

PN-ACP-326

NATIONAL FAMILY HEALTH SURVEY (NFHS-2)

INDIA

1998-99

GOA

**International Institute for Population Sciences
Mumbai, India**

**MEASURE DHS+, ORC MACRO
Calverton, Maryland, USA**

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For additional information about the National Family Health Survey (NFHS-2), please contact:

**International Institute for Population Sciences
Govandi Station Road, Deonar, Mumbai-400 088
Telephone: 5564883, 5563254, 5563255, 5563256
Fax: 5563257
E-mail: iipsnfhs@vsnl.com
Website: <http://www.nfhsindia.org>**

NFHS-2 data sets for this state can be obtained from the website listed above

World Summit for Children Indicators: Goa, 1999

BASIC INDICATORS

Childhood mortality	Infant mortality rate	37 per 1,000
	Under-five mortality rate	47 per 1,000
Childhood malnutrition	Percent stunted (children 0–35 months)	18.1
	Percent wasted (children 0–35 months)	13.1
	Percent underweight (children 0–35 months)	28.6
Clean water supply	Percent of households within 15 minutes of safe water supply ¹	63.6
Sanitary excreta disposal	Percent of households with flush toilet	38.0
Basic education	Percent of women age 15–49 with completed primary education	72.1
	Percent of men age 15–49 with completed primary education	82.0
	Percent of girls age 6–12 attending school	93.9
	Percent of boys age 6–12 attending school	97.5
	Percent of women age 15–49 who are literate	80.9
Children in especially difficult situations	Percent of children age 0–14 who live in single adult households	4.2

SUPPORTING INDICATORS

Birth spacing	Percent of births within 24 months of a previous birth	23.0
Safe motherhood	Percent of births with medical antenatal care	99.0
	Percent of births with antenatal care in first trimester	73.4
	Percent of births with medical assistance at delivery	90.8
	Percent of births in a medical facility	90.8
	Percent of births at high risk	26.8
Family planning	Contraceptive prevalence rate (any method, currently married women)	47.5
	Percent of currently married women with an unmet need for family planning	17.1
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	11.7
Maternal nutrition	Percent of women with low body mass index (BMI)	27.1
Low birth weight	Percent of births with low birth weight (of those reporting a numeric weight)	25.3
Iodized salt intake	Percent of households that use iodized salt (at least 15 ppm)	41.9
Vaccinations	Percent of children whose mothers received tetanus toxoid vaccinations during pregnancy	97.5
	Percent of children 12–23 months with measles vaccination	84.3
	Percent of children 12–23 months fully vaccinated	82.6
Diarrhoea control	Percent of children with diarrhoea in the preceding 2 weeks who received ORS, sugar-salt-water solution, or gruel	68.6
Acute respiratory infection	Percent of children with acute respiratory infection in the preceding 2 weeks seen by medical personnel	98.2

¹Water from pipes, hand pump, covered well, or tanker truck

CONTRIBUTORS

**T.K. Roy
Donna Espeut
B.M. Ramesh
G. Rama Rao
Sunita Kishor
Rajeshri Chitanand
Rajib Acharya**

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PREFACE

The success of the first National Family Health Survey, conducted in 1992–93, in creating an important demographic and health database in India has paved the way for repeating the survey. The second National Family Health Survey (NFHS-2), undertaken in 1998–99, is designed to strengthen the database further and facilitate implementation and monitoring of population and health programmes in the country. As in the earlier survey, the principal objective of NFHS-2 is to provide state and national estimates of fertility, the practice of family planning, infant and child mortality, maternal and child health, and the utilization of health services provided to mothers and children. In addition, the survey provides indicators of the quality of health and family welfare services, women's reproductive health problems, and domestic violence, and includes information on the status of women, education, and the standard of living.

Another feature of NFHS-2 is measurement of the nutritional status of women. Height and weight measurements, which were available only for young children in the earlier survey, were extended to cover all eligible women in NFHS-2. In addition, ever-married women and their children below age three had their blood tested for the level of haemoglobin, using the HemoCue instrument. Through these blood tests, for the first time the survey provides information on the prevalence of anaemia throughout India. In two metropolitan cities, Delhi and Mumbai, a further test was done for children below age three to measure the lead content in their blood. The survey also measured the extent to which households in India use cooking salt that has been fortified with iodine.

The NFHS-2 survey was funded by the United States Agency for International Development (USAID) through ORC Macro, USA. UNICEF provided additional financial support for the nutritional components of the survey. The survey is the outcome of the collaborative efforts of many organizations. The International Institute for Population Sciences (IIPS) was designated as the nodal agency for this project by the Ministry of Health and Family Welfare, Government of India, New Delhi. Thirteen reputed field organizations (FOs) in India, including five Population Research Centres, were selected to carry out the houselisting operation and data collection for NFHS-2. The field organization for Goa was the Population Research Centre, JSS Institute of Economic Research, Dharwad. ORC Macro, Calverton, Maryland, USA, and the East-West Center, Honolulu, Hawaii, USA, provided technical assistance for all survey operations.

The NFHS-2 survey covered a representative sample of more than 90,000 eligible women age 15–49 from 26 states that comprise more than 99 percent of India's population. The data collection was carried out in two phases, starting in November 1998 and March 1999. The survey provides state-level estimates of demographic and health parameters as well as data on various socioeconomic and programmatic factors that are critical for bringing about desired changes in India's demographic and health situation. The survey provides urban and rural estimates for most states, regional estimates for five states (Bihar, Jammu and Kashmir, Madhya Pradesh, Rajasthan, and Uttar Pradesh), separate estimates for three metro cities (Chennai, Kolkata, and Mumbai), and estimates for slum areas in Mumbai.

The survey used uniform questionnaires, sample designs, and field procedures to facilitate comparability of the data and to achieve a high level of data quality. Preliminary reports

with selected results were prepared earlier for each state and presented to policymakers and programme administrators responsible for improving health and family welfare programmes in most states.

The final state reports are based on a standard tabulation plan developed at a workshop held in Kodaikanal on 15–17 January 1999. IIPS finalized the tabulation plan according to the recommendations of the NFHS-2 Technical Advisory Committee and produced the tables and figures for the final reports. In most states, the final state reports were written by representatives of the Population Research Centres, faculty members from IIPS, representatives from ORC Macro and the East-West Center, and reputed researchers from other organizations in the field of population and health in India. Each report has been reviewed by an Indian expert in the field of population sciences.

We are happy to present the final NFHS-2 state report for Goa, which was covered in the second phase of the survey. We hope that the report will provide helpful insights into the changes that are taking place in the state and will provide policymakers and programme managers with up-to-date estimates of indicators that can be used for effective management of health and family welfare programmes, with an emphasis on reproductive health dimensions. The report should also contribute to the knowledge of researchers and analysts in the fields of population, health, and nutrition.

T.K. Roy
Director
International Institute for
Population Sciences
Mumbai

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The second National Family Health Survey was successfully completed due to the efforts and involvement of numerous organizations and individuals at different stages of the survey. We would like to thank everyone who was involved in the survey and made it a success.

First of all, we are grateful to the Ministry of Health and Family Welfare, Government of India, New Delhi, for its overall guidance and support during the project. Mr. Y.N. Chaturvedi and Mr. K.S. Sugathan, the then Secretary and Joint Secretary, respectively, at the Department of Family Welfare deserve special thanks. They initiated the project and designated the International Institute for Population Sciences (IIPS) as the nodal agency for the survey. They also formed the Steering Committee, the Administrative and Financial Management Committee, and the Technical Advisory Committee for the smooth and efficient functioning of the project. Special thanks are due to Mr. A.R. Nanda, the present Secretary of the Department of Family Welfare, who continued to take an active interest in the project and provided timely guidance and support. The contributions of Mr. Vijay Singh, Joint Secretary (FA), Ms. Meenakshi Dutta Ghosh, Joint Secretary (S), Mr. Gautam Basu, Joint Secretary (RCH), Mr. P.K. Saha, Chief Director (S), and Dr. K.V. Rao, Chief Director (S), are acknowledged with gratitude.

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Dr. K.B. Pathak was the Director of IIPS during the development of the project and throughout the first phase of data collection. His immense interest and great assistance to NFHS-2 are gratefully acknowledged. We also acknowledge the invaluable contribution and continuing interest of Dr. Arvind Pandey, who helped coordinate NFHS-2 for most of the project period.

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Last but not the least, credit goes to the 1,246 ever-married women of Goa and the household respondents who spent their time and responded to the rather lengthy questionnaires with tremendous patience and without any expectation from NFHS-2.

T.K. Roy
Sumati Kulkarni
Kamla Gupta
Parveen Nangia

FACT SHEET, GOA

NATIONAL FAMILY HEALTH SURVEY, 1999

Sample Size

Households.....	1,599
Ever-married women age 15-49	1,246

Characteristics of Households

Percent with electricity.....	93.5
Percent within 15 minutes of safe water supply ¹	63.6
Percent with flush toilet	38.0
Percent with no toilet facility	41.1
Percent using govt. health facilities for sickness	22.2
Percent using iodized salt (at least 15 ppm).....	41.9

Characteristics of Women²

Percent urban	41.6
Percent illiterate	28.6
Percent completed high school and above.....	31.7
Percent Hindu.....	66.4
Percent Muslim	4.4
Percent Christian.....	28.9
Percent regularly exposed to mass media.....	88.4
Percent working in the past 12 months.....	47.4

Status of Women²

Percent involved in decisions about own health.....	61.6
Percent with control over some money	82.4

Marriage

Percent never married among women age 15-19.....	93.8
Median age at marriage among women age 25-49	23.2

Fertility and Fertility Preferences

Total fertility rate (for the past 3 years).....	1.8
Mean number of children ever born to women 40-49	3.2
Median age at first birth among women age 30-49	24.6
Percent of births ³ of order 3 and above	24.8
Mean ideal number of children ⁴	2.3
Percent of women with 2 living children wanting another child.....	15.7

Current Contraceptive Use⁵

Any method.....	47.5
Any modern method.....	35.9
Pill.....	0.9
IUD	1.9
Condom.....	4.9
Female sterilization	27.8
Male sterilization.....	0.4
Any traditional method	10.3
Rhythm/safe period	5.8
Withdrawal.....	4.5
Other traditional or modern method.....	1.4

Unmet Need for Family Planning⁵

Percent with unmet need for family planning	17.1
Percent with unmet need for spacing.....	7.3

¹Water from pipes, hand pump, covered well, or tanker truck

²Ever-married women age 15-49

³For births in the past 3 years

⁴Excluding women giving non-numeric responses

⁵Among currently married women age 15-49

Quality of Family Planning Services⁶

Percent told about side effects of method	16.3
Percent who received follow-up services.....	70.9

Childhood Mortality

Infant mortality rate ⁷	36.7
Under-five mortality rate ⁷	46.8

Safe Motherhood and Women's Reproductive Health

Percent of births ⁸ within 24 months of previous birth.....	23.0
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Percent of births³ whose mothers received:

Antenatal check-up from a health professional.....	99.0
Antenatal check-up in first trimester.....	73.4
Two or more tetanus toxoid injections.....	86.1
Iron and folic acid tablets or syrup.....	94.7

Percent of births³ whose mothers were assisted at delivery by a:

Doctor	77.5
ANM/nurse/midwife/LHV	13.3
Traditional birth attendant.....	3.9

Percent⁵ reporting at least one reproductive health problem

40.2

Awareness of AIDS

Percent of women ² who have heard of AIDS.....	76.3
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Child Health

Median duration of breastfeeding (months).....	23.3
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Percent of children⁹ who received vaccinations:

BCG.....	99.2
DPT (3 doses)	93.4
Polio (3 doses)	95.8
Measles	84.3
All vaccinations	82.6

Percent of children¹⁰ with diarrhoea in the past

2 weeks who received oral rehydration salts (ORS)	55.6
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Percent of children¹⁰ with acute respiratory infection in

the past 2 weeks taken to a health facility or provider	98.2
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Nutrition

Percent of women with anaemia ¹¹	36.4
Percent of women with moderate/severe anaemia ¹¹	9.1
Percent of children age 6-35 months with anaemia ¹¹	53.4
Percent of children age 6-35 months with moderate/severe anaemia ¹¹	29.8
Percent of children chronically undernourished (stunted) ¹²	18.1
Percent of children acutely undernourished (wasted) ¹²	13.1
Percent of children underweight ¹²	28.6

⁶For current users of modern methods

⁷For the 5 years preceding the survey (1994-98)

⁸For births in the past 5 years (excluding first births)

⁹Children age 12-23 months

¹⁰Children under 3 years

¹¹Anaemia-haemoglobin level < 11.0 grams/decilitre (g/dl) for children and pregnant women and < 12.0 g/dl for nonpregnant women. Moderate/severe anaemia -haemoglobin level < 10.0 g/dl.

¹²Stunting assessed by height-for-age, wasting assessed by weight-for-height, underweight assessed by weight-for-age

SUMMARY OF FINDINGS

The second National Family Health Survey (NFHS-2), conducted in 1998–99, provides information on fertility, mortality, family planning, and important aspects of health, nutrition, and health care. The International Institute for Population Sciences (IIPS) coordinated the survey, which collected information from a nationally representative sample of 90,303 ever-married women age 15–49 from 26 states of India. These states comprise more than 99 percent of India's population.

IIPS also coordinated the first National Family Health Survey (NFHS-1) in 1992–93. Most of the types of information collected in NFHS-2 were also collected in the earlier survey, making it possible to identify trends over the intervening period of six and a half years. In addition, the NFHS-2 questionnaire covered a number of new or expanded topics with important policy implications, such as reproductive health, women's autonomy, domestic violence, women's nutrition, anaemia, and salt iodization.

In Goa, NFHS-2 field staff collected information from 1,599 households between 22 March 1999 and 21 June 1999 and interviewed 1,246 eligible women in these households. In addition, the survey collected information on 328 children born to eligible women in the three years preceding the survey. One health investigator on each survey team measured the height and weight of eligible women and young children and took blood samples to assess the prevalence of anaemia.

Background Characteristics of the Survey Population

Sixty percent of Goa's population lives in rural areas. The age distribution is typical of a population that has experienced fertility declines in the recent past. The proportion of the population under age 5 is slightly lower than the proportion age 5–9, and the proportion under age 10 is lower than the proportion age 10–19. Twenty-four percent of the population are below age 15 and 10 percent are age 60 and above. The sex ratio of the *de facto* population in Goa is 1,028 females for every 1,000 males, much higher than the corresponding all-India sex ratio of 960.

The survey provides information on a variety of demographic and socioeconomic background characteristics. More than three-fourths of all household heads are male. A much higher proportion of households are headed by females in Goa (24 percent) than in India as a whole (10 percent). In the state, 63 percent of household heads are Hindu, 33 percent are Christian, and 4 percent are Muslim. Hindus constitute a larger proportion of the population in urban areas (68 percent) than in rural areas (60 percent), whereas Christians constitute a larger proportion of the population in rural areas (37 percent) than in urban areas (27 percent). Six percent of household heads belong to the scheduled castes, 6 percent belong to the other backward classes, and less than 1 percent belong to the scheduled tribes. Eighty-seven percent of household heads do not belong to a scheduled caste, a scheduled tribe, or an other backward class.

Questions about housing conditions and the standard of living of household members indicate some improvements since the time of NFHS-1. Ninety-four percent of households in Goa have electricity, up slightly from 92 percent at the time of NFHS-1. Sixty-two percent of

households have access to piped drinking water, up from 55 percent in NFHS-1. Forty-one percent of households do not have any toilet facility, down sharply from 52 percent in NFHS-1.

Eighty-nine percent of males and 75 percent of females age six and above are literate, an increase of only 1–2 percentage points from literacy rates at the time of NFHS-1. Despite negligible changes since NFHS-1, male and female literacy rates in Goa are much higher than male and female literacy rates for India as a whole (75 percent and 51 percent, respectively). Ninety-five percent of children age 6–14 currently attend school, almost the same as in NFHS-1 (94 percent). There is not much disparity between girls and boys in terms of school attendance, although girls lag slightly behind boys across all age groups.

Women in Goa tend to marry at a much older age than women in most other states. Only 6 percent of women age 15–19 have ever been married, which is substantially lower than the national average of 40 percent for that age group. According to NFHS-2, the average female in Goa gets married at age 25—much older than the legal minimum age of 18 years. On average, women in Goa are more than five years younger than the men they marry.

As part of an increasing emphasis on gender issues, NFHS-2 asked women about their participation in household decisionmaking. In Goa, 96 percent of women are involved in decisionmaking on at least one of four selected topics. A much lower proportion of women (62 percent), however, are involved in making decisions about their own health care. Less than half (47 percent) of women do work other than their own housework, and 73 percent of these women work for cash. Two-thirds of women who earn cash can decide independently how to spend the money that they earn. Forty-nine percent of working women report that their earnings constitute at least half of total family earnings, including 17 percent who report that the family is entirely dependent on their earnings.

Fertility and Family Planning

Fertility is lower in Goa than in any other Indian state. At current fertility levels, women in Goa will have an average of 1.8 children each throughout their childbearing years, much lower than the national average of 2.9 children. Goa's total fertility rate is down from 1.9 children per woman at the time of NFHS-1, when it was also the lowest in the nation. The average number of children ever born to women age 40–49 fell by half a child between the two surveys, from 3.7 in NFHS-1 to 3.2 in NFHS-2.

