having completed high school know the legal minimum age at marriage for females, compared to only 16 percent of illiterate women. Muslim women and women belonging to scheduled castes and scheduled tribes are less likely to have correct knowledge about the minimum legal age at marriage. The legal minimum age at marriage for males is less well-known than that for females by every group of women shown in Table 4.5. The enforcement of the female minimum age at marriage is probably more important than is enforcement of the male minimum age at marriage, however, because it has been the very young marriage of females that has been associated with their low status and high fertility. In this regard, the apparently steady increase in female age at first marriage is encouraging.

4.3 Age at First Cohabitation

In many states of India age at marriage is not necessarily equated with exposure to the risk of conception, although in West Bengal actual cohabitation with the husband closely follows the formal wedding rites. Table 4.6 shows median ages at first cohabitation with the husband. This table is the same as Table 4.3, except that age at first cohabitation with the husband is examined instead of the age at first marriage. The two ages may differ because formal marriage is not always immediately followed by cohabitation with the husband, which generally does not occur until after the *gauna* ceremony[3]. The median age at first cohabitation in West Bengal closely approximates and is only marginally higher in some cases than the median age at first marriage.

4.4 Marriage Between Relatives

Table 4.7 provides information on marriage between relatives. For both social and biological reasons, marriage between relatives has implications for mortality and morbidity as well as fertility. For example, Bittles et al (1992) found a positive association between consanguinity and fertility in 19 out of 22 populations. The authors also found that mortality is significantly higher among children of marriages between blood relatives. In Pakistan, Bittles (1993) found that children of marriages between relatives had consistently higher mortality than children of marriages between non-relatives, in line with expectations based on genetic theory, and that consanguineous couples had higher fertility than non-consanguineous couples. In analyzing the relationship between inbreeding and mortality, it is important to control for socioeconomic variables because of a tendency for marriage between relatives to be more common in lower socioeconomic groups whose mortality is higher primarily for socioeconomic reasons. Such a refined analysis is, however, not feasible in this report and will have to await further studies.

Table 4.7 indicates that 4 percent of ever-married women married a first cousin (on either their father's side or their mother's side). Fewer than 2 percent married a second cousin, uncle, or other blood relative, and 3 percent married a brother-in-law or other non-blood relative. Thus, consanguineous marriages are not common in West Bengal, but neither are they negligible. They occur mainly between first cousins, as is the pattern elsewhere in India. Interestingly, a higher percentage of women age 13-49 marry a cousin from the father's side (3 percent), compared with those marrying a cousin from the mother's side of the family (2 percent). Consanguineous marriage with a first cousin from the father's side is most common among women age 15-19 (4 percent), although generally the practice does not appear to vary with age. Rural women are more likely to have married a close relative than urban women, which was found to be the general pattern elsewhere (Rao et al., 1972; Khlat and Khoury, 1991; Rao and Inbaraj, 1977). This could in part be due to the higher proportion of Muslims in rural areas than in urban areas (see Table 3.10), and to the much greater propensity of Muslims to

[3] After marriage the bride often returns to her parental home until the gauna ceremony, which usually occurs when the bride is considered to be mature enough to begin cohabiting with her husband. The difference in the age at formal marriage and the age at first cohabitation with the husband is often large for women who marry before menarche.

Table 4.6 Age at first cohabitation with husband

Percentage of women who started living with husband by specific exact ages, and median age at first cohabitation with her husband, by current age and residence, West Bengal, 1992

Current age[1]	Percentage who started living with husband before age: 13	15	18	20	22	25	Percent never cohabited	Median age at first cohabitation with husband
URBAN								
15-19	1.9	7.5	NA	NA	NA	NA	77.9	NC
20-24	6.1	15.2	33.5	45.3	NA	NA	42.4	NC
25-29	2.4	17.1	37.8	51.8	62.9	77.0	16.9	19.3
30-34	5.2	19.1	48.2	63.1	73.5	84.2	7.0	18.2
35-39	10.4	25.5	56.4	73.8	80.9	89.9	2.4	17.0
40-44	16.8	30.9	61.2	74.2	84.3	90.3	4.9	16.7
45-49	13.5	31.1	56.0	73.2	82.1	89.1	1.5	17.2
20-49	7.8	21.4	46.3	60.7	70.2	79.0	15.3	18.4
25-49	8.2	23.1	49.7	64.7	74.5	84.7	8.1	18.0
RURAL								
15-19	5.0	18.3	NA	NA	NA	NA	50.9	NC
20-24	8.1	27.0	63.9	80.4	NA	NA	11.7	16.7
25-29	12.3	33.3	71.4	84.0	91.9	96.4	2.7	16.0
30-34	14.8	34.5	73.3	87.5	93.2	96.8	1.1	16.0
35-39	22.2	43.2	80.9	89.6	94.6	96.8	1.0	15.4
40-44	27.2	53.6	85.8	92.7	95.9	97.9	1.4	14.7
45-49	33.0	60.3	88.9	91.9	95.0	98.0	1.5	14.2
20-49	16.4	37.7	74.1	86.1	91.6	94.6	4.4	15.8
25-49	19.5	41.7	77.9	88.2	93.7	97.0	1.6	15.5
TOTAL								
15-19	4.1	15.2	NA	NA	NA	NA	58.6	NC
20-24	7.6	24.0	56.0	71.3	NA	NA	19.7	17.3
25-29	9.1	28.0	60.5	73.6	82.6	90.2	7.1	16.7
30-34	11.7	29.5	65.3	79.7	87.0	92.9	2.8	16.5
35-39	18.3	37.5	73.0	84.5	90.2	94.6	1.4	15.9
40-44	23.7	46.0	77.5	86.5	92.0	95.3	2.6	15.3
45-49	26.1	50.0	77.3	85.4	90.5	95.0	1.4	15.0
20-49	13.7	32.7	65.5	78.2	85.0	89.8	7.7	16.3
25-49	15.8	35.6	68.7	80.5	87.5	93.0	3.6	16.0
BACKWARD DISTRICTS								
15-19	5.6	19.5	NA	NA	NA	NA	51.4	NC
20-24	12.7	31.6	66.0	79.2	NA	NA	13.0	16.2
25-29	15.6	39.8	72.1	85.2	90.7	95.7	2.3	15.5
30-34	15.7	40.0	76.7	85.8	91.6	95.4	1.3	15.6
35-39	23.2	43.6	77.9	85.5	92.4	96.5	0.7	15.4
40-44	29.8	56.5	85.1	88.1	95.0	99.0	--	14.6
45-49	40.9	62.5	84.3	86.7	91.6	97.7	1.1	13.9
20-49	19.7	42.0	74.6	84.2	90.0	93.9	4.4	15.5
25-49	22.3	45.7	77.7	86.0	92.0	96.5	1.3	15.3

NA: Not applicable
NC: Not calculated because less than 50 percent of women in the age group x to x+n have started living with husband
-- Less than 0.05 percent
[1]The current age groups include both never-married and ever-married women.

Table 4.7 Marriage between relatives

Percent distribution of ever-married women by relationship to current husband, according to selected background characteristics, West Bengal, 1992

Background characteristic	First cousin		Second cousin	Uncle	Other blood relation	Brother in-law	Other non-blood relation	Not related	Total per-cent	Number
	Father's side	Mother's side								
Age										
13-14	(1.3)	(--)	(--)	(--)	(--)	(--)	(--)	(98.7)	100.0	35
15-19	4.3	2.3	0.6	0.3	1.4	0.1	4.4	86.6	100.0	499
20-24	3.3	2.1	0.5	--	1.7	0.2	3.5	88.7	100.0	832
25-29	2.9	1.4	0.3	--	1.3	0.2	2.4	91.5	100.0	865
30-34	1.7	2.0	0.5	--	1.0	0.2	2.0	92.7	100.0	667
35-39	1.6	1.2	0.5	--	0.9	0.2	3.3	92.3	100.0	616
40-44	2.1	2.5	0.9	0.3	1.1	0.2	1.5	91.4	100.0	459
45-49	2.6	1.0	0.4	--	1.0	--	3.4	91.5	100.0	350
Residence										
Urban	1.0	0.8	0.3	0.2	1.0	0.1	2.8	93.8	100.0	1180
Rural	3.3	2.2	0.6	--	1.3	0.2	2.9	89.6	100.0	3142
Backward districts	5.4	4.2	1.5	--	1.6	0.4	2.1	84.8	100.0	464
Education										
Illiterate	3.4	2.3	0.6	0.1	1.6	0.2	2.5	89.3	100.0	2185
Lit.,<middle complete	2.5	1.6	0.4	0.1	1.0	0.1	3.4	90.9	100.0	1278
Middle school complete	1.9	1.1	0.1	--	1.0	--	3.7	92.2	100.0	444
High school and above	--	0.2	0.3	--	0.6	--	2.5	96.3	100.0	415
Religion										
Hindu	0.8	0.7	0.2	--	1.1	0.2	3.1	93.8	100.0	3292
Muslim	9.3	5.7	1.4	0.2	1.7	0.2	2.1	79.5	100.0	939
Other	--	--	--	--	--	--	2.4	97.6	100.0	92
Caste/tribe										
Scheduled caste	2.3	1.2	0.3	0.3	1.6	0.1	1.8	92.4	100.0	408
Scheduled tribe	--	1.5	--	--	2.0	--	2.4	94.1	100.0	221
Other	2.8	1.9	0.5	--	1.2	0.2	3.0	90.4	100.0	3693
Total	2.6	1.8	0.5	0.1	1.2	0.2	2.9	90.7	100.0	4322

( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent

marry close relatives. Also, in backward districts, where a majority of the respondents are Muslim, marriages between blood relations are more common (13 percent) than in the state (6 percent). Less educated women are more likely to have married a close relative than more educated women, but some marriages between relatives are still evident in the higher educational groups. One-fifth of Muslim women have married a blood relative. Consanguineous marriages are slightly less common in the scheduled castes and scheduled tribes than in other groups.

CHAPTER 5

FERTILITY

A major objective of the NFHS is to estimate fertility levels, differentials and trends. The fertility estimates in this chapter are based on the complete birth histories of ever-married women age 13-49. Several procedures were established to facilitate the complete and accurate reporting of births. First, women were asked separately about their number of daughters and sons who were still living at home, those living elsewhere and those who had died. Then, more complete details about each birth were collected, including the year and month of birth, sex and survival status. The birth history information was used to calculate measures of current fertility and fertility trends over time, as well as cumulative measures of the number of children ever born. Estimates of birth intervals and the mother's age at the initiation of childbearing were calculated from data on the timing of births. Interviewers received extensive training in methods of probing to help respondents recall the details of all births. In addition, interviewers were instructed to check any documents (such as horoscopes, school certificates, or immunization cards) that may provide information on the date of birth. Finally, for any interval of four or more years between births, interviewers were required to record the reason for the long interval to help in identifying any live births that might have been omitted during the time period.

Despite all the measures to improve data quality, the NFHS is subject, to some degree, to the same kinds of errors that are inherent in all retrospective sample surveys -- namely, the omission of some births (especially births of children who died at a very young age) and the difficulty of determining the date of birth accurately.

5.1 Current Fertility Levels, Differentials and Trends

Various summary measures of fertility have been calculated from the NFHS to provide a complete picture of recent fertility in West Bengal. These measures include the crude birth rate (CBR), the general fertility rate (GFR), age-specific fertility rates (ASFRs) and the total fertility rate (TFR). Fertility estimates from the NFHS and the Sample Registration System (SRS) are shown by place of residence in Table 5.1 and discussed in the following sections. Except for the crude birth rate (CBR) based on the household birth record, all of the NFHS fertility statistics are derived from the birth history information and refer to the three years prior to the survey. Since the NFHS fieldwork in West Bengal was conducted from April 1992 to July 1992, the three years prior to the survey corresponds roughly to the years 1989-91. A three-year period is chosen for the NFHS rates as a compromise of three objectives: to obtain the most current information, to reduce the effects of sampling variation, and to minimize problems with the displacement of births from recent years to earlier years.

Crude Birth Rate

Table 5.1 shows two different sets of NFHS crude birth rates. The first set is based on births that occurred to usual residents of the household during the two years preceding the survey as obtained in the Household Questionnaire. The CBR is calculated as the annual number of births in the two-year period before the date of interview per 1,000 usual residents at the time of the survey. The denominator of this measure is adjusted by projecting the population

Table 5.1 Current fertility

Age-specific and cumulative fertility rates and crude birth rates from the NFHS and the SRS, by residence, West Bengal, 1989-91

	NFHS (1989-91)[1]				SRS (1990)		
Age	Urban	Rural	Total	Backward districts	Urban	Rural	Total
15-19	0.083	0.140	0.123	0.153	0.051	0.107	0.092
20-24	0.158	0.219	0.202	0.221	0.149	0.232	0.209
25-29	0.107	0.152	0.138	0.186	0.123	0.205	0.179
30-34	0.058	0.084	0.075	0.125	0.057	0.119	0.101
35-39	0.016	0.039	0.031	0.069	0.030	0.077	0.063
40-44	0.000	0.012	0.008	0.023	0.009	0.030	0.023
45-49	0.007	0.005	0.005	0.015	0.005	0.012	0.010
TFR 15-44	2.11	3.23	2.89	3.89	2.09	3.85	3.33
TFR 15-49	2.14	3.25	2.92	3.96	2.11	3.91	3.38
GFR	78	124	110	144	72	131	114
NFHS CBR based on							
Household birth record	18.6	27.8	25.1	32.3	NA	NA	NA
Woman's birth history	18.5	28.4	25.5	32.2	NA	NA	NA
SRS CBR	NA	NA	NA	NA	18.6	32.0	28.2

Note: Rates from NFHS are for the period 1-36 months before the interview except for the CBR from the household birth record which is based on the period 1-24 months before the interview. Rates for the age group 45-49 might be slightly biased due to truncation.
TFR: Total Fertility Rate for ages 15-44 and 15-49, expressed per woman.
GFR: General Fertility Rate (births to women age 13-49 divided by woman-years lived between age 15 and 49), expressed per 1,000 women.
CBR: Crude Birth Rate, expressed per 1,000 population.
NA: Not applicable
[1]Three years preceding the survey
Source of SRS data: Office of the Registrar General (1993).

backwards to the mid-point of the time period on the basis of the intercensal population growth rate in the state (which is used for both the total and backward district estimates), and separately for urban and rural areas. The second set of estimates is derived from the birth history information collected in the Woman's Questionnaire and covers a period of three years prior to the interview. It is calculated as a sum of products, where each product is an age-specific fertility rate multiplied by the proportion of women in the specific age group out of the total *de facto* population, both male and female.

Although the NFHS estimates are based on information from two different parts of the interview (often with different respondents), the two estimates agree quite closely with one another. The three-year CBR is slightly higher than the two-year rate, as would be expected when fertility is declining. The SRS crude birth rate for 1990 (28.2) is slightly higher than the NFHS crude birth rate for 1989-91 (25.5). The urban birth rate estimates are very close in both the sources but the NFHS rural birth rate (based on the women's birth history) is 11 percent lower than the SRS rural crude birth rate. Considerable differentials are seen in the level of fertility by residence. The rural birth rate based on the women's birth history is one and half times higher than the corresponding urban rate. The birth rate in backward districts (32.2) is higher than that in the state as a whole (25.5).

General Fertility Rate

The general fertility rate (GFR) in the NFHS is calculated by dividing the total number of births to women age 13-49 that occurred during the time period by the number of woman-years lived between the ages of 15 and 49 during the period, and multiplying the result by 1,000. The NFHS estimated the GFR for 1989-91 in West Bengal as 110 births per 1,000 women for the state as a whole, very close to the SRS general fertility rate for 1990 (114). The observed GFR is considerably higher in rural areas (124) than in urban areas (78).

Age-Specific and Total Fertility Rates

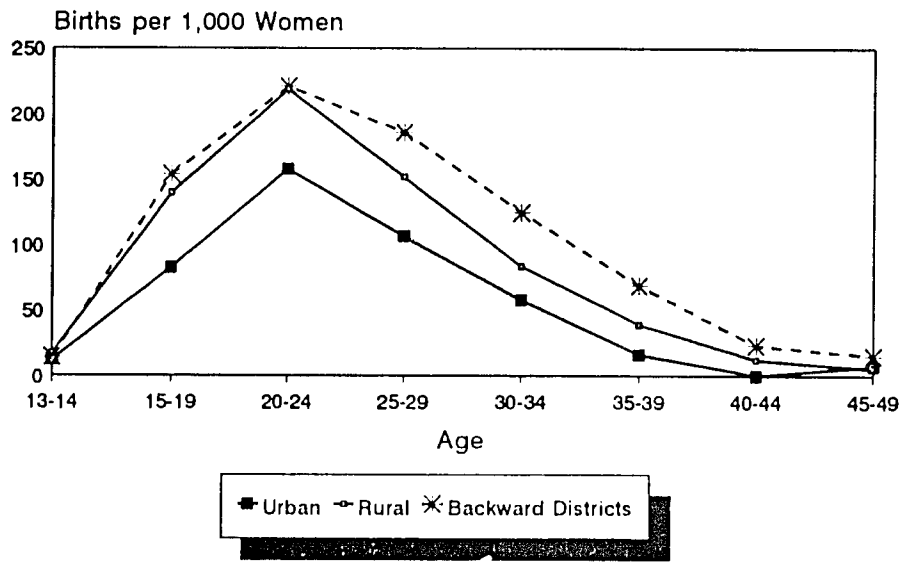
Both the GFR and the CBR are crude summary measures of fertility. A better picture of fertility can be obtained by examining the age-specific fertility rates (ASFRs) and the total fertility rate (TFR). To compute the numerator for the NFHS age-specific rates, live births are classified by (1) the segment of time preceding the survey (that is, 1-36 months), based on the date of interview and date of birth, and (2) the age of the mother (in conventional five-year groupings) at the time of birth, based on the date of interview and the dates of birth of both mother and child. The denominators of the age-specific rates are numbers of woman-years lived in the specified five-year age intervals during the time segment. The TFR is a summary measure that indicates the number of children a woman would bear during her reproductive years if she were to experience the age-specific fertility rates prevailing at the time of the survey. Mathematically, the TFR is five times the sum of the age-specific fertility rates for five-year age groups.

The NFHS estimates of TFR for the state as a whole for 1989-91 is 2.9 children per woman, about 14 percent lower than the SRS estimate for 1990 (3.4). As expected, the NFHS urban TFR (2.1 children per woman) is substantially lower than the rural TFR (3.3 children per woman). Under the present schedule of fertility, a woman in the rural areas would have, on an average, 1.2 children more in her childbearing years than a woman in the urban areas. The TFR for backward districts is 4 children per woman.

The age-specific fertility rates follow the expected, bell-shaped pattern. Fertility peaks in the 20-24 age group, reflecting a pattern of early marriage and childbearing. This pattern is the same for all the three areas under study (see Figure 5.1). Fertility rates decline steadily after age 25, reaching low levels among women age 40 and above. Fertility is heavily concentrated in the 20-29 age group - about 58 percent of total fertility is contributed by women in this age group. The contribution of these two relatively high fertility age groups to total fertility is higher in urban than in rural areas because of the later initiation of childbearing, and a low level of fertility after age 30 in the former. The age-specific fertility rates are consistently higher in rural areas than in urban areas. The contribution to total fertility of women age 35 and above is only 5 percent in urban areas, 9 percent in rural areas and 14 percent in the backward districts.

It is useful to extend the comparison of NFHS and SRS results from total fertility rates to the corresponding age-specific fertility rates, as shown in Table 5.1 and Figure 5.2. The NFHS apparently enumerates relatively more births to younger women than the SRS and relatively fewer births to older women. The large difference for the 15-19 age group may be

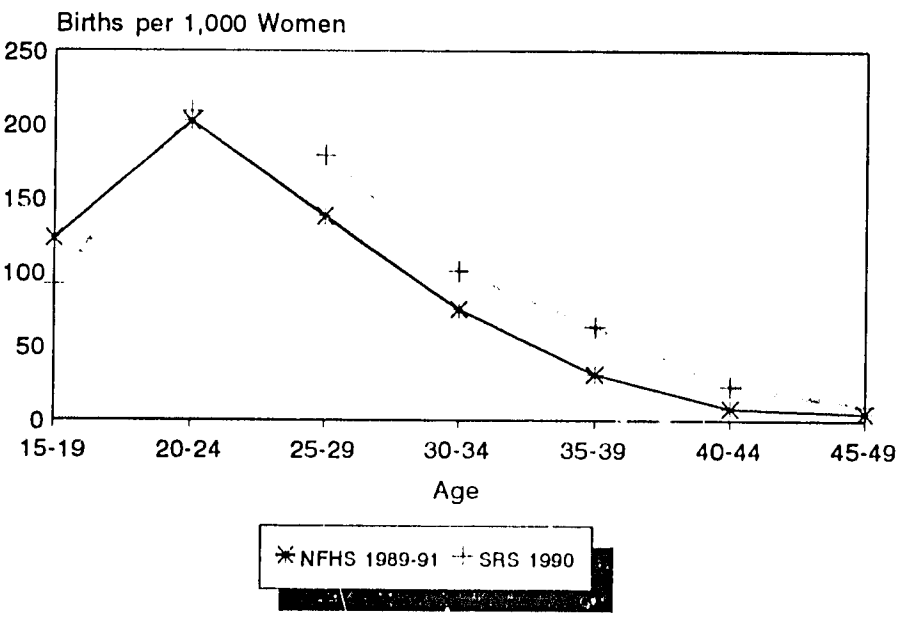
Figure 5.1
Age-Specific Fertility Rates by Residence



Note: Rates are for the three years before the survey (1989-91)

NFHS, West Bengal, 1992

Figure 5.2
Age-Specific Fertility Rates NFHS and SRS



NFHS, West Bengal, 1992

due to the fact that the SRS rates are *de jure* while the NFHS rates are *de facto*. In calculating fertility estimates, the SRS excludes births occurring within the sample unit to visitors, but includes births to usual residents outside the sample unit. Since young women typically return to their parental household to have their first baby, it is not surprising that the NFHS fertility estimate for the 15-19 age group is considerably higher than the SRS estimate. The differences in the older age groups are more difficult to explain. The very low fertility rates for women in the highest age groups in West Bengal are reasonable, because many women in these ages have been sterilized or are menopausal. Moreover, terminal abstinence from sexual intercourse is commonly practiced by couples once their daughter attains menarche or once any of their children gets married or has a child. A complete explanation of the differences in fertility at older ages in the two data sets must await further analysis.

Fertility Differentials and Trends

Table 5.2 and Figure 5.3 show current and cohort fertility by selected background characteristics. Current fertility is measured by the total fertility rate for the three years prior to the survey. Cohort fertility is measured by the mean number of children ever born to women age 40-49 at the time of the survey. Both measures are calculated from the birth history information in the Woman's Questionnaire.

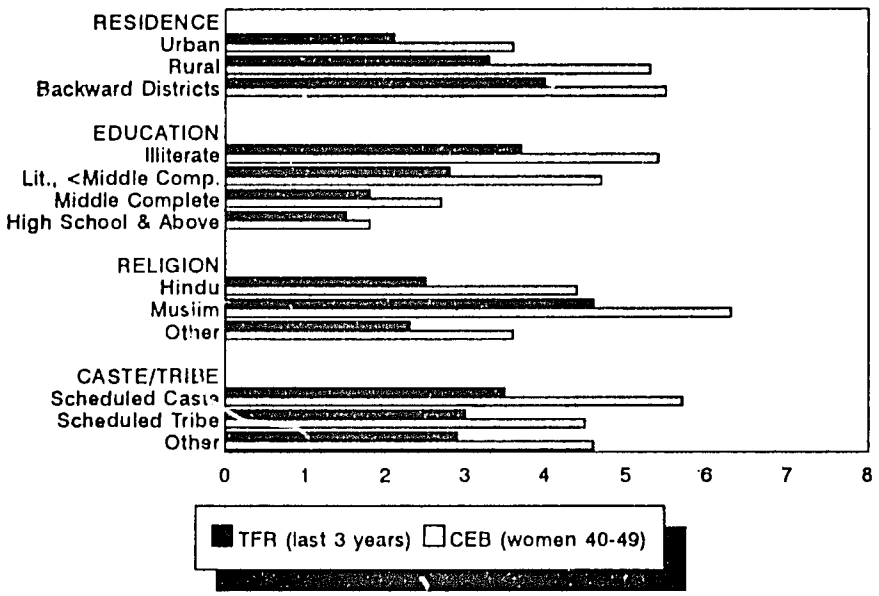
Table 5.2 Fertility by background characteristics

Total fertility rate for the three years preceding the survey, and mean number of children ever born to women age 40-49 years, by selected background characteristics, West Bengal, 1992

Background characteristic	Total fertility rate[1]	Mean number of children ever born to women age 40-49 years
Residence		
Urban	2.14	3.64
Rural	3.25	5.28
Backward districts	3.96	5.52
Education		
Illiterate	3.73	5.44
Lit., < middle complete	2.82	4.69
Middle school complete	1.77	2.69
High school and above	1.50	1.76
Religion		
Hindu	2.52	4.40
Muslim	4.59	6.25
Other	2.30	3.57
Caste/tribe		
Scheduled caste	3.52	5.73
Scheduled tribe	3.05	4.48
Other	2.85	4.64
Total	2.92	4.72

[1]Rate for women age 15-49 years

Figure 5.3
Total Fertility Rate (TFR) and Mean Number of Children Ever Born (CEB)



NFHS, West Bengal, 1992

If there had been no change in fertility during the decades prior to the survey, the current and cohort indicators would be nearly identical, differences being due solely to the slightly incomplete fertility of women age 40-49. If fertility has declined, current fertility will be lower than cohort fertility, with larger differences generally indicating more rapid decline. The gap between the TFR of 2.9 and the mean number of children ever born of 4.7 suggests that a substantial fertility decline has taken place in West Bengal. Similar comparison for urban and rural areas suggest that the pace of decline has been more or less equal in the two areas.

Educational differentials in fertility are substantial, with current fertility declining steadily from 3.7 children per woman for illiterate women to 1.5 children for women with at least a high school education. The cohort fertility differential by education is even more striking. The mean number of children ever born to illiterate women age 40-49 (5.4), is much higher than the mean number ever born to women having completed high school (1.8).

The Hindu-Muslim fertility differential is substantial. Muslim women have, on average, two children more than Hindu women. In both current and cohort figures, Muslims have the highest fertility among all groups shown in Table 5.2. Scheduled caste women have on average half a child more than women belonging to scheduled tribes.

The most direct way of observing fertility trends is to examine changes in age-specific rates over time. Table 5.3 shows age-specific fertility rates for the 20-year period preceding the survey, calculated from the birth history information. Because birth histories are obtained only

Table 5.3 Fertility trends

Age-specific fertility rates for five-year periods preceding the survey by residence, West Bengal, 1992

Maternal age at birth	Years preceding survey			
	0-4	5-9	10-14	15-19
URBAN				
15-19	0.085	0.118	0.132	0.143
20-24	0.167	0.176	0.231	0.216
25-29	0.115	0.150	0.161	0.170
30-34	0.062	0.073	0.104	[0.125]
35-39	0.014	0.035	[0.093]	U
40-44	0.000	[0.042]	U	U
45-49	[0.006]	U	U	U
RURAL				
15-19	0.151	0.214	0.201	0.221
20-24	0.223	0.282	0.305	0.295
25-29	0.153	0.196	0.229	0.237
30-34	0.076	0.136	0.161	[0.197]
35-39	0.040	0.080	[0.093]	U
40-44	0.012	[0.028]	U	U
45-49	[0.005]	U	U	U
TOTAL				
15-19	0.133	0.186	0.179	0.195
20-24	0.207	0.248	0.281	0.269
25-29	0.141	0.181	0.206	0.214
30-34	0.072	0.115	0.141	[0.174]
35-39	0.031	0.064	[0.093]	U
40-44	0.008	[0.032]	U	U
45-49	[0.005]	U	U	U
BACKWARD DISTRICTS				
15-19	0.169	0.211	0.220	0.212
20-24	0.231	0.304	0.317	0.297
25-29	0.183	0.220	0.237	0.270
30-34	0.124	0.164	0.167	[0.235]
35-39	0.076	0.097	[0.121]	U
40-44	0.032	[0.088]	U	U
45-49	[0.019]	U	U	U

Note: Age-specific fertility rates are per woman.
U: Not available
[] Truncated, censored

for women under age 50 at the time of the survey, no rate is available for women age 45 and over for the period 5-9 years prior to the survey, nor for women age 40 and over for 10-14 years prior to the survey, nor for women age 35 and over 15-19 years prior to the survey. In almost every age group fertility fell steadily from the period 10-14 years before the survey to the period 0-4 years before the survey. There was a general tendency for the fertility decline to accelerate during the most recent period in both urban and rural areas.

Further evidence of a decline in fertility over time is shown in Table 5.4, which gives fertility rates over the last 20 years by the number of years since women started living with their husbands. This measure controls to some extent for changing age at marriage and may help to elucidate the trends in Table 5.3. In most marital duration groups, fertility has fallen steadily

Table 5.4 Fertility by marital duration

Fertility rates for ever-married women by duration since first effective marriage (in years) for five-year periods preceding the survey, West Bengal, 1992

Duration of effective marriage	Years preceding survey			
	0-4	5-9	10-14	15-19
	URBAN			
0 - 4	0.287	0.283	0.293	0.243
5 - 9	0.173	0.186	0.215	0.227
10-14	0.077	0.124	0.167	0.208
15-19	0.035	0.066	0.118	(0.177)
20-24	0.016	0.068	(0.124)	*
25-29	0.006	(0.036)	*	*
	RURAL			
0 - 4	0.282	0.327	0.299	0.276
5 - 9	0.213	0.278	0.295	0.302
10-14	0.136	0.192	0.230	0.268
15-19	0.079	0.147	0.178	0.208
20-24	0.043	0.088	0.139	*
25-29	0.021	0.058	*	*
	TOTAL			
0 - 4	0.283	0.315	0.297	0.266
5 - 9	0.203	0.252	0.269	0.279
10-14	0.119	0.171	0.211	0.250
15-19	0.065	0.122	0.160	0.202
20-24	0.035	0.082	0.136	(0.177)
25-29	0.017	0.054	(0.136)	*
	BACKWARD DISTRICTS			
0 - 4	0.274	0.304	0.293	0.259
5 - 9	0.253	0.309	0.307	0.280
10-14	0.167	0.246	0.228	(0.317)
15-19	0.123	0.157	(0.216)	*
20-24	0.084	(0.131)	*	*
25-29	(0.075)	*	*	*

Note: Duration-specific fertility rates are per woman. The duration of effective marriage is defined as the difference between the woman's age at the specified time period and the age she began living with her husband.
() Based on 125-249 person-years of exposure
* Rate not shown; based on fewer than 125 person-years of exposure

over time. The rapidity of the fertility decline increases with marital duration, being most pronounced among women married 20 or more years. The general absence of any marked fertility decline in the group married for 0-4 years is typical of populations in which contraception is initiated only after the first birth or later. The rise in fertility in this duration group, from 0.266 at 15-19 years before the survey to 0.283 at 0-4 years before the survey, probably reflects the rising age at marriage for women and a consequent increase in their fecundability at the time they marry. Consistent with the trend in age-specific fertility rates shown in Table 5.3, the fertility decline has accelerated in the most recent period.

Since information was collected only on a woman's age at effective marriage, and not her year and month of effective marriage (which would be difficult to determine accurately in

most cases), the duration since first effective marriage is calculated as the woman's age during the specified time period minus the age at which she started living with her (first) husband. For those whose current age is the same as their age at effective marriage (marriage duration 0), the average period covered is only about six months rather than one full year. Hence, the 0-4 duration category effectively covers a period of only about 4.5 years while all the other duration categories cover 5 years.

Marital fertility is lower in urban than in rural areas at most durations and time periods. Once again, the only exception is the 0-4 duration category, in which urban women have higher fertility than rural women. This pattern is not uncommon in populations in which the age at marriage is higher in urban areas than in rural areas, as is the case in West Bengal (see Chapter 4). Women who marry at later ages often have their first birth sooner after marriage and concentrate their births relatively earlier in their marriages.

5.2 Outcome of Pregnancies

Table 5.5 shows the outcome of all life-time pregnancies reported by ever-married women according to their current age and current place of residence. Information on stillbirths and spontaneous and induced abortions was obtained in the reproduction section of the Woman's Questionnaire.

In any survey, it is more difficult to collect retrospective information on pregnancies than on live births, particularly on pregnancies spontaneously aborted within the first few months after conception. The number of total pregnancies and the percentage of all pregnancies that end in spontaneous abortions are almost certainly underestimated and, therefore, should not be subject to very intensive interpretation. Stillbirths are probably much more accurately reported than abortions. Reports of induced abortions may be suppressed by respondents, or induced abortions may be reported as spontaneous abortions, so that the actual incidence of induced abortions may be much higher than is reported.

Of the 13,819 pregnancies reported by sample women, 93 percent resulted in live births, 2 percent in stillbirths, 2 percent in induced abortions, and 3 percent in spontaneous abortions. There is little variation in the outcome of pregnancies by age for the state as a whole, except among women age 15-19 years, where spontaneous abortion is relatively high (8 percent). The pattern is somewhat similar for rural areas, which account for 75 percent of all pregnancies. Women in urban areas report a higher proportion of pregnancies ending in induced abortions (4 percent), compared with 1 percent in rural areas, and a correspondingly lower proportion of live births.

In view of the problems of underreporting early spontaneous abortions, it is useful to consider induced abortions and stillbirths in relation to live births rather than to total pregnancies. By this measure, there were 2.5 stillbirths and 1.8 induced abortions for every 100 live births in the state as a whole.

Table 5.5 Outcome of pregnancy

Percent distribution of all pregnancies of ever-married women by their outcome, according to age of the woman and residence, West Bengal, 1992

Current age	Outcome of pregnancy				Total percent	Number of pregnancies
	Spontaneous abortion	Induced abortion	Still-birth	Live birth		
			URBAN			
15-19	11.8	--	1.9	86.3	100.0	76
20-24	2.1	4.3	2.1	91.5	100.0	272
25-29	3.3	4.5	1.3	90.9	100.0	605
30-34	3.0	6.3	2.4	88.3	100.0	658
35-39	5.9	3.4	1.9	88.8	100.0	751
40-44	4.5	2.8	1.8	90.9	100.0	587
45-49	4.3	1.9	1.1	92.8	100.0	535
Total	4.3	3.8	1.7	90.2	100.0	3486
			RURAL			
15-19	7.3	1.4	4.1	87.2	100.0	297
20-24	3.9	0.8	2.6	92.7	100.0	1332
25-29	2.9	1.6	2.5	93.0	100.0	1894
30-34	3.1	1.0	2.4	93.5	100.0	1806
35-39	2.7	0.6	2.6	94.1	100.0	1941
40-44	3.5	1.2	2.5	92.7	100.0	1742
45-49	2.6	0.5	1.6	95.3	100.0	1316
Total	3.3	1.0	2.5	93.3	100.0	10333
			TOTAL			
15-19	8.2	1.1	3.7	87.0	100.0	373
20-24	3.6	1.4	2.5	92.5	100.0	1604
25-29	3.0	2.3	2.2	92.5	100.0	2498
30-34	3.1	2.4	2.4	92.1	100.0	2463
35-39	3.6	1.4	2.4	92.6	100.0	2693
40-44	3.8	1.6	2.3	92.3	100.0	2329
45-49	3.1	0.9	1.5	94.6	100.0	1851
Total	3.5	1.7	2.3	92.5	100.0	13819
			BACKWARD DISTRICTS			
15-19	8.2	5.7	2.5	83.6	100.0	55
20-24	3.9	1.1	2.3	92.6	100.0	195
25-29	2.1	0.8	1.4	95.7	100.0	280
30-34	2.9	0.3	2.9	94.0	100.0	300
35-39	3.0	0.7	1.6	94.8	100.0	316
40-44	3.6	1.5	2.6	92.3	100.0	260
45-49	3.7	0.2	2.4	93.7	100.0	208
Total	3.3	0.9	2.2	93.6	100.0	1614

Note: Total includes 6 pregnancies to women age 13-14, which are not shown separately.
-- Less than 0.05 percent

5.3 Children Ever Born and Living

The distribution of women by number of children ever born is shown in Table 5.6, both for currently married women and for all women (including never-married women from the household sample). The table also shows the mean number of children ever born and surviving. The mean number of children ever born to all women is 2.2, and to currently married women 3.0. The mean number of children ever born increases steadily with age for all women as well as currently married women, reaching a high of five children per woman for the 45-49 age group. Early childbearing is relatively rare in West Bengal. Only 21 percent of all women in the 15-19 age group have ever had a child, and the mean number of children ever born to women age 15-19 is only 0.27, in comparison to 51 percent of currently married women ever having a child and 0.66 children ever born to them.

It is not uncommon in sample surveys to find mean numbers of children ever born for older age groups declining, which may indicate deteriorating completeness of reporting of children ever born as women reach the end of the reproductive age span. Although the steady increase with age in the NFHS mean number of children ever born does not provide conclusive evidence that births have been completely reported by older women, there is no indication of underreporting, either in the pattern or the level of fertility.

Table 5.6 Children ever born and living

Percent distribution of all women and currently married women age 15-49 by number of children ever born and mean number of children ever born (CEB) and living, according to age, West Bengal, 1992

Age	Children ever born											Total percent	Number of women	Mean CEB	Mean children living
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	79.2	15.3	5.0	0.4	0.1	--	--	--	--	--	--	100.0	1205	0.27	0.24
20-24	31.0	24.8	23.9	13.3	5.2	1.2	0.5	0.1	--	--	--	100.0	1036	1.43	1.29
25-29	12.8	15.3	25.1	21.9	12.9	8.1	2.0	1.6	0.2	--	--	100.0	931	2.48	2.23
30-34	7.1	12.6	17.2	20.0	16.4	13.0	7.2	2.8	2.4	1.1	0.2	100.0	686	3.31	2.83
35-39	5.8	7.6	14.8	17.2	16.1	3.8	11.3	4.7	4.4	2.8	1.4	100.0	624	3.99	3.36
40-44	5.8	5.7	10.3	17.2	13.5	13.0	12.6	9.4	3.8	5.0	3.8	100.0	472	4.56	3.76
45-49	4.6	6.7	10.2	11.3	10.3	14.5	12.1	13.2	9.0	3.6	4.6	100.0	355	4.93	4.00
Total	28.7	14.5	15.8	13.4	9.2	7.1	4.6	2.9	1.8	1.2	0.8	100.0	5309	2.41	2.06
CURRENTLY MARRIED WOMEN															
15-19	49.2	37.3	12.3	0.9	0.3	--	--	--	--	--	--	100.0	482	0.66	0.59
20-24	13.7	30.0	30.3	16.9	6.7	1.6	0.7	0.1	--	--	--	100.0	802	1.81	1.63
25-29	4.8	16.2	27.5	24.0	14.3	9.0	2.3	1.8	0.2	0.1	--	100.0	825	2.73	2.47
30-34	2.8	12.0	18.1	21.5	17.1	13.8	7.7	2.8	2.7	1.2	0.2	100.0	608	3.51	3.02
35-39	3.2	7.2	13.7	17.6	17.2	15.1	11.6	4.9	4.7	3.2	1.6	100.0	555	4.19	3.54
40-44	2.5	5.8	9.6	16.0	14.5	13.1	14.5	10.8	3.9	5.2	4.0	100.0	402	4.82	4.00
45-49	3.2	7.9	9.9	10.5	10.0	14.1	12.5	12.9	9.5	4.0	5.5	100.0	295	5.06	4.13
Total	11.1	18.0	19.7	16.7	11.6	8.8	5.8	3.6	2.2	1.5	1.1	100.0	3970	3.00	2.58

-- Less than 0.05 percent

The distribution of women age 45-49 by number of children ever born is of particular interest since these women have nearly completed their childbearing. Therefore, the distribution of children ever born approximates the completed parity distribution for this cohort of women. Completed parity distributions are generally unimodal, with the modal number of children born near the mean number of children ever born. The distributions for women age 45-49 in Table 5.6 agree, apart from minor fluctuations, with this pattern.

The figures on childlessness shown in Table 5.6 are relatively low, particularly for currently married women. The low level of childlessness is in part an indicator of primary sterility in the population of West Bengal. Only 3 percent of currently married women age 45-49 have no children.

Differentials in the number of children ever born and children still living by background characteristics, shown in Table 5.7, provide additional information on fertility patterns. To avoid the confounding influence of different age distributions of women in different groups, the

Table 5.7 Mean number of children ever born and living by background characteristics

Age-standardized mean number of children ever born and living for currently married women, according to sex and selected background characteristics, West Bengal, 1992

Background characteristic	Children ever born			Children living		
	Male	Female	Total	Male	Female	Total
Age						
15-19	0.1	0.1	0.3	0.1	0.1	0.2
20-24	0.7	0.7	1.4	0.7	0.6	1.3
25-29	1.2	1.3	2.5	1.1	1.1	2.2
30-34	1.6	1.7	3.3	1.4	1.4	2.8
35-39	2.1	1.9	4.0	1.8	1.6	3.4
40-44	2.3	2.2	4.6	1.9	1.8	3.8
45-49	2.6	2.3	4.9	2.1	1.8	4.0
Residence						
Urban	1.0	0.9	1.8	0.8	0.8	1.6
Rural	1.2	1.2	2.4	1.0	1.0	2.0
Backward districts	1.3	1.3	2.5	1.1	1.0	2.1
Education						
Illiterate	1.6	1.5	3.1	1.3	1.3	2.6
Literate, < middle complete	1.0	0.9	1.9	0.9	0.8	1.7
Middle school complete	0.7	0.6	1.3	0.6	0.6	1.2
High school and above	0.4	0.5	0.9	0.4	0.5	0.9
Religion						
Hindu	1.1	1.0	2.1	0.9	0.9	1.8
Muslim	1.5	1.4	2.8	1.3	1.1	2.4
Other	1.0	1.0	2.1	0.9	0.9	1.8
Caste/tribe						
Scheduled caste	1.3	1.3	2.6	1.1	1.0	2.1
Scheduled tribe	1.2	1.2	2.4	0.9	1.0	1.9
Other	1.1	1.1	2.2	1.0	0.9	1.9
Total	1.1	1.1	2.2	1.0	0.9	1.9

Note: The means by residence, education, religion and caste/tribe are standardized on the age distribution of all currently married women. There were no reported births for women age 13-14. Means for the total are based on women age 13-49.

mean values in the table are all age standardized, according to the age distribution of all currently married women. For male and female children together, the differentials by background characteristics follow the same pattern observed earlier. Although in most human populations the biological patten is for the average number of males ever born to be slightly higher than the average number of females ever born, the NFHS data for West Bengal indicate no difference in sex ratio at birth. The ratio of males to females still living, however, is fractionally higher among children still alive, but the differences between children ever born and children living are identical for male and female children. This suggests that West Bengal does not experience substantial excess female mortality.

Fertility is higher in rural areas, among illiterate women and those with low educational attainment, as well as for Muslim women. The differentials in the mean number of children still living are considerably smaller than the differentials in the mean number of children ever born. This convergence is due to the fact that the groups that exhibit high fertility are the same groups in which infant and child mortality are relatively high. For example, illiterate women have, on average, 2.2 children more than women with a high school education, but only 1.7 living children more. This is attributable to the higher loss of infants and children due to mortality among illiterate women. The survival of children is particularly precarious among scheduled castes and scheduled tribes. The average woman in this group has experienced the loss of one-fifth of children she had borne by the time of the survey.

5.4 Birth Order

Births during the three years before the survey by birth order are shown in Table 5.8. Overall, 29 percent of all births were first births, 25 percent were second births, and 17 percent were third births. Higher order births are less numerous, but still substantial. Twenty-nine percent of all births were of order four and above and a little more than 10 percent were of order six and above. As found in most populations, the number of births at each order is greater than the number at the next higher order, and younger women have more lower-order births and older women have more higher-order births. The relative percentages of lower-order births (first and second births) are higher among urban residents, while the percentages of higher-order births are higher among rural residents (Table 5.8). Consistent with the results seen earlier from age-specific fertility rates, in each residence panel of the table the greatest number of births is to the age group 20-24.

5.5 Birth Intervals

There is considerable evidence from research studies that children born too close to a previous birth are at increased risk of dying, especially if the interval between births is less than 24 months (Govindasamy et al., 1993; Hobcraft et al., 1983). Table 5.9 presents the percent distribution of second and higher order births in the five years prior to the survey by the interval since the previous birth. Overall, one in every ten births occurred within 18 months of the previous birth, and one quarter of all births occurred within 24 months. The relatively high proportion of births with intervals shorter than 12 months for women age 15-19 at the time of the survey is striking. This is probably a selection effect. Only women who have had two or more births are included in this table, and women age 15-19 with more than one birth must have

Table 5.8 Birth order by age of woman

Percent distribution of births during the three years preceding the survey by order of birth and age of woman at birth, according to residence, West Bengal, 1992

Maternal age at birth	Order of birth						Total percent	Number of births
	1	2	3	4	5	6+		
URBAN								
15-19	55.9	30.6	8.9	4.1	0.5	--	100.0	80
20-24	24.9	31.3	25.4	9.7	6.3	2.4	100.0	135
25-29	26.7	27.8	10.2	20.5	8.6	6.2	100.0	92
30-34	(18.3)	(23.1)	(14.7)	(11.0)	(18.3)	(14.7)	100.0	39
Total	32.1	28.0	15.6	10.9	6.7	6.7	100.0	361
RURAL								
15-19	61.8	30.2	7.2	0.4	0.4	--	100.0	347
20-24	22.0	32.0	25.0	13.7	5.9	1.5	100.0	480
25-29	8.6	14.3	25.0	22.1	16.2	13.7	100.0	260
30-34	2.3	4.1	12.4	9.1	19.4	52.7	100.0	113
35-49	--	0.8	3.5	9.7	9.0	77.0	100.0	56
Total	28.4	23.7	17.7	11.0	7.8	11.4	100.0	1275
TOTAL								
15-19	60.7	30.3	7.5	1.1	0.5	--	100.0	428
20-24	22.6	31.9	25.1	12.8	6.0	1.7	100.0	615
25-29	13.4	17.8	21.1	21.7	14.3	11.7	100.0	352
30-34	6.4	8.9	13.0	9.6	19.1	43.0	100.0	152
35-49	2.1	0.7	3.0	8.1	7.6	78.5	100.0	67
Total	29.2	24.6	17.2	11.0	7.5	10.4	100.0	1636
BACKWARD DISTRICTS								
15-19	60.1	29.6	7.2	1.6	1.6	--	100.0	56
20-24	22.2	31.2	22.8	12.5	8.4	3.0	100.0	75
25-29	(7.2)	(12.4)	(20.6)	(17.5)	(18.5)	(23.8)	100.0	44
30-34	1.8	7.0	3.6	10.7	17.9	59.0	100.0	25
Total	25.8	21.9	14.7	9.4	9.9	18.4	100.0	218

Note: Total includes 22 births to women age 13-14, 11 births to urban women age 35-49, and 16 births to women in backward districts age 35-49, which are not shown separately.
( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent

higher than average fecundability. The proportion of births with intervals of less than 12 months is nearly twelve times as high when the last birth is deceased, as when the last birth is still alive. Probably this reflects the cessation of breastfeeding when the child dies and the consequent shortening of postpartum amenorrhoea. The median intervals shown in the next to last column of the table indicate that the overall median interval between births is 32 months, or about 2.7 years. There is a very clear gradient by age, ranging from 26 months for women age 15-19 to 40 months for women age 40 and over. Curiously, in view of the correlation between age of women and birth order, there is little variation in median intervals according to the birth order of the previous birth. This is because women with large numbers of births are probably more fecund, and, therefore, have shorter median intervals than other women.

Table 5.9 Birth intervals

Percent distribution of births during the five years preceding the survey by interval since previous birth, according to demographic and background characteristics, West Bengal, 1992

Characteristic	Months since previous birth						Total percent	Median months since previous birth	Number of births
	<12	12-17	18-23	24-35	36-47	48+			
Age of the mother									
15-19	4.8	18.1	19.5	33.7	17.7	6.4	100.0	25.5	89
20-29	1.4	8.9	16.4	37.8	19.9	15.7	100.0	30.4	1298
30-39	0.5	7.9	9.1	29.1	23.7	29.6	100.0	37.1	468
40-49	--	1.7	7.5	33.2	19.0	38.6	100.0	40.2	53
Order of prior birth									
1	1.6	8.5	15.3	34.0	19.3	21.2	100.0	32.3	641
2-3	1.0	8.4	14.6	36.9	19.8	19.4	100.0	31.2	759
4-5	1.5	11.3	13.3	31.7	22.8	19.4	100.0	32.6	318
6+	0.6	6.6	12.8	40.6	26.3	13.1	100.0	31.1	170
Sex of prior birth									
Male	1.5	7.9	15.3	34.9	21.1	19.3	100.0	31.6	923
Female	1.0	9.6	13.7	35.8	20.3	19.6	100.0	31.8	964
Survival of prior birth									
Still living	0.5	7.5	13.8	35.5	22.2	20.5	100.0	33.0	1653
Deceased	6.3	18.0	19.0	34.2	10.6	11.9	100.0	25.0	235
Residence									
Urban	0.7	10.2	15.9	34.4	17.5	21.3	100.0	31.4	402
Rural	1.4	8.4	14.1	35.6	21.6	18.9	100.0	31.9	1385
Backward districts	0.8	10.8	14.7	36.4	17.1	20.2	100.0	30.6	275
Education of the mother									
Illiterate	1.2	10.2	14.7	34.7	21.3	17.8	100.0	31.1	1170
Lit., < middle complete	1.3	5.9	14.7	39.8	20.4	18.0	100.0	32.0	514
Middle school complete	1.2	7.3	11.1	30.5	23.8	26.1	100.0	36.0	124
High school and above	1.8	9.0	13.9	25.0	9.1	41.2	100.0	38.3	80
Religion									
Hindu	1.0	8.6	13.8	33.9	21.6	21.0	100.0	33.2	1210
Muslim	1.8	9.3	15.7	38.0	19.2	16.1	100.0	30.0	644
Other	(--)	(4.5)	(12.8)	(37.7)	(19.1)	(25.9)	100.0	(34.4)	34
Caste/tribe									
Scheduled caste	1.8	8.9	14.7	32.3	25.8	16.4	100.0	33.3	209
Scheduled tribe	--	12.8	9.0	38.2	18.3	21.7	100.0	31.2	105
Other	1.3	8.5	14.8	35.6	20.2	19.7	100.0	31.6	1574
Total	1.3	8.8	14.4	35.4	20.7	19.4	100.0	31.7	1888

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. There were no reported second or higher order births to women age 13-14.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent

The median interval does not depend on the sex of prior birth. There is a much larger difference in the median interval when the survival status of the previous birth is considered. A larger proportion of short birth intervals (under 18 months) occur to mothers whose previous child had died.

There is no significant difference in median birth intervals by type of residence. However, rural women have twice as many birth intervals of less than 12 months, and the median interval is slightly shorter in backward districts compared with state as a whole. As expected, there is a positive correlation between mother's level of education and median length of birth interval. Muslims have slightly shorter median intervals than Hindus or other religious groups. Mothers belonging to scheduled castes have slightly longer birth intervals than mothers of scheduled tribes.

5.6 Age at First and Last Birth

The onset of childbearing is an important demographic indicator. Postponement of first birth, reflecting a rise in the age at marriage, can make an important contribution to overall fertility decline. Table 5.10 shows the distribution of women by age at first birth. The medians shown in Table 5.10 require special comment. The median age at first birth for any group of women is the age by which half of them have had their first birth. For women in younger age groups, however, the number who will eventually become mothers is not known since some first births to the cohort will occur only in the future. The medians shown in Table 5.10 are, therefore, calculated as the ages by which one half of *all* women in the cohort have had a first birth, rather than the age by which half of all mothers in the cohort have had a first birth. This statistic may be computed without knowing how many women in the cohort will eventually have a first birth.

The medians are of course undefined for cohorts in which fewer than half of the women have had a first birth. This is the reason that no medians are given for the younger age groups in Table 5.10. Median ages at first birth for different cohorts are higher by about 1-3 years in urban areas than that in rural areas. The pattern of age at first birth in the backward districts resembles that in the state as a whole. Very early childbearing (below age 15) is uncommon, although 14 percent of women age 45-49 had their first child when they were younger than age 15, compared with only 5 percent of women age 15-19. The prevalence of teenage childbearing, therefore, is declining along with the prevalence of "child" marriage in West Bengal.

Table 5.11 shows the median age at first birth by selected background characteristics. The urban-rural differences have already been discussed in connection with Table 5.10. The median age at first birth increases substantially with mother's educational attainment, with mothers having completed high school giving birth the first time nearly 7 years later than mothers who are illiterate.

The age at first birth by religion shows that Muslim women begin childbearing earlier than Hindus. Scheduled castes tend to begin childbearing slightly earlier than scheduled tribes.

Table 5.10 Age at first birth

Percent distribution of women by age at first birth, according to current age and residence, West Bengal, 1992

Current age[1]	No birth[2]	Age at first birth						Total percent	Median age at first birth
		<15	15-17	18-19	20-21	22-24	25+		
URBAN									
15-19	87.8	3.8	6.4	1.9	NA	NA	NA	100.0	NC
20-24	55.1	5.1	16.1	11.9	8.6	3.3	NA	100.0	NC
25-29	24.4	5.3	22.6	14.5	11.8	13.0	8.4	100.0	21.4
30-34	13.9	6.3	21.0	23.0	10.9	9.8	15.1	100.0	20.0
35-39	8.2	8.1	23.4	19.2	13.9	16.4	10.7	100.0	19.9
40-44	9.5	9.1	32.1	16.7	14.7	7.1	10.8	100.0	19.2
45-49	7.2	11.3	22.9	12.4	15.3	16.3	14.5	100.0	20.4
RURAL									
15-19	75.7	5.3	15.3	3.7	NA	NA	NA	100.0	NC
20-24	22.5	8.1	35.1	20.7	10.4	3.2	NA	100.0	18.6
25-29	7.5	9.3	36.3	21.4	12.9	9.4	3.2	100.0	18.4
30-34	4.2	7.7	37.6	26.5	13.2	7.4	3.3	100.0	18.3
35-39	4.6	12.9	38.2	21.7	11.6	6.6	4.4	100.0	17.9
40-44	3.8	13.7	38.4	23.5	9.7	6.1	4.7	100.0	17.9
45-49	3.3	15.0	34.3	19.6	14.4	9.5	4.0	100.0	18.1
TOTAL									
15-19	79.2	4.9	12.7	3.2	NA	NA	NA	100.0	NC
20-24	31.0	7.3	30.2	18.4	10.0	3.2	NA	100.0	19.3
25-29	12.8	8.0	31.9	19.2	12.6	10.6	4.9	100.0	19.0
30-34	7.1	7.3	32.3	25.4	12.5	8.2	7.2	100.0	18.7
35-39	5.8	11.3	33.4	20.9	12.3	9.8	6.5	100.0	18.4
40-44	5.8	12.2	36.3	21.2	11.4	6.5	6.7	100.0	18.1
45-49	4.6	13.7	30.3	17.1	14.7	11.9	7.8	100.0	18.6
BACKWARD DISTRICTS									
15-19	73.9	4.3	17.6	4.3	NA	NA	NA	100.0	NC
20-24	25.8	10.2	34.9	15.9	9.5	3.7	NA	100.0	18.6
25-29	10.9	13.1	35.3	19.7	11.6	7.6	2.0	100.0	18.2
30-34	3.3	7.2	35.4	29.4	13.1	8.3	3.3	100.0	18.4
35-39	4.8	16.2	30.9	23.1	9.8	7.5	7.7	100.0	18.3
40-44	--	18.6	40.9	16.2	8.2	7.0	9.1	100.0	17.5
45-49	3.7	16.6	31.9	12.8	15.2	14.9	4.9	100.0	18.2

NA: Not applicable
NC: Not calculated because less than 50 percent of the women in the age group x to x+n have had a birth by age x.
-- Less than 0.05 percent
[1]The current age groups include both never-married and ever-married women.
[2]Never-married women are included in this category.

The age at last birth is another important determinant of overall fertility levels. Table 5.12 shows the distribution of women by age at last birth for women age 40-44 and 45-49. Although a few of these women may have another birth later on, the very low fertility rates for women in their forties seen earlier suggest that childbearing is virtually complete for this cohort. Forty-eight percent of these women had their last child by age 30, and three-fourths had their last birth before age 35. The median ages at last birth are not shown in the table, but may be computed by interpolation in the frequency distribution. The median age at last birth for women age 45-49 is 31.1 years, which when compared with their median age at first birth (18.6, from Table 5.10), suggests an estimated reproductive life of approximately 13 years.

Table 5.11 Age at first birth by background characteristics

Median age at first birth among women age 20-49 years, by current age and selected background characteristics, West Bengal, 1992

Background characteristic	Current age							
	20-24	25-29	30-34	35-39	40-44	45-49	20-49	25-49
Residence								
Urban	NC	21.4	20.0	19.9	19.2	20.4	NC	20.2
Rural	18.6	18.4	18.3	17.9	17.9	18.1	18.3	18.1
Backward districts	18.6	18.2	18.4	18.3	17.5	18.2	18.3	18.2
Education								
Illiterate	17.5	17.6	18.1	17.3	17.7	17.6	17.6	17.7
Lit., < middle complete	19.1	18.6	18.1	18.4	17.7	18.6	18.5	18.3
Middle school complete	NC	20.7	20.1	19.8	(19.1)	*	NC	20.5
High school and above	NC	24.9	23.5	23.5	(23.4)	*	NC	24.4
Religion								
Hindu	19.8	19.5	18.9	18.7	18.4	18.8	19.1	18.9
Muslim	17.7	17.6	18.0	17.4	16.8	17.8	17.6	17.5
Other	(19.8)	*	*	*	*	*	NC	20.3
Caste/tribe								
Scheduled caste	18.0	17.6	18.2	16.4	(16.6)	(17.1)	17.5	17.3
Scheduled tribe	17.9	(19.7)	(18.1)	(18.0)	*	*	18.4	18.6
Other	19.6	19.1	18.7	18.6	18.3	18.8	18.9	18.7
Total	19.3	19.0	18.7	18.4	18.1	18.6	18.8	18.6

NC: Not calculated because less than 50 percent of the women had their first child by age 20.
() Based on 25-49 unweighted cases
* Median not shown; based on fewer than 25 unweighted cases

Table 5.12 Age at last birth

Percent distribution of ever-married women age 40-49 by age at last birth, according to current age, West Bengal, 1992

Current age	No birth	Age at last birth							Total percent	Number of women
		<20	20-24	25-29	30-34	35-39	40-44	45-49		
40-44	3.2	4.6	17.6	30.3	26.4	15.6	2.3	NA	100.0	459
45-49	3.2	3.3	11.4	27.1	28.9	19.4	5.6	1.1	100.0	350
40-49	3.2	4.0	14.9	28.9	27.5	17.3	3.7	0.5	100.0	809

NA: Not applicable

5.7 Childbearing at Young Ages

Fertility among teenagers (those under age 20) is drawing increasing attention from policymakers. Table 5.13 shows the percentages of ever-married women age 13-19 who are either mothers or are pregnant with their first child. The sum of these two percentages represents the proportion of young ever-married women who have begun childbearing. Overall, 63 percent of ever-married teenage women have begun childbearing. Twenty-five percent of ever-married women age 13-16 years are mothers compared with 57 percent for ever-married women age 17-19. The percentage of women age 13-16 who are pregnant with their first child (11 percent), however, is much closer to the corresponding figure for women age 17-19 (18 percent). Among all teenagers, 75 percent of older teens (age 17-19) have begun childbearing, compared with 35 percent of younger teens (age 13-16). Teenage motherhood is only slightly higher among illiterate women than among literate women, but the percentage of women pregnant with first child is higher among the latter, so that the overall percentage who have began childbearing is same in the two groups.

Table 5.13 Childbearing among ever-married women 13-19

Percentage of ever-married women age 13-19 who are mothers or pregnant with their first child, by age and literacy, West Bengal, 1992

Background characteristic	Percentage who are: Mothers	Pregnant with first child	Percent who have begun childbearing	Number of women
Age				
13-16	24.8	10.6	35.4	157
17-19	57.4	17.7	75.1	376
Literacy				
Illiterate	49.7	14.0	63.6	276
Literate	45.8	17.3	63.1	257
Total	47.8	15.6	63.4	533

5.8 Postpartum Amenorrhoea, Abstinence and Nonsusceptibility

The importance of lactational infecundability and postpartum abstinence as determinants of fertility is well recognized. Postpartum protection from conception can be prolonged by breastfeeding, which tends to lengthen the duration of postpartum amenorrhoea (delayed resumption of ovulation following a birth). Protection from conception can also be prolonged by delaying the resumption of sexual relations after a birth. Thus postpartum amenorrheoa is largely determined by the duration and intensity (i.e., frequency) of breastfeeding, while the period of postpartum abstinence often follows culturally-prescribed norms. Table 5.14 presents information on postpartum amenorrhoea, abstinence, and consequent nonsusceptibility following births in the three years prior to the NFHS. A woman is defined as nonsusceptible if she is amenorrhoeic or abstaining or both. The second column of Table 5.14 shows proportions amenorrhoeic by months since birth. We see, for example, that 86 percent of all women who had a birth in the two months prior to the survey are still amenorrhoeic, and that 88 percent of women whose last birth occurred 2-3 months prior to the survey are still amenorrhoeic. The

proportion amenorrhoeic gradually decreases as the number of months since birth increases. A little more than 55 percent of all women with births that occurred 8-9 months before the survey are still amenorrhoeic, although amenorrhoea declines rapidly thereafter. Except for the first group (women who gave birth in the two months before the survey), the proportions of mothers abstaining from sexual intercourse are much lower than the proportions amenorrhoeic. By four to five months since the birth less than one-fifth of the mothers are still abstaining. Overall, more than half of all the mothers become susceptible to pregnancy within 10 to 11 months of giving birth, and almost three-fourths become susceptible within 16 to 17 months. The median and mean values for each measure are shown at the bottom of Table 5.14.

Estimates of means and medians are based on a smoothed distribution of the current status proportions in each months-since-birth group. The prevalence-incidence mean is obtained by dividing the number of mothers who are amenorrhoeic or abstaining (nonsusceptible) by the average number of births per month over a 36-month period. On the basis of this measure, it is evident that, on average, women remain nonsusceptible to conception for 11 months after a birth, primarily due to the effects of postpartum amenorrhoea.

Table 5.15 shows median durations of postpartum amenorrhoea, postpartum abstinence, and postpartum nonsusceptibility by selected background characteristics. The median duration of postpartum nonsusceptibility is slightly longer among women age 30 and over than for women

Table 5.14 Postpartum amenorrhoea, abstinence and nonsusceptibility

Percentage of births during the three years preceding the survey whose mothers are postpartum amenorrhoeic, postpartum abstaining and postpartum nonsusceptible, by number of months since birth, and median and mean durations, West Bengal, 1992

Months since birth	Percent of births whose mothers are: Postpartum amenorrhoeic	Postpartum abstaining	Postpartum nonsusceptible	Number of births
< 2	85.9	88.0	97.4	60
2 - 3	88.2	41.4	93.5	64
4 - 5	70.9	18.9	72.1	93
6 - 7	66.8	12.4	66.8	115
8 - 9	55.2	9.9	58.1	113
10-11	39.6	6.9	43.3	97
12-13	36.9	3.5	36.9	75
14-15	34.9	9.1	39.4	73
16-17	20.2	3.9	22.5	97
18-19	11.9	3.1	13.7	107
20-21	9.5	--	9.5	94
22-23	6.1	3.0	7.8	84
24-25	3.6	--	3.6	85
26-27	2.4	--	2.4	83
28-29	4.4	--	4.4	84
30-31	1.1	2.2	3.3	99
32-33	--	0.5	0.5	91
34-35	1.8	--	1.8	85
Median	9.5	2.3	10.0	NA
Mean	11.1	4.4	11.8	NA
Prevalence/incidence mean	10.3	3.4	10.9	NA

Note: Medians and means are based on current status. Nonsusceptible is defined as amenorrhoeic or abstaining or both.
NA: Not applicable
-- Less than 0.05 percent

Table 5.15 Median duration of postpartum nonsusceptibility by background characteristics

Median number of months of postpartum amenorrhoea, postpartum abstinence and postpartum nonsusceptibility, by selected background characteristics of mothers for births during the three years preceding the survey, West Bengal, 1992

Background characteristic	Postpartum amenorrhoea	Postpartum abstinence	Postpartum nonsusceptibility	Number of births
Age				
13-29	9.1	2.3	9.7	1317
30-49	10.7	2.0	10.9	282
Residence				
Urban	7.4	2.3	7.6	354
Rural	10.2	2.3	10.8	1245
Backward districts	11.5	1.8	11.7	213
Education				
Illiterate	12.5	2.0	13.2	868
Lit., < middle complete	8.9	2.8	9.3	472
Middle school complete	3.3	3.0	5.1	148
High school and above	0.4	2.1	3.1	111
Religion				
Hindu	8.8	2.4	9.6	1072
Muslim	10.1	2.0	10.1	501
Other	(3.5)	(3.5)	(3.5)	27
Caste/tribe				
Scheduled caste	10.9	3.2	13.7	172
Scheduled tribe	12.7	3.9	13.7	81
Other	9.1	2.2	9.3	1346
Total	9.5	2.3	10.0	1599

Note: Medians are based on current status.
() Based on 25-49 unweighted cases.

under age 30. Among women age 13-29, the median duration of postpartum amenorrhoea (9.1 months) is over a month and a half lower than that for women age 30-49 (10.7 months), although the median period of postpartum abstinence (only 2.3 months) is slightly longer among women age 13-29. The median duration of postpartum nonsusceptibility is longer for women in rural areas than for women in urban areas, possibly due to the longer period of breastfeeding in rural areas. Periods of amenorrhoea and nonsusceptibility are higher in backward districts compared with state as a whole. Periods of amenorrhoea and nonsusceptibility are also relatively longer for illiterate women and women belonging to scheduled castes and scheduled tribes, again as a possible consequence of the breastfeeding patterns of these groups. It is noteworthy that while the duration of postpartum abstinence does not appear to vary with the educational attainment of the mother, the duration of postpartum amenorrhoea is clearly inversely associated with educational attainment. The median length of postpartum amenorrhoea for illiterate mothers in West Bengal is 12.5 months, which then declines steadily with advancing education, reaching a low of only 0.4 months among mothers with at least a high school education.

5.9 Menopause

Another factor impinging on fertility is the onset of menopause. Later in life (typically beginning around age 30), the risk of pregnancy begins to decline with age. In the NFHS, menopause is defined as the lack of a menstrual period for at least the six months preceding the survey for women who are neither pregnant nor postpartum amenorrhoeic. Women who report that they are menopausal are also included in this group. In West Bengal, menopause is relatively rare for women in their thirties, but its incidence increases rapidly after age 40 (Table 5.16). One-quarter of all women are reportedly menopausal in the age group 42-43, and by age 44-45, one-third of women are in menopause. This figure increases to 51 percent for women age 46-47 and 67 percent for women age 48-49. There is little variation in the proportions of women attaining menopause by residence.

Table 5.16 Menopause

Percentage of currently married women age 30-49 years who are in menopause, by age and residence, West Bengal, 1992

	Urban		Rural		Total		Backward districts	
Age	Percent	Number	Percent	Number	Percent	Number	Percent	Number
30-34	3.2	176	2.8	359	3.0	534	2.8	48
35-39	5.0	180	5.4	345	5.2	525	7.4	49
40-41	(13.7)	62	12.0	123	12.6	185	(14.8)	18
42-43	(20.1)	54	27.6	87	24.8	141	(23.2)	13
44-45	(39.8)	56	28.8	107	32.6	163	(32.1)	14
46-47	(43.3)	38	55.1	67	50.8	105	*	9
48-49	(58.3)	29	70.9	63	66.9	92	*	8
Total	15.1	594	15.6	1151	15.4	1745	15.7	159

Note: Percentage menopausal is defined as the percent of nonpregnant, nonamenorrhoeic currently married women whose last menstrual period occurred six or more months prior to the survey or who report that they are menopausal.
() Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases

CHAPTER 6

FAMILY PLANNING

Family planning is the conscious effort of couples or individuals to control the number and spacing of births. Knowledge of family planning methods and of where to obtain them are vital parts of this conscious effort, which essentially involves whether to use a contraceptive method, which method to use, and where that method is obtained. On the programmatic side, information about knowledge of family planning and the use of contraceptive methods helps policymakers and programme administrators to formulate strategies of family planning service delivery. Data collected in the NFHS on knowledge of family planning methods and sources, as well as current and past practice of family planning, are presented in this chapter. Emphasis is placed on describing the characteristics associated with nonuse of contraception, with contraceptive discontinuation and the reasons for doing so, and with intention to use a method of family planning in the future. Data collected on the channels through which women in West Bengal receive information about family planning, on whether they have discussed family planning with their husbands, and on their attitudes about the use of family planning are also presented in this chapter.

6.1 Knowledge of Family Planning Methods and Sources

Knowledge of family planning methods was derived from the following question, asked to each respondent: "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. Which ways or methods have you heard about?" All methods named in response to this open-ended question were recorded as spontaneously recognized, which can be viewed as "unprompted" knowledge. The interviewer would then describe each of the methods in the questionnaire that the respondent failed to mention, one at a time, probing for recognition. All methods recognized by the respondent in this manner were recorded as known after probing, or "prompted" knowledge. Knowledge of family planning thus resulted in three response categories: (1) knowledge of a method without probing, or "spontaneous" knowledge; (2) knowledge of a method after hearing a short description of it, or knowledge after probing; and (3) no knowledge at all of a particular method. Six modern methods (pills, IUDs, injections, condoms, female sterilization and male sterilization) were included in the questionnaire, as well as two traditional methods (periodic abstinence, or the rhythm method, and withdrawal). Other methods mentioned by the respondent, such as herbal applications and breastfeeding, were also recorded. For each modern method known to the respondent, either spontaneously or after probing, she was asked if she knew where a person could go to get the method. If she reported knowing about the rhythm method, she was asked if she knew where a person could obtain advice on how to use the method. All of this information is presented for ever-married and currently married women in Table 6.1.