Despite a low overall level of fertility, some population groups continue to have higher than average fertility. These groups include Muslim women, women belonging to the scheduled castes or other backward classes, and women who have not completed at least middle school.

A driving force behind a population's level of fertility is the extent of early childbearing. The median age at first childbirth for women age 30–34 is 26 years in Goa, and even among currently married women age 25–29 more than one out five women have not yet had a birth. Undoubtedly, the ability of women in Goa to delay childbearing has been an important contributing factor to the low fertility that exists in the state.

The appropriate design of family planning programmes depends, to a large extent, on women's fertility preferences. Women may have large families because they want many children, or they may prefer small families but, for a variety of reasons, may have more children

than they actually want. For 6 percent of births over the three years preceding NFHS-2, mothers report that they did not want the pregnancy at all, and for another 23 percent of births, mothers say that they would have preferred to delay the pregnancy. When asked about their preferred family size, half of women who already have three living children and more than one-third (36 percent) of women with four or more living children said that they consider the two-child family to be ideal. Even though Goa's overall level of fertility is extremely low, the gap between women's actual fertility experience and what they want or would consider ideal underscores the importance of continued efforts aimed at expanding or improving family welfare services to help women achieve their fertility goals. In Goa, 68 percent of women want at least one son and 65 percent want at least one daughter. Based on NFHS-2, there is a slight preference for sons, as indicated by the fact that 17 percent of women want more sons than daughters but only 5 percent want more daughters than sons.

Knowledge of contraception is virtually universal in Goa. Women are most familiar with female sterilization (99 percent), followed by the pill (90 percent), the condom (87 percent), the IUD (80 percent), and male sterilization (77 percent). Knowledge of modern spacing methods has increased by 3–14 percentage points since the time of NFHS-1, although use rates for these methods remain very low.

Despite the very low fertility level in Goa, current contraceptive use is relatively low. Only 48 percent of currently married women are currently using some method of contraception and 36 percent are using a modern method. The contraceptive prevalence rate in Goa is about the same as the rate for India as a whole (49 percent) and has not changed since NFHS-1. Contraceptive prevalence is much higher in urban areas (53 percent) than in rural areas (44 percent). Female sterilization is by far the most popular method, used by 59 percent of all current contraceptive users. The median age at sterilization (29 years) is three years higher in Goa than in India as a whole and has not changed much over time. In all, 28 percent of currently married women are sterilized, down from 30 percent at the time of NFHS-1. By contrast, less than 1 percent of women report that their husbands are sterilized. Five percent of women report using condoms. Use rates for the pill and the IUD remain very low, at 1 and 2 percent, respectively. Ten percent of women report that they are currently using traditional methods, fairly evenly distributed between the rhythm method and withdrawal.

Contraceptive use rises steadily with age, peaking at 62 percent for women age 40–44 and declining thereafter. Use also increases with the number of living children from 8 percent for women with no children and 31 percent for women with one child to 68–69 percent for women with three or more children. Although there is no evidence of a strong preference for sons among currently married women in Goa, women with at least two living children and one or more sons are consistently more likely to use contraception than are women who have the same number of children but have only daughters. However, it is women who have one daughter and one or more sons that are most likely to be using contraception, suggesting that the preferred combination of children is one that includes sons but also one daughter.

There is some variation in contraceptive prevalence among socioeconomic groups. Contraceptive prevalence is highest (67 percent) among schedule-caste women and is at least 50 percent among illiterate women, urban women, Hindu women, and women living in households with a low standard of living. Use of modern spacing methods—pills, IUDs, and condoms—is highest (12–16 percent) among women living in households with a high standard of living and

women who have completed at least high school. Modern spacing methods are used more frequently by women with one or two children than by women with no children or more than two children.

Seven percent of currently married women are not using contraception but say that they want to wait at least two years before having another child. Another 10 percent are not using contraception although they do not want any more children. These women are described as having an 'unmet need' for family planning. Unmet need is highest (20 percent or more) among women with one living child, women age 20–29, Muslim women, and literate women who have not completed high school. Most of these groups have a strong interest in both spacing and limiting their births, although unmet need among younger women and women with only one child is predominantly for spacing of births. These results underscore the need for strategies that provide spacing as well as terminal contraceptive methods in order to meet the changing needs of women over their lifecycle. The need for promoting spacing methods is also made evident by the fact that almost one out of four non-first births (23 percent) in Goa is taking place within a period of 24 months after a previous birth, a period considered too short for the health of mothers and children.

For many years, the Government of India has been using electronic and other mass media to promote family planning. Among the different types of media, television has the broadest reach across all categories of women. Overall, 81 percent of ever-married women watch television at least once a week, 52 percent listen to the radio at least once a week, and 48 percent read a newspaper or magazine at least once a week. Twelve percent of ever-married women are not regularly exposed to television, radio, or other types of media. Eighty-six percent of women saw or heard a family planning message in the media during the few months preceding the survey. Television and wall paintings or hoardings are the primary sources of these messages. Exposure to family planning messages is relatively low among women from households with a low standard of living, women from other backward classes, and illiterate women.

More than two-thirds (68 percent) of women who use modern contraception obtained their method from a government hospital or other source in the public medical sector. Thirty percent obtained their method from the private medical sector. More than four-fifths of condom users get their supply from the private medical sector, whereas the same proportion of sterilized women had the procedure done by a provider in the public medical sector.

An important indication of the quality of family planning services is the information that women receive when they obtain contraception and the extent to which they receive follow-up services after accepting contraception. In Goa, only 21 percent of users of modern contraceptives who were motivated by someone to use their method were told about any other method by that person. Moreover, at the time of adopting the method, only 16 percent of all modern-method users were told by a health or family planning worker about possible side effects of the method they adopted. Seventy-one percent of the users of modern contraceptive methods, however, received follow-up services after accepting the method.

From the information provided in NFHS-2, a picture emerges of women delaying marriage and the birth of their first child until their mid-twenties and completing their childbearing around age thirty with less than two children. Nevertheless, there remains a sizable

unmet need for family planning in Goa. This need should be addressed in order to help women achieve their fertility goals and to minimize health risks associated with closely spaced births.

Infant and Child Mortality

NFHS-2 provides estimates of infant and child mortality and factors associated with the survival of young children. During the five years preceding the survey, the infant mortality rate was 37 deaths at age 0–11 months per 1,000 live births, and the under-five mortality rate was 47 per 1,000 live births. According to NFHS-2, there has been a reduction in infant mortality from 62 per 1,000 live births during the 10–14 years before the survey to 37 per 1,000 during the most recent five-year period. However, a comparison of NFHS-1 and NFHS-2 data suggests that the infant mortality rate has not declined during the six years between the two surveys. Nevertheless, Goa continues to have one of the lowest levels of infant mortality in the entire country.

Health and Health Care

Promotion of maternal and child health has been one of the most important components of the Reproductive and Child Health Programme of the Government of India. One goal is for each pregnant woman to receive at least three antenatal check-ups plus two tetanus toxoid injections and a full course of iron and folic acid supplementation. In Goa, mothers of 99 percent of the children born in the three years preceding NFHS-2 received at least one antenatal check-up—much higher than the national average of 65 percent. Mothers of 96 percent of children received at least three antenatal check-ups and 73 percent received their first check-up in the first trimester of pregnancy. Ninety-five percent of women received iron and folic acid supplementation during their pregnancies, but a lower proportion (86 percent) received two or more tetanus toxoid vaccinations.

The Reproductive and Child Health Programme encourages women to deliver in a medical facility or, if at home, with assistance from a trained health professional and to receive at least three check-ups after delivery. During the three years preceding NFHS-2, 91 percent of births in Goa were delivered in a medical facility. Five percent were delivered in the woman's own home and 4 percent in her parents' home. Trained health professionals assisted with the delivery in 95 percent of cases. Only 5 percent of deliveries were assisted by a *dai* (a traditional birth attendant), and less than 1 percent were attended only by relatives, friends, and other persons who were not health professionals. Overall, these results show that the reach of health services during pregnancy and delivery is quite extensive, reaching the overwhelming majority of women in Goa. Among all of the Indian states, Goa ranks consistently high on each of the maternity care indicators measured in NFHS-2.

The Government of India recommends that breastfeeding should begin immediately after childbirth and that infants should be exclusively breastfed for about the first four months of life. In Goa, only 34 percent of children begin breastfeeding in the first hour and 62 percent in the first day of life. Moreover, for 47 percent of births, mothers squeeze the first milk (colostrum) from the breast before breastfeeding begins, thereby depriving the baby of natural immunity against diseases that colostrum provides. In spite of the small number of births in Goa, the NFHS-2 data suggest that exclusive breastfeeding is not widely practised. However, the median duration of any breastfeeding is 23 months, or slightly under two years. At age 6–9 months, children should be receiving solid or mushy food in addition to breast milk. However, only about

two-thirds of children age 6–9 months receive the recommended combination of breast milk and solid/mushy foods.

NFHS-2 uses three internationally recognized standards to assess children's nutritional status—weight-for-age, height-for-age, and weight-for-height. Children who are more than two standard deviations below the median of an international reference population are considered underweight (measured in terms of weight-for-age), stunted (height-for-age), or wasted (weight-for-height). Stunting is a sign of chronic, long-term undernutrition, wasting is a sign of acute, short-term undernutrition, and underweight is a composite measure that takes into account both chronic and acute undernutrition.

Based on these measures, 29 percent of children under age three years are underweight, 18 percent are stunted, and 13 percent are wasted. Child nutritional status has improved in Goa since the time of NFHS-1, when 34 percent of young children were underweight, 30 percent were stunted, and 16 percent were wasted. Despite these improvements, however, poor nutrition is still a serious problem in Goa. The proportions underweight and stunted are much higher than average for closely spaced births, older children (age 12–35 months), male children, children whose mothers are themselves undernourished, children whose mothers have not completed high school, children belonging to households with a low or medium standard of living, and Hindu children. Over half (53 percent) of children age 6–35 months are anaemic, including 28 percent who are moderately anaemic and 2 percent who are severely anaemic. Children of anaemic mothers are more likely to be anaemic than children whose mothers are not anaemic. In addition, children whose mothers are illiterate, who are living in households with a low standard of living, who are less than two years of age, who are Hindu, and who are male have higher than average levels of anaemia.

Child immunization is an important component of child-survival programmes in India, with efforts focussing on six serious but preventable diseases—tuberculosis, diphtheria, pertussis, tetanus, polio, and measles. The objective of the Universal Immunization Programme (UIP), launched in 1985–86, was to extend immunization coverage against these diseases to at least 85 percent of infants by 1990 and the target now is to achieve 100 percent immunization coverage. In Goa, 83 percent of children age 12–23 months are fully vaccinated, including 76 percent who were fully vaccinated before their first birthday. All children in Goa have received at least some of the recommended vaccinations. Ninety-nine percent of children age 12–23 months have been vaccinated against tuberculosis, 93 percent have received three doses of DPT vaccine, and 96 percent have received three doses of polio vaccine. Measles vaccination coverage (84 percent) is slightly lower than coverage of other vaccines.

Immunization coverage has improved somewhat since NFHS-1, when three-fourths of children had been fully vaccinated and 5 percent had not received any vaccinations at all. The coverage of each of the vaccinations also improved considerably in the period between the two surveys. Dropout rates for the series of DPT and polio vaccinations are fairly low (3–4 percent) in Goa and have declined slightly since NFHS-1. It is also recommended that children under age five years should receive oral doses of vitamin A every six months starting at age nine months. Seventy-eight percent of children age 12–35 months have received any vitamin A supplementation, although a much lower percentage (52 percent) received a dose of vitamin A in the six months preceding the survey.

NFHS-2 collected information on the prevalence and treatment of three health problems that cause considerable mortality in young children—fever, acute respiratory infection (ARI), and diarrhoea. In Goa, 34 percent of children under age three were ill with fever during the two weeks preceding the survey, 19 percent had diarrhoea, and 17 percent were ill with ARI. Almost all children (98 percent) who became ill with ARI and 65 percent of children who were ill with diarrhoea were taken to a health facility or health provider. Mothers' knowledge of the appropriate treatment of diarrhoea is fairly high: 86 percent of mothers of children age less than three years know about oral rehydration salt (ORS) packets, although 36 percent of mothers incorrectly believe that when children are sick with diarrhoea, they should be given less to drink than usual. Seventy-six percent of children with diarrhoea received some form of oral rehydration therapy (ORT), including 56 percent who received ORS. Knowledge of ORS has increased substantially since NFHS-1, when it was 56 percent. Similarly, ORS use has increased substantially, from 27 percent at the time of NFHS-1 to 56 percent in NFHS-2.

Based on a weight-for-height index (the body mass index), more than one-fourth (27 percent) of women in Goa are undernourished. Nutritional deficiency is particularly serious for women living in households with a low standard of living, younger women, illiterate women, ever-married women who are not currently married, and women belonging to scheduled castes or other backward classes. Overall, 36 percent of women in Goa have some degree of anaemia, with 9 percent being moderately to severely anaemic. Anaemia is a serious problem among women in every population group, with prevalence rates ranging from 26 to 52 percent.

Only 42 percent of households use cooking salt that is iodized at the recommended level of 15 parts per million, suggesting that iodine deficiency disorders are likely to be a serious problem. Households with a low standard of living, scheduled-caste households, and rural households are much less likely than other households to be using adequately iodized cooking salt.

Forty percent of currently married women in Goa report some type of reproductive health problem, including abnormal vaginal discharge, symptoms of a urinary tract infection, and pain or bleeding associated with intercourse. Among these women, 57 percent have not sought any advice or treatment. These results suggest a need to expand reproductive health services, as well as information programmes that encourage women to discuss their problems with a health-care provider.

In recent years, there has been growing concern about domestic violence in India. NFHS-2 found that in Goa, there is widespread acceptance among ever-married women that the beating of wives by husbands is justified under some circumstances. Almost 6 out of 10 women accept at least one of six reasons as a justification for a husband beating his wife. Domestic violence is also fairly common in Goa. Eighteen percent of ever-married women have experienced beatings or physical mistreatment since age 15, including 6 percent of women who experienced such violence in the 12 months preceding the survey. Most of these women have been beaten or physically mistreated by their husbands. Domestic violence against women is especially prevalent for ever-married women who are not currently married, women belonging to other backward classes, illiterate women, and women living in households with a low standard of living.

Overall, 18 percent of women received a home visit from a health or family planning worker during the 12 months preceding the survey. A large majority of the women who received a home visit expressed satisfaction with the amount of time that the worker spent with them and with the way the worker talked to them.

The survey collected information on the prevalence of tuberculosis, asthma, malaria, and jaundice among all household members. Disease prevalence based on reports from household heads must be interpreted with caution, however. The survey found that less than 1 percent of the population suffer from tuberculosis, 2 percent suffer from asthma, less than 1 percent suffered from malaria during the three months preceding the survey, and 2 percent suffered from jaundice during the 12 months preceding the survey. Men are slightly more likely than women to suffer from tuberculosis and jaundice, women are slightly more likely than men to suffer from asthma, and women and men are about equally likely to suffer from malaria.

More than three-fourths of household respondents in Goa said that household members usually go to private hospitals or private doctors for treatment when they get sick. Twenty-two percent normally use the public medical sector. Even among households with a low standard of living, the majority (57 percent) normally use the private medical sector when household members become ill. NFHS-2 also asked women about the quality of care received during the most recent visit to a health facility. Most respondents are generally satisfied with the health care they receive. Virtually all women received the service they went for on their last visit. Although women had to wait about 29 minutes before being served, 96 percent said that the staff spent enough time with them. Ninety percent said that the staff talked to them nicely and 80 percent rated the facility as very clean. Ninety-seven percent of those who said they needed privacy during the visit said that the staff respected their need for privacy. Ratings of the quality of services are consistently lower for public-sector facilities than for private-sector facilities.

NFHS-2 also collected information on selected lifestyle indicators for household members. According to household respondents, among household members age 15 and above, 29 percent of men and 5 percent of women drink alcohol, 18 percent of men and 2 percent of women smoke, and 8 percent each of men and women chew *paan masala* or tobacco.

The spread of HIV/AIDS is a major concern in India. In Goa, 76 percent of women have heard of AIDS. There are large differentials, however, with awareness of AIDS being particularly low among women who are not regularly exposed to the media, illiterate women, and women living in households with a low standard of living. Among women who have heard of AIDS, 83 percent received information about the disease from television, 35 percent from newspapers or magazines, and 27 percent from the radio, suggesting that government efforts to promote AIDS awareness through the electronic mass media have achieved some success. Among women who have heard of AIDS, one-quarter do not know of any way to avoid infection. Among women who know of ways to avoid infection, the method most commonly mentioned is avoiding injections or using clean needles. Only 15 percent of women mention using condoms as a way of avoiding infection. NFHS-2 results suggest that health personnel could play a much larger role in promoting AIDS awareness. In Goa, only 10 percent of women who know about AIDS received information about the disease from a health worker.