The knowledge of family planning is nearly universal in West Bengal, with 99 percent of ever-married women in both urban and rural areas reporting knowledge of at least one modern method of family planning (Figure 6.1). Seventy-six percent of total knowledge of modern methods was spontaneous in urban areas, equalling the percentage in rural areas. Effective knowledge of family planning methods in West Bengal was as widespread in rural

Table 6.1 Knowledge of contraceptive methods and source of methods

Percentage of ever-married and currently married women knowing any contraceptive method and knowing a source, by specific method and residence, West Bengal, 1992

Method	Ever-married women				Currently married women			
	Knowing method				Knowing method			
	Without probe	With probe	Total	Knowing source[1]	Without probe	With probe	Total	Knowing source[1]
URBAN								
Any method	77.5	21.1	98.6	95.2	79.3	19.4	98.7	95.7
Any modern method	76.3	22.2	98.5	94.8	78.1	20.4	98.5	95.3
Pill	56.6	31.7	88.3	69.6	59.1	30.8	89.8	72.0
Copper T/IUD	30.0	42.9	72.9	52.2	31.4	43.8	75.2	54.5
Injection	5.7	29.3	35.1	22.5	6.0	29.9	36.0	23.1
Condom	40.0	38.3	78.3	61.6	42.2	38.3	80.5	64.1
Female sterilization	37.6	58.9	96.5	91.0	38.4	58.1	96.5	91.2
Male sterilization	10.9	73.2	84.1	76.9	11.0	73.7	84.7	77.3
Any traditional method	19.1	51.8	70.9	NA	20.1	53.0	73.1	NA
Rhythm/periodic abstinence	10.4	50.0	60.4	48.3	10.8	51.3	62.1	49.7
Withdrawal	9.8	46.4	56.3	NA	10.5	48.4	58.9	NA
Other methods	2.9	NA	2.9	NA	3.1	NA	3.1	NA
Number of women	1180	1180	1180	1180	1096	1096	1096	1096
RURAL								
Any method	77.9	21.1	99.0	96.6	79.6	19.7	99.3	97.1
Any modern method	75.8	23.0	98.7	95.6	77.3	21.6	98.9	96.1
Pill	45.3	37.5	82.8	63.9	46.8	37.3	84.1	65.3
Copper T/IUD	24.8	39.5	64.3	49.8	25.6	40.0	65.5	50.9
Injection	8.7	35.8	44.5	34.4	8.9	36.0	45.0	34.9
Condom	21.9	39.4	61.4	47.3	22.8	39.9	62.7	48.4
Female sterilization	55.1	43.2	98.3	94.4	56.0	42.6	98.6	94.9
Male sterilization	18.4	65.7	84.2	79.4	18.4	66.4	84.8	79.9
Any traditional method	19.2	51.4	70.6	NA	19.9	52.3	72.2	NA
Rhythm/periodic abstinence	11.4	49.4	60.8	49.8	11.9	50.1	62.0	50.7
Withdrawal	6.4	46.3	52.8	NA	6.7	47.4	54.1	NA
Other methods	5.6	NA	5.6	NA	5.8	NA	5.8	NA
Number of women	3142	3142	3142	3142	2909	2909	2909	2909
TOTAL								
Any method	77.8	21.1	98.9	96.2	79.5	19.6	99.1	96.7
Any modern method	75.9	22.8	98.7	95.4	77.5	21.3	98.8	95.9
Pill	48.4	35.9	84.3	65.5	50.1	35.5	85.6	67.1
Copper T/IUD	26.2	40.4	66.7	50.4	27.1	41.0	68.2	51.9
Injection	7.9	34.1	41.9	31.2	8.1	34.4	42.5	31.7
Condom	26.9	39.1	66.0	51.2	28.1	39.4	67.6	52.7
Female sterilization	50.3	47.5	97.8	93.5	51.2	46.9	98.0	93.9
Male sterilization	16.4	67.8	84.1	78.7	16.4	68.4	84.8	79.2
Any traditional method	19.1	51.5	70.7	NA	20.0	52.5	72.5	NA
Rhythm/periodic abstinence	11.2	49.5	60.7	49.4	11.6	50.4	62.0	50.4
Withdrawal	7.4	46.4	53.7	NA	7.7	47.7	55.4	NA
Other methods	4.8	NA	4.8	NA	5.0	NA	5.0	NA
Number of women	4322	4322	4322	4322	4004	4004	4004	4004

Table 6.1 Knowledge of contraceptive methods and source of methods (Contd.)

Percentage of ever-married and currently married women knowing any contraceptive method and knowing a source, by specific method and residence, West Bengal,1992

Method	Ever-married women				Currently married women			
	Knowing method				Knowing method			
	Without probe	With probe	Total	Knowing source[1]	Without probe	With probe	Total	Knowing source[1]
BACKWARD DISTRICTS								
Any method	71.3	27.0	98.3	94.7	72.6	25.8	98.4	95.2
Any modern method	69.5	27.9	97.4	92.5	70.6	26.9	97.5	92.8
Pill	45.8	38.0	83.8	60.0	46.6	38.1	84.6	61.0
Copper T/IUD	18.1	45.7	63.9	45.0	18.8	46.5	65.3	46.3
Injection	8.9	42.4	51.3	38.5	9.0	43.0	52.0	39.3
Condom	22.0	40.8	62.8	47.5	22.7	41.1	63.8	48.2
Female sterilization	52.3	44.4	96.7	90.5	53.2	43.7	96.8	90.9
Male sterilization	5.7	74.5	80.2	75.4	5.9	74.8	80.7	76.1
Any traditional method	15.4	63.7	79.1	NA	16.2	64.7	80.9	NA
Rhythm/periodic abstinence	6.7	63.2	69.9	61.9	7.0	64.5	71.5	63.7
Withdrawal	3.4	58.4	61.8	NA	3.3	59.6	63.0	NA
Other methods	6.9	NA	6.9	NA	7.3	NA	7.3	NA
Number of women	464	464	464	464	425	425	425	425

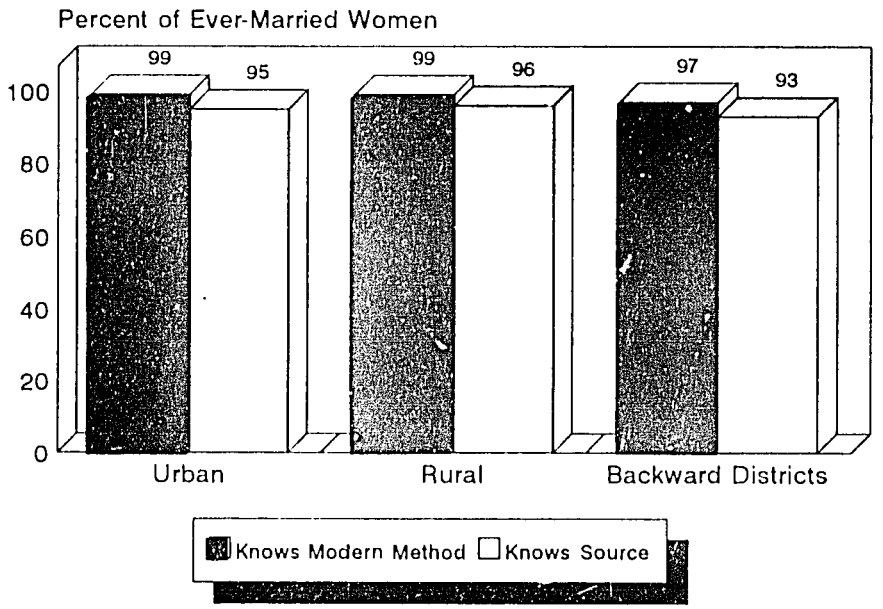
NA: Not applicable
[1]For modern methods, the source refers to a place that a person could go to get the method. For rhythm/periodic abstinence, the source refers to a source of advice on how to use periodic abstinence.

areas as in urban areas. A slightly higher percentage of currently married women knew each contraceptive method than ever-married women.

Knowledge about sterilization is widespread in West Bengal, especially for female sterilization, known by 98 percent of women, compared with vasectomy, known by about 85 percent of currently married women. It should be noted that a large majority of those reporting knowledge of male sterilization did so only after probing (spontaneous knowledge was less than 20 percent). The most well known spacing method is the pill (86 percent of women reported knowledge) while only 68 percent of women knew about the condom and the IUD. Injections were the least familiar method, known by only 42 percent of respondents. Nearly three-quarters of all currently married women in West Bengal report knowledge of traditional methods of contraception. In fact knowledge of traditional methods among West Bengal women is among the highest in all of India, substantially above the NFHS all-India figure of 39 percent (International Institute for Population Sciences, 1994). Periodic abstinence is slightly better known (62 percent) than the withdrawal method (55 percent), and it is noteworthy that both methods were recognized by relatively few women without probing (12 percent and 8 percent, respectively). The use of probing was important to elicit full information on all methods, but particularly injectables, male sterilization, the IUD, and traditional methods.

The Third All India Survey on Family Planning Practices in India, conducted in 1988-89 (Operations Research Group, 1990), reached broadly similar conclusions about the knowledge

Figure 6.1
Knowledge of Modern Contraceptive Methods and Sources by Residence



NFHS, West Bengal, 1992

of specific methods (90-100 percent of the currently married women in West Bengal knew about female sterilization, 84 percent knew about vasectomy, 69 percent knew about the condom, 40-60 percent knew about the IUD, and 78 percent were aware of the pill).

Differentials in the level of overall knowledge by residence in West Bengal are generally negligible, where (going against the norm) rural residents actually report slightly higher levels of knowledge for any method and for any modern method. When comparing individual methods, however, knowledge differentials appear significant only for spacing methods, such that about 6 percent more urban women report knowledge of the pill, 10 percent more for the IUD, and nearly 18 percent more urban women report knowledge of the condom. Reported knowledge of rural women is higher for female sterilization, and is about equal to urban women for vasectomy. Urban-rural differentials are also negligible in the knowledge of traditional methods. The level of knowledge in the backward districts closely resembles the situation in the state as a whole, except that knowledge of any traditional method is nearly 8 percentage points higher in the former in comparison with the latter (81 percent and 73 percent, respectively).

Table 6.1 also provides information about the extent of knowledge about sources of contraceptive methods. The question about the source of a method was asked only of those women who knew about the method. Knowledge about the sources of contraceptives was high, as 96 percent of the respondents knew where to obtain at least one modern method of family planning. Respondents were most knowledgeable about the source of female sterilization, although over 50 percent of women knew about the source of spacing methods, such as pills,

condoms and the IUD. Urban women knew more than rural women the sources for spacing methods, while rural women knew more about where to obtain sterilization services.

Table 6.2 shows differentials in the level of knowledge of modern contraceptive methods and sources of methods among currently married women. The differentials are shown according to background characteristics such as age and education of woman, religion and caste/tribe. Regarding the level of knowledge of methods, the differentials are only marginal. In terms of respondent's age, the level of knowledge equalled or exceeded 98 percent for women in every age group except ages 13-14 and 45-49. The level of knowledge of at least one modern method of contraception increases from the illiterate category, but levels off thereafter. Even among illiterate women, 98 percent knew at least one modern method. Knowledge about the source of a modern method appears to increase with age up to the age group 30-34, and then decreases with succeeding age groups. Knowledge of contraceptive sources is slightly higher among rural

Table 6.2 Knowledge of methods and source by background characteristics

Percentage of currently married women knowing any method and at least one modern method and knowing a source for a modern method by selected background characteristics, West Bengal, 1992

Background characteristic	Knows any method	Knows any modern method[1]	Knows source for any modern method	Number of women
Age				
13-14	(93.7)	(92.4)	(80.7)	35
15-19	98.3	98.0	93.5	482
20-24	99.5	99.2	96.4	802
25-29	99.3	98.9	96.5	825
30-34	100.0	99.7	98.1	608
35-39	99.3	99.2	96.6	555
40-44	99.3	99.0	96.1	402
45-49	96.9	96.9	92.2	295
Residence				
Urban	98.7	98.5	95.3	1096
Rural	99.3	98.9	96.1	2909
Backward districts	98.4	97.5	92.8	425
Education				
Illiterate	98.4	97.9	93.3	1958
Lit., < middle complete	99.8	99.7	97.8	1208
Middle school complete	99.7	99.7	98.3	434
High school and above	99.6	99.6	99.6	404
Religion				
Hindu	99.3	99.0	96.4	3057
Muslim	98.4	98.0	93.9	866
Other	100.0	100.0	95.6	81
Caste/tribe				
Scheduled caste	98.9	98.5	96.5	380
Scheduled tribe	96.6	96.2	90.5	196
Other	99.3	99.0	96.1	3429
Total	99.1	98.8	95.8	4004

() Based on 25-49 unweighted cases
[1]Includes pill, copper T/IUD, injections, condoms, female sterilization, and male sterilization.

women, increases with education, and is lower among Muslims and women from scheduled tribes.

6.2 Contraceptive Use

Ever Use of Family Planning Methods

All respondents who knew at least one method of family planning were asked whether they had ever used each of the methods they knew. The use of contraception was further probed by asking whether they "ever used anything or tried in any way to delay or avoid getting pregnant". Table 6.3 presents the pattern of ever use by age and residence separately for ever-married and currently married women.

Seventy percent of all or currently married women in West Bengal report having ever used a method. Modern methods have been used by 49 percent of women and traditional methods by 45 percent. The most commonly accepted method was periodic abstinence, having been accepted by 33 percent of currently married women, compared with an equal percentage of withdrawal and female sterilization (26 percent). Pills and condoms have been used by 15 and 11 percent of currently married women, respectively. Ever use of the IUD was reported by fewer than 4 percent of currently-married women. Ever use of modern methods was higher in urban areas (56 percent) than in rural areas (46 percent) among currently married women (see Figure 6.2). Over twice as many women in urban areas had ever used the pill and the condom, although more rural women reported ever use of sterilization. Reported ever use of traditional methods was slightly higher among urban women. The ever use of contraception in backward districts was lower for all methods except traditional methods.

Ever use of any modern method of contraception increases with age reaching a maximum in the age group 35-39 (70 percent among currently married women age 35-39), where knowledge was also reported to be very high. A low use rate was observed among the youngest women: only 13 percent of those age 15-19 had ever used a modern method. Among modern methods, female sterilization was the most used method for women of age 20 and above, although when including traditional methods, periodic abstinence was used more often than any modern method at any age except for female sterilization among women age 30-39.

The age pattern of ever use of family planning differed by residence, the main feature being earlier use of a method among urban women. In both areas, ever use of a modern method peaked at the same level among women age 35-39, but while among urban women age 20-24 ever use was 43 percent, it was 35 percent among rural women. In urban areas, the condom was the most popular modern method until age 30 and female sterilization above age 30. In rural areas, however, the most used modern method was condoms up until age 20, and female sterilization thereafter. Except currently married urban women age 15-19, 17 percent of whom reported ever use of the pill, a larger percentage of urban women in West Bengal report ever use of traditional methods, particularly periodic abstinence, than any of the other modern methods. Among rural women, periodic abstinence was the most common method ever used up until age 30, after which larger percentages reported ever use of female sterilization.

Table 6.3 Ever use of contraception

Percentage of ever-married and currently married women who have ever used any contraceptive method, by specific method and age, according to residence, West Bengal, 1992

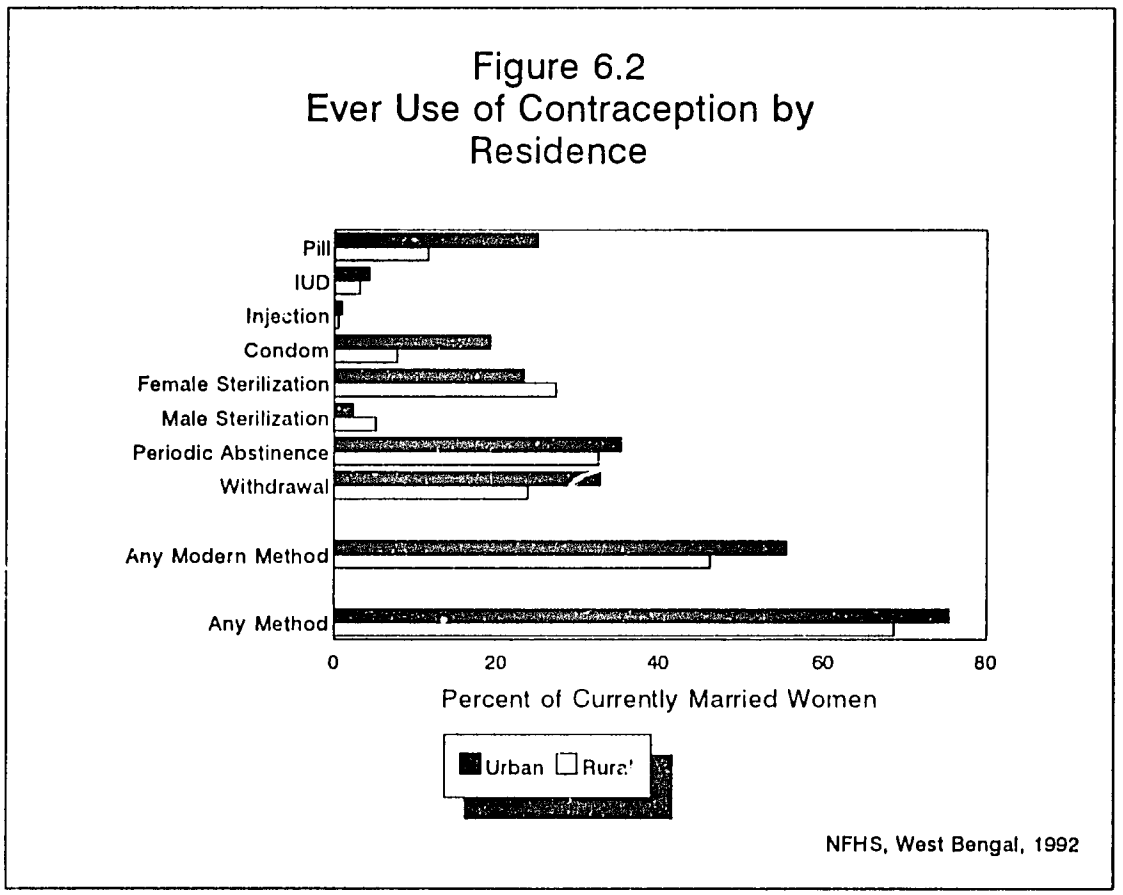
Age	Any method	Any modern method	Pill	IUD	Injection	Condom	Female sterilization	Male sterilization	Any trad. method	Periodic abstinence	Withdrawal	Other methods	Number of women
URBAN													
Ever-married women													
15-19	39.4	22.7	17.4	1.7	--	7.0	1.7	--	20.2	9.7	16.2	1.7	82
20-24	58.6	41.7	19.4	4.9	0.9	17.7	11.0	--	38.4	23.6	28.2	2.1	155
25-29	83.8	59.4	23.0	6.1	0.6	25.0	21.5	--	60.8	43.0	43.2	1.1	257
30-34	79.0	61.0	27.2	6.5	0.7	21.1	30.9	0.7	50.4	36.5	34.2	--	210
35-39	81.7	66.6	29.7	1.4	0.7	19.4	35.5	3.6	49.1	37.7	28.6	1.9	198
40-44	72.1	52.9	23.8	2.9	2.9	12.4	22.7	8.6	46.4	35.1	26.6	0.3	149
45-49	66.1	43.3	18.9	1.1	1.1	10.5	15.6	8.0	47.1	34.9	25.4	1.5	124
Total	72.6	53.3	23.6	4.0	1.0	18.0	22.2	2.6	47.8	34.2	31.2	1.1	118
Currently married women													
15-19	39.4	22.7	17.4	1.7	--	7.0	1.7	--	20.2	9.7	16.2	1.7	82
20-24	60.8	43.3	20.1	5.0	1.0	18.4	11.4	--	39.9	24.5	29.3	2.2	149
25-29	85.9	61.5	23.4	6.4	0.6	26.2	22.5	--	61.8	43.3	43.9	1.2	245
30-34	83.9	64.4	29.4	7.0	0.7	22.8	32.6	--	54.4	39.4	36.9	--	194
35-39	84.9	69.6	31.7	0.8	0.8	21.2	36.4	3.9	50.8	38.7	30.1	2.0	181
40-44	75.0	55.6	26.8	3.3	3.3	14.2	24.8	6.5	50.1	37.2	30.0	0.3	131
45-49	69.3	45.8	21.7	1.3	--	10.8	17.9	7.9	50.1	37.5	26.6	1.7	108
Total	75.3	55.5	25.1	4.1	0.9	19.2	23.3	2.2	49.9	35.4	32.8	1.2	1096
RURAL													
Ever-married women													
13-14	(29.7)	(8.9)	(--)	(--)	(--)	(8.9)	(--)	(--)	(20.8)	(12.6)	(20.8)	(--)	30
15-19	41.1	10.3	5.4	0.3	0.3	4.7	0.9	0.4	34.8	24.2	22.1	0.5	417
20-24	59.9	33.8	11.4	3.5	0.7	8.0	15.2	0.5	43.2	31.5	27.3	1.2	677
25-29	70.2	48.7	15.6	4.0	0.4	8.9	30.1	1.6	44.6	34.7	26.3	2.3	608
30-34	79.8	63.8	15.5	5.4	0.3	8.2	43.5	5.0	44.4	35.2	22.6	3.2	457
35-39	79.4	65.3	10.7	2.5	0.3	7.4	41.6	12.7	39.8	32.5	18.7	2.7	417
40-44	76.0	54.8	6.8	1.6	0.9	6.9	34.8	14.4	41.6	34.7	17.9	1.1	310
45-49	58.5	39.0	3.3	1.3	--	4.1	25.2	11.3	34.0	27.7	14.2	2.1	226
Total	66.1	44.4	10.8	2.9	0.4	7.3	26.3	5.1	41.1	31.7	22.6	1.9	3142
Currently married women													
13-14	(29.7)	(8.9)	(--)	(--)	(--)	(8.9)	(--)	(--)	(20.8)	(12.6)	(20.8)	(--)	30
15-19	42.7	10.8	5.7	0.3	0.3	4.9	0.9	0.4	36.1	25.1	23.0	0.5	400
20-24	61.8	34.9	11.7	3.6	0.7	8.3	15.8	0.5	44.5	32.4	28.0	1.2	653
25-29	72.1	50.4	16.2	4.2	0.4	9.3	31.2	1.5	45.5	35.4	26.7	2.4	580
30-34	82.7	66.1	16.9	5.7	0.4	8.2	45.6	5.0	46.5	36.5	23.8	3.3	414
35-39	84.5	70.1	11.7	2.8	0.3	7.8	44.6	13.3	41.4	33.3	20.8	3.0	374
40-44	80.7	59.3	7.4	1.8	1.0	7.7	37.9	15.5	44.4	36.8	19.9	0.9	271
45-49	62.9	43.0	4.0	1.5	--	4.9	27.5	12.4	36.0	28.3	15.8	2.6	187
Total	68.6	46.2	11.5	3.1	0.5	7.7	27.4	5.1	42.6	32.6	23.9	1.9	2909

Table 6.3 Ever use of contraception (Contd.)

Percentage of ever-married and currently married women who have ever used any contraceptive method, by specific method and age, according to residence, West Bengal, 1992

Age	Any method	Any modern method	Pill	IUD	Injection	Condom	Female sterilization	Male sterilization	Any trad. method	Periodic abstinence	Withdrawal	Other methods	Number of women
TOTAL													
Ever-married women													
13-14	(29.4)	(7.6)	(--)	(--)	(--)	(7.6)	(--)	(--)	(21.9)	(14.8)	(17.8)	(--)	35
15-19	40.8	12.4	7.4	0.5	0.2	5.1	1.0	0.3	32.4	21.9	21.1	0.7	499
20-24	59.7	35.3	12.9	3.7	0.8	9.8	14.5	0.4	42.3	30.1	27.5	1.3	832
25-29	74.3	51.9	17.8	4.6	0.4	13.7	27.6	1.1	49.4	37.2	31.3	2.0	865
30-34	79.5	62.9	19.2	5.8	0.4	12.3	39.5	3.6	46.3	35.6	26.2	2.2	667
35-39	80.2	65.7	16.9	2.1	0.4	11.2	39.6	9.7	42.8	34.2	21.9	2.4	616
40-44	74.8	54.2	12.3	2.0	1.5	8.7	30.8	12.5	43.2	34.8	20.7	0.9	459
45-49	61.2	40.5	8.8	1.2	0.4	6.4	21.8	10.1	38.6	30.2	18.2	1.9	350
Total	67.9	46.8	14.3	3.2	0.6	10.2	25.2	4.4	42.9	32.4	25.0	1.7	4322
Currently married women													
13-14	(29.4)	(7.6)	(--)	(--)	(--)	(7.6)	(--)	(--)	(21.9)	(14.8)	(17.8)	(--)	35
15-19	42.1	12.8	7.7	0.5	0.2	5.2	1.1	0.3	33.4	22.5	21.8	0.7	482
20-24	61.6	36.5	13.3	3.9	0.8	10.2	15.0	0.4	43.6	30.9	28.3	1.4	802
25-29	76.2	53.7	18.3	4.8	0.4	14.4	28.6	1.1	50.3	37.8	31.8	2.1	825
30-34	83.1	65.6	20.9	6.1	0.5	12.9	41.5	3.4	49.0	37.4	28.0	2.2	608
35-39	84.6	69.9	18.2	2.1	0.5	12.2	41.9	10.2	44.5	35.1	23.8	2.7	555
40-44	78.8	58.1	13.7	2.3	1.7	9.8	33.6	12.6	46.2	36.9	23.2	0.7	402
45-49	65.3	44.0	10.5	1.5	--	7.1	24.0	10.7	41.1	31.7	19.7	2.3	295
Total	70.4	48.7	15.2	3.4	0.6	10.8	26.3	4.3	44.6	33.4	26.3	1.7	4004
BACKWARD DISTRICTS													
Ever-married women													
15-19	46.4	12.1	6.1	--	--	4.7	0.7	0.7	43.0	32.9	26.9	--	67
20-24	60.3	27.8	8.4	3.3	0.5	10.4	11.8	--	50.9	39.6	33.5	1.9	95
25-29	70.0	39.7	10.3	2.6	--	9.8	22.2	2.6	52.5	38.1	28.8	3.6	87
30-34	76.7	53.5	15.1	3.9	0.7	11.1	35.8	1.3	57.5	45.1	34.4	4.0	68
35-39	73.8	48.5	15.4	0.7	--	11.8	23.2	5.7	49.1	37.3	28.0	3.5	63
40-44	74.3	47.7	12.8	1.0	1.0	13.0	26.6	7.2	50.5	43.5	26.2	4.1	44
45-49	51.0	34.4	8.6	5.2	--	6.1	8.9	16.8	34.4	25.5	21.7	2.5	35
Total	64.8	36.5	10.7	2.3	0.3	9.7	18.3	3.5	49.3	37.8	29.4	2.7	464
Currently married women													
15-19	48.3	12.8	6.4	--	--	5.0	0.7	0.7	44.8	34.1	28.4	--	63
20-24	63.6	29.8	9.0	3.5	0.5	11.1	12.7	--	53.5	41.4	35.3	2.0	89
25-29	71.0	40.1	9.6	2.7	--	10.2	23.0	2.7	52.9	39.0	28.8	3.8	84
30-34	78.6	55.2	16.2	4.2	0.7	11.2	36.9	1.4	58.7	45.4	36.1	4.3	63
35-39	77.4	51.8	17.5	0.8	--	12.6	24.0	4.8	51.8	39.2	29.5	3.9	56
40-44	76.9	50.3	13.9	1.2	1.2	14.1	29.0	7.3	53.7	45.4	28.5	4.8	37
45-49	58.4	37.9	10.7	6.4	--	7.6	11.0	16.0	39.4	28.4	25.2	3.1	28
Total	67.4	38.0	11.4	2.5	0.3	10.2	19.2	3.2	51.5	39.2	31.1	2.9	425

Note: Urban and backward districts totals include 5 women each age 13-14 who are not shown separately.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent



Current Use of Family Planning Methods

The level of current use of contraception in West Bengal is among the highest in India, with 57 percent of currently married women practicing family planning; 37 percent using modern methods and another 20 percent using traditional methods (Table 6.4)[1]. Another set of statistics on current use is available from the Third All India Survey on Family Planning Practices in India, conducted in 1988-89 (Operations Research Group, 1990). These data refer to currently married women age 15-44. Restricting the NFHS data in this way gives an estimate of the current use rate of 59 percent, with 38 percent using modern methods.

The Third All India Survey shows a slightly lower overall contraceptive prevalence rate of 53 percent for West Bengal, with 40 percent using modern methods and 13 percent using traditional methods. The difference in the contraceptive prevalence rate for modern methods between the two surveys cannot be attributed to the difference in the reported use of sterilization (male and female sterilization combined) which was 30 percent in the 1988-89 survey and 31 percent in the NFHS; most of the difference is due to the reported use of traditional methods, which was 13 percent and 21 percent in the 1988-89 survey and the NFHS, respectively. The

[1] In the NFHS, no specific reference period was defined for current use. The woman was asked whether she or her husband was currently using a method.

Table 6.4 Current use of contraception

Percent distribution of currently married women by contraceptive method currently used, according to age and residence, West Bengal, 1992

Age	Any method	Any modern method	Pill	IUD	Injection	Condom	Female sterilization	Male sterilization	Any trad. method	Periodic abstinence	Withdrawal	Other methods	Not using any method	Total percent	Number of women
URBAN															
15-19	27.9	15.7	10.5	1.7	--	1.7	1.7	--	12.2	--	10.5	1.7	72.1	100.0	82
20-24	43.7	25.3	6.0	1.9	--	6.0	11.4	--	18.4	12.3	5.9	0.3	56.3	100.0	149
25-29	74.8	42.2	7.5	3.5	--	8.7	22.5	--	32.6	16.0	16.6	--	25.2	100.0	245
30-34	70.7	42.5	3.1	2.6	--	4.1	32.6	--	28.2	14.1	13.4	0.7	29.3	100.0	194
35-39	76.3	47.1	4.9	--	--	1.8	36.4	3.9	29.3	14.2	13.5	1.6	23.7	100.0	181
40-44	59.0	35.7	2.2	--	--	2.2	24.8	6.5	23.3	11.5	11.8	--	41.0	100.0	131
45-49	47.6	28.8	3.0	--	--	1.3	17.9	6.6	18.8	12.2	5.3	1.3	52.4	100.0	108
15-44	63.6	37.5	5.5	1.8	--	4.7	24.0	1.6	26.0	12.8	12.6	0.6	36.4	100.0	983
15-49	62.0	36.7	5.2	1.6	--	4.3	23.4	2.1	25.3	12.7	11.9	0.7	38.0	100.0	1091
13-49	61.8	36.5	5.2	1.6	--	4.3	23.3	2.1	25.3	12.8	11.8	0.7	38.2	100.0	1096
RURAL															
13-14	(19.3)	(3.7)	(--)	(--)	(--)	(3.7)	(--)	(--)	(15.6)	(8.9)	(6.7)	(--)	(80.7)	100.0	30
15-19	27.1	4.7	1.6	--	--	1.8	0.9	0.4	22.4	13.1	8.7	0.5	72.9	100.0	400
20-24	45.1	23.8	4.6	1.8	--	1.1	15.8	0.5	21.3	10.7	10.4	0.2	54.9	100.0	653
25-29	59.4	40.1	4.3	1.9	0.2	0.9	31.2	1.5	19.3	11.9	6.8	0.6	40.6	100.0	580
30-34	73.1	55.7	3.0	1.3	0.3	0.6	45.6	5.0	17.4	10.7	5.9	0.7	26.9	100.0	414
35-39	76.6	62.0	2.3	0.9	--	0.9	44.6	13.3	14.7	10.1	4.0	0.6	23.4	100.0	374
40-44	69.8	54.0	0.6	--	--	--	37.9	15.5	15.8	11.4	3.9	0.6	30.2	100.0	271
45-49	48.0	41.1	--	0.6	--	0.6	27.5	12.4	7.0	3.5	3.4	--	52.0	100.0	187
15-44	56.7	37.7	3.1	1.2	0.1	0.9	27.7	4.7	19.0	11.3	7.1	0.5	43.3	100.0	2692
15-49	56.1	37.9	2.9	1.1	0.1	0.9	27.7	5.2	18.2	10.8	6.9	0.5	43.9	100.0	2879
13-49	55.7	37.6	2.9	1.1	0.1	0.9	27.4	5.1	18.2	10.8	6.9	0.5	44.3	100.0	2909
TOTAL															
13-14	(20.6)	(3.1)	(--)	(--)	(--)	(3.1)	(--)	(--)	(17.4)	(11.7)	(5.7)	(--)	(79.4)	100.0	35
15-19	27.2	6.5	3.1	0.3	--	1.8	1.1	0.3	20.7	10.9	9.0	0.7	72.8	100.0	482
20-24	44.9	24.1	4.9	1.8	--	2.0	15.0	0.4	20.8	11.0	9.6	0.2	55.1	100.0	802
25-29	63.9	40.7	5.3	2.4	0.1	3.2	28.6	1.1	23.2	13.1	9.7	0.5	36.1	100.0	825
30-34	72.3	51.5	3.0	1.7	0.2	1.7	41.5	3.4	20.8	11.8	8.3	0.7	27.7	100.0	608
35-39	76.5	57.1	3.2	0.6	--	1.2	41.9	10.2	19.4	11.4	7.1	0.9	23.5	100.0	555
40-44	66.3	48.0	1.1	--	--	0.7	33.6	12.6	18.3	11.4	6.5	0.4	33.7	100.0	402
45-49	47.9	36.6	1.1	0.4	--	0.9	24.0	10.2	11.3	6.7	4.1	0.5	52.1	100.0	295
15-44	58.5	37.7	3.8	1.3	0.1	1.9	26.7	3.9	20.8	11.7	8.6	0.6	41.5	100.0	3675
15-49	57.7	37.6	3.6	1.3	0.1	1.9	26.5	4.3	20.1	11.3	8.3	0.5	42.3	100.0	3970
13-49	57.4	37.3	3.5	1.3	0.1	1.9	26.3	4.3	20.1	11.3	8.3	0.5	42.6	100.0	4004

Table 6.4 Current use of contraception (Contd.)

Percent distribution of currently married women by contraceptive method currently used, according to age and residence, West Bengal, 1992

Age	Any method	Any modern method	Pill	IUD	Injection	Condom	Female sterilization	Male sterilization	Any trad. method	Periodic abstinence	Withdrawal	Other methods	Not using any method	Total percent	Number of women
BACKWARD DISTRICTS															
15-19	27.8	3.6	1.4	--	--	0.7	0.7	0.7	24.2	15.7	8.5	--	72.2	100.0	63
20-24	45.8	17.2	2.5	1.0	--	1.0	12.7	--	28.7	18.2	9.5	1.0	54.2	100.0	89
25-29	48.6	29.4	1.1	1.6	--	1.1	23.0	2.7	19.2	11.2	7.4	0.5	51.4	100.0	84
30-34	65.8	46.0	2.8	2.8	--	2.0	36.9	1.4	19.8	13.5	4.9	1.4	34.2	100.0	63
35-39	63.9	36.0	2.4	--	--	4.8	24.0	4.8	27.9	17.6	10.3	--	36.1	100.0	56
40-44	61.5	37.5	1.2	--	--	--	29.0	7.3	24.0	14.5	8.3	1.2	38.5	100.0	37
45-49	41.3	28.6	1.5	--	--	--	11.0	16.0	12.7	9.5	3.2	--	58.7	100.0	28
15-44	50.8	26.8	1.9	1.0	--	1.6	20.0	2.3	23.9	15.1	8.2	0.7	49.2	100.0	392
15-49	50.1	27.0	1.9	1.0	--	1.5	19.4	3.2	23.2	14.7	7.8	0.6	49.9	100.0	420
13-49	49.8	26.6	1.9	0.9	--	1.5	19.2	3.2	23.2	14.6	8.0	0.6	50.2	100.0	425

Note: Urban and backward districts totals include 5 women each age 13-14, who are not shown separately.
-- Less than 0.05 percent

current use rates observed for the pill were 5 percent in the 1988-89 survey, and 4 percent in the NFHS, while the condom use rates were 5 percent and 2 percent, respectively.

According to unpublished official statistics (Evaluation and Information Division, Department of Family Welfare, Ministry of Health and Family Welfare), 29 percent of couples in West Bengal were sterilized in 1993 compared with 31 percent in the NFHS.

Table 6.4 shows that female sterilization is the most popular contraceptive method in West Bengal, as in nearly all Indian states[2]. Female sterilization is being used by 26 percent of currently married women, accounting for 46 percent of contraceptive prevalence. The preponderance of terminal methods is commensurate with the emphasis on sterilization in the Indian family planning programme. Another 4 percent of currently married women report that their husbands were sterilized, equal to the percentage reporting use of the pill, and 2 percent report use of condoms.

As already seen, however, the feature that distinguishes West Bengal from all other Indian states (except Assam and Tripura) is the unusually high reported use of traditional methods: more women report using periodic abstinence (11 percent) and withdrawal (8 percent)

[2] In 23 out of the 25 states in the NFHS survey, current use of contraception is dominated by female sterilization; overall, female sterilization accounts for nearly 60 percent of current use of any method. The two states departing from this pattern are the National Capital Territory of Delhi, where condom use (20.5 percent) is slightly higher than female sterilization use (20.0 percent), and Tripura, where both female sterilization and periodic abstinence are at the same level at 16.7 percent (International Institute for Population Sciences, 1994).

than any other method apart from female sterilization. This is impressive, in that current use of a traditional method implies more or less regular practice of birth spacing behaviour, while those women who chose sterilization underwent the procedure at one point in time and thereafter do not have to "currently use" a method. That 20 percent of West Bengal women report current use of a traditional method is thus suggestive of substantial demand for family planning, and in particular the relatively high use of withdrawal is an indicator of husband's motivation to control fertility.

Current use of contraception was at about equal levels in both urban areas and rural areas (62 and 56 percent, respectively). Except for sterilization, the current use of every single method of family planning, including traditional methods, was higher in urban than in rural areas, especially for the condom and withdrawal. However, the contribution of male and female sterilization to total contraceptive use among women age 15-49 was much larger in rural areas (59 percent) than in urban areas (41 percent). The current use of contraception was lower in the backward districts in comparison with the state as a whole, and this was true for all the modern methods.

The level of contraceptive use (including traditional methods) varies with the age of women, increasing from 27 percent for currently married women age 15-19 to a high of 77 percent for women age 35-39, and decreasing thereafter. In the two highest fertility age groups (20-24 and 25-29), contraceptive prevalence rates were 45 and 64 percent, respectively, although these rates are discounted to 24 and 41 percent when considering only modern methods. Among modern methods, female sterilization was the most used method above age 20 and its use peaks in the age group 30-39 (42 percent). The use rate of most of the modern methods, especially female sterilization, shows an expected inverted U-shape when plotted with age. The urban-rural differences in the age pattern of current use of contraception are similar to those discussed earlier in the case of ever use.

Socioeconomic Differentials in Current Use of Family Planning

Table 6.5 shows differentials in current contraceptive use. Differentials in current use exist by literacy and education of women, religion, and sex composition of living children. The positive relationship between education and the level of current use is seen for spacing methods and traditional methods, but not for sterilization. Thus, when considering current use of any modern method, the relationship disappears (see Figure 6.3).

Religious differentials in the prevalence of contraceptive use are substantial. The prevalence rate was lowest among Muslims; only 23 percent of Muslim women were using any modern method. The prevalence rate for Hindus (41 percent) was about 77 percent higher than the rate for Muslims but only slightly higher than the rate for other religious groups. The current use of modern methods does not vary much between caste/tribe groups; the prevalence rates being 39 percent for scheduled castes, 36 percent for scheduled tribes and 37 percent for others. The use of spacing methods was relatively less among both scheduled castes and scheduled tribes compared to other women. Women belonging to the scheduled castes were

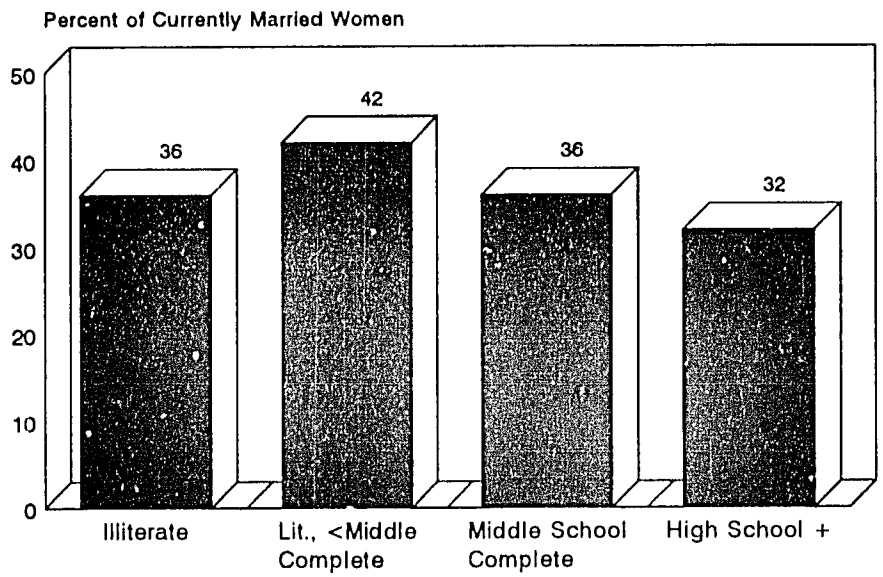
Table 6.5 Current use by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, West Bengal, 1992

Background characteristic	Any method	Any modern method	Pill	IUD	Injection	Condom	Female sterilization	Male sterilization	Any trad. method	Periodic abstinence	Withdrawal	Other methods	Not using any method	Total percent	Number of women
Residence															
Urban	61.8	36.5	5.2	1.6	--	4.3	23.3	2.1	25.3	12.8	11.8	0.7	38.2	100.0	1096
Rural	55.7	37.6	2.9	1.1	0.1	0.9	27.4	5.1	18.2	10.8	6.9	0.5	44.3	100.0	2909
Backward districts	49.8	26.6	1.9	0.9	--	1.5	19.2	3.2	23.2	14.6	8.0	0.6	50.2	100.0	425
Education															
Illiterate	49.1	35.9	1.3	0.5	0.1	0.2	28.3	5.5	13.2	8.9	3.8	0.4	50.9	100.0	1958
Literate, < middle	61.6	41.8	5.1	1.3	0.1	1.4	29.3	4.5	19.8	9.8	9.3	0.7	38.4	100.0	1208
Middle complete	66.9	36.2	5.9	2.3	--	2.4	23.2	2.3	30.7	17.1	13.3	0.3	33.1	100.0	434
High school and above	75.1	31.9	7.0	3.6	--	10.6	10.8	--	43.2	21.1	21.0	1.1	24.9	100.0	404
Religion															
Hindu	61.4	41.2	3.4	1.3	0.1	2.1	30.0	4.4	20.1	10.9	8.8	0.4	38.6	100.0	3057
Muslim	43.0	23.3	4.2	1.0	--	1.2	13.1	3.8	19.7	12.4	6.1	1.2	57.0	100.0	866
Other	60.7	37.3	1.4	1.4	--	--	27.8	6.8	23.4	13.4	10.0	--	39.3	100.0	81
Caste/tribe															
Scheduled caste	54.5	38.8	0.1	1.1	--	0.7	30.9	6.0	15.7	11.1	4.3	0.3	45.5	100.0	379
Scheduled tribe	44.8	36.4	1.1	0.6	--	--	30.2	4.5	8.4	4.2	3.4	0.8	55.2	100.0	196
Other	58.4	37.2	4.0	1.3	0.1	2.1	25.5	4.1	21.3	11.7	9.0	0.6	41.6	100.0	3429
Number and sex of living children															
None	19.8	4.8	0.7	0.3	--	2.3	0.5	1.0	15.0	7.5	7.4	0.2	80.2	100.0	507
1 child	49.5	15.0	5.0	1.7	--	3.6	2.4	2.3	34.5	17.6	16.4	0.5	50.5	100.0	789
1 son	53.9	16.1	5.1	2.5	--	2.8	2.7	3.0	37.8	19.5	17.5	0.9	46.1	100.0	409
No sons	44.8	13.9	4.8	0.9	--	4.5	2.1	1.6	30.9	15.5	15.3	0.1	55.2	100.0	380
2 children	66.4	42.3	5.6	2.5	0.1	2.4	27.5	4.3	24.1	14.3	9.4	0.4	33.6	100.0	907
2 sons	74.8	55.8	5.4	3.9	0.4	0.7	39.9	5.5	19.0	9.5	8.9	0.6	25.2	100.0	256
1 son	67.0	41.0	6.0	1.6	--	3.1	25.6	4.7	26.0	16.6	8.9	0.5	33.0	100.0	475
No sons	52.7	26.0	4.8	2.7	--	2.7	14.4	1.5	26.7	15.4	11.3	--	47.3	100.0	176
3 children	74.2	60.9	2.5	0.8	--	1.0	48.6	7.9	13.3	8.1	4.7	0.5	25.8	100.0	722
3 sons	82.3	70.7	1.3	--	--	--	60.8	8.6	11.7	9.9	1.8	--	17.7	100.0	87
2 sons	78.0	69.1	2.3	0.5	--	0.8	54.8	10.7	8.9	4.2	4.3	0.3	22.0	100.0	329
1 son	72.0	55.9	1.5	1.8	--	0.8	45.6	6.1	16.1	9.6	5.9	0.7	28.0	100.0	237
No sons	53.2	26.5	7.9	--	--	4.3	14.3	--	26.7	19.7	5.4	1.6	46.8	100.0	69
4+children	62.0	48.8	2.7	0.7	0.1	0.5	39.9	4.9	13.2	8.2	4.2	0.8	38.0	100.0	1080
2+ sons	61.4	47.9	2.2	0.5	0.1	0.4	39.9	4.9	13.5	8.1	4.4	1.1	38.6	100.0	831
1 son	66.7	55.8	5.3	1.5	--	0.5	43.3	5.2	10.9	7.6	3.2	--	33.3	100.0	212
No sons	(47.3)	(28.7)	(1.2)	(--)	(--)	(3.9)	(20.6)	(3.0)	(18.6)	(14.4)	(4.3)	(--)	(52.7)	100.0	36
Total	57.4	37.3	3.5	1.3	0.1	1.9	26.3	4.3	20.1	11.3	8.3	0.5	42.6	100.0	4004

() Based on 25-49 unweighted cases
-- Less than 0.05 percent

Figure 6.3
Current Use of Modern Contraceptive Methods by Education



NFHS, West Bengal, 1992

nearly three times as likely to report use of periodic abstinence than were scheduled tribe women. Use of traditional methods, however, was lower among scheduled castes and scheduled tribes (16 percent and 8 percent, respectively), compared with others (21 percent).

Table 6.5 also shows the differentials in current use by the number and sex of living children. The association between number of living children and current use of contraception shows the expected inverted U-shape curve. Current use of any modern method increases steadily from 5 percent for women who have no living children to 15 percent having one child, 42 percent having two children, 61 percent having three, and then down to 49 percent among women having four or more children. The same trend is evident for sterilized women. The data on the prevalence rate by the sex composition of living children indicate the existence of son preference; at each parity, the current use of family planning is lowest for women having no sons and, (except women with 4 or more children), highest for women having all sons. As expected, sterilization was a particularly unpopular method for women who did not have any sons. The use of traditional methods appears to decline with parity.

Number of Children at First Use of Contraception

In order to examine the timing of initial contraceptive use, the NFHS included a question on how many living children women had when they first used a method. Responses to this question are shown in Table 6.6. Overall, only 19 percent of contraceptors (13 percent of all

Table 6.6 Number of living children at first use

Percent distribution of ever-married women by number of living children at the time of first use of contraception, according to current age and residence, West Bengal, 1992

Current age	Never used	Number of living children at the time of first use					Total percent	Number of women
		0	1	2	3	4+		
URBAN								
15-19	60.6	15.0	17.4	5.2	--	1.7	100.0	82
20-24	41.4	21.9	20.9	10.3	3.7	1.8	100.0	155
25-29	16.2	20.4	33.7	14.5	8.3	6.9	100.0	257
30-34	21.0	13.9	32.4	9.6	8.1	14.9	100.0	210
35-39	18.3	15.9	27.5	8.0	10.5	19.8	100.0	198
40-44	27.9	10.0	22.0	14.2	12.7	13.3	100.0	149
45-49	33.9	9.8	18.9	10.7	9.2	17.5	100.0	124
Total	27.4	15.9	26.4	10.9	8.1	11.4	100.0	1100
RURAL								
13-14	(70.3)	(26.0)	(3.7)	(--)	(--)	(--)	100.0	30
15-19	58.9	26.8	12.5	1.4	0.4	--	100.0	417
20-24	40.1	15.8	24.9	11.2	6.1	2.0	100.0	677
25-29	29.8	10.9	19.3	17.4	13.6	9.0	100.0	608
30-34	20.2	8.9	22.9	14.0	16.4	17.5	100.0	457
35-39	20.6	5.7	17.4	14.8	15.5	26.0	100.0	417
40-44	24.0	5.8	12.6	10.5	17.0	30.2	100.0	310
45-49	41.5	2.1	11.1	11.4	7.8	26.1	100.0	226
Total	33.9	12.1	18.5	11.8	10.7	13.0	100.0	3142
TOTAL								
13-14	(70.6)	(26.3)	(3.1)	(--)	(--)	(--)	100.0	35
15-19	59.2	24.9	13.3	2.0	0.3	0.3	100.0	499
20-24	40.3	16.9	24.1	11.0	5.6	2.0	100.0	832
25-29	25.7	13.7	23.6	16.6	12.0	8.3	100.0	865
30-34	20.5	10.5	25.9	12.6	13.8	16.7	100.0	667
35-39	19.8	9.0	20.7	12.6	13.9	24.0	100.0	616
40-44	25.2	7.1	15.6	11.7	15.6	24.7	100.0	459
45-49	38.8	4.9	13.8	11.1	8.3	23.1	100.0	350
Total	32.1	13.1	20.6	11.6	10.0	12.6	100.0	4322
BACKWARD DISTRICTS								
15-19	53.6	29.5	14.1	2.0	0.7	--	100.0	67
20-24	39.7	21.7	25.4	9.9	2.8	0.5	100.0	95
25-29	30.0	17.0	17.0	12.9	13.5	9.7	100.0	87
30-34	23.3	11.2	22.5	13.1	12.0	17.9	100.0	68
35-39	26.2	9.1	18.1	14.0	12.0	20.5	100.0	63
40-44	25.7	13.1	16.0	12.2	9.2	23.7	100.0	44
45-49	49.0	3.7	15.1	9.0	6.5	16.7	100.0	35
Total	35.2	16.8	18.8	10.4	7.9	10.8	100.0	464

Note: Urban and backward districts totals include 5 women each age 13-14, who are not shown separately.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent

ever-married women) initiated the use of contraception before having any children, and the largest proportion (30 percent) of the women started using a method after only one child. About two-thirds (67 percent) of those who had ever used family planning initiated use when they had fewer than three living children, which indicates early initiation of family planning. As noted earlier, the mainstay of India's family planning programme is sterilization, and most women tend to accept a terminal method only after having had several children. The pattern of first acceptance in West Bengal at relatively low parities is thus outside the norm, and represents a feature shared by the more demographically progressive states in India. Table 6.6 also shows the generational shift towards initiating use at lower parities. There is a tendency for younger women to have initiated family planning use at lower parities. As one moves towards the older cohorts, the percentage of nulliparous women (those with no children) or women with only one child having initiated contraceptive use generally decreases. For example, only 30 percent of ever users in the age group 40-44 accepted a method for the first time in the early stage of reproductive life (when they had fewer than two children). This proportion has increased to 46 percent among women in the 30-34 age group. In comparison to rural women, urban women started using contraception at lower parities. The pattern of use by number of living children in backward districts was similar to the state as a whole, except that, interestingly, a higher percentage of ever users in the backward districts (26 percent) initiated contraceptive use before having any children than did women in the state as a whole (19 percent).

Problems in the Current Use of Family Planning

Current users of the pill, the IUD and sterilization were asked if they had any problems using these methods. Table 6.7 deals with the problems faced by these women while using the methods. Most of the women using the IUD did not report any problems, although 7 percent reported weakness or an inability to work, and another 7 percent reported experiencing backache. Among the 31 percent of pill users reporting problems, headache, body ache and dizziness were most common. About 38 percent of women complained of a problem in the case of female sterilization, the most commonly used method. The major causes of discomfort in this case were pain/backache and weakness or an inability to work. The same problems were most commonly mentioned in the case of male sterilization.

Age at Sterilization

Table 6.8 shows the age and time at which couples obtained a sterilization. Of the 1,224 sterilization operations reported, 45 percent were conducted fewer than 6 years before the survey, another 25 percent were conducted 6-9 years before the survey and the remaining 30 percent were conducted 10 or more years before the survey. Seventy-six percent of the couples had undergone sterilization before age 30. There were very few cases of sterilization being performed when the woman was in her forties. The median age of a woman at the time of sterilization was 26.0 years. Three-fourths of the sterilized women (74 percent) accepted this terminal method of family planning before completing their most fertile ages of 20-29. As mentioned earlier, the use of male sterilization was negligible in the state and it is likely that most of the 171 cases of vasectomy were performed more than 10 years ago. It is difficult to assess trends in the age at sterilization since the NFHS interviewed only ever-married women age 13-49. Thus, there were no respondents who were age 40-49 during the period 10 or more

Table 6.7 Problems with current method

Percentage of current users of pills, copper T/IUD and female/male sterilization who have had problems in using the method, West Bengal, 1992

Problem	Method	
	Pill	
No problems	68.6	
Cramps	0.8	
Weight gain	2.6	
Dizziness	7.0	
Body ache	7.4	
Spotting/bleeding	1.8	
White discharge	1.0	
Nausea/vomitting	2.2	
Headache	13.3	
Other	2.6	
Number of pill users	141	
	Copper T/IUD	
No problems	(81.5)	
Backache	(7.1)	
Irregular periods	(3.1)	
Excessive bleeding	(3.1)	
Weakness/inability to work	(7.4)	
Other	(5.2)	
Number of IUD users	51	
	Female sterilization	**Male sterilization**
No problems	62.2	78.7
Fever	2.9	0.9
Pain/backache	18.6	8.6
Sepsis	2.6	0.9
Weakness/inability to work	19.5	13.6
Failure/woman got pregnant	0.9	--
Loss of sexual power	0.8	2.4
Other	8.6	1.9
Number sterilized	1053	172

Note: Percentages may sum to more than 100.0 because multiple problems could be recorded. Users with missing information on problems are not included.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent

years before the survey, since these women would have been age 50-59 at the time of the survey.

6.3 Source of Supply of Contraception

Family planning methods and services in West Bengal are provided through a network of government hospitals and urban family welfare centres in urban areas and Primary Health Centres and sub-centres in rural areas. Besides these government outlets, family planning services are also provided by a number of private hospitals and clinics as well as non-governmental organizations. Sterilization operations and the IUD insertions are carried out mostly in government hospitals and Primary Health Centres. Sterilization camps, organized from time to time, also provide sterilization services. Modern spacing methods such as the IUD, pills and condoms are available through both the government and private sectors.

Table 6.8 Timing of sterilization

Percent distribution of currently married sterilized women and sterilized couples by age at the time of sterilization, according to the number of years since the operation, West Bengal, 1992

Years since operation	Woman's age at the time of operation						Total percent	Number	Median age*
	<25	25-29	30-34	35-39	40-44	45-49			
STERILIZED WOMEN									
< 2	43.3	31.6	15.5	6.1	2.4	1.1	100.0	202	25.6
2-3	47.9	23.5	21.2	6.5	0.9	--	100.0	179	25.2
4-5	39.7	34.2	16.3	9.5	0.3	--	100.0	155	25.8
6-7	36.4	36.2	18.6	7.9	0.9	U	100.0	162	26.7
8-9	41.5	36.7	14.4	7.3	U	U	100.0	115	26.2
10+	37.7	37.4	20.5	4.4	U	U	100.0	239	NC
Total	41.0	33.2	18.1	6.7	0.8	0.2	100.0	1053	26.1
STERILIZED COUPLES									
< 2	43.0	31.9	15.6	6.0	2.4	1.1	100.0	204	25.7
2-3	48.5	23.0	21.4	6.3	0.8	--	100.0	183	25.2
4-5	40.9	33.8	15.8	9.2	0.3	--	100.0	160	25.8
6-7	36.5	35.2	19.6	7.9	0.8	U	100.0	176	26.7
8-9	41.9	37.6	13.1	7.3	U	U	100.0	130	26.1
10+	42.2	38.3	16.7	2.8	U	U	100.0	371	NC
Total	42.2	33.9	17.1	5.9	0.7	0.2	100.0	1224	26.0

Note: Sterilized couples include wives of sterilized men, who are not shown separately.
NC: Not calculated due to censoring
U: Not available
-- Less than 0.05 percent
*Median ages are calculated only for persons sterilized at less than 40 years of age to avoid problems of censoring.

In order to assess the relative importance of various sources of contraceptive methods, the NFHS included a question about where current users of contraception obtained their methods. Overall, the public sector, consisting of government/municipal hospitals, Primary Health Centres and other governmental health infrastructure, supplied 80 percent of the current users of all modern methods, while the private medical sector, including private hospitals or clinics, private doctors and pharmacies/drugstores supplied 16 percent of current users (Table 6.9 and Figure 6.4). Only 4 percent of users obtained their methods from other sources, such as shops, friends and relatives.

The mix of public and private sector sources varied according to the method used. For clinical methods (IUDs and sterilization), the government was by far the major source of supply; more than 90 percent of male and female sterilization operations and 82 percent of the IUD insertions were done at a government source. Supply methods (pills and condoms) were provided primarily by the private sector. Only 16 percent of pill users obtained their pills from a government source and 10 percent of condom users relied on the public sector for their supply.

With regard to specific sources of contraception, government/municipal hospitals, pharmacies, and Primary Health Centres (the main institutions that provide contraceptive services) are the most important sources; more than 85 percent of sterilization acceptors, and 75 percent of the IUD users, are served by these institutions. Private shops are major sources for pills and condoms (60 percent of pill users and 54 percent of condom users). Eighteen

Table 6.9 Source of supply of modern contraceptive methods

Percent distribution of current users of modern contraceptive methods by most recent source of supply, according to specific method and residence, West Bengal, 1992

Source of supply	Pill	Copper T/ IUD	Con-dom	Female steril-ization	Male steril-ization	All modern methods
			URBAN			
Public sector	(5.0)	*	(6.0)	77.2	*	57.9
Government/municipal hospital	(2.5)	*	(--)	73.5	*	53.5
Primary Health Centre	(2.5)	*	(3.0)	0.7	*	1.9
Sub-centre	(--)	*	(3.0)	--	*	0.4
Family planning clinic	(--)	*	(--)	0.2	*	0.5
Public mobile clinic	(--)	*	(--)	--	*	--
Camp	(--)	*	(--)	2.8	*	1.8
Government paramedic	(--)	*	(--)	--	*	--
Private medical sector	(84.3)	*	(52.1)	22.3	*	34.2
Private hospital or clinic	(--)	*	(--)	19.5	*	13.1
Pharmacy/drugstore	(76.1)	*	(52.1)	--	*	17.0
Private doctor	(8.2)	*	(--)	2.2	*	3.7
Private mobile clinic	(--)	*	(--)	0.6	*	0.4
Field worker	(--)	*	(--)	--	*	--
Other source	(10.7)	*	(41.9)	0.6	*	7.9
Shop	(10.7)	*	(16.0)	--	*	3.4
Husband	(--)	*	(25.9)	--	*	3.1
Friend/relative	(--)	*	(--)	--	*	--
Other	(--)	*	(--)	0.6	*	1.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	57	18	47	255	23	400
			RURAL			
Public sector	23.8	(90.0)	(17.6)	95.0	96.8	87.5
Government/municipal hospital	7.8	(43.7)	(13.6)	81.3	79.7	72.4
Primary Health Centre	7.0	(34.8)	(4.0)	8.4	10.1	9.2
Sub-centre	7.8	(10.0)	(--)	0.4	1.0	1.3
Family planning clinic	1.1	(--)	(--)	0.4	1.5	0.6
Public mobile clinic	--	(--)	(--)	0.4	1.5	0.5
Camp	--	(--)	(--)	4.1	2.9	3.4
Government paramedic	--	(1.4)	(--)	--	--	--
Private medical sector	65.5	(10.0)	(56.7)	3.8	1.5	9.9
Private hospital or clinic	--	(3.3)	(--)	3.7	0.7	2.9
Pharmacy/drugstore	49.6	(--)	(56.7)	--	--	5.2
Private doctor	12.0	(3.3)	(--)	--	0.7	1.3
Private mobile clinic	1.3	(3.3)	(--)	0.1	--	0.3
Field worker	2.6	(--)	(--)	--	--	0.2
Other source	10.7	(--)	(25.8)	1.2	1.8	2.6
Shop	6.3	(--)	(5.6)	--	--	0.6
Husband	--	(--)	(20.1)	--	--	0.5
Friend/relative	3.9	(--)	(--)	--	--	0.3
Other	0.5	(--)	(--)	1.2	1.8	1.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	84	33	27	797	149	1093

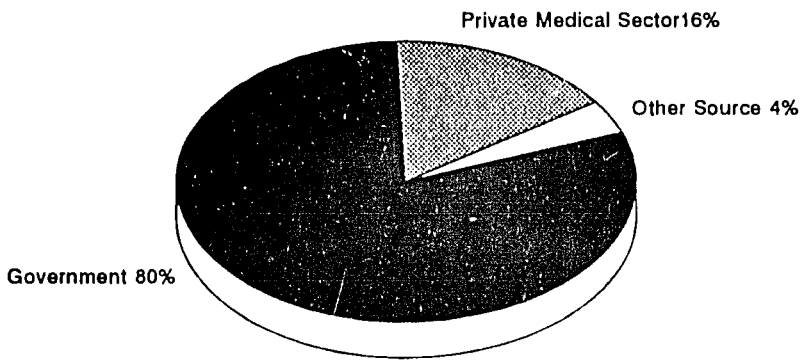
Table 6.9 Source of supply of modern contraceptive methods (Contd.)

Percent distribution of current users of modern contraceptive methods by most recent source of supply, according to specific method and residence, West Bengal, 1992

Source of supply	Pill	Copper T/ IUD	Con-dom	Female steril-ization	Male steril-ization	All modern methods
			TOTAL			
Public sector	16.2	(82.3)	10.3	90.7	93.9	79.6
Government/municipal hospital	5.7	(49.6)	5.0	79.4	77.4	67.4
Primary Health Centre	5.2	(25.3)	3.4	6.5	9.6	7.2
Sub-centre	4.7	(6.5)	1.9	0.3	0.9	1.1
Family planning clinic	0.6	(--)	--	0.4	2.1	0.6
Public mobile clinic	--	(--)	--	0.3	1.3	0.4
Camp	--	(--)	--	3.8	2.5	3.0
Government paramedic	--	(0.9)	--	--	--	--
Private medical sector	73.1	(17.7)	53.8	8.3	2.1	16.4
Private hospital or clinic	--	(7.8)	--	7.5	0.6	5.6
Pharmacy/drugstore	60.3	(--)	53.8	--	--	8.4
Private doctor	10.5	(7.8)	--	0.5	1.5	2.0
Private mobile clinic	0.8	(2.2)	--	0.2	--	0.3
Field worker	1.6	(--)	--	--	--	0.1
Other source	10.7	(--)	35.9	1.0	4.0	4.0
Shop	8.1	(--)	12.2	--	--	1.4
Husband	--	(--)	23.8	--	--	1.2
Friend/relative	2.3	(--)	--	--	--	0.2
Other	0.3	(--)	--	1.0	4.0	1.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	141	51	75	1053	172	1493
			BACKWARD DISTRICTS			
Public sector	*	*	*	98.3	(96.7)	87.5
Government/municipal hospital	*	*	*	91.8	(86.7)	79.6
Primary Health Centre	*	*	*	3.3	(6.7)	4.0
Sub-centre	*	*	*	2.8	(3.3)	2.4
Family planning clinic	*	*	*	0.5	(--)	1.2
Public mobile clinic	*	*	*	--	(--)	--
Camp	*	*	*	--	(--)	--
Government paramedic	*	*	*	--	(--)	0.4
Private medical sector	*	*	*	1.1	(--)	6.7
Private hospital or clinic	*	*	*	1.1	(--)	0.8
Pharmacy/drugstore	*	*	*	--	(--)	4.3
Private doctor	*	*	*	--	(--)	1.6
Private mobile clinic	*	*	*	--	(--)	--
Field worker	*	*	*	--	(--)	--
Other source	*	*	*	0.6	(3.3)	5.9
Shop	*	*	*	--	(--)	1.9
Husband	*	*	*	--	(--)	2.7
Friend/relative	*	*	*	--	(--)	--
Other	*	*	*	0.6	(3.3)	1.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	8	4	6	82	14	113

Note: Total current users of all modern methods includes 2 users of injections, who are not shown separately.
() Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases
-- Less than 0.05 percent

Figure 6.4
Sources of Family Planning Among Current Users of Modern Contraceptive Methods



NFHS, West Bengal, 1992

percent of IUD insertions were performed by private medical practitioners. Fewer than 5 percent each of male and female sterilizations were done in sterilization camps.

Differentials in the source of methods are found between urban and rural areas of the state. In rural areas, the public sector is the source of supply for the large majority of users (88 percent), while in urban areas, the public sector is the source of supply for 58 percent of users. Other (non-medical) sources provided contraception for only a small percentage of users (8 percent) in urban areas, although the corresponding figure in rural areas was much smaller (3 percent). The predominance of the public sector is particularly evident in the case of female and male sterilizations in rural areas (95 and 97 percent, respectively). In urban areas, the private medical sector is the source of supply for 22 percent of female sterilizations, in contrast to rural areas where only 4 percent of the women were sterilized through the private medical sector. Non-medical sources are important suppliers of condoms in both urban (42 percent) and rural areas (26 percent). As far as the IUD is concerned, the public sector is by far the predominant source of supply in rural areas (90 percent). The private medical sector supplies the large majority of pill users (84 percent) in urban areas, and also supplies a smaller majority (65 percent) of pill users in rural areas. In rural areas, government and municipal hospitals provide services to 81 percent of acceptors of female sterilization, 44 percent of the IUD acceptors, 80 percent of male sterilization acceptors and 8 percent of the pill users. Primary Health Centres supply only 8 percent of female sterilization, 35 percent of all IUD insertions, 10 percent of male sterilization procedures, and 7 percent of pill users. Sub-centres are used by only 1 percent of rural women for their contraceptive needs. The existence of a large network of

government family planning outlets has helped the West Bengal programme to achieve a level of current use of modern contraceptive methods of 37 percent. However, a large proportion of the women (20 percent) are using a traditional method. To facilitate a large-scale transfer of contraceptive use from traditional to modern methods, the quality of services from both public and private sources could be upgraded and made more accessible to potential users.

6.4 Reasons for Discontinuation

All currently married women who had ever used contraception but who were not using any method at the time of the survey and were not pregnant, were asked why they had discontinued their use of contraception. Their responses to this question are presented in Table 6.10. A large proportion of the women (47 percent) did not give any specific reason for the discontinuation of use. Among the reasons other than wanting to have a child, health and other method-related problems were cited most often. Only seven percent of women had discontinued use either because they did not like the method or felt it to be inconvenient to use or difficult to get. Another three percent of the women discontinued use since they became pregnant while using a method. The pattern of response shown by reasons for discontinuation did not differ much between urban and rural women or, for that matter, among women in the backward districts. However, a greater proportion of urban women (15 percent) in comparison with rural women (9 percent) mentioned that the reason for discontinuation was health related problems.

Table 6.10 Reasons for discontinuation

Percent distribution of nonpregnant, currently married ever users who are not currently using a contraceptive method by main reason for stopping use and residence, West Bengal, 1992

Reason for stopping use	Urban	Rural	Total	Backward districts
Method failed/got pregnant	2.4	3.9	3.4	3.2
Lack of sexual satisfaction	1.2	1.4	1.3	0.8
Created menstrual problem	6.4	9.1	8.3	4.0
Created health problem	15.1	9.4	11.1	11.9
Inconvenient to use	6.0	1.4	2.8	0.8
Hard to get method	1.2	1.2	1.2	--
Did not like the method	4.0	3.0	3.3	5.6
Wanted to have a child	16.0	21.5	19.8	15.2
Wanted to replace a dead child	--	0.2	0.1	0.8
Lack of privacy for use	1.2	1.4	1.3	0.8
Other	46.6	46.8	46.7	57.0
Don't know/missing	--	0.8	0.6	--
Total percent	100.0	100.0	100.0	100.0
Number	118	272	390	56

-- Less than 0.05 percent

6.5 Intention to Use Family Planning in the Future

In the NFHS, all currently married pregnant women and nonpregnant women who were not using contraception at the time of the interview were asked about their intentions to use family planning in the future, and, if yes, whether they expressed preference for a particular method. If no, they were asked why they did not intend to use it. This type of information can

assist family planning programme administrators in identifying potential groups of users and in providing the types of contraception that are likely to be in demand. Information on the reasons for nonuse is important for designing successful information programmes and understanding the obstacles to further advances in contraceptive prevalence.

Overall, 46 percent of currently married nonusers reported that they did not intend to use contraception in the future (Table 6.11), 47 percent said that they would use it in the future, and the remaining women (7 percent) were not sure about their intentions. The lack of intentions to use family planning suggests that it will be difficult for the family planning programme to be successful without a strong Information, Education and Communication (IEC) component to motivate couples to use contraception. Over half (55 percent) of the intended users said they would use contraception within the next 12 months, 42 percent said they would use it at a later stage, and 3 percent were not sure when they would start using contraception. Among women who have never used contraceptive methods before, 43 percent reported that they intend to use them in the future and 7 percent were not sure of their intentions. Fifty seven percent of those who have used contraception in the past (but discontinued and are not currently using) intended to use contraception again in the future and 7 percent were not sure of their intentions.