CHAPTER 1

INTRODUCTION

1.1 Background of the Survey

India's first National Family Health Survey (NFHS-1) was conducted in 1992–93 (International Institute for Population Sciences, 1995). The Ministry of Health and Family Welfare (MOHFW) subsequently designated the International Institute for Population Sciences (IIPS), Mumbai, as the nodal agency to initiate a second survey (NFHS-2), which was conducted in 1998–99. An important objective of NFHS-2 is to provide state-level and national-level information on fertility, family planning, infant and child mortality, reproductive health, child health, nutrition of women and children, and the quality of health and family welfare services. Another important objective is to examine this information in the context of related socioeconomic and cultural factors. The survey is also intended to provide estimates at the regional level for five states (Bihar, Jammu and Kashmir, Madhya Pradesh, Rajasthan, and Uttar Pradesh) and estimates for three metro cities (Chennai, Kolkata, and Mumbai), as well as slum areas in Mumbai. This information will assist policymakers and programme administrators in planning and implementing strategies for improving population, health, and nutrition programmes. Comparative state results from NFHS-2 have already been published (International Institute for Population Sciences and ORC Macro, 2000). The current report provides a more comprehensive picture of the findings for Goa.

The NFHS-2 national sample covers more than 99 percent of India's population living in the 26 states that existed at the time of the survey. It does not cover the union territories. NFHS-2 is a household sample survey with an overall sample size of 90,303 ever-married women in the age group 15–49 living in 92,486 households.

NFHS-2 was conducted with financial support from the United States Agency for International Development (USAID), with additional funding from UNICEF. Technical assistance was provided by ORC Macro, Calverton, Maryland, USA, and the East-West Center, Honolulu, Hawaii, USA. Thirteen field organizations were selected to collect the data. Eight of the field organizations are private-sector organizations and five are Population Research Centres (PRCs) established by the Government of India in various states. Each field organization had responsibility for collecting the data in one or more states. The PRC, JSS Institute of Economic Research, Dharwad, Karnataka, was selected as the field organization for NFHS-2 in Goa.

1.2 Basic Socioeconomic and Demographic Features

Goa was liberated from Portuguese rule on 19 December 1961 and was integrated with India on 27 March 1962. Together with Daman and Diu, it formed the Union Territory of Goa, Daman, and Diu. Goa achieved its status as a state within the Indian Union in May 1987, with Panaji as its capital. It is one of the smaller states of India and has a total land area of 3,702 square kilometres (km²). Goa is divided into two districts (North Goa and South Goa) that are subdivided into 11 *taluks* (sub-districts). Geographically, Goa can be divided into three distinct zones, namely the Eastern Sahyadris, the Central Uplands, and the Western Coastal Plains.

Goa is one of India's most economically developed states. Tourism plays an important role in its economy. Agriculture is not a dominant industry in the state; the contribution of the agricultural sector to the net state domestic product declined from 16 percent in 1980–81 to 9 percent in 1996–97. In 1991, only 24 percent of Goa's main workforce were employed in the agricultural sector (Office of the Registrar General and Census Commissioner, 1992). Goa's agriculture is almost entirely dependent on rains. Food crops include paddy, pulses, millets, sugarcane, and vegetables. Cash crops—mainly coconut, cashew, and arecanuts—are also grown.

Whereas agriculture plays a limited role in Goa's economy, the manufacturing sector is becoming increasingly important. The Goan economy developed rapidly following liberation, with major increases in mining, industrialization, and urbanization. Mining along the slopes of Sahyadri is a prominent industry in the state. Transport and communication infrastructures have also improved considerably over the years. Notably, the share of the manufacturing sector in the state domestic product has increased from 25 percent in 1980–81 to 33 percent in 1996–97 (EPW Research Foundation, 1998).

The average annual per capita net domestic product in the state almost doubled from Rs. 3,145 in 1980–81 to Rs. 6,227 in 1996–97 at constant (1980–81) prices or Rs. 19,719 at current prices (EPW Research Foundation, 1998). As per the estimates provided by the Planning Commission for 1993–94, only 5 percent of the rural population and 27 percent of the urban population in Goa live below the poverty line (Central Statistical Organization, 1999).

According to the 2001 Census, Goa has a population of 1.3 million, accounting for only 0.1 percent of India's total population. The total population of the state was just under 1.2 million in 1991. Goa's population growth rate decreased slightly from 16.1 percent in 1981–1991 to 14.9 in 1991–2001, which is much lower than the decadal percentage increase for the country as a whole (21.3 percent). The population sex ratio, which is defined as the number of females per 1,000 males, for 2001 was 960 for Goa, compared with 933 for the entire country (Office of the Registrar General and Census Commissioner, 2001). Population density per km² in Goa increased from 316 in 1991 to 363 in 2001 and is substantially higher than the density for the country as a whole (324). The increase in Goa's population density indicates a growing pressure on land and other resources.

In 1991, 41 percent of Goa's population was urban, compared with 26 percent for India as a whole. The urban population has increased sharply from 26 percent of the total population in 1971 to 41 percent in 1991 and 49 percent in 2001. According to the 1991 Census, scheduled castes¹ comprise only 2 percent of the Goan population (compared with 17 percent for all India), and scheduled tribes constitute a minuscule 0.03 percent of the total population (compared with 8 percent for India as a whole).

Goa is one of India's most educationally advanced states. According to the 2001 Census, 82 percent of Goa's population age seven and above is literate, compared with 65 percent of the country's population in the same age group. The literacy rates are 89 percent for males and 76 percent for females in Goa, compared with 76 and 56 percent for males and females, respectively, for India.

The crude birth and death rates estimated by the Sample Registration System (SRS) in 1999 for Goa, 14.3 and 7.2 per 1,000 population, respectively, are much lower than the

¹Scheduled castes and scheduled tribes are castes and tribes that the Government of India officially recognizes as socially and economically backward and in need of special protection from injustice and exploitation.

corresponding all-India rates of 26.1 and 8.7. Between 1971 and 1999, fertility declined substantially in the state. The crude birth rate declined from 26.2 per 1,000 population in 1971 to 14.3 in 1999, a decline of 45 percent. The infant mortality rate (IMR) for Goa in the same year was estimated at 21 per 1,000 live births, which is much lower than the rate of 70 for India as a whole. The total fertility rate for Goa in 1997, as estimated by the SRS, is one of the lowest in the country. On average, a woman in Goa bears 1.4 children, compared with 3.3 children for the country as a whole. Although the lower fertility level suggests widespread use of family planning, the couple protection rate (defined as the percentage of eligible couples effectively protected against pregnancy by various methods of contraception) in Goa was only 33 percent in 1997, substantially lower than the all-India estimate of 45 percent. Nonetheless, the couple protection rate in Goa has more than doubled since 1980, when it was only 16 percent (Ministry of Health and Family Welfare, 1999a).

1.3 Questionnaires

NFHS-2 used three types of questionnaires: the Household Questionnaire, the Woman's Questionnaire, and the Village Questionnaire. The overall content and format of the questionnaires were determined through a series of workshops held at IIPS in Mumbai in 1997 and 1998. The workshops were attended by representatives of a wide range of organizations in the population and health fields, as well as experts working on gender issues. The questionnaires in Goa were bilingual, with questions in both Konkani and English.

The Household Questionnaire listed all usual residents in each sample household plus any visitors who stayed in the household the night before the interview. For each listed person, the survey collected basic information on age, sex, marital status, relationship to the head of the household, education, and occupation. The Household Questionnaire also collected information on the prevalence of asthma, tuberculosis, malaria, and jaundice, as well as three risk behaviours—chewing *paan masala* or tobacco, drinking alcohol, and smoking. Information was also collected on the usual place where household members go for treatment when they get sick, the main source of drinking water, type of toilet facility, source of lighting, type of cooking fuel, religion of the household head, caste/tribe of the household head, ownership of a house, ownership of agricultural land, ownership of livestock, and ownership of other selected items. In addition, a test was conducted to assess whether the household uses cooking salt that has been fortified with iodine. Finally, the Household Questionnaire asked about deaths occurring to household members in the two years preceding the survey, with particular attention to maternal mortality. The information on the age, sex, and marital status of household members was used to identify eligible respondents for the Woman's Questionnaire.

The Woman's Questionnaire collected information from ever-married women age 15–49 who were usual residents of the sample household or visitors who stayed in the sample household the night before the interview. The questionnaire covered the following topics:

Background characteristics: Questions on age, marital status, education, employment status, and place of residence provide information on characteristics likely to influence demographic and health behaviour. Questions are also asked about the background characteristics of a woman's husband.

Reproductive behaviour and intentions: Questions cover dates and survival status of all births and the current pregnancy status and future childbearing intentions of each woman.

Quality of care: Questions assess the quality of family planning and health services.

Knowledge and use of contraception: Questions cover knowledge and use of specific family planning methods. For women not using any contraceptive method, questions are included on reasons for not using contraception and intentions concerning future use.

Sources of family planning: Questions determine where a user obtained her family planning method.

Antenatal, delivery, and postpartum care: The questionnaire collects information on whether women received antenatal and postpartum care, who attended the delivery, and the nature of complications during pregnancy for the last two births since January 1996.

Breastfeeding and health: Questions cover feeding practices, the length of breastfeeding, immunizations, and recent occurrences of diarrhoea, fever, and cough for the last two births since January 1996.

Reproductive health: Questions assess various aspects of women's reproductive health and the type of care sought for health problems.

Status of women: The questionnaire asks about gender roles, women's autonomy, and violence against women.

Knowledge of AIDS: Questions assess women's knowledge of AIDS and the sources of their knowledge, as well as their knowledge about ways to avoid getting AIDS.

In addition, the health investigator on each survey team measured the height and weight of each woman and each of her children born since January 1996. This height and weight information is useful for assessing levels of nutrition prevailing in the population. The health investigators also took blood samples from each woman and each of her children born since January 1996 to assess haemoglobin levels. This information is useful for assessing prevalence rates of anaemia among women and children. Haemoglobin levels were measured in the field at the end of each interview using portable equipment (the HemoCue) that provides test results in less than one minute. Severely anaemic women and children were referred to local medical authorities for treatment.

For each village selected in the NFHS-2 sample, the Village Questionnaire collected information on the availability of various facilities in the village (especially health and education facilities) and amenities such as electricity and telephone connections. Respondents to the Village Questionnaire were also asked about development and welfare programmes operating in the village. The village survey included a short, open-ended questionnaire that was administered to the village head, with questions on major problems in the village and actions that could be taken to alleviate the problems.

1.4 Survey Design and Sample Implementation

Sample Size and Reporting Domains

The overall target sample size for Goa was 1,500 completed interviews with eligible women. The NFHS-1 nonresponse rates at the household and individual levels were used to estimate the

sample size that would be required to achieve the target number of completed interviews in NFHS-2.

The sample was designed to provide estimates for the state as a whole. The sample is not large enough to provide reliable estimates for individual districts. For a select number of indicators, separate estimates are provided for urban and rural areas. The required sampling rates for urban and rural areas were determined by allocating the sample proportionally to the population of the two areas, taking into account their expected urban and rural nonresponse rates (based on the nonresponse rates in NFHS-1).

Sample Design

Within each of the two sampling domains (rural areas and urban areas), a systematic, multi-stage stratified sampling design was used. The rural sample was selected in two stages: the selection of Primary Sampling Units (PSUs), which are villages or groups of villages (in the case of small linked villages), with probability proportional to size (PPS) in the first stage, followed by the selection of households using systematic sampling within each selected PSU in the second stage. In urban areas, a three-stage sampling procedure was followed. In the first stage, wards were selected with PPS. From each selected ward, one census enumeration block (CEB) was selected with PPS in the second stage, followed by selection of households using systematic sampling within each selected CEB in the third stage.

Sample Selection in Rural Areas

In rural areas, the 1991 Census list of villages served as the sampling frame. The list was stratified by two variables. The first level of stratification was geographic, with villages classified into three contiguous regions, each region having approximately equal population. In each region, villages were further stratified by village size. Table 1.1 provides details of sample stratification in rural areas along with the population of each stratum. The final level of stratification was implicit for all strata, consisting of an ordering of villages within each stratum by the level of female literacy (obtained from the 1991 Census Village Directory). From the list of villages arranged in this manner, villages were selected systematically with probability proportional to the 1991 Census population of the village. Small villages with 5–49 households were linked with one or more adjoining villages to form PSUs with a minimum of 50 households. Villages with fewer than five households were excluded from the sampling frame.

The domain sampling fraction, i.e., the probability of selecting a woman in rural Goa (f) was computed as:

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

where n = number of rural women to be interviewed (after adjusting upward to account for nonresponse and other loss), and
 N = projected rural population of eligible women in the state in May 1999.

The probability of selecting a PSU from rural Goa (f_i) was computed as:

Table 1.1 Sampling stratification			
Sampling stratification procedure in rural areas, Goa			
Stratum	Stratification variables		Population ¹
	Region	Village size (population)	
1	1	≤ 3,700	108,621
2	1	> 3,700	108,705
3	2	≤ 3,400	105,947
4	2	> 3,400	109,864
5	3	≤ 3,000	129,631
6	3	> 3,000	121,210
Total	NA	NA	683,978

Note: The level of female literacy is used for implicit stratification.
¹The population shown is the 1991 Census population, excluding persons living in villages with fewer than five households.
NA: Not applicable

$$f_i = \frac{a \times s_i}{\sum s_i}$$

where a = number of rural PSUs selected from the state,
 s_i = population size of the i^{th} PSU, and
 $\sum s_i$ = total rural population of the state.

A mapping and household listing operation carried out in each sample area provided the necessary frame for selecting households at the second stage. The household listing operation involved preparing up-to-date notional and layout sketch maps of each selected PSU, assigning numbers to structures, recording addresses of these structures, identifying residential structures, and listing the names of heads of all the households in residential structures in the selected PSUs. Sample villages larger than 400 households were segmented into three or more segments, and two segments were selected randomly using the PPS method. The household listing in these PSUs was carried out only in the selected segments. The work was carried out by two teams, each comprising one lister and one mapper, under the supervision of two household listing coordinators. The teams were trained from 22–26 January 1999 in Panaji by the household listing coordinators from the PRC, Dharwad, one of whom was earlier trained in a workshop conducted by IIPS. The mapping and household listing operation was carried out between 28 January and 3 May 1999. The households to be interviewed were selected with equal probability from the household list in each selected enumeration area using systematic sampling.

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

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

On average, 34 households were initially targeted for selection in each selected enumeration area. To avoid extreme variations in the workload, minimum and maximum limits were put on the number of households that could be selected from any area, at 15 and 60,

respectively. All the selected households were visited during the main survey, and no replacement was made if a selected household was absent during data collection. However, if a PSU was inaccessible, a replacement PSU with similar characteristics was selected by IIPS and provided to the field organization.

Sample Selection in Urban Areas

The 1991 Census list of urban wards was arranged according to districts and within districts by the level of female literacy, and a sample of wards was selected systematically with probability proportional to population size. Next, one census enumeration block (CEB), consisting of approximately 150–200 households, was selected from each selected ward using the PPS method. As in rural areas, a household listing operation was carried out in the selected CEBs and, on average, 30 households per block were targeted for selection.

The domain sampling fraction, i.e., the probability of selecting a woman in urban Goa (f) was computed as:

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

where n = number of urban women to be interviewed (after adjusting upward to account for nonresponse and other loss), and
 N = projected urban population of eligible women in the state in May 1999.

The probability of selecting an urban ward (f_1) was computed as:

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

where a = number of urban wards selected from the state,
 s_i = population size of the i^{th} ward, and
 $\sum s_i$ = total urban population of the state.

The probability of selecting a CEB from a selected ward (f_2) was computed as:

$$f_2 = \frac{B_i}{\sum B_i}$$

where B_i = population size of the i^{th} block, and
 $\sum B_i$ = total population of the ward.

A household listing operation carried out in each selected census enumeration block provided the necessary frame for selecting households in the third stage of sample selection. The probability of selecting a household from a selected CEB (f_3) was computed as:

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

Sample Weights

Sample weights for households and women are based on design weights, adjusted for the effect of differential nonresponse in different geographical areas. The method of calculating the weights is specified below.

Let R_{Hi} and R_{wi} be the households' and eligible women's response rates, respectively. Then the household weight (w_{Hi}) is calculated as follows:

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

where w_{Di} = the design weight for the i^{th} domain, calculated as the ratio of the overall sampling fraction ($F = n/N$) and the sampling fraction for the i^{th} domain ($f = n_i/N_i$). Note that $n = \sum n_i$ and $N = \sum N_i$.

The eligible woman's weight (w_{wi}) is calculated as follows:

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

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 weights for households and eligible women are:

$$W_{Hi} = \frac{\sum n_i}{\sum w_{Hi} \times n_i} \times w_{Hi}$$

$$W_{wi} = \frac{\sum n_i}{\sum w_{wi} \times n_i} \times w_{wi}$$

where n_i refers to the actual number of cases (households or eligible women) interviewed in the i^{th} domain.

For the tabulations on anaemia and height/weight of women and children, two separate sets of weights were calculated using a similar procedure. In this case, however, the response rates for anaemia (for both women and children) are based on the percentage of eligible women whose haemoglobin level was measured, and the response rates for height/weight (for both women and children) are based on the percentage of eligible women whose height or weight was measured.

Sample Implementation

A total of 50 PSUs were selected, of which 20 were urban and 30 were rural. Table 1.2 shows response rates for households and individuals and reasons for nonresponse. Nonresponse can occur at the stage of the household interview or at the stage of the woman's interview. The last row of the table shows the overall effect of nonresponse at the two stages. The survey achieved

an overall response rate of 94 percent. The overall response rate is marginally higher in urban areas (95 percent) than in rural areas (93 percent).

Of the 1,736 households selected in Goa, interviews were completed in 92 percent of the cases, 3 percent of the selected households were absent for an extended period, another 3 percent were found to be vacant, and 1 percent of households had no member or competent respondent at home when the household was visited. For the remaining 1 percent of households, an interview was not conducted for reasons such as the household refusing to be interviewed and the dwelling being destroyed or not found (Table 1.2). The household response rate—the number of households interviewed per 100 occupied households—was 98 percent in urban areas and 99 percent in rural areas.

In the interviewed households, 1,311 women were identified as eligible for the individual interview. Interviews were successfully completed with 95 percent of the eligible women. The response rate for women was slightly higher in urban areas (96 percent) than in rural areas (94 percent). Nonresponse at the individual level was primarily due to eligible women not being at home. Only about 1 percent of eligible women refused to be interviewed.

1.5 Recruitment, Training, and Fieldwork

Field staff for the main survey were trained in Alto Porvorim by the officials of the PRC, Dharwad, one of whom was trained earlier in a Training of Trainers Workshop conducted by IIPS. Training in Goa consisted of classroom training, general lectures, and demonstration and practice interviews, as well as field practice and additional training for field editors and supervisors. Health investigators attached to interviewing teams were given additional specialized training on measuring height and weight and testing for anaemia in a centralized training programme conducted by the All India Institute of Medical Sciences (AIIMS), New Delhi, in collaboration with IIPS. This specialized training took place in Mumbai. It included classroom training and extensive field practice in schools, *anganwadis*, and communities.

Two interviewing teams conducted the main fieldwork in Goa, each team consisting of one field supervisor, one female field editor, four female interviewers, and one health investigator. The fieldwork was carried out between 22 March 1999 and 21 June 1999. Coordinators and senior staff of the PRC, Dharwad, monitored and supervised the data collection operations. IIPS also appointed one research officer to help with monitoring throughout the training and fieldwork period in order to ensure that correct survey procedures were followed and data quality was maintained. From time to time, project coordinators, senior research officers, and other faculty members from IIPS, as well as staff members from ORC Macro and the East-West Center, visited the field sites to monitor the data collection operation. Medical health coordinators appointed by IIPS monitored the nutritional component of the survey. Field data were quickly entered into microcomputers, and field-check tables were produced to identify certain types of errors that might have occurred in eliciting information and filling out questionnaires. Information from the field-check tables was fed back to the interviewing teams and their supervisors so that they could improve their performance.

Table 1.2 Sample results						
Sample results for households and ever-married women age 15–49 by residence, Goa, 1999						
Result	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
Households selected	693	100.0	1,043	100.0	1,736	100.0
Households completed (C)	623	89.9	976	93.6	1,599	92.1
Households with no household member at home or no competent respondent at home at the time of interview (HP)	8	1.2	10	1.0	18	1.0
Households absent for extended period (HA)	28	4.0	29	2.8	57	3.3
Households postponed (P)	0	0.0	0	0.0	0	0.0
Households refused (R)	4	0.6	0	0.0	4	0.2
Dwelling vacant/address not a dwelling (DV)	26	3.8	24	2.3	50	2.9
Dwelling destroyed (DD)	1	0.1	1	0.1	2	0.1
Dwelling not found (DNF)	0	0.0	1	0.1	1	0.1
Other (O)	3	0.4	2	0.2	5	0.3
Households occupied	635	100.0	987	100.0	1,622	100.0
Households interviewed	623	98.1	976	98.9	1,599	98.6
Households not interviewed	12	1.9	11	1.1	23	1.4
Household response rate (HRR) ¹	NA	98.1	NA	98.9	NA	98.6
Eligible women	510	100.0	801	100.0	1,311	100.0
Women interviewed (EWC)	491	96.3	755	94.3	1,246	95.0
Women not at home (EWNH)	8	1.6	26	3.2	34	2.6
Women postponed (EWP)	0	0.0	0	0.0	0	0.0
Women refused (EWR)	3	0.6	9	1.1	12	0.9
Women partly interviewed (EWPC)	5	1.0	7	0.9	12	0.9
Other (EWO)	3	0.6	4	0.5	7	0.5
Eligible women's response rate (EWRR) ²	NA	96.3	NA	94.3	NA	95.0
Overall response rate (ORR) ³	NA	94.5	NA	93.2	NA	93.7

Note: Eligible women are defined as ever-married women age 15–49 who stayed in the household the night before the interview (including both usual residents and visitors). This table is based on the unweighted sample; all other tables are based on the weighted sample unless otherwise specified.
NA: Not applicable
¹Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\text{HRR} = \frac{C}{C+HP+P+R+DNF} \times 100$$

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

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

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

$$\text{ORR} = \frac{\text{HRR} \times \text{EWRR}}{100}$$

1.6 Data Processing

Completed questionnaires were sent to the PRC office in Dharwad for data processing, which consisted of office editing, coding, data entry, and machine editing, using the Integrated System for Survey Analysis (ISSA) software. Data entry was done by two data entry operators under the supervision of senior staff at the PRC, Dharwad, who were trained at a data-processing workshop in Mumbai. Data entry and editing operations were completed by August 1999. Tabulations for the preliminary report as well as for the present final report were carried out at IIPS in Mumbai.

CHAPTER 2

BACKGROUND CHARACTERISTICS OF HOUSEHOLDS

This chapter presents a profile of the demographic and socioeconomic characteristics of NFHS-2 households and describes facilities and services that are available in villages in Goa. The chapter also includes some comparisons of NFHS-2 results with results from NFHS-1 and the Census of India.

2.1 Age-Sex Distribution of the Household Population

The NFHS-2 household population can be tabulated in two ways: *de facto* (the place each person stayed the night before the survey interview) or *de jure* (the place of usual residence). The *de facto* and *de jure* populations in Goa differ because of temporary population movements. Table 2.1 shows the *de facto* population in the NFHS-2 household sample for Goa, classified by age and sex. The total *de facto* sample population is 7,345. The sex ratio (females per 1,000 males) of the *de facto* population is 1,028. The sex ratio of the *de jure* population, at 1,013, is slightly lower (not shown). Forty percent of the *de facto* population resides in urban areas and the sex ratio of the urban population is much higher (1,054) than the sex ratio of the rural population (1,012).

The age distribution of the population in Goa is typical of a population that has experienced a substantial decline in fertility (Figure 2.1). Only 24 percent of the population are below age 15, with 10 percent age 60 and above. The proportion under age 5 is slightly lower than the proportion age 5–9, and the proportion under age 10 is lower than the proportion age 10–19, suggesting a decline in Goan fertility in recent years. The age distribution of the population is similar in urban and rural areas.

The single-year age distributions by sex in the *de facto* population (see Appendix Table B.1) indicate that there is some preference for ages ending in particular digits, especially 0 and 5. One of the most commonly used measures of digit preference in age reporting is Myers' Index (United Nations, 1955). This index provides an overall summary of preferences for, or avoidance of, each of the 10 digits, from 0 to 9. The index is often used as one indicator of the quality of age reporting on a survey. Values of Myers' Index computed for the age range 10–69 in the household sample population in Goa are 13.6 for males and 14.8 for females. The relatively low values of the Myers' index are probably due to the emphasis during the interviewer training on obtaining accurate age information, especially for women, to correctly determine the eligibility of women for the individual interview. The values of Myers' Index from NFHS-2 are only slightly different from the values from NFHS-1 (revised from the published NFHS-1 estimates, 16.7 and 10.7, respectively, for males and females). This indicates that the quality of age reporting on the Household Questionnaire in Goa was similar in NFHS-1 and NFHS-2.

Table 2.1 Household population by age and sex

Percent distribution of the household population by age, according to residence and sex, Goa, 1999

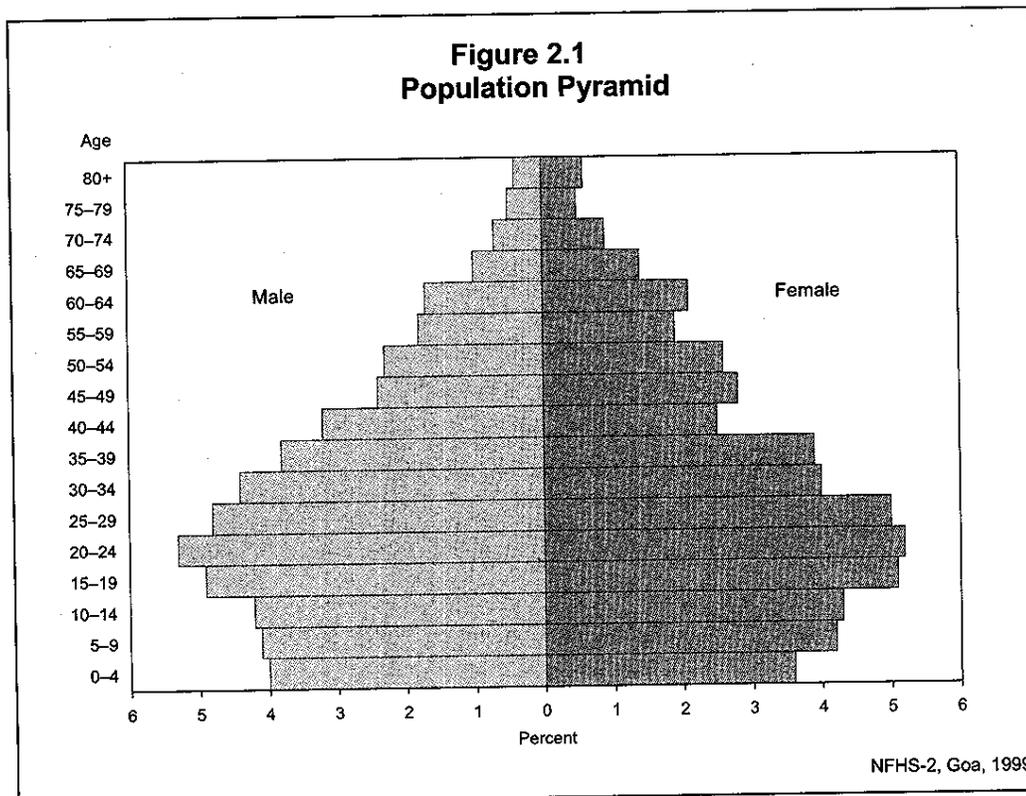
Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
< 1	1.8	1.1	1.4	1.5	1.6	1.5	1.7	1.4	1.5
1-4	7.1	5.7	6.3	6.2	5.8	6.0	6.5	5.7	6.1
5-9	8.7	8.5	8.6	8.2	8.1	8.2	8.4	8.3	8.3
10-14	8.3	8.8	8.6	8.5	8.4	8.4	8.4	8.6	8.5
15-19	9.4	9.3	9.3	10.2	10.6	10.4	9.9	10.1	10.0
20-24	9.9	10.9	10.4	11.1	10.0	10.5	10.7	10.3	10.5
25-29	9.5	9.6	9.5	10.0	10.0	10.0	9.8	9.8	9.8
30-34	9.4	8.2	8.8	8.6	7.6	8.1	8.9	7.9	8.4
35-39	7.1	7.6	7.4	8.0	7.9	7.9	7.6	7.8	7.7
40-44	6.1	4.7	5.4	6.7	5.1	5.9	6.5	5.0	5.7
45-49	5.2	6.7	6.0	4.6	4.7	4.7	4.8	5.5	5.2
50-54	5.5	5.0	5.2	4.3	5.1	4.7	4.8	5.1	4.9
55-59	3.8	3.9	3.8	3.5	3.6	3.5	3.6	3.7	3.6
60-64	3.2	3.7	3.4	3.5	4.4	3.9	3.4	4.1	3.7
65-69	2.4	2.8	2.6	1.8	2.9	2.3	2.0	2.8	2.4
70-74	0.9	1.5	1.2	1.7	1.9	1.8	1.4	1.7	1.6
75-79	1.1	1.2	1.1	0.9	0.9	0.9	1.0	1.0	1.0
80+	0.7	1.1	0.9	0.7	1.4	1.1	0.7	1.2	1.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of persons	1,442	1,520	2,962	2,179	2,204	4,383	3,621	3,724	7,345
Sex ratio ¹	NA	NA	1,054	NA	NA	1,012	NA	NA	1,028

Note: Table is based on the *de facto* population, i.e., persons who stayed in the household the night before the interview (including both usual residents and visitors).

NA: Not applicable

¹Females per 1,000 males

**Figure 2.1
Population Pyramid**



2.2 Marital Status

NFHS-2 includes information on the marital status of all household members age six and above. Table 2.2 shows the marital status distribution of the *de facto* household population, classified by age and sex. Among females age six and above, 46 percent are currently married and 40 percent have never been married. The proportion never married is higher for males (52 percent) than for females (40 percent). The proportion divorced, separated, or deserted is small, and widowhood is quite limited until the older ages. Fifty-three percent of women age 50 or older are widowed, but only 8 percent of males in that age group are widowed. The sex differential in the percentage widowed probably reflects higher mortality rates among older men than women, the fact that husbands are older than their wives, and higher rates of remarriage among widowers than among widows.

Also of interest is the proportion of persons who marry young. At age 15–19, only 6 percent of females and 1 percent of males have married and at age 20–24, 30 percent of females and 6 percent of males have married. By age 25–29, the majority of women but less than one-third of men have married.

Table 2.2 Marital status of the household population								
Percent distribution of the household population age 6 and above by marital status, according to age and sex, Goa, 1999								
Age	Marital status							Total percent
	Never married	Currently married	Married, <i>gauna</i> not performed	Widowed	Divorced	Separated	Deserted	
MALE								
6–12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13–14	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15–19	98.9	1.1	0.0	0.0	0.0	0.0	0.0	100.0
20–24	93.6	6.4	0.0	0.0	0.0	0.0	0.0	100.0
25–29	71.5	28.0	0.3	0.3	0.0	0.0	0.0	100.0
30–49	16.3	83.1	0.0	0.4	0.0	0.0	0.2	100.0
50+	4.1	87.6	0.0	8.3	0.0	0.0	0.0	100.0
Total	52.0	46.2	0.0	1.7	0.0	0.0	0.1	100.0
FEMALE								
6–12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13–14	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15–19	93.8	5.6	0.3	0.0	0.0	0.0	0.3	100.0
20–24	70.0	29.5	0.0	0.3	0.3	0.0	0.0	100.0
25–29	30.7	67.9	0.0	0.5	0.0	0.3	0.6	100.0
30–49	5.5	87.4	0.0	6.1	0.4	0.2	0.4	100.0
50+	2.6	43.6	0.0	53.0	0.0	0.6	0.3	100.0
Total	40.4	45.7	0.0	13.3	0.2	0.2	0.3	100.0
Note: Table is based on the <i>de facto</i> population, i.e., persons who stayed in the household the night before the interview (including both usual residents and visitors). The marital status distribution for females by age cannot be directly compared with the published distribution for NFHS-1 because the ages in the current table are based entirely on the reports of the household respondents, whereas in NFHS-1 the ages of ever-married women age 13–49 were taken from the Woman's Questionnaire.								

Table 2.3 Singulate mean age at marriage			
Singulate mean age at marriage from selected sources, Goa, 1961–1999			
Source	Singulate mean age at marriage (SMAM)		
	Male	Female	Difference
1961 Census	27.1	20.9	6.2
1971 Census	U	U	U
1981 Census	28.5	23.0	5.5
1991 Census	29.4	24.2	5.2
1992–93 NFHS-1			
Urban	30.7	25.0	5.7
Rural	30.5	25.2	5.3
Total	30.6	25.1	5.5
1999 NFHS-2			
Urban	30.3	25.2	5.1
Rural	30.1	24.4	5.6
Total	30.2	24.8	5.4

Note: Table is based on the *de jure* population. The male SMAM minus the female SMAM may not correspond exactly to the difference in SMAM due to rounding.
U: Not available

Table 2.3 shows estimates of the singulate mean age at marriage (SMAM), which can be calculated from age-specific proportions single in a census or household survey. SMAM is calculated from the *de jure* population in NFHS-2 in order to arrive at estimates that are more comparable to those derived from the censuses, which are modified *de jure* counts. The SMAM in Goa is 24.8 for females and 30.2 for males. According to the SMAM measure, men in Goa tend to marry women who are five years younger than themselves.

There was almost no change in the SMAM in the six years between NFHS-1 and NFHS-2; however, the census and NFHS-1 and NFHS-2 data together indicate that age at marriage has been increasing in Goa for both men and women. Between 1961 and the early 1990s, the SMAM increased by over three years for men and by about four years for women. Compared with all other states in India, Goa has the highest SMAM for men and is second only to Manipur with regard to the SMAM for women.

2.3 Household Composition

Table 2.4 shows the percent distribution of households by various characteristics of the household head (sex, age, religion, and caste/tribe), as well as by household type and the number of usual household members, according to residence. The table is based on the *de jure* population because household type and the number of usual household members pertain to the usual-resident population. Forty-two percent of the households live in urban areas. Almost one-quarter of households in Goa are headed by females (22 percent in urban areas and 25 percent in rural areas), compared with only 11 percent in India as a whole.