Table 6.11 Future use

Percent distribution of currently married women who are not currently using any contraceptive method by intention to use in the future, according to number of living children, residence and whether ever used contraception, West Bengal, 1992

Past use/ intention to use in future	Number of living children[1]					Total
	0	1	2	3	4+	
URBAN						
Never used contraception						
Intends to use in next 12 months	4.0	16.0	11.8	(17.8)	6.5	11.1
Intends to use later	8.0	15.5	16.5	(10.6)	2.0	10.9
Intends to use, unsure when	--	--	1.4	(--)	--	0.3
Unsure as to intention	10.6	6.7	--	(3.0)	3.0	4.5
Does not intend to use	52.6	21.4	30.4	(35.5)	54.6	37.9
Previously used contraception						
Intends to use in next 12 months	--	12.0	9.0	(9.8)	11.5	8.9
Intends to use later	6.6	6.7	4.3	(3.0)	4.5	5.2
Intends to use, unsure when	2.0	--	1.4	(0.9)	--	0.8
Unsure as to intention	10.0	3.1	--	(3.0)	2.0	3.3
Does not intend to use	6.0	18.6	25.1	(16.6)	15.9	17.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
All currently married nonusers						
Intends to use in next 12 months	4.0	28.1	20.8	(27.5)	18.0	20.0
Intends to use later	14.7	22.2	20.8	(13.6)	6.5	16.1
Intends to use, unsure when	2.0	--	2.9	(0.9)	--	1.1
Unsure as to intention	20.7	9.8	--	(5.9)	5.0	7.8
Does not intend to use	58.6	40.0	55.5	(52.1)	70.5	55.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	71	106	100	48	94	418

Table 6.11 Future use (Contd.)

Percent distribution of currently married women who are not currently using any contraceptive method by intention to use in the future, according to number of living children, residence and whether ever used contraception, West Bengal, 1992

Past use/ intention to use in future	Number of living children[1]					Total
	0	1	2	3	4+	
RURAL						
Never used contraception						
Intends to use in next 12 months	4.4	15.2	16.6	23.6	16.3	15.1
Intends to use later	18.4	22.0	18.9	14.0	5.9	15.6
Intends to use, unsure when	1.8	1.1	2.1	0.9	0.5	1.2
Unsure as to intention	12.5	6.2	3.5	3.8	2.3	5.3
Does not intend to use	49.4	28.1	27.6	26.4	37.3	33.6
Previously used contraception						
Intends to use in next 12 month	2.0	9.9	15.2	18.7	16.3	12.5
Intends to use later	3.4	8.4	6.6	5.8	1.8	5.2
Intends to use, unsure when	--	0.6	1.7	0.7	0.6	0.7
Unsure as to intention	1.3	2.1	0.6	1.3	2.0	1.6
Does not intend to use	6.9	6.3	7.1	4.7	17.0	9.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
All currently married nonusers						
Intends to use in next 12 months	6.5	25.2	31.7	42.3	32.6	27.6
Intends to use later	21.8	30.4	25.5	19.9	7.8	20.8
Intends to use, unsure when	1.8	1.7	3.8	1.6	1.1	1.9
Unsure as to intention	13.7	8.3	4.1	5.1	4.2	6.9
Does not intend to use	56.2	34.4	34.7	31.2	54.3	42.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	207	332	241	167	340	1287
TOTAL						
Never used contraception						
Intends to use in next 12 months	4.3	15.4	15.2	22.3	14.1	14.1
Intends to use later	15.7	20.4	18.2	13.3	5.1	14.4
Intends to use, unsure when	1.3	0.9	1.9	0.7	0.4	1.0
Unsure as to intention	12.0	6.3	2.5	3.6	2.4	5.1
Does not intend to use	50.2	26.5	28.4	28.5	41.0	34.7
Previously used contraception						
Intends to use in next 12 months	1.5	10.4	13.3	16.7	15.3	11.6
Intends to use later	4.2	8.0	5.9	5.2	2.4	5.2
Intends to use, unsure when	0.5	0.5	1.6	0.7	0.5	0.7
Unsure as to intention	3.5	2.3	0.5	1.7	2.0	2.0
Does not intend to use	6.7	9.3	12.4	7.4	16.8	11.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
All currently married nonusers						
Intends to use in next 12 months	5.8	25.9	28.6	39.0	29.4	25.7
Intends to use later	20.0	28.4	24.2	18.5	7.5	19.6
Intends to use, unsure when	1.9	1.3	3.6	1.4	0.9	1.7
Unsure as to intention	15.5	8.6	2.9	5.3	4.4	7.1
Does not intend to use	56.9	35.8	40.8	35.8	57.8	45.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	278	439	340	215	433	1706

Table 6.11 Future use (Contd.)

Percent distribution of currently married women who are not currently using any contraceptive method by intention to use in the future, according to number of living children, residence and whether ever used contraception, West Bengal, 1992

Past use/ intention to use in future	Number of living children[1]					
	0	1	2	3	4+	Total
BACKWARD DISTRICTS						
Never used contraception						
Intends to use in next 12 months	1.3	8.0	14.1	15.7	15.8	11.6
Intends to use later	18.8	21.0	12.9	12.4	4.6	12.8
Intends to use, unsure when	1.3	1.0	4.7	1.6	0.7	1.7
Unsure as to intention	22.7	9.0	4.7	3.1	3.3	7.8
Does not intend to use	42.5	25.1	23.6	28.3	35.0	31.2
Previously used contraception						
Intends to use in next 12 months	2.7	15.1	16.5	18.8	15.1	13.9
Intends to use later	9.3	11.0	13.0	11.0	2.6	8.4
Intends to use, unsure when	--	2.0	2.4	1.5	--	1.0
Unsure as to intention	1.3	1.9	1.2	--	3.9	2.1
Does not intend to use	--	5.8	6.9	7.7	18.9	9.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
All currently married nonusers						
Intends to use in next 12 months	4.0	23.1	30.6	34.5	30.9	25.5
Intends to use later	28.1	32.0	25.9	23.4	7.2	21.2
Intends to use, unsure when	1.3	3.0	7.1	3.0	0.7	2.7
Unsure as to intention	24.0	11.0	5.9	3.1	7.2	9.9
Does not intend to use	42.5	30.9	30.5	36.0	54.0	40.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number	34	45	38	29	68	213

() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Includes current pregnancy, if any.

The proportion of women who intend to use family planning in the future increases with parity, although begins to decline among those women having four or more living children. For example, while only 6 percent of women with no living children expressed an intention to use contraceptives in next 12 months, this percentage reached 39 for women with three living children, and then declined to 29 percent of women with 4 or more living children. Intention to use a contraceptive method in the future did not vary substantially by residence. However, it is worth noting that a higher proportion of rural women (50 percent) in comparison with urban women (37 percent) showed an inclination to use contraceptive methods.

6.6 Reasons for Nonuse of Contraception

Currently married women who are not using any contraceptive method, and who say that they do not intend to use contraception at any time in the future, were asked the main reason for their future intentions. Reasons for not intending to use any method are indicated in Table 6.12. The largest proportion of women (34 percent) said they did not intend to use contraception because they wanted more children. This reason was given by 63 percent of

Table 6.12 Reasons for nonuse

Percent distribution of currently married women who are not using any contraceptive method and who do not intend to use in the future by main reason for not intending to use, according to age and residence, West Bengal, 1992

Reason	Urban			Rural			Total			Backward districts		
	Age < 30	Age 30+	Total	Age < 30	Age 30+	Total	Age < 30	Age 30+	Total	Age < 30	Age 30+	Total
Wants children	(69.9)	12.6	24.3	61.8	11.8	37.8	62.9	12.1	33.8	41.0	11.4	24.8
Wants a son	(3.0)	1.5	1.9	12.2	2.7	7.7	10.9	2.3	6.0	5.7	3.8	4.7
Worry about side effects	(--)	0.8	0.6	0.5	1.2	0.9	0.5	1.0	0.8	1.1	--	0.5
Can't work after sterilization	(--)	--	--	0.4	0.6	0.5	0.3	0.3	0.3	--	1.0	0.5
Lack of knowledge	(0.9)	0.8	0.8	0.5	0.6	0.6	0.6	0.7	0.6	2.2	1.0	1.5
Afraid of sterilization	(--)	1.5	1.2	--	1.6	0.8	--	1.6	0.9	--	1.9	1.0
Cost too much	(3.0)	--	0.6	0.8	0.4	0.6	1.1	0.2	0.6	--	--	--
Against religion	(--)	4.6	3.7	5.8	2.8	4.4	5.0	3.5	4.2	22.8	8.6	15.0
Opposed to family planning	(--)	1.8	1.4	2.3	1.8	2.1	2.0	1.8	1.9	11.4	6.6	8.8
Husband opposed	(3.0)	7.0	6.2	4.4	5.2	4.8	4.2	5.9	5.2	4.6	5.7	5.2
Other people opposed	(--)	--	--	0.4	--	0.2	0.3	--	0.1	--	--	--
Difficult to get pregnant	(3.0)	12.6	10.7	1.3	9.3	5.1	1.5	10.7	6.8	1.1	6.6	4.1
Menopausal/had hysterectomy	(3.0)	31.6	25.8	0.4	40.4	19.6	0.8	36.8	21.4	--	39.6	21.6
Health does not permit	(--)	5.6	4.5	2.8	6.4	4.5	2.4	6.1	4.5	1.1	6.6	4.1
Inconvenient	(--)	6.2	4.9	0.4	5.1	2.7	0.3	5.6	3.3	--	1.0	0.5
Doesn't like existing methods	(3.0)	3.9	3.7	1.1	3.5	2.3	1.4	3.6	2.7	--	1.0	0.5
Other	(10.9)	9.4	9.7	4.8	6.5	5.6	5.6	7.7	6.8	9.0	5.5	7.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	47	184	230	287	265	551	333	448	782	40	47	87

() Based on 25-49 unweighted cases
-- Less than 0.05 percent

women less than 30 years of age. Among women age 30 and over, only 12 percent gave the same reason.

Another 21 percent of married women were menopausal or had undergone a hysterectomy. Eleven percent reported that contraception was either against their religion or that they or their husbands were against the use of family planning. A higher proportion of younger women (5 percent) reported that contraceptive use was against religious beliefs. A significant proportion of older women reported perceived sterility (11 percent), poor health (6 percent), and the inconvenience of family planning (6 percent) as the main reasons for not intending to use contraception in the future. Less than one percent of all women did not intend to use family planning methods due to lack of knowledge. The desire for more children as the most important reason for nonuse of family planning was markedly higher among rural (38 percent), compared to urban (24 percent) women.

6.7 Preferred Future Method of Family Planning

Women who said they intended to use a method in the future were asked to specify the method of family planning that they would like to use. From Table 6.13 it can be seen that 39 percent of the women who reported their intention to use contraception in the future said they preferred to use modern spacing methods, while 43 percent of women preferred female sterilization - the most preferred method - the pill was the second most preferred method (27 percent). Another 9 percent favoured traditional methods.

The choice of preferred methods was slightly different for those who intended to use them within 12 months and for those who intended to use them later, with female sterilization being the most preferred method among women in the latter group and the pill in the former group. The pattern of preferred future methods did not vary substantially by residence.

Table 6.13 Preferred method

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 whether they intend to use in the next 12 months or later, by residence, West Bengal, 1992

Preferred method	Timing of intended use: Next 12 months	Later	Unsure when	All women
URBAN				
Pill	35.5	17.5	*	26.7
Copper T/IUD	5.1	2.1	*	3.7
Injection	10.2	--	*	5.5
Condom	5.1	--	*	3.7
Female sterilization	23.1	55.3	*	37.5
Male sterilization	--	--	*	--
Periodic abstinence	7.3	8.4	*	7.6
Withdrawal	--	2.1	*	0.9
Other	10.2	9.7	*	10.6
Unsure	3.4	4.8	*	3.9
Total percent	100.0	100.0	100.0	100.0
Number	84	67	5	156
RURAL				
Pill	35.8	18.9	(3.6)	27.6
Copper T/IUD	2.0	1.0	(4.4)	1.7
Injection	7.3	7.0	(--)	6.9
Condom	3.8	0.6	(--)	2.3
Female sterilization	30.0	62.7	(52.6)	44.3
Male sterilization	--	0.8	--	0.3
Periodic abstinence	10.4	2.9	(4.4)	7.0
Withdrawal	2.5	1.6	(--)	2.0
Other	4.7	2.4	(18.5)	4.3
Unsure	3.6	2.2	(16.7)	3.6
Total percent	100.0	100.0	100.0	100.0
Number	355	267	25	647

Table 6.13 Preferred method (Contd.)

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 whether they intend to use in the next 12 months or later, by residence, West Bengal, 1992

Preferred method	Timing of intended use: Next 12 months	Later	Unsure when	All women
TOTAL				
Pill	35.8	18.6	(3.0)	27.4
Copper T/IUD	2.6	1.2	(3.7)	2.0
Injection	7.8	5.6	(--)	6.6
Condom	4.0	0.5	(4.8)	2.6
Female sterilization	28.7	61.2	(50.5)	43.0
Male sterilization	--	0.7	(--)	0.3
Periodic abstinence	9.8	4.0	(3.7)	7.1
Withdrawal	2.0	1.7	(--)	1.8
Other	5.7	3.9	(20.3)	5.5
Unsure	3.6	2.7	(14.0)	3.6
Total percent	100.0	100.0	100.0	100.0
Number	438	335	30	803
BACKWARD DISTRICTS				
Pill	33.0	15.9	*	24.7
Copper T/IUD	0.8	1.0	*	0.9
Injection	13.3	10.0	*	11.1
Condom	2.5	1.0	*	1.7
Female sterilization	28.1	59.5	*	42.5
Male sterilization	--	--	*	--
Periodic abstinence	14.0	5.0	*	9.4
Withdrawal	4.1	2.0	*	3.0
Other	2.5	3.9	*	4.2
Unsure	1.7	1.9	*	2.5
Total percent	100.0	100.0	100.0	100.0
Number	54	45	6	105

() Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases
-- Less than 0.05 percent

The contraceptive method mix that intended future users say they would prefer is quite different from the methods actually selected by current users. The modern spacing methods are being used by only 12 percent of current users of any methods (Table 6.4), but 39 percent of intended future users say they would like to use them. These results suggest that the potential demand for modern spacing methods is strong and that the family welfare programme should pay increasing attention to effective spacing methods as part of a balanced programme to satisfy the contraceptive needs of women in West Bengal.

6.8 Exposure to Family Planning Messages on Radio and Television

The family welfare programme continues to use the electronic mass media to promote family planning. In order to explore the spread of family planning messages through various mass media, respondents were asked whether they had heard such messages on radio and/or

television in the past month. Table 6.14 shows the variation in the percentage of women exposed to family planning messages according to various background characteristics. The effort to disseminate family planning information through the electronic mass media has largely failed, if evaluated solely on the basis of reported exposure to messages through radio and television, as only 15 percent of ever-married women in West Bengal heard messages on the radio, 7 percent on television, and only 12 percent through both media channels. This is not surprising since only 19 percent of households in West Bengal own televisions, and fewer than half (44 percent) own radios (Table 3.9).

Urban-rural differentials in media coverage were substantial. The percentage of women exposed to family planning messages on radio or television was 43 and 31 in the urban and rural areas, respectively. Television was relatively more prominent in disseminating family planning messages in urban areas, and radio more prominent in rural areas. The situation in backward districts was similar to that in the rural areas of the state.

Table 6.14 Exposure to family planning messages on radio and television

Percent distribution of ever-married women by whether they have heard a radio or television message about family planning in the month prior to the interview, according to selected background characteristics, West Bengal, 1992

Background characteristic	Heard family planning message on radio or television					Total percent	Number
	Neither	Radio only	Television only	Both	Missing		
Age							
13-19	66.8	19.4	5.3	8.6	--	100.0	533
20-29	65.0	15.5	6.1	13.5	--	100.0	1697
30-39	65.3	14.0	8.3	12.3	--	100.0	1282
40-49	67.5	13.0	7.4	12.2	--	100.0	809
Residence							
Urban	57.4	5.4	16.2	21.0	--	100.0	1180
Rural	68.9	18.7	3.4	9.0	--	100.0	3142
Backward districts	69.5	17.6	4.2	8.6	0.1	100.0	464
Education							
Illiterate	77.6	15.2	2.0	5.2	--	100.0	2185
Lit., < middle complete	62.0	17.3	7.9	12.7	--	100.0	1278
Middle school complete	46.2	16.1	12.8	24.9	--	100.0	444
High school and above	35.9	6.2	23.0	34.9	--	100.0	415
Religion							
Hindu	65.2	14.4	7.6	12.7	--	100.0	3292
Muslim	67.9	17.7	4.4	10.0	--	100.0	939
Other	64.8	10.1	5.2	19.9	--	100.0	91
Caste/tribe							
Scheduled caste	74.2	14.2	2.0	9.7	--	100.0	408
Scheduled tribe	81.0	11.2	2.1	5.6	--	100.0	221
Other	63.9	15.4	7.7	13.0	--	100.0	3693
Use of contraception							
Ever use	60.5	16.6	8.2	14.7	--	100.0	2934
Never use	77.0	11.7	4.1	7.2	--	100.0	1388
Total	65.8	15.0	6.9	12.3	--	100.0	4322

-- Less than 0.05 percent

Women's exposure to family planning messages on television is positively correlated with educational attainment. Only 7 percent of illiterate respondents reported that they had heard a family planning message on television, whereas 58 percent of women with a high school education had heard such a message.

Differences in the extent of exposure to family planning messages between Hindus and Muslims were negligible. However, the percentage who had heard a family planning message on radio or television was lower among scheduled caste and scheduled tribe women than among those in the other category.

6.9 Acceptability of Family Planning Messages on Radio and Television

Whether or not women had heard a family planning message on the radio or television, they were asked whether they considered it acceptable for family planning information to be aired on radio or television. Eighty-three percent of the women said it is acceptable to have family planning messages on radio and television, while only 6 percent said it is not acceptable and the rest (11 percent) were not sure (Table 6.15). Older women (over age 39), illiterate women, and Muslim women were less likely than others to think it is acceptable to broadcast family planning messages on radio or television. Education appears to play an important role in positive attitudes toward the acceptability of family planning messages on the electronic media; only 77 percent of illiterate women think media messages are acceptable, compared with 88 percent of literate women having completed less than a middle school education, 94 percent of women having completed middle school, and 89 percent with high school education.

6.10 Discussion of Family Planning Among Couples

Among non-sterilized couples, all currently married women who knew a contraceptive method were asked how often they had talked with their husbands about family planning in the past year. The extent of such communication was low in the state. Overall, 41 percent of the women said they had not discussed this topic with their husbands at all in the previous year (Table 6.16). Thirty-six percent discussed family planning once or twice and 23 percent report having discussed it more often. A relatively high percentage of women age 20-24 (71 percent) reported that they had discussed family planning with their husbands. Women in the late reproductive years were least likely to have communicated with their husbands on family planning. Substantial differences were also observed according to residence, respondent's level of education, her husband's education, and the ever-use of family planning. Somewhat surprisingly, women in urban areas were less likely to have discussed family planning with their husbands than those in rural areas (52 percent compared with 62 percent). The extent of husband-wife communication about family planning was positively related to the educational attainment of women, as well as the education of their husbands. For example, 66 percent of women who completed high school had discussed family planning with their husbands compared with 53 percent of illiterate women. The pattern of interspousal communication according to husband's education level, however, was not as direct, although generally communication increased with education.

Husband-wife communication about family planning was associated with actual use of a method. A majority (69 percent) of the women who had ever-used a family planning method

Table 6.15 Acceptability of media messages on family planning

Percent distribution of ever-married women by their attitudes towards having messages about family planning on the radio or television, by selected background characteristics, West Bengal, 1992

Background characteristic	Acceptability of media messages				
	Acceptable	Not acceptable	Unsure	Total percent	Number of women
Age					
13-14	(81.1)	(13.5)	(5.4)	100.0	35
15-19	84.2	4.5	11.4	100.0	499
20-24	86.4	3.8	9.8	100.0	832
25-29	84.1	5.5	10.3	100.0	865
30-34	83.1	5.9	11.0	100.0	667
35-39	84.2	6.2	9.6	100.0	616
40-44	80.9	7.4	11.7	100.0	459
45-49	76.8	9.4	13.8	100.0	350
Residence					
Urban	80.3	10.5	9.2	100.0	1180
Rural	84.6	4.0	11.3	100.0	3142
Backward districts	80.7	5.5	13.8	100.0	464
Education					
Illiterate	77.4	5.6	17.0	100.0	2185
Lit., < middle complete	88.4	5.1	6.5	100.0	1278
Middle school complete	93.5	5.5	1.0	100.0	444
High school and above	89.2	9.7	1.0	100.0	415
Religion					
Hindu	84.7	5.3	10.0	100.0	3292
Muslim	79.2	7.8	13.0	100.0	939
Other	83.0	4.3	12.6	100.0	91
Caste/tribe					
Scheduled caste	78.4	3.2	18.3	100.0	408
Scheduled tribe	78.8	2.4	18.8	100.0	221
Other	84.3	6.3	9.4	100.0	3693
Total	83.5	5.8	10.7	100.0	4322

( ) Based on 25-49 unweighted cases

had discussed the topic with their husbands; 43 percent having discussed it once or twice and 26 percent having discussed it more often. Among those who had never used family planning, however, only 44 percent had discussed family planning with their husbands in the past year. Sixty-nine percent of women belonging to scheduled castes reported discussions of family planning with their husbands, compared with 54 percent of scheduled tribes and 58 percent of the "other" category.

Table 6.16 Discussion of family planning with husband

Percent distribution of non-sterilized currently married women knowing a contraceptive method by the number of times they discussed family planning with their husbands in the past year, according to selected background characteristics, West Bengal, 1992

Background characteristic	Number of times family planning discussed				Number of women
	Never	Once or twice	More often	Total percent	
Age					
13-14	(50.8)	(34.0)	(15.2)	100.0	33
15-19	36.7	41.1	22.2	100.0	467
20-24	29.2	44.8	26.0	100.0	675
25-29	32.1	42.0	25.9	100.0	574
30-34	41.3	35.0	23.7	100.0	335
35-39	47.6	28.5	24.0	100.0	262
40-44	69.4	15.6	15.0	100.0	213
45-49	82.0	12.9	5.1	100.0	185
Residence					
Urban	48.1	33.4	18.4	100.0	803
Rural	38.4	37.5	24.1	100.0	1940
Backward districts	37.9	29.3	32.9	100.0	323
Respondent's education					
Illiterate	46.8	33.5	19.8	100.0	1266
Lit., < middle complete	39.1	37.5	23.4	100.0	796
Middle school complete	33.3	39.2	27.5	100.0	322
High school and above	33.8	40.8	25.4	100.0	359
Religion					
Hindu	40.1	38.4	21.4	100.0	1985
Muslim	44.0	29.5	26.5	100.0	706
Other	47.2	45.7	7.1	100.0	53
Caste/tribe					
Scheduled caste	31.1	45.2	23.6	100.0	235
Scheduled tribe	46.2	36.0	17.8	100.0	121
Other	42.0	35.4	22.6	100.0	2387
Use of contraception					
Ever used	30.8	42.8	26.4	100.0	1597
Never used	55.8	27.3	17.0	100.0	1147
Husband's education					
Illiterate	42.6	35.2	22.2	100.0	785
Lit., < primary complete	45.2	34.4	20.4	100.0	523
Primary school complete	44.9	36.0	19.1	100.0	351
Middle school complete	36.5	40.2	23.4	100.0	380
High school complete	40.0	34.3	25.8	100.0	355
Above high school	35.0	40.1	24.9	100.0	345
Total	41.3	36.3	22.5	100.0	2744

Note: Table excludes women who are sterilized or whose husbands are sterilized. Total includes 4 women with missing information on husband's education, who are not shown separately.
() Based on 25-49 unweighted cases

6.11 Attitudes of Couples Toward Family Planning

Information on attitudes toward family planning was obtained by asking women whether they and their husbands approved or disapproved of couples using a method to delay or avoid pregnancy. Table 6.17 shows the degree of concurrence between women's attitudes and those of their husbands. In reporting on the attitudes of her husband toward family planning, the wife's response may or may not accurately reflect the husband's attitudes. The wife could be projecting her own attitudes to the husband's, or her response could be based on the prevailing stereotypes of husband's attitudes in general across a range of issues. Even if the wife's answer actually agreed with her husband's, real husband-wife "consensus" on attitudes toward family planning, as opposed to "concordance," or chance agreement, is not likely to occur without some level of husband-wife communication about family planning, covered in the previous section. The wife's perception of her husband's attitudes, however, is still an important indicator of the couple's propensity to initiate contraceptive use.

Table 6.17 shows that 84 percent of currently married, nonsterilized women who knew of a contraceptive method approved of family planning use while only 16 percent disapproved. While 7 percent of women said they did not know their husband's attitude, 21 percent thought their husbands disapproved of family planning. There is a substantial amount of concurrence between individual husbands and wives regarding the approval of family planning. Seventy percent of female respondents reported that both they and their husbands approved of family planning while only 12 percent said they both disapproved. The latter couples constitute a challenge for the family welfare programme since neither spouse represents a potential agent of attitudinal change for the other.

The percentage of women approving family planning decreases slowly but steadily with their age. Urban women are slightly less likely to approve of family planning than rural women (83 percent compared with 84 percent), but "joint" approval of family planning by both husband and wife was slightly higher among urban couples: 72 and 69 percent in urban and rural areas, respectively. Rural women were less likely to know their husband's attitude than urban women, even though the reported incidence of interspousal communication about family planning was higher in rural areas.

Education of women as well as their husbands is an important determinant of the perceived approval of family planning by both husband and wife. Overall, 76 percent of illiterate women approved of family planning compared with 96 percent of women who had completed high school. Approval by both husband and wife was the lowest (57 percent) among illiterate women. A similar relationship was observed with the level of husband's education. As education of the husband increased, the proportion of women who reported that both they and their husbands approve of family planning increased from 59 percent in the case of illiteracy to 90 percent for wives of husbands educated above the high school level.

The approval of family planning was lower among Muslim (78 percent), compared to Hindu women (86 percent). Approval did not substantially vary according to caste or tribe. More than 80 percent of the women who had ever-used family planning reported that both they and their husbands approve of family planning. Among the never users, however, 28 percent

Table 6.17 Attitudes of couples toward family planning

For non-sterilized currently married women who know of a contraceptive method, the percentage who approve of family planning by their perception of their husband's attitude, according to selected background characteristics, West Bengal, 1992

Background characteristic	Respondent approves			Respondent disapproves			Respondent unsure	Total percent	Number of women
	Husband approves	Husband disapproves	Husband's attitude unknown[1]	Husband approves	Husband disapproves	Husband's attitude unknown[1]			
Respondent's age									
13-14	(52.2)	(1.4)	(20.8)	(--)	(11.1)	(14.5)	(--)	100.0	33
15-19	71.5	7.3	8.0	1.6	8.0	3.3	0.5	100.0	467
20-24	76.7	9.3	3.8	1.0	6.4	2.4	0.4	100.0	675
25-29	73.6	9.3	3.1	1.6	10.8	0.9	0.7	100.0	574
30-34	72.2	9.2	1.6	1.0	14.5	0.5	1.1	100.0	335
35-39	67.9	11.0	3.2	2.7	14.0	1.3	--	100.0	262
40-44	53.4	12.5	3.8	2.8	24.5	3.0	--	100.0	213
45-49	51.3	11.1	8.4	1.3	24.8	3.1	--	100.0	185
Residence									
Urban	71.8	8.3	2.7	2.1	13.8	1.1	0.2	100.0	803
Rural	69.2	9.8	5.3	1.3	11.2	2.6	0.6	100.0	1940
Backward districts	64.9	10.4	5.7	1.7	14.4	2.6	0.3	100.0	323
Respondent's education									
Illiterate	57.1	12.8	6.1	2.0	18.5	3.2	0.4	100.0	1266
Lit., < middle complete	74.0	9.1	4.1	1.6	8.9	1.9	0.3	100.0	796
Middle school complete	85.5	4.0	3.4	0.9	4.5	0.7	1.0	100.0	322
High school and above	92.3	2.9	1.0	0.4	2.8	0.3	0.3	100.0	359
Religion									
Hindu	72.7	8.9	4.3	1.4	10.4	1.9	0.5	100.0	1985
Muslim	61.2	11.6	5.1	2.1	17.0	2.7	0.4	100.0	706
Other	84.2	--	7.9	--	3.8	4.1	--	100.0	53
Caste/tribe									
Scheduled caste	68.4	7.3	6.4	1.1	14.3	2.0	0.5	100.0	235
Scheduled tribe	62.7	8.3	11.1	1.5	11.5	4.9	--	100.0	121
Other	70.5	9.6	4.0	1.6	11.8	2.0	0.5	100.0	2387
Use of contraception									
Ever used	84.0	6.9	1.6	1.5	5.1	0.5	0.5	100.0	1597
Never used	50.4	12.9	8.7	1.6	21.6	4.5	0.4	100.0	1147
Family planning discussed with husband in last year									
Never	47.8	13.7	9.7	2.1	21.5	4.9	0.4	100.0	1132
Once or twice	84.7	7.2	0.9	1.2	5.1	0.4	0.5	100.0	995
More often	86.9	4.9	1.0	1.2	5.7	--	0.4	100.0	616
Husband's education									
Illiterate	59.1	12.7	6.7	1.6	16.0	3.8	0.2	100.0	785
Lit., <primary complete	61.4	12.0	5.8	1.7	16.4	2.0	0.6	100.0	523
Primary school complete	68.7	10.1	3.0	2.1	12.2	3.2	0.6	100.0	351
Middle school complete	77.0	9.1	3.3	1.5	8.2	0.3	0.6	100.0	380
High school complete	81.4	3.6	4.0	1.2	7.8	1.1	0.7	100.0	355
Above high school	89.7	3.4	1.0	0.8	4.3	0.6	0.1	100.0	345
Total	70.0	9.4	4.5	1.5	12.0	2.1	0.4	100.0	2744

Note: Table excludes women who are sterilized or whose husbands are sterilized. Total includes 4 women with missing information on husband's education, who are not shown separately.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Respondent does not know her husband's attitude

of women report not approving of family planning and 35 percent mentioned that their husbands do not approve of family planning.

Table 6.17 also reveals that as expected, "joint" approval of family planning by both the husband and wife is positively related to the number of times family planning was discussed between the two in the past year, with the largest difference occurring between couples who never discussed family planning and those who discussed it at least once. Probably the most striking correlate of discussing family planning, however, is the wife's knowledge of her husband's attitudes. The percentage of women who are ignorant of their husband's attitudes is greatest among those who have not discussed family planning (15 percent) and is lowest among those who have discussed it more than twice (1 percent).

CHAPTER 7

FERTILITY PREFERENCES

An important component of family planning is the idea of reproductive or fertility preferences. In the NFHS the respondent was asked questions about her future childbearing intentions, including whether another child was desired, and if yes, how long the respondent would prefer to wait until the birth of another child. The respondent was also asked about how many children she would want in her lifetime if she could imagine starting her reproductive life over again. Further, there is an attempt to determine whether the respondent has any preferences concerning the sex of the next child, and on the sex composition of her children if she could start over. Together, these questions elicit information on desire for more children, potential need for family planning services, ideal number of children, and sex preference.

Answers to the above, coupled with the information collected on current use of contraception, can help policymakers and family planning programme managers ascertain the relative proportions of women who wish to terminate their childbearing activities, and those who wish to prolong the period between births. Thus the NFHS was also able to specify measures of *unmet need* for family planning services. All of these measures, however, are based on women's answers at one point in time to highly subjective questions, and the value of these responses for predicting the actual fertility behaviour of individual women in the future is questionable.

The interpretation of survey data on fertility preferences has been the subject of much controversy, with the criticism generally focusing on five points: (1) in part depending on whether the concept of fertility control is "within the calculus of conscious choice," attitudes toward childbearing may be either largely absent, or incomplete; (2) attitudes of women toward childbearing are associated with the life cycle, and thus are likely to change over time; (3) the reported attitudes may in fact be held with little conviction; (4) responses by individual women may not accurately reflect the complex process of childbearing decision making in the household or community, where such basic factors as status of women, husband's attitudes, husband-wife communication, social pressure from extended family members, and women's reproductive health are involved; and (5) stated reproductive preferences for limiting or spacing births are irrelevant unless the respondent has the means to do so. Nevertheless, in the aggregate, data on fertility preferences can lead to useful indicators of general attitudes and the possible future course of fertility.

7.1 Desire for More Children

In the NFHS, currently married women were asked "Would you like to have another child or would you prefer not to have any more children?" Women who did not yet have any children were asked whether or not they wanted to have any children. If a woman was pregnant, she was asked whether or not she wanted another child after the one she was expecting. Women expressing desire for another child were then asked about the preferred timing and sex of their next child.

Table 7.1 and Figure 7.1 provide information about the fertility preferences of currently married women. Overall, only 31 percent of women say they want another child at some time in the future and two-thirds of these women say they would like to wait at least two years before having their next birth. Only 10 percent of women say they would like another child soon (that is, within two years). Fewer than 1 percent of women express the attitude that this matter is "up to God". About 35 percent of women say they do not want any more children and another 31 percent of women (or their husbands) are sterilized, so that they cannot have any more children.

Table 7.1 Fertility preferences

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children and residence, West Bengal, 1992

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
URBAN								
Desire for additional child								
Have another soon[2]	51.7	9.8	3.3	2.5	--	(--)	--	8.4
Have another later[3]	30.4	37.7	10.1	6.4	2.3	(--)	--	16.3
Have another, undecided when	3.3	0.5	0.5	--	--	(--)	--	0.6
Undecided	--	2.2	1.0	--	--	(--)	--	0.8
Up to God	1.5	--	0.5	0.8	--	(--)	--	0.4
Want no more	4.4	45.4	58.0	38.2	49.7	(34.1)	52.3	44.5
Sterilized	2.9	1.7	23.6	50.6	44.2	(63.1)	35.1	25.3
Declared infecund	5.8	2.7	3.0	1.3	3.8	(2.8)	12.5	3.7
Missing	--	--	--	--	--	(--)	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	98	278	297	168	124	51	79	1096
Preferred sex of additional child								
Boy	31.6	43.1	(60.3)	*	*	NC	NC	44.4
Girl	13.6	28.0	(17.1)	*	*	NC	NC	20.7
Doesn't matter	49.7	21.5	(7.9)	*	*	NC	NC	27.1
Up to God	5.1	7.4	(14.7)	*	*	NC	NC	7.9
Total percent	100.0	100.0	100.0	100.0	100.0	NC	NC	100.0
Number wanting more	84	134	41	15	3	0	0	277
RURAL								
Desire for additional child								
Have another soon[2]	60.1	17.3	4.4	1.4	0.3	1.7	0.4	10.5
Have another later[3]	28.5	59.5	22.4	10.4	5.7	3.2	1.2	22.1
Have another, undecided when	2.5	1.8	0.5	0.2	0.3	0.5	0.4	0.9
Undecided	0.3	2.0	0.5	0.5	--	0.2	0.2	0.7
Up to God	2.3	0.6	0.9	0.9	1.0	0.6	1.1	1.0
Want no more	2.3	11.8	37.2	30.5	38.0	48.1	60.9	30.7
Sterilized	1.7	5.9	33.6	55.6	52.5	44.8	29.0	32.5
Declared infecund	2.3	0.8	0.4	0.5	2.2	0.8	6.7	1.5
Missing	--	0.2	--	--	--	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	281	551	645	583	357	239	252	2909
Preferred sex of additional child								
Boy	56.9	48.5	69.2	76.6	(51.4)	*	*	56.6
Girl	3.3	24.4	12.3	14.8	(33.5)	*	*	15.8
Doesn't matter	29.8	17.3	8.4	1.6	(4.9)	*	*	17.9
Up to God	10.0	9.8	10.2	7.0	(10.1)	*	*	9.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number wanting more	256	433	176	70	22	13	5	976

Table 7.1 Fertility preferences (Contd.)

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children and residence, West Bengal, 1992

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
TOTAL								
Desire for additional child								
Have another soon[2]	57.9	14.8	4.1	1.6	0.2	1.4	0.3	10.0
Have another later[3]	29.0	52.2	18.5	9.5	4.8	2.7	0.9	20.5
Have another, undecided when	2.7	1.4	0.5	0.2	0.2	0.4	0.3	0.8
Undecided	0.2	2.1	0.7	0.4	--	0.2	0.1	0.7
Up to God	2.1	0.4	0.8	0.9	0.7	0.5	0.8	0.8
Want no more	2.9	23.1	43.7	32.3	41.0	45.6	58.8	34.5
Sterilized	2.0	4.5	30.5	54.5	50.4	48.0	30.5	30.6
Declared infecund	3.2	1.4	1.2	0.7	2.6	1.2	8.1	2.1
Missing	--	0.1	--	--	--	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	379	829	942	752	481	290	331	4004
Preferred sex of additional child								
Boy	50.7	47.2	67.5	75.8	(56.9)	*	*	53.9
Girl	5.8	25.3	13.2	13.9	(29.7)	*	*	16.9
Doesn't matter	34.7	18.3	8.3	3.0	(4.4)	*	*	19.9
Up to God	8.8	9.3	11.0	7.4	(9.0)	*	*	9.3
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number wanting more	339	567	218	85	25	13	5	1252
BACKWARD DISTRICTS								
Desire for additional child								
Have another soon[2]	59.1	13.3	5.0	1.9	1.7	2.4	--	10.1
Have another later[3]	26.2	64.6	30.7	15.4	9.5	6.1	1.7	25.5
Have another, undecided when	7.3	2.9	--	1.9	--	--	--	1.6
Undecided	2.1	2.3	1.5	1.2	--	1.2	0.9	1.4
Up to God	2.1	1.7	3.0	1.2	2.6	1.2	5.2	2.4
Want no more	--	8.9	33.7	38.3	48.6	57.8	64.6	34.3
Sterilized	1.1	4.6	25.2	38.3	34.3	28.9	22.4	22.3
Declared infecund	2.1	1.7	1.0	1.8	3.4	2.4	5.2	2.3
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	43	78	91	73	52	37	52	425
Preferred sex of additional child								
Boy	46.6	42.9	51.4	(61.1)	*	*	*	47.3
Girl	4.6	19.3	19.5	(19.4)	*	*	*	15.3
Doesn't matter	28.2	24.2	9.7	(--)	*	*	*	19.2
Up to God	20.5	13.6	19.4	(19.4)	*	*	*	18.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number wanting more	39	63	32	14	6	3	1	158

NC: Not calculated because there are no cases on which to base a percentage.
() Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases
-- Less than 0.05 percent
[1]Includes current pregnancy, if any
[2]Wants next birth within 2 years
[3]Wants to delay next birth for 2 or more years

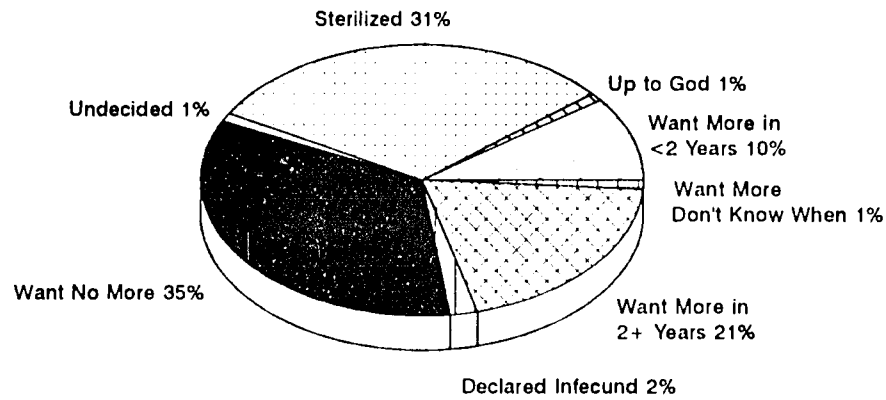
These two groups together constitute two-thirds of all currently married women in West Bengal. In this chapter, it is assumed that women who are sterilized (or whose husbands are sterilized) do not want any more children. Some women, however, may regret that the sterilization took place and wish to have another child, an issue which can be further analyzed, because women who are sterilized (or whose husbands are sterilized) were asked a question on whether they regret having undergone the sterilization procedure, and, if yes, the reasons for their regret.

The analysis of this information, which is not shown in the table, indicates that 15 percent of all women who were sterilized (or whose husbands were sterilized) regretted having undergone the procedure. It should be noted that this 15 percent actually consists of 170 women in the West Bengal sample. Just over half (55 percent) of these women mentioned side effects as the reason for their regret, with another 32 percent saying they want another child, and 2 percent saying their husbands want another child. Eight percent of women with sterilization regret report wanting another child to replace a child who had died. Therefore, the assumption that women who were sterilized (or whose husbands were sterilized) want no more children is generally supported by the data, and the percentage with regret will only slightly underestimate preferences to have another child, and slightly overestimate the desire to stop childbearing.

Overall, 86 percent of women want to either space their next birth (that is, they want to delay their next birth for two or more years or they want another child but are undecided when) or stop having children altogether (that is, they want no more children or they are sterilized). This percentage varies little between urban and rural areas and backward districts. Among women who want another child, there is a strong preference for having a son as the next child. More than half (54 percent) say they want a son, 17 percent express a desire for a daughter, and the rest say that the sex of the child does not matter (20 percent) or that it is "up to God" (9 percent). The desire for a son is particularly strong in rural areas and among women having two or more children. Women who do not have any children are unlikely to want a daughter for their first child. Among nulliparous women, only 6 percent express a desire for a daughter, 51 percent say they want a son, 35 percent stated that the sex of the child did not matter, and the remaining (9 percent) said that the matter was "up to God."

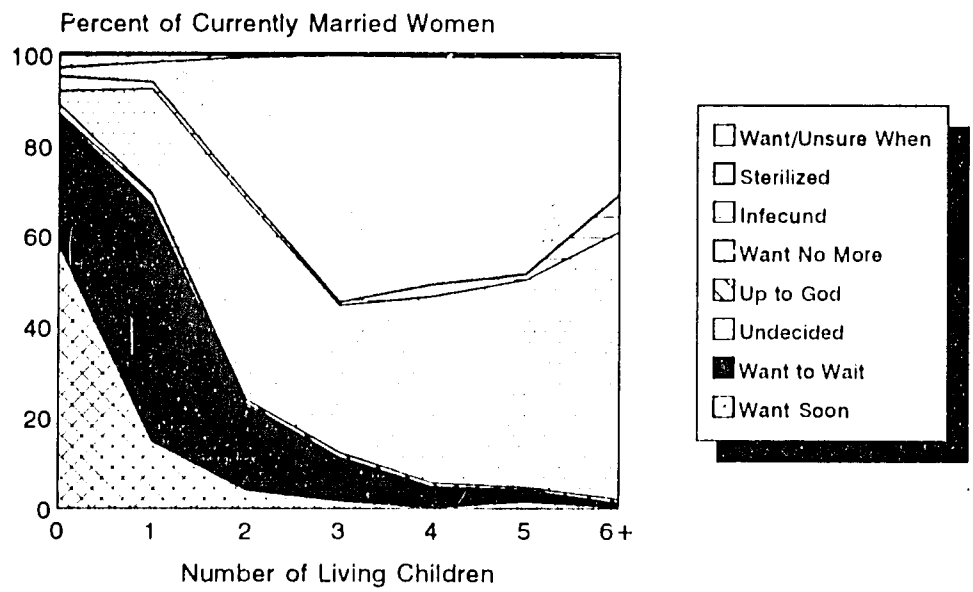
As expected, the desire for more children declines rapidly as the number of children increases (Table 7.1 and Figure 7.2). Ninety percent of women with no children say they want a child - only 3 percent say they do not want any children. The proportion who want another child drops to 23 percent for women who have two living children and only 11 percent for those with three living children. The desire to have a child within two years drops even more rapidly, from 58 percent for women without any living children to 4 percent for women with two living children. The desire for spacing children is strong for women who have one child (52 percent), and declines to 19 percent for those with two children, and less than 10 percent for those with three. About 45 percent of currently married women in West Bengal having fewer than two children state a preference for spacing their next birth. It is noteworthy that about one-third of women with no children would like to wait at least two years before having their first birth. And although the desire to limit childbearing is stronger than the desire to space, perhaps this is partially a reflection of the heavy emphasis on sterilization in the Indian family planning programme. The strong focus of the family planning programme on permanent methods of contraception is evidently not satisfying the needs of a substantial number of low-parity women

Figure 7.1
Fertility Preferences Among Currently Married Women Age 13-49



NFHS, West Bengal, 1992

Figure 7.2
Fertility Preferences by Number of Living Children



NFHS, West Bengal, 1992

in West Bengal who wish to space. Further encouragement of spacing methods for women who want more children is likely to lower overall fertility and population growth, and increase the health benefits to both mothers and their children.

The age pattern of fertility preferences shown in Table 7.2 is similar to the pattern by number of children discussed above. The majority of currently married women age 15-19 want to space their next birth, but even among women age 20-24, 41 percent wish to stop

Table 7.2 Fertility preferences by age

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to age and residence, West Bengal, 1992

Desire for children	Current age								
	13-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
URBAN									
Desire for additional child									
Have another soon[1]	*	14.5	13.6	9.3	9.5	7.3	1.1	3.9	8.4
Have another later[2]	*	67.6	36.6	20.8	5.9	0.8	--	--	16.3
Have another, undecided when	*	3.5	--	--	0.7	--	1.1	--	0.6
Undecided	*	--	2.2	1.2	0.7	--	--	1.3	0.8
Up to God	*	--	1.0	0.6	--	0.8	--	--	0.4
Want no more	*	12.7	35.3	44.5	49.1	47.4	57.2	55.0	44.5
Sterilized	*	1.7	11.4	22.5	32.6	40.3	31.4	24.5	25.3
Declared infecund	*	--	--	1.2	1.5	3.4	9.3	15.3	3.7
Missing	*	--	--	--	--	--	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	5	82	149	245	194	181	131	108	1096
Preferred sex of additional child									
Boy	*	23.6	61.0	53.2	*	*	*	*	44.4
Girl	*	28.5	13.8	21.2	*	*	*	*	20.7
Doesn't matter	*	33.6	15.2	21.8	*	*	*	*	27.1
Up to God	*	14.3	10.0	3.9	*	*	*	*	7.9
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number wanting more	5	70	75	74	31	15	3	4	277
RURAL									
Desire for additional child									
Have another soon[1]	(20.0)	25.1	16.6	9.2	5.0	2.2	3.2	0.6	10.5
Have another later[2]	(57.0)	59.3	39.9	16.8	5.8	1.4	0.8	--	22.1
Have another, undecided when	(5.2)	2.3	1.4	0.5	0.1	0.4	--	--	0.9
Undecided	(1.5)	1.7	0.6	1.2	0.1	0.1	--	0.2	0.7
Up to God	(8.9)	1.2	1.7	0.8	0.5	0.7	0.4	--	1.0
Want no more	(7.4)	8.8	23.4	38.4	37.8	35.5	38.7	46.7	30.7
Sterilized	(--)	1.3	16.3	32.7	50.6	57.9	53.4	39.9	32.5
Declared infecund	(--)	--	0.1	0.4	--	1.8	3.6	12.6	1.5
Missing	(--)	0.3	--	--	--	--	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	30	400	653	580	414	374	271	187	2909
Preferred sex of additional child									
Boy	(57.8)	50.6	58.4	63.2	61.6	*	*	*	56.6
Girl	(6.3)	15.7	16.9	15.3	11.2	*	*	*	15.8
Doesn't matter	(17.9)	22.2	15.9	14.2	16.0	*	*	*	17.9
Up to God	(17.9)	11.6	8.7	7.2	11.2	*	*	*	9.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number wanting more	24	347	378	154	45	15	11	1	976

Table 7.2 Fertility preferences by age (Contd.)

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to age and residence, West Bengal, 1992

Desire for children	Current age								Total
	13-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
TOTAL									
Desire for additional child									
Have another soon[1]	(17.0)	23.3	16.0	9.2	6.5	3.9	2.5	1.8	10.0
Have another later[2]	(62.1)	60.7	39.3	18.0	5.8	1.2	0.5	--	20.5
Have another/undecided when	(5.7)	2.5	1.2	0.3	0.3	0.3	0.4	--	0.8
Undecided	(1.3)	1.4	0.9	1.2	0.3	0.1	--	0.6	0.7
Up to God	(7.6)	1.0	1.6	0.7	0.4	0.7	0.3	--	0.8
Want no more	(6.3)	9.4	25.6	40.2	41.4	39.4	44.7	49.7	34.5
Sterilized	(--)	1.4	15.4	29.7	44.9	52.2	46.2	34.3	30.6
Declared infecund	(--)	--	0.1	0.6	0.5	2.3	5.4	13.6	2.1
Missing	(--)	0.2	--	--	--	--	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	35	482	802	825	608	555	402	295	4004
Preferred sex of additional child									
Boy	(62.2)	46.1	58.8	60.0	49.4	(50.7)	*	*	53.9
Girl	(5.2)	17.9	16.4	17.2	21.5	(10.4)	*	*	16.9
Up to God	(17.7)	24.1	15.8	16.7	22.5	(34.3)	*	*	19.9
Doesn't matter	(14.8)	12.0	9.0	6.1	6.6	(4.6)	*	*	9.3
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number wanting more	30	417	453	227	77	30	14	5	1252
BACKWARD DISTRICTS									
Desire for additional child									
Have another soon[1]	*	22.7	15.2	10.2	3.6	5.6	2.4	--	10.1
Have another later[2]	*	60.9	41.9	25.1	12.1	1.6	--	--	25.5
Have another/undecided when	*	4.3	2.0	0.5	0.7	0.8	--	--	1.6
Undecided	*	2.1	1.5	1.6	0.7	0.8	--	1.6	1.4
Up to God	*	0.7	5.1	1.6	3.6	2.4	--	--	2.4
Want no more	*	7.8	21.1	35.2	41.0	56.7	56.5	50.7	34.3
Sterilized	*	1.4	12.7	25.7	38.4	28.8	36.3	27.1	22.3
Declared infecund	*	--	0.5	--	--	3.2	4.7	20.6	2.3
Missing	*	--	--	--	--	--	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	5	63	89	84	63	56	37	28	425
Preferred sex of additional child									
Boy	*	43.6	52.9	41.7	*	*	*	NC	47.3
Girl	*	15.4	14.5	16.5	*	*	*	NC	15.3
Doesn't matter	*	24.0	14.6	19.4	*	*	*	NC	19.2
Up to God	*	17.0	18.0	22.5	*	*	*	NC	18.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	NC	100.0
Number wanting more	4	56	53	30	10	4	1	0	158

NC: Not computed because there are no cases on which to base a percentage
() Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases
-- Less than 0.05 percent
[1]Wants next birth within 2 years
[2]Wants to delay next birth for 2 or more years

childbearing, compared with 39 percent who want to space their next birth. By age 25-29 over two-thirds of women report wanting no more children.

Table 7.3 provides information about the desire to have no more children by selected background characteristics. As before, women who are sterilized (or whose husbands are

Table 7.3 Desire to have no more children by background characteristics

Percentage of currently married women who want no more children by number of living children and selected background characteristics, West Bengal, 1992

Background characteristic	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Age								
13-19	1.2	5.5	45.9	*	*	NC	NC	10.5
20-29	3.4	20.4	67.0	77.0	85.8	93.4	(90.7)	55.7
30-39	(15.0)	70.5	91.7	95.4	94.4	93.3	95.4	88.8
40-49	*	78.1	90.1	96.2	92.0	94.3	84.7	88.0
Residence								
Urban	7.3	47.1	81.6	88.9	93.9	(97.2)	87.5	69.9
Rural	4.1	17.8	70.8	86.1	90.6	92.9	89.9	63.3
Backward districts	1.1	13.5	58.9	76.6	82.9	86.7	87.0	56.6
Education								
Illiterate	3.0	17.8	63.8	81.0	89.4	93.7	86.7	65.4
Lit., < middle complete	6.5	16.0	73.2	92.7	94.0	93.0	95.6	65.2
Middle school complete	(2.6)	31.1	87.4	97.8	(100.0)	*	*	64.4
High school and above	8.4	57.2	91.5	*	*	NC	*	63.7
Religion								
Hindu	5.3	30.9	79.2	88.8	94.7	95.3	91.5	67.5
Muslim	4.0	11.8	45.6	75.9	80.7	89.5	87.4	55.9
Other	*	*	*	*	*	*	*	72.2
Caste/tribe								
Scheduled caste	(1.1)	11.1	70.0	82.9	(89.9)	(100.0)	(100.0)	63.5
Scheduled tribe	*	(14.9)	(62.7)	(81.8)	(94.1)	*	*	60.1
Other	5.3	29.7	75.3	87.5	91.4	93.3	88.4	65.5
Number of living sons[2]								
None	4.9	29.1	40.9	46.4	(68.3)	*	*	25.4
1	NA	33.9	80.3	87.2	96.3	50.0	(88.4)	70.1
2	NA	NA	85.1	94.3	93.6	92.2	94.9	91.9
3+	NA	NA	NA	93.8	89.6	95.7	89.0	92.2
Number of living daughters[2]								
None	4.9	33.9	85.1	93.8	(76.1)	*	*	41.8
1	NA	29.1	80.3	94.3	93.6	(97.9)	*	72.4
2	NA	NA	49.9	87.2	93.6	95.5	89.3	81.2
3+	NA	NA	NA	46.4	91.4	93.5	89.9	84.5
Total	4.9	27.6	74.2	86.7	91.4	93.7	89.3	65.1

Note: Women who have been sterilized, or whose husbands have been sterilized, are considered to want no more children.
NA: Not applicable
NC: Not calculated because there are no currently married women in this group
( ) Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases
[1]Includes current pregnancy, if any
[2]Excludes currently pregnant women

sterilized) are added to those who say they want no more children to derive this measure. Age and residence differences have already been discussed above. Educational attainment is strongly related to the desire to have no more children. Among women with one child, 18 percent of illiterates want no more children, compared with 57 percent of those having a high school education. This suggests that a one-child family is only acceptable to those women in West Bengal who have completed high school, but on the other hand, a clear majority of illiterate women with two children (64 percent) want no more. It is thus safe to say that, based on these data, a substantial majority of women in West Bengal would favour a two-child family.

In terms of religious groups, Muslims are least likely to want to stop childbearing, and comparing scheduled castes and scheduled tribes to the general population, the percentage wanting no more children is less among scheduled caste and scheduled tribe women with fewer than two children, but approximates the state average thereafter. There are no appreciable differentials between scheduled castes and scheduled tribes in West Bengal on these questions of reproductive preferences.

7.2 Need for Family Planning Services

Currently married women who say that they either 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 defined as having an *unmet need* for family planning. Current users of family planning methods are said to have a *met need* for family planning. The total demand for family planning is the sum of the met need and the unmet need for family planning. Table 7.4 shows the unmet need, met need and total demand for family planning, according to whether there is a need for spacing or limiting births. The table also contains detailed definitions of these concepts.

Overall, 17 percent of women in West Bengal have an unmet need for family planning, according to these definitions. The unmet need is slightly greater for spacing births (9 percent) than for limiting births (8 percent). Together with the 57 percent of currently married women who are using contraception, a total of 75 percent of currently married women have a demand for family planning[1]. If all of the women who say they want to space or limit their births were to use family planning, the contraceptive prevalence rate would increase from 57 percent to 75 percent of married women. This level of contraceptive use would translate to the idea that 77 percent of the total demand for family planning is being met by current programmes (last column of Table 7.4). If the current level of unmet need indicated in the table is assumed to reflect the needs of all currently married women age 13-49 in West Bengal, then about 4.4 million women in West Bengal have an unmet need for family planning.

[1] The percentage currently using contraceptive methods for West Bengal includes 20 percent of currently married women who use a traditional method. If only modern methods of contraception are considered, current use would decline from 58 percent to 38 percent of currently married women age 15-49. Adding the 17 percent of women having an unmet need for family planning to this revised figure of current use would bring the total demand for family planning to 55 percent of women.

Table 7.4 Need for family planning services

Percent of currently married women with unmet need, met need, and total demand for family planning (FP) services by selected background characteristics, West Bengal, 1992

Background characteristic	Unmet need for FP[1]			Met need-currently using[2]			Total demand for FP			Percent of need satisfied
	To space	To limit	Total	To space	To limit	Total	To space	To limit	Total	
Age										
13-14	(47.9)	(3.1)	(51.0)	(17.4)	(3.1)	(20.6)	(65.3)	(6.3)	(71.6)	(28.7)
15-19	30.2	1.9	32.0	23.3	3.9	27.2	53.5	5.8	59.2	45.9
20-24	16.9	5.2	22.0	20.4	24.5	44.9	37.2	29.7	66.9	67.1
25-29	7.3	9.6	16.8	11.3	52.6	63.9	18.6	62.2	80.8	79.2
30-34	2.3	12.4	14.7	3.8	68.5	72.3	6.1	80.9	87.1	83.1
35-39	0.4	11.0	11.3	1.7	74.8	76.5	2.1	85.8	87.9	87.1
40-44	0.5	9.0	9.5	--	66.3	66.3	0.5	75.3	75.8	87.4
45-49	--	6.2	6.2	0.5	47.4	47.9	0.5	53.6	54.1	88.5
Residence										
Urban	6.8	9.8	16.7	9.9	52.0	61.8	16.7	61.8	78.5	78.8
Rural	10.3	7.3	17.7	10.4	45.4	55.7	20.7	52.7	73.4	75.9
Backward districts	12.3	10.8	23.2	12.3	37.5	49.8	24.7	48.3	73.0	68.3
Education										
Illiterate	10.0	9.9	19.9	5.8	43.2	49.1	15.8	53.1	68.9	71.2
Lit.,< middle complete	10.5	6.2	16.7	11.7	49.9	61.6	22.3	56.0	78.3	78.7
Middle complete	8.5	5.8	14.3	15.0	51.9	66.9	23.5	57.7	81.2	82.4
High school and above	3.9	6.9	10.8	22.0	53.1	75.1	25.9	60.0	85.9	87.4
Religion										
Hindu	8.6	6.8	15.3	9.7	51.7	61.4	18.3	58.5	76.7	80.0
Muslim	12.5	12.4	24.9	12.2	30.8	43.0	24.8	43.2	67.9	63.3
Other	6.5	8.7	15.2	8.5	52.2	60.7	15.0	60.9	75.9	80.0
Caste/tribe										
Scheduled caste	11.3	6.7	18.0	9.1	45.4	54.5	20.4	52.1	72.5	75.2
Scheduled tribe	10.3	7.6	18.0	3.8	41.0	44.8	14.1	48.7	62.8	71.4
Other	9.1	8.2	17.3	10.7	47.7	58.4	19.8	55.9	75.7	77.2
Number of living children										
None	20.5	1.3	21.8	17.6	2.2	19.8	38.2	3.5	41.7	47.6
1	16.8	4.7	21.5	28.3	21.2	49.5	45.0	25.9	71.0	69.8
2	8.1	6.5	14.6	7.2	59.2	66.4	15.3	65.7	81.0	82.0
3	5.4	7.4	12.8	3.1	71.0	74.2	8.6	78.4	86.9	85.3
4	2.5	13.9	16.4	1.1	65.6	66.6	3.5	79.5	83.0	80.3
5	3.3	13.0	16.4	1.1	66.4	67.5	4.4	79.4	83.8	80.5
6+	1.7	19.5	21.2	0.1	50.2	50.4	1.9	69.7	71.6	70.4
Total	9.4	8.0	17.4	10.2	47.2	57.4	19.6	55.2	74.8	76.7

() Based on 25-49 unweighted cases

-- Less than 0.05 percent

[1] *Unmet need for spacing* includes pregnant women whose pregnancy was mistimed, amenorrhoeic women whose last birth was mistimed, and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and say they want to wait 2 or more years for their next birth. Also included in unmet need for spacing are women who are unsure whether they want another child or who want another child but are unsure when to have the birth. *Unmet need for limiting* refers to pregnant women whose pregnancy was unwanted, amenorrhoeic women whose last child was unwanted and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and who want no more children.

[2] *Using for spacing* refers to women who are using some method of family planning and say they want to have another child or are undecided whether to have another. *Using for limiting* refers to women who are using and who want no more children. Note that the specific methods used are not taken into account here.

The unmet need for limiting childbearing increases steadily until age 30-34 and decreases thereafter. The unmet need for spacing, on the other hand, is particularly strong for women under age 25. This is the relatively underserved segment of the population, largely because of the family planning programme's emphasis on the delivery of terminal, rather than temporary methods. Less than half (46 percent) of the total demand for family planning services is being met for married women age 15-19, increasing to 67 percent for women age 20-24 and 79 percent for women age 25-29.

The unmet need for family planning is exactly one percentage point higher in rural areas than in urban areas, and the total demand for family planning is slightly less likely to be satisfied in rural areas. In urban areas, 79 percent of the total demand is satisfied, compared with 76 percent in rural areas. The unmet need for family planning is inversely associated with educational attainment (20 percent for illiterates, decreasing to only 11 percent among high school graduates), but the total needs of illiterate women are least likely to be satisfied by current family planning programmes. Repeating this pattern, unmet need is higher for Muslims (25 percent) compared with Hindus (15 percent), although the percentage of need which is satisfied by current programmes is much higher among Hindus (80 percent) compared with Muslims (63 percent). Overall, however, the family planning programme in West Bengal manages to satisfy the majority of reported total demand for family planning services.

7.3 Ideal Number of Children

The analysis above has focused on the respondent's reproductive desires for the future, implicitly taking into account the number of sons and daughters that she already has. In determining the *ideal* number of children, on the other hand, the respondent was asked to state the number of children she would like to have if she could imagine starting her reproductive life over again. In the NFHS, women who have no children were asked, "If you could choose exactly the number of children to have in your whole life, how many would that be?" Women who already had children were asked, "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?" Some women had difficulty answering this hypothetical question and it often had to be repeated to ensure that the respondent fully understood the question. Nevertheless, 91 percent of respondents were able to give a numerical response when asked for their ideal number of children.

Table 7.5 shows that the ideal number of children falls within a narrow range (2-3 children) for a large majority of women. Only 6 percent of women expressed a desire for fewer than two children and only 15 percent thought that more than three children would be ideal. For those currently married women who gave numeric responses, the average number of children considered ideal was 2.6. The mean ideal number of children ranged from 2.1 for women with fewer than two children to 3.4 for those who already had six or more children.

Although it is thought that some women adjust their ideal family size upwards over time as their number of children increases by way of rationalization, it is evident that a large proportion of women say that their ideal number of children is less than the number they already have. For example, among women who have five living children, 72 percent state that their ideal family would consist of fewer than five children. Similarly, 58 percent of women with

Table 7.5 Ideal and actual number of children

Percent distribution of ever-married women by ideal number of children and mean ideal number of children for ever-married women and currently married women, according to number of living children and residence, West Bengal, 1992

Ideal number of children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
URBAN								
None	--	--	--	--	--	(--)	--	--
1	21.4	31.1	7.4	5.6	1.1	(--)	--	12.8
2	62.0	57.5	74.6	43.1	44.0	(33.4)	19.3	55.2
3	4.0	5.5	10.3	37.8	25.5	(29.9)	23.8	16.2
4	--	1.5	4.1	5.6	16.3	(5.8)	20.8	5.8
5	2.4	--	--	--	0.3	(5.0)	3.5	0.8
6+	--	--	0.4	0.8	0.3	--	7.5	0.8
Non-numeric responses	10.1	4.5	3.2	7.2	12.4	(25.9)	25.0	8.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	117	293	325	178	130	57	81	1180
Mean ideal number[2]								
Ever-married women	1.9	1.8	2.1	2.6	2.7	2.8	3.5	2.2
Currently married women	1.8	1.7	2.1	2.5	2.7	2.8	3.5	2.2
RURAL								
None	0.3	--	--	--	--	--	--	--
1	5.8	7.3	1.8	1.0	1.4	1.3	1.2	3.0
2	52.5	59.6	59.1	36.7	29.3	15.6	14.9	43.2
3	21.1	20.0	24.9	40.0	22.5	36.1	28.1	27.4
4	9.1	7.5	8.0	11.2	32.0	19.2	23.3	13.8
5	2.4	1.1	1.0	2.2	3.2	7.2	4.3	2.5
6+	0.3	0.2	0.2	0.8	1.8	2.4	5.0	1.1
Non-numeric responses	8.5	4.3	5.0	8.0	9.8	18.2	23.1	9.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	329	609	686	611	386	250	270	3142
Mean ideal number[2]								
Ever-married women	2.4	2.3	2.5	2.8	3.2	3.4	3.4	2.7
Currently married women	2.4	2.3	2.4	2.8	3.2	3.4	3.4	2.7
TOTAL								
None	0.2	--	--	--	--	--	--	--
1	9.9	15.0	3.6	2.1	1.3	1.1	0.9	5.7
2	55.0	58.9	64.1	38.1	33.0	18.9	15.9	46.5
3	16.6	15.3	20.2	39.5	23.3	35.0	27.1	24.3
4	6.7	5.6	6.7	10.0	28.1	16.8	22.7	11.6
5	2.4	0.8	0.7	1.7	2.5	6.8	4.1	2.0
6+	0.2	0.1	0.3	0.8	1.4	1.9	5.6	1.0
Non-numeric responses	8.9	4.4	4.4	7.8	10.4	19.6	23.5	8.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	446	902	1011	789	516	307	351	4322
Mean ideal number[2]								
Ever-married women	2.3	2.1	2.3	2.7	3.0	3.3	3.4	2.6
Currently married women	2.3	2.1	2.3	2.7	3.0	3.3	3.4	2.6

Table 7.5 Ideal and actual number of children (Contd.)

Percent distribution of ever-married women by ideal number of children and mean ideal number of children for ever-married women and currently married women, according to number of living children and residence, West Bengal, 1992

Ideal number of children	Number of living children[1]							
	0	1	2	3	4	5	6+	Total
BACKWARD DISTRICTS								
None	--	--	--	--	--	--	--	--
1	2.4	9.1	1.7	1.2	--	--	--	2.5
2	32.5	35.3	47.9	26.6	18.8	5.6	5.8	28.3
3	25.9	26.5	24.5	36.9	19.0	40.9	26.4	28.0
4	15.1	12.7	11.3	18.5	33.1	20.5	29.7	18.8
5	2.5	4.2	2.7	1.8	3.1	6.8	3.3	3.3
6	1.7	1.6	1.4	0.6	3.1	1.1	5.8	2.0
Non-numeric responses	20.0	10.6	10.4	14.4	22.9	25.0	29.0	17.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	54	85	99	75	57	39	54	464
Mean ideal number[2]								
Ever-married women	2.8	2.7	2.7	2.9	3.4	3.5	3.7	3.0
Currently married women	2.8	2.7	2.7	2.9	3.4	3.5	3.7	3.0

( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Includes current pregnancy, if any
[2]Means are calculated excluding the women giving non-numeric responses.

four children think that fewer than four children would be ideal. Thus, family size norms are relatively progressive, and it is evident that a large proportion of women already have more children than they would consider ideal. This may be taken as another indicator of surplus or unwanted fertility.

Table 7.6 shows the mean ideal number of children for ever-married women by age and selected background characteristics. The mean increases steadily over a rather narrow range, from 2.5 children for women under age 30 to 2.8 children for women age 45-49. The stated ideal family size is half a child higher, on the average, in rural areas than in urban areas. Similarly, it is almost a child higher for Muslims than Hindus. The ideal family sizes of scheduled castes and tribes are about equal (2.8 and 2.9 children, respectively). The most pronounced differentials are by educational attainment, particularly the wife's education. The average ideal family size is over one child higher for illiterate women than for women who have completed high school. There is little difference in the ideal number of children by the work status of the respondent.

Women who gave a numerical response to the question about the ideal number of children were further asked how many of these children they would like to be boys and how many they would like to be girls. The responses are shown in Table 7.7. Evidence of son preference can be seen in this table, although its apparent occurrence is not pronounced. Overall, the ideal family consists of 1.4 sons and 1.0 daughters, with a very small percentage of women stating that the sex of the child does not matter. Rural women preferred 1.5 sons and 1.1 daughters, while urban respondents showed little evidence of son preference (1.1 sons and

Table 7.6 Ideal number of children by background characteristics

Mean ideal number of children for ever-married women by age and selected background characteristics, West Bengal, 1992

Background characteristic	Current age								
	13-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Residence									
Urban	*	2.4	2.0	2.1	2.2	2.3	2.3	2.4	2.2
Rural	(2.9)	2.5	2.6	2.7	2.7	2.8	3.1	3.0	2.7
Backward districts	*	2.9	2.9	3.0	3.1	3.0	3.1	3.1	3.0
Education									
Illiterate	*	2.7	2.8	2.9	3.0	3.0	3.2	3.1	2.9
Lit., < middle complete	*	2.4	2.4	2.5	2.5	2.6	2.8	2.7	2.5
Middle school complete	*	(2.0)	2.0	2.0	2.1	2.2	(2.2)	*	2.1
High school and above	*	*	1.7	1.7	1.8	1.9	(1.8)	*	1.7
Religion									
Hindu	*	2.4	2.3	2.4	2.4	2.5	2.7	2.7	2.4
Muslim	*	2.8	3.0	3.1	3.4	3.3	3.5	(3.5)	3.1
Other	*	*	*	*	*	*	*	*	2.4
Caste/tribe									
Scheduled caste	*	2.6	2.5	2.8	(2.7)	(3.1)	(3.3)	*	2.8
Scheduled tribe	*	(2.9)	(2.7)	(2.9)	(3.0)	(3.2)	*	*	2.9
Other	(2.8)	2.5	2.4	2.5	2.5	2.6	2.8	2.7	2.5
Work status									
Not working	(2.8)	2.5	2.4	2.4	2.5	2.6	2.8	2.8	2.5
Working in family farm/business	*	(2.6)	2.5	(2.7)	(2.6)	(2.6)	*	*	2.7
Employed by someone else	*	2.9	2.7	2.7	2.7	2.8	3.0	(2.6)	2.8
Self employed	*	*	*	(2.7)	(2.6)	*	*	*	2.6
Husband's education									
Illiterate	*	2.6	2.7	2.9	3.2	3.1	3.3	3.1	2.9
Lit., < primary complete	*	2.6	2.7	2.7	2.8	2.9	3.2	(3.1)	2.8
Primary school complete	*	2.5	2.4	2.7	2.4	2.7	(2.6)	(2.9)	2.6
Middle school complete	*	2.4	2.3	2.3	2.5	2.7	2.9	(2.8)	2.5
High school complete	*	(2.0)	1.9	2.2	2.2	2.2	(2.2)	(2.1)	2.1
Above high school	*	*	1.8	1.8	1.8	2.0	(2.1)	(2.0)	1.9
Total	(2.8)	2.5	2.5	2.5	2.6	2.7	2.8	2.8	2.6

Note: Total means are based on all women including 6 women with missing information on husband's education, the means for whom are not shown separately.
() Based on 25-49 unweighted cases
* Mean not shown; based on fewer than 25 unweighted cases

0.9 daughters). Son preference did not appear to significantly vary by the sex composition of respondents' living children.