The median age of household heads is 50 years in both urban and rural areas. More than two-thirds (67 percent) of household heads are age 30–59 and only 5 percent are less than age 30. Sixty-three percent of household heads are Hindu, 33 percent are Christian, and 4 percent are Muslim. Hindus and Muslims constitute higher proportions of the population in urban areas than

Table 2.4 Household characteristics

Percent distribution of households by selected characteristics of the household head, household type, and household size, according to residence, Goa, 1999

Characteristic	Urban	Rural	Total
Sex of household head			
Male	77.8	75.4	76.4
Female	22.2	24.6	23.6
Age of household head			
< 30	5.4	4.6	5.0
30-44	33.8	33.2	33.5
45-59	34.9	32.9	33.7
60+	25.9	29.1	27.8
Missing	0.0	0.1	0.1
Median age	49.5	50.2	50.0
Religion of household head			
Hindu	67.7	59.6	63.0
Muslim	5.3	2.7	3.8
Christian	26.8	37.3	32.9
Jain	0.2	0.3	0.2
No religion	0.0	0.1	0.1
Caste/tribe of household head			
Scheduled caste	5.7	6.6	6.2
Scheduled tribe	0.0	0.5	0.3
Other backward class	2.9	9.0	6.4
Other	91.3	83.5	86.8
Don't know/missing	0.2	0.3	0.2
Household type			
Nuclear household	65.6	60.9	62.8
Non-nuclear household	34.4	39.1	37.2
Number of usual members			
1	4.7	4.5	4.6
2	10.9	9.7	10.2
3	19.5	15.0	16.9
4	21.4	21.6	21.5
5	19.2	19.4	19.3
6	12.2	14.1	13.3
7	5.9	6.2	6.1
8	1.9	3.4	2.8
9+	4.3	6.2	5.4
Mean household size	4.4	4.7	4.6
Total percent	100.0	100.0	100.0
Number of households	667	932	1,599

Note: Table is based on the *de jure* population.

in rural areas, whereas Christians constitute a higher proportion of the population in rural areas. Only 6 percent of household heads in Goa belong to the scheduled castes, 6 percent belong to other backward classes (OBC¹), and less than 1 percent belong to the scheduled tribes. The remaining 87 percent of household heads do not belong to a scheduled tribe, a scheduled caste, or an other backward class.

¹Other backward classes are castes and communities that have been designated by the Government of India as socially and educationally backward and in need of special protection from social injustice.

Sixty-three percent of all households are nuclear family households (consisting of an unmarried adult living alone or a married person or couple and their unmarried children, if any). Nuclear households are slightly more common in urban areas than in rural areas (66 percent compared with 61 percent). The average household size is 4.6 persons (4.4 in urban areas and 4.7 in rural areas). Five percent of households consist of only one person, and 14 percent have seven or more individuals.

2.4 Educational Level

The level of education of household members may affect reproductive behaviour, contraceptive use, the health of children, and the adoption of hygienic practices. Table 2.5 shows the percent distribution of the *de facto* household population by literacy and educational level, according to

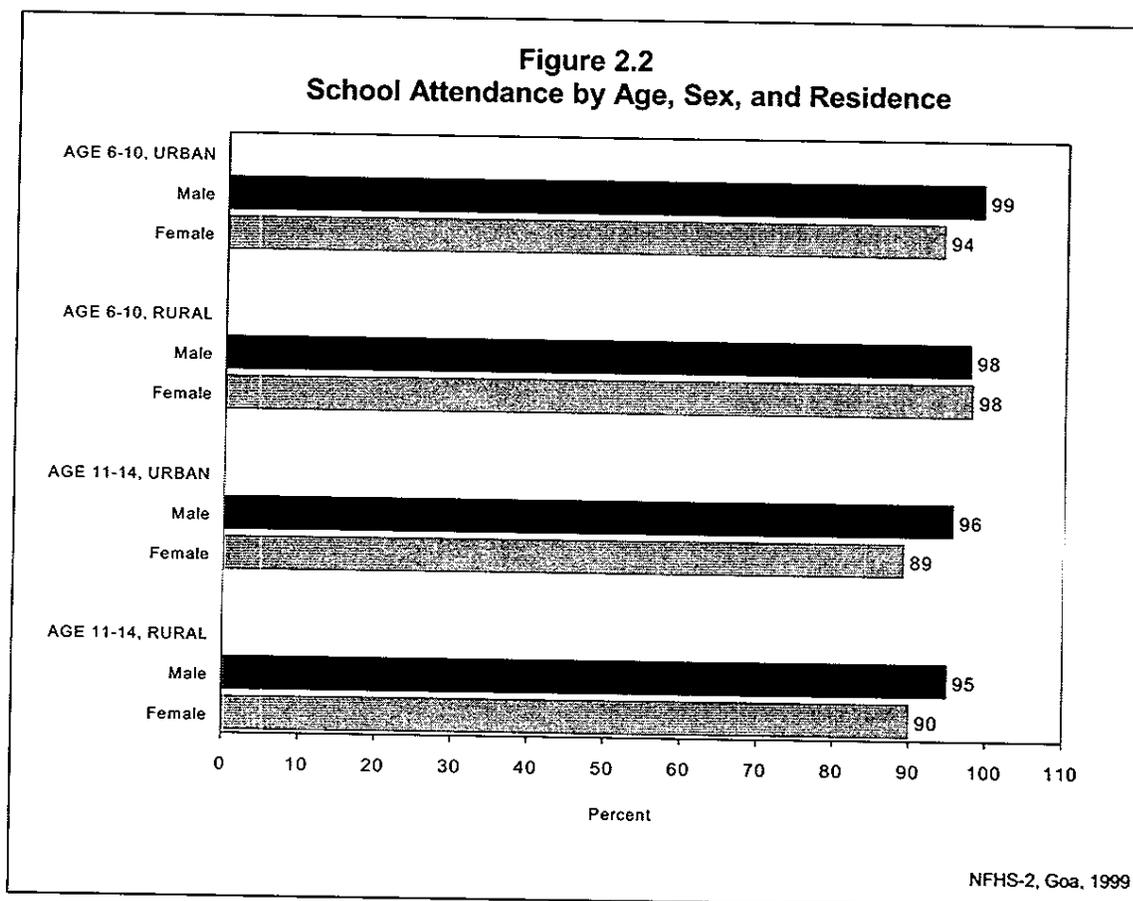
Table 2.5 Educational level of the household population										
Percent distribution of the household population age 6 and above by literacy and level of education, and median number of completed years of schooling, according to age and sex, Goa, 1999										
Age	Educational level ¹							Total percent	Number of persons	Median number of years of schooling
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing			
MALE										
6-9	7.1	89.3	3.2	0.0	0.0	0.0	0.4	100.0	223	2.5
10-14	0.3	22.7	54.1	20.9	1.4	0.0	0.6	100.0	305	6.6
15-19	3.9	5.3	17.3	32.9	28.4	12.3	0.0	100.0	357	9.6
20-29	4.8	4.5	14.0	19.6	24.4	32.7	0.0	100.0	741	10.4
30-39	12.1	10.5	13.9	18.3	20.9	24.4	0.0	100.0	600	9.5
40-49	19.1	17.5	15.3	12.3	16.5	19.3	0.0	100.0	409	7.7
50+	24.4	28.1	13.4	4.1	15.3	14.7	0.0	100.0	609	4.8
Total	11.3	19.3	17.4	15.8	17.7	18.5	0.1	100.0	3,243	8.3
FEMALE										
6-9	8.9	88.3	2.4	0.0	0.0	0.0	0.4	100.0	248	2.7
10-14	4.8	20.3	48.8	24.8	1.3	0.0	0.0	100.0	319	6.7
15-19	5.3	3.4	14.3	29.0	30.8	17.3	0.0	100.0	375	9.9
20-29	13.6	6.3	13.9	19.2	17.1	29.9	0.0	100.0	751	9.7
30-39	23.1	11.2	18.4	13.0	15.1	19.2	0.0	100.0	582	7.7
40-49	37.0	16.3	12.8	6.1	17.2	10.6	0.0	100.0	391	4.7
50+	56.8	17.2	8.4	3.9	8.2	5.4	0.1	100.0	733	0.0
Total	25.2	17.6	15.8	13.5	13.6	14.2	0.1	100.0	3,400	6.7
TOTAL										
6-9	8.1	88.8	2.7	0.0	0.0	0.0	0.4	100.0	471	2.6
10-14	2.6	21.5	51.4	22.9	1.3	0.0	0.3	100.0	624	6.7
15-19	4.6	4.3	15.7	30.9	29.6	14.8	0.0	100.0	732	9.7
20-29	9.2	5.4	13.9	19.4	20.7	31.3	0.0	100.0	1,491	10.1
30-39	17.5	10.8	16.1	15.7	18.1	21.8	0.0	100.0	1,182	8.8
40-49	27.9	16.9	14.1	9.2	16.9	15.1	0.0	100.0	800	6.1
50+	42.1	22.2	10.6	4.0	11.4	9.6	0.1	100.0	1,342	3.3
Total	18.4	18.5	16.6	14.6	15.6	16.3	0.1	100.0	6,642	7.6

Note: This table and all subsequent tables (unless otherwise indicated) are based on the *de facto* population. Illiterate persons may have been to school, but they cannot read and write. Total includes 1 female with missing information on age, who is not shown separately.

¹In this report, 'primary school complete' means 5-7 completed years of education, 'middle school complete' means 8-9 completed years of education, 'high school complete' means 10-11 completed years of education, and 'higher secondary complete and above' means 12 or more completed years of education.

Table 2.6 School attendance
Percentage of the household population age 6–17 years attending school by age, sex, and residence, Goa, 1999

Age	Male			Female			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6–10	99.1	97.6	98.3	94.0	97.9	96.3	96.6	97.7	97.2
11–14	95.5	94.9	95.1	89.1	90.0	89.7	92.1	92.4	92.3
15–17	73.2	70.3	71.3	73.5	67.0	69.4	73.3	68.6	70.4
6–14	97.5	96.3	96.8	91.7	94.3	93.2	94.6	95.2	95.0
6–17	91.2	88.5	89.6	87.2	86.5	86.8	89.2	87.5	88.1



age and sex. (This table and all subsequent tables and figures in this report are based on the *de facto* sample, unless otherwise specified.)

Seventy-five percent of females and 89 percent of males age 6 and over are literate in Goa. The literacy levels for both females and males in the state are virtually unchanged since NFHS-1. Nonetheless, the illiteracy level in Goa, at 18 percent, is about half the illiteracy level for the country as whole (37 percent).

Table 2.7 Reasons for children not attending school		
Percent distribution of children age 6–17 years who never attended school by the main reason for never attending school and percent distribution of children age 6–17 years who have dropped out of school by the main reason for not currently attending school, according to sex, Goa, 1999		
Reason	Male	Female
Main reason for never attending school¹		
School too far away	*	(7.2)
Education not considered necessary	*	(20.3)
Required for household work	*	(10.7)
Required for work on farm/family business	*	(3.1)
Required for outside work for payment in cash or kind	*	(10.4)
Costs too much	*	(10.8)
Required for care of siblings	*	(13.9)
Not interested in studies	*	(3.3)
Other	*	(20.4)
Total percent	100.0	100.0
Number of children	7	30
Main reason for not currently attending school²		
Transport not available	0.0	1.4
Further education not considered necessary	3.1	11.0
Required for household work	0.0	8.6
Required for work on farm/family business	1.7	2.8
Required for outside work for payment in cash or kind	21.2	12.5
Costs too much	4.8	9.9
Required for care of siblings	0.0	5.9
Not interested in studies	31.7	15.5
Repeated failures	29.9	22.5
Got married	0.0	3.0
Other	4.3	5.7
Don't know/missing	3.3	1.3
Total percent	100.0	100.0
Number of children	66	70
() Based on 25–49 unweighted cases *Percentage not shown; based on fewer than 25 unweighted cases ¹ For children who never attended school ² For children who have dropped out of school		

Rapid increases in educational attainment over time can be seen by examining the differences in educational levels by age.² For example, 97 percent of persons age 10–14 are literate, compared with 58 percent of persons age 50 and over, and 52 percent of persons age 20–29 have completed at least high school, compared with 21 percent of persons age 50 and over. Although sex differentials in literacy and education have narrowed over the years, differentials still persist. The proportion of males age 20–29 with a higher secondary education is 33 percent, compared with 30 percent of females of the same age. Notably, the proportion illiterate is almost

²Although the number of years of education at each level (primary school, middle school, secondary school, and higher secondary school) is different in different states, to facilitate comparisons of educational attainment among states, the NFHS-2 tabulations use the same levels in all states (five years of primary school, three years of middle school, two years of secondary school, and two years of higher secondary school). In NFHS-1, tabulations followed the actual educational system in Goa (four years of primary school, three years of middle school, three years of secondary school, and two years of higher secondary school), so that the educational levels in the NFHS-1 and NFHS-2 published tables are not strictly comparable.

three times as high among females age 20–29 (14 percent) as among males of the same age (5 percent). The median number of years of schooling is 8.3 for males and 6.7 for females.

Table 2.6 and Figure 2.2 show school attendance rates for the school-age household population by age and sex. In Goa as a whole, 95 percent of children age 6–14 are attending school. The attendance rate drops off sharply (to 70 percent) at age 15–17. For the age group 6–17, the attendance rate is 90 percent for males, 87 percent for females, and 88 percent for the state as a whole.

Table 2.7 shows reasons for children never attending school or not currently attending school (for those who have dropped out of school), as reported by the respondent to the Household Questionnaire. As mentioned above, the vast majority of children in Goa have attended school at some point in their lives. For children who dropped out of school, the major reasons for not currently attending school are that the child is not interested in studies, he or she has failed repeatedly, and the child is required for outside work for payment. All three reasons are cited much more often for boys than for girls. The notion of further education being unnecessary is also a major reason for girls not currently attending school. Reasons related to housework or caring for siblings are mentioned only for girls.

2.5 Housing Characteristics

Table 2.8 provides information on housing characteristics by residence. Nearly 94 percent of all households in Goa have electricity (96 percent in urban areas and 92 percent in rural areas). Water sources and sanitation facilities have an important influence on the health of household members, especially children. NFHS-1 and NFHS-2 included questions on sources of drinking water and types of sanitation facilities. Sixty-two percent of households use piped drinking water (up from 55 percent in NFHS-1) and another 34 percent get drinking water from wells (down from 39 percent in NFHS-1). Four percent of households use surface water for drinking. The proportion of households with piped drinking water is 75 percent in urban areas, but only 52 percent in rural areas. A greater proportion of rural households use well water and surface water for drinking (41 percent and 7 percent, respectively) than urban households (24 percent and less than 1 percent, respectively). Most households have fairly easy access to drinking water. Ninety-three percent of all households either have a source of drinking water in their residence/yard or take less than 15 minutes to get drinking water, including the time to go to the source, get water, and come back. Two-thirds of households purify their drinking water by some method (74 percent in urban areas and 62 percent in rural areas). In the state as a whole, the most popular method of water purification is to boil the water.

Regarding sanitation facilities, 38 percent of households have a flush toilet (using either piped water or water from a bucket for flushing), 21 percent have a pit toilet or latrine, and 41 percent have no facility. Again, there are large urban-rural differences: 52 percent of urban households have a flush toilet, whereas one-half of rural households have no toilet facility at all.

Several types of fuel are used for cooking in Goa, with liquid petroleum gas (used by 48 percent of households) and wood (used by 41 percent of households) being the most common types. There are large urban-rural differences: 66 percent of urban households rely mainly on liquid petroleum gas, whereas 56 percent of rural households rely mainly on wood. One in every 10 households uses kerosene as fuel for cooking.

Table 2.8 Housing characteristics			
Percent distribution of households by housing characteristics, according to residence, Goa, 1999			
Housing characteristic	Urban	Rural	Total
Electricity			
Yes	96.0	91.7	93.5
No	4.0	8.3	6.5
Total percent	100.0	100.0	100.0
Source of drinking water			
Piped	75.0	52.0	61.6
Hand pump	0.7	0.0	0.3
Well water	23.9	41.3	34.0
Surface water	0.2	6.6	3.9
Other	0.3	0.1	0.2
Total percent	100.0	100.0	100.0
Time to get drinking water			
Percentage < 15 minutes	96.0	90.8	93.0
Median time (minutes)	0.0	0.3	0.0
Method of drinking water purification¹			
Strains water by cloth	7.9	6.0	6.8
Uses alum	0.2	0.7	0.5
Uses water filter	16.3	6.8	10.7
Boils water	61.3	54.3	57.2
Uses electronic purifier	1.8	0.4	1.0
Uses other method	1.0	2.4	1.8
Does not purify water	26.3	37.9	33.1
Sanitation facility			
Flush toilet	52.1	28.0	38.0
Pit toilet/latrine	19.9	21.6	20.9
No facility	28.1	50.4	41.1
Total percent	100.0	100.0	100.0
Main type of fuel used for cooking			
Wood	19.8	56.2	41.0
Crop residues	0.0	0.4	0.2
Dung cakes	0.2	0.1	0.1
Kerosene	13.1	8.5	10.4
Electricity	0.2	0.0	0.1
Liquid petroleum gas	66.4	34.6	47.9
Biogas	0.0	0.2	0.1
Other	0.2	0.0	0.1
Missing	0.2	0.0	0.1
Total percent	100.0	100.0	100.0
Type of house			
<i>Kachha</i>	1.3	2.7	2.1
<i>Semi-pucca</i>	33.1	56.7	46.9
<i>Pucca</i>	65.7	40.6	51.0
Total percent	100.0	100.0	100.0
Persons per room			
< 3	83.7	87.2	85.8
3-4	10.1	9.6	9.8
5-6	4.8	2.5	3.4
7+	1.4	0.7	1.0
Total percent	100.0	100.0	100.0
Mean number of persons per room	1.6	1.6	1.6
Number of households	667	932	1,599

¹Totals add to more than 100.0 because households may use more than one method of purification.