7.4 Fertility Planning

Another way to gauge the extent of unwanted fertility is to focus on recent births. For each child born in the four years before the survey and each current pregnancy, women were asked whether the pregnancy was wanted at that time (planned), wanted at a later time (mistimed), or not wanted at all (unwanted). Information from these questions may result in underestimation of unplanned childbearing due to rationalization, where a woman may retrospectively declare an unplanned birth as one that was wanted at the time. Nevertheless,

Table 7.7 Ideal sex composition of children by actual sex composition of living children

Mean ideal number of sons and daughters for ever-married women by sex composition of the living children, according to residence, West Bengal, 1992

Sex composition of living children	Urban			Rural			Total			Backward districts		
	Sons	Daughters	Doesn't matter	Sons	Daughters	Doesn't matter	Sons	Daughters	Doesn't matter	Sons	Daughters	Doesn't matter
None	0.9	0.8	0.3	1.2	0.9	0.3	1.1	0.9	0.3	1.4	1.0	0.4
1 child	0.8	0.6	0.3	1.2	0.9	0.2	1.1	0.8	0.2	1.5	1.0	0.2
1 son	0.9	0.6	0.3	1.2	0.9	0.2	1.1	0.8	0.2	1.4	1.0	0.2
No sons	0.7	0.7	0.4	1.2	1.0	0.1	1.0	0.9	0.2	1.5	1.0	0.1
2 children	1.1	0.8	0.2	1.3	1.0	0.2	1.2	0.9	0.2	1.4	1.1	0.2
2 sons	1.1	0.7	0.4	1.3	0.8	0.2	1.2	0.8	0.3	1.7	1.0	0.1
1 son	1.0	0.9	0.2	1.3	1.0	0.1	1.2	1.0	0.2	1.4	1.1	0.2
No sons	1.0	0.8	0.1	1.3	1.2	0.1	1.2	1.1	0.1	(1.1)	(1.0)	(0.5)
3 children	1.3	1.0	0.1	1.6	1.1	0.1	1.5	1.1	0.1	1.6	1.2	0.1
3 sons	*	*	*	1.7	1.0	0.1	1.6	1.0	0.1	*	*	*
2 sons	1.4	1.0	0.1	1.7	1.1	0.1	1.7	1.0	0.1	1.6	1.1	0.1
1 son	(1.3)	(1.2)	(0.2)	1.4	1.2	--	1.4	1.2	0.1	(1.6)	(1.3)	(--)
No sons	*	*	*	(1.3)	(1.3)	(0.1)	1.2	1.2	0.2	*	*	*
4+ children	1.6	1.2	0.2	1.9	1.3	0.1	1.8	1.3	0.1	2.0	1.4	0.1
2 or more sons	1.7	1.2	0.2	2.0	1.3	0.1	1.9	1.3	0.1	2.1	1.5	0.1
1 son	(1.2)	1.1	0.1	1.7	1.3	0.1	1.6	1.3	0.1	(1.7)	(1.4)	(0.1)
No sons	*	*	*	(1.4)	(1.2)	(--)	(1.4)	(1.2)	(--)	*	*	*
Total	1.1	0.9	0.2	1.5	1.1	0.1	1.4	1.0	0.2	1.6	1.2	0.2

Note: Table excludes women who gave non-numeric responses to the questions on the ideal number of sons and daughters.
() Based on 25-49 unweighted cases
* Mean not shown; based on fewer than 25 unweighted cases
-- Less than 0.05 children

these questions form a potentially powerful indicator of the degree to which couples successfully control childbearing.

Table 7.8 shows that 35 percent of all births (including current pregnancies) in the four years before the survey were not wanted at the time the woman became pregnant. Fifteen percent of the births were unwanted and 20 percent were mistimed. More educated women are less likely to have unplanned births, but those births reported as mistimed births were more common among literate than illiterate women. Differentials in fertility planning by residence, religion, caste and tribe are not substantive. Forty-two percent of Muslims report unwanted births, compared with 32 percent of Hindus. Major differences are apparent by birth order and the age of the mother at the time of the birth. Seventy-nine percent of first births are reported as wanted at the time of birth, while 27 percent of second births were reportedly mistimed, and about equal percentages of third births were mistimed (20) and unwanted (16). Fourth and higher order births are particularly likely to be unwanted (41 percent). The percentage of pregnancies that were reported as planned decreases steadily with increasing age of mother, from 71 percent for women age 15-19 to 26 percent for women age 35-39.

The impact of unwanted fertility can be estimated by comparing *wanted fertility rates* with the total fertility rates presented in Chapter 5. The wanted fertility rate is calculated in the

Table 7.8 Fertility planning

Percent distribution of births during the four years preceding the survey and current pregnancies by fertility planning status, according to selected background characteristics, West Bengal, 1992

Background characteristic	Planning status of pregnancy: Wanted then	Wanted later	Wanted no more	Missing	Total percent	Number of births
Residence						
Urban	64.3	17.9	17.6	0.3	100.0	560
Rural	64.8	20.5	14.6	0.1	100.0	1953
Backward districts	53.6	23.5	22.9	--	100.0	333
Education						
Illiterate	64.4	16.2	19.2	0.2	100.0	1357
Lit., < middle complete	61.3	25.8	12.7	0.1	100.0	746
Middle school complete	69.3	23.4	7.2	--	100.0	237
High school and above	75.0	18.6	6.4	--	100.0	174
Religion						
Hindu	67.5	20.4	12.0	0.1	100.0	1716
Muslim	57.6	19.1	23.1	0.3	100.0	759
Other	(80.2)	(12.1)	(7.7)	(--)	100.0	38
Caste/tribe						
Scheduled caste	70.4	16.4	12.7	0.5	100.0	267
Scheduled tribe	75.8	12.7	11.5	--	100.0	136
Other	63.3	20.8	15.8	0.1	100.0	2110
Birth order[1]						
1	78.9	20.3	0.8	--	100.0	781
2	69.7	26.7	3.4	0.2	100.0	614
3	63.4	20.0	16.3	0.3	100.0	415
4+	45.3	13.4	41.0	0.2	100.0	703
Mother's age at birth[2]						
13-14	(78.5)	(21.5)	(--)	(--)	100.0	40
15-19	71.1	25.0	3.7	0.2	100.0	699
20-24	68.0	22.2	9.6	0.1	100.0	945
25-29	61.6	16.6	21.8	--	100.0	503
30-34	49.8	8.7	40.9	0.6	100.0	227
35-39	26.0	3.8	70.2	--	100.0	77
40-49	(52.5)	(--)	(47.5)	(--)	100.0	22
Total	64.7	19.9	15.3	0.1	100.0	2513

( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Includes current pregnancy, if any.
[2]For current pregnancy, estimated maternal age at birth

same way as the total fertility rate, except that unwanted births are excluded from the numerator. A birth was considered unwanted if the number of living children at the time of conception was greater than or equal to the current ideal number of children, as reported by the respondent. (Women who gave a non-numeric response to the question on the ideal number of children were assumed to want all their births). The wanted fertility rate represents the level of fertility that theoretically would result if all unwanted births were prevented. A comparison of the total fertility rate with the total wanted fertility rate indicates the potential demographic impact of the elimination of all unwanted births.

The wanted TFR of 2.2 is 24 percent lower than the actual TFR of 2.9, as shown in Table 7.9. The largest differentials are found in the backward districts, where the wanted fertility rate is a full child lower than the actual total fertility rate, and among Muslims, where actual fertility is nearly a child and a half higher than the wanted rate. Rural differentials are a half child higher than those reported by urban couples, while both scheduled castes and scheduled tribes reportedly desire about a child less than they actually have.

The most impressive differentials are by educational attainment. The difference between wanted and actual fertility narrows with education, such that not only does an illiterate woman want more children (2.8) than a woman having completed high school (1.4), but the illiterate woman actually has about one child more than she wants (3.7), while those completing high school have almost exactly the same number that they report wanting (1.5).

Table 7.9 Wanted fertility rates

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by selected background characteristics, West Bengal, 1992

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.65	2.14
Rural	2.43	3.25
Backward districts	3.01	3.96
Education		
Illiterate	2.76	3.73
Literate, < middle complete	2.11	2.82
Middle school complete	1.37	1.77
High school and above	1.35	1.50
Religion		
Hindu	1.96	2.52
Muslim	3.17	4.59
Other	1.74	2.30
Caste/tribe		
Scheduled caste	2.74	3.52
Scheduled tribe	2.22	3.05
Other	2.15	2.85
Total	2.20	2.92

Note: Rates are calculated based on births in the period 1-36 months before the interview to women age 15-49. The total fertility rates are the same as those presented in Table 5.2.

CHAPTER 8

MORBIDITY AND MORTALITY

This chapter presents data on the prevalence of certain diseases as well as mortality rates, especially for infants and young children. This type of information is relevant both to the demographic assessment of the population and to health policies and programmes. Mortality estimates are also useful for projecting the future size of populations. Detailed information on the mortality of children can be used to identify sectors of the population that are at high risk and in need of health services.

The National Family Health Survey collected information on mortality and on morbidity, from both the Household and Woman's Questionnaires. The Household Questionnaire includes questions on individuals in the household suffering from blindness, tuberculosis, leprosy, physical impairment of the limbs, and malaria. The Household Questionnaire also includes a question on deaths occurring in the household during the past two years, and the Woman's Questionnaire collects information on the survival status of all births. the age at death if the child died, and the prevalence of common childhood diseases for children under four years of age. The prevalence and treatment of childhood diseases are discussed in Chapter 9.

8.1 Morbidity

Because demographic sample surveys generally do not include questions on the prevalence of diseases, there is little experience on which to predict the validity and reliability of such questions. The patterns shown by the morbidity data analyzed in this section are by and large plausible, suggesting that the questions have provided useful information. At the same time, there is little evidence to indicate whether the overall prevalence levels are correct. It is certainly possible that the results of the survey substantially understate the prevalence of certain conditions because some survey respondents failed to report them.

It is worth noting some of the considerations that might be made in assessing the validity of these prevalence figures. Conditions carrying a stigma, such as leprosy, may be underreported due to intentional concealment by respondents or embarrassment on the part of interviewers about asking these questions. Respondents will be aware of certain conditions, such as blindness and physical impairment, but may be unaware of others unless they have been diagnosed by medical personnel. Moreover, given the great extent of linguistic diversity in India, respondents may know that a household member suffers from a given condition but fail to report it because they do not recognize the words used by the interviewer in asking the question.

Table 8.1 shows the prevalence in the household population of the five health conditions covered in the Household Questionnaire, by age, sex and residence. Of the five conditions, the prevalence of partial blindness is highest, afflicting 8 per 1,000 population, while complete blindness afflicts an additional 2 per 1,000 population. The prevalence of Malaria among the household population during the three months prior to the interview is 7 per 1,000. The remaining diseases have an overall prevalence of less than 5 per 1,000 population.

Partial and Complete Blindness

The overall level of partial blindness is 8 per 1,000 population (Table 8.1). Differentials by residence are small, although prevalence is higher in the backward districts. Prevalence rates increase with age, from 1 per 1,000 among persons age 0-14, to 6 per 1,000 for persons age 15-

Table 8.1 Morbidity

Number of persons per 1,000 household populations suffering from blindness, tuberculosis, leprosy, physical impairment of the limbs and malaria according to age, sex and residence, West Bengal 1992

Demographic characteristic	Number of persons per 1,000 suffering from:						Number of usual residents
	Blindness		Tuberculosis	Leprosy	Physical impairment of limbs	Malaria during the last three months	
	Partial	Complete					
URBAN							
Age							
0 -14	1.3	2.7	0.9	0.0	0.7	1.5	2015
15-59	6.1	0.9	3.4	0.4	4.0	4.2	4344
60+	48.4	3.3	7.6	0.0	7.6	7.6	530
Sex							
Male	6.1	0.8	3.4	0.0	4.4	3.7	3672
Female	10.1	2.5	2.5	0.5	2.1	3.7	3217
Total	8.0	1.6	3.0	0.3	3.3	3.7	6889
RURAL							
Age							
0- 14	1.1	1.2	0.4	0.2	3.9	8.8	6187
15-59	6.5	0.4	4.8	0.6	3.4	7.8	8795
60+	48.9	13.7	15.5	2.4	10.7	6.6	1099
Sex							
Male	7.5	1.7	5.3	0.8	5.9	8.2	8165
Female	7.2	1.5	2.3	0.3	2.3	8.0	7914
Total	7.3	1.6	3.8	0.6	4.1	8.1	16080
TOTAL							
Age							
0- 14	1.2	1.6	0.5	0.1	3.1	7.0	8202
15-59	6.4	0.6	4.3	0.5	3.6	6.6	13139
60+	48.7	10.3	13.0	1.6	9.7	6.9	1628
Sex							
Male	7.0	1.4	4.7	0.5	5.4	6.8	11837
Female	8.0	1.8	2.4	0.4	2.2	6.8	11132
Total	7.5	1.6	3.6	0.5	3.9	6.8	22969
BACKWARD DISTRICTS							
Age							
0- 14	3.6	0.9	1.8	0.0	2.3	16.8	990
15-59	10.9	0.0	8.1	1.0	1.4	17.9	1280
60+	52.7	8.6	26.4	2.9	5.9	11.7	154
Sex							
Male	13.1	1.1	9.8	0.7	1.8	17.9	1235
Female	8.0	0.8	3.4	0.7	2.3	16.2	1189
Total	10.6	0.9	6.7	0.7	2.0	17.1	2424

59, and 49 per 1,000 for persons age 60 and over. The high prevalence among older persons is particularly striking. Overall sex differentials in blindness are negligible, 8 per 1,000 for males and 10 per 1,000 for females, although males are more prone to blindness (either partial or complete) in rural areas and particularly in the backward districts. Blindness prevalence among females, however, is slightly higher than among males in the urban areas. The difference in age composition between males and females in an area can, to some extent, explain these differentials. In the state as a whole, complete blindness among persons age 60 and above is about 17 times greater than among persons age 15-59. The NFHS estimate of complete blindness (2 per 1,000) for the state as a whole is considerably higher than the 1981 Census estimate of 0.5 per 1,000 (Office of the Registrar General and Census Commissioner, 1983), which is probably indicative of relatively high underenumeration in the census rather than substantial increase in blindness in West Bengal between 1981 and 1992.

Malaria

The overall level of malaria during the three months prior to the survey was 7 per 1,000. The prevalence of malaria is known to vary considerably by season, however, so the NFHS estimates should not be taken to represent the typical level throughout the year. It may be noted that the fieldwork was conducted during the dry season when malaria rates are expected to be relatively low. Malaria prevalence in rural areas (8 per 1,000) is about twice that of in urban areas (4 per 1,000). Sex differentials are negligible, and age differentials in malaria prevalence appear small except in urban areas, where prevalence increases with age. The highest prevalence of malaria (17 per 1,000) was found among persons below age 60 residing in the backward districts. Prevalence in the backward districts is more than twice that observed in the state as a whole.

Physical Impairment of Limbs

The overall prevalence of persons with physically impaired limbs is 4 per 1,000. The prevalence among females is about 2 per 1,000 in all residence groups. Males have slightly higher prevalence, 4 per 1,000 in urban areas, and 6 per 1,000 in rural areas. Physical impairment of limbs is higher in rural (4 per 1,000) than in urban areas (3 per 1,000), and lower in the backward districts (2 per 1,000). The prevalence also tends to increase with age, and those age 60 and over are more likely to have physically impaired limbs than others.

Tuberculosis

The overall prevalence of tuberculosis (TB) is low in West Bengal: about 4 per 1,000 population. There is no marked variation by residence, although it appears that the rural areas (4 per 1,000) are more affected by tuberculosis than the urban areas (3 per 1,000), and the backward districts are the worst affected (7 per 1,000). Considerable variation by age is observed. TB prevalence increases from one per 1,000 for persons under age 15, to four per 1,000 for those age 15-59, and 13 per 1,000 for those age 60 and above. The prevalence among older persons in rural areas (16 per 1,000) is about 3 times that of persons age 15-59. The prevalence of tuberculosis for the older persons (age 60 and above) in rural areas is twice that of older persons in urban areas. Similarly, TB prevalence among older persons in backward districts is nearly twice that of older persons in the state as a whole.

Leprosy

The reported prevalence of leprosy is low: less than 1 per 1,000 population. The prevalence is twice as high in rural, compared to urban areas, and also higher in backward districts. Except in urban areas, the prevalence tends to increase by age.

8.2 Crude Death Rates and Age-Specific Death Rates

Table 8.2 shows crude death rates (CDR) and age-specific death rates by sex for the usual resident population in West Bengal from the NFHS and the Sample Registration Survey (SRS). The crude death rate from the NFHS is based on deaths occurring to usual residents of the household during the two years preceding the survey as obtained in the Household Questionnaire, whereas the SRS estimates are based on deaths during a one-year period. The NFHS CDR is calculated as the annual number of deaths in the two-year period before the date of interview per 1,000 usual residents. The denominator of this measure is calculated by projecting the number of usual residents at the time of the survey backwards to the mid-point of the time period on the basis of the intercensal population growth rate in the state. The intercensal growth rate is assumed to be the same for all age and sex groups.

Questions on the number of deaths occurring to usual residents in each household during a particular time period have been included in demographic surveys in many countries and have generally resulted in a substantial understatement of deaths. We, therefore, begin by considering the evidence on the completeness of reporting of deaths. The Sample Registration System, maintained by the Office of the Registrar General, India, provides a useful comparison. The most recent report on mortality estimates by age for West Bengal is for 1991 (Office of the Registrar General, 1993).

Table 8.2 Crude death rates and age-sex specific death rates

Crude death rates (CDR) and age-sex specific death rates, West Bengal, 1991-92

	NFHS (1991-92)						SRS (1991)		
	Death rate			Number of usual residents			Death rate		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 - 4	17.1	20.3	18.7	1299	1268	2567	20.4	20.8	20.6
5 -14	1.9	1.8	1.9	2792	2843	5635	1.9	1.9	1.9
15-49	2.8	3.2	3.0	6131	5491	11622	2.7	2.9	2.8
50+	40.9	37.3	39.2	1615	1530	3146	33.1	30.3	31.7
CDR	9.4	9.7	9.6	11837	11132	22969	8.2	8.3	8.3

Note: Crude death rate and age-sex specific death rates from the NFHS are based on the annual number of deaths reported for the *de jure* population during the two years prior to the survey. The SRS rates are also *de jure*, based on deaths during 1991.
Source of SRS data: Office of the Registrar General (1993)

Table 8.2 shows an average annual crude death rate for the usual resident population of West Bengal of 9.6 per 1,000 persons for the two years before the NFHS survey (1991-92). The SRS death rate for the state is 8.3 per 1,000 for 1991 and 8.3 per 1,000 for 1992 (Office of the Registrar General, 1993; 1994a). The NFHS crude death rate estimate for the age-group 0-4 is 18.7 per 1,000, compared to 20.6 per 1,000 in the SRS. The NFHS estimate is thus quite close to the SRS estimate, albeit slightly lower. The NFHS estimate of the crude death rate may be subtracted from the earlier estimate of the crude birth rate from the household birth record (see Table 5.1) in order to calculate the rate of natural increase of the population of West Bengal. The resulting rate of natural increase is thus estimated at 15.5 per 1,000 population per year for the two-year period before the survey. This translates into an annual growth rate of 1.55 percent which would imply a doubling of the population of West Bengal in roughly 45 years if there were no net migration and the population of West Bengal is assumed to be growing exponentially.

The age-specific death rates for broad age groups shown in Table 8.2 can be compared directly with SRS rates. Although the SRS does not report the death rates for all of the specific age groups shown in Table 8.2, these rates are estimated based on the SRS age distribution. The NFHS age-specific death rates are slightly lower for both sexes at age 0-4, about the same as the SRS rates for both sexes at age 5-14, slightly higher for both sexes at age 15-49, and markedly higher for both sexes at age group 50 and above.

In most countries, male death rates are higher than female death rates at nearly all ages. South Asian countries generally have been an exception in this respect, with higher death rates for females over much of the age span (Preston, 1990; Ghosh, 1987; Roy & Lahiri, 1983). Sex-specific mortality differentials can be analyzed by computing the ratio of female to male rates in each age group. For the NFHS, these ratios are 1.19, 0.95, 1.14 and 0.91 for the 0-4, 5-14, 15-49 and 50+ age-groups, respectively. Thus females in West Bengal have higher death rates than males at the 0-4 age group and at the 15-49 age group. The high sex-specific mortality ratio for the 0-4 age-group is particularly notable. Differential treatment between male and female children, and strong preference for sons existing in India are the most likely explanations for the higher female mortality (Mukherjee, 1976; Lahiri, 1979 and 1984). Differential treatment of children by sex is further explored in Chapters 9 and 10, with respect to vaccination, infant feeding practices, and the treatment for children who are sick.

8.3 Infant and Child Mortality

Definitions of Infant and Child Mortality

All respondents in the NFHS were asked to give a complete history of their births, including the sex, date of birth, survival status, and age at the time of the survey or age at death for each live birth. For children who had died, age at death was recorded in days for children dying in the first month of life, in months for children dying before their second birthday, and in years for children dying at later ages. This information was used to calculate the following

direct estimates of infant and child mortality[1]:

Neonatal mortality:	the probability of dying in the first month of life;
Postneonatal mortality:	the difference between infant and neonatal mortality;
Infant mortality ($_1q_0$):	the probability of dying before the first birthday;
Child mortality ($_4q_1$):	the probability of dying between the first and fifth birthday;
Under-five mortality($_5q_0$):	the probability of dying before the fifth birthday.

Assessment of Data Quality

The reliability of mortality estimates calculated from retrospective birth histories depends upon the completeness with which deaths of children are reported and the extent to which birth dates and ages at deaths are accurately reported and recorded. Estimated rates of infant and child mortality are subject to both sampling and non-sampling errors. While the sampling errors for various mortality estimates are provided in Appendix A, this section describes the results of various checks for non-sampling errors -- in particular, underreporting of deaths in early childhood (which would result in an underestimate of mortality), and misreporting of the date of birth or age at death (which could distort the age pattern of under-five mortality). Both problems are likely to be more pronounced for children born long before the survey than for children born recently. Failure to report deaths result in underestimates of mortality. If underreporting is more pronounced for children born longer ago, the estimates will tend to understate any decline in mortality that has occurred.

Underreporting of infant deaths, in particular, is usually most pronounced for deaths which occur very early in infancy. If deaths in the early neonatal period are selectively underreported, then there will be an abnormally low ratio of deaths under seven days to all neonatal deaths and an abnormally low ratio of neonatal to infant mortality. Changes in these ratios over time can be examined to test the hypothesis that underreporting of early infant deaths is more common for births that occurred longer before the survey. Results from Table B.5 (see Appendix-B) suggest that the reporting of early infant deaths is reasonably complete in the West Bengal NFHS, since the ratios of deaths under seven days to all neonatal deaths are quite high (a ratio of less than 25 percent is often used as a guideline to indicate underreporting of early neonatal deaths). The ratio for 0-4 years prior to the survey is 72 percent, which is quite high. However, the ratios for the period 5-9 years and 10-14 years prior to the survey are slightly lower -- 62 and 64, respectively. Some fraction of the early infant deaths may not have been reported by older women. The proportions of deaths that occurred during the neonatal period

[1] A detailed description of the method for calculating the probabilities presented here is given in Rutstein (1984). The mortality estimates are not rates, but are true probabilities, calculated according to the conventional life table approach. For any calendar period, deaths and exposure in that period are first tabulated for the age intervals 0, 1-2, 3-5, 6-11, 12-23, 24-35, 36-47, and 48-59 months. Then age interval specific probabilities of survival are calculated. Finally, probabilities of mortality for larger age segments are produced by multiplying the relevant age interval survival probabilities together and subtracting the product from one:

$$_nq_x = 1 - \prod_i (1 - q_i)$$

are also high (see Appendix Table B.6). This ratio (proportion) remains almost steady over the periods (around 70 percent).

One problem that is inherent in most retrospective surveys is heaping of the age at death on certain digits, e.g., 6, 12 and 18 months. Misreporting of age at death will bias estimates of the age pattern of mortality if the net result of misreporting is the transference of deaths between age segments for which the rates are calculated; for example, an overestimate of child mortality relative to infant mortality may result if children dying during the first year of life are reported as having died at age one or older. Thus, heaping at 12 months can bias the mortality estimates because a certain fraction of these deaths, which are reported to have occurred after infancy (i.e., at ages 12-23 months), may have actually occurred during infancy (i.e., at ages 0-11 months). In this case, heaping would bias the infant mortality rate (${}_1q_0$) downward and child mortality (${}_4q_1$) upward.

Digit preference in age-reporting has been observed in Indian censuses, and in the West Bengal NFHS ages at death in months during early infancy tend to concentrate at ages 5, 10, 15 and 20 months (due to digit preference at ages ending in 0 and 5). In addition to this, there was clustering of reported ages at 3, 7, 13, 21 and 29 months. Examination of the distribution of deaths under age 22 months during the 15 years prior to the survey by month of death (Appendix Table B.6) indicates that the calculated infant mortality rates for the population of West Bengal as a whole are not likely to be understated significantly on this account. There was surprisingly little "heaping" on particular months of deaths, and due to a strong emphasis during interviewer training[2], there were few deaths reported to have occurred at age "1 year", making any adjustment in infant and child mortality rates unnecessary.

The above brief check on internal consistency of the West Bengal NFHS childhood mortality data suggests that there is no serious underreporting of deaths during the time period for which the mortality rates are estimated and that although there is some evidence of heaping in age at death at certain ages, the bias in infant and child mortality rates arising from this heaping is negligible.

It is seldom possible to establish, with confidence, mortality levels for a period more than 15 years before a survey. Even within the recent 15-year period considered here, apparent trends in mortality rates should be interpreted with caution, for several reasons. First, there may exist differences in the completeness of death reporting related to the length of time before the survey. Second, the accuracy of reports of age at death and of date of birth may deteriorate systematically over time. Third, sampling variability for mortality rates is relatively high (see Appendix A). The fourth reason relates to truncation of mortality rates further back in time, because women age 50 and over who were bearing children during these periods were not included in the survey. This truncation particularly affects mortality trends.

For the period 10-14 years before the survey, for example, the rates do not include any births to women age 40-49 since these women were over age 50 at the time of the survey and

[2] Interviewers in NFHS were instructed to probe for the exact number of months lived by the child if the age at death was reported as "1 year".

not eligible to be interviewed. Since these excluded births to older women were likely to be at a somewhat greater risk of dying than births to younger women, the mortality levels for the period :nay be slightly underestimated. The estimates for later periods, however, are less affected by the truncation bias since fewer older women are excluded. The extent of this bias depends on the proportion of births omitted, and Table 8.6 shows that among children born in the five years prior to the survey, only 4 percent were born to women over age 34 years. Given this small proportion of births excluded, selection bias for infant and child mortality statistics as far as 15 years back from the survey should be negligible.

Levels and Trends in Infant and Child Mortality

Table 8.3 and Figure 8.1 show measures of infant and child mortality for the three quinquennial periods preceding the survey, by residence group. (It may again be mentioned that due to large sampling errors, the interpretation of the values in this Table should be restricted only to broad and consistent differences). Moderate decline in infant mortality has been observed in West Bengal during the 15 years prior to the NFHS in 1992. The infant mortality rate for the total population declined from 89 per 1,000 live births during 1977-81 (10-14 years prior to the survey) to 75 per 1,000 live births during 1987-91 (0-4 years prior to the survey), an average rate of decline of little more than 1 infant death per 1,000 live births per year. In terms of percentage decline in mortality during the ten years interval between the periods 1977-81 and 1987-91, the highest decline was recorded in child mortality (31 percent) and the lowest was

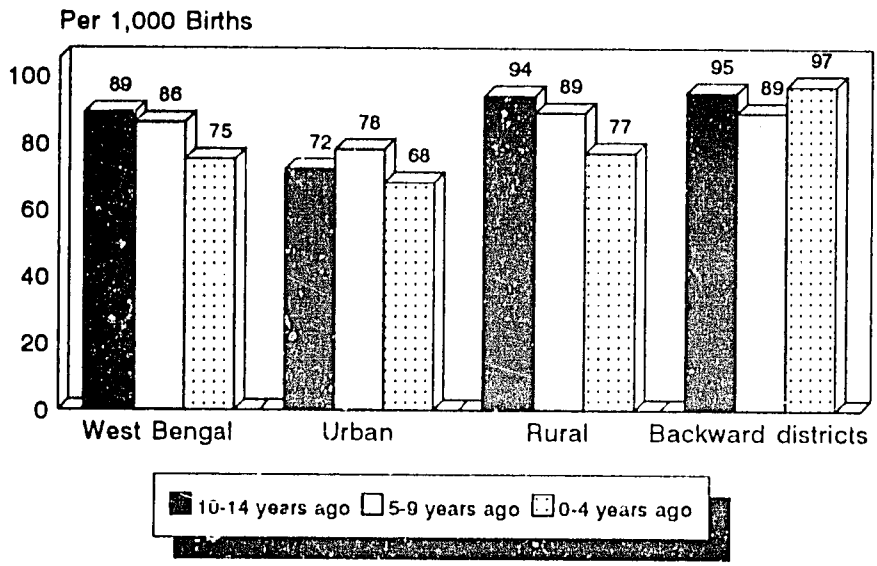
Table 8.3 Infant and child mortality

Neonatal, postneonatal, infant, child and under-five mortality for five-year periods preceding the survey, by residence, West Bengal, 1992

Years prior to survey	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
			URBAN		
0-4 years	(42.2)	(26.0)	(68.2)	(16.1)	(83.3)
5-9 years	47.8	30.2	78.0	18.4	94.9
10-14 years	51.3	21.0	72.3	20.7	91.5
			RURAL		
0-4 years	54.7	22.7	77.4	28.8	104.0
5-9 years	60.9	27.6	88.5	35.7	121.1
10-14 years	63.4	30.9	94.2	44.0	134.0
			TOTAL		
0-4 years	51.8	23.5	75.3	26.0	99.3
5-9 years	58.0	28.2	86.2	31.4	114.9
10-14 years	60.2	28.3	88.5	37.8	123.0
			BACKWARD DISTRICTS		
0-4 years	68.7	28.1	96.8	49.2	141.2
5-9 years	59.4	29.3	88.7	58.1	141.6
10-14 years	55.6	39.2	94.9	47.3	137.7

() Based on 250-499 unweighted children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates

Figure 8.1
Infant Mortality Rates for Five-Year Periods by Residence



Note: Rates are for 5-year periods preceding the survey

NFHS, West Bengal, 1992

found in neonatal mortality (14 percent). The rate of decline was higher in rural areas than in urban areas for all the mortality measures. In all areas, the rate of mortality decline accelerated in the recent period. Despite moderately rapid overall decline in infant mortality (15 percent over a 10-year period), about 8 percent of the children born during the period five years prior to the NFHS died within the first year of life, and about 10 out of 100 children died before reaching age 5 years. Therefore, child survival programmes still need to be intensified to produce further reductions in the level of infant and child mortality.

The estimated NFHS infant mortality rate of West Bengal during the period 1987-91 was 75 per 1,000 live births, whereas the rate estimated by the SRS for the same period was 71 per 1,000 live births (Office of the Registrar General, 1994b).

Socioeconomic Differentials in Infant and Child Mortality

Table 8.4 and Figure 8.2 show infant and child mortality statistics for the 10-year period preceding the survey, by selected background characteristics. Infant mortality rates in rural and urban areas are respectively 83 and 73 per 1,000 live births. Rural infant mortality rates are thus 13 percent higher than the urban rates. Children in rural West Bengal experience a 26 percent higher risk of dying before their fifth birthday than their urban counterparts. Infant mortality declines substantially with education of women, from 96 per 1,000 live births among illiterate mothers, to 58 per 1,000 live births among those who have completed middle school, and to 36 per 1,000 live births among mothers having completed high school. A similar inverse

Table 8.4 Infant and child mortality by background characteristics

Neonatal, postneonatal, infant, child and under-five mortality by selected background characteristics for the 10-year period preceding the survey, West Bengal, 1992

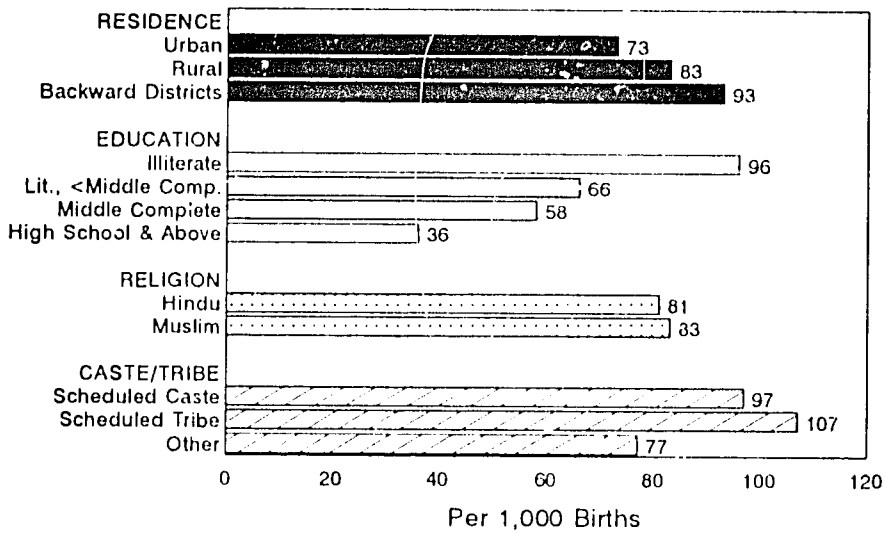
Background characteristic	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Residence					
Urban	45.1	28.2	73.4	17.3	89.4
Rural	58.0	25.3	83.3	32.0	112.6
Backward districts	64.0	28.7	92.6	53.5	141.2
Mother's education					
Illiterate	67.4	28.2	95.5	35.8	127.9
Literate, < middle complete	38.3	27.4	65.8	22.9	87.2
Middle school complete	(44.0)	(14.2)	(58.2)	(9.7)	(67.4)
High school and above	(24.9)	(11.5)	(36.4)	(5.6)	(41.8)
Religion					
Hindu	54.6	26.3	80.9	26.1	104.9
Muslim	56.8	26.2	82.9	34.2	114.3
Caste/tribe					
Scheduled caste	61.9	34.8	96.8	44.3	136.7
Scheduled tribe	87.6	19.5	107.1	29.1	133.0
Other	52.1	25.2	77.3	26.7	101.9
Medical maternity care[2]					
No antenatal or delivery care	49.6	12.7	62.3	27.5	88.1
Either antenatal or delivery care	49.2	23.3	72.5	34.2	104.2
Both antenatal and delivery care	27.5	26.8	54.3	(4.6)	58.7
Total	55.1	25.9	81.0	28.6	107.3

Note: Total includes the mortality experience of other religious groups, which is based on fewer than 250 unweighted children surviving to the beginning of the age interval, and is not shown separately.
() Based on 250-499 unweighted children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates
[2]Rates for the four-year period before the survey. Medical care is that given by a doctor, nurse, trained midwife, or other health professional in a hospital, clinic, or health centre or care received at home from a health worker.

association between mother's educational attainment and both child mortality ($_4q_1$), and under-five mortality ($_5q_0$) is evident. Muslim infants have slightly higher mortality compared with Hindu infants, particularly during neonatal period. In the childhood period (that is, 1-4 years age group), however, the mortality among Hindus is substantially lower than among Muslims. The highest infant mortality of any group is among children of scheduled tribes (107 per 1,000 live births). Compared to scheduled tribes, however, scheduled castes experience higher mortality during the post-neonatal and childhood periods.

It is believed that the presence of medical maternity care for mothers (antenatal or delivery care by a trained health professional) is associated with substantially lower mortality risks. In West Bengal, however, the statistics on infant mortality rates classified by various levels of exposure to medical maternity care do not fully support the above hypothesis. When

Figure 8.2
Infant Mortality Rates by Selected Background Characteristics



Note: Based on births in the 10 years preceding the survey

NFHS, West Bengal, 1992

either antenatal or delivery care was provided, for example, the infant mortality rate increased substantially compared with the situation when neither antenatal nor delivery care was available. When both antenatal and delivery care were provided, however, pronounced declines in mortality during infancy is observed. The effect of antenatal and delivery care is often assumed to be most pronounced for mortality risks immediately following birth (neonatal mortality), and this assumption is partially supported in West Bengal, where the neonatal mortality rate among children whose mothers received both antenatal and delivery care is 45 percent lower than the rate among children whose mothers received neither service. The corresponding decline in the infant mortality rate is 13 percent, and in the under-five mortality rate 33 percent. Substantial declines are also evident with the postneonatal and child mortality rates.

Although utilization of antenatal and delivery care services is very likely associated with other circumstances favourable to child survival, its impact on survival during the first year of life is nonetheless quite substantial. The large impact of antenatal and delivery care services on the neonatal mortality rate alone is impressive, because women who have pregnancy-related complications (whose babies have a relatively high risk of dying) are usually more likely to seek antenatal care in the first place (see Table 9.7 in Chapter 9).

Demographic Differentials in Infant and Child Mortality

This section examines differentials in early child mortality by various demographic characteristics of both the child and the mother. Table 8.5 and Figure 8.3 present mortality

Table 8.5 Infant and child mortality by demographic characteristics

Neonatal, postneonatal, infant, child and under-five mortality by selected demographic characteristics for the 10-year period preceding the survey, West Bengal, 1992

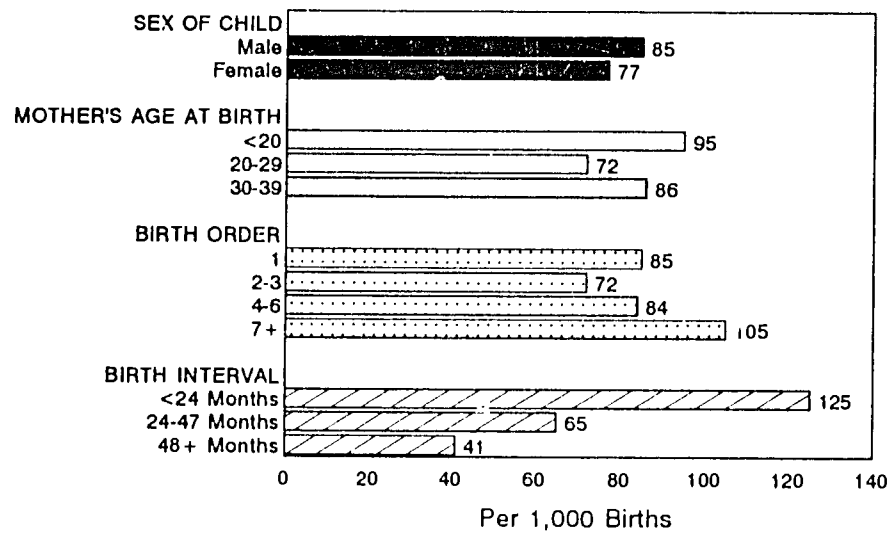
Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Sex of child					
Male	56.5	28.2	84.7	21.7	104.5
Female	53.7	23.6	77.4	35.4	110.0
Mother's age at birth					
< 20	65.4	29.4	94.8	28.7	120.8
20-29	47.6	24.1	71.7	29.5	99.1
30-39	60.3	25.2	85.6	24.7	108.2
Birth order					
1	57.9	27.5	85.4	19.2	103.0
2-3	48.7	23.1	71.8	29.6	99.3
4-6	56.9	26.8	83.8	34.4	115.3
7+	(73.2)	(31.9)	(105.1)	(36.5)	(137.8)
Previous birth interval					
< 24 months	87.3	37.6	125.0	45.3	164.6
24-47 months	42.3	22.2	64.5	30.7	93.3
48+ months	26.8	14.0	40.9	12.7	53.1
Birth size[2]					
Large	50.7	27.6	78.3	30.8	106.6
Average	29.8	11.6	41.4	21.7	62.2
Small	60.3	33.4	93.7	(19.6)	111.4

() Based on 250-499 unweighted children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates
[2]Rates for the four-year period before the survey

rates for the 10 years preceding the survey by sex of the child, age of the mother at the time of the child's birth, birth order, length of the previous birth interval and size of the child at birth.

The data on household deaths in Table 8.2 indicate that the female death rate for the age group 0-4 exceeds the male rate by 19 percent. The childhood mortality rates (probability of death between ages one and five) in Table 8.5 show that the female childhood mortality rate is 63 percent higher than male rate. Mortality during the neonatal period, predominately influenced by congenital factors, is slightly higher among males compared with females. The same sex differential exists for mortality during the postneonatal period, which is subject to both congenital and environmental conditions. Thus while neonatal and postneonatal mortality are higher among males, the sex-differential for childhood mortality (age group 1-4) is just the reverse - female child mortality is about 63 percent higher than male child mortality. This reversal of sex differentials in mortality after the age of weaning has been observed in other studies conducted in South Asia and is thought to reflect the relative nutritional and medical neglect of girls after breastfeeding has ceased. Higher neonatal mortality among boys than girls is found in most populations and reflects greater underlying male frailty. Thus the pattern of sex differentials in mortality at various ages under 5 years in West Bengal suggests differential treatment of male and female children.

Figure 8.3
Infant Mortality Rates by Selected Demographic Characteristics



Note: Based on births in the 10 years preceding the survey

NFHS, West Bengal, 1992

For both social and biological reasons, infant and child mortality often exhibit a U-shaped pattern with respect to the mother's age at the time of birth, with children of both very young and very old mothers being at higher risks of dying than children whose mothers are in the prime reproductive ages (20-29). This pattern is also seen in West Bengal. As Table 8.5 shows, infant mortality is highest for the children of mothers under age 20 (95 per 1,000 live births), while the lowest infant mortality rates (72 per 1,000 live births), are for women age 20-29. The child mortality estimates ($_4q_1$) show a slight inverse association with age at maternity, with children of mothers in both younger age groups (<20 and 20-29) having about the same risk of dying (29 per 1,000 and 30 per 1,000, respectively), while children of mothers age 30-39 have a slightly lower risk of dying (25 per 1,000).

Deaths contributing to the infant mortality rate are concentrated in the first month of life, and slightly more so for infants of mothers age less than 20, and age 30-39. Thus mortality associated with the offspring of young mothers (under age 20) is particularly evident in the neonatal mortality rate (65 per 1,000 live births). Among the explanations linking young maternal age and increased risk of infant (or neonatal) mortality are, first, that pregnancies occurring before mothers have attained full maternal growth or physical maturation may result in a greater risk of complications during labour and delivery, and second, that young women are less likely to receive early and adequate antenatal and delivery care (Table 9.7 in Chapter 9), as mentioned above. Additionally, infants born to young mothers in India (especially those younger than age 18) experience greatly elevated risks of obstetric complications or of delivering low birth weight babies.

The relationship between infant mortality and birth order usually plots as a J-shaped curve, with increased mortality risks (after controlling for maternal age) associated with first order and higher order (7+) births. Relative to births at other parities, first order births experience a disproportionately large share of neonatal and postneonatal mortality, but these mortality risks appear to diminish after the first birthday. On the other hand, higher order births experience increased mortality risks at all ages (i.e., ages 1-5). The steady increase in child mortality with birth order may reflect the more intense competition for nutritious food faced by high birth order children once they are weaned, being cared for by someone other than the mother, and the possible unwantedness of the birth (Govindasamy, et al., 1993). Note that in Table 8.5 the mortality rates for births of parity seven or higher are based on 250-499 unweighted children surviving to the beginning of the age interval, and should therefore be interpreted with caution.

Numerous studies have demonstrated a positive association between birth interval and child survival, particularly for the preceding birth interval (Govindasamy et al., 1993). In other words, the infant mortality rate increases sharply as the length of the preceding birth interval decreases. In West Bengal, the infant mortality rate is 125 per 1,000 live births among children born fewer than 24 months after the previous birth, compared to 41 per 1,000 live births among children with a preceding birth interval of more than 48 months. This pattern holds for all of the mortality rates presented in Table 8.5. Possible explanations for the link between birth interval and child survival could include: competition from siblings (especially male siblings) for breastmilk, food, medicine, and other nurturing resources; shorter periods of breastfeeding; the occurrence of *maternal depletion syndrome*, or the idea that mothers lack sufficient time to recover, both physically and nutritionally, from the births of children at short intervals; and finally, that the effects of short intervals may in part result from the perceived need to quickly replace an infant death, where the "replacement" birth comes soon after the death of the previous child, and is thus exposed to the same factors which may have caused the death in the first place.

Another important determinant of the survival chances of children is the baby's weight at the time of birth. Many studies have found that low birth weight babies (under 2,500 grams) have a substantially increased risk of mortality. Since most babies in West Bengal are not weighed at the time of birth, mothers were asked to report the size of their babies at birth, for children born during the four years preceding the interview. Women were asked whether these births were "large, average, or small". The last panel of Table 8.5 shows infant and child mortality statistics for births classified in this way. Children who are perceived by their mothers to be smaller than average at birth generally experience higher mortality rates than children perceived to be average or larger, particularly in their first month of life and in infancy. Perceived birth size, however, appears to be positively associated with the child mortality rate, such that larger births are at higher risks of dying between age one and five (31 per 1,000), compared to either "average" (22 per 1,000) or "small" births (20 per 1,000). In fact those births perceived by the mother as large have mortality rates which approximate those perceived as small, a counterintuitive result. One explanation for this pattern has to do with the relatively small number of cases that birth size is based on, and the fact that sampling errors in general for the infant and child mortality rates are high (see Appendix A).

8.4 High-Risk Fertility Behaviour

Certain patterns of childbearing are associated with elevated levels of infant and child mortality. Table 8.5, for example, shows increased mortality risks for children of young mothers and for births occurring within 24 months of a previous birth. Since couples may control each of these risk factors by the use of family planning, it may be possible for couples to reduce the risks of mortality to their children.

Table 8.6 shows, for births during the five years preceding the interview, percentages with mothers in various "elevated risk" categories. The purpose of this table is to identify areas in which changes in women's behaviour might result in reduced mortality risks for their children. Mortality risks are represented here by the proportion of children born during the five years prior to the survey who had died by the time of the survey. The "risk ratio" is the ratio of this proportion of deceased children in the given "elevated risk" category to the proportion of deceased children not in any "elevated risk" category.

The figures in Table 8.6 may be considered either from the point of view of a prospective mother or from the point of view of the health and family planning policymaker. For the prospective mother, the critical issue is how much greater the risks are in the various "elevated risk" categories, since parents will presumably want to avoid having births under circumstances that would increase the likelihood of an infant or child death. The mortality risk to children of mothers younger than 18, for example, is 2.79 times as high as the risk to children not in any "elevated risk" category (the reference group for this table).

A total of 48 percent of all births occurring in the five years preceding the survey were not in any high-risk category. Forty percent of all births were subjected to single high-risk categories, meaning they were born to mothers either younger than age 18, older than age 34, within 24 months of the previous birth, or of birth order higher than three. Another 12 percent of all births were subject to multiple high-risk categories, meaning that their mothers were simultaneously in more than one of the above high-risk categories. A birth may have occurred, for example, to a mother who was both younger than age 18 and delivering within 24 months of her previous birth. Slightly more than half of all currently married women (52 percent) are not at risk of conceiving a child in any high-risk category, while 26 percent are in a single high-risk category, and the remaining 22 percent are in a multiple high-risk category.

From the point of view of policymakers in health and family welfare, the magnitudes of the risk ratios should be considered in conjunction with the percentage of women in each elevated risk category. The highest risk ratio is associated with births to mothers below age 18. Thirteen percent of all births are in this category. Discouraging childbearing among women under age 18 is also likely to have a substantial impact on overall mortality levels.

While mortality risks to children can undoubtedly be reduced by changing women's childbearing behaviour, the risk ratios shown in Table 8.6 almost certainly overstate the magnitude of the potential effect. This is because a mother's demographic characteristics are

Table 8.6 High-risk fertility behaviour

Percentage of children born in the last five years at elevated risk of mortality and percentage of currently married women at risk of conceiving a child with an elevated risk of mortality, according to category of increased risk and residence, West Bengal, 1992

High-risk category	Births in last 5 years: Percent of births	Births in last 5 years: Risk ratio	Percentage of currently married women[a]
URBAN			
Not in any high-risk category	55.3	1.00	51.3[b]
Single high-risk category			
Age<18: Age under 18 years at birth	10.7	(0.40)	1.6
Age>34: Age over 34 years at birth	0.2	*	14.7
BI<24 : Birth interval under 24 months	9.0	(2.36)	7.0
BO>3 : Birth order higher than 3	14.0	(1.52)	7.3
Subtotal	34.0	1.38	30.6
Multiple high-risk category			
Age<18 & BI<24[c]	1.2	*	0.5
Age>34 & BI<24	--	*	--
Age>34 & BO>3	1.9	*	14.7
Age>34 & BI<24 & BO>3	0.2	*	0.3
BI<24 & BO>3	7.4	*	2.6
Subtotal	10.7	(2.61)	18.1
In any high-risk category	44.7	1.68	48.7
Total percent	100.0	NA	100.0
Number	605	NA	1096
RURAL			
Not in any high-risk category	45.3	1.00	52.7[b]
Single high-risk category			
Age<18: Age under 18 years at birth	13.7	2.07	4.2
Age>34: Age over 34 years at birth	0.2	*	3.0
BI<24 : Birth interval under 24 months	8.3	1.73	7.6
BO>3 : Birth order higher than 3	19.9	0.91	10.0
Subtotal	42.0	1.44	24.8
Multiple high-risk category			
Age<18 & BI<24[c]	1.7	*	1.0
Age>34 & BI<24	--	*	--
Age>34 & BO>3	3.8	(2.42)	14.6
Age>34 & BI<24 & BO>3	0.4	*	1.0
BI<24 & BO>3	6.7	2.72	5.9
Subtotal	12.7	2.87	22.5
In any high-risk category	54.7	1.77	47.3
Total percent	100.0	NA	100.0
Number	2065	NA	2909

Table 8.6 High-risk fertility behaviour (Contd.)

Percentage of children born in the last five years at elevated risk of mortality and percentage of currently married women at risk of conceiving a child with an elevated risk of mortality, according to category of increased risk and residence, West Bengal, 1992

High-risk category	Births in last 5 years		Percentage of currently married women[a]
	Percent of births	Risk ratio	
TOTAL			
Not in any high-risk category	47.6	1.00	52.3[b]
Single high-risk category			
Age<18: Age under 18 years at birth	13.0	2.79	3.5
Age>34: Age over 34 years at birth	0.2	*	6.2
BI<24 : Birth interval under 24 months	8.4	1.88	7.4
BO>3 : Birth order higher than 3	18.6	1.01	9.3
Subtotal	40.2	1.44	26.4
Multiple high-risk category			
Age<18 & BI<24[c]	1.6	*	0.9
Age>34 & BI<24	--	*	--
Age>34 & BO>3	3.3	(2.43)	14.7
Age>34 & BI<24 & BO>3	0.4	*	0.8
BI<24 & BO>3	6.9	2.67	5.0
Subtotal	12.2	2.84	22.3
In any high-risk category	54.4	1.77	47.7
Total percent	100.0	NA	100.0
Number	2069	NA	4004

not the only causal factors influencing the risks of mortality experienced by her children. Women who have many children at short birth intervals almost certainly tend, for example, to live in rural areas, which will raise mortality risks to their children independently of their childbearing behaviour. An adequate analysis of the determinants of this risk ratios shown in Table 8.6 is beyond the scope of this report.

Table 8.6 High-risk fertility behaviour (Contd.)

Percentage of children born in the last five years at elevated risk of mortality and percentage of currently married women at risk of conceiving a child with an elevated risk of mortality, according to category of increased risk and residence, West Bengal, 1992

High-risk category	Births in last 5 years		Percentage of currently married women[a]
	Percent of births	Risk ratio	
BACKWARD DISTRICTS			
Not in any high-risk category	36.6	1.00	43.5[b]
Single high-risk category			
Age<18: Age under 18 years at birth	12.6	*	4.5
Age>34: Age over 34 years at birth	0.6	*	3.6
BI<24 : Birth interval under 24 months	8.2	*	8.6
BO>3 : Birth order higher than 3	24.4	(0.89)	11.5
Subtotal	45.9	1.52	28.2
Multiple high-risk category			
Age<18 & BI<24[c]	1.7	*	1.2
Age>34 & BI<24	0.0	NA	0.1
Age>34 & BO>3	5.6	*	17.5
Age>34 & BI<24 & BO>3	1.5	*	1.8
BI<24 & BO>3	8.6	*	17.8
Subtotal	17.4	(2.95)	28.3
In any high-risk category	63.4	1.92	56.5
Total percent	100.0	NA	100.0
Number	360	NA	425

Note: Risk ratio is the ratio of the proportion dead of births in a specific high-risk category to the proportion dead of births in the "not in any high risk" category.
NA: Not applicable
() Denominator of the upper proportion in the risk ratio is between 50 and 99 unweighted births
* Risk ratio not shown; denominator of the upper proportion in the risk ratio is less than 50 unweighted births
-- Less than 0.05 percent
[a]Women are placed into the categories according to the status they would have at the birth of a child if they were to conceive at the current time: current age less than 17 years and 3 months or older than 34 years and 2 months, last birth occurred less than 15 months ago, or last birth was order 3 or higher.
[b]Includes sterilized women and women whose husbands are sterilized.
[c]Also includes category age under 18 and birth order greater than 3.

CHAPTER 9

MATERNAL AND CHILD HEALTH

The importance of safe motherhood practices and child survival cannot be exaggerated in a country which has experienced high infant and child mortality and maternal mortality. Realizing the importance of maternal and child health care services, the Ministry of Health, Government of India, took concrete steps to strengthen maternal and child health services in the First and Second Five Year Plans (1951-56 and 1956-61). The integration of family planning services with maternal and child health services and nutrition services was introduced as a part of the Minimum Needs Programme during the Fifth Five Year Plan (1974-79). The primary objective was to provide minimum public health services to vulnerable groups of pregnant women, lactating mothers and preschool children (Kanitkar, 1979). Since then, the promotion of health of mothers and children has been one of the most important aspects of the Family Welfare Programme in India, recently strengthened by introducing the Child Survival and Safe Motherhood Programme (Ministry of Health and Family Welfare, 1993a). The Ministry of Health and Family Welfare has also sponsored special schemes, under the Maternal and Child Health Programme, including the programme of Oral Rehydration Therapy (ORT), the development of Regional Institutes of Maternal and Child Health in states where infant mortality rates are high, the Universal Immunization Programme, and the Maternal and Child Health Supplemental Programme within the Post-Partum Programme (Ministry of Health and Family Welfare, 1992).

Maternal and child health services in rural areas of India are mainly delivered in the public sector, through Primary Health Centres and sub-centres. Services for pregnant women and children can be obtained from private and public maternity homes or hospitals, as well as private practitioners. In urban areas, maternal and child health services are available mainly through government or municipal hospitals, urban health posts, hospitals and nursing homes operated by non-governmental voluntary organizations, and various private nursing homes or maternity homes.

The Village Health Guide is a link between the community and MCH services in rural areas. The Female Health Worker, who is an Auxiliary Nurse Midwife (ANM), renders maternal and child health and family welfare services (Ministry of Health and Family Welfare, 1978). The Female Health Worker is supposed to assist the Medical Officer and Female Health Assistant in providing maternal and child health services. She is responsible for registering pregnant women and assessing their health throughout pregnancy in their homes or in the antenatal clinic. Another responsibility of the Female Health Worker is to refer pregnant women who have signs and symptoms of abnormal pregnancy or labour or gynaecological problems that are beyond her level of competence, to the Primary Health Centre. The basic maternal and child services offered at Primary Health Centres are antenatal and postnatal care of mothers as well as infants and children.

A major objective of the NFHS has been to provide information on maternal and child health care practices. The relevant information was collected in the Woman's Questionnaire from the mothers of all children born since 1 January 1988. The information covered matters related to pregnancy and childbirth; infant and child feeding practices including breastfeeding;

immunizations; episodes of illnesses such as acute respiratory infection, fever and diarrhoea and the treatment received; mothers' knowledge and use of Oral Rehydration Salts (ORS); and the level of child nutrition assessed by measuring the weight and height of children.

This chapter analyzes the data collected on antenatal and delivery care, immunization coverage, prevalence of acute respiratory infection, fever and diarrhoea and their treatment, and mothers' knowledge and use of ORS. Chapter 10 deals with infant feeding and child nutrition.

Although information was obtained for each child born since January, 1988, the analysis carried out in this chapter relates to the children born during the four years preceding the survey. If a woman had more than one live birth during the four years preceding the survey, the information was collected for up to three live births and all of these births are taken into account in the analysis.

9.1 Maternal Care Indicators

Antenatal Care

Antenatal care (ANC) refers to pregnancy related health care provided by a doctor or a health worker in a medical facility or at home. The Safe Motherhood Initiative proclaims that all pregnant women must receive basic but professional antenatal care (Harrison, 1990). Antenatal care can contribute significantly to the reduction of maternal morbidity and mortality because it includes important dietary advice and the provision of iron and folic acid tablets to pregnant women. Improved nutritional status, coupled with improved antenatal care, can help reduce the incidence of low birth weight babies and thus reduce perinatal, neonatal and infant mortality.

A pregnant woman can receive antenatal care either by visiting a doctor or other health professional in a medical facility, or by receiving a home visit from a health worker, or both. In the NFHS, each woman who had a live birth during the four years prior to the survey was initially asked whether any health worker visited her at home for an antenatal check-up when she was pregnant and, if so, at which month of pregnancy the first visit was made and how many such visits were made in all. Next she was asked whether she had gone for an antenatal check-up outside the home and whom she saw for the check-up. If she saw more than one person, information was collected on all persons seen. She was asked at which month of pregnancy she first went for an antenatal check-up and how many such visits she made.

Table 9.1 and Figure 9.1 show the percent distribution of live births in the last four years by the source of antenatal care received during pregnancy. In all, the information is available for 2,169 live births in the last four years. If the respondent received antenatal care outside the home from more than one type of provider, only the most qualified provider was counted in the table. In West Bengal, mothers of about 68 percent of the births received antenatal care from either a doctor or health professional - 60 percent from allopathic doctors and eight percent by other health professionals, such as nurses, midwives, ayurvedic and homeopathic doctors. Twenty-five percent of births were to mothers who did not receive any antenatal care. Fewer than 1 percent of mothers received antenatal care outside the home from Traditional Birth Attendants, and for 7 percent of births, the mothers received antenatal care only at home.

Table 9.1 Antenatal care

Percent distribution of live births during the four years preceding the survey by source of antenatal care (ANC) during pregnancy, according to selected background characteristics, West Bengal, 1992

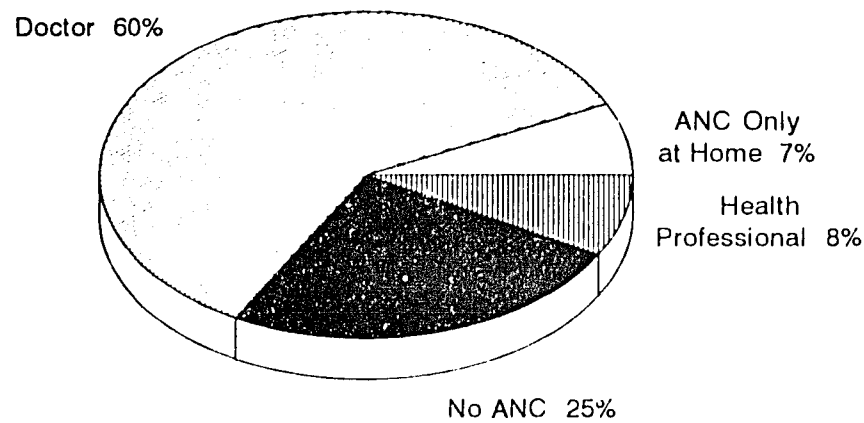
Background characteristic	Antenatal care provider (outside home)[1]							
	Only ANC at home from health worker	Doctor	Other health professional	Traditional birth attendant, other[2]	No ANC	Missing	Total percent	Number of births
Mother's age at birth								
< 20	6.6	64.3	9.8	0.5	18.5	0.4	100.0	621
20-34	6.5	60.1	7.4	0.4	25.6	--	100.0	1459
35+	8.8	39.3	1.0	--	50.9	--	100.0	90
Birth order								
1	4.6	76.1	7.5	0.4	11.2	0.2	100.0	655
2-3	5.2	60.7	9.1	0.3	24.6	0.1	100.0	889
4-5	11.7	47.4	6.8	0.8	33.3	--	100.0	394
6+	9.0	36.7	5.9	--	48.4	--	100.0	232
Residence								
Urban	2.7	75.2	4.4	--	17.7	--	100.0	492
Rural	7.8	56.1	8.9	0.5	26.7	0.1	100.0	1677
Backward districts	6.0	42.8	11.9	1.1	38.2	--	100.0	287
Education								
Illiterate	8.1	46.7	9.8	0.5	34.8	0.1	100.0	1184
Literate, < middle complete	6.9	69.8	6.2	0.3	16.6	0.2	100.0	635
Middle school complete	1.9	82.7	7.1	0.5	7.9	--	100.0	200
High school and above	--	99.0	0.3	--	0.7	--	100.0	151
Religion								
Hindu	5.7	65.1	7.0	0.3	21.7	0.1	100.0	1460
Muslim	8.7	50.7	8.8	0.6	31.1	0.2	100.0	673
Other	(3.0)	(50.2)	(22.4)	(--)	(24.4)	(--)	100.0	36
Caste/tribe								
Scheduled caste	6.1	50.1	10.5	--	33.3	--	100.0	226
Scheduled tribe	6.7	45.0	16.0	--	32.3	--	100.0	114
Other	6.7	62.6	7.0	0.5	23.1	0.1	100.0	1829
Total[3]	6.6	60.4	7.9	0.4	24.6	0.1	100.0	2169

Note: ANC refers to pregnancy-related health care provided by a doctor or a health worker in a medical facility or at home.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Includes births to women who received ANC outside the home, whether or not they also received ANC at home from a health worker. If more than one source of ANC was mentioned, only the provider with the highest qualifications is considered in this tabulation.
[2]Includes hakim and "Don't know"
[3]Births in the period 1-47 months prior to the survey

The coverage of antenatal care is highest (81 percent) among births to mothers below 20 years of age, and lowest (49 percent) among births to mothers in the age group 35 and above[1]. In terms of physician-provided service, there is a negative relationship between the order of birth

[1] Percentages exclude cases with missing information on antenatal care.

Figure 9.1
Sources of Antenatal Care (ANC)
During Pregnancy



Note: Based on births in the four years preceding the survey

NFHS, West Bengal, 1992

and coverage of antenatal care. The mothers of first order births are more likely to have received antenatal care than those of higher order births. Mothers receiving antenatal care from doctors are likely to be younger and of low parity. On the other hand, antenatal care administered only through home visits appears to increase with mother's parity, reaching a high of 12 percent for mothers with 4-5 children, then decreasing slightly to nine percent for mothers with six or more children.

As expected, antenatal care is more common in urban areas (82 percent) than in rural areas (73 percent). The coverage of antenatal care in backward districts is the lowest (62 percent). The proportion of births whose mothers received antenatal care from physicians increases steadily with the mother's educational attainment, from 65 percent for illiterates to 92 percent for mothers who had completed middle school and 99 percent for mothers who had completed high school and above. This strong positive association between mother's education and ANC received from Allopathic practitioners is at least partially balanced by an increased tendency among less-educated mothers to receive ANC from health outreach workers or to seek antenatal care from other health professionals.

Overall, a higher percentage of Hindu mothers (65 percent) received antenatal care from an Allopathic physician than Muslim mothers (51 percent), and scheduled caste and scheduled tribe women were slightly less likely than the average mother to have received antenatal care from an Allopathic physician, but were more likely to have received ANC from other health professionals.

Number and Timing of Antenatal Care Visits

The number of antenatal care visits and the timing of the first antenatal check-up are important for the health of the mother and the outcome of the pregnancy. Ideally, for normal cases, antenatal care visits (after confirmation of pregnancy) should be scheduled at intervals of four weeks throughout the first seven months, then every two weeks until the last month, and weekly thereafter (McDonald and Pritchard, 1980). However, it is often difficult for working women from lower socioeconomic groups to attend an antenatal clinic, as for each visit they may face loss of wages. Under these circumstances, a minimum of four antenatal visits are recommended, during the third, sixth, eighth and ninth months of the pregnancy (Park and Park, 1989).

Table 9.2, and Figure 9.2 show the percentage distribution of live births in the last four years by number and timing of antenatal care visits. The median frequency of any type of antenatal care visits was 3.5, consisting of 2.6 home visits and 3.4 "outside" visits. Based on these figures, women in West Bengal are substantially below the international standards set for antenatal visits. The median number of visits was larger in urban areas (4.1) than in rural areas (3.3). The comparative nearness of antenatal care services and the ease in getting transport in urban areas could be important factors for the larger number of outside visits in urban areas. No home visits were made by health workers to the mothers of 86 percent of births; only 6 percent of births in urban areas and 16 percent of births in rural areas received antenatal care through home visits.

Obstetricians advise that antenatal care should begin at the latest six weeks after the last menstrual period. However, studies undertaken to measure the impact of the initial antenatal visit show that, even when antenatal care is initiated as late as the third trimester, there is a substantial reduction in perinatal mortality (Ramachandran, 1992). In the NFHS, the median gestational age for the first antenatal care visit (home or outside) was 4.4 months in urban areas and 5.6 months in rural areas The median number of months pregnant at first visit in urban areas was higher for home visits (6.1 months) than outside visits (4.3 months), whereas no such difference was observed in rural areas (5.7 and 5.6 months, respectively). One-fourth of all births in West Bengal were to mothers reporting no antenatal care, and among those who did receive ANC, nearly 40 percent were in their second trimester of pregnancy at the time of their first visit. The lack of care by health professionals, the relatively late gestational age at first visit, and the overall low frequency of such visits, are all factors preventing women and children in West Bengal from achieving optimal health and well-being.

Tetanus Toxoid Vaccination

In India, an important cause of death among neonates is neonatal tetanus (Visaria, 1984; Simmons et al., 1978). According to the Central Bureau of Health Intelligence, 15 percent of all deaths due to neonatal tetanus in India in 1991 occurred in West Bengal (Central Bureau of Health Intelligence, 1991). Since West Bengal accounts for 8 percent of the total population of India, the incidence of deaths due to neonatal tetanus in the state cannot be ignored. Neonatal tetanus is caused by infection of the newborn (usually at the umbilical stump) with tetanus organisms. Neonatal tetanus is most common when the delivery takes place in an unhygienic environment and non-sterilized instruments are used for cutting the umbilical cord. Tetanus

Table 9.2 Number of antenatal care visits and stage of pregnancy

Percent distribution of live births during the four years preceding the survey by number of antenatal care (ANC) visits, and by the stage of pregnancy at the time of the first visit, according to residence, West Bengal, 1992

ANC visits/ months pregnant	Home visits	Outside visits	Any type
	URBAN		
Number of ANC visits			
None	94.1	20.4	17.7
1 visit	2.3	4.7	5.0
2-3 visits	2.8	34.8	34.6
4 or more visits	0.9	40.0	42.6
Total percent	100.0	100.0	100.0
Median number of visits (for those with ANC)	3.1	4.0	4.1
Months pregnant at the time of the first ANC visit			
No antenatal care	94.1	20.4	17.7
First trimester	1.4	37.7	38.9
Second trimester	2.9	33.3	34.5
Third trimester	1.6	8.5	8.9
Don't know/missing	--	--	--
Total percent	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	6.1	4.3	4.4
Number of live births[1]	492	492	492
	RURAL		
Number of ANC visits			
None	83.8	34.4	26.7
1 visit	5.1	8.1	8.2
2-3 visits	9.0	43.2	45.6
4 or more visits	1.6	14.2	19.2
Don't know/missing	0.3	0.1	0.3
Total percent	100.0	100.0	100.0
Median number of visits (for those with ANC)	2.5	3.3	3.3
Months pregnant at the time of the first ANC visit			
No antenatal care	83.8	34.4	26.7
First trimester	3.4	16.7	19.4
Second trimester	7.9	32.8	36.8
Third trimester	4.7	16.0	17.1
Don't know/missing	0.2	0.1	0.1
Total percent	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	5.7	5.6	5.6
Number of live births[1]	1677	1677	1677

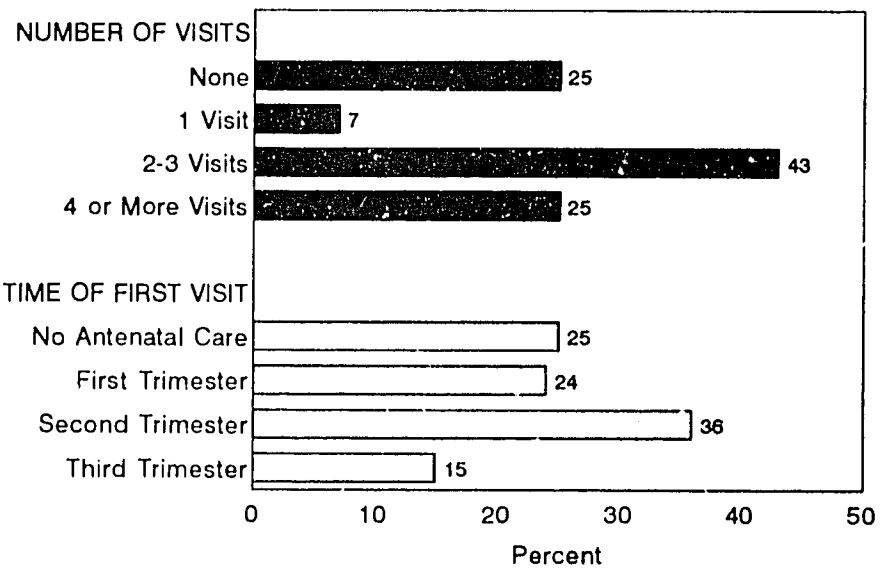
Table 9.2 Number of antenatal care visits and stage of pregnancy (Contd.)

Percent distribution of live births during the four years preceding the survey by number of antenatal care (ANC) visits, and by the stage of pregnancy at the time of the first visit, according to residence, West Bengal, 1992

ANC visits/ months pregnant	Home visits	Outside visits	Any type
TOTAL			
Number of ANC visits			
None	86.2	31.2	24.6
1 visit	4.5	7.3	7.4
2-3 visits	7.6	41.3	43.1
4 or more visits	1.5	20.1	24.5
Don't know/missing	0.3	0.1	0.3
Total percent	100.0	100.0	100.0
Median number of visits (for those with ANC)	2.6	3.4	3.5
Months pregnant at the time of the first ANC visit			
No antenatal care	86.2	31.2	24.6
First trimester	3.0	21.5	23.8
Second trimester	6.8	32.9	36.2
Third trimester	4.0	14.3	15.2
Don't know/missing	0.2	0.1	0.1
Total percent	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	5.7	5.4	5.4
Number of live births[1]	2169	2169	2169
BACKWARD DISTRICTS			
Number of ANC visits			
None	88.7	44.1	38.2
1 visit	3.0	7.8	7.8
2-3 visits	7.4	37.1	39.8
4 or more visits	0.5	10.9	13.7
Don't know/missing	0.5	--	0.5
Total percent	100.0	100.0	100.0
Median number of visits (for those with ANC)	2.4	2.9	3.0
Months pregnant at the time of the first ANC visit			
No antenatal care	88.7	44.1	38.2
First trimester	2.7	19.9	21.7
Second trimester	6.4	23.3	26.9
Third trimester	2.2	12.7	13.2
Total percent	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	5.5	5.3	5.3
Number of live births[1]	287	287	287

-- Less than 0.05 percent
[1]Births in the period 1-47 months prior to the survey

Figure 9.2
Number and Timing of Antenatal Visits



Note: Based on births in the four years preceding the survey

.NFHS, West Bengal, 1992

typically develops during the first or second week of life and is fatal in 70 to 90 percent of cases (Foster,1984). Where this disease is most common, such as rural areas of West Bengal, expert medical help is rarely available, resulting in a fatality rate of nearly 100 percent. This fatality rate is definitely avoidable, however, as neonatal tetanus is a preventable disease. Two doses of tetanus toxoid vaccine given one month apart during early pregnancy are nearly 100 percent effective in preventing tetanus among newborns and mothers. A degree of immunity is transferred to the baby through the placenta when the mother is immunized.

In India, the tetanus immunization programme for expectant mothers was initiated in 1975-76 and was integrated with the Expanded Programme on Immunization (EPI) in 1978 (Ministry of Health and Family Welfare, 1991). In order to speed implementation of the immunization programme, in 1985-86 the Government of India started a special programme called the Universal Immunization Programme (UIP). In 1986 the UIP was recognized as one of seven Technology Missions. One important objective of the UIP was to protect all pregnant women against tetanus by 1990. According to the National Immunization Schedule, a pregnant woman should receive two tetanus toxoid injections (the first injection when she is 16 weeks pregnant and the second when she is 20 weeks pregnant). Reinoculation is recommended every three years, although a single booster injection should be given if the initial two doses were administered within a three-year period (Central Bureau of Health Intelligence, 1991).

In the NFHS, each mother who had a live birth during the past four years was asked whether she was given an injection in the arm to prevent her and her baby from getting tetanus

and, if so, how many times. The distribution of births by the number of tetanus toxoid injections given to mothers, according to selected background characteristics, is shown in Table 9.3. Twenty-two percent of births were to mothers who did not receive a single dose of tetanus toxoid vaccine, 7 percent to those who received one dose and the remaining 70 percent of births were to those mothers who received two or more doses. Tetanus immunization coverage is ten percentage points higher in urban than rural areas (78 percent receiving two or more doses in urban areas), and again about ten percentage points lower in backward districts than rural areas.

For births in the last four years, tetanus toxoid coverage was lower for older mothers, mothers pregnant with higher order births, and mothers belonging to scheduled castes and

Table 9.3 Tetanus toxoid vaccinations

Percent distribution of live births during the four years preceding the survey by number of tetanus toxoid injections and whether the respondent was given iron/folic tablets during pregnancy, according to selected background characteristics, West Bengal, 1992

Background characteristic	Number of tetanus toxoid injections					Percent given iron/ folic tablets	Number of births
	None	One dose	Two doses or more	Don't know/ missing	Total percent		
Mother's age at birth							
< 20	15.5	8.5	75.8	0.1	100.0	60.1	621
20-34	23.3	6.4	70.3	0.1	100.0	55.8	1459
35+	55.1	10.7	34.2	--	100.0	38.6	90
Birth order							
1	9.3	5.0	85.6	--	100.0	69.5	655
2	16.4	8.6	74.9	--	100.0	57.7	521
3	28.0	5.9	65.6	0.5	100.0	50.7	368
4	30.2	8.0	61.8	--	100.0	48.1	238
5	32.9	9.7	57.4	--	100.0	46.5	156
6+	48.7	9.1	42.2	--	100.0	39.8	232
Residence							
Urban	16.2	5.4	78.1	0.3	100.0	63.4	492
Rural	24.2	7.7	68.1	--	100.0	54.2	1677
Backward districts	34.1	7.0	58.7	0.2	100.0	44.9	287
Education							
Illiterate	32.8	9.1	58.1	--	100.0	46.5	1184
Lit., < middle complete	12.9	5.9	81.2	--	100.0	63.8	635
Middle school complete	6.8	3.4	89.1	0.7	100.0	71.3	200
High school and above	1.5	1.9	96.7	--	100.0	81.8	151
Religion							
Hindu	19.9	7.2	72.8	0.1	100.0	61.4	1460
Muslim	27.6	7.2	65.1	--	100.0	44.5	673
Other	(24.9)	(5.5)	(68.3)	(1.2)	100.0	(69.6)	36
Caste/tribe							
Scheduled caste	33.3	11.0	55.8	--	100.0	51.5	226
Scheduled tribe	34.2	10.4	55.0	0.4	100.0	56.5	114
Other	20.3	6.5	73.1	0.1	100.0	56.9	1829
Total[1]	22.4	7.2	70.4	0.1	100.0	56.3	2169

() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Births in the period 1-47 months prior to the survey

scheduled tribes. A marked positive relationship is observed between the educational attainment of the mother and the coverage rate for tetanus toxoid vaccination. The proportion of births whose mothers had received one or more doses of tetanus toxoid vaccine increases steadily from 67 percent of illiterate mothers to 99 percent of mothers with at least a high school education. The tetanus immunization coverage rate was higher for births to Hindus (80 percent) than for births to Muslims (72 percent).

Iron and Folic Acid Tablets

Proper maternal nutritional care is important for the healthy intrauterine growth of a baby and may affect infant birth weight. Various studies in different parts of India have indicated that the percentage of low birth weight babies (weighing less than 2,500 grams) ranged from 15 in Trivandrum to 46 in Baroda (Nutrition Foundation of India, 1993). Overall, around one-third of babies in India are low birth weight, suggesting a nutritional deficiency among many expectant mothers. Improved maternal nutrition (coupled with improved health care in pregnancy) has, however, been shown to substantially improve birth weights in India (Ramachandran, 1992). The provision of iron and folic acid tablets as a prophylaxis against nutritional anaemia among pregnant women forms an integral part of MCH activities in the Indian Family Welfare Programme (Ministry of Health and Family Welfare, 1991). It is recommended that in the period beginning with pregnancy confirmation and ending with childbirth, pregnant women should have ingested 100 tablets of iron and folic acid (or about 13-15 tablets per month), and health workers are instructed accordingly.

In the NFHS, information was collected on whether the mother had received iron and folic acid tablets during each pregnancy resulting in a live birth during the last four years. The results are presented in Table 9.3. Only 56 percent of births were to mothers who had received iron and folic acid tablets. Receipt of iron and folic acid tablets was substantially higher in urban (63 percent) than in rural areas (54 percent), with less than half of women receiving tablets in the backward districts. The differentials in the distribution of iron and folic acid tablets by other background characteristics are almost the same as those for tetanus injections.

Place of Delivery and Assistance During Delivery

From the standpoint of child survival and the health of the mother, it is advantageous for the birth of the baby to take place under proper hygienic conditions with the assistance of a trained medical practitioner. Table 9.4 presents the percent distribution of live births occurring during the four years preceding the survey according to place of delivery and selected background characteristics. A substantial majority of births in West Bengal occur at home (68 percent). Out of the total 2,169 live births, only 31 percent occurred in health facilities or institutions, with 26 percent in public institutions and 5 percent in private medical institutions (Figure 9.3). The percentage of births occurring in health facilities is about three times as high in urban areas (66 percent) as in rural areas (21 percent). Fourteen percent of births occurring in backward districts occurred in health facilities/institutions.

Births to women below age 34 years, first-order births, and to women with higher educational attainment are more likely to occur in health facilities. The percentage of births to Muslim, scheduled caste and scheduled tribe mothers are all more likely to occur at home.

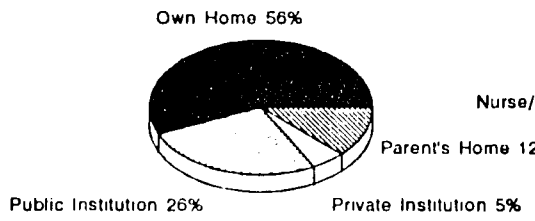
Table 9.4 Place of delivery

Percent distribution of live births during the four years preceding the survey by place of delivery, according to selected background characteristics, West Bengal, 1992

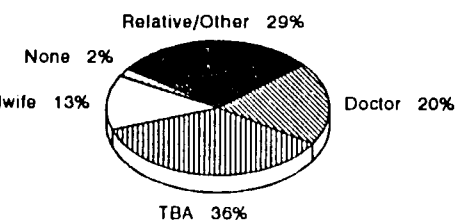
Background characteristic	Place of delivery						Number of live births[1]
	Health facility/ institution		Home			Total percent	
	Public	Private	Own home	Parents' home	Other		
Mother's age at birth							
< 20	31.1	3.3	45.5	19.8	0.4	100.0	621
20-34	25.1	6.4	58.7	9.3	0.5	100.0	1459
35+	11.0	--	88.5	0.5	--	100.0	90
Birth order							
1	42.2	8.8	29.8	19.0	0.2	100.0	655
2-3	23.2	5.2	59.0	11.8	0.8	100.0	889
4-5	15.6	1.9	76.4	6.1	--	100.0	394
6+	10.9	0.9	85.3	2.3	0.6	100.0	232
Residence							
Urban	50.2	15.8	26.7	6.4	0.9	100.0	402
Rural	19.2	2.2	64.8	13.5	0.3	100.0	1677
Backward districts	13.4	0.5	65.3	20.9	--	100.0	287
Education							
Illiterate	15.7	0.6	71.5	11.8	0.3	100.0	1184
Lit., < middle complete	31.6	4.3	49.7	13.6	0.8	100.0	635
Middle school complete	55.2	8.3	24.7	11.3	0.5	100.0	200
High school and above	47.8	41.7	4.1	6.3	--	100.0	151
Religion							
Hindu	34.0	6.4	50.6	8.6	0.4	100.0	1460
Muslim	9.5	2.3	68.1	19.5	0.5	100.0	673
Other	(21.2)	(15.1)	(57.6)	(6.0)	(--)	100.0	36
Caste/tribe							
Scheduled caste	21.3	0.6	69.6	8.4	--	100.0	226
Scheduled tribe	16.0	--	74.5	8.5	1.0	100.0	114
Other	27.5	6.2	53.3	12.6	0.5	100.0	1829
Antenatal care visits							
None	9.2	0.3	81.1	8.8	0.6	100.0	535
1-3 visits	24.4	2.3	57.8	15.3	0.2	100.0	1097
4+ visits	47.1	16.5	27.9	7.7	0.7	100.0	532
Total[1]	26.2	5.3	56.1	11.9	0.4	100.0	2169

() Based on 25-49 unweighted cases
- Less than 0.05 percent
[1]Births in the period 1-47 months prior to the survey. Total includes 5 births with missing information on antenatal care visits, which are not shown separately.

Figure 9.3
Place of Delivery and Assistance During Delivery



Place of Delivery



Assistance During Delivery

Note: Based on births in the four years preceding the survey

NFHS, West Bengal, 1992

In West Bengal, the percentage of births delivered in health facilities (31 percent) is less common than the percentage of births to mothers who received antenatal care (75 percent). Among mothers who had four or more antenatal visits, 64 percent of births occurred in health facilities. Ninety percent of births to mothers having had no antenatal care, however, occurred in the home. The positive association between antenatal care visits and deliveries occurring in health facilities could be due to the availability of services for both antenatal care and delivery and/or to complications during pregnancy which may lead women to seek more antenatal care. Another explanation could be that the more pregnant women seek antenatal care outside the home, the more they develop rapport with service providers and agree to have medical assistance during delivery.

Table 9.5 presents information on assistance during delivery according to selected background characteristics. In all, 33 percent of the 2,169 births were attended by a doctor (20 percent) or a trained nurse/midwife (13 percent). Little more than one-third of births were attended by traditional birth attendants and 29 percent were attended by relatives, friends or neighbours.

As expected, a higher proportion of deliveries were attended by doctors in urban areas (45 percent) than in rural areas (13 percent), and in backward districts only 9 percent of births were attended by a doctor. Among the deliveries which took place in private health institutions, 87 percent were attended by doctors and 13 percent by nurses/midwives, whereas among deliveries in public health institutions, 52 percent were attended by doctors and 45 percent by

Table 9.5 Assistance during delivery

Percent distribution of live births during the four years preceding the survey by type of assistance during delivery, according to selected background characteristics, West Bengal, 1992

Background characteristic	Attendant assisting during delivery[1]						Number of live births[2]
	Doctor	Nurse/ midwife	Traditional birth attendant	Relative/ other	None	Total percent	
Mother's age at birth							
< 20	18.7	17.6	35.9	26.6	1.2	100.0	621
20-34	21.6	11.3	36.2	29.0	1.9	100.0	1459
35+	5.8	6.5	42.0	41.5	4.3	100.0	90
Birth order							
1	34.2	18.8	29.0	17.3	0.7	100.0	655
2-3	17.1	12.5	35.5	32.9	2.0	100.0	889
4-5	12.2	7.2	44.5	33.1	3.0	100.0	394
6+	5.2	7.5	46.3	38.6	2.3	100.0	232
Residence							
Urban	45.1	21.4	22.2	10.0	1.2	100.0	492
Rural	12.7	10.4	40.5	34.4	2.0	100.0	1677
Backward districts	8.9	6.4	39.8	41.7	3.3	100.0	287
Mother's education							
Illiterate	9.4	7.9	42.8	37.5	2.4	100.0	1184
Lit., < middle complete	19.1	19.4	35.2	25.1	1.2	100.0	635
Middle school complete	41.6	22.9	25.1	9.7	0.7	100.0	200
High school and above	79.8	12.1	5.7	1.5	0.9	100.0	151
Religion							
Hindu	25.2	16.7	33.4	23.0	1.7	100.0	1460
Muslim	8.8	4.8	42.5	41.8	2.0	100.0	673
Other	(23.3)	(13.0)	(39.5)	(24.2)	(--)	100.0	36
Caste/tribe							
Scheduled caste	11.1	11.3	38.2	36.5	2.8	100.0	226
Scheduled tribe	8.5	8.2	45.9	36.2	1.2	100.0	114
Other	21.9	13.4	35.5	27.4	1.7	100.0	1829
Antenatal care							
None	5.3	4.9	44.3	41.7	3.8	100.0	535
1-3 visits	13.9	14.7	39.8	30.4	1.3	100.0	1097
4+ visits	48.0	17.3	21.0	12.8	0.9	100.0	532
Place of delivery							
Public health facility	52.2	45.3	1.0	0.8	0.8	100.0	569
Private health facility	87.4	12.6	--	--	--	100.0	114
Own home	2.4	0.4	52.5	42.4	2.2	100.0	1218
Parents' home	3.7	1.3	53.5	39.0	2.5	100.0	259
Total[2]	20.1	12.9	36.3	28.8	1.8	100.0	2169

() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]If the respondent mentioned more than one attendant, only the most qualified attendant is considered in this tabulation.
[2]Births in the period 1-47 months prior to the survey. Total includes 5 births with missing information on antenatal care visits, 10 births with "other" place of delivery and 42 cases with missing information on place of delivery, which are not shown separately.

nurses/midwives. Among deliveries occurring in the respondent's home, more than half (53 percent) were attended by TBAs, 42 percent by relatives or others, and only 2 percent by doctors. Whereas 56 percent of all births occur at the respondent's own home, only 12 percent of deliveries take place at the parental home. At the parental home, assistance at delivery by a TBA is more frequent (54 percent), and 39 percent of the deliveries were attended by relatives or others. Only 5 percent of parental home deliveries were attended by medical professionals.

Births to women who had four or more antenatal visits were more likely to be assisted by a doctor at the time of delivery than births to women with fewer visits or no antenatal care. Assistance at birth by a doctor is positively associated with educational attainment, and, conversely, assistance by a traditional birth attendant is inversely associated with mother's education.

Thus in West Bengal, a large majority of live births (68 percent) were delivered in the home, and among these home deliveries about 44 percent were attended by untrained persons. Assistance at birth by trained medical or paramedical personnel, whether at home or at a health facility, is conducive to safe motherhood and child survival; improvement in this area could lead to associated improvements in infant mortality rates for West Bengal.

Delivery Characteristics

The percent distribution of live births in the last four years according to complications during delivery, prematurity, birth weight and mother's estimate of the baby's size at birth are presented in Table 9.6. As reported by mothers, 85 percent of the deliveries had no complications, seven percent were characterized by a long period of labour, two percent were accompanied by excessive bleeding and delivery of the placenta was delayed for only one percent of births. Four percent of births were by Caesarian section (C-section). C-section deliveries were nearly four times as prevalent in urban areas (where institutional deliveries are more common) as in rural areas. The reported complications of delivery in the backward districts were more than those in the state as a whole.

A small percentage of live births (4 percent) were reported as premature. Reported premature births were more common among urban (6 percent) compared to rural (4 percent) births.

Seventy-three percent of babies were not weighed at birth (38 percent in urban areas and 83 percent in rural areas), which is not surprising considering that the majority of deliveries were at home. Moreover, for nine percent of births in urban areas and four percent of births in rural areas the baby was weighed, but information on birth weight was not available. Thus, the resulting sample of birth weights is small and subject to substantial selection bias. About one-quarter of the babies whose weight at birth was known had low birth weight (less than 2.5 kg). Since most deliveries in India take place at home where it is difficult to weigh newborns, a question on the size of the baby at birth (small, average, or large) was asked in the NFHS. Experience has shown that mothers can give useful information about the size of their newborns. Almost one in four births were reported to be small in size and many of these were undoubtedly of low birth weight. Slightly more rural mothers reported that their babies were "small" (26 percent), than did urban mothers (23 percent).

Table 9.6 Delivery characteristics

Percent distribution of live births during the four years preceding the survey by whether the delivery had complications, whether premature, and by birth weight and the mother's estimate of the baby's size at birth, according to residence, West Bengal, 1992

Delivery characteristic	Urban	Rural	Total	Backward districts
Complications at delivery[1]				
No complications	81.6	86.0	85.0	80.7
Caesarian section	9.7	2.4	4.0	1.6
Use of forceps	0.9	1.1	1.0	0.3
Excessive bleeding	3.6	1.2	1.8	1.7
Long period of labour	3.8	8.3	7.3	14.6
Delayed delivery of placenta	0.3	1.0	0.8	1.4
Other	0.7	0.6	0.7	0.9
Premature birth				
Yes	5.6	3.9	4.3	3.4
No	94.4	96.0	95.7	96.6
Don't know/missing	--	0.1	0.1	--
Total percent	100.0	100.0	100.0	100.0
Birth weight				
Less than 2.5 kg	10.6	4.0	5.5	2.9
2.5 kg or more	42.6	9.3	16.9	5.9
Don't know/missing	8.6	3.5	4.7	2.0
Not weighed	38.2	83.2	73.0	89.1
Total percent	100.0	100.0	100.0	100.0
Size at birth				
Large	23.0	25.1	24.7	26.3
Average	54.3	48.4	49.7	45.5
Small	22.7	26.3	25.5	28.1
Don't know/missing	--	0.2	0.1	0.2
Total percent	100.0	100.0	100.0	100.0
Number of births[2]	492	1677	2169	287

-- Less than 0.05 percent
[1]Percentages may sum to more than 100.0 because multiple complications could be recorded. Births with missing information on complications at delivery are not included.
[2]Births in the period 1-47 months prior to the survey.

Table 9.7 shows the relationship between delivery characteristics and antenatal care, previous birth interval and mother's age at birth. Complications were most common for births to mothers who had four or more antenatal visits. This suggests that there is a tendency among pregnant women having some complications to obtain antenatal care more often. Even the percentage of premature births is higher for those births to mothers who made four or more antenatal visits. The proportion of newborns who were weighed was 7 percent for those whose mothers did not receive antenatal care, 21 percent for those with 1-3 antenatal check-ups, and 59 percent for those whose mothers had four or more antenatal visits. As indicated in Table 9.4, 64 percent of births to mothers who had four or more antenatal visits were delivered in institutions, where the possibility of weighing children is very high.

Table 9.7 Delivery characteristics by background characteristics

Percent distribution of live births during the four years preceding the survey by whether the delivery had complications, whether premature, and by birth weight and the mother's estimate of the baby's size at birth according to antenatal care, birth interval, and mother's age, West Bengal, 1992

Delivery characteristic	Antenatal care			Previous birth interval				Age of mother at birth		
	None	1-3 visits	4+ visits	Under 2 years	2-3 years	4+ years	First birth	<20	20-34	35+
Complications at delivery[1]										
No complications	90.1	88.0	74.0	93.7	88.5	83.5	76.7	85.4	85.0	81.9
Caesarian section	0.9	1.8	11.8	0.9	2.1	3.6	8.4	2.6	4.8	1.6
Use of forceps	0.1	0.7	2.8	0.3	0.3	1.2	2.4	1.4	1.0	--
Excessive bleeding	1.5	1.3	3.0	1.5	1.1	1.9	2.7	2.2	1.5	3.5
Long period of labour	6.8	7.3	7.4	3.1	6.3	8.3	10.2	8.8	6.2	13.6
Delayed delivery of placenta	1.0	0.6	1.0	0.7	0.9	2.0	0.2	0.4	1.0	0.5
Other	0.4	0.5	1.3	--	1.1	0.1	0.7	0.2	0.9	--
Premature birth										
Yes	2.5	4.1	6.3	2.6	2.4	3.4	8.0	7.5	3.1	1.7
No	97.3	95.9	93.7	97.4	97.5	96.6	92.0	92.5	96.9	98.3
Don't know/missing	0.2	--	--	--	0.1	--	--	--	0.1	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Birth weight										
Less than 2.5 kg	1.3	5.5	9.9	4.3	3.2	2.9	10.3	6.7	5.3	--
2.5 kg or more	3.7	11.3	41.7	11.2	10.9	17.6	27.3	15.7	18.0	6.1
Don't know/missing	2.2	4.6	7.4	3.2	3.9	5.3	6.2	6.1	4.3	1.2
Not weighed	92.8	78.6	41.0	81.3	82.0	74.2	56.2	71.4	72.4	92.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Size at birth										
Large	23.2	23.5	28.5	26.3	23.4	24.8	25.4	26.3	23.9	26.3
Average	51.4	48.9	50.0	48.0	50.3	56.7	46.4	43.7	52.2	51.2
Small	25.3	27.4	21.2	25.7	26.2	18.4	27.8	29.8	23.9	22.4
Don't know/missing	0.1	0.1	0.2	--	--	0.1	0.3	0.2	0.1	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of births[2]	536	1097	532	335	863	314	657	621	1459	90

Note: Five births for which information on number of antenatal care visits is missing or not known are not shown separately.
-- Less than 0.05 percent
[1]Percentages may sum to more than 100.0 because multiple complications could be recorded. Births with missing information on complications at delivery are not included.
[2]Births in the period 1-47 months prior to the survey.

Complications are reported more frequently for births with a previous birth interval of four or more years than for births with shorter intervals. In terms of birth intervals, first births had the higher complication rates (23.3 percent), especially with respect to the period of labour. C-sections were carried out for 8 percent of first births, compared with less than 4 percent for other births. First births were also more likely to be premature births (8 percent) compared with less than 4 percent for other births, and were also more likely to be weighed at birth than other births. Mother's age is positively associated with complications, although this relationship

appears weak. Overall, a large majority of all births took place without any reported complications.

9.2 Child Care Indicators

Immunization of Children

The immunization of children against six serious but preventable diseases (namely, tuberculosis, diphtheria, pertussis, tetanus, polio, and measles) has been an important cornerstone of the child health care system in India. As part of the National Health Policy, the National Immunization Programme is being implemented in India on a priority basis (Gupta and Murli, 1989). The Expanded Programme on Immunization (EPI) was started by the Government of India in 1978 with the objective of reducing morbidity, mortality and disabilities due to these six diseases by making free vaccination services easily available to all eligible children. Immunization against polio was introduced to the programme in 1979-80 and tetanus toxoid for school children was added in 1980-81. BCG was brought under the EPI in 1981-82. The latest addition to the Programme has been vaccination against measles in 1985-86 (Ministry of Health and Family Welfare, 1991).

In order to provide an impetus to the immunization scheme, the Government of India started a special programme called the Universal Immunization Programme (UIP) in 1985-86. The UIP was designated as one of the seven Technology Missions with the following objectives: i) to cover at least 85 percent of all infants by 1990 against six vaccine preventable diseases; and ii) to achieve self-sufficiency in vaccine production and manufacture of cold chain equipment (Ministry of Health and Family Welfare, 1991).

The standard immunization schedule developed for the immunization programme for children contains the age at which each vaccine is administered, the number of doses to be given and the route of vaccination (intramuscular, oral or subcutaneous). Vaccinations received by infants and children are usually recorded on a vaccination card which is given to the mother of each child.

During the training of the interviewers in West Bengal, a lecture by a medical doctor covering immunization and child health was arranged. During the fieldwork, each mother was asked whether she had a vaccination card for each child born since 1 January 1988. If a card was available, the interviewer was required to copy carefully the dates on which the child received vaccinations against each disease. When the mother could not produce the vaccination card she was asked whether the child had received any vaccinations. If any vaccination had been received, the mother was then asked whether the child had received a vaccination against tuberculosis (BCG); diphtheria, whooping cough (pertussis) and tetanus (DPT); polio, and measles. For DPT and polio, information was obtained on the number of injections or oral doses given.

Table 9.8 presents the percentage of children age 12-23 months who received each vaccine at any time before the interview and the percentage who received each vaccine before 12 months of age, by source of information (i.e., vaccination card or mother's report). The below-12 months age group is chosen for analysis because international guidelines specify that

children should be fully immunized by the time they complete their first year of life. The denominator for any given row in the table is the number of children age 12-23 months. The numerator of each entry in the row labelled "Vaccination card" is the number of children who received the specific vaccination or dose any time prior to the survey, as indicated in the vaccination card seen by the interviewer. The numerator for this row also includes those cases where a card was shown but (1) there was an indication on the card that the vaccination was given but the actual date was either missing or inconsistent, or (2) there was no record of receipt of the vaccination on the card, but the mother reported that the vaccination was given.

The numerator for each entry in the row labelled "Mother's report" is the number of children whose mothers did not show a card to the interviewer but reported that the child had received the vaccination. The numerator for each entry in the row labelled "Either source" is the sum of the numerators in the preceding two rows for the vaccination under consideration. The numerator for each entry in the fourth row, "Vaccinated by 12 months of age," is the sum of two quantities: (1) children vaccinated during the first year of life (0-11 months) as indicated on the vaccination card (including cases where there was no date on the card or the specific vaccine was not recorded on the card); and (2) children vaccinated by 12 months of age according to the mother's report. Because the date of immunization was not asked of the mother if she could not show the card, the proportion of vaccinations given during the first year of life among children whose information is based on the mother's report is assumed to be the same as the proportion of vaccinations given during the first year of life among children with a written record of vaccination.

Of the 488 children in the age group 12-23 months, vaccination cards were available for only 48 percent of children in West Bengal (56 percent in urban areas and 45 percent in rural areas). For backward districts, vaccination cards were available for 37 percent of children. As expected, levels of vaccination coverage are much higher for children whose mothers showed interviewers vaccination cards, than for those children whose mother either had no card or was unable to present the card to the interviewer.

Based on the information either recorded on a card or reported by the mother, only 34 percent of children age 12-23 months are fully vaccinated[2] and 22 percent have not received any vaccinations. Thus, the findings on immunization indicate that West Bengal has a long way to go to achieve the goal of universal immunization of children.

Analysis of vaccine-specific data shows that nearly two-thirds of the children (63 percent) had received the BCG vaccine, and three-fourths had received the first dose of DPT (74 percent) and polio vaccines (75 percent). Slightly more than half of children had received three doses of DPT and polio vaccines and only 43 percent had been vaccinated against measles. The DPT and polio coverage rates are about the same since both vaccines are normally administered simultaneously. The continuation rate from the first dose to the third dose of DPT and polio

[2] They have received BCG, measles, and three doses of DPT and polio (excluding polio 0). Polio 0 has been introduced only recently and because it is a vaccination given at the time of birth, mothers may not remember whether the first dose of the polio vaccine was given just after birth or later. Therefore, the coverage of polio 0 reported in the NFHS may be subject to response errors.

Table 9.8 Vaccinations by source of information

Among children 12-23 months of age, the percentage who have received each vaccine at any time before the interview and before 12 months of age, according to whether the information is from the vaccination card or from the mother, West Bengal, 1992

Source of information	Percentage vaccinated among children 12-23 months old											Number of children
	BCG	Polio 0	DPT 1	DPT 2	DPT 3	Polio 1	Polio 2	Polio 3	Measles	All[1]	None	
URBAN												
Vaccinated at any time before interview												
Vaccination card	(86.2)	(--)	(100.0)	(88.5)	(75.6)	(97.7)	(93.1)	(80.9)	(55.9)	(50.6)	(--)	62
Mother's report	(53.6)	(3.0)	(65.5)	(56.6)	(47.6)	(68.5)	(62.5)	(56.6)	(35.7)	(35.7)	(31.5)	48
Either source	72.0	1.3	85.0	74.6	63.4	85.0	79.8	70.3	47.1	44.1	13.7	110
Vaccinated by 12 months of age[2]	62.8	1.3	67.6	59.9	49.8	69.2	59.0	55.7	30.2	29.4	26.8	110
RURAL												
Vaccinated at any time before interview												
Vaccination card	86.1	0.3	96.8	84.7	72.2	98.7	89.2	77.3	68.2	53.9	--	171
Mother's report	39.5	1.3	48.7	38.9	29.0	50.8	41.0	31.0	19.0	12.7	45.4	207
Either source	60.5	0.8	70.4	59.6	48.5	72.4	62.8	51.9	41.2	31.3	24.9	378
Vaccinated by 12 months of age[2]	54.8	0.8	63.3	52.0	38.5	64.8	54.5	39.7	26.2	18.4	30.7	378
TOTAL												
Vaccinated at any time before interview												
Vaccination card	86.1	0.2	97.6	85.7	73.1	98.4	90.2	78.3	64.9	53.0	--	233
Mother's report	42.1	1.6	51.8	42.2	32.5	54.1	45.1	35.7	22.1	17.0	42.8	255
Either source	63.1	0.9	73.7	62.9	51.9	75.2	66.6	56.0	42.5	34.2	22.4	488
Vaccinated by 12 months of age[2]	56.6	0.9	64.2	53.7	41.1	65.7	55.5	43.2	27.1	20.7	29.9	488
BACKWARD DISTRICTS												
Vaccinated at any time before interview												
Vaccination card	92.8	1.8	100.0	87.4	64.3	100.0	87.4	66.0	64.5	48.5	--	25
Mother's report	33.4	1.1	34.5	28.0	18.3	39.8	33.4	22.6	12.9	10.8	56.9	42
Either source	55.7	1.3	59.0	50.3	35.5	62.4	53.6	38.9	32.3	24.9	35.6	67
Vaccinated by 12 months of age[2]	45.5	1.3	50.6	38.1	27.6	53.5	39.0	31.2	18.5	14.1	43.7	67

() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Children who are fully vaccinated, i.e., those who have received BCG, measles and three doses of DPT and polio vaccine (excluding polio 0).
[2]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.

vaccine indicate a considerable dropout (30 percent in the case of DPT and 26 percent in the case of polio).

The analysis of the vaccine-specific data also indicates higher coverage for each type of vaccine in urban areas than in rural areas. However, even in urban areas most children are not fully immunized. Dropout rates for DPT and polio are also lower in urban areas than in rural areas. The coverage of vaccinations in the backward districts is even lower than the coverage for rural areas of the state. In all cases (excluding polio 0), levels of coverage were substantially higher for children with a vaccination card than those without a card.

According to the immunization schedule, all primary vaccinations, including measles, should be completed by the time a child is 12 months old. The data presented in Table 9.8 indicate that of all the vaccinations reportedly administered, most occur before the child's first birthday. For example, while about 21 percent of children had been fully vaccinated by age 12 months, 34 percent were fully vaccinated by the time of the survey. More than one-third of children who were vaccinated against measles received the vaccination after their first birthday.

Table 9.9 and Figure 9.4 present vaccination coverage rates among children age 12-23 months by selected background characteristics. The percentage for whom vaccination cards could be seen was slightly lower for male children (47 percent) than female children (48 percent). Similarly, for almost all types of vaccination, coverage is slightly lower among male children, a departure from the pattern seen in most states of India. For example, 32 percent of male children were fully vaccinated, compared with 37 percent of female children, and 24 percent of male children are given no vaccinations, compared to 21 percent of females. The sex differential in coverage rates ranged from 0.3 percentage points for DPT2 to 4.9 percentage points for BCG. This pattern indicates that female children are not discriminated against in the utilization of immunization services, and these differentials could be an important factor in the lower female mortality during infancy as observed in Table 8.5.

First-order births were in an advantageous position with respect to the possession of vaccination cards and vaccination coverage levels. The relationship between vaccination coverage and birth order was consistently negative for all vaccinations. A large majority of first-order births occur to younger women who have been observed to have a higher degree of utilization of health care services, such as antenatal and natal services. As in the case of the utilization of maternal health care services, there is a consistent positive relationship between the educational level of the mother and utilization of immunization services. The percentage of children fully vaccinated increases from 23 percent for children of illiterate mothers to 67 percent for children whose mothers had completed high school. Muslim children and children from scheduled castes and scheduled tribes are much less likely than other children to have been vaccinated against childhood diseases.

Table 9.10 shows the percentage of children age 12-47 months with vaccination cards shown to the interviewer and the percentage receiving various vaccinations in the first year of life, according to the current age of the child and residence. The table illustrates changes in vaccination over time. In all cases, the percentage of children whose immunization status was determined by vaccination card declines with the age of the child. This may be a reflection of

Table 9.9 Vaccinations by background characteristics

Among children 12-23 months, the percentage who had received each vaccine by the time of the survey (according to the vaccination card or the mother) and the percentage with a vaccination card which was shown to the interviewer, by selected background characteristics, West Bengal, 1992

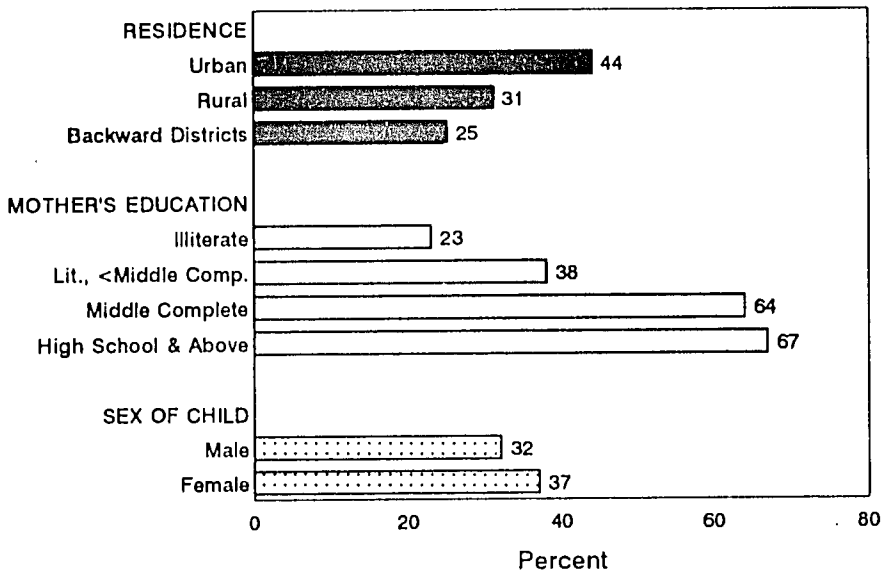
Background characteristic	Percentage vaccinated											Percentage showing vaccination card	Number of children
	BCG	Polio 0	DPT 1	DPT 2	DPT 3	Polio 1	Polio 2	Polio 3	Measles	All[1]	None		
Sex													
Male	60.6	1.1	73.3	63.1	50.5	75.0	65.8	54.2	42.4	31.8	23.6	47.4	238
Female	65.5	0.7	74.0	62.8	53.2	75.4	67.4	57.7	42.7	36.5	21.3	47.9	250
Birth order													
1	77.2	--	83.8	76.4	64.4	84.9	79.2	68.2	51.0	44.4	12.9	59.5	147
2-3	61.9	1.7	72.3	61.2	53.3	72.8	65.9	56.3	41.4	32.6	23.7	44.3	207
4-5	55.6	1.2	72.2	59.5	41.0	76.4	62.8	46.7	39.8	27.4	23.2	42.4	90
6+	37.1	--	49.6	33.8	25.4	52.7	35.8	33.3	25.3	21.9	46.3	34.9	44
Residence													
Urban	72.0	1.3	85.0	74.6	63.4	85.0	79.8	70.3	47.1	44.1	13.7	56.4	110
Rural	60.5	0.8	70.4	59.6	48.5	72.4	62.8	51.9	41.2	31.3	24.9	45.2	378
Backward districts	55.7	1.3	59.0	50.3	35.6	62.4	53.6	38.9	32.3	24.9	35.6	37.5	67
Mother's education													
Illiterate	51.6	1.0	63.7	54.3	42.0	67.1	57.4	45.1	34.0	22.7	30.6	39.6	261
Lit., < middle complete	69.8	1.0	81.0	67.1	56.1	81.8	71.1	62.1	43.1	37.6	16.7	54.2	145
Middle school complete	(84.5)	(1.0)	(87.4)	(79.7)	(71.1)	(85.1)	(82.0)	(73.4)	(65.9)	(63.5)	(10.3)	(67.2)	47
High school and above	(92.5)	(--)	(98.8)	(88.4)	(82.1)	(95.6)	(95.6)	(89.3)	(72.9)	(66.6)	(1.2)	(54.9)	35
Religion													
Hindu	67.2	0.9	78.0	68.3	58.1	79.2	70.9	62.5	46.4	38.5	18.4	52.9	337
Muslim	52.7	1.1	62.8	48.8	36.4	64.6	54.4	40.2	32.9	24.5	33.0	36.9	140
Caste/tribe													
Scheduled caste	(56.4)	(3.1)	(64.5)	(58.8)	(40.5)	(73.9)	(61.1)	(47.6)	(32.5)	(23.0)	(26.1)	(37.4)	46
Scheduled tribe	(52.4)	(--)	(58.3)	(53.2)	(33.2)	(62.4)	(53.2)	(33.2)	(36.6)	(20.7)	(29.3)	(29.3)	26
Other	64.5	0.7	75.7	64.0	54.3	76.2	68.1	58.4	44.0	36.3	21.5	50.0	415
Total	63.1	0.9	73.7	63.0	51.9	75.3	66.6	56.0	42.5	34.2	22.4	47.7	488

Note: Total includes 10 children belonging to other religions, who are not shown separately.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Children who are fully vaccinated, i.e., those who have received BCG, measles and three doses of DPT and polio vaccine (excluding polio 0).

the increased use of vaccination cards in recent years, as well as the increased overall coverage of vaccinations. In addition, in many cases the vaccination cards of older children are discarded once they have completed their vaccinations or the cards are lost.

The highest level of vaccination coverage for each vaccine except polio at birth is observed at age 12-23 months. The coverage then progressively declines with an increase in age up through age 36-47 months. This phenomenon is particularly noted for rural areas and backward districts of West Bengal. The row labelled "No vaccinations" indicates the percentage of children who have not received any vaccination by 12 months of age.

Figure 9.4
Percentage of Children 12-23 Months
Who Have Received All Vaccinations



NFHS, West Bengal, 1992

Child Morbidity and Treatment Patterns

According to the Central Bureau of Health and Intelligence (1991), there are two major causes of death among infants and children in India. These are acute respiratory infections (ARI) and diarrhoea. The NFHS has collected information on the occurrence of the symptoms of these two diseases. Information was also collected on recent episodes of fever. Acute respiratory tract infection, primarily pneumonia, is a common cause of illness and death in infancy and childhood. Early diagnosis and treatment with antibiotics can prevent a large proportion of these ARI/pneumonia deaths. Fever is a major manifestation of malaria, although it also accompanies various other illnesses. The mothers of children born during the past four years were asked a series of questions on the prevalence of cough, fever, and diarrhoea during the last two weeks and the type of treatment given to the child.

Information on the prevalence and treatment of these conditions is presented in Tables 9.11 to 9.16. Table 9.11 shows the percentage of children with cough accompanied by rapid breathing, i.e., the symptoms of acute respiratory infection, fever and diarrhoea during the two weeks prior to the survey and the percentage with diarrhoea in the 24 hours before the survey by selected background characteristics.

One in 10 children suffered from the symptoms of ARI during two weeks preceding the survey. The most vulnerable group were children age 6 to 11 months. Reported ARI symptoms do not vary by sex of child in West Bengal, and the data suggest a positive association between

Table 9.10 Vaccinations in the first year of life by current age

Among children one to three years of age, the percentage with a vaccination card which was shown to the interviewer and the percentage who had received each vaccine during the first year of life, according to the current age of the child and residence, West Bengal, 1992

Vaccination status	Current age of child in months			Total
	12-23	24-35	36-47	
URBAN				
Vaccination card shown to interviewer	56.4	43.5	34.6	44.1
Percent vaccinated at 0-11 months[1]				
BCG	62.8	45.8	54.0	54.2
Polio 0	1.3	1.3	--	0.8
DPT				
1	67.6	62.9	56.6	61.9
2	59.9	58.9	56.9	58.4
3	49.8	48.6	48.2	48.8
Polio				
1	69.2	70.4	58.6	65.5
2	59.0	66.5	56.0	60.1
3	55.7	55.0	52.6	54.3
Measles	30.2	29.7	8.9	21.8
All vaccinations[2]	29.4	17.6	9.8	18.3
No vaccinations	26.8	28.5	41.8	33.1
Number of children	110	107	136	353
RURAL				
Vaccination card shown to interviewer	45.2	37.8	23.5	35.3
Percent vaccinated at 0-11 months[1]				
BCG	54.8	41.6	23.5	39.8
Polio 0	0.8	0.7	0.8	0.8
DPT				
1	63.3	47.4	27.3	45.7
2	52.0	41.8	24.0	39.0
3	38.5	33.1	18.6	29.9
Polio				
1	64.8	48.5	31.7	48.1
2	54.5	42.3	28.3	41.5
3	39.7	36.2	22.3	32.6
Measles	26.2	16.0	8.6	16.8
All vaccinations[2]	18.4	13.5	7.3	13.0
No vaccinations	30.7	49.6	66.9	49.3
Number of children	378	383	394	1156

Table 9.10 Vaccinations in the first year of life by current age (Contd.)

Among children one to three years of age, the percentage with a vaccination card which was shown to the interviewer and the percentage who had received each vaccine during the first year of life, according to the current age of the child and residence, West Bengal, 1992

Vaccination status	Current age of child in months			Total
	12-23	24-35	36-47	
	TOTAL			
Vaccination card shown to interviewer	47.7	39.1	26.3	37.4
Percent vaccinated at 0-11 months[1]				
BCG	56.6	42.4	31.4	43.1
Polio 0	0.9	0.8	0.9	0.9
DPT				
1	64.2	50.6	35.7	49.8
2	53.7	45.5	32.8	43.7
3	41.1	36.4	26.6	34.5
Polio				
1	65.7	53.1	39.1	52.3
2	55.5	47.5	35.8	46.0
3	43.2	40.3	30.2	37.7
Measles	27.1	18.5	8.8	17.9
All vaccinations[2]	20.7	14.4	7.9	14.1
No vaccinations	29.9	45.1	59.7	45.3
Number of children	488	491	531	1509

birth order and symptoms. Rural children had a higher risk of ARI compared with urban children, and those in backward districts had still higher risk of the infection. There is a clear inverse association between mother's educational attainment and reported ARI symptoms, and children of Muslim mothers and scheduled caste mothers were more likely to have had ARI symptoms than children of other religions or castes/tribes.

Fever was the most prevalent of the three conditions examined. About two out of seven children suffered from fever during the two weeks prior to survey. As with acute respiratory infection, children age 6-11 months were somewhat more prone to fever, and the reported prevalence of fever does not vary by sex of the child. There are no differentials in fever prevalence by residence, the children of scheduled caste (23 percent) and schedule tribe mothers (17 percent) had slightly lower rates of fever compared with the state average (29 percent), and no consistent relationship was observed between the prevalence of fever and the education of the mother. Particularly high percentages of children having recent fever were seen among those residing in backward districts (44 percent), those age 6-11 months (40 percent), and among Muslim children (38 percent).

Table 9.10 Vaccinations in the first year of life by current age (Contd.)

Among children one to three years of age, the percentage with a vaccination card which was shown to the interviewer and the percentage who had received each vaccine during the first year of life, according to the current age of the child and residence, West Bengal, 1992

Vaccination status	Current age of child in months			Total
	12-23	24-35	36-47	
	BACKWARD DISTRICTS			
Vaccination card shown to interviewer	37.5	31.5	13.7	27.5
Percent vaccinated at 0-11 months[1]				
BCG	45.5	39.2	23.7	36.1
Polio 0	1.3	--	--	0.5
DPT				
1	50.6	34.3	18.4	34.6
2	38.1	24.8	17.9	27.2
3	27.6	21.6	6.9	18.6
Polio				
1	53.5	34.1	21.4	36.6
2	39.0	26.5	17.9	28.0
3	31.2	23.8	7.9	20.9
Measles	18.5	14.8	6.6	13.3
All vaccinations[2]	14.1	8.9	2.1	8.4
No vaccinations	43.7	61.6	76.5	60.4
Number of children	67	55	65	187

-- Less than 0.05 percent
[1]Information was obtained either from the vaccination card or from the mother if there was no written record. 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 vaccinations.
[2]Children who have received BCG, measles and three doses of DPT and polio vaccines (excluding polio 0).

The prevalence of diarrhoea among children during the two weeks before the interview was quite low (3 percent for any type of diarrhoea and less than 1 percent for bloody diarrhoea). Less than 1 percent of children had diarrhoea during the preceding 24 hours. Due to seasonal variations in the incidence of diarrhoea, these estimates may not reflect the average situation throughout the year. The prevalence of diarrhoea during the two weeks before the interview was highest (4 percent) among children age 6-23 months. Diarrhoea was more prevalent among those using surface water as their main source of drinking water, although this percentage is based on less than 50 unweighted cases and should thus be interpreted with caution. In terms of mother's educational level, the prevalence of diarrhoea was lowest (2 percent) among children whose mothers had completed high school, and highest for those with illiterate mothers (3 percent). Little variation in diarrhoea by residence is observed, slightly more males than females had diarrhoea in the two weeks preceding the interview, birth order does not appear to

Table 9.11 Prevalence of acute respiratory infection, fever and diarrhoea

Among all children under four years of age, the percentage who were ill with a cough accompanied by fast breathing, fever and diarrhoea during the two weeks before the survey, and the percentage with diarrhoea or bloody diarrhoea in the 24 hours before the survey, according to selected background characteristics, West Bengal, 1992

Background characteristic	Percentage of children suffering in previous two weeks from:				Any diarrhoea in previous 24 hours[2]	Number of children
	Cough accompanied by fast breathing	Fever	Diarrhoea[1] Any	Diarrhoea[1] Bloody		
Child's age						
< 6 months	9.2	34.0	1.4	--	0.8	190
6-11 months	12.9	40.5	4.1	--	0.5	315
12-23 months	11.3	34.2	4.3	0.9	0.2	488
24-35 months	9.1	26.3	2.0	0.2	0.5	491
36-47 months	8.8	19.6	1.0	0.3	0.2	531
Sex						
Male	10.0	29.2	2.9	0.5	0.4	1037
Female	10.3	29.6	2.2	0.1	0.4	977
Birth order						
1	8.1	28.4	3.1	0.4	0.2	606
2-3	10.7	28.5	1.9	0.1	0.6	834
4-5	11.3	30.2	3.6	0.8	0.4	365
6+	12.1	34.5	2.0	0.2	--	210
Residence						
Urban	7.7	29.0	3.1	--	--	464
Rural	10.9	29.5	2.4	0.4	0.5	1550
Backward districts	12.0	44.4	2.4	0.9	0.5	258
Mother's education						
Illiterate	11.1	29.5	2.8	0.6	0.5	1088
Lit.,< middle complete	10.5	32.0	2.4	--	0.4	590
Middle school complete	6.9	24.8	2.1	--	--	187
High school and above	5.8	24.3	1.7	--	--	149
Religion						
Hindu	8.6	25.7	2.3	0.4	0.2	1362
Muslim	13.5	38.4	3.1	0.3	0.9	617
Other	10.4	14.8	--	--	--	35
Caste/tribe						
Scheduled caste	10.7	23.1	4.3	0.5	--	209
Scheduled tribe	7.7	17.2	2.4	1.4	1.0	109
Other	10.2	30.9	2.3	0.2	0.4	1695
Source of drinking water						
Piped water	U	U	2.6	--	--	323
Ground water	U	U	2.5	0.5	0.6	1360
Well water	U	U	1.6	0.2	--	256
Surface water	U	U	(6.1)	(--)	(--)	41
Other	U	U	(6.5)	(--)	(--)	34
Total	10.2	29.4	2.5	0.3	0.4	2014

Note: Figures are for children born in the period 1-47 months prior to the survey.
U: Not available
() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Includes diarrhoea in the past 24 hours
[2]Includes diarrhoea with blood

influence the prevalence of diarrhoea, and Muslim children are more likely to have had diarrhoea than Hindu children.

Treatment of ARI

Table 9.12 presents information on the percentage of children with ARI symptoms taken to a health facility or provider, whether any treatment was provided, and, if yes, what type of treatment. Note that children could have received treatment without having visited a health facility or provider. Sixty-two percent of the children who suffered from ARI during the two weeks preceding the interview were taken to a health facility for treatment or were treated by a doctor or other health professional. Only 25 percent of children received no treatment. Sick children were most often treated with cough syrups (33 percent), antibiotic pills or syrups (16 percent) or home remedies/herbal medicines (15 percent). It should be noted that 35 percent of children with ARI symptoms were treated with "Other" medicines or procedures.

The percentage of male children taken to a health facility or provider was much higher (68 percent) than for female children (56 percent). Similarly, a higher percentage of male children were given each type of treatment except for home remedies or herbal medicines, for which female children received slightly more. Twenty-three percent of male children received no treatment, compared with 28 percent of female children. This pattern suggests discrimination against female children in the provision and use of health care facilities, and could be a contributing factor in the higher female child mortality observed in West Bengal. First order births were more likely to have been taken to a facility, and to have received treatments, with the exception of those given home remedies or herbal medicines, which tend to be given to higher order births. This pattern is expected, as first order births occur to younger women who are more likely to utilize health care services for themselves and for their children. No marked urban-rural difference was observed with regard to utilization of health care services. Children of higher birth orders (6+), female children, children in rural areas, children of mothers who were literate but below middle level complete, and children of Muslim mothers were all more likely to receive home remedies or herbal medicines. It should be noted that the (substantial) percentages under the column labelled "Other" mostly consist of pills and syrups which were not clearly identified as antibiotic, or whose specific ingredients were otherwise unknown.

Treatment of Fever

Table 9.13 shows treatment patterns for children suffering from fever during the two weeks before the survey. Fifty-nine percent of the children were taken to a health facility or provider for the treatment of fever, again more males (64 percent) than females (54 percent). Twenty-seven percent of all children received no treatment for fever. About one-sixth of the children (17 percent) were treated with antibiotics in the form of pills or syrup and 16 percent were given home remedies/herbal medicines. Smaller proportions were given antimalarial medication (9 percent) or injection (2 percent). Differentials in the treatment of fever were along similar lines as those observed in Table 9.12.

Table 9.12 Treatment of acute respiratory infection

Among all children under four years of age who had cough accompanied by fast breathing during the two weeks before the survey, the percentage taken to a health facility or provider and percentage given treatment, according to selected background characteristics, West Bengal, 1992

Background characteristic	Among children with cough and fast breathing							
	Percentage taken to a health facility or provider[1]	Percentage treated with						Number of children
		Anti-biotic pill or syrup	Injection	Cough syrup	Home remedy/ herbal medicine	Other	None	
Child's age								
< 12 months	61.5	9.6	0.8	33.2	21.0	25.9	25.1	58
12-23 months	65.2	19.8	2.8	29.2	15.4	36.8	24.6	55
24 or more months	59.8	18.7	3.7	34.6	10.6	39.3	25.7	91
Sex								
Male	67.6	20.3	3.7	35.0	13.5	37.4	22.9	104
Female	55.7	12.4	1.5	30.4	16.2	32.2	27.6	101
Birth order								
1	75.4	19.1	2.2	39.2	14.9	31.5	22.7	49
2-3	56.4	16.3	0.5	30.3	16.5	31.4	29.7	89
4-5	(60.0)	(12.8)	(4.8)	(31.8)	(8.0)	(48.4)	(17.6)	41
6+	56.7	17.7	7.4	30.6	20.0	31.2	26.8	25
Residence								
Urban	(60.0)	(16.0)	(4.0)	(40.0)	(8.0)	(32.0)	(28.0)	36
Rural	62.1	16.5	2.4	31.2	16.3	35.4	24.6	169
Backward districts	59.4	15.9	5.8	29.0	14.5	30.4	31.9	31
Mother's education								
Illiterate	62.6	15.4	4.5	31.4	10.5	35.4	27.0	121
Lit., < middle complete	60.8	17.6	--	34.2	22.5	35.0	24.1	62
Religion								
Hindu	59.3	13.7	1.3	30.1	12.7	37.3	29.6	118
Muslim	63.5	21.0	4.6	36.7	18.4	29.7	20.2	83
Caste/tribe								
Scheduled caste	49.0	4.9	--	24.5	9.8	39.2	41.2	22
Other (Non-SC/ST)	63.4	18.1	3.1	34.8	16.2	33.6	23.1	174
Total	61.7	16.4	2.6	32.8	14.8	34.8	25.2	204

Note: Total includes 21 children whose mothers have completed at least middle school, 13 children belonging to other religions and 8 scheduled tribe children, who are not shown separately.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Includes government/municipal hospital, private hospital/clinic, Primary Health Centre, sub-centre, doctor or other health professional.

Treatment of Diarrhoea

Deaths from acute diarrhoea are most often due to the dehydration that results from the loss of water and electrolytes (Black, 1984). However, nearly all dehydration related deaths can be prevented by prompt administration of rehydration solutions. Since deaths due to diarrhoea are a significant proportion of all deaths to children, the government has launched the Oral Rehydration Therapy Programme as one of its priority activities for child survival. A major purpose of this programme is to increase awareness among women and in the community about

Table 9.13 Treatment of fever

Among all children under four years of age suffering from fever during the two weeks before the survey, the percentage taken to the health facility or provider and type of treatment given, according to selected background characteristics, West Bengal, 1992

Background characteristic	Among children with fever							
	Percentage taken to a health facility or provider[1]	Percentage treated with						Number of children
		Anti-malarial	Antibiotic pill or syrup	Injection	Home remedy/ herbal medicine	Other	None	
Child's age								
< 6 months	47.3	6.2	6.5	--	20.6	35.2	33.9	65
6-11 months	59.3	6.6	17.5	0.4	24.0	33.6	24.4	128
12-23 months	63.2	7.9	18.6	1.6	16.0	39.5	25.9	167
24-35 months	64.7	9.9	19.5	3.6	9.6	43.9	23.1	129
36-47 months	54.1	12.6	17.7	1.8	12.9	35.3	30.2	104
Sex								
Male	64.4	7.7	19.4	2.1	14.2	41.9	23.9	303
Female	54.1	9.7	14.6	1.1	18.4	33.9	29.4	289
Birth order								
1	68.4	8.5	16.8	1.3	18.0	46.0	20.3	172
2-3	51.8	8.1	18.4	1.3	15.7	34.5	29.7	237
4-5	62.6	10.6	20.0	2.2	12.4	32.4	29.0	110
6+	57.6	8.1	8.6	2.6	20.2	39.0	27.7	72
Residence								
Urban	75.0	9.7	22.5	1.1	7.7	50.5	18.6	134
Rural	54.7	8.4	15.5	1.8	18.8	34.3	28.9	457
Backward districts	53.2	18.8	8.6	2.4	15.3	29.3	32.2	114
Mother's education								
Illiterate	58.0	9.1	17.8	2.7	13.9	35.7	30.4	321
Lit., < middle complete	60.2	8.6	14.9	0.6	21.3	34.1	26.2	189
Middle school complete	(57.7)	(10.0)	(18.9)	(--)	(11.4)	(58.1)	(8.7)	46
High school and above	(68.9)	(3.9)	(19.6)	(--)	(18.1)	(52.3)	(17.8)	36
Religion								
Hindu	61.3	8.1	17.8	1.1	16.8	38.9	25.3	350
Muslim	55.8	9.7	15.9	2.5	15.7	36.0	29.1	237
Caste/tribe								
Scheduled caste	(49.2)	(8.8)	(6.4)	(2.3)	(14.3)	(33.3)	(41.7)	48
Other (Non-SC/ST)	60.4	8.7	18.2	1.6	16.8	37.8	25.4	525
Total	59.4	8.7	17.1	1.6	16.3	38.0	26.6	592

Note: Total includes 5 children belonging to other religions and 19 scheduled tribe children, who are not shown separately.
() Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Includes government/municipal hospital, private hospital/clinic, Primary Health Centre, sub-centre, doctor, or other health professional.

the causes and treatment of diarrhoea. Health programmes emphasize instructing mothers in the use of Oral Rehydration Salt (ORS) packets and the preparation of rehydration solutions at home, which are known as Recommended Home Solutions (RHS). This education is given mostly through the electronic and print media, and in adult literacy classes. Documentaries covering the topic of diarrhoea among children and the use of ORS and preparation of RHS are regularly shown in cinema theatres and movie halls. Such spots are also shown on television, and All-India Radio frequently airs messages about ORS and RHS.

In order to gauge the extent of knowledge and use of oral rehydration, the NFHS asked mothers of children born during the last four years a series of questions regarding their knowledge and use of ORS and RHS. Table 9.14 shows that only 64 percent of mothers know about ORS and half the mothers had ever used ORS packets. Knowledge and use of ORS

Table 9.14 Knowledge and ever use of ORS packets

Percentage of mothers with births during the four years preceding the survey who know about and have ever used ORS packets, according to selected background characteristics, West Bengal, 1992

Background characteristic	Know about ORS packets	Have ever used ORS packets	Number of mothers
Mother's age			
15-19	59.7	43.1	243
20-24	64.6	50.4	628
25-29	68.1	54.9	512
30-34	60.0	47.1	214
35+	62.3	47.1	122
Residence			
Urban	61.4	47.9	386
Rural	65.1	50.7	1337
Backward districts	79.8	60.6	222
Mother's education			
Illiterate	58.1	44.5	908
Lit., < middle complete	68.3	55.3	514
Middle school complete	68.7	52.9	167
High school and above	84.4	63.9	135
Religion			
Hindu	62.4	48.5	1186
Muslim	69.7	55.6	506
Other	(46.8)	(18.9)	31
Caste/tribe			
Scheduled caste	54.2	44.6	176
Scheduled tribe	48.8	33.6	94
Other	66.5	51.8	1453
Mother's exposure to media			
Exposed to media	66.9	51.6	948
Watches television weekly	66.1	51.1	464
Listens to radio weekly	68.3	53.1	752
Visits cinema/theatre monthly	66.6	52.4	265
Not exposed to any of the media	61.1	48.2	775
Total	64.3	50.1	1723

Note: Total includes 4 women age 13-14 years.
() Based on 25-49 unweighted cases

packets is slightly higher among mothers age 25-29, and were also higher among rural mothers. Levels of knowledge and use of ORS appear positively related to the educational attainment of mothers. Muslim mothers have relatively more knowledge about ORS and are more likely to have used it. Knowledge and use of ORS packets among scheduled caste and scheduled tribe mothers were below the overall average. Mass media can evidently play an important role in rehydration programmes. Both knowledge and use of ORS were relatively higher among mothers exposed to electronic mass media as among those with no such exposure.

In terms of whether children with diarrhoea in the two weeks preceding the interview were taken to a health facility or provider, whether they received treatment, and, if yes, what type of treatment, the results are based on only 51 children who were reported to have suffered from diarrhoea and, therefore, only the overall totals will be discussed (differentials in treatment by background characteristics are not presented due to small number of cases). Table 9.15 shows that nearly 82 percent of all the children who suffered from diarrhoea were taken to a health facility or provider for treatment.

Forty-five percent of children were treated with ORS packets and 47 percent received a Recommended Home Solution. In order to reduce dehydration due to diarrhoea, mothers are taught to increase the supply of fluids to children with diarrhoea, but 23 percent of the children received neither ORT nor increased fluids. Only 12 percent of children received an increased supply of fluids (apart from breastmilk).

Although fluid therapy alone may be useful in preventing deaths from acute dehydration, treatment with antibiotics may be useful in reducing the duration and volume of diarrhoea.

Table 9.15 Treatment of diarrhoea

Among children under four years who had diarrhoea in the past two weeks, the percentage taken for treatment to a health facility or provider, the percentage who received increased fluids and oral rehydration therapy (ORT), either an oral rehydration solution made from a packet (ORS) or a recommended home solution (RHS), the percentage who received neither ORT nor increased fluids, and the percentage given other treatments, West Bengal, 1992

Treatment of diarrhoea	Percentage
Taken to a health facility or provider[1]	82.1
ORS packets	45.3
RHS at home	46.7
Either ORS or RHS	74.7
Increased fluids	11.8
Not given ORS, RHS or increased fluids	23.2
Antibiotics	13.1
Injection	11.2
Home remedy, other	64.8
None	6.9
Number of children with diarrhoea	51

Note: Figures are for children born in the period 1-47 months prior to the survey.
[1]Includes government/municipal hospital, private hospital/clinic, Primary Health Centre, sub-centre, doctor, or other health professional

Overall, 13 percent of children with diarrhoea were given antibiotic pill or syrup, 11 percent received injections and 65 percent were treated at home.

When a child has diarrhoea, it is inappropriate to reduce the child's frequency of breastfeeding or the total intake of breast milk or other fluids. In the NFHS, the mothers of the children who suffered from diarrhoea were asked about whether any changes in feeding practices of those children occurred during the period of diarrhoea. Table 9.16 provides information on feeding practices during diarrhoea for children of different ages. For a large majority of children (76 percent), the frequency of breastfeeding remained the same or increased during the diarrhoea. The amount of other fluids given to the children, however, was likely to be decreased. About 53 percent of children with diarrhoea were given less fluids than they received before the diarrhoea began. Thus, a substantial proportion of children with diarrhoea are being treated contrary to medical recommendations with regard to fluid intake, again suggesting that West Bengal's infant mortality rate could be further reduced were a more effective health education programme focused on diarrhoea treatment implemented, especially one reaching the rural, illiterate majority.

Table 9.16 Feeding practices during diarrhoea

Percent distribution of children under four years who had diarrhoea in the past two weeks, according to feeding practices during diarrhoea, West Bengal, 1992

Feeding practices during diarrhoea	Distribution of children[1]
Breastfeeding frequency[2]	
Same as usual	67.1
Increased	9.1
Reduced	19.0
Stopped	4.8
Don't know/missing	
Total percent	100.0
Number of children	46
Amount of fluids given	
Same as usual	38.2
More	7.9
Less	53.0
Don't know	0.9
Total percent	100.0
Number of children with diarrhoea	51

[1]Children born in the period 1-47 months prior to the survey
[2]Applies only to children who are still breastfed

CHAPTER 10

INFANT FEEDING AND CHILD NUTRITION

Infant feeding practices and child nutrition significantly influence child growth and child survival, maternal health, and fertility. In particular, breastfeeding has been shown to reduce the risk of morbidity and mortality and improve the nutritional status of children. Breastfeeding also has a direct bearing on the mother's period of postpartum amenorrhoea (lactational infecundability), and hence on the length of birth intervals and overall fertility levels. These effects depend on both the duration and intensity (i.e., frequency) of breastfeeding, as well as the age at which the child receives supplemental liquids and foods. This chapter examines the information collected on infant feeding, paying close attention to breastfeeding and supplementary feeding. Also covered is the nutritional status of children under four years of age as it relates to anthropometric indicators.

International recommendations for the feeding of infants and young children are contained in the Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding (1990) and the report of the WHO Working Group on Infant Feeding (World Health Organization, 1991). Among the recommendations is that infants receive only breast milk up to 4-6 months of age, and that aside from breast milk, no other foods or liquids are needed during this period. At age 4-6 months adequate and appropriate complementary foods should be added to the infant's diet in order to provide sufficient nutrients for optimal growth. It is also recommended that breastfeeding should continue, along with the complementary foods, up through the second-year birthday or beyond. It is further recommended that, for purposes of hygiene and infection prevention, a conventional feeding bottle with nipple should not be used at any age. In addition, the recommendations of the Baby Friendly Hospital Initiative, launched by WHO, include early initiation of breastfeeding.

Five different indicators of breastfeeding practices have been included in the WHO recommendations. These include the ever-breastfed rate, the exclusive breastfeeding rate, the timely complementary feeding rate, the continued breastfeeding rates, and the bottle feeding rate. The *exclusive breastfeeding rate* is based on current status information for infants whose current age is under four months; it is defined as the proportion of these infants who receive only breast milk. The *timely complementary feeding rate* is the proportion of infants in the 6-9 month age group who receive both breast milk and solid or semi-solid food. Ideally, information on the quality and quantity of the complementary foods should also be available; however, this type of information is beyond the scope of most broad surveys. The *continued breastfeeding rate through one year of age* measures the proportion of children 12-15 months of age who are being breastfed. The proportion of infants who are still breastfed in the 20-23 month age group constitute the *continued breastfeeding rate up through two years of age*. The *bottle feeding rate* is reflected in the proportion of infants who are, or were fed using a bottle with a nipple. The data presented here on breastfeeding and other feeding practices in West Bengal are focused on these five indicators.

The NFHS obtained fairly detailed information on infant feeding and child nutrition. Data on breastfeeding and supplementation were obtained from a series of questions in Section 4 of the Women's Questionnaire, which inquired about births occurring since 1 January 1988.

These questions were asked for up to three births during this period.

10.1 Breastfeeding and Supplementation

Table 10.1 shows the percentages of children ever breastfed by selected background characteristics. This information is reported for children born during the four years preceding

Table 10.1 Initiation of breastfeeding

Percentage of all children who were ever breastfed and the percentage of last-born children who started breastfeeding within one hour and one day of birth, among children born during the four years preceding the survey, according to selected background characteristics, West Bengal, 1992

Background characteristic	Among all children:		Among last-born children:		
	Percentage ever breastfed	Number of children	Percent started breastfeeding within 1 hour of birth	Percent started breastfeeding within 1 day of birth[1]	Number of children
Sex of child					
Male	95.4	1116	11.0	35.7	888
Female	96.2	1073	10.6	31.8	851
Residence					
Urban	95.5	496	9.4	32.8	387
Rural	95.9	1693	11.2	34.0	1352
Backward districts	94.1	288	13.1	40.9	223
Mother's education					
Illiterate	95.8	1191	13.2	36.8	919
Lit., < middle complete	96.9	644	8.9	31.2	517
Middle school complete	92.9	203	8.7	34.2	167
High school and above	94.9	151	5.1	22.4	136
Religion					
Hindu	96.5	1477	11.1	34.9	1197
Muslim	94.3	676	10.0	29.2	510
Other	(94.5)	36	(14.0)	(64.3)	31
Caste/tribe					
Scheduled caste	96.7	229	13.8	31.6	177
Scheduled tribe	95.9	114	18.7	47.3	93
Other	95.7	1846	10.0	33.2	1469
Assistance at delivery					
Health professional	95.4	729	8.2	32.3	599
Traditional birth attendant	95.8	797	11.5	35.9	632
Other or none	96.2	663	13.1	32.8	508
Place of delivery					
Public health facility	95.4	575	9.7	38.4	461
Private health facility	94.1	114	3.8	16.8	105
Own home	96.3	1228	12.3	34.4	953
Parents' home	94.9	261	10.8	30.4	209
Total	95.8	2189	10.8	33.8	1739

Note: Table is based on children born in the four years preceding the survey, whether living or dead at the time of interview. The total includes 11 children among all children and 11 children among last born children with 'other' place of delivery, who are not shown separately
( ) Based on 25-49 unweighted cases
[1]Includes children who started breastfeeding within one hour of birth

the survey - a total of 2,189 births. In India, traditionally, breast milk has been the main source of nutrition for infants and young children - it not only provides the child with important nutrients but also protects the child against infections. Breastfeeding is nearly universal in West Bengal, with 96 percent of all children having been breastfed. The practice of breastfeeding is high among all groups, ranging from 93 to 97 percent.