Table 2.9 Household ownership of agricultural land, house, and livestock			
Percent distribution of households owning agricultural land and percentage owning a house and livestock by residence, Goa, 1999			
Asset	Urban	Rural	Total
No agricultural land	80.5	59.7	68.4
Irrigated land only			
< 1 acre	2.4	7.6	5.5
1-5 acres	2.4	8.0	5.6
6+ acres	1.0	1.0	1.0
Nonirrigated land only			
< 1 acre	2.9	7.3	5.5
1-5 acres	7.3	11.6	9.8
6+ acres	0.7	0.9	0.8
Both irrigated and nonirrigated land			
< 1 acre	0.3	0.4	0.4
1-5 acres	1.0	1.5	1.3
6+ acres	0.3	0.4	0.4
Missing	1.3	1.5	1.4
Total percent	100.0	100.0	100.0
Percentage owning a house	88.4	93.9	91.6
Percentage owning livestock	9.5	27.1	19.8
Number of households	667	932	1,599

Regarding type of house construction, 51 percent of households live in houses that are *pucca* (made with high-quality materials throughout, including the roof, walls, and floor), 47 percent live in semi-*pucca* houses (using partly low-quality and partly high-quality materials), and the remaining 2 percent live in *kachha* houses (made with mud, thatch or other low-quality materials). Sixty-six percent of households in urban areas live in *pucca* houses, compared with 41 percent in rural areas. The majority (57 percent) of rural households live in semi-*pucca* houses.

Crowded housing conditions may affect health as well as the quality of life. On an average, there are 1.6 persons per room (down from 1.8 persons per room in NFHS-1), and the majority of households (86 percent) have fewer than three persons per room. Only 4 percent of households have five or more persons per room.

Table 2.9 shows a number of measures related to the socioeconomic status of the household (ownership of land, house, and livestock). Overall, 68 percent of households do not own any agricultural land. The majority of households that own agricultural land in Goa, do not own any land that is irrigated. One-fifth of households own livestock and 92 percent of households own a house.

The possession of durable goods is another indicator of a household's socioeconomic level, although these goods may also have other benefits. For example, having access to a radio or television may expose household members to innovative ideas or important information about health and family welfare; a refrigerator prolongs the wholesomeness of food; and a means of

Table 2.10 Household ownership of durable goods and standard of living			
Percentage of households owning selected durable goods and percent distribution of households by type of kitchenware and the standard of living index, according to residence, Goa, 1999			
Asset	Urban	Rural	Total
Durable goods			
Mattress	72.0	52.5	60.7
Pressure cooker	62.9	34.2	46.1
Chair	87.8	86.8	87.2
Cot/bed	84.5	71.3	76.8
Table	81.2	80.0	80.5
Clock/watch	94.6	90.3	92.1
Electric fan	88.6	72.4	79.2
Bicycle	37.7	41.9	40.1
Radio/transistor	68.8	56.9	61.8
Sewing machine	48.8	42.3	45.0
Telephone	33.2	17.0	23.8
Refrigerator	52.7	32.3	40.8
Television (black and white)	22.7	19.7	21.0
Television (colour)	56.8	36.3	44.8
Moped/scooter/motorcycle	46.5	35.3	40.0
Car	12.4	4.8	8.0
Water pump	10.1	8.4	9.1
Bullock cart	0.5	0.3	0.4
Thresher	0.0	0.8	0.5
Tractor	0.2	0.2	0.2
None of the above	1.8	3.0	2.5
Main type of kitchenware used			
Clay	1.1	3.4	2.5
Aluminium	45.4	53.5	50.1
Cast iron	0.2	0.0	0.1
Brass/copper	1.1	0.5	0.8
Stainless steel	52.2	42.6	46.6
Total percent	100.0	100.0	100.0
Standard of living index			
Low	8.3	18.6	14.3
Medium	36.3	44.1	40.9
High	54.6	36.9	44.3
Missing	0.8	0.4	0.6
Total percent	100.0	100.0	100.0
Number of households	667	932	1,599

transportation allows greater access to many services outside the local area. Table 2.10 shows that the majority of households in Goa have a clock or watch (92 percent), a chair (87 percent), a table (81 percent), an electric fan (79 percent), a cot or a bed (77 percent), a radio or transistor (62 percent), and a mattress (61 percent). Other durable goods often found in households are pressure cookers (46 percent), sewing machines (45 percent), colour televisions (45 percent), refrigerators (41 percent), bicycles (40 percent), mopeds, scooters, or motorcycles (40 percent), telephones (24 percent), and black and white televisions (21 percent). Smaller proportions own water pumps (9 percent), cars (8 percent), and agricultural equipment such as bullock carts, threshers, and tractors (1 percent or less each). Urban households are much more likely than rural households to own most of these durable goods. Half the households in Goa use mainly aluminium kitchenware, and almost all of the remaining households use stainless steel kitchenware. Stainless steel kitchenware is more popular in urban areas (52 percent) than in rural areas (43 percent). The majority (54 percent) of households in rural areas use aluminium kitchenware.

Table 2.10 also shows a summary household measure called the standard of living index (SLI), which is calculated by adding the following scores:

House type: 4 for *pucca*, 2 for *semi-pucca*, 0 for *kachha*;

Toilet facility: 4 for own flush toilet, 2 for public or shared flush toilet or own pit toilet, 1 for shared or public pit toilet, 0 for no facility;

Source of lighting: 2 for electricity, 1 for kerosene, gas, or oil, 0 for other source of lighting;

Main fuel for cooking: 2 for electricity, liquid petroleum gas, or biogas, 1 for coal, charcoal, or kerosene, 0 for other fuel;

Source of drinking water: 2 for pipe, hand pump, or well in residence/yard/plot, 1 for public tap, hand pump, or well, 0 for other water source;

Separate room for cooking: 1 for yes, 0 for no;

Ownership of house: 2 for yes, 0 for no;

Ownership of agricultural land: 4 for 5 acres or more, 3 for 2.0–4.9 acres, 2 for less than 2 acres or acreage not known, 0 for no agricultural land;

Ownership of irrigated land: 2 if owns at least some irrigated land, 0 for no irrigated land;

Ownership of livestock: 2 if owns livestock, 0 if does not own livestock;

Ownership of durable goods: 4 each for a car or tractor, 3 each for a moped/scooter/motorcycle, telephone, refrigerator, or colour television, 2 each for a bicycle, electric fan, radio/transistor, sewing machine, black and white television, water pump, bullock cart, or thresher, 1 each for a mattress, pressure cooker, chair, cot/bed, table, or clock/watch.

Index scores range from 0–14 for a low SLI to 15–24 for a medium SLI to 25–67 for a high SLI. By this measure, 44 percent of households in Goa have a high standard of living, 41 percent have a medium standard of living, and 14 percent have a low standard of living. The proportion with a low standard of living is higher in rural areas (19 percent) than in urban areas (8 percent), and the proportion with a high standard of living is much higher in urban areas (55 percent) than in rural areas (37 percent).

2.6 Lifestyle Indicators

The NFHS-2 Household Questionnaire asked about certain aspects of the lifestyle of household members. Table 2.11 shows the percentages of men and women age 15 and above who chew *paan masala* or tobacco, drink alcohol, or smoke. These lifestyle indicators are of considerable interest because the use of *paan masala*, tobacco, and alcohol can all have detrimental effects on health.

The respondent to the Household Questionnaire reported on these lifestyle indicators for all persons in the household and, therefore, the results should be interpreted with caution because the household respondent may not be aware of use that takes place outside the household

Table 2.11 Lifestyle indicators

Percentage of usual household members age 15 and above who chew *paan masala* or tobacco, drink alcohol, currently smoke, or have ever smoked by selected background characteristics and sex, Goa, 1999

Background characteristic	Chew <i>paan masala</i> or tobacco	Drink alcohol	Currently smoke	Ever smoked ¹	Number of household members
MALE					
Age					
15-19	2.4	3.7	0.3	0.6	366
20-24	5.7	12.8	3.7	4.5	388
25-29	8.4	19.1	7.8	8.9	364
30-39	10.2	41.2	18.0	21.4	601
40-49	11.9	43.2	31.9	40.3	419
50-59	5.7	38.7	35.6	45.3	302
60+	7.3	35.7	31.6	51.5	310
Residence					
Urban	7.2	29.1	16.5	21.7	1,080
Rural	8.1	28.4	18.7	24.7	1,670
Education					
Illiterate	15.2	45.8	44.7	55.6	357
Literate, < middle school complete	10.9	29.9	26.0	34.3	768
Middle school complete	7.8	23.7	7.1	10.6	441
High school complete and above	3.4	24.5	8.4	11.6	1,183
Standard of living index					
Low	20.2	39.0	34.9	38.9	317
Medium	9.1	25.2	19.8	25.6	1,140
High	3.5	29.0	11.7	17.6	1,284
Total	7.7	28.7	17.8	23.5	2,750
FEMALE					
Age					
15-19	0.5	0.3	0.0	0.0	369
20-24	1.9	2.6	0.3	0.3	383
25-29	3.3	3.5	0.0	0.3	365
30-39	9.4	4.0	0.7	0.9	587
40-49	9.8	4.1	1.5	2.7	397
50-59	13.1	8.2	2.7	4.2	323
60+	18.2	9.1	9.9	13.6	402
Residence					
Urban	5.9	5.1	1.9	2.1	1,145
Rural	9.7	4.1	2.3	3.7	1,680
Education					
Illiterate	22.6	3.1	6.0	9.1	819
Literate, < middle school complete	6.0	4.1	1.5	1.7	680
Middle school complete	1.1	3.9	0.0	0.0	383
High school complete and above	0.1	6.3	0.0	0.0	942
Standard of living index					
Low	25.8	2.4	2.4	4.5	323
Medium	10.3	1.9	2.9	4.1	1,179
High	2.0	7.3	1.4	1.7	1,315
Total	8.2	4.5	2.1	3.1	2,826
Total male and female	8.0	16.4	9.9	13.1	5,576
<p>Note: Total includes 1 female with missing information on education and 9 males and 9 females with missing information on the standard of living index, who are not shown separately.</p> <p>¹Includes household members who currently smoke</p>					

environs. In addition, to the extent that social stigma may be attached to the use of some of the substances, underreporting is likely.

Eight percent of persons age 15 and above are reported to chew *paan masala* or tobacco. Chewing of *paan masala* or tobacco is almost equally common among men and women in Goa. It increases steadily with age for women, but peaks at age 40–49 for men. Specifically, this proportion rises from 2 percent and 1 percent for men and women, respectively, age 15–19 to a high of 10–12 percent for men age 30–49 and 18 percent for women age 60 and over. Chewing of *paan masala* or tobacco is inversely related to both education and the standard of living for men. For women, chewing of *paan masala* or tobacco is almost entirely concentrated among women who are illiterate or are literate but have not completed middle school and among women who live in households with a low or medium standard of living.

Twenty-nine percent of men age 15 and above drink alcohol (the highest rate among all the states of India), but a relatively small proportion of women drink alcohol (5 percent). The proportion of men who drink alcohol rises with age up to age 40–49, where it reaches a high of 43 percent, then falls to 36 percent among those age 60 and above. Alcohol consumption is higher among illiterate men (46 percent) than among literate men (24–30 percent). Men in households with a low standard of living are more likely to drink alcohol than men in households with a high standard of living (39 percent compared with 29 percent). By contrast, among women, alcohol consumption, although relatively low in all population groups, increases more or less steadily with age, education, and standard of living.

Among men age 15 and above, 18 percent currently smoke. This proportion rises from less than 1 percent at age 15–19 to 36 percent at age 50–59 and then falls to 32 percent at age 60 and over. Smoking is more than five times as high among illiterate men than among men who have completed at least high school, and it is almost three times as high among men with a low standard of living than among men with a high standard of living. Three-fourths of men who ever smoked were still smokers at the time of the survey. The pattern of differentials for ever-smokers closely resembles the pattern for current smokers. Although only 3 percent of all women are reported to have ever smoked, smoking is much more common among the oldest women (14 percent of women age 60 and over have ever smoked) and illiterate women (9 percent of them have ever smoked).

2.7 Availability of Facilities and Services to the Rural Population

The NFHS-2 Village Questionnaire collected information from the *sarpanch*, other village officials, or other knowledgeable persons in the village on facilities and services in the village. One important set of questions was on the distance of the village from various types of health facilities, including Primary Health Centres (PHCs), sub-centres, hospitals, and dispensaries or clinics. Table 2.12 summarizes findings on distance from a health facility. The unit of analysis is ever-married women age 15–49 who reside in rural areas. Seventeen percent of rural women live in a village with a Primary Health Centre and 61 percent live in a village with a sub-centre. The proportions who live in a village with other health facilities are 11 percent for hospitals and 56 percent for dispensaries or clinics. Three-fourths of women live in a village that has some kind of health facility. The median distance from a Primary Health Centre is 6.5 km, compared with 4.9 km for hospitals. Seven percent of rural women need to travel at least 5 kilometres to reach the nearest health facility.

Table 2.12 Distance from the nearest health facility						
Percent distribution of ever-married rural women age 15–49 by distance from the nearest health facility, Goa, 1999						
Distance	Health facility					Any health facility
	Primary Health Centre	Sub-centre	Either PHC or sub-centre	Hospital ¹	Dispensary/clinic	
Within village	17.0	61.4	61.4	10.9	56.2	75.1
< 5 km	23.9	31.6	31.6	40.1	29.6	17.9
5–9 km	30.4	3.6	3.6	37.0	8.0	3.6
10+ km	28.6	3.4	3.4	12.1	6.2	3.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Median distance (in km)	6.5	0.0	0.0	4.9	0.0	0.0

Note: The category '< 5 km' excludes cases where the facility is within the village. When median distance is calculated, 'within village' cases and cases with a facility less than 1 km from the village are assigned a distance of zero.
 PHC: Primary Health Centre
¹Includes community health centre, rural hospital, government hospital, and private hospital

Table 2.13 shows the proportion of rural population of Goa living in villages that have various facilities and services. Virtually all rural villages have a primary school and an *anganwadi*³ (a nursery school for children age 3–6). Eighty percent of rural residents live in villages that have a middle school, 63 percent live in villages that have a secondary school, and 25 percent live in villages with a higher secondary school. In terms of health facilities and services, 62 percent of rural residents live in villages that have a sub-centre, a similar proportion live in villages that have a private doctor, and 56 percent live in villages with a dispensary or clinic.

In Goa, all rural residents live in villages that have electricity. Sixty-four percent live in villages with an STD booth (for long distance telephoning within India), 87 percent live in villages that have at least one household with a private telephone, and 69 percent live in villages that have a post office. A large proportion (96 percent) of rural residents live in villages that have a general market or shop, and 87 percent live in villages that have a fair price shop. Three-fifths of rural residents live in villages that have cable television service (compared with 28 percent nationwide), and 57 percent live in villages that have a community television set, providing further evidence that exposure to electronic mass media is quite widespread in rural Goa. The majority of rural residents also live in villages that have a bank (59 percent) and a mill or a small-scale industry (69 percent). Other facilities that are available in villages where more than half of rural residents live are youth clubs, *paan* shops, and credit cooperative societies. One-third of rural residents live in villages with a *mahila mandal*, a women's community group. The most widely available rural development programmes as reported by the respondents to the Village Questionnaire are the Indira Awas Yojana, the Training Rural Youth for Self-Employment (TRYSEM), and the Integrated Rural Development Programme (IRDP). These development programmes are each available in villages where between one-third and one-half of the rural population lives.

³*Anganwadi* workers provide integrated child development services and may also engage in the promotion of family planning.

Table 2.13 Availability of facilities and services

Percentage of rural residents living in villages that have selected facilities and services, Goa, 1999

Facility/service	Percentage of residents	Facility/service	Percentage of residents
Primary school	99.8	Mill/small-scale industry	68.6
Middle school	79.7	Credit cooperative society	52.5
Secondary school	63.0	Agricultural cooperative society	21.1
Higher secondary school	25.0	Fishermen's cooperative society	10.2
College	6.1	Milk cooperative society	46.5
<i>Anganwadi</i>	99.8	<i>Kirana</i> /general market shop	96.2
Adult education centre	3.3	Weekly market	14.6
Primary Health Centre	18.3	Fair price shop	86.5
Sub-centre	61.9	<i>Paan</i> shop	63.4
Hospital ¹	11.5	Pharmacy/medical shop	28.6
Dispensary/clinic	55.9	<i>Mahila mandal</i>	34.4
Private doctor	61.8	Youth club	77.9
Visiting doctor	31.6	Community centre	20.4
Traditional birth attendant	9.3	Community television set	57.3
Electricity	100.0	Cable connection	61.4
Bank	59.2	Integrated Rural Development Programme (IRDP)	33.2
Post office	69.2	National Rural Employment Programme (NREP)	8.2
Telegraph office	30.7	Training Rural Youth for Self-Employment (TRYSEM)	40.3
STD (Subscriber Trunk Dialling) phone booth	63.5	Employment Guarantee Scheme (EGS)	13.3
At least one village household has a telephone	87.3	Development of Women and Children of Rural Areas (DWACRA)	7.4
		Indira Awas Yojana (IAY)	49.2
		Sanjay Gandhi Niradhar Yojana (SGNY)	7.3
		Total population	4,404

Note: Table is based on the *de jure* population.