The early initiation of breastfeeding is important since it benefits both the mother and the infant. As soon as the infant starts suckling the breast, the hormone oxytocin is released, resulting in uterine contractions which reduce the risk of postpartum haemorrhage and facilitate expulsion of the placenta. Colostrum and breast milk are all that is needed for newborn infants; together they provide the complete range of nutritional requirements, in addition to a degree of immunity to disease. In fact, supplemental feeding to the neonate may lead to the introduction of contaminants causing infections, and often resulting in diarrhoea.

It is also recommended that the first milk should be given to the child rather than squeezed from the breast because it contains colostrum, which provides natural immunity to the child. For children who were ever breastfed, Table 10.1 shows how soon after birth breastfeeding was initiated. This information was collected for the most recent birth of each woman who had a birth in the four years before the survey (a total of 1,739 births). While almost all the children are breastfed, it is rare for breastfeeding to begin very soon after delivery. In fact, only 11 percent of children began breastfeeding within one hour of birth and only 34 percent began during their first 24 hours of life. In West Bengal, as in many other Indian states, it is customary that the first feed given to the child often consists of substances other than breast milk, such as a dab of honey, or *gur* (jaggery). This practice is ironically based on the belief that the child will grow up strong and healthy, having begun its sustenance with sweetness.

Furthermore, the NFHS data not shown indicate that the apparently traditional practice of squeezing the first milk from the breast is very common in West Bengal. A substantial majority of women who breastfeed squeeze the first milk from the breast before they begin nursing their babies. This suggests the importance of launching an educational campaign to inform women about the benefits of providing the first breast milk to their children.

There is little difference in the timing of initiation of breastfeeding by sex of the child. Although the same proportion of male and female children start breastfeeding within one hour of birth, slightly more males than females begin breastfeeding within 24 hours. According to other background characteristics and the circumstances of delivery, there are substantial differences in the initiation of breastfeeding. Women from scheduled tribes initiate breastfeeding much earlier than any other group. Almost one-fifth of children born to women from scheduled tribes are breastfed within one hour (nearly twice the state average) and nearly half within 24 hours of birth. Early initiation of breastfeeding in West Bengal is inversely associated with educational attainment of the mother, and on average Hindus breastfed slightly earlier than Muslims, particularly within the first 24 hours after birth. There is little difference in the initiation of breastfeeding by place of residence of the mother.

An important finding is that of those six percent of children born in private health facilities, only four percent had begun breastfeeding within one hour of birth, compared to over

ten percent of all children born in public health facilities or the home. Similarly, those born in a private health facility were half as likely to be breastfed in the 24 hour period following birth compared to children born at home. It is possible that relatively higher proportions of well-educated mothers attend private medical facilities for childbirth, these mothers being particularly associated with delayed (and less frequent) breastfeeding practices. Another selection effect contributing to this result might involve a skewed proportion of complicated deliveries occurring at private facilities, which could impact upon the ability to breastfeed immediately following childbirth.

Although there are differences in the initiation of breastfeeding by background characteristics, the presence of delayed breastfeeding behaviour in all groups shows that in general feeding practices for newborn infants in West Bengal are not optimal. Breastfeeding was initiated within the first hour of life for only one in nine babies, and overall, nearly two-thirds of the infants did not start breastfeeding even in their first 24 hours.

For children currently being breastfed, mothers were asked if the children had been given any other liquids or solid foods at any time the previous day or night. The results are shown in Table 10.2 and Figure 10.1. Children who received nothing but breast milk in the previous 24 hours are defined as being *exclusively breastfed*, while *full breastfeeding* refers to both those given only breast milk and those who received breast milk and plain water only. In West Bengal, exclusive breastfeeding is not very common even for very young children. The majority of babies even at age 0-1 month are given water or other supplements. On average, about 40 percent of infants under four months are given only breast milk and 54 percent receive full breastfeeding. The percentage of babies being exclusively breastfed drops off rapidly after the first few months of life to six percent at 6-7 months and one percent at age 10-11 months.

Supplements other than plain water are given in addition to breast milk to 36 percent of children age 0-1 month, 52 percent of those age 2-3 months, and four-fifths of those age 6-7 months. By age 10-11 months, supplements are given along with breast milk to most (94 percent) of the infants. However, breastfeeding typically continues for long durations. After two years of life (i.e. age 24-25 months), 30 percent of children are still being breastfed and even after three years (i.e., 36-37 months), 37 percents are still being breastfed. Twenty-seven percent of children continue to breastfeed even at 46-47 months.

Table 10.3 and Figure 10.2 show in more detail the type of food supplementation received by currently breastfeeding last-born children under four years of age during the 24 hours before the interview. The number of children in each two-month age group is shown in the far right column.

The use of infant formula is quite low in West Bengal. The percentage given infant formula increases after four months of age and peaks at age 6-7 months, when 22 percent of babies are given infant formula as supplemental food. The percentage fed the formula after age 20-21 months declines sharply to less than five percent and remains low through 48 months of age. Supplementation of breast milk by other milk rises steadily with age through age 8-9 months to slightly under 45 percent of all children, after which it remains fairly constant. Supplementation of other liquids such as juice or tea, rises gradually from 25 percent of all

Table 10.2 Breastfeeding status by child's age

Percent distribution of living children by breastfeeding status, according to child's age in months, West Bengal, 1992

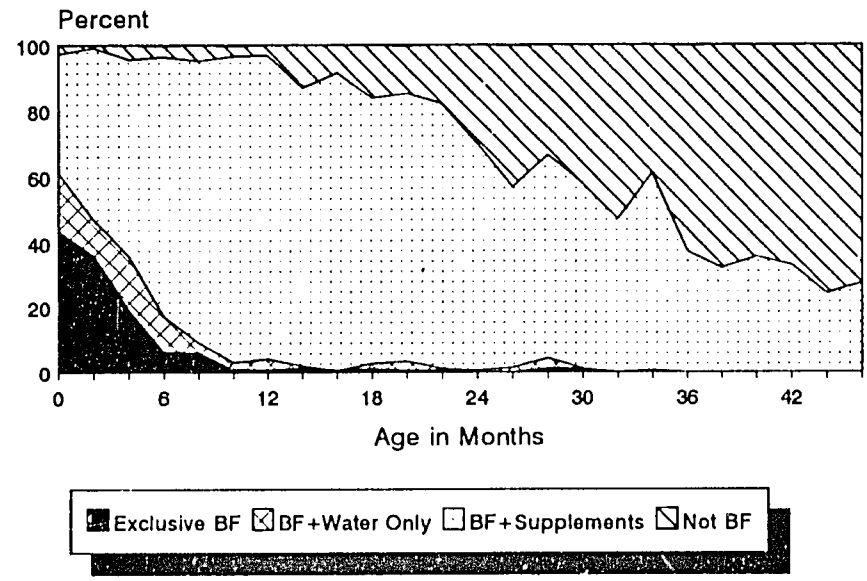
Age in months	Percentage among all living children						Number of living children
	Not breast-feeding	Exclusively breastfeeding	Breastfeeding and Plain water only	Breastfeeding and Supple-ments	Breastfeeding and DK supple-ments	Total percent	
0 - 1	2.6	43.6	17.6	36.2	--	100.0	60
2 - 3	0.8	36.2	10.9	52.1	--	100.0	57
4 - 5	4.3	19.0	16.9	59.8	--	100.0	92
6 - 7	3.4	6.4	10.7	79.4	--	100.0	114
8 - 9	4.8	6.2	2.9	86.1	--	100.0	113
10-11	3.2	1.0	2.1	93.6	--	100.0	88
12-13	3.2	0.7	3.4	92.8	--	100.0	69
14-15	13.0	1.3	0.7	85.0	--	100.0	69
16-17	8.4	0.5	--	91.1	--	100.0	90
18-19	16.1	1.1	1.6	81.2	--	100.0	97
20-21	14.6	0.5	2.9	81.9	--	100.0	87
22-23	17.9	0.6	0.6	77.1	3.9	100.0	76
24-25	29.9	--	0.6	69.5	--	100.0	76
26-27	43.1	--	1.4	55.4	--	100.0	76
28-29	33.5	1.1	3.2	62.2	--	100.0	79
30-31	42.1	1.2	--	55.2	1.5	100.0	94
32-33	52.7	--	--	46.0	1.3	100.0	84
34-35	39.0	--	0.6	56.0	4.5	100.0	81
36-37	62.6	--	--	33.6	3.7	100.0	67
38-39	67.8	--	--	32.2	--	100.0	87
40-41	64.3	--	--	34.0	1.8	100.0	81
42-43	66.8	--	--	28.7	4.5	100.0	111
44-45	75.7	--	--	24.3	--	100.0	111
46-47	72.6	--	--	25.9	1.5	100.0	72

Note: Breastfeeding status refers to last 24 hours. Children classified as "Breastfeeding and plain water only" receive no supplements.
DK: Don't know
-- Less than 0.05 percent

children 0-1 month to 52 percent of children 8-9 months, reaching a peak of 65 percent at age 30-31 months. Supplementation by solid and mushy foods shows a more distinct age pattern, increasing sharply from 2 percent of all children age 0-1 months to 46 percent for age 6-7 months. By age 10-11 months, 9 out of 10 children start getting solid and mushy food. Little more than half (56 percent) of infants in the age group 6-9 months received both breast milk and solid foods as recommended.

The use of a bottle with a nipple to feed children is of interest to both demographers and health personnel. Bottle feeding has a direct effect on the mother's exposure to the risk of pregnancy since the period of amenorrhoea is positively associated with the duration and frequency of breastfeeding. In addition, since it is difficult to sterilize the nipples properly, the use of bottles with nipples exposes children to an increased risk of developing diarrhoea and other diseases. The use of bottles with nipples is relatively low in West Bengal, increasing from 14 percent in the first two months after birth to a high of 24 percent for children age 4-7 months, after which it declines gradually.

Figure 10.1
Distribution of Children by Breast-feeding (BF) Status According to Age



Note: BF + Supplements includes
BF + DK (Don't know) Supplements

NFHS, West Bengal, 1992

Table 10.4 shows several statistics describing the length of breastfeeding for selected background variables. Among all children under four years of age, the median length of breastfeeding is just under 33 months. Supplementation, however, begins early. The median length of exclusive breastfeeding is less than one month and of full breastfeeding less than two months. The mean length of breastfeeding (31 months) is slightly shorter than the median length, indicating that a substantial proportion of children are breastfed for only very short periods.

Estimates of both the means and the medians are based on the current proportions of children breastfeeding in each age group rather than on the mother's recall because current status information is usually more accurate. An alternative measure of the duration of breastfeeding is the prevalence incidence mean, which is calculated as the "prevalence" of breastfeeding divided by its "incidence". In this case, prevalence is defined as the number of children whose mothers were breastfeeding at the time of the survey and incidence is defined as the average number of births per month (averaged over a 48-months period to overcome problems of the seasonality of births and possible reference period errors). For each measure of breastfeeding, the prevalence-incidence means are very close to the means calculated in the conventional manner.

Children of more "modernized" women (urban women, educated women, those who are self employed, and those who are exposed to mass media) have slightly shorter durations of any breastfeeding than other children, but the differences are small. Other groups inside West

Table 10.3 Type of supplementation by child's age

Percentage of last born breastfeeding children receiving food supplementation by type and using a bottle with a nipple, according to child's age in months, West Bengal, 1992

Age in months	Percentage of breastfeeding children who are: Receiving supplement: Infant formula	Other milk	Other liquid	Solid/ mushy food	Using bottle with a nipple	Number of breast-feeding children
0 - 1	4.9	21.3	25.3	1.9	13.7	58
2 - 3	5.8	33.4	28.4	--	19.1	57
4 - 5	16.8	37.9	33.7	11.2	24.1	88
6 - 7	21.8	40.8	43.4	46.3	24.1	111
8 - 9	14.1	43.3	52.0	65.8	17.9	107
10-11	17.6	42.2	44.4	88.8	14.5	85
12-13	21.2	41.9	47.6	75.7	11.3	67
14-15	12.6	31.6	47.6	88.2	4.2	60
16-17	17.2	41.9	49.2	93.5	5.7	82
18-19	10.7	34.6	42.0	92.2	10.7	82
20-21	19.6	40.2	43.0	91.4	4.7	74
22-23	4.1	43.9	56.7	91.5	4.4	60
24-25	7.5	48.6	60.0	95.1	4.1	53
26-29	4.7	36.0	46.7	95.3	0.5	96
30-47	4.0	40.9	55.6	96.8	2.7	293

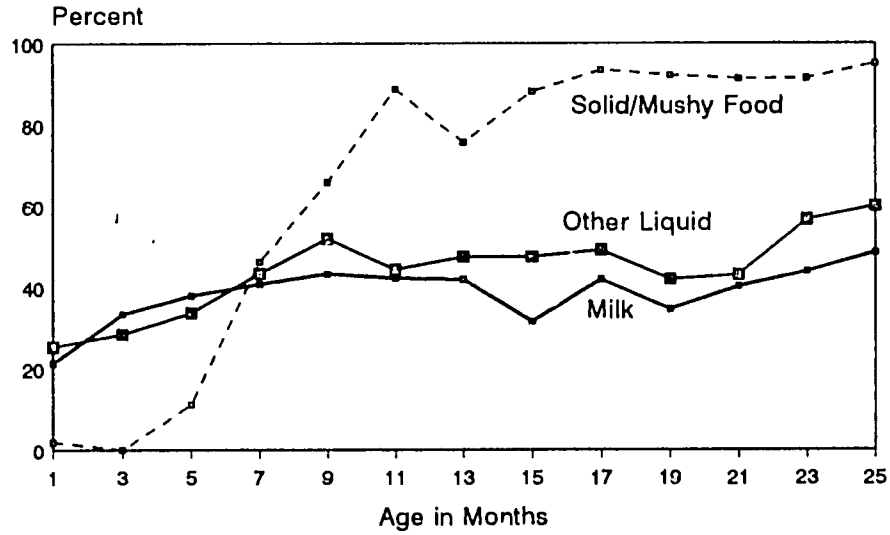
Note: Supplementation refers to last 24 hours. Percents by type of supplement among breastfeeding children may sum to more than 100.0 since children may have received more than one type of supplement.
-- Less than 0.05 percent

Bengal with relatively long breastfeeding durations include Hindus, scheduled tribes, and children whose births were attended by traditional birth attendants.

Based on NFHS results, the median duration of any breastfeeding in India by sex of the child appears to vary only by a few months in either direction. In West Bengal mothers report longer durations of any breastfeeding for sons than for daughters (33.0 months compared with 28.1 months), a pattern seen in most states. In terms of exclusive and full breastfeeding, however, the West Bengal and all-India figures suggest that females are nursed slightly longer than males, a pattern particularly evident in Assam.

A substantial majority of children (78 percent) had mothers who were not working at the time of the survey. Mothers who were working on the family farm or in a family business breastfed longer than any other group. Children of mothers working in a family business breastfeed longer than children of mothers not working (36.6 months compared with 30.7 months). It should be noted that mothers working on a family farm/business come disproportionately from rural areas whose breastfeeding durations are relatively long. The children of mothers employed by someone else breastfed for a shorter duration than average, and self-employed women not only breastfed for shorter median durations than any other group shown in Table 10.4 (23.4 months), but *exclusively* breastfed longer (3.7 months) than any other group. The number of children under four years of age with self-employed mothers is only 64, so these results should be interpreted with some caution.

Figure 10.2
Percentage of Children Given Milk, Other Liquid, or Solid/Mushy Food the Day Before the Interview



Note: Based on youngest child being breastfed;
Milk refers to fresh milk and tinned/powdered milk

NFHS, West Bengal, 1992

In addition to the length of breastfeeding, the frequency with which mothers breastfeed can affect the duration of postpartum amenorrhoea. The health and nutritional status of the child may also be influenced by the frequency of breastfeeding. Eighty-nine percent of children under six months of age were breastfed six or more times on the day before the interview. This finding suggests that there is a high intensity of breastfeeding in West Bengal.

10.2 Nutritional Status of Children

One of the major contributions of the Naticnal Family Health Survey to the study of child health is the anthropometric data for children under four years of age. In most of the states covered by the survey, both weight and height measurements were obtained for each child. However, due to nonavailability of measuring instruments during the first phase of data collection, measurement of height/length of children was not undertaken in West Bengal, and thus only information on the weight of children was obtained.

The nutritional status of children was measured by the weight of each child using a Salter scale, which is a hanging spring balance. The guidelines given in the United Nations Manual, "How to Weigh and Measure Children" (United Nations, 1986), were followed when training the field staff on use of the scale. Weight was measured to the nearest 100 grams. These data are used to calculate weight-for-age as a summary index of nutritional status. The nutritional status of children calculated by weight-for-age is compared with the nutritional status of an international reference population that has been recommended by the World Health Organization

Table 10,4 Median duration and frequency of breastfeeding by background characteristics

Median durations of any, exclusive and full breastfeeding among children under four years and the percentage of children under six months of age who were breastfed six or more times in the 24 hours preceding the interview, according to selected background characteristics, West Bengal, 1992

Background characteristic	Median durations (months)[1]				Children under 6 months	
	Any breast-feeding	Exclusive breast-feeding	Full breast-feeding[2]	Number of children	Breastfed 6+ times in last 24 hours	Number of children
Sex of child						
Male	33.0	0.6	1.2	1116	88.9	105
Female	28.1	0.7	2.6	1073	88.2	105
Residence						
Urban	26.8	0.5	0.7	496	78.2	41
Rural	33.9	0.7	1.9	1693	91.1	168
Backward districts	30.5	1.9	2.9	288	86.4	33
Mother's education						
Illiterate	33.4	0.9	1.9	1191	87.5	114
Literate, < middle complete	31.8	0.5	2.0	644	91.4	69
Middle school complete	37.2	1.6	1.6	203	*	15
High school and above	26.9	0.4	0.4	151	*	11
Religion						
Hindu	33.9	0.6	1.6	1477	90.5	139
Muslim	30.3	0.7	2.0	676	84.7	71
Other	32.5	3.5	3.5	36	*	0
Caste/tribe						
Scheduled caste	29.1	1.9	2.1	229	95.8	26
Scheduled tribe	35.5	0.8	0.8	114	86.5	8
Other	32.4	0.6	1.6	1846	87.6	175
Mother's work status						
Not working	30.7	0.6	1.8	1715	87.6	176
Working in family farm/business	36.6	0.4	2.3	132	*	11
Employed by someone else	28.3	0.7	0.7	278	*	21
Self-employed	23.4	3.7	3.9	64	*	2
Mother's exposure to media						
Exposed to media	29.7	0.6	1.4	1180	89.6	104
Watches television weekly	25.8	0.6	2.0	566	(83.8)	44
Listens to radio weekly	30.1	0.6	1.7	947	92.4	91
Visits cinema/theatre monthly	26.7	0.4	0.6	320	92.1	32
Not exposed to any of the media	33.4	0.7	2.0	1009	87.6	105
Assistance at delivery						
Health professional	28.2	0.5	0.7	729	84.6	59
Traditional birth attendant	35.0	1.1	2.0	797	89.1	82
Other or none	29.8	1.5	2.6	663	91.3	68
Total[1]	32.8	0.6	1.7	2189	88.6	209
Mean for all children[1]	31.1	2.7	4.1	NA	NA	NA
P/I for all children[3]	30.2	1.9	3.2	NA	NA	NA

Note: Total includes children with missing information on assistance at delivery.
NA: Not applicable
( ) Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases
[1]Median and mean based on current status
[2]Either exclusively breastfed or received breast milk and plain water only
[3]Prevalence-incidence mean

(Dibley et al., 1987a, 1987b). The use of this reference population is based on the empirical finding that well-nourished children in all population groups for which data exist follow very similar growth patterns (Martorell and Habicht, 1986). A recent scientific report from the Nutrition Foundation of India (Agarwal et al., 1991) has concluded that the WHO standard is applicable to Indian children in general.

The weight-for-age index is expressed in standard deviation units (z-scores) from the median for the international reference population. Children who are more than two standard deviations below the reference median are considered to be *underweight*, and children who fall more than three standard deviations below the reference median are considered to be *severely underweight*. Weight-for-age is a composite measure that takes into account both chronic undernutrition (i.e., long-term effects of undernutrition due to either inadequate food intake resulting from poor feeding practices or from lack of sufficient food) and acute undernutrition (associated with either the failure to receive adequate nutrition in the period immediately before the survey or a seasonal reduction of food supply or recent episodes of illness, especially diarrhoea).

The validity of this index is determined by many factors, including the coverage of the population of children and the accuracy of the anthropometric measurements. Sixteen percent of living children under age four in West Bengal were not weighed (Table B.3 in Appendix B), usually because the child was not at home or because the mother refused to allow the child to be weighed. Also excluded from the analysis are children whose month and year of birth were not reported by the mother, and those with grossly improbable weight measurement. In addition, weight-for-age is sensitive to misreporting of children's ages, including heaping on preferred digits.

Table 10.5 shows the nutritional status of children by selected demographic characteristics. Over half of children under four years of age in West Bengal (57 percent) are underweight, and 18 percent are severely undernourished.

Weight-for-age varies substantially according to the child's age. There is a marked increase in the prevalence of children severely underweight from age six months onward, reaching a peak in the age group 12-23 months. One-fourth of children at age one year are severely undernourished. The percentage of children who are underweight reaches a plateau of 68 percent at age 12-23 months (Figure 10.3). Undernutrition is lowest in the first six months of life, when most babies are being fully breastfed.

Nutritionally, female children are slightly more disadvantaged than male children. The percentage of female children under four years of age who are severely underweight is 20, about three percentage points higher than the corresponding figure for males (17 percent). Fifty-nine percent of the female children are underweight compared with 55 percent of male children. The nutritional status does not appear to vary with birth order of child, except that higher order births are slightly more likely to suffer from severe undernutrition. Birth interval, however, does appear to make difference; the longer the interval preceding the birth of a child, the lower the percentage who are undernourished. These differences are surprisingly modest, however, in view of the large differences in mortality according to the interval since the preceding birth (Chapter 8).

Table 10.5 Nutritional status by demographic characteristics

Among children under four years of age, the percentage classified as undernourished according to weight-for-age, by demographic characteristics, West Bengal, 1992

Demographic characteristic	Weight-for-age: Percentage below -3 SD	Weight-for-age: Percentage below -2 SD[1]	Number of children
Child's age			
< 6 months	2.0	13.5	152
6-11 months	11.5	46.6	258
12-23 months	26.9	67.8	405
24-35 months	21.2	63.7	399
36-47 months	17.7	61.4	421
Sex			
Male	17.2	54.7	839
Female	19.6	59.0	797
Birth order			
1	18.1	55.5	501
2-3	17.0	55.8	694
4-5	20.7	62.8	278
6+	21.3	54.4	163
Previous birth interval[2]			
First birth	18.1	55.5	501
< 24 months	23.3	61.3	236
24-47 months	18.5	57.8	662
48+ months	14.0	52.0	237
Total	18.4	56.8	1635

Note: Figures are for children born 1-47 months prior to the survey. Weight-for-age is expressed in standard deviation units (SD) from the median of the International Reference Population. The percents of children who are more than three and more than two standard deviation units below the median of the International Reference Population (-3SD and -2SD) are shown according to selected characteristics.

[1]Also includes the children who are below -3 standard deviations from the International Reference Population median

[2]In case of first-born twins, both twins are counted as first births, because neither has a previous birth interval.

Table 10.6 shows nutritional status by selected background characteristics. Undernutrition is higher in rural than in urban areas (Figure 10.4). The proportion of children underweight is 35 percent greater in rural than urban areas, and 74 percent more children are severely underweight in rural areas. The nutritional situation in backward districts is similar to that in rural areas. Muslim children and children from scheduled tribes and schedules castes are slightly more undernourished than other children, but the differentials are small.

The variability by educational level is in striking contrast to the muted differences shown for the other background characteristics, although here as elsewhere it must be noted that

Table 10.6 Nutritional status by background characteristics

Among children under four years of age, the percentage classified as undernourished according to weight-for-age, by selected background characteristics, West Bengal, 1992

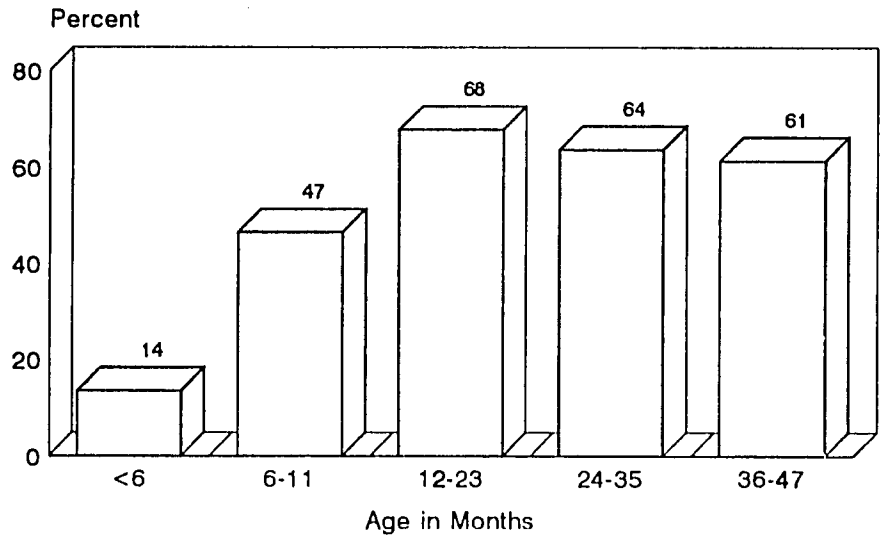
Background characteristic	Weight-for-age: Percentage below -3 SD	Weight-for-age: Percentage below -2 SD[1]	Number of children
Residence			
Urban	11.7	44.8	382
Rural	20.4	60.4	1253
Backward districts	22.2	59.8	202
Mother's education			
Illiterate	21.8	61.8	867
Lit., <middle complete	18.2	59.4	488
Middle school complete	11.9	45.8	159
High school and above	3.9	24.6	122
Religion			
Hindu	18.5	55.8	1120
Muslim	19.0	59.4	495
Other	--	43.7	21
Caste/tribe			
Scheduled caste	26.9	60.7	166
Scheduled tribe	19.5	65.3	80
Other	17.3	55.8	1390
Total	18.4	56.8	1635

Note: Figures are for children born 1-47 months prior to the survey. Weight-for-age is expressed in standard deviation units (SD) from the median of the International Reference Population. The percents of children who are more than three and more than two standard deviation units below the median of the International Reference Population (-3SD and -2SD) are shown according to selected characteristics.

[1]Also includes the children who are below -3 standard deviations from the International Reference Population median

53 percent of all children have illiterate mothers. Undernutrition declines steadily with the increasing educational attainment of the mothers. The decline is pronounced for the highest educational group (high school and above). One-fourth of the children of mothers with at least a high school education are underweight compared with three-fifths of the children of illiterate mothers, and children of illiterate mothers are six times more likely to be severely underweight than children of mothers having completed high school. Clearly, the effectiveness of nutrition education programmes in West Bengal would be enhanced through overreaching efforts in the fields of female education and poverty alleviation.

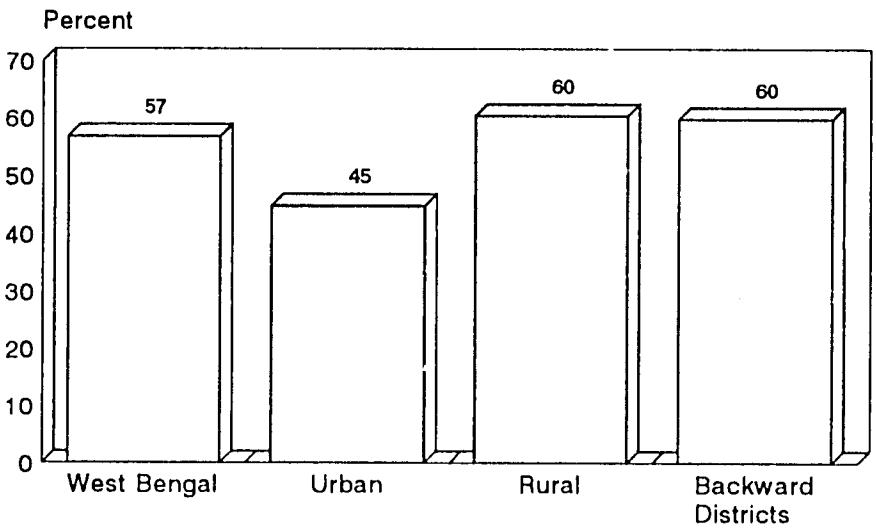
Figure 10.3
Percentage of Children Under Age Four Who Are Underweight by Age



Note: Percentage of children more than 2 standard deviations below the median of the International Reference Population

NFHS, West Bengal, 1992

Figure 10.4
Percentage of Children Under Age Four Who Are Underweight By Residence



Note: Percentage of children more than 2 standard deviations below the median of the International Reference Population

NFHS, West Bengal, 1992

CHAPTER 11

VILLAGE PROFILE

Information collected at the individual and household level can be considerably enhanced if supplemented by community-level data. Much of the health, fertility, and family planning characteristics reported on in previous chapters interact with, and are influenced by, the "supply" attributes of the respondent's village. The supply of health and family planning services, as measured in terms of access to various categories of service providers, number and type of service delivery point, and so on, not only influences the actual use of services, but also has at least an interactive effect on the demand for services. The NFHS thus included a Village Questionnaire to assess the availability, or supply, of family planning and other health and educational services in rural areas.

The questionnaire, which included over 70 items, obtained information on the type of roads linking the village with other places, and the distance to transportation depots such as train stations and bus stands, to the nearest town, and to block and tahsil headquarters. A series of questions was included on the availability of and distance to educational institutions and programmes, as well as health personnel and facilities. The existence of important support services and facilities in the village (including banks, cooperative societies, post offices, markets and shops) was also determined, as they contribute to village quality of life and can serve as one indicator of the degree of village isolation.

The supervisor of each interviewing team was responsible for locating key informants in the village who were knowledgeable about village facilities and infrastructure. The supervisor was required to complete all items on the village questionnaire, but was not required to interview all potential sources of information; the number and type of sources contacted depended upon availability of key informants in the village as well as the scope and quality of information provided. The village headman (*Sarpanch*) would usually be contacted by the supervisor to obtain an interview and to collect names of other persons who could provide more specific information. A teacher or school principal, for example, might be asked about available schools and educational services, a doctor or health practitioner could be questioned about health facilities, the recordkeeper on village lands (*Patwari*) could provide information about heavy equipment and other capital goods used for farming, and the village extension worker (*Gram Sevak*) might be asked about the availability of electricity, irrigation, and other production infrastructure. Based upon the responses from these informants, the supervisor filled in the questionnaire during the field work in each village. The information in this chapter is based on questionnaires completed for 110 villages in the NFHS sample.

11.1 Distance from the Nearest Town and Transportation Facility

Table 11.1 presents the distribution of sample villages according to the distance from the nearest town, railway station and bus stand. The majority of sampled villages in West Bengal (52 percent) are beyond 10 km of a town, and only 18 percent of the villages are located very near (within five km) of a town. Relatively convenient bus services are widespread, as 80 percent of the villages have a bus stand within 5 km. Only 22 percent of the villages, on the other hand, have a railway station within a distance of 5 km. The median distances to the

Table 11.1 Distance from nearest town and transportation facility

Percent distribution of villages according to distance from the nearest town, railway station and bus stand, West Bengal, 1992

Distance	Nearest town	Nearest railway station	Nearest bus stand
< 5 km	17.6	21.5	80.3
5-9 km	30.6	13.1	12.7
10+ km	51.8	65.5	7.0
Total percent	100.0	100.0	100.0
Median distance	10.6	15.5	3.2

nearest town, railway station and bus stand are 10.6, 15.5 and 3.2 kilometres, respectively.

11.2 Availability of Educational Facilities

Table 11.2 shows similar statistics for the proximity of educational facilities. Most of the villages (84 percent) have a primary school within the village, and in the remaining villages (16 percent), a primary school is available within 5 km. Only 12 percent of the villages have a middle school located within the village, but for 59 percent of the villages such a facility is available within a distance of 5 km. Eighty-two percent of the villages have a secondary school either within the village or within 5 km from the village. The median distance of villages from a secondary school is 3 km. More than half (56 percent) of the villages also have a higher secondary school either within the village or within a distance of 5 km. As would be expected, colleges are located quite far from the villages, at a median distance of 14 km. These figures should be assessed bearing in mind that according to the 1991 Census of India, the population density of West Bengal was estimated at 767 persons per square kilometre (see Table 1.1), the

Table 11.2 Distance from nearest educational facility

Percent distribution of villages according to distance from nearest educational facility, West Bengal, 1992

	Educational facility				
Distance	Primary school	Middle school	Secondary school	Higher secondary school	College
Within village	83.6	11.6	8.9	6.6	--
< 5 km	16.4	59.3	72.7	49.2	13.0
5-9 km	--	23.6	13.6	31.5	26.5
10+ km	--	0.8	4.8	12.7	60.5
Don't know/missing	--	4.7	--	--	--
Total percent	100.0	100.0	100.0	100.0	100.0
Median distance	0.0	2.9	3.0	4.3	14.4

-- Less than 0.05 percent

highest among all states of India (National Capital Territory of Delhi and Union Territories excluded).

11.3 Availability of Health Facilities

The availability of health facilities within or close to the village is critical to the health and wellbeing of village mothers and their children. Table 11.3 shows the distance of villages from the nearest health facility as well as the percentage distribution of ever-married women in rural areas, by distance from the nearest facility. Forty percent of villages in the West Bengal NFHS sample have some form of health facility available within the village, most commonly a sub-centre (25 percent), followed by a dispensary/clinic (21 percent). Eight in ten villages have either a sub-centre or a Primary Health Centre located in the village or within a range of five km. The median distance to a sub-centre is 2.7 km, while the median distance to a Primary Health Centre is 5.5 km. The median distance of villages from a hospital is 8.5 km., and 31 percent of the villages have a hospital located either in the village or within a distance of 5 km.

The percent distribution of ever-married women by distance to nearest health facility is a measure directly parallel with the distribution of villages by distance to these facilities. Because health facilities tend to be concentrated in larger villages, however, where more women live, the median distances of health facilities to villages should be slightly greater than distances to women living in the villages. Thus the median distance of a village to a Primary Health Centre

Table 11.3 Distance from nearest health facility

Percent distribution of villages and ever-married women age 13-49, according to distance from nearest health facility, West Bengal, 1992

Distance	Health facility					
	Primary Health Centre	Sub-centre	Either PHC/Sub-centre	Hospital	Dispensary/ clinic	Any health facility
			VILLAGES			
Within village	6.8	24.6	27.7	1.0	20.5	40.4
< 5 kms	39.1	45.0	51.9	30.3	50.7	41.7
5-9 kms	40.1	23.7	17.5	24.5	27.9	17.8
10+ kms	13.5	3.2	2.9	41.7	0.8	--
Don't know/missing	0.5	3.5	--	2.4	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Median distance	5.5	2.7	2.4	8.5	2.3	1.4
			EVER-MARRIED WOMEN			
Within village	11.4	39.7	43.8	3.4	36.5	61.0
< 5 kms	37.9	34.8	41.5	29.0	43.7	30.0
5-9 kms	31.9	15.4	12.0	20.6	17.9	9.1
10+ kms	17.3	4.5	2.7	45.0	1.9	--
Don't know/missing	1.6	5.6	--	2.0	--	--
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Median distance	5.0	2.1	1.4	8.7	1.6	0.0

-- Less than 0.05 percent

is 5.5 km., but is 5.0 km. for an ever-married woman. Sixty-one percent of ever-married women have access to a health facility within their village, the most common facility being a sub-centre (40 percent). Eighty-five percent of ever-married women live within five km. of either a PHC or sub-centre (for half of these women the facility is located in their village), and 80 percent have a dispensary/clinic located either in their village or at a distance of less than five km. Thirty-two percent of the women have access to a hospital, either within a village or within a distance of five km.

11.4 Availability of Other Facilities and Services

Table 11.4 indicates the availability of selected health providers within the villages, as well as several facilities and services, a portion of which are either currently or potential future service delivery points for health and family planning. In terms of selected health providers, 56 percent of the villages have a village health guide, but only 39 percent have a trained birth attendant. The mobile health unit is apparently available in 18 percent of the villages (Table 11.4).

In terms of other facilities and services in the villages, only 44 percent have electricity, and among the government rural developmental programmes, the most important in the villages of West Bengal is the Integrated Rural Development Programme (IRDP), found in 87 percent of the villages. Sixty-six percent of the villages have a National Rural Employment Programme (NREP) representative, and 45 percent have *Anganwadi* centres (a preschool child care centre under the Integrated Child Development Scheme). Another 38 percent have adult education classes, and 15 percent have *Jana Shikshana Nilayam*, which are post-literacy and continuing education centres. Youth clubs are common in rural West Bengal, with 62 percent of sample villages having such a community group. *Mahila Mandals* (women's clubs) are available in 28

Table 11.4 Availability of facilities and services

Percentage of villages having selected facilities and services, West Bengal, 1992

Facility/services	Percentage
Anganwadi	44.8
Adult education classes	37.9
Jana Shikshana Nilayam	15.0
Village health guide	56.1
Trained birth attendant	39.2
Mobile health unit	17.9
Electricity	43.6
Bank	17.0
Cooperative society	32.3
Post office	29.3
Market/shop	49.7
Fair price shop	36.6
Mahila Mandal	27.8
Youth club	62.4
Integrated Rural Development Programme (IRDP)	86.7
National Rural Employment Programme (NREP)	66.4
Training the Youth for Self-employment (TRYSEM)	36.6

percent of villages. One-third of the villages (32 percent) have a credit cooperative society, and 37 percent have a fair price shop. The proportion of rural private medical practitioners is not available from these data, but it can be inferred that many of the "clinics/dispensaries" shown in Table 11.3 would be staffed by practitioners of various non-Allopathic disciplines popular in India, including Homeopathy, Ayurveda, and Unani systems of medicine.

CHAPTER 12

KNOWLEDGE OF AIDS

Acquired Immune Deficiency Syndrome, or AIDS, as it is more commonly known, was first recognized in 1981. Since the beginning of the pandemic, it is estimated that over 16 million individuals throughout the world have been infected with the human immunodeficiency virus (HIV), which causes AIDS, and about 1.5 million people developed AIDS between mid-1993 and mid-1994 - three times as many as in the previous 12-month period (World Health Organization, 1994). The estimated total number of actual AIDS cases in adults and children over the same period is four million, of which over 240,000 (6.0 percent) are from Asia. A large proportion (30-50 percent) of these infected individuals are expected to die within 5-10 years of acquiring the infection (World Health Organization, 1992). Because of the high case fatality rate and the lack of a curative treatment or vaccine, the HIV/AIDS pandemic is one of the most serious health problems in the world.

Within a few years after the original description of the AIDS syndrome, its cause and mode of transmission were documented. The virus that causes AIDS may remain in a state of latency for some time without causing clinical disease. It is thought that once an individual becomes infected with the virus, however, he or she remains infected for life. The clinical manifestations of AIDS result primarily from critical injury to the immune system. Soon after becoming infected with HIV, some people have an acute self-limiting illness, indistinguishable from many other mild viral illnesses. After the healthy carrier state, which may last as long as 10 years (longer in some cases), most infected people progress to the full long-term clinical illness stage - the stage at which AIDS itself is contracted.

Epidemiological studies have demonstrated that the major routes of HIV transmission are sexual intercourse, intravenous injections (e.g., transfusions of HIV-contaminated blood or injections using HIV-contaminated needles) and transmission from infected mothers to unborn foetuses through the placenta. Female sex workers in India have significant levels of HIV infection, and a major route of transmission of the virus is along well-established truck routes of the country, as contact between sex workers and the drivers is common. The available evidence indicates that the HIV cannot be transmitted through food, water, vectors, or casual contact. Increasingly HIV is found in association with sexually transmitted diseases (STDs) and tuberculosis, compounding an already alarming public health problem. In urban areas of Tamil Nadu, Gujarat, Karnataka, Punjab, and West Bengal, HIV prevalence levels in STD patients are now estimated to be about one percent (World Health Organization, 1994).

India established a National AIDS Control Organization (NACO) under the Ministry of Health and Family Welfare in 1989. Prior to this, attempts were made by various non-governmental organizations (NGOs) to raise awareness of the AIDS syndrome and implement small-scale prevention programs, concentrating in the perceived higher-risk areas of Bombay, Calcutta, Madras, and Delhi. As the NGO work continues to make important contributions in the field of AIDS prevention, the numbers compiled at the national level reveal the spread of HIV in India (NACO produces a monthly update on HIV infection in India, based on medical records submitted from 59 hospitals and major medical research centres throughout India).

records submitted from 59 hospitals and major medical research centres throughout India).

The updates show that by June of 1988 nearly 120,000 persons from high-risk groups in India had been screened for the virus. Of these cases, 370 tested as HIV-positive, and 22 of them (15 Indians and 7 foreigners) were diagnosed as having actually contracted AIDS. It was subsequently determined that 21 of these 22 AIDS cases were transmitted through sexual intercourse, and one through blood transfusion. According to another set of estimates, by 1988 sixteen patients (14 Indians and two foreigners) had died of AIDS in India (Khurana, 1989). Approximately 600,000 persons were HIV positive in India in 1992, and the number of HIV positive cases among those screened (who tend to be from high-risk groups) has shown an increase from 2.5 per 1,000 population in 1986 to 11.2 per 1,000 in 1992 (Ministry of Health and Family Welfare, 1993a).

As of March 1993, 11,849 sero-positive cases out of a total of 1,659,412 samples screened had been reported in India (Ministry of Health and Family Welfare, 1993b). Of these HIV-positive cases, 310 were diagnosed as having actually contracted AIDS, their geographical distribution covering 20 states and union territories of the country. Three-fourths of these AIDS cases had reportedly acquired the virus through sexual intercourse, 12 percent through blood transfusions, and seven percent through sharing unsterilized needles. It is estimated that if the transmission of HIV continues at the same pace, about five million persons would be infected in India by the year 2000, and the number of AIDS cases would exceed one million (Ministry of Health and Family Welfare, 1993b).

Recent estimates from the NACO monthly updates on HIV infection in India show that as of 31 March 1994 a total of 15,017 cases were confirmed HIV-positive (using the Western Blot test), out of 2,052,856 samples screened, resulting in a sero-positivity rate of 7.32 per 1000 (National AIDS Control Organization, 1994). The number of AIDS cases *reported* in India was 713, (551 males and 162 females), although according to WHO estimates the actual number would be substantially larger. Nearly half of the sero-positives (15,017) were categorized as heterosexual (43 percent), 16 percent were blood donors, and 13 percent were I/V drug users. It should be noted that a large number of the sero-positives (20 percent) were categorized as "other".

The prevalence of the HIV infection as measured in 1994 was substantially larger than in 1988, when high-risk groups were first screened, and unless serious interventions are undertaken in the area of prevention, there is great potential for a further acceleration in HIV prevalence. To summarize the recent situation in India: (1) HIV infection is rapidly spreading beyond those few areas in the country considered to be of especially high risk, and is at different epidemiological stages even within the same state; (2) the epidemic has begun to spread to the general population, mainly through heterosexual contact with those categorized as "high-risk" groups; and (3) the interaction of HIV infection with sexually transmitted diseases (STDs) and tuberculosis, both widely prevalent throughout India, presents an even more challenging public health problem - stemming STDs is essential to slowing the transmission of HIV, and the correlation between HIV and tuberculosis may result in a resurgence of TB (56 percent of reported AIDS cases in India have tuberculosis). Furthermore, fewer than 10 percent of STD patients seek treatment from public health centres, and the quality of case management and care provided at public as well as private and informal centres is generally low (Lal, 1994).

It is against the above-described public health situation that the NFHS in West Bengal included a series of questions on knowledge of AIDS. These were included as state-specific questions in addition to the core questions used in all Indian states. The added questions enable measurement of the extent of knowledge about AIDS among different population sub-groups, thus generating information that will be useful for planning and implementing AIDS prevention programmes. Ever-married women age 13-49 were first asked if they had ever heard of an illness called AIDS. Respondents indicating knowledge of AIDS were asked further questions about the sources of their knowledge, their knowledge of the mechanisms of AIDS transmission, whether they believe the transmission of AIDS is preventable, and if so, their perception of the precautions a person can take to avoid AIDS.

12.1 Knowledge of AIDS

Only 10 percent of ever-married women age 13-49 in West Bengal report having heard about AIDS (Table 12.1). Knowledge is particularly low among women age 13-24, as only five percent of this group reports knowing about AIDS. Knowledge of AIDS is also to a great extent associated with residence and educational attainment; urban women are about seven times more likely to have heard about AIDS than rural women, and among illiterate women, who comprise 51 percent of all ever-married women, knowledge of AIDS is negligible. The positive association between knowledge of AIDS and educational attainment is pronounced, increasing from 0.5 percent of illiterates having knowledge, to 4 percent of literate women with some primary school, 21 percent of those having completed middle school, and 66 percent of ever-married women with a high school education. Hindu women are four times as likely to have heard about AIDS than Muslim women, and less than 2 percent of scheduled caste and scheduled tribe women have any knowledge of AIDS. Exposure to mass media substantially influences the percentage of ever-married women knowing about AIDS. Only 1 percent of women not exposed to any media report having knowledge, compared with 15 percent of women who watch television at least once a week, or listen to the radio at least once a week, or visit the cinema/theatre at least once a month. Knowledge of AIDS in West Bengal is thus to a substantial extent dependent upon residence, education, and media exposure.

In the NFHS, women who had heard about AIDS were asked an open-ended question on how HIV is transmitted. Interviewers were instructed to record all the reported modes of transmission by the respondents. The most frequently reported mode of transmission of HIV was simply "sexual intercourse", mentioned by over 60 percent of ever-married women; (an additional seven percent of women specified heterosexual intercourse, and two percent specified homosexual intercourse). The second most frequent answer was transfusion of infected blood, mentioned by 18 percent of the respondents. Infected needles/blades/skin punctures, and transmission from mother to child were reported by only 10 and 2 percent of women, respectively. Differentials in knowledge of the mode of HIV transmission by selected background characteristics are relatively small.

12.2 Source of Knowledge about AIDS

As a part of the AIDS programme, the Government of India continues to take advantage of mass media, especially the electronic media, to create AIDS awareness among the general public and to air educational messages on how to prevent spread of the virus. The impact of

Table 12.1 Knowledge of AIDS

The percentage of ever-married women age 13-49 who have heard about AIDS and, among women who have heard about AIDS, the percentage who think AIDS can be transmitted through different modes, according to selected background characteristics, West Bengal, 1992

Background characteristic	Percent who heard about AIDS	Total number of women	Among those who have heard about AIDS, percent[1] who think AIDS can be transmitted through: Sexual intercourse	Homosexual intercourse	Heterosexual intercourse	Needles/ blades/ punctures	Mother to child	Transfusion of infected blood	Other ways	Don't know	Number of women
Age											
< 25	4.9	1366	53.5	1.3	8.6	7.2	2.1	19.4	3.3	29.1	67
25-34	13.0	1532	65.0	2.0	5.9	7.9	1.3	16.5	5.9	23.9	200
35+	11.1	1423	63.7	3.0	7.2	12.6	2.7	18.3	8.3	22.1	158
Residence											
Urban	26.3	1180	64.0	2.2	7.1	11.0	2.3	19.8	5.6	23.0	310
Rural	3.7	3142	59.3	2.3	6.1	5.5	1.0	11.8	8.4	26.7	115
Education											
Illiterate	0.5	2185	*	*	*	*	*	*	*	*	11
Lit., < middle complete	4.0	1278	(51.1)	(--)	(4.9)	(--)	(2.8)	(12.6)	(9.2)	34.1	51
Middle school complete	20.5	444	57.4	1.6	13.6	5.5	1.2	12.4	5.5	27.5	91
High school and above	65.5	415	67.0	3.0	5.2	13.1	2.1	20.7	6.4	20.1	272
Religion											
Hindu	11.7	3292	64.0	2.1	7.2	10.4	2.1	18.4	6.9	21.8	386
Muslim	2.9	939	(48.6)	(--)	(--)	(1.7)	(--)	(14.6)	(1.7)	(49.7)	27
Other	13.1	91	*	*	*	*	*	*	*	*	12
Caste/tribe											
Scheduled caste	1.0	408	*	*	*	*	*	*	*	*	4
Scheduled tribe	1.8	221	*	*	*	*	*	*	*	*	4
Other	11.3	3693	63.0	2.3	7.0	9.7	2.0	17.7	6.5	23.5	417
Exposure to Mass Media											
Exposed to any media	15.3	2650	64.3	2.4	6.9	10.0	2.0	17.7	6.7	22.1	404
Listens to radio weekly	13.8	2086	64.5	3.3	6.5	9.3	2.4	18.1	6.7	19.6	288
Watches television weekly	25.4	1438	65.1	2.3	7.3	11.1	1.9	18.0	6.4	20.7	365
Goes to cinema monthly	15.9	697	60.2	1.4	7.8	7.3	2.6	15.6	6.5	23.4	111
Not exposed to any media	1.2	1672	*	*	*	*	*	*	*	*	21
Total	9.8	4322	62.7	2.3	6.8	9.5	1.9	17.7	6.4	24.0	425

( ) Based on 25-49 unweighted cases
* Percentage not shown; based on fewer than 25 unweighted cases
-- Less than 0.05 percent
[1]Percentages may sum to more than 100.0 since multiple responses were allowed.

these efforts is shown in Table 12.2. In the NFHS, women who had heard about AIDS were asked to identify their sources of information. The most common source of knowledge reported was television, cited by 59 percent of ever-married women who had heard of AIDS. Another 54 percent reported hearing of AIDS through newspapers, and an equal percentage of women (21 percent) reported learning about AIDS from the radio and from friends or relatives.

Respondent's age did not substantially differentiate responses, as television, newspapers, and friends/relatives were the three most commonly mentioned sources of knowledge for all

Table 12.2 Source of knowledge about AIDS

Among women who have heard about AIDS, the percentage having knowledge of AIDS from different sources, according to selected background characteristics, West Bengal, 1992

Background characteristic	Among those who have heard about AIDS, percent[1] by sources of knowledge: Radio	Tele-vision	News papers	Maga-zines	Friends/ relatives	Other sources	Number of women
Age							
< 25	20.0	59.1	39.8	12.3	22.6	10.6	67
25-34	25.0	57.1	53.1	12.5	23.5	8.4	200
35+	15.2	61.7	61.3	10.2	16.4	8.9	158
Residence							
Urban	15.3	65.1	61.0	13.4	19.4	4.5	310
Rural	34.8	43.0	35.5	6.9	24.1	20.2	115
Education							
Lit., < middle complete	(29.4)	(39.1)	(14.8)	(--)	(30.5)	(10.7)	51
Middle school complete	20.2	59.9	41.9	9.5	24.1	8.2	91
High school and above	19.3	64.3	67.7	15.0	16.9	7.0	272
Religion							
Hindu	20.7	61.0	55.8	11.0	19.2	8.4	386
Muslim	(20.1)	(36.0)	(20.0)	(5.7)	(51.8)	(17.1)	27
Exposure to Mass Media							
Exposed to any media	21.1	60.9	55.1	12.2	19.4	7.3	404
Listens to radio weekly	27.4	61.0	56.5	11.3	20.3	7.2	288
Watches television weekly	17.7	65.6	58.9	13.2	18.8	6.0	365
Goes to cinema monthly	21.1	53.2	47.6	16.3	18.7	4.7	111
Total	20.6	59.1	54.1	11.6	20.7	8.9	425

Note: Total includes 11 illiterate women, 12 women belonging to other religions and 21 women not exposed to any media, who are not shown separately.
( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Percentages may sum to more than 100.0 because multiple responses were allowed.

three age groups. Women over age 35 tended to rely less on the radio than the other two age groups, and women younger than age 25 received relatively less information about AIDS from newspapers. The age group 25-34 was more likely to get information from magazines than were women of other ages, and women over age 35 were slightly less likely to have mentioned friends/relatives as sources (16 percent compared to 23 percent for the other two groups). Rural women were far more likely than urban women to have received information on AIDS from the radio. On the other hand, urban women were much more likely to have reported television, newspapers, and magazines as sources. Television, however, remained the most commonly mentioned source for both urban and rural residents.

Hearing about AIDS on television is strongly associated with educational attainment. The more education, the more likely the respondent is to have reported television as a source of knowledge, and a similar association is evident with newspapers as a source (note that only 11 ever-married illiterate women in the sample had ever heard of AIDS, and are therefore excluded from the analysis). There appears to be an inverse association between education and identifying friends/relatives as sources of information. A critical factor in examining sources of knowledge

about AIDS, of course, is exposure to mass media. Only 21 women having heard about AIDS were *not* exposed to any mass media, and these women tend to report friends/relatives and health workers as ("health workers" is the most common response category comprising "other sources") their main sources of information. For those few Muslim women who had heard about AIDS (27), their main source of knowledge was friends/relatives, compared with Hindu women, who tended to report television, newspapers, and radio, respectively. Only eight women belonging to either scheduled castes or scheduled tribes had heard of AIDS and are thus excluded from the analysis.

12.3 Misconceptions about AIDS

One of the many challenging public health issues associated with AIDS treatment and prevention is in the area of health education. Serious misconceptions about the disease among the general public constrain the impact of AIDS preventive measures and the provision of effective care and treatment. Just as medical research scientists depend upon the epidemiology of AIDS to draw conclusions about possible medical causes and consequences, health educators are unable to design effective prevention programmes without fully understanding the *epidemiology* of rumours and misinformation surrounding the disease. Respondents were therefore asked if they thought that one could get AIDS from various commonly occurring social situations such as shaking hands with an individual who is HIV-positive, hugging and kissing an HIV-positive individual, sharing cloth or utensils with such a person, or using the toilet or coming into contact with urine and/or the fecal material of an infected person. Respondents were also asked about whether one could contract the virus from mosquito, flea or bedbug bites. Women were also asked if they thought AIDS is curable or whether an AIDS vaccine exists. Results are shown in Table 12.3.

The proportions of women who perceive that AIDS can be contracted from these rumoured sources of transmission are 20 percent from shaking hands, 30 percent from hugging an infected person, 60 percent from kissing an infected person, 54 percent from wearing an infected person's clothes, 68 percent from sharing eating utensils with someone with AIDS, 62 percent from stepping on the urine or fecal material of an infected person, and 77 percent from mosquito, flea or bedbug bites. Thirty-five percent think that AIDS is curable, but only 2 percent think that an AIDS vaccine exists. Even among those women who are younger, urban, literate and better educated, as well as regularly exposed to mass media, substantial proportions of ever-married women in West Bengal believe in these common rumours about how HIV is transmitted.

12.4 Knowledge of Prevention of AIDS

Those respondents who had heard of AIDS were also asked an open-ended question about how the disease can be prevented. Of the 425 women answering, the most commonly mentioned response involved practising "safe sex" (43 percent), and the second most common response was, more specifically, using a condom during sex (36 percent). Another 17 percent mentioned that AIDS can be avoided by checking the blood sample prior to receiving a blood transfusion, and seven percent mentioned ensuring that needles or syringes are sterilized before receiving an injection. Four percent mentioned that for those people already infected with HIV, further spread can be prevented if pregnancy is avoided. These responses varied little by background

Table 12.3 Misconceptions about AIDS

Among women who have heard about AIDS, the percentage having misconceptions about different ways of getting AIDS, according to selected background characteristics, West Bengal, 1992

Background characteristic	Percent[1] who think it is possible to get AIDS from:							Percent who think:		Number of women
	Shaking hands with someone with AIDS	Hugging someone with AIDS	Kissing someone with AIDS	Wearing clothes of someone with AIDS	Sharing eating utensils with someone with AIDS	Stepping on urine/ stools of person who has AIDS	Mosquito, flea, bedbug bites	AIDS is curable	An AIDS vaccine exists	
Age										
< 25	23.2	31.6	51.3	52.1	63.0	54.3	75.5	34.0	0.7	67
25-34	17.9	27.9	58.6	51.4	65.9	64.2	75.0	36.4	2.4	200
35+	20.8	30.8	64.4	57.4	72.0	62.8	79.2	33.4	2.1	158
Residence										
Urban	19.2	26.8	57.5	53.0	66.7	60.3	75.7	30.4	0.9	310
Rural	21.7	36.9	65.1	56.0	70.6	67.0	79.2	47.0	5.1	115
Education										
Lit., < middle complete	(22.1)	(28.6)	(52.6)	(55.4)	(67.4)	(59.0)	(73.8)	(44.0)	(4.3)	51
Middle school complete	25.7	38.6	61.4	50.9	69.0	61.1	74.9	36.2	--	91
High school and above	18.1	27.3	61.0	54.4	67.5	63.5	77.7	31.6	2.4	272
Religion										
Hindu	19.2	29.2	61.3	54.8	69.7	63.8	76.9	35.5	1.9	386
Muslim	(37.1)	(47.9)	(47.8)	(53.1)	(61.2)	(51.8)	(85.6)	(38.1)	(4.1)	27
Exposure to Mass Media										
Exposed to any media	19.7	29.6	60.0	54.3	67.5	62.2	76.3	34.7	1.9	404
Listens to radio weekly	22.2	32.9	61.5	53.9	67.6	63.2	77.8	37.9	2.1	288
Watches television weekly	20.4	28.7	59.8	53.3	67.0	61.8	75.9	33.2	1.6	365
Go to cinema monthly	18.6	30.6	62.6	60.0	68.0	63.6	78.7	36.4	1.4	111
Total	19.8	29.5	59.6	53.8	67.7	62.1	76.7	34.9	2.0	425

Note: Total includes 11 illiterate women, 12 women belonging to other religions and 21 women not exposed to any media, who are not shown separately.
( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Percentages may sum to more than 100.0 since multiple responses were allowed.

characteristics such as age, residence, and religion, although the percentage referring to using condoms during sex increased with education and media exposure, and those citing "safe sex" were far more likely to be exposed to mass media.

This brief examination of knowledge of AIDS among ever-married women in West Bengal indicates what might be considered alarmingly low levels of knowledge of the disease. Even among those who have heard of AIDS, serious misconceptions about how the disease is transmitted are evidence of the degree to which rumours and misinformation dominate current beliefs and (possibly) attitudes. Results shown in this chapter, taken along with the growing body of research on AIDS, should better enable public health educators in West Bengal to design interventions. It is clear that knowledge of AIDS is heavily concentrated among urban women, women who are well-educated, and women who are relatively well-exposed to mass media. Much effort is needed to spread awareness of AIDS to the rural, illiterate majority.

Table 12.4 Knowledge about avoidance of AIDS

Among the women who have heard about AIDS, the percentage who believe AIDS can be avoided by various means, according to selected background characteristics, West Bengal, 1992

Background characteristic	Percent[1] who believe AIDS can be avoided by:					Number of women
	Using condoms during intercourse	Practicing safe sex	Checking blood prior to transfusion	Sterilizing needles/ syringes for injection	Avoiding pregnancy when infected with AIDS	
Age						
< 25	34.6	41.7	23.2	3.0	6.6	67
25-34	34.8	47.9	10.7	4.8	2.1	200
35+	37.2	36.7	22.0	11.0	6.2	158
Residence						
Urban	37.2	42.1	18.2	6.8	4.6	310
Rural	31.5	44.5	13.3	6.9	3.6	115
Education						
Lit., < middle complete	(24.3)	(42.5)	(19.1)	(--)	(--)	51
Middle school complete	38.2	43.1	14.2	2.8	2.8	91
High school and above	37.4	43.0	17.7	9.4	5.8	272
Religion						
Hindu	35.7	42.9	16.6	6.4	4.2	386
Muslim	(41.5)	(42.0)	(18.7)	(11.0)	(8.1)	27
Exposure to Mass Media						
Exposed to any media	35.9	43.7	16.9	7.2	4.6	404
Listens to radic weekly	36.8	44.2	18.3	6.8	4.5	288
Watches television weekly	36.0	43.3	16.2	7.1	4.7	365
Go to cinema monthly	38.6	45.5	16.9	4.1	4.0	111
Total	35.6	42.7	16.9	6.8	4.3	425

Note: Total includes 11 illiterate women, 12 women belonging to other religions and 21 women not exposed to any media, who are not shown separately.
( ) Based on 25-49 unweighted cases
-- Less than 0.05 percent
[1]Percentages may sum to more than 100.0 since multiple responses were allowed.

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APPENDIX A

ESTIMATES OF SAMPLING ERRORS

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors and (2) sampling errors. Nonsampling errors are the result of errors committed 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 NFHS 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 women selected in the NFHS is only one of many samples that could have been selected from the same population, using the same design and expected sample size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. The sampling error is 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.

The sampling error is usually measured in terms of the *standard error* for a particular statistic (for example, mean or percentage), 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 women had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the NFHS sample is the result of a multi-stage stratified sample design, and consequently, it is necessary to use more complex formulas. The computer software used to calculate sampling errors for the NFHS is the ISSA Sampling Error Module (ISSAS). This module uses the linear Taylor series approximation method for variance estimation, known as the CLUSTERS model, for survey estimates that are means, proportions or ratios. The JACKKNIFE repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The ISSAS package 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 or r is computed using the formula given below, with the standard error being the square root of the variance:

$$var(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - r x_{hi}$$

$$z_h = y_h - r x_h$$

where

h	represents the stratum which varies from 1 to H,
m_h	is the total number of PSUs selected in the h^{th} stratum,
y_{hi}	is the sum of the values of variable y in PSU i in the h^{th} stratum,
x_{hi}	is the sum of the number of cases in PSU i in the h^{th} stratum, and
f	is the overall sampling fraction, which is so small that ISSAS ignores it.

In addition to the standard errors, ISSAS 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. ISSAS also computes the relative error and confidence limits for the estimates.

Sampling errors for the NFHS are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the state as a whole and for urban and rural areas, and separately for backward districts. For each variable, the type of statistic (mean, proportion, ratio or rate) and the base population are given in Table A.1. Table A.2 presents the value of the statistic (R), its standard error (SE), the number of unweighted cases (N) and weighted (WN) cases, the standard error assuming a simple random sample (SER), the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R$\pm$2SE), for each variable.

Table A.1 List of selected variables for sampling errors, West Bengal, 1992

VARIABLE	ESTIMATE	BASE POPULATION
Sex ratio	Ratio	Household *de facto* population
Illiterate	Proportion	Household *de facto* population age 6 and older
Different sources of drinking water	Proportion	Households
Illiterate	Proportion	Ever-married women 13-49
With secondary education or more	Proportion	Ever-married women 13-49
Currently married	Proportion	Ever-married women 13-49
Children ever born	Mean	Ever-married women 13-49
Children surviving	Mean	Ever-married women 13-49
Know at least one contraceptive method	Proportion	Currently married women 13-49
Know source for any modern method	Proportion	Currently married women 13-49
Have ever used any method	Proportion	Currently married women 13-49
Currently using any method	Proportion	Currently married women 13-49
Currently using any modern method	Proportion	Currently married women 13-49
Currently using pills	Proportion	Currently married women 13-49
Currently using Copper T/IUD	Proportion	Currently married women 13-49
Currently using injections	Proportion	Currently married women 13-49
Currently using condoms	Proportion	Currently married women 13-49
Currently using female sterilization	Proportion	Currently married women 13-49
Currently using male sterilization	Proportion	Currently married women 13-49
Currently using periodic abstinence	Proportion	Currently married women 13-49
Using public source for modern method	Proportion	Current users of modern methods
Do not want any more children	Proportion	Currently married women 13-49
Want to delay birth at least 2 years	Proportion	Currently married women 13-49
Ideal number of children	Mean	Ever-married women 13-49
Ideal number of sons	Mean	Ever-married women 13-49
Ideal number of daughters	Mean	Ever-married women 13-49
Received no antenatal care	Proportion	Births in the last 4 years
Received tetanus toxoid (2 doses)	Proportion	Births in the last 4 years
Received medical assistance at delivery	Proportion	Births in the last 4 years
Had diarrhoea in the last 24 hours	Proportion	Children under 4 years old
Had diarrhoea in the last 2 weeks	Proportion	Children under 4 years old
Treated with ORS packets	Proportion	Children under 4 with diarrhoea in last 2 weeks
Consulted medical personnel for diarrhoea	Proportion	Children under 4 with diarrhoea in last 2 weeks
Showing vaccination card	Proportion	Children 12-23 months
Received BCG vaccination	Proportion	Children 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Received polio vaccination (3 doses)	Proportion	Children 12-23 months
Received measles vaccination	Proportion	Children 12-23 months
Fully vaccinated	Proportion	Children 12-23 months
Know about AIDS	Proportion	Ever-married women age 13-49
Fertility rates	Rate	All women, population
Mortality rates	Rate	Births, population

Table A.2 Sampling errors, West Bengal, 1992

Variable/residence	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
SEX RATIO (Household *de facto* population)									
Urban	880	38.0	2805	3566	21.496	1.769	0.043	804.1	956.2
Rural	972	9.8	8907	8078	11.645	0.844	0.010	952.6	991.9
Total	944	13.9	11712	11644	10.336	1.340	0.015	916.4	971.8
Backward districts	967	27.8	2737	1226	20.727	1.340	0.029	911.1	1022.2
ILLITERATE (Household *de facto* population, age 6 and over)									
Urban	0.199	0.023	4727	5963	0.009	0.062	0.115	0.153	0.245
Rural	0.408	0.011	14740	13440	0.006	0.016	0.028	0.386	0.431
Total	0.344	0.011	19467	19403	0.005	1.990	0.031	0.322	0.366
Backward districts	0.495	0.023	4472	2002	0.013	1.789	0.046	0.449	0.541
PIPED WATER AS SOURCE OF DRINKING WATER (Households)									
Urban	0.591	0.046	1086	1362	0.015	3.059	0.437	0.500	0.683
Rural	0.049	0.016	3152	2876	0.004	4.250	0.617	0.016	0.082
Total	0.224	0.020	4238	4238	0.006	3.109	0.089	0.184	0.263
Backward districts	0.083	0.025	969	433	0.009	2.843	0.303	0.033	0.134
PUMPED WATER AS SOURCE OF DRINKING WATER (Households)									
Urban	0.317	0.033	1086	1362	0.014	2.371	0.106	0.250	0.384
Rural	0.771	0.021	3152	2876	0.007	2.787	0.027	0.729	0.813
Total	0.625	0.019	4238	4238	0.007	2.539	0.030	0.587	0.663
Backward districts	0.776	0.052	969	433	0.013	3.846	0.501	0.673	0.879
WELL WATER AS SOURCE OF DRINKING WATER (Households)									
Urban	0.081	0.029	1086	1362	0.008	3.551	0.364	0.022	0.139
Rural	0.131	0.021	3152	2876	0.006	3.451	0.158	0.090	0.173
Total	0.115	0.017	4238	4238	0.005	3.461	0.148	0.081	0.149
Backward districts	0.128	0.046	969	433	0.011	4.297	0.360	0.036	0.220
SURFACE WATER AS SOURCE OF DRINKING WATER (Households)									
Urban	0.003	0.001	1086	1362	0.002	0.586	0.310	0.001	0.005
Rural	0.029	0.014	3152	2876	0.003	4.652	0.479	0.001	0.057
Total	0.021	0.009	4238	4238	0.002	4.317	0.456	0.002	0.040
Backward districts	0.008	0.003	969	433	0.003	0.998	0.352	0.002	0.014
OTHER SOURCE OF DRINKING WATER (Households)									
Urban	0.008	0.003	1086	1362	0.003	1.058	0.353	0.002	0.014
Rural	0.019	0.004	3152	2876	0.002	1.638	0.208	0.011	0.027
Total	0.016	0.003	4238	4238	0.002	1.512	0.183	0.010	0.022
Backward districts	0.004	0.003	969	433	0.002	1.255	0.630	0.001	0.009
ILLITERATE (Ever-married women age 13-49)									
Urban	0.299	0.032	898	1180	0.015	2.066	0.106	0.235	0.362
Rural	0.583	0.015	3424	3142	0.008	1.759	0.025	0.554	0.613
Total	0.506	0.015	4322	4322	0.008	1.925	0.029	0.476	0.535
Backward districts	0.639	0.027	1036	464	0.015	1.778	0.042	0.585	0.692
WITH SECONDARY EDUCATION OR MORE (Ever-married women age 13-49)									
Urban	0.252	0.032	898	1180	0.014	2.192	0.126	0.188	0.315
Rural	0.038	0.004	3424	3142	0.003	1.221	0.105	0.030	0.046
Total	0.096	0.010	4322	4322	0.004	2.150	0.100	0.077	0.115
Backward districts	0.066	0.015	1036	464	0.008	1.888	0.220	0.037	0.095

Table A.2 Sampling errors, West Bengal, 1992 (Contd.)