¹Includes community health centre, rural hospital, government hospital, and private hospital

CHAPTER 3

BACKGROUND CHARACTERISTICS OF RESPONDENTS

Women's demographic and health-seeking behaviour is associated with several characteristics including their age, marital status, religion, and caste. Modernizing influences such as education and exposure to mass media are also important catalysts for demographic and socioeconomic change. In addition, women's status and autonomy are critical in promoting change in reproductive attitudes and behaviour, especially in patriarchal societies (Dyson and Moore, 1983; Das Gupta, 1987; Jeffery and Basu, 1996). The National Population Policy, 2000, of the Government of India identifies the low status of women in India, typified by factors such as discrimination against the girl child and female adolescents, early age at marriage, and high rates of maternal mortality, as an important barrier to the achievement of population and maternal and child welfare goals (Ministry of Health and Family Welfare, 2000).

This chapter presents a profile of the demographic and socioeconomic characteristics of ever-married women age 15–49 who were identified in the NFHS-2 Household Questionnaire as eligible respondents for the Woman's Questionnaire. In addition, data are presented on the extent to which women in Goa enjoy autonomy as measured by their participation in household decisionmaking, freedom of movement, and access to money they can spend as they wish. Finally, data on women's attitudes towards the acceptance of spousal violence under specific circumstances and their experience of physical violence are discussed.

3.1 Background Characteristics

Table 3.1 presents the percentage distribution of ever-married women age 15–49 by age, marital status, co-residence with husband, education, religion, caste/tribe, work status, and husband's education. The proportion of respondents in five-year age groups increases steadily from 2 percent in the age group 15–19 to 20 percent in the age group 35–39, and then falls to 16 percent in the age group 40 and above. Nearly three-fifths of the respondents are age 25–39. Notably, the proportion of ever-married women in the age group 15–24 is 10 percent in Goa, compared with 28 percent in India as a whole. This age pattern of ever-married women is largely a consequence of the higher age at marriage in the state. The age distribution is similar in urban and rural areas of the state.

Ninety-four percent of respondents are currently married, 5 percent are widowed, and the remaining 1 percent are either divorced, separated, or deserted. The distribution of respondents by marital status varies only marginally by place of residence. Eighty-seven percent of respondents live with their husbands, and 8 percent are married but are not living with their husbands. The proportion co-resident with their husbands is slightly lower in urban areas (85 percent) than in rural areas (88 percent).

Educational levels of respondents and their husbands may have an important influence on demographic and health-seeking behaviour. Twenty-nine percent of ever-married women age 15–49 in Goa are illiterate, compared with 58 percent of women in India as a whole. The level of illiteracy for ever-married women declined in Goa from 34 percent at the time of NFHS-1 to 29 percent at the time of NFHS-2. Between the two surveys, the decline in illiteracy among ever-

Table 3.1 Background characteristics of respondents

Percent distribution of ever-married women age 15–49 by selected background characteristics, according to residence, Goa, 1999

Background characteristic	Residence			Number of women	
	Urban	Rural	Total	Weighted	Unweighted
Age					
15–19	2.0	1.3	1.6	20	20
20–24	8.7	8.4	8.5	106	107
25–29	18.7	19.0	18.9	235	235
30–34	18.2	20.0	19.2	240	240
35–39	18.6	21.1	20.0	250	250
40–44	16.2	15.8	15.9	198	198
45–49	17.7	14.5	15.8	197	196
Marital status					
Currently married	93.3	94.4	94.0	1,171	1,171
Widowed	5.1	4.8	4.9	61	61
Divorced	0.2	0.1	0.2	2	2
Separated	0.8	0.4	0.6	7	7
Deserted	0.6	0.3	0.4	5	5
Co-residence with husband					
Living with husband	84.7	87.7	86.5	1,077	1,077
Not living with husband	8.6	6.7	7.5	93	94
Not currently married	6.7	5.6	6.0	75	75
Education					
Illiterate	22.9	32.7	28.6	357	359
Literate, < primary school complete	7.4	13.4	10.9	136	137
Primary school complete	14.9	17.2	16.3	203	203
Middle school complete	13.7	11.7	12.5	156	156
High school complete	17.9	13.6	15.4	191	191
Higher secondary complete and above	23.3	11.4	16.3	203	200
Religion					
Hindu	71.7	62.5	66.4	827	820
Muslim	5.5	3.7	4.4	55	55
Christian	22.6	33.4	28.9	361	367
Jain	0.2	0.3	0.2	3	3
No religion	0.0	0.1	0.1	1	1
Caste/tribe					
Scheduled caste	9.7	5.9	7.4	93	92
Scheduled tribe	0.0	0.4	0.2	3	3
Other backward class	2.6	8.9	6.3	79	82
Other	87.5	84.7	85.9	1,070	1,067
Missing	0.2	0.1	0.2	2	2
Work status					
Working in family farm/business	7.6	15.1	12.0	150	151
Employed by someone else	26.6	29.1	28.1	350	351
Self-employed	6.9	7.5	7.3	91	91
Not worked in past 12 months	58.8	48.2	52.6	655	652
Missing	0.0	0.1	0.1	1	1
Husband's education					
Illiterate	12.0	19.0	16.1	200	203
Literate, < primary school complete	11.9	16.9	14.8	185	184
Primary school complete	12.3	16.6	14.8	184	185
Middle school complete	10.9	13.8	12.6	157	159
High school complete	24.0	21.2	22.4	279	279
Higher secondary complete and above	28.3	12.4	19.0	237	232
Missing	0.6	0.1	0.3	4	4
Total percent	100.0	100.0	100.0	NA	NA
Number of women					
Weighted	519	727	1,246	1,246	NA
Unweighted	491	755	1,246	NA	1,246

NA: Not applicable

married women was more pronounced in rural areas (from 44 percent to 33 percent) than in urban areas (from 24 percent to 23 percent). Thirty-two percent of respondents have completed at least high school (up from 27 percent in NFHS-1), including 16 percent who have completed higher secondary school or above. Forty-one percent of urban respondents have attained this level of education, compared with 25 percent of rural respondents.

Although 29 percent of women are illiterate, only 16 percent of their husbands are illiterate, down from 18 percent in NFHS-1. The overall decline in illiteracy for husbands is driven by the decline in illiteracy in rural areas (from 24 percent to 19 percent) rather than in urban areas (where illiteracy remained unchanged at 12 percent during the period between the two surveys). At the other educational extreme, 41 percent of women have husbands who have completed at least high school (up from 37 percent in NFHS-1). This percentage is much higher in urban areas (52 percent) than in rural areas (34 percent).

Sixty-six percent of the respondents in Goa are Hindu, 29 percent are Christian, and only 4 percent are Muslim. The proportion of women who are Christian is much higher in rural areas (33 percent) than in urban areas (23 percent) and the proportion of women who are Hindu is higher in urban areas (72 percent) than in rural areas (63 percent).

A large majority of respondents (86 percent) do not belong to a scheduled caste, a scheduled tribe, or an other backward class. Seven percent belong to the scheduled castes and 6 percent belong to the other backward classes. The proportion of women who belong to scheduled castes is somewhat higher in urban areas (10 percent) than in rural areas (6 percent), and the proportion of women who belong to other backward classes is higher in rural areas (9 percent) than in urban areas (3 percent).

Fifty-three percent of respondents in Goa did not do work other than their regular housework during the 12 months preceding the survey, and the proportion is higher in urban areas (59 percent) than in rural areas (48 percent). Twelve percent of women work on the family farm or in a family business, 7 percent are self-employed, and 28 percent are employed by someone else.

3.2 Educational Level

Table 3.2 presents the percent distribution of ever-married women age 15–49 by the highest level of education attained, according to age, religion, caste/tribe, and husband's education. The educational distribution of women in different age groups illustrates the progress in the spread of education over a period of about three decades. As expected, the level of illiteracy declines with declining age from 41 percent for women age 45–49 to 21 percent for women age 25–29, but then rises to 27 percent for women age 20–24 (undoubtedly because illiterate women are more likely than literate women to marry at young ages). Thus, despite declines in illiteracy, more than one-fourth of ever-married women in the age group 20–24 are still illiterate. At the other end of the educational spectrum, the proportion of women who have completed at least high school is almost twice as high among women age 30–34 (40 percent) as among women age 45–49 (22 percent). The level of illiteracy is much higher among Muslims (44 percent) than Hindus (29 percent) and Christians (26 percent). By caste/tribe, the proportion of women who are illiterate is highest among scheduled-caste women (67 percent), followed by women from other backward classes (49 percent), while it is only 24 percent for women who do not belong to a scheduled caste, a scheduled tribe, or an other backward class.

Table 3.2 Respondent's level of education by background characteristics								
Percent distribution of ever-married women age 15–49 by highest level of education attained, according to selected background characteristics, Goa, 1999								
Background characteristic	Respondent's level of education						Total percent	Number of women
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above		
Age								
20–24	26.7	9.1	17.9	18.7	16.2	11.4	100.0	106
25–29	21.3	8.7	14.4	18.6	13.2	23.7	100.0	235
30–34	22.0	9.0	15.0	14.5	18.4	21.1	100.0	240
35–39	28.5	9.6	20.8	10.9	15.4	14.9	100.0	250
40–44	33.8	13.5	13.2	7.7	17.2	14.6	100.0	198
45–49	40.7	16.5	14.7	6.1	13.0	9.0	100.0	197
Religion								
Hindu	29.0	13.0	17.7	11.4	14.2	14.7	100.0	827
Muslim	43.9	8.7	23.8	10.9	10.9	1.7	100.0	55
Christian	25.6	6.6	11.9	15.5	18.7	21.7	100.0	361
Caste/tribe								
Scheduled caste	67.3	5.2	12.1	2.3	4.4	8.8	100.0	93
Other backward class	48.9	8.6	12.1	10.2	8.6	11.6	100.0	79
Other ¹	23.6	11.6	16.9	13.5	16.9	17.4	100.0	1,070
Husband's education								
Illiterate	72.6	12.2	8.5	5.1	1.0	0.5	100.0	200
Literate, < primary school complete	52.7	22.7	15.3	6.6	2.2	0.5	100.0	185
Primary school complete	34.0	17.4	27.2	13.2	7.7	0.6	100.0	184
Middle school complete	15.2	12.1	23.8	28.2	12.7	8.0	100.0	157
High school complete	8.0	6.3	18.5	15.9	33.9	17.4	100.0	279
Higher secondary complete and above	0.9	0.4	7.3	8.7	24.0	58.8	100.0	237
Total	28.6	10.9	16.3	12.5	15.4	16.3	100.0	1,246

Note: Total includes 20 women age 15–19, 4 women belonging to other religions, 3 women belonging to the scheduled tribes, and 2 and 4 women with missing information on caste/tribe and husband's education, respectively, who are not shown separately.
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Seventy-three percent of women with illiterate husbands are themselves illiterate. The table shows that husbands at each level of education are more likely to have wives with a lower level of education than with an equal or higher level of education. Specifically, the proportion of women who have less education than their husbands is 53 percent for women whose husbands are literate but have not completed primary school, 51 percent for women whose husbands have completed primary school but have not completed middle school, 51 percent for women whose husbands have completed middle school, 49 percent for women whose husbands have completed high school, and 41 percent for women whose husbands have completed higher secondary school. Thus, in Goa, the likelihood that a wife is at least as educated as her husband is, in general, greater the higher is her husband's education.

3.3 Age at First Marriage

Table 3.3 provides information on age at first marriage for all women. The table shows the percentage of women who first married by specified exact ages, and the median age at first marriage and first cohabitation by current age and residence. The median age at first

Table 3.3 Age at first marriage								
Percentage of women married by specific exact ages, median age at first marriage, and median age at first cohabitation with husband, according to current age and residence, Goa, 1999								
Current age ¹	Percentage ever married by exact age						Median age at first marriage	Median age at first cohabitation with husband
	13	15	18	20	22	25		
URBAN								
15-19	1.7	3.3	NA	NA	NA	NA	NC	NC
20-24	3.0	7.4	15.4	22.9	NA	NA	NC	NC
25-29	0.6	4.5	12.8	20.6	31.6	47.2	NC	NC
30-34	1.9	4.8	17.9	25.8	36.8	53.0	24.0	24.0
35-39	2.0	6.0	20.5	29.6	48.1	65.5	22.2	22.4
40-44	1.3	3.7	13.5	26.6	42.5	65.5	22.8	22.8
45-49	5.5	7.7	16.8	43.4	54.7	80.2	21.2	21.3
20-49	2.3	5.7	15.9	27.1	38.4	54.5	NC	NC
25-49	2.1	5.2	16.0	28.1	41.4	60.2	23.3	23.3
RURAL								
15-19	0.0	0.9	NA	NA	NA	NA	NC	NC
20-24	0.5	1.0	6.3	13.2	NA	NA	NC	NC
25-29	0.5	2.3	8.1	14.8	28.0	49.8	NC	NC
30-34	0.0	2.3	6.2	20.0	33.1	58.7	24.0	24.0
35-39	1.8	2.3	15.5	31.3	47.1	66.2	22.5	22.6
40-44	2.4	4.1	22.8	37.4	57.2	74.3	20.9	21.1
45-49	3.5	8.6	30.5	52.1	65.3	77.2	19.8	20.0
20-49	1.2	3.0	13.0	25.3	39.2	56.5	NC	NC
25-49	1.4	3.5	14.8	28.4	43.2	63.1	23.0	23.1
TOTAL								
15-19	0.6	1.8	NA	NA	NA	NA	NC	NC
20-24	1.5	3.6	10.1	17.2	NA	NA	NC	NC
25-29	0.5	3.3	10.2	17.3	29.6	48.6	NC	NC
30-34	0.7	3.3	10.7	22.1	34.4	56.2	24.0	24.1
35-39	1.9	3.8	17.4	30.6	47.5	65.8	22.4	22.5
40-44	1.9	3.9	18.8	32.8	50.9	70.5	21.8	21.9
45-49	4.4	8.2	24.1	48.0	60.2	78.3	20.3	20.4
20-49	1.6	4.1	14.2	26.0	38.8	55.5	NC	NC
25-49	1.7	4.2	15.3	28.2	42.3	61.7	23.2	23.2

NA: Not applicable
NC: Not calculated because less than 50 percent of women in the age group have married or started living with their husband by the beginning of the five-year age group
¹The current age groups include both never-married and ever-married women.

marriage/cohabitation with husband for a cohort of women is the age by which 50 percent of the cohort marries/cohabits. The table further substantiates that the average age at marriage for women in Goa is relatively high. Marriage before age 18 is rare in Goa; only 14 percent of women age 20-49 were married by age 18. The proportion marrying by age 18 has declined over time, from 24 percent for women age 45-49 to 10 percent for women age 20-29. Sixty-two percent of the women age 25-49 were married by age 25, compared with 94 percent in India as a whole. The proportion of women married by exact age 25 has also declined from 78 percent for women age 45-49 to 49 percent for women age 25-29.

The median age at first marriage has also risen over the past three decades. The median age at first marriage is four years higher for women age 30-34 than for women age 45-49 (24.0

compared with 20.3). (The median age at first marriage could not be calculated for women age 15–19, 20–24, and 25–29 because more than half of the women in these age groups were not married at the time of the survey.)

Table 3.3 also provides information on the median age at first cohabitation with husband. This, along with age at first marriage, shows the gap between formal marriage and the time when a wife starts living with her husband. In Goa, there is no difference between the median age at first marriage and the median age at first cohabitation, suggesting that cohabitation begins immediately after the marriage.

3.4 Exposure to Mass Media

In NFHS-2, women were asked questions about whether they read a newspaper or magazine, watch television, or listen to the radio at least once a week, and whether they visit the cinema or theatre at least once a month. Table 3.4 gives information on women's exposure to these forms of mass media by selected background characteristics.

In Goa, a large majority (88 percent) of women are regularly exposed to one or more of these media. Sixteen percent of rural women are not regularly exposed to any media, compared with only 6 percent of urban women. Exposure to mass media varies little and inconsistently by age, with exposure being highest for the age group 25–29. As expected, the percentage not regularly exposed to media is much higher among illiterate women and women with a low standard of living than among other women. Thirty-one percent of illiterate women are not exposed to any media, whereas all women who have completed at least a high school education have regular exposure to some form of mass media. The proportion not regularly exposed to any media is 36 percent among women with a low standard of living and only 2 percent among those with a high standard of living. A high proportion of women from the scheduled castes (22 percent) and the other backward classes (26 percent) are not regularly exposed to any media, compared with 10 percent of 'other' women. The proportion of women not regularly exposed to any media does not differ substantially by religion.