Variable/residence	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
CURRENTLY MARRIED (Ever-married women age 13-49)									
Urban	0.929	0.009	898	1180	0.009	1.092	0.010	0.910	0.947
Rural	0.926	0.005	3424	3142	0.004	1.111	0.005	0.916	0.936
Total	0.927	0.004	4322	4322	0.004	1.118	0.005	0.918	0.935
Backward districts	0.917	0.009	1036	464	0.009	1.002	0.009	0.900	0.934
MEAN NUMBER OF CHILDREN EVER BORN (Ever-married women age 13-49)									
Urban	2.664	0.119	898	1180	0.071	1.672	0.045	2.426	2.903
Rural	3.069	0.044	3424	3142	0.040	1.106	0.014	2.980	3.158
Total	2.959	0.046	4322	4322	0.035	1.322	0.016	2.866	3.051
Backward districts	3.259	0.096	1036	464	0.080	1.197	0.029	3.067	3.451
MEAN NUMBER OF CHILDREN SURVIVING (Ever-married women age 13-49)									
Urban	2.349	0.095	898	1180	0.061	1.550	0.040	2.160	2.538
Rural	2.601	0.036	3424	3142	0.033	1.098	0.014	2.528	2.673
Total	2.532	0.037	4322	4322	0.029	1.275	0.015	2.458	2.606
Backward districts	2.714	0.085	1036	464	0.065	1.300	0.031	2.544	2.884
KNOW AT LEAST ONE CONTRACEPTIVE METHOD (Currently married women age 13-49)									
Urban	0.987	0.004	833	1096	0.004	0.900	0.004	0.979	0.994
Rural	0.993	0.002	3165	2909	0.002	1.018	0.002	0.989	0.996
Total	0.991	0.001	3998	4004	0.001	0.996	0.002	0.988	0.994
Backward districts	0.984	0.006	950	425	0.004	1.507	0.006	0.972	0.996
KNOW SOURCE FOR ANY MODERN METHOD (Currently married women age 13-49)									
Urban	0.953	0.008	833	1096	0.007	1.078	0.008	0.937	0.969
Rural	0.961	0.006	3165	2909	0.003	1.598	0.006	0.949	0.972
Total	0.958	0.005	3998	4004	0.003	1.448	0.005	0.949	0.968
Backward districts	0.928	0.018	950	425	0.008	2.148	0.019	0.892	0.964
HAVE EVER USED ANY METHOD (Currently married women age 13-49)									
Urban	0.753	0.022	833	1096	0.015	1.481	0.029	0.709	0.797
Rural	0.686	0.011	3165	2909	0.008	1.299	0.016	0.665	0.708
Total	0.704	0.010	3998	4004	0.007	1.367	0.014	0.685	0.724
Backward districts	0.674	0.022	950	425	0.015	1.455	0.033	0.630	0.718
CURRENTLY USING ANY METHOD (Currently married women age 13-49)									
Urban	0.618	0.026	833	1096	0.017	1.531	0.042	0.567	0.670
Rural	0.557	0.011	3165	2909	0.009	1.300	0.021	0.534	0.580
Total	0.574	0.011	3998	4004	0.008	1.402	0.019	0.552	0.596
Backward districts	0.498	0.022	950	425	0.016	1.349	0.044	0.455	0.542
CURRENTLY USING ANY MODERN METHOD (Currently married women age 13-49)									
Urban	0.365	0.018	833	1096	0.017	1.107	0.051	0.328	0.402
Rural	0.376	0.014	3165	2909	0.009	1.646	0.038	0.347	0.404
Total	0.373	0.011	3998	4004	0.008	1.497	0.031	0.350	0.396
Backward districts	0.266	0.018	950	425	0.014	1.257	0.068	0.230	0.302
CURRENTLY USING PILLS (Currently married women age 13-49)									
Urban	0.052	0.009	833	1096	0.008	1.122	0.166	0.035	0.069
Rural	0.029	0.003	3165	2909	0.003	1.107	0.114	0.022	0.035
Total	0.035	0.003	3998	4004	0.003	1.164	0.096	0.028	0.042
Backward districts	0.019	0.004	950	425	0.004	0.899	0.211	0.011	0.027

Table A.2 Sampling errors, West Bengal, 1992 (Contd.)

Variable/residence	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
CURRENTLY USING COPPER T/IUD (Currently married women age 13-49)									
Urban	0.016	0.007	833	1096	0.004	1.562	0.420	0.003	0.030
Rural	0.011	0.002	3165	2909	0.002	1.050	0.175	0.007	0.015
Total	0.013	0.002	3998	4004	0.002	1.341	0.188	0.008	0.017
Backward districts	0.009	0.004	950	425	0.003	1.125	0.375	0.002	0.016
CURRENTLY USING INJECTIONS (Currently married women age 13-49)									
Urban	0.000	0.000	833	1096	0.000	NC	NC	0.000	0.000
Rural	0.001	0.001	3165	2909	0.000	1.101	0.713	0.000	0.002
Total	0.001	0.000	3998	4004	0.000	1.052	0.712	0.000	0.001
Backward districts	0.000	0.000	950	425	0.000	NC	NC	0.000	0.000
CURRENTLY USING CONDOM (Currently married women age 13-49)									
Urban	0.043	0.006	833	1096	0.007	0.812	0.133	0.032	0.054
Rural	0.009	0.002	3165	2909	0.002	1.085	0.198	0.006	0.015
Total	0.019	0.002	3998	4004	0.002	1.003	0.115	0.014	0.023
Backward districts	0.015	0.004	950	425	0.004	1.057	0.282	0.006	0.023
CURRENTLY USING FEMALE STERILIZATION (Currently married women age 13-49)									
Urban	0.233	0.017	833	1096	0.015	1.165	0.073	0.199	0.267
Rural	0.274	0.012	3165	2909	0.008	1.462	0.042	0.251	0.297
Total	0.263	0.010	3998	4004	0.007	1.378	0.037	0.244	0.282
Backward districts	0.192	0.020	950	425	0.013	1.543	0.103	0.152	0.231
CURRENTLY USING MALE STERILIZATION (Currently married women age 13-49)									
Urban	0.021	0.006	833	1096	0.005	1.133	0.270	0.010	0.032
Rural	0.051	0.005	3165	2909	0.004	1.389	0.106	0.040	0.062
Total	0.043	0.004	3998	4004	0.003	1.332	0.099	0.034	0.051
Backward districts	0.032	0.007	950	425	0.006	1.306	0.234	0.017	0.047
CURRENTLY USING PERIODIC ABSTINENCE (Currently married women age 13-49)									
Urban	0.128	0.020	833	1096	0.012	1.696	0.153	0.089	0.168
Rural	0.108	0.007	3165	2909	0.006	1.234	0.063	0.094	0.121
Total	0.113	0.007	3998	4004	0.005	1.456	0.064	0.099	0.128
Backward districts	0.146	0.018	950	425	0.011	1.563	0.123	0.110	0.182
USING PUBLIC SOURCE FOR CONTRACEPTIVE METHOD (Current users of modern methods)									
Urban	0.579	0.047	299	400	0.029	1.655	0.082	0.485	0.674
Rural	0.875	0.012	1133	1093	0.010	1.231	0.014	0.851	0.899
Total	0.796	0.017	1432	1493	0.011	1.574	0.021	0.762	0.829
Backward districts	0.875	0.029	253	113	0.021	1.411	0.034	0.816	0.934
DO NOT WANT ANY MORE CHILDREN (Currently married women age 13-49)									
Urban	0.445	0.020	833	1096	0.017	1.161	0.045	0.405	0.485
Rural	0.307	0.011	3165	2909	0.008	1.348	0.036	0.285	0.329
Total	0.345	0.010	3998	4004	0.008	1.296	0.028	0.326	0.365
Backward districts	0.343	0.019	950	425	0.015	1.207	0.054	0.306	0.380
WANT TO DELAY BIRTH AT LEAST TWO YEARS (Currently married women age 13-49)									
Urban	0.163	0.014	833	1096	0.013	1.116	0.088	0.134	0.191
Rural	0.221	0.008	3165	2909	0.007	1.132	0.038	0.205	0.238
Total	0.205	0.007	3998	4004	0.006	1.136	0.035	0.191	0.220
Backward districts	0.255	0.012	950	425	0.014	0.858	0.048	0.231	0.280

Table A.2 Sampling errors, West Bengal, 1992 (Contd.)

Variable/residence	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
IDEAL NUMBER OF CHILDREN (Ever-married women age 13-49)									
Urban	2.235	0.063	824	1081	0.033	1.922	0.028	2.110	2.361
Rural	2.711	0.033	3065	2859	0.018	1.803	0.012	2.645	2.777
Total	2.581	0.030	3889	3940	0.016	1.867	0.012	2.520	2.641
Backward districts	2.989	0.059	859	384	0.037	1.595	0.020	2.871	3.106
IDEAL NUMBER OF SONS (Ever-married women age 13-49)									
Urban	1.105	0.045	811	1067	0.026	1.728	0.040	1.016	1.195
Rural	1.478	0.024	2992	2802	0.014	1.683	0.016	1.430	1.526
Total	1.375	0.022	3803	3868	0.013	1.764	0.016	1.330	1.420
Backward districts	1.609	0.039	820	367	0.029	1.362	0.024	1.531	1.687
IDEAL NUMBER OF DAUGHTERS (Ever-married women age 13-49)									
Urban	0.882	0.032	811	1067	0.020	1.619	0.036	0.818	0.946
Rural	1.084	0.016	2992	2802	0.011	1.471	0.015	1.053	1.116
Total	1.028	0.015	3803	3868	0.010	1.580	0.015	0.998	1.058
Backward districts	1.180	0.032	820	367	0.022	1.437	0.027	1.116	1.244
RECEIVED NO ANTENATAL CARE (Births in last . years)									
Urban	0.177	0.036	371	492	0.023	1.559	0.204	0.105	0.250
Rural	0.267	0.016	1888	1677	0.012	1.388	0.062	0.234	0.300
Total	0.247	0.015	2259	2169	0.011	1.404	0.061	0.217	0.277
Backward districts	0.382	0.026	639	287	0.022	1.206	0.069	0.329	0.434
RECEIVED TETANUS TOXOID (Births in last 4 years)									
Urban	0.781	0.034	371	492	0.026	1.315	0.043	0.714	0.849
Rural	0.681	0.014	1888	1677	0.013	1.127	0.021	0.653	0.709
Total	0.704	0.013	2259	2169	0.011	1.172	0.019	0.677	0.730
Backward districts	0.587	0.022	639	287	0.022	1.007	0.038	0.542	0.632
RECEIVED MEDICAL ASSISTANCE AT DELIVERY (Births in last 4 years)									
Urban	0.671	0.047	371	492	0.028	1.690	0.070	0.577	0.765
Rural	0.233	0.016	1888	1677	0.011	1.524	0.071	0.200	0.266
Total	0.333	0.016	2259	2169	0.011	1.456	0.049	0.300	0.365
Backward districts	0.157	0.019	639	287	0.016	1.210	0.121	0.119	0.195
HAD DIARRHOEA IN THE LAST 24 HOURS (Children under 4 years of age)									
Urban	0.000	0.000	351	464	0.000	NC	NC	0.000	0.000
Rural	0.005	0.002	1734	1550	0.002	1.064	0.361	0.001	0.009
Total	0.004	0.001	2085	2014	0.001	1.020	0.362	0.001	0.007
Backward districts	0.005	0.004	575	258	0.003	1.239	0.711	0.002	0.013
HAD DIARRHOEA IN THE LAST 2 WEEKS (Children under 4 years of age)									
Urban	0.031	0.008	351	464	0.009	0.924	0.277	0.014	0.048
Rural	0.024	0.004	1734	1550	0.004	0.984	0.155	0.016	0.031
Total	0.025	0.003	2085	2014	0.004	0.973	0.135	0.019	0.032
Backward districts	0.024	0.007	575	258	0.007	0.974	0.274	0.011	0.038
TREATED WITH ORS PACKETS (Children with diarrhoea in the last 2 weeks)									
Urban	0.300	0.106	10	14	0.139	0.759	0.353	0.088	0.512
Rural	0.512	0.094	42	37	0.080	1.184	0.184	0.323	0.701
Total	0.453	0.077	52	51	0.070	1.093	0.170	0.299	0.607
Backward districts	0.571	0.159	14	6	0.139	1.143	0.278	0.254	0.889

Table A.2 Sampling errors, West Bengal, 1992 (Contd.)

Variable/residence	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
CONSULTED MEDICAL PERSONNEL FOR DIARRHOEA (Children with diarrhoea in the last 2 weeks)									
Urban	0.900	0.094	10	14	0.091	1.028	0.104	0.712	1.088
Rural	0.791	0.061	42	37	0.064	0.947	0.077	0.669	0.913
Total	0.821	0.051	52	51	0.054	0.957	0.063	0.719	0.924
Backward districts	0.643	0.106	14	6	0.133	0.795	0.164	0.432	0.854
SHOWING VACCINATION CARD (Children age 12-23 months)									
Urban	0.564	0.052	82	110	0.054	0.956	0.092	0.460	0.668
Rural	0.452	0.030	429	378	0.025	1.212	0.066	0.392	0.511
Total	0.477	0.026	511	488	0.023	1.141	0.054	0.425	0.529
Backward districts	0.375	0.040	149	67	0.040	1.016	0.107	0.294	0.455
RECEIVED BCG VACCINATION (Children age 12-23 months)									
Urban	0.720	0.053	82	110	0.049	1.075	0.074	0.614	0.826
Rural	0.605	0.026	429	378	0.024	1.056	0.042	0.554	0.656
Total	0.631	0.023	511	488	0.022	1.034	0.036	0.586	0.676
Backward districts	0.557	0.049	149	67	0.041	1.206	0.088	0.458	0.655
RECEIVED DPT VACCINATION (3 DOSES) (Children age 12-23 months)									
Urban	0.634	0.057	82	110	0.053	1.080	0.090	0.520	0.748
Rural	0.485	0.028	429	378	0.025	1.127	0.057	0.429	0.541
Total	0.519	0.025	511	488	0.023	1.085	0.047	0.469	0.568
Backward districts	0.355	0.061	149	67	0.039	1.567	0.173	0.233	0.478
RECEIVED POLIO VACCINATION (3 DOSES) (Children age 12-23 months)									
Urban	0.703	0.061	82	110	0.050	1.210	0.086	0.582	0.824
Rural	0.519	0.029	429	378	0.025	1.170	0.056	0.461	0.577
Total	0.560	0.025	511	488	0.023	1.131	0.046	0.509	0.611
Backward districts	0.389	0.058	149	67	0.040	1.462	0.150	0.272	0.505
RECEIVED MEASLES VACCINATION (Children age 12-23 months)									
Urban	0.471	0.050	82	110	0.055	0.908	0.105	0.372	0.570
Rural	0.412	0.027	429	378	0.024	1.101	0.065	0.359	0.466
Total	0.425	0.023	511	488	0.022	1.044	0.055	0.378	0.472
Backward districts	0.323	0.047	149	67	0.038	1.230	0.146	0.229	0.417
FULLY VACCINATED (Children age 12-23 months)									
Urban	0.441	0.058	82	110	0.054	1.057	0.130	0.326	0.556
Rural	0.313	0.025	429	378	0.023	1.112	0.081	0.262	0.364
Total	0.342	0.023	511	488	0.022	1.087	0.068	0.295	0.389
Backward districts	0.249	0.051	149	67	0.035	1.438	0.204	0.147	0.351
KNOW ABOUT AIDS (Ever-married women age 13-49)									
Urban	0.263	0.029	898	1180	0.015	1.983	0.111	0.204	0.321
Rural	0.037	0.004	3424	3142	0.003	1.190	0.104	0.029	0.044
Total	0.098	0.009	4332	4322	0.005	1.987	0.092	0.080	0.116
Backward districts	0.063	0.015	1036	464	0.008	1.914	0.229	0.034	0.092

Table A.2 Sampling errors, West Bengal, 1992 (Contd.)

Variable/residence	Value (R)	Standard error (SE)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
TOTAL FERTILITY RATE (Women age 15-49)					
Urban	2.142	0.133	0.062	1.878	2.407
Rural	3.254	0.106	0.033	3.042	3.466
Total	2.917	0.084	0.029	2.749	3.085
Backward districts	3.961	0.248	0.063	3.465	4.456
TOTAL FERTILITY RATE (Women age 15-44)					
Urban	2.108	0.128	0.061	1.853	2.363
Rural	3.230	0.104	0.032	3.023	3.437
Total	2.890	0.082	0.028	2.727	3.053
Backward districts	3.887	0.235	0.061	3.416	4.358
AGE-SPECIFIC FERTILITY RATE (Age group 15-19)					
Urban	0.083	0.010	0.117	0.063	0.102
Rural	0.140	0.007	0.047	0.127	0.153
Total	0.123	0.005	0.044	0.113	0.134
Backward districts	0.153	0.014	0.094	0.125	0.182
AGE-SPECIFIC FERTILITY RATE (Age group 20-24)					
Urban	0.158	0.015	0.095	0.128	0.188
Rural	0.219	0.008	0.037	0.203	0.236
Total	0.202	0.007	0.035	0.188	0.217
Backward districts	0.221	0.013	0.058	0.195	0.247
AGE-SPECIFIC FERTILITY RATE (Age group 25-29)					
Urban	0.107	0.014	0.132	0.078	0.135
Rural	0.152	0.010	0.066	0.132	0.172
Total	0.138	0.008	0.060	0.121	0.154
Backward districts	0.186	0.021	0.111	0.145	0.228
AGE-SPECIFIC FERTILITY RATE (Age group 30-34)					
Urban	0.058	0.010	0.178	0.037	0.078
Rural	0.084	0.008	0.095	0.068	0.100
Total	0.075	0.006	0.083	0.063	0.088
Backward districts	0.125	0.018	0.148	0.088	0.162
AGE-SPECIFIC FERTILITY RATE (Age group 35-39)					
Urban	0.016	0.007	0.406	0.003	0.030
Rural	0.039	0.007	0.172	0.025	0.052
Total	0.031	0.005	0.158	0.021	0.041
Backward districts	0.069	0.014	0.211	0.040	0.097
AGE-SPECIFIC FERTILITY RATE (Age group 40-44)					
Urban	0.000	0.000	0.000	0.000	0.000
Rural	0.012	0.004	0.329	0.004	0.020
Total	0.008	0.003	0.331	0.003	0.013
Backward districts	0.023	0.009	0.387	0.005	0.041
AGE-SPECIFIC FERTILITY RATE (Age group 45-49)					
Urban	0.007	0.007	1.016	0.000	0.021
Rural	0.005	0.003	0.635	0.000	0.011
Total	0.005	0.003	0.555	0.000	0.011
Backward districts	0.015	0.011	0.729	0.000	0.036

Table A.2 Sampling errors, West Bengal, 1992 (Contd.)

Variable/residence	Value (R)	Standard error (SE)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
NEONATAL MORTALITY (5-year period preceding survey)					
Urban	42.182	10.193	0.242	21.795	62.569
Rural	54.688	6.226	0.114	42.236	67.140
Total	51.850	5.313	0.102	41.224	62.476
Backward districts	68.673	10.036	0.146	48.600	88.745
INFANT MORTALITY $_1q_0$ (5-year period preceding survey)					
Urban	68.228	11.517	0.169	45.194	91.262
Rural	77.424	6.748	0.087	63.928	90.919
Total	75.316	5.768	0.077	63.781	86.852
Backward districts	96.764	10.813	0.112	75.139	118.390
CHILD MORTALITY $_4q_1$ (5-year period preceding survey)					
Urban	16.123	6.413	0.398	3.296	28.949
Rural	28.768	3.663	0.127	21.443	36.094
Total	25.963	3.197	0.123	19.568	32.357
Backward districts	49.236	8.742	0.178	31.751	66.721
UNDER-FIVE MORTALITY $_5q_0$ (5-year period preceding survey)					
Urban	83.251	12.712	0.153	57.826	108.676
Rural	103.965	7.674	0.074	88.617	119.312
Total	99.324	6.547	0.066	86.230	112.417
Backward districts	141.236	13.490	0.096	114.257	168.216
CRUDE BIRTH RATE (Based on Household Questionnaire)					
Urban	18.648	1.591	0.085	15.466	21.830
Rural	27.780	0.969	0.035	25.842	29.718
Total	25.062	0.868	0.035	23.326	26.798
Backward districts	32.318	2.016	0.064	28.196	36.440
CRUDE DEATH RATE (Based on Household Questionnaire)					
Urban	8.650	0.814	0.094	7.022	10.278
Rural	10.181	0.572	0.056	9.037	11.325
Total	9.721	0.466	0.048	8.789	10.633
Backward districts	12.672	1.237	0.098	10.199	15.146
CRUDE RATE OF NATURAL INCREASE (Based on Household Questionnaire)					
Urban	9.998	1.834	0.184	6.320	13.676
Rural	17.599	0.929	0.053	15.741	19.487
Total	15.341	0.880	0.057	13.581	17.101
Backward districts	14.646	2.074	0.106	15.498	23.794
CRUDE BIRTH RATE (Based on birth history)					
Urban	18.479	1.026	0.056	16.427	20.531
Rural	28.437	0.809	0.028	26.819	30.085
Total	25.460	0.656	0.026	24.148	26.772
Backward districts	32.226	1.466	0.045	29.294	35.138

NC: Not calculated because denominator is 0.000
SRS: Simple random sample

APPENDIX B

DATA QUALITY TABLES

The purpose of this appendix is to provide the data user with an initial view of the general quality of the NFHS data. While Appendix A is concerned with sampling errors and their effects on the survey results, the tables in this appendix refer to possible *non-sampling* errors: for example, digit preference; rounding or heaping on certain ages or dates; omission of events occurring further in the past; deliberate distortion of information by some interviewers in an attempt to lighten their work loads; noncooperation of the respondent in providing information or refusal to have children weighed. A description of the magnitude of such nonsampling errors is provided below.

The distribution of the *de facto* household population by single year of age is presented in Table B.1 (see also Figure 3.1). In many (but not all) cases, the respondent was the head of the household. In cases where an eligible woman was later interviewed with the Woman's Questionnaire, her own reported age from the Woman's Questionnaire was substituted for the age in the household listing when there was a difference, because it was assumed that she would be better able than the household respondent to report her own age.

It is well documented that ages are poorly reported in most parts of India. Ages are of little relevance to much of the rural population in particular, and no amount of probing will ensure that ages are properly recorded. In interviewer training for the NFHS, a great deal of emphasis was placed on obtaining as accurate information as possible on ages and dates of events. Nevertheless, it is clear that age reporting in the NFHS shares the same problems inherent in all Indian censuses and surveys. Heaping on ages ending in 0 and 5 is severe, particularly in the older age groups, and the typical pattern of heaping on ages 8, 10 and 12 is also evident. However, the NFHS age data are evidently of considerably better quality than age data from other sources. This can be seen, for example, by comparing the degree of age heaping in the NFHS with the 1981 Census, which is the most recent census that has already published data by single year of age (see Chapter 3, Section 3.1). The age reporting for females appears to be relatively good during the childbearing years, when interviewed women reported their own ages. Another measure of the quality of the NFHS age data is the negligible number of persons whose ages were recorded as not known or missing. In West Bengal, age was missing for only 11 persons out of a total of 22,635 persons listed on the household schedule.

Table B.2 examines the possibility that some eligible women (that is, ever-married women age 13-49) were not properly identified in the NFHS. In some surveys, interviewers may try to reduce their work load by pushing women out of the eligible age range or recording ever-married women as never married so that they will not have to be interviewed. If such practices were being followed to a noticeable extent, Table B.2 would normally show (1) a shortage of ever-married women in the 45-49 age group and an excess in the 50-54 age group or (2) an unusually low proportion of ever-married women by age. Neither of these patterns is evident in the NFHS data. It can, therefore, be concluded that there was no concerted effort to mis-identify eligible women in the NFHS in West Bengal.

Table B.1 Household age distribution

Single year age distribution of the *de facto* household population by sex (weighted), West Bengal, 1992

	Male		Female			Male		Female	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
< 1	283	2.4	264	2.4	38	125	1.1	129	1.2
1	243	2.1	251	2.3	39	75	0.6	107	1.0
2	266	2.3	251	2.3	40	288	2.5	151	1.4
3	291	2.5	265	2.4	41	64	0.6	75	0.7
4	243	2.1	216	2.0	42	91	0.8	104	0.9
5	317	2.7	333	3.0	43	44	0.4	67	0.6
6	266	2.3	261	2.4	44	73	0.6	86	0.8
7	300	2.6	352	3.2	45	272	2.3	111	1.0
8	319	2.7	258	2.3	46	44	0.4	72	0.7
9	245	2.1	253	2.3	47	50	0.4	62	0.6
10	283	2.4	316	2.9	48	75	0.6	70	0.6
11	242	2.1	218	2.0	49	71	0.6	41	0.4
12	300	2.6	314	2.9	50	192	1.6	133	1.2
13	233	2.0	236	2.1	51	32	0.3	78	0.7
14	260	2.2	262	2.4	52	72	0.6	100	0.9
15	232	2.0	270	2.5	53	33	0.3	40	0.4
16	259	2.2	225	2.0	54	51	0.4	61	0.6
17	213	1.8	239	2.2	55	180	1.5	256	2.3
18	258	2.2	278	2.5	56	52	0.4	30	0.3
19	183	1.6	196	1.8	57	31	0.3	25	0.2
20	234	2.0	253	2.3	58	39	0.3	30	0.3
21	181	1.6	237	2.2	59	28	0.2	14	0.1
22	273	2.3	221	2.0	60	212	1.8	208	1.9
23	200	1.7	189	1.7	61	21	0.2	12	0.1
24	208	1.8	176	1.6	62	32	0.3	22	0.2
25	330	2.8	256	2.3	63	19	0.2	13	0.1
26	216	1.9	187	1.7	64	29	0.2	20	0.2
27	166	1.4	178	1.6	65	128	1.1	98	0.9
28	250	2.1	195	1.8	66	19	0.2	12	0.1
29	101	0.9	141	1.3	67	15	0.1	6	0.1
30	357	3.1	211	1.9	68	24	0.2	18	0.2
31	72	0.6	106	1.0	69	20	0.2	21	0.2
32	199	1.7	140	1.3	70+	329	2.8	307	2.8
33	91	0.8	106	1.0	Don't know/				
34	128	1.1	138	1.3	missing	2	--	9	0.1
35	394	3.4	185	1.7					
36	100	0.9	130	1.2					
37	73	0.6	95	0.9	Total	11644	100.0	10991	100.0

Note: The *de facto* population includes residents and nonresidents who slept in the household the night before the interview.
-- Less than 0.05 percent

One traditional measure of the quality of data is the extent to which information is missing on key variables. Although completeness of responses does not necessarily indicate that the results are accurate, the existence of missing information for a large number of cases would suggest that the data collection was not carried out with sufficient care. For West Bengal, the extent of missing information is very low on all of the measures shown except for the measurement of the weight of young children (Table B.3). The data are exceptionally complete for month and year of birth, age at first marriage, woman's education, and child's size at birth. Data on weight are available for more than 80 percent of children, which is also acceptable since in any survey many children cannot be measured because they are either not at home or they are ill at the time of the survey. In some cases when the child was at home, either the child refused to be weighed or the mother refused to allow the child to be weighed because of cultural beliefs, and no amount of persuasion could change their mind.

Table B.2 Age distribution of eligible and interviewed women

Percent distribution of the *de facto* household population of women age 10-54 and of interviewed women age 13-49, and percentage of eligible women who were interviewed (weighted), West Bengal, 1992

Age	All women	Ever-married women	Interviewed women		Percent interviewed
			Number	Percent	
10-12	848	6	NA	NA	NA
13-14	499	41	35	0.8	85.7
15-19	1209	510	499	11.5	97.8
20-24	1076	864	832	19.2	96.2
25-29	957	887	865	20.0	97.5
30-34	701	681	667	15.4	97.9
35-39	646	637	616	14.2	96.7
40-44	483	470	459	10.6	97.7
45-49	356	351	350	8.1	99.6
50-54	413	406	NA	NA	NA
13-49	5926	4441	4322	100.0	97.3

Note: The *de facto* population includes all residents and non-residents who slept in the household the night before the interview. To allow comparison of distributions, weights for both households and interviewed women are household weights.
NA: Not applicable

Another measure of data quality is the completeness and accuracy of information on births. Table B.4 examines the distribution of births by calendar year to identify any unusual patterns which may indicate that births have been omitted or that the ages of children have been displaced. Overall, above 99 percent of living children listed in the birth history had complete birth dates recorded as did 98 percent of children who had died. Thus, the completeness of data

Table B.3 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions (weighted), West Bengal, 1992

Subject	Reference group	Percentage missing information	Number of cases
Birth date	Births in last 15 years		
Month only		0.39	8405
Month and year		0.00	8405
Age at death	Deaths to births in last 15 years	0.15	940
Age at 1st marriage	Ever-married women	0.00	4322
Woman's education	Ever-married women	0.00	4322
Child's size at birth	All births in last 0-47 months	0.00	2189
Anthropometry[1]	Living children age 0-47 months		
Weight		15.61	2033
Diarrhoea in last 2 weeks	Living children age 0-47 months	0.13	2033

[1]Child not measured

on birth dates is extremely good. Although the annual number of births does fluctuate, real annual fluctuations are to be expected and there is no evidence of the largescale omission of births or displacement of birth dates which would substantially affect the fertility rate estimates for recent years.

It should be noted that many surveys that include both demographic information and health information for children below a specified age have been subject to a substantial amount of age displacement. In particular, there is often a tendency for interviewers to "age" children out of the eligible period for asking health questions. This problem was well known before the NFHS began; therefore, interviewer's training stressed this issue to try to avoid any biases due to age displacement. In West Bengal, the cutoff date for asking the health questions was 1 January 1988. An examination of Table B.4 indicates that there is little or no age displacement across this boundary for living children. There does, however. appear to be some likely omission of dead children since 1988, although much of the decline in the number of deaths to children born after 1988 is undoubtedly real. Moreover, the proportion of children who died will naturally decrease with each successive calendar year because the more recent births have been subject to the risk of mortality for a shorter period of time.

Table B.4 Births by calendar year

Distribution of births by calendar year for living (L), dead (D), and all (T) children, according to reporting completeness, sex ratio at birth, and ratio of births by calendar year (weighted), West Bengal, 1992

Calendar year	Number of births			Percent with complete birth date[1]			Sex ratio at birth[2]			Calendar year ratio[3]		
	L	D	T	L	D	T	L	D	T	L	D	T
1992	219	12	231	100.0	100.0	100.0	985	756	971	NA	NA	NA
1991	535	30	564	100.0	100.0	100.0	1015	1307	1029	150	93	146
1990	492	52	544	100.0	95.1	99.8	947	1197	968	95	139	98
1989	498	45	543	100.0	100.0	100.0	898	1610	942	103	101	103
1988	476	38	514	99.9	96.2	99.6	842	884	845	91	57	87
1987	551	87	639	99.6	98.7	99.5	998	1210	1024	107	166	113
1986	551	68	618	99.6	96.3	99.2	1053	827	1025	102	81	99
1985	526	79	605	99.8	98.6	99.6	1089	883	1059	93	120	96
1984	576	64	640	100.0	92.7	99.3	1135	1350	1155	113	86	109
1983	497	70	567	99.8	95.9	99.3	991	769	960	93	99	93
1982	499	76	575	99.5	94.8	98.9	1000	608	937	100	110	101
1987-1991	2553	251	2804	99.9	98.0	99.7	941	1222	963	NA	NA	NA
1982-1986	2649	357	3006	99.7	95.8	99.3	1055	848	1028	NA	NA	NA
1977-1981	2216	352	2568	99.8	97.3	99.5	999	951	992	NA	NA	NA
1972-1976	1623	359	1982	99.6	97.4	99.2	886	953	898	NA	NA	NA
1971 or earlier	1684	512	2196	99.8	98.8	99.6	820	959	851	NA	NA	NA
All	10944	1843	12787	99.8	97.6	99.5	951	964	953	NA	NA	NA

NA: Not applicable
[1]Both year and month of birth given
[2]$(B_f/B_m)x1000$, where B_f and B_m are the numbers of female and male births, respectively
[3]$[2B_x/(B_{x-1}+B_{x+1})]x100$, where B_x is the number of births in calendar year x.

Table B.5 presents information on the reporting of age at death in days. Results from the table suggest that early infant deaths have not been severely underreported in West Bengal, since the ratios of deaths under seven days to all neonatal deaths are quite high (a ratio of less than 25 percent is often used as a guideline to indicate underreporting of early neonatal deaths). The ratios are 72, 62 and 64 for the 0-4, 5-9 and 10-14 years before the survey, respectively. Such a trend over time shows that some of the early infant deaths may not have been reported by older women. Although there was no severe underreporting of deaths in West Bengal, there was some misreporting of age at death due to a preference for reporting the age at death at 3, 5, 7, 10, 15 and 20 days (see Table B.5).

Table B.6 shows the ratios of infant deaths that occurred during the neonatal period. These ratios are also quite high, suggesting that there is no major omission of early deaths. One problem that is inherent in most retrospective surveys is heaping of the age at death on certain digits, e.g., 6, 10, 12, and 17 months. Misreporting of age at death will bias estimates of the age pattern of mortality if the net result of misreporting is the transference of deaths between

Table B.5 Reporting of age at death in days

Distribution of reported deaths under 1 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), West Bengal, 1992

Age at death (days)	Years preceding survey			
	0-4	5-9	10-14	0-14
<1	39	45	43	127
1	10	13	19	43
2	6	7	5	18
3	19	23	10	52
4	11	6	9	26
5	7	9	12	29
6	4	10	7	20
7	5	9	10	24
8	2	7	3	12
9	4	3	3	10
10	2	5	5	12
11	0	3	2	5
12	0	3	2	5
13	3	5	1	9
14	0	0	2	3
15	5	5	10	20
16	0	6	2	8
17	2	2	3	7
18	0	2	0	2
19	0	4	0	4
20	3	5	3	10
21	3	4	2	10
22	3	2	4	9
23	1	0	0	2
24	0	1	0	1
25	0	1	0	2
26	1	0	0	1
27	1	0	0	2
28	0	0	4	4
29	2	1	4	7
0-30	134	183	164	481
Percent early neonatal[1]	72	62	64	65

[1]0-6 days/0-30 days

age segments for which the rates are calculated; for example, an overestimate of child mortality relative to infant mortality may result if children dying during the first year of life are reported as having died at age one or older. Thus, heaping at 12 months can bias the mortality estimates because a certain fraction of these deaths, which are reported to have occurred after infancy (that is, at ages 12-23 months), may have actually occurred during infancy (that is, at ages 0-11 months). In this case, heaping would bias the infant mortality rate downward and child mortality upward.

Examination of the distribution of deaths under age two years during the 15 years prior to the survey by month of death (Table B.6) indicates that the calculated infant mortality rates for the population of West Bengal as a whole was likely to be understated by no more than 1-3 percent due to age misreporting.

Table B.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 (weighted), West Bengal, 1992

Age at death (months)	Years preceding survey			
	0-4	5-9	10-14	0-14
<1	134	183	164	481
1	10	22	11	44
2	8	7	4	19
3	7	10	11	28
4	5	6	7	18
5	5	5	9	19
6	5	12	11	28
7	1	3	7	10
8	3	4	0	7
9	3	8	3	14
10	5	5	7	17
11	2	1	2	6
12	7	10	13	29
13	1	0	0	2
14	0	1	0	2
15	0	0	0	1
16	1	0	0	1
17	6	5	11	22
18	0	1	0	2
19	1	0	0	1
20	0	1	1	2
21	1	0	1	2
22	0	0	0	1
23	2	2	3	8
0-11	188	267	236	691
Percent neonatal[1]	71	69	69	70

[1]Under 1 month / under 1 year

APPENDIX C

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APPENDIX D

SURVEY INSTRUMENTS

NATIONAL FAMILY HEALTH SURVEY
(MCH AND FAMILY PLANNING)
HOUSEHOLD QUESTIONNAIRE

CONFIDENTIAL
For Research
Purposes Only

INDIA 1992-1993

IDENTIFICATION

NAME OF STATE _____

PSU NUMBER.....

NAME OF DISTRICT _____

NAME OF TEHSIL/TALUK _____

URBAN/RURAL (urban=1, rural=2).....

NAME OF TOWN AND TOWN BLOCK OR VILLAGE _____

LARGE CITY/SMALL CITY/TOWN/RURAL AREA.....
(large city=1, small city=2, town=3, rural area=4)

HOUSEHOLD NUMBER.....

NAME OF HOUSEHOLD HEAD _____

ADDRESS OF HOUSEHOLD _____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY / MONTH / YEAR
INTERVIEWER'S NAME				NAME
RESULT*				RESULT
NEXT VISIT: DATE / TIME				TOTAL NUMBER OF VISITS

*RESULT CODES:
1 COMPLETED
2 HOUSEHOLD PRESENT BUT NO COMPETENT RESP. AT HOME
3 HOUSEHOLD ABSENT
4 POSTPONED
5 REFUSED
6 DWELLING VACANT OR ADDRESS NOT A DWELLING
7 DWELLING DESTROYED
8 DWELLING NOT FOUND
9 OTHER _____ (SPECIFY)

TOTAL IN HOUSEHOLD

TOTAL ELIGIBLE WOMEN

LINE NO. OF RESP. TO HOUSEHOLD SCHEDULE

	SPOT-CHECKED BY	FIELD EDITED BY	OFFICE EDITED BY	KEYED BY	KEYED BY
NAME					
DATE					

1	RECORD THE TIME.	HOUR..... ☐☐ MINUTES..... ☐☐

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD*	RESIDENCE		SEX	AGE	IF AGED 6 YEARS OR OLD			
							MARITAL STATUS**	EDUCATION		
	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?	Does (NAME) usually live here?	Did (NAME) stay here last night?	Is (NAME) male or female?	How old is (NAME)?	What is the current marital status of (NAME)?	Can (NAME) read and write?	Has (NAME) ever been to school?	IF ATTEND What is the highest grade (NAME) completed?***
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			YES NO	YES NO	M F	IN YEARS	M S W D NM	YES NO	YES NO	GRADE
01		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐
02		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐
03		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐
04		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐
05		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐
06		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐
07		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐
08		☐☐	1 2	1 2	1 2	☐☐	1 2 3 4 5	1 2	1 2	☐☐

Now I would like some information about the people who usually live in your household or who are staying with you now.

ER			Does (NAME) suffer from					ELIGI-BILITY
	OCCUPATION							
ED SCHOOL								
IF AGED LESS THAN 15 YEARS								CIRCLE LINE NUMBER OF WOMEN ELIGIBLE FOR INDI-VIDUAL INTERVIEW (EVER MARRIED FEMALES AGED 13-49)
Is (NAME) still in school?	What kind of work does (NAME) do most of the time?		EACH PERSON Blindness?	EACH PERSON Tuberculosis?	FOR EACH PERSON Leprosy?	Does (NAME) suffer from any physical impairment of limbs?	Did (NAME) suffer from malaria any time during the last THREE months?	
(13)	(14)		(15)	(16)	(17)	(18)	(19)	(20)
YES NO			YES PARTIAL YES COMPLETE NO	YES NO	YES NO	YES HAN DS YES LEGS YES BO TH NO	YES NO	
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	01
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	02
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	03
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	04
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	05
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	06
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	07
1 2			1 2 3	1 2	1 2	1 2 3 4	1 2	08

2

HOUSEHOLD SCHEDULE (CONTINUED)

(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			YES NO	YES NO	M F	IN YEARS	CM S W D NM	YES NO	YES NO	GRADE
09			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
10			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
11			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
12			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
13			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
14			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
15			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
16			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
17			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	
18			1 2	1 2	1 2		1 2 3 4 5	1 2	1 2	

TICK HERE IF CONTINUATION SHEET USED ☐

21 Just to make sure that I have a complete listing:

1) Are there any other persons such as small children or infants that we have not listed?

2) 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?

3) Do you have any guests or temporary visitors staying here, or anyone else who stayed here last night?

* CODES FOR Q.4
RELATIONSHIP TO HEAD OF HOUSEHOLD:

01= HEAD	05= GRANDCHILD	09= BROTHER OR SISTER-IN-LAW
02= WIFE OR HUSBAND	06= PARENT	10= OTHER RELATIVE
03= SON OR DAUGHTER	07= PARENT-IN-LAW	11= ADOPTED/FOSTER CHILD
04= SON OR DAUGHTER-IN-LAW	08= BROTHER OR SISTER	12= NOT RELATED
		98= DK

(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
YES NO 1 2		YES PARTIAL 1 YES COMPLETE 2 NO 3	YES 1 NO 2	YES 1 NO 2	YES HANDS 1 YES LEGS 2 YES BOTH 3 NO 4	YES 1 NO 2	
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	09
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	10
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	11
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	12
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	13
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	14
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	15
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	16
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	17
1 2		1 2 3	1 2	1 2	1 2 3 4	1 2	18

TOTAL NUMBER OF ELIGIBLE WOMEN ☐☐

YES ☐ → ENTER EACH IN TABLE NO ☐

YES ☐ → ENTER EACH IN TABLE NO ☐

YES ☐ → ENTER EACH IN TABLE NO ☐

** CODES FOR Q.9
MARITAL STATUS:
1= CURRENTLY MARRIED
2= SEPARATED
3= WIDOWED
4= DIVORCED
5= NEVER MARRIED

***CODES FOR Q.12
GRADE:
00=LESS THAN 1
YEAR COMPLETED
98=DK

3

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
22	What is the main source of water your household uses for bathing and washing?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT.....11 PUBLIC TAP.....12 GROUND WATER HANDPUMP IN YARD/PLOT.....21 PUBLIC HANDPUMP.....22 WELL WATER WELL IN RESIDENCE/YARD/PLOT...23 PUBLIC WELL.....24 SURFACE WATER SPRING.....31 RIVER/STREAM.....32 POND/LAKE.....33 DAM.....34 RAINWATER.....41 TANKER TRUCK.....51 OTHER_____81 (SPECIFY)	24 24 24
23	How long does it take to go there, get water, and come back in one trip?	MINUTES..... ☐☐☐	
24	Does your household get drinking water from this same source?	YES.....1 NO.....2	26
25	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT.....11 PUBLIC TAP.....12 GROUND WATER HANDPUMP IN YARD/PLOT.....21 PUBLIC HANDPUMP.....22 WELL WATER WELL IN RESIDENCE/YARD/PLOT...23 PUBLIC WELL.....24 SURFACE WATER SPRING.....31 RIVER/STREAM.....32 POND/LAKE.....33 DAM.....34 RAINWATER.....41 TANKER TRUCK.....51 BOTTLED WATER.....61 OTHER_____81 (SPECIFY)	
26	What kind of toilet facility does your household have?	FLUSH TOILET OWN FLUSH TOILET.....11 SHARED FLUSH TOILET.....12 PUBLIC FLUSH TOILET.....13 PIT TOILET/LATRINE OWN PIT TOILET/LATRINE.....21 SHARED PIT TOILET/LATRINE.....22 PUBLIC PIT TOILET/LATRINE.....23 NO FACILITY/BUSH/FIELD.....31 OTHER _____41 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
27	What is the main source of lighting for your household?	ELECTRICITY.....1 KEROSENE.....2 GAS.....3 OIL.....4 OTHER_____5 (SPECIFY)	
28	How many rooms are there in your household?	ROOMS..... ☐☐	
29	Do you have a separate room which is used as a kitchen?	YES.....1 NO.....2	
30	What type of fuel does your household mainly use for cooking?	WOOD.....01 COW DUNG CAKES.....02 COAL/COKE/LIGNITE.....03 CHARCOAL.....04 KEROSENE.....05 ELECTRICITY.....06 LIQUID PETROLEUM GAS.....07 BIO-GAS.....08 OTHER_____09 (SPECIFY)	
31	TYPE OF HOUSE. ROOF _____ WALLS_____ RECORD OBSERVATION. FLOOR_____	PUCCA.....1 KACHHA.....2 SEMI-PUCCA.....3	
32	What is the religion of the head of the household?	HINDU.....01 SIKH.....02 BUDDHIST/NEO BUDDHIST.....03 CHRISTIAN.....04 JAIN.....05 JEWISH.....06 MUSLIM.....07 ZOROASTRIAN.....08 NO RELIGION.....09 OTHER_____10 (SPECIFY)	
33	Does the head of the household belong to a scheduled tribe?	YES.....1 NO.....2	→35
34	What is the name of the tribe?	☐☐☐ TRIBE_____ (NAME)	→36
35	To which caste does the head of the household belong?	☐☐ CASTE_____ (NAME) NO CASTE.....996	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
36	Does this household own any agricultural land?	YES.....1 NO.....2	→39
37	What is the size of non-irrigated land under cultivation, in acres?	ACRES..... ☐☐☐ NONE.....000 LESS THAN ONE.....996	
38	What is the size of irrigated land under cultivation, in acres?	ACRES..... ☐☐☐ NONE.....000 LESS THAN ONE.....996	
39	Does this household own any livestock?	YES.....1 NO.....2	→42
40	What type of livestock do you own? RECORD ALL MENTIONED.	BULLOCK.....A COW.....B BUFFALO.....C GOAT.....D SHEEP.....E CAMEL.....F OTHER _____ G (SPECIFY)	
41	Where do you usually keep the animals at night?	IN THE HOUSE.....1 OUTSIDE THE HOUSE.....2	
42	Does the household own any of the following?	YES NO	
	A sewing machine?	SEWING MACHINE.....1 2	
	A clock or watch?	CLOCK/WATCH.....1 2	
	A sofa set?	SOFA SET.....1 2	
	A fan?	FAN.....1 2	
	A radio or transistor?	RADIO/TRANSISTOR.....1 2	
	A refrigerator?	REFRIGERATOR.....1 2	
	A television?	TELEVISION.....1 2	
	A VCR or VCP?	VCR/VCP.....1 2	
	A bicycle?	BICYCLE.....1 2	
	A motorcycle or scooter?	MOTORCYCLE/SCOOTER.....1 2	
	A car?	CAR.....1 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
43	Now I would like to ask you about the births that have taken place to any member of your household or visitor during the last two years. Did any usual resident of this household give birth to a child since (Pongal/Makar Sankranti/January) 1990 in this (city/town/village) or outside?	YES.....1 NO.....2	→45
44	How many births took place?	TOTAL BIRTHS..... ☐	
45	Did any visitor to this household give birth to a child since (Pongal/Makar Sankranti/January) 1990?	YES.....1 NO.....2	→47
46	How many births took place?	TOTAL BIRTHS..... ☐	
47	CHECK 44 AND 46: ONE OR MORE BIRTHS ☐ (↓) NO BIRTHS ☐		→58

7

RECORD NAMES OF BIRTHS SINCE JANUARY 1990 IN 48. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

48	49	50	51	52	53	54	55	56
What name was given to the baby born (first/next)?	Was the mother a usual resident of the household or a visitor?	RECORD LINE NUMBER OF MOTHER IN THE HOUSEHOLD SCHEDULE.	How old was the mother at the time of birth of (NAME)? RECORD AGE IN COMPLETED YEARS.	RECORD SINGLE OR MULTIPLE BIRTH STATUS.	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday? OR: In what season was he/she born?	Is (NAME) still alive?	IF DEAD: How old was he/she when he/she died? IF "1 YEAR", PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN ONE MONTH
01 _____ (NAME)	RESIDENT..1 VISITOR...2	LINE NUMBER ☐☐ MOTHER DIED.....95 LEFT HH..96	AGE OF MOTHER ☐☐	SINGLE..1 MULT....2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 (GO TO NEXT BIRTH) NO....2	DAYS....1 MONTHS..2 ☐☐
02 _____ (NAME)	RESIDENT..1 VISITOR...2	LINE NUMBER ☐☐ MOTHER DIED.....95 LEFT HH..96	AGE OF MOTHER ☐☐	SINGLE..1 MULT....2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 (GO TO NEXT BIRTH) NO....2	DAYS....1 MONTHS..2 ☐☐
03 _____ (NAME)	RESIDENT..1 VISITOR...2	LINE NUMBER ☐☐ MOTHER DIED.....95 LEFT HH..96	AGE OF MOTHER ☐☐	SINGLE..1 MULT....2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 (GO TO NEXT BIRTH) NO....2	DAYS....1 MONTHS..2 ☐☐
04 _____ (NAME)	RESIDENT..1 VISITOR...2	LINE NUMBER ☐☐ MOTHER DIED.....95 LEFT HH..96	AGE OF MOTHER ☐☐	SINGLE..1 MULT....2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 (GO TO NEXT BIRTH) NO....2	DAYS....1 MONTHS..2 ☐☐
05 _____ (NAME)	RESIDENT..1 VISITOR...2	LINE NUMBER ☐☐ MOTHER DIED.....95 LEFT HH..96	AGE OF MOTHER ☐☐	SINGLE..1 MULT....2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 (GO TO NEXT BIRTH) NO....2	DAYS....1 MONTHS..2 ☐☐
06 _____ (NAME)	RESIDENT..1 VISITOR...2	LINE NUMBER ☐☐ MOTHER DIED.....95 LEFT HH..96	AGE OF MOTHER ☐☐	SINGLE..1 MULT....2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 (GO TO NEXT BIRTH) NO....2	DAYS....1 MONTHS..2 ☐☐

57 COMPARE SUM OF 44 AND 46 WITH NUMBER OF BIRTHS IN 48 AND MARK:

NUMBERS ARE SAME ☐ V

NUMBERS ARE DIFFERENT ☐ → PROBE AND RECONCILE

8

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
58	Now I would like to ask you about the deaths of any member of your household or visitor during the last two years. Did any usual resident of this household die since (Pongal/Makar Sankranti/January) 1990 in this (city/town/village) or outside?	YES.....1 NO.....2	→60
59	How many persons died?	TOTAL DEATHS..... ☐	
60	Did any visitor to this household die since (Pongal/Makar Sankranti/January) 1990?	YES.....1 NO.....2	→62
61	How many deaths took place?	TOTAL DEATHS..... ☐	
62	CHECK 59 AND 61: ONE OR MORE DEATHS ☐ ↓ NO DEATHS ☐		→75

9

RECORD NAMES OF DEATHS SINCE JANUARY 1990 IN 63.

63	64	65	66	67	68	69	70	71	72	73
What (was/were) the name(s) of the person(s) who died?	Was (NAME) a usual resident of the household or a visitor?	Was (NAME) a male or a female?	How old was he/she when he/she died? RECORD DAYS IF LESS THAN ONE MONTH, MONTHS IF LESS THAN TWO YEARS, OR YEARS	In what month and year did (NAME) die?	CHECK 65 AND 66: DECEASED WAS FEMALE AGED 13-49 AT THE TIME OF DEATH	Was (NAME) pregnant when she died?	Did (NAME) die during childbirth?	Did (NAME) die within two months after the end of a pregnancy or childbirth?	Was the death of (NAME) due to a complication of the pregnancy or childbirth?	What were the major symptoms observed before the death of (NAME)?
01 _____ (NAME)	RESIDENT..1 VISITOR...2	MALE.....1 FEMALE...2	DAYS....1 MONTHS..2 YEARS...3	MONTH.. YEAR...	YES.....1 NO.....2 (GO TO 73)	YES.....1 (GO TO 72) NO.....2	YES.....1 (GO TO NEXT DEATH) NO.....2	YES.....1 NO.....2 (GO TO 73)	YES.....1 (GO TO NEXT DEATH) NO.....2	SYMPTOMS
02 _____ (NAME)	RESIDENT..1 VISITOR...2	MALE.....1 FEMALE...2	DAYS....1 MONTHS..2 YEARS...3	MONTH.. YEAR...	YES.....1 NO.....2 (GO TO 73)	YES.....1 (GO TO 72) NO.....2	YES.....1 (GO TO NEXT DEATH) NO.....2	YES.....1 NO.....2 (GO TO 73)	YES.....1 (GO TO NEXT DEATH) NO.....2	SYMPTOMS
03 _____ (NAME)	RESIDENT..1 VISITOR...2	MALE.....1 FEMALE...2	DAYS....1 MONTHS..2 YEARS...3	MONTH.. YEAR...	YES.....1 NO.....2 (GO TO 73)	YES.....1 (GO TO 72) NO.....2	YES.....1 (GO TO NEXT DEATH) NO.....2	YES.....1 NO.....2 (GO TO 73)	YES.....1 (GO TO NEXT DEATH) NO.....2	SYMPTOMS

74 COMPARE SUM OF 59 AND 61 WITH NUMBER OF DEATHS IN 63 AND MARK:

NUMBERS ARE SAME ☐

NUMBERS ARE DIFFERENT ☐ → PROBE AND RECONCILE

75 RECORD THE TIME.

HOUR.....

MINUTES.....

260

NATIONAL FAMILY HEALTH SURVEY
(MCH AND FAMILY PLANNING)
WOMAN'S QUESTIONNAIRE

CONFIDENTIAL
For Research
Purposes Only

INDIA 1992-1993

IDENTIFICATION

NAME OF STATE _____

PSU NUMBER.....

NAME OF DISTRICT _____

NAME OF TEHSIL/TALUK _____

URBAN/RURAL (urban=1, rural=2).....

NAME OF TOWN AND TOWN BLOCK OR VILLAGE _____

LARGE CITY/SMALL CITY/TOWN/RURAL AREA.....
(large city=1, small city=2, town=3, rural area=4)

HOUSEHOLD NUMBER.....

NAME AND LINE NUMBER OF WOMAN _____

ADDRESS OF HOUSEHOLD _____

_____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY ☐☐
				MONTH ☐☐
				YEAR ☐☐
INTERVIEWER'S NAME	_____	_____	_____	NAME ☐☐
RESULT*	_____	_____	_____	RESULT ☐
NEXT VISIT: DATE	_____	_____		TOTAL NUMBER OF VISITS ☐
TIME	_____	_____		

*RESULT CODES:
1 COMPLETED 3 POSTPONED 5 PARTLY COMPLETED
2 NOT AT HOME 4 REFUSED 6 OTHER _____ (SPECIFY)

LANGUAGE OF QUESTIONNAIRE**..... ☐☐

LANGUAGE OF INTERVIEW**..... ☐☐

NATIVE LANGUAGE OF RESPONDENT**..... ☐☐

TRANSLATOR USED..... YES...1 NO...2

**LANGUAGE CODES:

01 Assamese	05 Hindi	09 Marathi	13 Sindhi
02 Bengali	06 Kannada	10 Oriya	14 Tamil
03 English	07 Kashmiri	11 Punjabi	15 Telugu
04 Gujarati	08 Malayalam	12 Sanskrit	16 Urdu

17 Other (SPECIFY) _____ 18 Konkani

	SPOT-CHECKED BY	FIELD EDITED BY	OFFICE EDITED BY	KEYED BY	KEYED BY
NAME	_____	_____	_____	_____	☐☐
DATE	_____	_____	_____	_____	

SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
101	RECORD THE TIME.	HOUR..... ☐☐ MINUTES..... ☐☐	
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 or in a village?	CITY/TOWN.....1 VILLAGE.....2	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?	YEARS..... ☐☐ ALWAYS.....95 VISITOR.....96	→105
104	Just before you moved here, did you live in a city or in a village?	CITY/TOWN.....1 VILLAGE.....2	
105	In what month and year were you born?	MONTH..... ☐☐ DK MONTH.....98 YEAR..... ☐☐ DK YEAR.....98	
106	How old were you at your last birthday? COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS..... ☐☐	
107	What is your current marital status?	CURRENTLY MARRIED.....1 SEPARATED.....2 WIDOWED.....3 DIVORCED.....4 NEVER MARRIED.....5	→111 →END
108	Are you living with your husband now or is he staying elsewhere?	LIVING WITH HIM.....1 STAYING ELSEWHERE.....2	→111

2

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
109	During the last four weeks, did you stay with your husband at any time?	YES.....1 NO.....2	→111
110	For how long have you and your husband not been living together? RECORD MONTHS OR YEARS.	MONTHS.....1 YEARS.....2	
111	Now I would like to ask you some questions on your marriage. Have you been married only once or more than once?	ONCE.....1 MORE THAN ONCE.....2	→115
112	How old were you at the time of your <u>first</u> marriage?	AGE IN COMPLETED YEARS.....	
113	How old were you when you started living with your <u>first</u> husband?	AGE IN COMPLETED YEARS..... GAUNA HAD NOT TAKEN PLACE..... 96	
114	How old were you when your first marriage dissolved?	AGE IN COMPLETED YEARS.....	
115	How old were you at the time of your [current] marriage?	AGE IN COMPLETED YEARS.....	
116	How old were you when you started living with your [current] husband?	AGE IN COMPLETED YEARS..... GAUNA HAS NOT TAKEN PLACE.....96	→END

3

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
117	Before you got married, was your [current] husband related to you in any way?	YES.....1 NO.....2	→119
118	What type of relationship was it?	FIRST COUSIN ON FATHER'S SIDE...1 FIRST COUSIN ON MOTHER'S SIDE...2 SECOND COUSIN.....3 UNCLE.....4 OTHER BLOOD RELATIVE.....5 BROTHER-IN-LAW.....6 OTHER NON-BLOOD RELATIVE.....7	
119	What is the minimum legal age at marriage for a girl in India?	AGE IN YEARS..... ☐☐ DK.....98	
120	What is the minimum legal age at marriage for a boy in India?	AGE IN YEARS..... ☐☐ DK.....98	
121	Have you ever attended school?	YES.....1 NO.....2	→124
122	What is the highest grade you completed?	GRADE..... ☐☐	
123	CHECK 122: GRADE 0-5 ☐ ↓	GRADE 6-12 ☐ GRADE 13+ ☐	→126 →125
124	Can you read and write?	YES.....1 NO.....2	→126
125	What is the highest degree you have obtained?	DEGREE NOT COMPLETED.....01 NON-TECHNICAL DEGREE BACHELOR'S DEGREE.....02 MASTER'S DEGREE.....03 Ph.D.....04 TECHNICAL DEGREE BACHELOR'S DEGREE.....05 MASTER'S DEGREE.....06 TECHNICAL DIPLOMA/CERTIFICATE NOT EQUIVALENT TO DEGREE.....07 NON-TECHNICAL DIPLOMA/CERTIF. NOT EQUIVALENT TO DEGREE.....08 OTHER DEGREE_____09 (SPECIFY)	

4

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
126	Do you usually listen to a radio at least once a week?	YES.....1 NO.....2	
127	Do you usually watch television at least once a week?	YES.....1 NO.....2	
128	Do you usually go to a Cinema Hall or Theatre to see a movie at least once a month?	YES.....1 NO.....2	
129	CHECK Q.5 IN THE HOUSEHOLD SCHEDULE: THE WOMAN INTERVIEWED IS NOT A USUAL RESIDENT ☐ ↓ THE WOMAN INTERVIEWED IS A USUAL RESIDENT ☐		→201
130	How long have you been visiting in this house?	DAYS.....1 MONTHS.....2 YEARS.....3	
131	How much longer do you intend to stay here?	DAYS.....1 MONTHS.....2 YEARS.....3 DK.....998	
132	What is the main reason for your visiting this household?	VISITING FOR DELIVERY PURPOSE..1 VISITING FOR OTHER PURPOSE.....2	
133	Now I would like to ask about the place in which you usually live. Do you usually live in a city, in a town, or in a village? IF CITY: In which city do you live? _____	LARGE CITY (1 MILLION +).....1 SMALL CITY.....2 TOWN.....3 VILLAGE.....4	

5

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
134	In which state do you usually live?	ANDHRA PRADESH.....01 ARUNACHAL PRADESH.....02 ASSAM.....03 BIHAR.....04 GOA.....05 GUJARAT.....06 HARYANA.....07 HIMACHAL PRADESH.....08 JAMMU & KASHMIR.....09 KARNATAKA.....10 KERALA.....11 MADHYA PRADESH.....12 MAHARASHTRA.....13 MANIPUR.....14 MEGHALAYA.....15 MIZORAM.....16 NAGALAND.....17 ORISSA.....18 PUNJAB.....19 RAJASHTAN.....20 SIKKIM.....21 TAMIL NADU.....22 TRIPURA.....23 UTTAR PRADESH.....24 WEST BENGAL.....25 ANDMAN & NICOBAR ISLANDS.....26 CHANDIGARH.....27 DADRA & NAGAR HAVELI.....28 DAMAN & DIU.....29 DELHI.....30 LAKSHADWEEP.....31 PONDICHERRY.....32 OUTSIDE INDIA.....33	
135	Now I would like to ask about the household in which you usually live. What is the main source of water your household uses for bathing and washing?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT.....11 → 137 PUBLIC TAP.....12 GROUND WATER HANDPUMP IN YARD/PLOT.....21 → 137 PUBLIC HANDPUMP.....22 WELL WATER WELL IN RESIDENCE/YARD/PLOT...23 → 137 PUBLIC WELL.....24 SURFACE WATER SPRING.....31 RIVER/STREAM.....32 POND/LAKE.....33 DAM.....34 RAINWATER.....41 TANKER TRUCK.....51 OTHER_____ 81 (SPECIFY)	
136	How long does it take to go there, get water, and come back in one trip?	MINUTES..... ☐☐☐	
137	Does your household get drinking water from this same source?	YES.....1 → 139 NO.....2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
138	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT.....11 PUBLIC TAP.....12 GROUND WATER HANDPUMP IN YARD/PLOT.....21 PUBLIC HANDPUMP.....22 WELL WATER WELL IN RESIDENCE/YARD/PLOT...23 PUBLIC WELL.....24 SURFACE WATER SPRING.....31 RIVER/STREAM.....32 POND/LAKE.....33 DAM.....34 RAINWATER.....41 TANKER TRUCK.....51 BOTTLED WATER.....61 OTHER_____81 (SPECIFY)	
139	What kind of toilet facility does your household have?	FLUSH TOILET OWN FLUSH TOILET.....11 SHARED FLUSH TOILET.....12 PUBLIC FLUSH TOILET.....13 PIT TOILET/LATRINE OWN PIT TOILET/LATRINE.....21 SHARED PIT TOILET/LATRINE.....22 PUBLIC PIT TOILET/LATRINE.....23 NO FACILITY/BUSH/FIELD.....31 OTHER _____41 (SPECIFY)	
140	What is the main source of lighting for your household?	ELECTRICITY.....1 KEROSENE.....2 GAS.....3 OIL.....4 OTHER_____5 (SPECIFY)	
141	How many rooms are there in your household?	ROOMS..... ☐☐	
142	Do you have a separate room which is used as a kitchen?	YES.....1 NO.....2	
143	What type of fuel does your household mainly use for cooking?	WOOD.....01 COW DUNG CAKES.....02 COAL/COKE/LIGNITE.....03 CHARCOAL.....04 KEROSENE.....05 ELECTRICITY.....06 LIQUID PETROLEUM GAS.....07 BIO-GAS.....08 OTHER_____09 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
144	What materials have been used for the construction of roof, walls and floor of the house where you usually live? ROOF_____ WALLS_____ FLOOR_____	PUCCA.....1 KACHHA.....2 SEMI-PUCCA.....3	
145	What is the religion of the head of the household?	HINDU.....01 SIKH.....02 BUDDHIST/NEO BUDDHIST.....03 CHRISTIAN.....04 JAIN.....05 JEWISH.....06 MUSLIM.....07 ZOROASTRIAN.....08 NO RELIGION.....09 OTHER_____10 (SPECIFY)	
146	Does the head of the household belong to a scheduled tribe?	YES.....1 NO.....2	→148
147	What is the name of the tribe?	TRIBE_____ (NAME)	→149
148	To which caste does the head of the household belong?	CASTE_____ (NAME) NO CASTE.....996	
149	Does your household own any agricultural land?	YES.....1 NO.....2	→152
150	What is the size of <u>non-irrigated</u> land under cultivation, in acres?	ACRES..... NONE.....000 LESS THAN ONE.....996	
151	What is the size of <u>irrigated</u> land under cultivation, in acres?	ACRES..... NONE.....000 LESS THAN ONE.....996	

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
152	Does your household own any livestock?	YES.....1 NO.....2	→155
153	What type of livestock do you own? RECORD ALL MENTIONED.	BULLOCK.....A COW.....B BUFFALO.....C GOAT.....D SHEEP.....E CAMEL.....F OTHER _____ G (SPECIFY)	
154	Where do you usually keep the animals at night?	IN THE HOUSE.....1 OUTSIDE THE HOUSE.....2	
155	Does the household own any of the following?	YES NO	
	A sewing machine?	SEWING MACHINE.....1 2	
	A clock or watch?	CLOCK/WATCH.....1 2	
	A sofa set?	SOFA SET.....1 2	
	A fan?	FAN.....1 2	
	A radio or transistor?	RADIO/TRANSISTOR.....1 2	
	A refrigerator?	REFRIGERATOR.....1 2	
	A television?	TELEVISION.....1 2	
	A VCR or VCP?	VCR/VCP.....1 2	
	A bicycle?	BICYCLE.....1 2	
	A motorcycle or scooter?	MOTORCYCLE/SCOOTER.....1 2	
	A car?	CAR.....1 2	
156	How many people are there in your household?	NUMBER OF PERSONS..... ☐☐	

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
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	→206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES.....1 NO.....2	→204
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	→206
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	Have you ever given birth to a boy or a girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed any sign of life but only survived a few hours or days?	YES.....1 NO.....2	→208
207	In all, how many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD..... GIRLS DEAD.....	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE RECORD '00'.	TOTAL.....	

10

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
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 ☐ → v NO ☐ → PROBE AND CORRECT 201-208 AS NECESSARY		
210	Have you ever had a stillbirth?	YES.....1 NO.....2	→212
211	How many stillbirths have you had?	NUMBER OF STILLBIRTHS..... ☐	
212	Have you ever had an abortion? PROBE FOR SPONTANEOUS AND INDUCED ABORTIONS.	YES.....1 NO.....2	→214
213	How many abortions have you had? PROBE FOR NUMBER OF SPONTANEOUS AND INDUCED ABORTIONS. IF NONE, RECORD '0'.	SPONTANEOUS ABORTIONS..... ☐☐ INDUCED ABORTIONS..... ☐☐	
214	CHECK 208: ONE OR MORE BIRTHS ☐ → v NO BIRTHS ☐		→226

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215

Now I would like to talk to you about all the births in your lifetime, whether currently alive or not, starting with the first one you had.

RECORD NAMES OF ALL THE BIRTHS IN 216. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

216 What name was given to your (first, next) baby?	217 RECORD SINGLE OR MULTIPLE BIRTH STATUS.	218 Is (NAME) a boy or a girl?	219 In what month and year was (NAME) born? PROBE: What is his/her birthday? OR: In what season was he/she born?	220 Is (NAME) still alive?	221 IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	222 IF ALIVE: Is (NAME) living with you?	223 IF DEAD: How old was he/she when he/she died? IF "1 YEAR", PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH, MONTHS IF LESS THAN TWO YEARS, OR YEARS.
01 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 NO....2 → 223	AGE IN YEARS ☐☐	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3 ☐☐
02 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 NO....2 → 223	AGE IN YEARS ☐☐	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3 ☐☐
03 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 NO....2 → 223	AGE IN YEARS ☐☐	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3 ☐☐
04 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 NO....2 → 223	AGE IN YEARS ☐☐	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3 ☐☐
05 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 NO....2 → 223	AGE IN YEARS ☐☐	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3 ☐☐
06 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 NO....2 → 223	AGE IN YEARS ☐☐	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3 ☐☐
07 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. ☐☐ YEAR... ☐☐	YES...1 NO....2 → 223	AGE IN YEARS ☐☐	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3 ☐☐

216	217	218	219	220	221	222	223
What name was given to your next baby?	RECORD SINGLE OR MULTIPLE BIRTH STATUS.	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday? OR: In what season was he/she born?	Is (NAME) still alive?	IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	IF ALIVE: Is (NAME) living with you?	IF DEAD: How old was he/she when he/she died? IF "1 YEAR", PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH, MONTHS IF LESS THAN TWO YEARS, OR YEARS.
08 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. YEAR...	YES...1 NO....2 → 223	AGE IN YEARS	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3
09 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. YEAR...	YES...1 NO....2 → 223	AGE IN YEARS	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3
10 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. YEAR...	YES...1 NO....2 → 223	AGE IN YEARS	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3
11 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. YEAR...	YES...1 NO....2 → 223	AGE IN YEARS	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3
12 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH.. YEAR...	YES...1 NO....2 → 223	AGE IN YEARS	YES.....1 NO.....2 → (GO TO NEXT BIRTH)	DAYS....1 MONTHS..2 YEARS...3

224 COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK:

NUMBERS ARE SAME ☐ → NUMBERS ARE DIFFERENT ☐ → (PROBE AND RECONCILE)

CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED. ☐
FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED. ☐
FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED. ☐
FOR AGE AT DEATH 12 MONTHS: PROBE TO DETERMINE EXACT NUMBER OF MONTHS. ☐
FOR EACH CALENDAR BIRTH INTERVAL 4 OR 4+ YEARS: EXPLANATION IS GIVEN. ☐

225 CHECK 219 AND ENTER THE NUMBER OF BIRTHS SINCE JANUARY 1988. IF NONE RECORD '0'. ☐

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
226	CHECK 107: CURRENTLY MARRIED ☐ →	WIDOWED ☐ DIVORCED SEPARATED	→232
227	Are you pregnant now?	YES.....1 NO.....2 UNSURE.....8	→230
228	How many months pregnant are you?	MONTHS..... ☐☐	
229	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</u> <u>want</u> to become pregnant at all?	THEN.....1 LATER.....2 NOT AT ALL.....3	→232
230	Are you currently menstruating?	YES .....1 NO IN MENOPAUSE.....2 NO IN AMENORRHOEA.....3 NEVER MENSTRUATED.....4	→232 →301
231	When did your last menstrual period start?	MONTH..... ☐☐ YEAR..... ☐☐	
232	How old were you when you experienced your first monthly period?	AGE IN YEARS..... ☐☐	

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SECTION 3. CONTRACEPTION

301

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. Which ways or methods have you heard about?

CIRCLE CODE 1 IN 302 FOR EACH METHOD MENTIONED SPONTANEOUSLY.
THEN PROCEED DOWN THE COLUMN, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY.
CIRCLE CODE 2 IF METHOD IS RECOGNIZED, AND CODE 3 IF NOT RECOGNIZED.
THEN, FOR EACH METHOD WITH CODE 1 OR 2 CIRCLED IN 302, ASK 303-304 BEFORE PROCEEDING TO THE NEXT METHOD.

		302 Have you ever heard of (METHOD)? READ DESCRIPTION OF EACH METHOD.	303 Have you ever used (METHOD)?	304 Do you know where a person could go to get (METHOD)?
01	Pill Women can take a pill every day.	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3	YES.....1 NO.....2	YES.....1 NO.....2
02	Loop or Copper T Women can have a loop or coil placed inside them by a doctor or a nurse.	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3	YES.....1 NO.....2	YES.....1 NO.....2
03	Injections Women can have an injection given by a doctor or nurse which stops them from becoming pregnant for several months.	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3	YES.....1 NO.....2	YES.....1 NO.....2
04	Condom or Nirodh Men can use a rubber sheath during sexual intercourse.	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3	YES.....1 NO.....2	YES.....1 NO.....2
05	Female sterilization Women can have an operation to avoid having any more children.	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3	Have you ever had an operation to avoid having any more children? YES.....1 NO.....2	YES.....1 NO.....2

	302 Have you ever heard of (METHOD)? READ DESCRIPTION OF EACH METHOD.	303 Have you ever used (METHOD)?	304 Do you know where a person could go to get (METHOD)?
06	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3 →	Has your husband ever had an operation to avoid having any more children? YES.....1 NO.....2	YES.....1 NO.....2
Male sterilization Men can have an operation to avoid having any more children.			
07	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3 →	YES.....1 NO.....2	Do you know where a person can obtain advice on how to practice periodic abstinence? YES.....1 NO.....2
Rhythm or Periodic abstinence Couples can avoid having sexual intercourse on certain days of the month when the woman is more likely to become pregnant.			
08	YES/SPONTANEOUS.....1 YES/PROBED.....2 NO.....3 →	YES.....1 NO.....2	
Withdrawal Men can be careful and pull out before climax.			
09	YES/SPONTANEOUS.....1 NO.....3 →	YES.....1 NO.....2 YES.....1 NO.....2 YES.....1 NO.....2	
Have you heard of any other ways or methods that women or men can use to avoid pregnancy? 1 _____ (SPECIFY) 2 _____ (SPECIFY) 3 _____ (SPECIFY)			

305 CHECK 303: NOT A SINGLE "YES" (NEVER USED) ↓ AT LEAST ONE "YES" (EVER USED) → SKIP TO 308

16

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
306	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES..... ☐ NO..... ☐	→344
307	What have you used or done? CORRECT 303-305 (AND 302 IF NECESSARY).		
308	Now I would like to ask you about the time when you first did something or used a method to avoid getting pregnant. How many living children did you have at that time, if any? IF NONE, RECORD '00'.	NUMBER OF CHILDREN..... ☐☐	
309	CHECK 107: CURRENTLY MARRIED ☐ ↓ WIDOWED, DIVORCED, SEPARATED ☐		→352
310	CHECK 227: NOT PREGNANT OR UNSURE ☐ ↓ PREGNANT ☐		→345
311	CHECK 303: NEITHER STERILIZED ☐ ↓ HE OR SHE STERILIZED ☐		→313A
312	Are you or your husband currently doing something or using any method to delay or avoid getting pregnant?	YES.....1 NO.....2	→342

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
313 313A	Which method are you using? CIRCLE '05' FOR FEMALE STERILIZATION. CIRCLE '06' FOR MALE STERILIZATION.	PILL.....01 LOOP/COPPER T.....02 INJECTION.....03 CONDOM/NIRODH.....04 FEMALE STERILIZATION.....05 MALE STERILIZATION.....06 RHYTHM/PERIODIC ABSTINENCE.....07 WITHDRAWAL.....08 OTHER_____09 (SPECIFY)	→321 →328 →330 →332 →341
314	For how many months have you been using the pill continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS.....☐☐ 8 YEARS OR LONGER.....96	
315	At the time you first started using the pill, did you consult a doctor or a nurse ?	YES.....1 NO.....2	
316	Once you started using the pill, did a health worker come to visit you for a follow-up related to your use of the pill?	YES.....1 NO.....2	
317	Once you started using the pill, did you go to consult a medical or health person about your experience with the use of the pill?	YES.....1 NO.....2	
318	Have you had any problems with the use of the pill?	YES.....1 NO.....2	→320
319	What problems have you had? RECORD ALL PROBLEMS MENTIONED.	CRAMPS.....A WEIGHT GAIN.....B DIZZINESS.....C BODY ACHE.....D SPOTTING/BLEEDING.....E WHITE DISCHARGE.....F BREAST TENDERNESS.....G NAUSEA/VOMITING.....H CANCER.....I ALLERGY.....J HEADACHE.....K OTHER _____L (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
320	Where did you obtain the pills the last time? _____ (NAME OF HOSPITAL IF CODE 11 OR 21)	PUBLIC SECTOR GOVT./MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 SUB-CENTRE.....13 FAMILY PLANNING CLINIC.....14 MOBILE CLINIC.....15 GOVERNMENT PARAMEDIC.....16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL OR CLINIC....21 PHARMACY/DRUGSTORE.....22 PRIVATE DOCTOR.....23 MOBILE CLINIC.....24 FIELD WORKER.....25 OTHER PRIVATE SECTOR SHOP.....31 FRIENDS/RELATIVES.....32 OTHER _____41 (SPECIFY)	→352
321	Who inserted the (LOOP/COPPER T)?	GOVERNMENT DOCTOR.....1 GOVERNMENT PARAMEDIC.....2 PRIVATE DOCTOR.....3 PRIVATE NURSE.....4	
322	Where did you obtain the (LOOP/COPPER T)? _____ (NAME OF HOSPITAL IF CODE 11 OR 21)	PUBLIC SECTOR GOVT./MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 SUB-CENTRE.....13 FAMILY PLANNING CLINIC.....14 MOBILE CLINIC.....15 GOVERNMENT PARAMEDIC.....16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL OR CLINIC....21 PRIVATE DOCTOR.....22 MOBILE CLINIC.....23 OTHER _____31 (SPECIFY)	
323	For how many months have you been using the (LOOP/COPPER T) continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... ☐☐ 8 YEARS OR LONGER.....96	
324	Since the (LOOP/COPPER T) was inserted, did any health worker visit you for follow-up related to use of the (LOOP/COPPER T)?	YES.....1 NO.....2	
325	After the (LOOP/COPPER T) was inserted, did you go to consult a medical or health person about your experience with the use of the (LOOP/COPPER T)?	YES.....1 NO.....2	

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
326	Have you had any problems with the use of the (LOOP/COPPER T)?	YES.....1 NO.....2	→352
327	What problems have you had? RECORD ALL PROBLEMS MENTIONED	CRAMPS.....A BACKACHE.....B IRREGULAR PERIODS.....C EXCESSIVE BLEEDING.....D WEAKNESS/INABILITY TO WORK.....E EXPULSION.....F OTHER _____ G (SPECIFY)	→352
328	For how many months have you been using injections continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... ☐☐ 8 YEARS OR LONGER.....96	
329	Where did you obtain the injection the last time? _____ (NAME OF HOSPITAL IF CODE 11 OR 21)	PUBLIC SECTOR GOVT./MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 SUB-CENTRE.....13 FAMILY PLANNING CLINIC.....14 MOBILE CLINIC.....15 GOVERNMENT PARAMEDIC.....16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL OR CLINIC....21 PRIVATE DOCTOR.....22 MOBILE CLINIC.....23 OTHER _____ 31 (SPECIFY)	→352
330	For how many months have you been using (condoms/Nirodhs) continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... ☐☐ 8 YEARS OR LONGER.....96	
331	Where did you obtain the (condoms/Nirodhs) the last time? _____ (NAME OF HOSPITAL IF CODE 11 OR 21)	PUBLIC SECTOR GOVT./MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 SUB-CENTRE.....13 FAMILY PLANNING CLINIC.....14 MOBILE CLINIC.....15 GOVERNMENT PARAMEDIC.....16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL OR CLINIC....21 PHARMACY/DRUGSTORE.....22 PRIVATE DOCTOR.....23 MOBILE CLINIC.....24 FIELD WORKER.....25 OTHER PRIVATE SECTOR SHOP.....31 HUSBAND.....32 FRIENDS/RELATIVES.....33 OTHER _____ 41 (SPECIFY) DK.....98	→352

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
332	In what month and year was the sterilization operation performed?	MONTH..... ☐☐ YEAR..... ☐☐ DK.....9998	→334
333	How long ago were (you/your husband) sterilized?	MONTHS AGO.....1 ☐☐ YEARS AGO.....2 ☐☐	
334	Where did (you/your husband) obtain the sterilization? _____ (NAME OF HOSPITAL IF CODE 11 OR 21)	PUBLIC SECTOR GOVT./MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 FAMILY PLANNING CLINIC.....14 MOBILE CLINIC.....15 CAMP.....16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL OR CLINIC....21 PRIVATE DOCTOR.....22 MOBILE CLINIC.....23 OTHER _____31 (SPECIFY)	
335	How would you rate the care (you/he) received during or immediately after the operation: excellent, very good, allright, not so good, or very bad?	EXCELLENT.....1 VERY GOOD.....2 ALLRIGHT.....3 NOT SO GOOD.....4 VERY BAD.....5 DK.....8	
336	Since the sterilization, has any health worker come to visit (you/your husband) for follow-up related to the sterilization?	YES.....1 NO.....2 DK.....8	→338
337	How would you rate the follow-up care services for the sterilization: excellent, very good, allright, not so good, or very bad?	EXCELLENT.....1 VERY GOOD.....2 ALLRIGHT.....3 NOT SO GOOD.....4 VERY BAD.....5 DK.....8	
338	After the sterilization, did (you/your husband) go to consult a medical or health person about the sterilization?	YES.....1 NO.....2 DK.....8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
339	(Have you/Has your husband) had any problems as a result of the sterilization (operation)?	YES.....1 NO.....2	→352
340	What problems (have you/has he) had? RECORD ALL PROBLEMS MENTIONED	FEVER.....A PAIN/BACKACHE.....B SEPSIS.....C WEAKNESS/INABILITY TO WORK.....D FAILURE/GOT PREGNANT.....E LOSS OF SEXUAL POWER.....F OTHER _____ G (SPECIFY)	→352
341	For how many months have you been using (CURRENT METHOD) continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... ☐☐ 8 YEARS OR LONGER.....96	→350
342	What is the main reason you stopped using family planning?	METHOD FAILED/GOT PREGNANT.....01 LACK OF SEXUAL SATISFACTION....02 CREATED MENSTRUAL PROBLEM.....03 CREATED HEALTH PROBLEM.....04 INCONVENIENT TO USE.....05 HARD TO GET METHOD.....06 PUT ON WEIGHT.....07 DID NOT LIKE THE METHOD.....08 WANTED TO HAVE A CHILD.....09 WANTED TO REPLACE DEAD CHILD...10 LACK OF PRIVACY FOR USE.....11 OTHER _____ 12 (SPECIFY)	→345

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
343	What was the outcome of that pregnancy?	INDUCED ABORTION.....1 SPONTANEOUS ABORTION.....2 STILLBIRTH.....3 LIVE BIRTH.....4	
344	CHECK 107: CURRENTLY MARRIED ☐ ↓ WIDOWED DIVORCED SEPARATED ☐		→352
345	Do you intend to use a method to delay or avoid pregnancy at any time in the future?	YES.....1 NO.....2 DK.....8	→347 →352
346	What is the main reason you do not intend to use a method?	WANTS CHILDREN.....01 WANTS A SON.....02 WANTS A DAUGHTER.....19 LACK OF KNOWLEDGE.....03 AFRAID OF STERILIZATION.....04 CAN'T WORK AFTER STERILIZATION.05 COST TOO MUCH.....06 WORRY ABOUT SIDE EFFECTS.....07 HARD TO GET METHODS.....08 AGAINST RELIGION.....09 OPPOSED TO FAMILY PLANNING.....10 HUSBAND OPPOSED.....11 OTHER PEOPLE OPPOSED.....12 DIFFICULT TO GET PREGNANT.....13 HEALTH DOES NOT PERMIT.....14 MENOPAUSAL/HAD HYSTERECTOMY....15 INCONVENIENT.....16 DON'T LIKE EXISTING METHODS....17 OTHER_____18 (SPECIFY)	→350
347	Do you intend to use a method within the next 12 months?	YES.....1 NO.....2 DK.....8	
348	When you use a method, which method would you prefer to use?	PILL.....01 LOOP/COPPER T.....02 INJECTION.....03 CONDOM/NIRODH.....04 FEMALE STERILIZATION.....05 MALE STERILIZATION.....06 RHYTHM/PERIODIC ABSTINENCE.....07 WITHDRAWAL.....08 OTHER_____09 (SPECIFY) UNSURE.....98	→350

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
349	Where can you get (METHOD MENTIONED IN 348)? _____ (NAME OF HOSPITAL IF CODE 11 OR 21)	PUBLIC SECTOR GOVT./MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 SUB-CENTRE.....13 FAMILY PLANNING CLINIC.....14 MOBILE CLINIC.....15 GOVERNMENT PARAMEDIC.....16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL OR CLINIC....21 PHARMACY/DRUGSTORE.....22 PRIVATE DOCTOR.....23 MOBILE CLINIC.....24 FIELD WORKER.....25 OTHER PRIVATE SECTOR SHOP.....31 FRIENDS/RELATIVES.....32 OTHER_____41 (SPECIFY) DK.....98	→352
350	Do you know of a place where you can obtain a method of family planning?	YES.....1 NO.....2	→352
351	Where is that? _____ (NAME OF HOSPITAL IF CODE 11 OR 21)	PUBLIC SECTOR GOVT./MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 SUB-CENTRE.....13 FAMILY PLANNING CLINIC.....14 MOBILE CLINIC.....15 GOVERNMENT PARAMEDIC.....16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL OR CLINIC....21 PHARMACY/DRUGSTORE.....22 PRIVATE DOCTOR.....23 MOBILE CLINIC.....24 FIELD WORKER.....25 OTHER PRIVATE SECTOR SHOP.....31 FRIENDS/RELATIVES.....32 OTHER_____41 (SPECIFY)	
352	In the last month, have you heard a message about family planning on: the radio? television?	YES NO RADIO.....1 2 TELEVISION.....1 2	
353	Is it acceptable or not acceptable to you for family planning information to be provided on the radio or television?	ACCEPTABLE.....1 NOT ACCEPTABLE.....2 DK.....8	

401 CHECK 225:
ONE OR MORE BIRTHS SINCE JAN. 1988 ☐ v
NO BIRTHS SINCE JAN. 1988 ☐ → (SKIP TO 501)

402 ENTER THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH SINCE JANUARY 1988 IN THE TABLE. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 3 BIRTHS, RECORD ONLY THE LAST 3 BIRTHS).

Now I would like to ask you some more questions about the health of all your children born in the past four years. (We will talk about one child at a time.)

LINE NUMBER FROM Q. 216	☐☐	☐☐	☐☐
FROM Q. 216 AND Q. 220	LAST BIRTH NAME _____ ALIVE ☐ v DEAD ☐ v	NEXT-TO-LAST BIRTH NAME _____ ALIVE ☐ v DEAD ☐ v	SECOND-FROM-LAST BIRTH NAME _____ ALIVE ☐ v DEAD ☐ v
403 At the time you became pregnant with (NAME), did you want to become pregnant then, did you want to wait until later or did you want no (more) children at all?	THEN.....1 (SKIP TO 405) LATER.....2 NO MORE.....3 (SKIP TO 405)	THEN.....1 (SKIP TO 405) LATER.....2 NO MORE.....3 (SKIP TO 405)	THEN.....1 (SKIP TO 405) LATER.....2 NO MORE.....3 (SKIP TO 405)
404 How much longer would you like to have waited?	MONTHS.....1 ☐☐ YEARS.....2 DK.....998	MONTHS.....1 ☐☐ YEARS.....2 DK.....998	MONTHS.....1 ☐☐ YEARS.....2 DK.....998
405 When you were pregnant with (NAME), did any health worker visit you at home for an antenatal check-up?	YES.....1 NO.....2 (SKIP TO 408)	YES.....1 NO.....2 (SKIP TO 408)	YES.....1 NO.....2 (SKIP TO 408)
406 How many months pregnant were you when a health worker first visited you?	MONTHS..... ☐☐	MONTHS..... ☐☐	MONTHS..... ☐☐

		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
407	How many times did she visit you?	NO. OF VISITS....... [_][_]	NO. OF VISITS....... [_][_]	NO. OF VISITS....... [_][_]
408	When you were pregnant with (NAME), did you go for an antenatal check-up?	YES......................1 NO......................2 (SKIP TO 412)	YES......................1 NO......................2 (SKIP TO 412)	YES......................1 NO......................2 (SKIP TO 412)
409	Whom did you see? Anyone else? RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR..................A AYURVEDIC DOCTOR/VAID...B HOMEOPATH...............C NURSE/MIDWIFE...........D OTHER HEALTH PROFSSNL...E OTHER PERSON TRAINED (TRADITIONAL) BIRTH ATTENDANT........F TRADITIONAL BIRTH ATTENDANT..............G HAKIM..................H OTHER________________I (SPECIFY)	HEALTH PROFESSIONAL DOCTOR..................A AYURVEDIC DOCTOR/VAID...B HOMEOPATH...............C NURSE/MIDWIFE...........D OTHER HEALTH PROFSSNL...E OTHER PERSON TRAINED (TRADITIONAL) BIRTH ATTENDANT........F TRADITIONAL BIRTH ATTENDANT..............G HAKIM..................H OTHER________________I (SPECIFY)	HEALTH PROFESSIONAL DOCTOR..................A AYURVEDIC DOCTOR/VAID...B HOMEOPATH...............C NURSE/MIDWIFE...........D OTHER HEALTH PROFSSNL...E OTHER PERSON TRAINED (TRADITIONAL) BIRTH ATTENDANT........F TRADITIONAL BIRTH ATTENDANT..............G HAKIM..................H OTHER________________I (SPECIFY)
410	How many months pregnant were you when you first went for an antenatal check-up?	MONTHS.............. [_][_]	MONTHS.............. [_][_]	MONTHS.............. [_][_]
411	How many times did you go for an antenatal check-up?	NO. OF TIMES........ [_][_] (SKIP TO 413)	NO. OF TIMES........ [_][_] (SKIP TO 413)	NO. OF TIMES........ [_][_] (SKIP TO 413)
412	What is the main reason you did not go for an antenatal check-up?	LACK OF KNOWLEDGE OF SERVICES...............01 NOT NECESSARY...........02 NOT CUSTOMARY...........03 FINANCIAL COST..........04 INCONVENIENT............05 POOR QUALITY SERVICE....06 HEALTH STAFF VISIT AT HOME................07 NO TIME TO GO...........08 NOT PERMITTED TO GO.....09 OTHER________________10 (SPECIFY)	LACK OF KNOWLEDGE OF SERVICES...............01 NOT NECESSARY...........02 NOT CUSTOMARY...........03 FINANCIAL COST..........04 INCONVENIENT............05 POOR QUALITY SERVICE....06 HEALTH STAFF VISIT AT HOME................07 NO TIME TO GO...........08 NOT PERMITTED TO GO.....09 OTHER________________10 (SPECIFY)	LACK OF KNOWLEDGE OF SERVICES...............01 NOT NECESSARY...........02 NOT CUSTOMARY...........03 FINANCIAL COST..........04 INCONVENIENT............05 POOR QUALITY SERVICE....06 HEALTH STAFF VISIT AT HOME................07 NO TIME TO GO...........08 NOT PERMITTED TO GO.....09 OTHER________________10 (SPECIFY)

		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
413	Were you given any iron folic tablets during this pregnancy?	YES....1 NO....2	YES....1 NO....2	YES....1 NO....2
414	When you were pregnant with (NAME), were you given an injection in the arm to prevent you and the baby from getting tetanus, that is, convulsions?	YES....1 NO....2 (SKIP TO 416) DK....8	YES....1 NO....2 (SKIP TO 416) DK....8	YES....1 NO....2 (SKIP TO 416) DK....8
415	During this pregnancy how many times did you get this injection?	TIMES....[ ] DK....8	TIMES....[ ] DK....8	TIMES....[ ] DK....8
416	Where did you give birth to (NAME)?	HOME YOUR HOME....11 PARENTS' HOME....12 OTHER HOME....13 PUBLIC SECTOR GVT./MUNICIPL HOSPITL..21 PRIMARY HEALTH CENTRE..22 SUB-CENTRE....23 PRIVATE SECTOR PRIVATE HOSPITAL/ CLINIC/MATERNITY HOME..31 OTHER________41 (SPECIFY)	HOME YOUR HOME....11 PARENTS' HOME....12 OTHER HOME....13 PUBLIC SECTOR GVT./MUNICIPL HOSPITL..21 PRIMARY HEALTH CENTRE..22 SUB-CENTRE....23 PRIVATE SECTOR PRIVATE HOSPITAL/ CLINIC/MATERNITY HOME..31 OTHER________41 (SPECIFY)	HOME YOUR HOME....11 PARENTS' HOME....12 OTHER HOME....13 PUBLIC SECTOR GVT./MUNICIPL HOSPITL..21 PRIMARY HEALTH CENTRE..22 SUB-CENTRE....23 PRIVATE SECTOR PRIVATE HOSPITAL/ CLINIC/MATERNITY HOME..31 OTHER________41 (SPECIFY)

		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
417	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS ASSISTING.	HEALTH PROFESSIONAL DOCTOR....A AYURVEDIC DOCTOR/VAID...B NURSE/MIDWIFE....C ANM/LHV....D OTHER PERSON TRAINED (TRADITIONAL) BIRTH ATTENDANT....E TRADITIONAL BIRTH ATTENDANT....F RELATIVE/FRIEND....G OTHER________H (SPECIFY) NO ONE....I	HEALTH PROFESSIONAL DOCTOR....A AYURVEDIC DOCTOR/VAID...B NURSE/MIDWIFE....C ANM/LHV....D OTHER PERSON TRAINED (TRADITIONAL) BIRTH ATTENDANT....E TRADITIONAL BIRTH ATTENDANT....F RELATIVE/FRIEND....G OTHER________H (SPECIFY) NO ONE....I	HEALTH PROFESSIONAL DOCTOR....A AYURVEDIC DOCTOR/VAID...B NURSE/MIDWIFE....C ANM/LHV....D OTHER PERSON TRAINED (TRADITIONAL) BIRTH ATTENDANT....E TRADITIONAL BIRTH ATTENDANT....F RELATIVE/FRIEND....G OTHER________H (SPECIFY) NO ONE....I
418	Was (NAME) born on time or prematurely?	ON TIME....1 PREMATURELY....2 DK....8	ON TIME....1 PREMATURELY....2 DK....8	ON TIME....1 PREMATURELY....2 DK....8
419	Were there any complications in the delivery of (NAME)?	YES....1 NO....2 (SKIP TO 421)	YES....1 NO....2 (SKIP TO 421)	YES....1 NO....2 (SKIP TO 421)
420	What were the complications? RECORD ALL MENTIONED.	CAESARIAN SECTION....A USE OF FORCEPS....B EXCESSIVE BLEEDING....C LONG PERIOD OF LABOR....D DELAYED DELIVERY OF PLACENTA....E OTHER________F (SPECIFY)	CAESARIAN SECTION....A USE OF FORCEPS....B EXCESSIVE BLEEDING....C LONG PERIOD OF LABOR....D DELAYED DELIVERY OF PLACENTA....E OTHER________F (SPECIFY)	CAESARIAN SECTION....A USE OF FORCEPS....B EXCESSIVE BLEEDING....C LONG PERIOD OF LABOR....D DELAYED DELIVERY OF PLACENTA....E OTHER________F (SPECIFY)
421	When (NAME) was born, was he/she: large, average or small?	LARGE....1 AVERAGE....2 SMALL....3 DK....8	LARGE....1 AVERAGE....2 SMALL....3 DK....8	LARGE....1 AVERAGE....2 SMALL....3 DK....8
422	Was (NAME) weighed at birth?	YES....1 NO....2 (SKIP TO 424)	YES....1 NO....2 (SKIP TO 425)	YES....1 NO....2 (SKIP TO 425)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
423	How much did (NAME) weigh?	GRAMS.....1 ☐☐☐☐ POUNDS OUNCES POUNDS....2 ☐☐ ☐☐ DK.....99998	GRAMS.....1 ☐☐☐☐ POUNDS OUNCES POUNDS....2 ☐☐ ☐☐ DK.....99998	GRAMS.....1 ☐☐☐☐ POUNDS OUNCES POUNDS....2 ☐☐ ☐☐ DK.....99998
424	Has your period returned since the birth of (NAME)?	YES .....1 (SKIP TO 426) NO.....2 (SKIP TO 427)		
425	Did your period return between the birth of (NAME) and your next pregnancy?		YES .....1 NO.....2 (SKIP TO 429)	YES .....1 NO.....2 (SKIP TO 429)
426	For how many months after the birth of (NAME) did you not have a period?	MONTHS..... ☐☐ DK.....98	MONTHS..... ☐☐ DK.....98	MONTHS..... ☐☐ DK.....98
427	CHECK 227: RESPONDENT PREGNANT?	NOT PREGNANT ☐ v PREGNANT OR UNSURE ☐ v (SKIP TO 429)		
428	Have you resumed sexual relations since the birth of (NAME)?	YES.....1 NO.....2 (SKIP TO 430)		
429	For how many months after the birth of (NAME) did you not have sexual relations?	MONTHS..... ☐☐ DK.....98	MONTHS..... ☐☐ DK.....98	MONTHS..... ☐☐ DK.....98

		LAST BIRTH NAME ______	NEXT-TO-LAST BIRTH NAME ______	SECOND-FROM-LAST BIRTH NAME ______
430	Did you ever breastfeed (NAME)?	YES....1 (SKIP TO 432) NO....2	YES....1 (SKIP TO 440) NO....2	YES....1 (SKIP TO 440) NO....2
431	Why did you not breastfeed (NAME)?	MOTHER ILL/WEAK....01 CHILD ILL/WEAK....02 CHILD DIED....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK....05 MOTHER WORKING....06 CHILD REFUSED....07 OTHER ______ 08 (SPECIFY) (SKIP TO 442)	MOTHER ILL/WEAK....01 CHILD ILL/WEAK....02 CHILD DIED....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK....05 MOTHER WORKING....06 CHILD REFUSED....07 OTHER ______ 08 (SPECIFY) (SKIP TO 442)	MOTHER ILL/WEAK....01 CHILD ILL/WEAK....02 CHILD DIED....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK....05 MOTHER WORKING....06 CHILD REFUSED....07 OTHER ______ 08 (SPECIFY) (SKIP TO 442)
432	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY....000 HOURS....1 [ ][ ] DAYS....2 [ ][ ]		
433	Did you squeeze out the milk from the breast before you first put (NAME) to the breast?	YES....1 NO....2		
434	CHECK 220: CHILD ALIVE?	ALIVE [ ] DEAD [ ] (SKIP TO 440)		
435	Are you still breastfeeding (NAME)?	YES....1 NO....2 (SKIP TO 440)		
436	How many times did you breastfeed last night between sunset and sunrise? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE ANSWER.	NUMBER OF NIGHTTIME FEEDINGS .... [ ]		
437	How many times did you breastfeed yesterday during the daylight hours? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE ANSWER.	NUMBER OF DAYTIME FEEDINGS .... [ ]		

		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
438	At any time yesterday or last night, was (NAME) given any of the following?:	YES NO		
	Plain water?	PLAIN WATER..........1 2		
	Sugar/honey water?	SUGAR/HONEY WATER....1 2		
	Juice?	JUICE................1 2		
	Tea?	TEA..................1 2		
	Baby formula?	BABY FORMULA.........1 2		
	Fresh milk?	FRESH MILK...........1 2		
	Tinned/powdered milk?	TINNED/POWDERED MILK.1 2		
	Other liquids?	OTHER LIQUIDS........1 2		
	Any solid or mushy food?	SOLID/MUSHY FOOD.....1 2		
439	CHECK 438: FOOD OR LIQUID GIVEN YESTERDAY?	"YES" TO ONE OR MORE ☐ (SKIP TO 444) "NO" TO ALL ☐ (SKIP TO 443)		
440	For how many months did you breastfeed (NAME)?	MONTHS.............☐☐ UNTIL DIED.............96 (SKIP TO 443)	MONTHS.............☐☐ UNTIL DIED.............96 (SKIP TO 443)	MONTHS.............☐☐ UNTIL DIED.............96 (SKIP TO 443)
441	Why did you stop breastfeeding (NAME)?	MOTHER ILL/WEAK.........01 CHILD ILL/WEAK..........02 CHILD DIED..............03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.......05 MOTHER WORKING..........06 CHILD REFUSED...........07 WEANING AGE.............08 BECAME PREGNANT.........09 STARTED USING CONTRACEPTION..........10 OTHER________11 (SPECIFY)	MOTHER ILL/WEAK.........01 CHILD ILL/WEAK..........02 CHILD DIED..............03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.......05 MOTHER WORKING..........06 CHILD REFUSED...........07 WEANING AGE.............08 BECAME PREGNANT.........09 STARTED USING CONTRACEPTION..........10 OTHER________11 (SPECIFY)	MOTHER ILL/WEAK.........01 CHILD ILL/WEAK..........02 CHILD DIED..............03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.......05 MOTHER WORKING..........06 CHILD REFUSED...........07 WEANING AGE.............08 BECAME PREGNANT.........09 STARTED USING CONTRACEPTION..........10 OTHER________11 (SPECIFY)
442	CHECK 220: CHILD ALIVE?	ALIVE ☐ (SKIP TO 444) DEAD ☐	ALIVE ☐ (SKIP TO 444) DEAD ☐	ALIVE ☐ (SKIP TO 444) DEAD ☐

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		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
443	Was (NAME) ever given water or anything else to drink or eat (other than breastmilk)?	YES.....1 NO.....2 (SKIP TO 447)	YES.....1 NO.....2 (SKIP TO 447)	YES.....1 NO.....2 (SKIP TO 447)
444	How many months old was (NAME) when you started giving the following on a regular basis?			
	Plain water?	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96
	Formula or milk other than breastmilk?	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96
	Other liquids?	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96
	Any solid or mushy food?	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96	AGE IN MONTHS..... ☐☐ NOT GIVEN.....96
	IF LESS THAN 1 MONTH, RECORD '00'.		(SKIP TO 447)	(SKIP TO 447)
445	CHECK 220: CHILD ALIVE?	ALIVE ☐ DEAD ☐ (SKIP TO 447)		
446	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES.....1 NO.....2 DK.....8		
447	→	GO BACK TO 403 FOR NEXT BIRTH; OR, IF NO MORE BIRTHS, GO TO FIRST COLUMN OF 448.		

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448 ENTER THE LINE NUMBER AND NAME OF EACH BIRTH SINCE JANUARY 1988 IN THE TABLE. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 3 BIRTHS, RECORD ONLY THE LAST 3 BIRTHS).

	LAST BIRTH	NEXT-TO-LAST BIRTH	SECOND-FROM-LAST BIRTH
LINE NUMBER FROM Q. 216	☐☐	☐☐	☐☐
FROM Q. 216 AND Q. 220	NAME _____ ALIVE ☐ DEAD ☐	NAME _____ ALIVE ☐ DEAD ☐	NAME _____ ALIVE ☐ DEAD ☐
449 Do you have a card where (NAME'S) vaccinations are written down? IF YES: May I see it, please?	YES, SEEN.....1 (SKIP TO 451) YES, NOT SEEN.....2 (SKIP TO 453) NO CARD.....3	YES, SEEN.....1 (SKIP TO 451) YES, NOT SEEN.....2 (SKIP TO 453) NO CARD.....3	YES, SEEN.....1 (SKIP TO 451) YES, NOT SEEN.....2 (SKIP TO 453) NO CARD.....3
450 Did you ever have a vaccination card for (NAME)?	YES.....1 (SKIP TO 453) NO.....2	YES.....1 (SKIP TO 453) NO.....2	YES.....1 (SKIP TO 453) NO.....2
451 (1) COPY VACCINATION DATES FOR EACH VACCINE FROM THE CARD. (2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE RECORDED.	DAY MO YR	DAY MO YR	DAY MO YR
BCG	BCG	BCG	BCG
POLIO 0	P0	P0	P0
DPT 1	D1	D1	D1
DPT 2	D2	D2	D2
DPT 3	D3	D3	D3
POLIO 1	P1	P1	P1
POLIO 2	P2	P2	P2
POLIO 3	P3	P3	P3
MEASLES	MEA	MEA	MEA

		LAST BIRTH NAME ______	NEXT-TO-LAST BIRTH NAME ______	SECOND-FROM-LAST BIRTH NAME ______
452	Has (NAME) received any vaccinations that are not recorded on this card? RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, DPT 1-3, POLIO 0-3 AND/OR MEASLES VACCINE(S).	YES....................1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 451) (SKIP TO 455) NO....................2 DK....................8 (SKIP TO 455)	YES....................1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 451) (SKIP TO 455) NO....................2 DK....................8 (SKIP TO 455)	YES....................1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 451) (SKIP TO 455) NO....................2 DK....................8 (SKIP TO 455)
453	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases?	YES....................1 NO....................2 (SKIP TO 455) DK....................8	YES....................1 NO....................2 (SKIP TO 455) DK....................8	YES....................1 NO....................2 (SKIP TO 455) DK....................8
454	Please tell me if (NAME) (has) received any of the following vaccinations:			
	A BCG vaccination against tuberculosis, that is, an injection in the left shoulder that caused a scar?	YES....................1 NO....................2 DK....................8	YES....................1 NO....................2 DK....................8	YES....................1 NO....................2 DK....................8
	A vaccination against diphtheria, whooping cough and tetanus given as an injection? IF YES: How many times?	YES....................1 NO....................2 DK....................8 NUMBER OF TIMES........☐	YES....................1 NO....................2 DK....................8 NUMBER OF TIMES........☐	YES....................1 NO....................2 DK....................8 NUMBER OF TIMES........☐
	Polio vaccine, that is, drops in the mouth? IF YES: How many times?	YES....................1 NO....................2 DK....................8 NUMBER OF TIMES........☐	YES....................1 NO....................2 DK....................8 NUMBER OF TIMES........☐	YES....................1 NO....................2 DK....................8 NUMBER OF TIMES........☐
	IF YES: When was the first polio vaccine given -- just after birth or later?	JUST AFTER BIRTH.........1 LATER....................2 DK....................8	JUST AFTER BIRTH.........1 LATER....................2 DK....................8	JUST AFTER BIRTH.........1 LATER....................2 DK....................8
	An injection against measles?	YES....................1 NO....................2 DK....................8	YES....................1 NO....................2 DK....................8	YES....................1 NO....................2 DK....................8

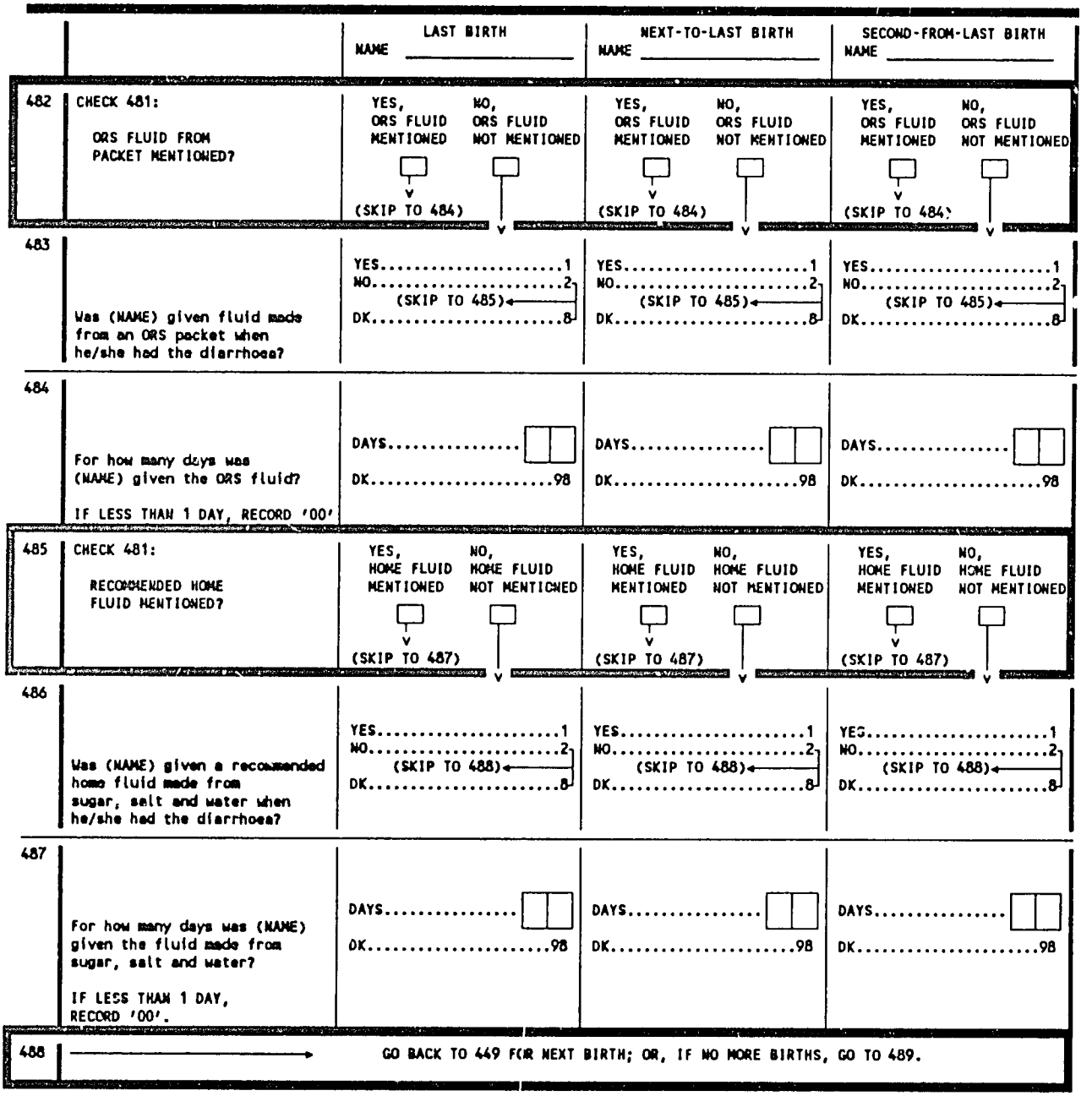
		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
455	Was a dose of vitamin A liquid ever given to (NAME) to protect him/her from night blindness?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
456	Did (NAME) ever have:	YES NO	YES NO	YES NO
	Whooping cough?	WHOOPING COUGH.... 1 2	WHOOPING COUGH.... 1 2	WHOOPING COUGH.... 1 2
	Measles?	MEASLES..... 1 2	MEASLES..... 1 2	MEASLES..... 1 2
	Polio?	POLIO..... 1 2	POLIO..... 1 2	POLIO..... 1 2
	Diphtheria?	DIPHTHERIA..... 1 2	DIPHTHERIA..... 1 2	DIPHTHERIA..... 1 2
	Chicken pox?	CHICKEN POX..... 1 2	CHICKEN POX..... 1 2	CHICKEN POX..... 1 2
	Rickets?	RICKETS..... 1 2	RICKETS..... 1 2	RICKETS..... 1 2
457	CHECK 220: CHILD ALIVE?	ALIVE ☐ DEAD ☐ (SKIP TO 459)	ALIVE ☐ DEAD ☐ (SKIP TO 459)	ALIVE ☐ DEAD ☐ (SKIP TO 459)
458	→ GO BACK TO 449 FOR NEXT BIRTH; OR, IF NO MORE BIRTHS, SKIP TO 489.			
459	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
460	Has (NAME) been ill with a cough at any time in the last 2 weeks?	YES.....1 NO.....2 (SKIP TO 464) DK.....8	YES.....1 NO.....2 (SKIP TO 464) DK.....8	YES.....1 NO.....2 (SKIP TO 464) DK.....8
461	Has (NAME) been ill with a cough in the last 24 hours?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8

		LAST BIRTH NAME ____	NEXT-TO-LAST BIRTH NAME ____	SECOND-FROM-LAST BIRTH NAME ____
462	For how many days (has the cough lasted/did the cough last)? IF LESS THAN 1 DAY, RECORD '00'	DAYS.............. [ ][ ]	DAYS.............. [ ][ ]	DAYS.............. [ ][ ]
463	When (NAME) was ill with a cough, did he/she breathe faster than usual with short, rapid breaths?	YES.....................1 NO......................2 DK......................8	YES.....................1 NO......................2 DK......................8	YES.....................1 NO......................2 DK......................8
464	CHECK 459 AND 460: FEVER OR COUGH?	"YES" IN EITHER 459 OR 460 [ ] OTHER [ ] →(SKIP TO 469)	"YES" IN EITHER 459 OR 460 [ ] OTHER [ ] →(SKIP TO 469)	"YES" IN EITHER 459 OR 460 [ ] OTHER [ ] →(SKIP TO 469)
465	Did you seek advice or treatment for the fever/cough?	YES.....................1 NO......................2 (SKIP TO 467)←	YES.....................1 NO......................2 (SKIP TO 467)←	YES.....................1 NO......................2 (SKIP TO 467)←
466	Where did you seek advice or treatment? Anywhere else? RECORD ALL MENTIONED.	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL..A PRIMARY HEALTH CENTRE...B SUB-CENTRE..............C MOBILE CLINIC...........D VILLAGE HEALTH GUIDE....E GOVERNMENT PARAMEDIC....F PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....G PHARMACY/DRUGSTORE......H PRIVATE DOCTOR..........I MOBILE CLINIC...........J COMMUNITY HEALTH WORKER.K OTHER PRIVATE SECTOR SHOP....................L TRADITIONAL PRACTITIONER...........M OTHER ____ N (SPECIFY)	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL..A PRIMARY HEALTH CENTRE...B SUB-CENTRE..............C MOBILE CLINIC...........D VILLAGE HEALTH GUIDE....E GOVERNMENT PARAMEDIC....F PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....G PHARMACY/DRUGSTORE......H PRIVATE DOCTOR..........I MOBILE CLINIC...........J COMMUNITY HEALTH WORKER.K OTHER PRIVATE SECTOR SHOP....................L TRADITIONAL PRACTITIONER...........M OTHER ____ N (SPECIFY)	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL..A PRIMARY HEALTH CENTRE...B SUB-CENTRE..............C MOBILE CLINIC...........D VILLAGE HEALTH GUIDE....E GOVERNMENT PARAMEDIC....F PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....G PHARMACY/DRUGSTORE......H PRIVATE DOCTOR..........I MOBILE CLINIC...........J COMMUNITY HEALTH WORKER.K OTHER PRIVATE SECTOR SHOP....................L TRADITIONAL PRACTITIONER...........M OTHER ____ N (SPECIFY)
467	Was anything given to treat the fever/cough?	YES.....................1 NO......................2 (SKIP TO 469)← DK......................8	YES.....................1 NO......................2 (SKIP TO 469)← DK......................8	YES.....................1 NO......................2 (SKIP TO 469)← DK......................8

		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
468	What was given to treat the fever/cough? Anything else? RECORD ALL MENTIONED.	INJECTION................A ANTIBIOTIC (PILL OR SYRUP).........B ANTIMALARIAL (PILL OR SYRUP).........C COUGH SYRUP..............D OTHER PILL OR SYRUP......E UNKNOWN PILL OR SYRUP....F HOME REMEDY/ HERBAL MEDICINE.........G OTHER________________H (SPECIFY)	INJECTION................A ANTIBIOTIC (PILL OR SYRUP).........B ANTIMALARIAL (PILL OR SYRUP).........C COUGH SYRUP..............D OTHER PILL OR SYRUP......E UNKNOWN PILL OR SYRUP....F HOME REMEDY/ HERBAL MEDICINE.........G OTHER________________H (SPECIFY)	INJECTION................A ANTIBIOTIC (PILL OR SYRUP).........B ANTIMALARIAL (PILL OR SYRUP).........C COUGH SYRUP..............D OTHER PILL OR SYRUP......E UNKNOWN PILL OR SYRUP....F HOME REMEDY/ HERBAL MEDICINE.........G OTHER________________H (SPECIFY)
469	Has (NAME) had diarrhoea in the last two weeks?	YES......................1 (SKIP TO 471) NO.......................2 DK.......................8	YES......................1 (SKIP TO 471) NO.......................2 DK.......................8	YES......................1 (SKIP TO 471) NO.......................2 DK.......................8
470	→	GO BACK TO 449 FOR NEXT BIRTH; OR, IF NO MORE BIRTHS, SKIP TO 489.		
471	Has (NAME) had diarrhoea in the last 24 hours?	YES......................1 NO.......................2 DK.......................8	YES......................1 NO.......................2 DK.......................8	YES......................1 NO.......................2 DK.......................8
472	For how many days (has the diarrhoea lasted/did the diarrhoea last)? IF LESS THAN 1 DAY, RECORD '00'	DAYS...............[ ][ ]	DAYS...............[ ][ ]	DAYS...............[ ][ ]
473	Was there any blood in the stools?	YES......................1 NO.......................2 DK.......................8	YES......................1 NO.......................2 DK.......................8 (SKIP TO 477)	YES......................1 NO.......................2 DK.......................8 (SKIP TO 477)
474	CHECK 430/435: LAST CHILD STILL BREASTFEEDING?	YES [ ] NO [ ] (SKIP TO 477)		
475	During (NAME)'s diarrhoea, did you change the frequency of breastfeeding?	YES......................1 NO.......................2 (SKIP TO 477)		
476	Did you <u>increase</u> the number of breastfeeds or <u>reduce</u> them, or did you <u>stop completely</u>?	INCREASED................1 REDUCED..................2 STOPPED COMPLETELY.......3		

37

		LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
477	(Aside from breastmilk) Was he/she given the same amount of fluids to drink as before the diarrhoea, or more, or less?	SAME....1 MORE....2 LESS....3 DK....8	SAME....1 MORE....2 LESS....3 DK....8	SAME....1 MORE....2 LESS....3 DK....8
478	Did you seek advice or treatment for the diarrhoea?	YES....1 NO....2 (SKIP TO 480)←	YES....1 NO....2 (SKIP TO 480)←	YES....1 NO....2 (SKIP TO 480)←
479	Where did you seek advice or treatment? Anywhere else? RECORD ALL MENTIONED.	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL..A PRIMARY HEALTH CENTRE...B SUB-CENTRE....C MOBILE CLINIC....D VILLAGE HEALTH GUIDE....E GOVERNMENT PARAMEDIC....F PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....G PHARMACY/DRUGSTORE....H PRIVATE DOCTOR....I MOBILE CLINIC....J COMMUNITY HEALTH WORKER.K OTHER PRIVATE SECTOR SHOP....L TRADITIONAL PRACTITIONER....M OTHER ________ N (SPECIFY)	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL..A PRIMARY HEALTH CENTRE...B SUB-CENTRE....C MOBILE CLINIC....D VILLAGE HEALTH GUIDE....E GOVERNMENT PARAMEDIC....F PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....G PHARMACY/DRUGSTORE....H PRIVATE DOCTOR....I MOBILE CLINIC....J COMMUNITY HEALTH WORKER.K OTHER PRIVATE SECTOR SHOP....L TRADITIONAL PRACTITIONER....M OTHER ________ N (SPECIFY)	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL..A PRIMARY HEALTH CENTRE...B SUB-CENTRE....C MOBILE CLINIC....D VILLAGE HEALTH GUIDE....E GOVERNMENT PARAMEDIC....F PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....G PHARMACY/DRUGSTORE....H PRIVATE DOCTOR....I MOBILE CLINIC....J COMMUNITY HEALTH WORKER.K OTHER PRIVATE SECTOR SHOP....L TRADITIONAL PRACTITIONER....M OTHER ________ N (SPECIFY)
480	Was anything given to treat the diarrhoea?	YES....1 NO....2 (SKIP TO 482)← DK....8	YES....1 NO....2 (SKIP TO 482)← DK....8	YES....1 NO....2 (SKIP TO 482)← DK....8
481	What was given to treat the diarrhoea? Anything else? RECORD ALL MENTIONED.	ORS FLUID FROM PACKET....A RECOMMENDED HOME FLUID...B ANTIBIOTIC (PILL OR SYRUP)....C OTHER PILL OR SYRUP....D INJECTION....E (I.V.) INTRAVENOUS....F HOME REMEDIES/ HERBAL MEDICINES....G OTHER ________ H (SPECIFY)	ORS FLUID FROM PACKET....A RECOMMENDED HOME FLUID...B ANTIBIOTIC (PILL OR SYRUP)....C OTHER PILL OR SYRUP....D INJECTION....E (I.V.) INTRAVENOUS....F HOME REMEDIES/ HERBAL MEDICINES....G OTHER ________ H (SPECIFY)	ORS FLUID FROM PACKET....A RECOMMENDED HOME FLUID...B ANTIBIOTIC (PILL OR SYRUP)....C OTHER PILL OR SYRUP....D INJECTION....E (I.V.) INTRAVENOUS....F HOME REMEDIES/ HERBAL MEDICINES....G OTHER ________ H (SPECIFY)


LAST BIRTH
NAME
NEXT-TO-LAST BIRTH
NAME
SECOND-FROM-LAST BIRTH
NAME
482
CHECK 481:
ORS FLUID FROM PACKET MENTIONED?
YES, ORS FLUID MENTIONED
NO, ORS FLUID NOT MENTIONED
(SKIP TO 484)
483
Was (NAME) given fluid made from an ORS packet when he/she had the diarrhoea?
YES.....1
NO.....2
(SKIP TO 485)
DK.....8
484
For how many days was (NAME) given the ORS fluid?
IF LESS THAN 1 DAY, RECORD '00'
DAYS.....
DK.....98
485
CHECK 481:
RECOMMENDED HOME FLUID MENTIONED?
YES, HOME FLUID MENTIONED
NO, HOME FLUID NOT MENTIONED
(SKIP TO 487)
486
Was (NAME) given a recommended home fluid made from sugar, salt and water when he/she had the diarrhoea?
YES.....1
NO.....2
(SKIP TO 488)
DK.....8
487
For how many days was (NAME) given the fluid made from sugar, salt and water?
IF LESS THAN 1 DAY, RECORD '00'.
DAYS.....
DK.....98
488
GO BACK TO 449 FOR NEXT BIRTH; OR, IF NO MORE BIRTHS, GO TO 489.

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
489	CHECK 481 AND 483 (ALL COLUMNS): ORS FLUID FROM PACKET GIVEN TO ANY CHILD → 492 ORS FLUID FROM PACKET NOT GIVEN TO ANY CHILD OR 481 AND 483 NOT ASKED →		
490	Have you ever heard of a special product called ORS you can get for the t[illegible]ent of diarrhoea?	YES.....1 → 492 NO.....2	
491	Have you ever seen a packet like one of these before? SHOW BOTH THE W.H.O. AND A COMMERCIAL PACKET.	YES.....1 NO.....2 → 496	
492	Have you ever prepared a solution with one of these packets to treat diarrhoea for yourself or someone else? SHOW BOTH THE W.H.O. AND A COMMERCIAL PACKET.	YES.....1 NO.....2 → 495	
493A	The last time you prepared the ORS, did you use the free W.H.O. packet(SHOW THE W.H.O. PACKET) or an alternative commercial packet (SHOW THE COMMERCIAL PACKET)?	FREE WHO PACKET.....1 ALTERNATIVE COMMERCIAL PACKET....2	
493	The last time you prepared the ORS, did you prepare the whole packet at once or only part of the packet?	WHOLE PACKET AT ONCE.....1 PART OF PACKET.....2 DK.....8 → 495	
494	How much water did you use to prepare ORS the last time you made it?	200 ML. GLASSES.....1 ☐☐ 1\2 LITER.....901 1 LITER.....902 1 1\2 LITERS.....903 2 LITERS.....904 FOLLOWED PACKAGE INSTRUCTIONS.905 OTHER_____906 (SPECIFY) DK.....998	
495	Where can you get the ORS packet? PROBE: Anywhere else? RECORD ALL PLACES MENTIONED.	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL.....A PRIMARY HEALTH CENTRE.....B SUB-CENTRE.....C MOBILE CLINIC.....D VILLAGE HEALTH GUIDE.....E GOVERNMENT PARAMEDIC .....F PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....G PHARMACY/DRUGSTORE.....H PRIVATE DOCTOR.....I MOBILE CLINIC.....J COMMUNITY HEALTH WORKER.....K OTHER PRIVATE SECTOR SHOP.....L TRADITIONAL PRACTITIONER.....M OTHER_____N (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
496	CHECK 481 AND 486 (ALL COLUMNS): HOME-MADE FLUID GIVEN TO ANY CHILD ☐ HOME-MADE FLUID NOT GIVEN TO ANY CHILD OR 481 AND 486 NOT ASKED ☐ → 501		
497	Where did you learn to prepare the recommended home fluid made from sugar, salt and water given to (NAME) when he/she had diarrhoea?	PUBLIC SECTOR GVT/MUNICIPAL HOSPITAL.....11 PRIMARY HEALTH CENTRE.....12 SUB-CENTRE.....13 MOBILE CLINIC.....14 VILLAGE HEALTH GUIDE.....15 GOVERNMENT PARAMEDIC .....16 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....21 PHARMACY/DRUGSTORE.....22 PRIVATE DOCTOR.....23 MOBILE CLINIC.....24 COMMUNITY HEALTH WORKER.....25 OTHER PRIVATE SECTOR SHOP.....31 TRADITIONAL PRACTITIONER.....32 MASS MEDIA TELEVISION.....41 RADIO.....42 PRINTED MATERIAL.....43 OTHER_____51 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
501	CHECK 107: CURRENTLY MARRIED ☐ → 502 WIDOWED, DIVORCED, SEPARATED ☐		→ 514
502	CHECK 313: NEITHER STERILIZED ☐ → 503 HE OR SHE STERILIZED ☐		→ 508
503	CHECK 227: NOT PREGNANT OR UNSURE ☐ → 503a PREGNANT ☐ → 503b 503a: 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? 503b: Now I have some questions about the future. After the child you are expecting, 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 CAN'T GET PREGNANT.....3 UP TO GOD.....4 UNDECIDED OR DK.....8	2,3,4 → 510
504	Would you prefer your next child to be a boy or a girl or doesn't it matter?	BOY.....1 GIRL.....2 DOESN'T MATTER.....3 UP TO GOD.....4	
505	CHECK 227: NOT PREGNANT OR UNSURE ☐ → 505a PREGNANT ☐ → 505b 505a: How long would you like to wait from now before the birth of (a/another) child? 505b: How long would you like to wait after the birth of the child you are expecting before the birth of another child?	MONTHS.....1 ☐☐ YEARS.....2 ☐☐ SOON/NOW.....994 SAYS SHE CAN'T GET PREGNANT...995 OTHER _____ 996 (SPECIFY) DK.....998	1,2,994 → 510 995 → 510

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
506	CHECK 220 AND 227: HAS LIVING CHILD(REN) OR PREGNANT?	YES ☐ NO ☐	→510
507	CHECK 227: NOT PREGNANT OR UNSURE ☐ → How old would you like your youngest child to be when your next child is born? PREGNANT ☐ → How old would you like the child you are expecting to be when your next child is born?	AGE OF CHILD YEARS..... ☐☐ DK.....98	→510
508	Do you regret that (you/your husband) had the operation not to have any (more) children?	YES.....1 NO.....2	→514
509	Why do you regret it?	RESPONDENT WANTS ANOTHER CHILD..1 WANTS TO REPLACE CHILD WHO DIED.2 HUSBAND WANTS ANOTHER CHILD.....3 SIDE EFFECTS.....4 OTHER _____ (SPECIFY) 5	→514
510	Do you think that your husband approves or disapproves of couples using a method to avoid a pregnancy?	APPROVES.....1 DISAPPROVES.....2 DK.....8	
511	How often have you talked to your husband about family planning in the past year?	NEVER.....1 ONCE OR TWICE.....2 MORE OFTEN.....3	
512	Have you and your husband ever discussed the number of children you would like to have?	YES.....1 NO.....2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
513	Do you think your husband wants the <u>same</u> number of children that you want, or does he want <u>more</u> or <u>fewer</u> than you want?	SAME NUMBER.....1 MORE CHILDREN.....2 FEWER CHILDREN.....3 DK.....8	
514	How long should a couple wait before starting sexual intercourse after the birth of a baby?	DAYS.....1 ☐☐ MONTHS.....2 ☐☐ YEARS.....3 ☐☐ UP TO COUPLE.....995 OTHER_____ (SPECIFY) 996	
515	In general, do you approve or disapprove of couples using a method to avoid getting pregnant?	APPROVE.....1 DISAPPROVE.....2	
516	CHECK 220: HAS LIVING CHILD(REN) ☐ → 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? NO LIVING CHILDREN ☐ → If you could choose exactly the number of children to have in your whole life, how many would that be? RECORD SINGLE NUMBER OR OTHER ANSWER.	NUMBER..... ☐☐ OTHER ANSWER_____ (SPECIFY) 96 → 518	
517	How many of these children would you like to be boys and how many would you like to be girls?	BOYS GIRLS EITHER NUMBER... ☐☐ ☐☐ ☐☐ OTHER_____ (SPECIFY) 999996	
518	In your opinion, what is the ideal interval between the birth of one child and the birth of the next child?	MONTHS.....1 ☐☐ YEARS.....2 ☐☐ OTHER_____ (SPECIFY) 996	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
519	Now I have a few questions about a very important topic. Have you heard of an illness called AIDS?	YES.....1 NO.....2	→601
520	From which sources of information or persons have you heard about AIDS? RECORD ALL MENTIONED	RADIO.....A TV.....B NEWS PAPERS.....C MAGAZINES.....D SLOGANS/PAMPHLETS/POSTERS.....E HEALTH WORKERS.....F SCHOOL TEACHERS.....G COMMUNITY MEETINGS.....H FRIENDS/RELATIVES.....I OTHER _____ J (SPECIFY)	
521	How is AIDS transmitted? RECORD ALL MENTIONED	SEXUAL INTERCOURSE.....A HOMOSEXUAL INTERCOURSE.....B HETEROSEXUAL INTERCOURSE.....C NEEDLES/BLADES/SKIN PUNCTURE....D MOTHER TO CHILD.....E TRANSFUSION OF INFECTED BLOOD...F OTHER _____ G (SPECIFY) DON'T KNOW.....H	
522	Do you think that you can get AIDS from:	YES NO	
	shaking hands with someone who has AIDS?	HAND SHAKING.....1 2	
	hugging someone who has AIDS?	HUGGING.....1 2	
	kissing someone who has AIDS?	KISSING.....1 2	
	wearing the clothes of someone who has AIDS?	SHARING CLOTHES.....1 2	
	sharing eating utensils with someone who has AIDS?	SHARING EATING UTENSILS....1 2	
	stepping on the urine or stool of someone with AIDS?	STEPPING ON URINE/STOOL....1 2	
	mosquito, flea or bedbug bites?	MOSQUITO/FLEA/BEDBUG BITES.1 2	
523	Is it possible for a healthy looking person to be infected with the AIDS virus?	YES.....1 NO.....2 DK.....8	
524	Do you think AIDS is a curable disease?	YES.....1 NO.....2 DK.....8	
525	In your knowledge, is there any vaccine to prevent AIDS?	YES.....1 NO.....2 DK.....8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
526	How do you think one can avoid AIDS? RECORD ALL MENTIONED	USING CONDOMS DURING EACH SEXUAL INTERCOURSE.....A SAFE SEX.....B CHECKING BLOOD PRIOR TO TRANSFUSION.....C STERILIZING NEEDLES AND SYRINGES FOR INJECTION.....D AVOIDING PREGNANCY WHEN HAVING AIDS VIRUS.....E OTHER ——— F (SPECIFY) DK.....G	
527	Is it possible for a woman who has the AIDS virus to give birth to a child with the AIDS virus?	YES.....1 NO.....2 DK.....8	
528	What do you suggest the government should do for the people who are suffering from AIDS? RECORD ALL MENTIONED	PROVIDE MEDICAL TREATMENT.....A HELP RELATIVES PROVIDE CARE.....B ISOLATE/QUARANTINE/JAIL.....C NOT TO BE INVOLVED.....D OTHER ——— E (SPECIFY) DK.....F	

SECTION 6. HUSBAND'S BACKGROUND AND WOMAN'S WORK

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
601	CHECK 107: CURRENTLY MARRIED ☐ → ASK QUESTIONS ABOUT CURRENT OR MOST RECENT HUSBAND. WIDOWED / DIVORCED / SEPARATED ☐		→603
602	How old was your husband on his last birthday?	AGE IN COMPLETED YEARS..... ☐☐	
603	Did your (last) husband ever attend school?	YES.....1 NO.....2	→606
604	What is the highest grade he completed?	GRADE..... ☐☐	
605	CHECK 604: GRADE 0-5 ☐	GRADE 6-12 ☐ GRADE 13+ ☐	→608 →607
606	(Can/Could) he read and write?	YES.....1 NO.....2	→608
607	What is the highest degree he obtained?	DEGREE NOT COMPLETED.....01 NON-TECHNICAL DEGREE BACHELOR'S DEGREE.....02 MASTER'S DEGREE.....03 Ph.D.....04 TECHNICAL DEGREE BACHELOR'S DEGREE.....05 MASTER'S DEGREE.....06 TECHNICAL DIPLOMA/CERTIFICATE NOT EQUIVALENT TO DEGREE.....07 NON-TECHNICAL DIPLOMA/CERTIF. NOT EQUIVALENT TO DEGREE.....08 OTHER DEGREE_____09 (SPECIFY)	

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
608	What kind of work does (did) your (last) husband mainly do?	☐☐	
609	CHECK 608: WORKS (WORKED) IN AGRICULTURE ☐ ↓ DOES (DID) NOT WORK IN AGRICULTURE ☐		→611
610	(Does/did) your husband work mainly on his own land or family land, or (does/did) he rent land, or (does/did) he work on someone else's land?	HIS/FAMILY LAND.....1 RENTED LAND.....2 SOMEONE ELSE'S LAND.....3	
611	Aside from your own housework, are you currently working?	YES.....1 NO.....2	→613
612	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?	YES.....1 NO.....2	→620
613	What is your occupation, that is, what kind of work do you do?	☐☐	
614	In your current work, do you work on the family farm/ business, are you employed by someone else, or are you self-employed?	FAMILY FARM/BUSINESS.....1 EMPLOYED BY SOMEONE ELSE.....2 SELF-EMPLOYED.....3	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
615	Do you earn cash for this work? PROBE: Do you make money for working?	YES.....1 NO.....2	
616	Do you do this work at home or away from home?	HOME.....1 AWAY.....2	
617	CHECK 219/220/222: HAS CHILD BORN SINCE JAN. 1988 AND LIVING AT HOME?	YES ☐ NO ☐ → 620	
618	While you are working, do you usually have (NAME OF YOUNGEST CHILD AT HOME) with you, sometimes have him/her with you, or never have him/her with you?	USUALLY.....1 → 620 SOMETIMES.....2 NEVER.....3	
619	Who usually takes care of (NAME OF YOUNGEST CHILD AT HOME) while you are working?	HUSBAND.....01 OLDER CHILD(REN).....02 OTHER RELATIVES.....03 NEIGHBORS.....04 FRIENDS.....05 SERVANTS/HIRED HELP.....06 CHILD IS IN SCHOOL.....07 INSTITUTIONAL CHILDCARE.....08 OTHER_____09 (SPECIFY)	
620	RECORD THE TIME	HOUR..... ☐☐ MINUTES..... ☐☐	
621	PRESENCE OF OTHERS DURING MOST OF THE INTERVIEW TIME.	YES NO CHILDREN UNDER 10.....1 2 HUSBAND.....1 2 MOTHER-IN-LAW.....1 2 OTHER MALES.....1 2 OTHER FEMALES.....1 2	

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SECTION 7. WEIGHT

701	CHECK 219/220:	
	ONE OR MORE LIVING CHILDREN BORN SINCE JAN. 1988 ☐ ↓	NO LIVING CHILDREN BORN SINCE JAN. 1988 ☐ → END

INTERVIEWER: IN 702 (COLUMNS 1-3) RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1988 AND STILL ALIVE.
IN 703 AND 704 RECORD THE NAME AND BIRTH DATE FOR ALL LIVING CHILDREN BORN SINCE JANUARY 1988.
IN 705 RECORD THE WEIGHT OF THE LIVING CHILDREN.
(NOTE:IF THERE ARE MORE THAN 3 LIVING CHILDREN BORN SINCE JANUARY 1988, USE ADDITIONAL FORMS).

	[1] YOUNGEST LIVING CHILD	[2] NEXT-TO-YOUNGEST LIVING CHILD	[3] SECOND-TO-YOUNGEST LIVING CHILD
702 LINE NO. FROM Q.216	☐☐	☐☐	☐☐
703 NAME FROM Q.216 FOR CHILDREN	(NAME) _____	(NAME) _____	(NAME) _____
704 DATE OF BIRTH FROM Q.219 FOR CHILDREN, COPY MONTH AND YEAR OF BIRTH AND ASK FOR DAY OF BIRTH	DAY..... ☐☐ MONTH.... ☐☐ YEAR..... ☐☐	DAY..... ☐☐ MONTH.... ☐☐ YEAR..... ☐☐	DAY..... ☐☐ MONTH.... ☐☐ YEAR..... ☐☐
705 WEIGHT (in kilograms)	☐☐.☐	☐☐.☐	☐☐.☐
706 DATE WEIGHED	DAY..... ☐☐ MONTH.... ☐☐ YEAR..... ☐☐	DAY..... ☐☐ MONTH.... ☐☐ YEAR..... ☐☐	DAY..... ☐☐ MONTH.... ☐☐ YEAR..... ☐☐
707 RESULT	CHILD WEIGHED..1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD REFUSED..4 MOTHER REFUSED.5 OTHER.....6 _____ (SPECIFY)	CHILD WEIGHED..1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD REFUSED..4 MOTHER REFUSED.5 OTHER.....6 _____ (SPECIFY)	CHILD WEIGHED..1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD REFUSED..4 MOTHER REFUSED.5 OTHER.....6 _____ (SPECIFY)
708 NAME OF MEASURER: _____ ☐☐		NAME OF ASSISTANT: _____ ☐☐	

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INTERVIEWER'S OBSERVATIONS
(To be filled in after completing interview)

Comments About Respondent: _____

_____

_____

_____

Comments on Specific Questions: _____

_____

_____

_____

Any Other Comments: _____

_____

SUPERVISOR'S OBSERVATIONS

_____

_____

_____

_____

_____

_____

Name of Supervisor: _____ Date: _____

EDITOR'S OBSERVATIONS

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_____

NATIONAL FAMILY HEALTH SURVEY
(MCH AND FAMILY PLANNING)
VILLAGE SHCHEDULE

CONFIDENTIAL
For Research
Purpose only

INDIA 1992-1993

IDENTIFICATION	
NAME OF STATE_____	
PSU NUMBER.....	
NAME OF DISTRICT_____	
NAME OF TEHSIL/TALUK_____	
NAME OF THE VILLAGE_____	
TOTAL POPULATION OF THE VILLAGE ACCORDING TO THE 1981 CENSUS.....	

1. Current population of the village: [ ][ ][ ][ ][ ]

2. Area of the village (in Hectares): [ ][ ][ ]

3. Total number of households in the village: [ ][ ][ ]

4. Total arable land in the village (in Hectares):
   (1) Irrigated land.....1 [ ][ ]
   (2) Non-irrigated land.....2 [ ][ ]

5. Main sources of irrigation in the village:
   RAIN WATER.....A
   TANK/POND.....B
   STREAM/RIVER.....C
   CANAL.....D
   WELL.....E
   TUBE WELL.....F
   OTHERS_____G
   (SPECIFY)

6. Distance from the nearest town (in kilometers): [ ][ ]

7. Distance from the Block Headquarters (in kilometers): [ ][ ]

8. Distance from the Tehsil Headquarters (in kilometers): [ ][ ]

9. Distance from the nearest railway station (in kilometers): [ ][ ]

10. Distance from the nearest bus stand (in kilometers): [ ][ ]

11. Whether the village is connected by all-weather road:
    YES.....1
    (SKIP TO 13)
    NO.....2

12. Distance from the nearest pucca road (in kilometers): [ ][ ]

13. Main sources of drinking water in the village:
    PIPED WATER.....A
    OPEN WELL.....B
    TUBE WELL/BORE WELL....C
    RIVER/SPRING/POND/LAKE.D
    OTHERS_____E
    (SPECIFY)

14. Is the village electrified? YES.....1

NO.....2

15. Educational facilities in the village:

Facilities	Whether available in the village	Distance from the nearest facility available (in Kms)
Primary School	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Middle School	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Secondary School	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Higher Secondary School	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
College	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Adult Education Classes	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Anganawadi	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Jana Sikshana Nilayam	YES.....1 NO.....2	☐☐

16. Health Facilities:

Facilities	Whether available in the village	Distance from the nearest facility available (in Kms)
Primary Health Centre	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Sub-Centre	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Government Hospital	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Hospital by NGO	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Private Hospital	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Dispensary/Clinic	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Village Health Guide	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Trained Birth Attendent	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Family Planning/ Health by NGO	YES.....1 (GO TO NEXT FACILITY) ◄ NO.....2	☐☐
Mobile Health Unit/ Visit	YES.....1 NO.....2	☐☐

17. Total number of Television sets in the Village: ☐☐

18. The type of drainage facility in the village: UNDERGROUND DRAINAGE....1
OPEN DRAINAGE.....2
NO.....3

19. Total number of tractors in the village: ☐☐

20. Total number of thrashers in the village: ☐☐

21. Total number of Gobar gas plants in the village: ☐☐

22. Total number of cars in the village: ☐☐

23. Total number of vans/matadors in the village: ☐☐

24. Total number of trucks in the village: ☐☐

25. Total number of motor cycles/scooters in the village: ☐☐

26. Other facilities:

Facilities	Whether available in the village	
	YES	NO
Bank	1	2
Credit cooperative society	1	2
Agricultural cooperative society	1	2
Fishermen's cooperative society	1	2
Milk cooperative society	1	2
Post Office	1	2
Market / Shop	1	2
Fair price shop	1	2
Cinema house/Tent	1	2
Pharmacy / Medical shop	1	2
Mahila Mandal	1	2
Youth club	1	2

27. Did the village experience any natural calamity during last two years?

YES.....1
NO.....2
(SKIP TO 29)

28. What was the nature of the calamity?

FLOOD.....A

DROUGHT.....B

CYCLONE.....C

EARTH QUAKE.....D

ANY OTHER_____E
(SPECIFY)

29. Major epidemics and diseases in the village during the last one year:

1. _____
2. _____
3. _____
4. _____

30. Mass media / other educational activities for Health and Family Welfare carried out during the last one year in the village:

1. Number of film shows held: ☐☐
2. Number of exhibitions held: ☐☐
3. Number of drama / song performances held: ☐☐
4. Number of group meetings held: ☐☐
5. Number of times family welfare/health worker visited the village in a month: ☐☐

31. Any family welfare / health posters distributed?

YES.....1
NO.....2

32. Any Leader's Orientation Training Camp held?

YES.....1
NO.....2
(SKIP TO 34)

33. Number of local leaders trained at the camp: ☐☐

34. Rural Development Programmes :

Programme	Whether there are any benificiaries in the village:	Total number of benificiaries
Integrated Rural Development Programme (IRDP)	YES.....1 NO.....2 (GO TO NEXT PROGRAMME)	☐☐
National Rural Employment Programme (NREP)	YES.....1 NO.....2 (GO TO NEXT PROGRAMME)	☐☐
Training Rural Youth for Self Employment (TRYSEM)	YES.....1 NO.....2 (GO TO NEXT PROGRAMME)	☐☐
Employment Guarantee Scheme	YES.....1 NO.....2	☐☐

35. Major sources of information for filling in the Village Schedule: (RECORD ALL THE SOURCES)

Sarpanch.....A
Patwari.....B
Gram Sevak.....C
School Teacher.....D
Health personnel.....E
Others _____ F
(Specify)

36. Any other relevant comments:

_____

_____

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