Among the different types of mass media, 81 percent of women are regularly exposed to television, up from 71 percent in NFHS-1. Fifty-two percent of women mentioned that they usually listen to the radio at least once a week, down from 69 percent in NFHS-1. Nearly half (48 percent) of women read a newspaper or magazine at least once a week and only 4 percent of women visit the cinema or theatre at least once a month. Notably, women under age 30 are more likely than older women to visit the cinema or theatre. Although the proportion not exposed to any media does not vary much by religion, Hindus (49 percent) and Christians (50 percent) are twice as likely to read newspapers or magazines weekly as Muslims (25 percent). Visits to the cinema or theatre are more common among Muslims (9 percent) than among Hindus (6 percent) or Christians (1 percent), however.

3.5 Women's Employment

Labour force participation not only gives women an opportunity to earn income, but also exposes them to the outside world and to authority structures and networks other than kin-based ones (Dixon-Mueller, 1993). In a developing country such as India, however, where women's workforce participation is often motivated by poverty, these benefits are likely to be mediated by the social context of women's work and their total work burden (Bardhan, 1985; Desai and Jain,

Table 3.4 Exposure to mass media

Percentage of ever-married women age 15–49 who usually read a newspaper or magazine, watch television, or listen to the radio at least once a week, who usually visit a cinema/theatre at least once a month, or who are not regularly exposed to any of these media by selected background characteristics, Goa, 1999

Background characteristic	Exposure to mass media					Number of women
	Reads a newspaper or magazine at least once a week	Watches television at least once a week	Listens to the radio at least once a week	Visits the cinema/theatre at least once a month	Not regularly exposed to any media	
Age						
20–24	36.7	73.0	47.6	10.4	15.3	106
25–29	51.9	86.7	54.9	7.5	7.5	235
30–34	56.7	80.9	54.8	4.6	10.6	240
35–39	51.1	76.5	53.7	2.1	13.8	250
40–44	46.1	83.8	52.3	1.6	11.2	198
45–49	39.3	79.5	45.2	1.0	14.0	197
Residence						
Urban	59.4	88.2	53.0	6.3	5.9	519
Rural	40.6	75.6	51.2	2.8	15.6	727
Education						
Illiterate	0.0	61.0	35.5	3.7	31.0	357
Literate, < middle school complete	45.9	80.3	58.1	2.1	8.0	339
Middle school complete	60.2	91.2	57.9	3.9	4.4	156
High school complete and above	89.6	95.2	59.3	6.8	0.0	395
Religion						
Hindu	49.4	82.6	51.8	5.6	11.1	827
Muslim	25.2	79.5	55.9	9.0	11.3	55
Christian	49.6	76.9	51.7	0.5	13.0	361
Caste/tribe						
Scheduled caste	17.8	77.5	33.3	6.8	21.5	93
Other backward class	30.3	64.7	40.6	5.1	26.0	79
Other ¹	52.5	82.4	54.6	4.0	9.6	1,070
Standard of living index						
Low	11.2	48.1	32.8	3.4	35.5	177
Medium	34.3	74.7	50.8	3.8	14.5	495
High	72.3	96.2	59.0	4.9	1.7	568
Total	48.4	80.8	52.0	4.3	11.6	1,246

Note: Total includes 20 women age 15–19, 4 women belonging to other religions, 3 women belonging to the scheduled tribes, and 2 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

1994). In addition, the empowering effects of employment for women are likely to depend on their occupation, the continuity of their workforce participation, and whether they earn income. It is generally expected that women who work at a regular job, who earn money, and who perceive that their contribution is a substantial part of total family earnings are more likely to be empowered than other employed and unemployed women (Youssef, 1982; Sen, 1990; Mahmud and Johnston, 1994). The National Population Policy adopted by the Government of India in 2000 (Ministry of Health and Family Welfare, 2000) explicitly recognizes the importance of women's paid employment in achieving the goal of population stabilization in India and also specifies measures that will encourage paid employment and self-employment of women.

Table 3.5 Employment			
Percent distribution of ever-married women age 15–49 by employment characteristics, according to residence, Goa, 1999			
Employment characteristic	Urban	Rural	Total
Employment status			
Currently working	38.1	46.2	42.8
Worked in past 12 months (not currently working)	3.1	5.7	4.6
Not worked in past 12 months	58.8	48.2	52.6
Continuity of employment¹			
Throughout the year	67.5	46.5	54.1
Seasonally/part of the year	22.0	42.1	34.8
Once in a while	10.5	11.4	11.1
Type of earnings¹			
Cash only	80.0	63.5	69.4
Cash and kind	1.0	4.3	3.1
Kind only	1.0	4.1	3.0
Not paid	18.0	28.2	24.5
Occupation¹			
Professional	16.8	7.8	11.1
Sales worker	13.4	6.4	8.9
Service worker	6.4	3.0	4.2
Production worker	14.5	11.4	12.5
Agricultural worker	13.1	49.5	36.3
Other worker	34.4	20.6	25.6
Missing	1.5	1.3	1.3
Earnings contribution to total family earnings²			
Almost none	10.9	12.0	11.6
Less than half	37.2	40.8	39.3
About half	25.1	22.7	23.7
More than half	8.6	8.3	8.4
All	18.3	16.3	17.1
Total percent	100.0	100.0	100.0
Number of women	519	727	1,246
Number of employed women ¹	214	377	591
Number of women earning cash	173	256	429

¹For currently working women and women who have worked in the past 12 months

²For women earning cash

Table 3.5 provides information on these aspects of women's employment for ever-married women age 15–49 according to residence. In Goa, 53 percent of women report that they did not work during the 12 months preceding the survey, aside from doing their own housework. Current employment of women increased substantially from 30 percent in NFHS-1 to 43 percent in NFHS-2. Fifty-two percent of rural women and 41 percent of urban women worked at any time in the 12 months preceding the survey. Among women who worked during the 12 months preceding the survey, the majority of women (54 percent) worked throughout the year (68 percent of urban working women and 47 percent of rural working women). Thirty-five percent of working women are engaged in seasonal work (22 percent in urban areas and 42 percent in rural areas). Overall, 36 percent of working women are agricultural workers, 13 percent are engaged in production work, 11 percent are professionals, and 9 percent are sales workers. As expected, the proportion engaged in work related to agriculture is much higher in rural areas (50 percent) than in urban areas (13 percent).

Sixty-nine percent of working women are paid only in cash, and one-quarter are not paid for their work at all. In urban areas, 81 percent of working women receive at least some cash for their work, compared with 68 percent of working women in rural areas.

A significant feature of women's work participation in Goa is their substantial contribution to family earnings. In NFHS-2, women who earned cash for their work in the past 12 months were asked how much their earnings contribute to the total family earnings. Almost half of these women say that their earnings constitute at least half of the total family earnings, including 17 percent who say that their family is entirely dependent on their earnings. Thirty-nine percent contribute less than half of family earnings and 12 percent say that they contribute almost nothing to the total family earnings. Urban and rural areas are very similar in terms of women's contribution to total family earnings.

3.6 Women's Autonomy

Education, work participation, and exposure to mass media are some of the means by which women gain status and autonomy, both important aspects of their empowerment. To measure women's autonomy and empowerment more directly, NFHS-2 asked about women's participation in household decisionmaking, their freedom of movement, and access to money that they can spend as they wish. Women's autonomy is likely to have a significant impact on the demographic and health-seeking behaviour of couples by altering women's relative control over fertility and contraceptive use, and by influencing their attitudes (for example, attitudes towards the sex composition of children) and abilities (for example, the ability to obtain health services for themselves and their children) (Sen and Batliwala, 1997).

In order to measure women's participation in household decisionmaking, NFHS-2 asked women to report who in their households makes decisions about the following: what items to cook, obtaining health care for themselves, purchasing jewellery or other major household items, and their going and staying with parents or siblings. The survey also asked women who earn cash who decides how the money they earn is spent. Table 3.6 gives the percent distribution of the person (or persons) who makes each of the specified household decisions, according to residence.

As expected, ever-married women in Goa are most likely to participate in the decision about what items to cook: 73 percent of women make this decision on their own and another 17 percent make this decision jointly with their husband or someone else in the household (see Figure 3.1). One in every 10 women, however, is not involved at all in decisions about what to cook. A substantial proportion of women are not involved at all in decisions about seeking health care (39 percent), purchasing jewellery or other major household items (38 percent), and going and staying with parents or siblings (28 percent). Among these three types of decisions, the decision that women are most likely to take on their own is the decision about going and staying with their parents or siblings (43 percent), followed by obtaining health care for themselves (40 percent). There are no sharp differences by residence in the proportion of women participating in the different types of decisions.

Almost two-thirds of women who earn cash (66 percent) report that they are solely responsible for deciding about how the money they earn will be used. Only 12 percent of women report that they have no involvement in deciding how the money they earn will be used.

Table 3.6 Household decisionmaking						
Percent distribution of ever-married women by person who makes specific household decisions, according to residence, Goa, 1999						
Household decision	Respondent only	Husband only	Respondent with husband	Others in household only	Respondent with others in household	Total percent
URBAN						
What items to cook	71.7	2.1	4.3	9.1	12.9	100.0
Obtaining health care for herself	38.1	30.7	15.8	6.1	9.3	100.0
Purchasing jewellery or other major household items	28.0	25.3	30.5	7.7	8.4	100.0
Going and staying with her parents or siblings	40.7	23.0	25.0	5.1	6.2	100.0
How the money she earns will be used ¹	67.1	9.8	20.7	1.9	0.6	100.0
RURAL						
What items to cook	74.0	1.4	4.1	7.8	12.6	100.0
Obtaining health care for herself	41.1	30.6	12.5	8.9	6.9	100.0
Purchasing jewellery or other major household items	28.5	32.8	22.2	7.8	8.6	100.0
Going and staying with her parents or siblings	44.8	22.6	22.1	4.7	5.8	100.0
How the money she earns will be used ¹	65.1	7.9	21.6	3.5	1.9	100.0
TOTAL						
What items to cook	73.0	1.7	4.2	8.4	12.7	100.0
Obtaining health care for herself	39.8	30.7	13.9	7.8	7.9	100.0
Purchasing jewellery or other major household items	28.3	29.7	25.7	7.8	8.5	100.0
Going and staying with her parents or siblings	43.1	22.8	23.3	4.9	5.9	100.0
How the money she earns will be used ¹	65.9	8.7	21.2	2.8	1.4	100.0
¹ For women earning cash						

Women's involvement in decisionmaking, alone or jointly with others in the household, increases with age, suggesting that autonomy also increases with age (Table 3.7). Specifically, among women age 35 and over, only 1–2 percent do not participate in any decisionmaking, compared with 11 percent of women age 20–24. Participation in each of the four specified decisions increases more or less steadily with age up to age 35–39.

The proportion of women not involved in any decisionmaking does not vary much or systematically by education or the standard of living. Notably, however, women who have completed at least high school are more likely to participate in each of the different decisions, except the decision about what to cook, than illiterate women and women with less education. Similarly, Christian women are more likely than Hindu and Muslim women to participate in each of the different decisions except the decision about what to cook. This is also true for women who worked for cash during the last year compared with working women who did not work for cash and women who were not employed at all. By caste/tribe, women belonging to the other

Table 3.7 Women's autonomy

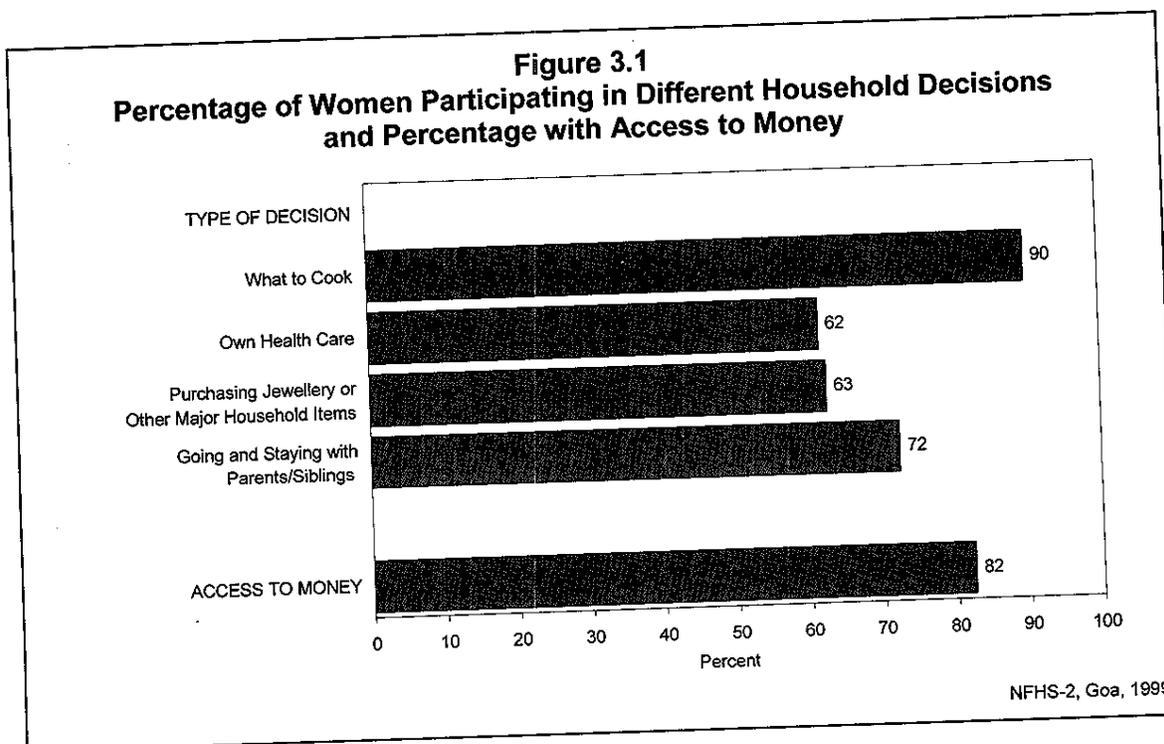
Percentage of ever-married women involved in household decisionmaking, percentage with freedom of movement, and percentage with access to money by selected background characteristics, Goa, 1999

Background characteristic	Percentage not involved in any decision-making	Percentage involved in decisionmaking on:				Percentage who do not need permission to:			Number of women
		What to cook	Own health care	Purchasing jewellery, etc.	Staying with her parents/siblings	Go to the market	Visit friends/relatives	Percentage with access to money	
Age									
20-24	10.6	82.0	42.0	50.3	55.7	50.4	44.0	73.7	106
25-29	7.0	81.5	57.2	52.4	61.8	56.5	48.4	83.8	235
30-34	2.6	91.7	60.1	64.9	75.5	62.2	50.5	82.8	240
35-39	1.2	94.8	68.7	69.6	80.8	71.4	64.0	80.9	250
40-44	1.5	93.6	67.3	67.3	72.4	76.5	68.8	86.3	198
45-49	1.6	93.3	66.0	66.7	81.2	78.9	73.8	84.0	197
Residence									
Urban	5.1	88.8	63.2	66.9	71.9	73.0	65.4	83.7	519
Rural	2.6	90.7	60.4	59.4	72.7	62.2	53.9	81.4	727
Education									
Illiterate	2.5	91.0	56.9	60.7	72.4	58.8	53.8	79.4	357
Literate, < middle school complete	3.6	91.2	60.0	58.3	70.6	56.1	50.4	75.0	339
Middle school complete	5.9	89.0	60.2	61.9	64.6	67.2	52.1	83.8	156
High school complete and above	3.7	88.3	67.7	68.1	76.9	82.7	72.8	90.8	395
Religion									
Hindu	4.1	90.7	58.8	60.1	69.9	62.7	54.6	81.2	827
Muslim	3.6	92.5	60.7	45.5	67.0	50.9	43.8	74.3	55
Christian	2.5	87.6	67.9	70.3	78.6	78.3	70.1	86.5	361
Caste/tribe									
Scheduled caste	3.4	84.8	50.8	57.6	71.4	55.4	53.2	75.1	93
Other backward class	1.3	95.0	66.9	67.0	79.2	68.2	61.8	93.7	79
Other ¹	3.8	90.0	62.1	62.6	71.9	67.6	58.9	82.4	1,070
Cash employment									
Working for cash	2.2	87.9	66.9	72.5	77.7	75.4	67.7	87.8	429
Working but not for cash	5.0	90.2	51.0	57.5	73.1	61.5	54.8	80.3	162
Not worked in past 12 months	4.2	91.2	60.8	57.3	68.7	62.3	53.8	79.3	655
Standard of living index									
Low	4.0	92.1	63.2	65.0	72.5	56.4	48.6	69.4	177
Medium	3.8	89.6	55.4	60.2	68.5	60.5	54.3	81.5	495
High	3.2	89.6	66.6	63.9	75.6	75.2	66.0	87.1	568
Total	3.6	89.9	61.6	62.5	72.4	66.7	58.7	82.4	1,246

Note: Total includes 20 women age 15-19, 4 women belonging to other religions, 3 women belonging to the scheduled tribes, and 2 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

backward classes are more likely than other women to participate in each of the different decisions.

NFHS-2 also collected information on two other dimensions of women's autonomy, namely, women's freedom of movement and their access to money that they can spend as they wish. With regard to freedom of movement, respondents were asked whether they need



permission to go to the market or to visit friends or relatives. Women's access to spending money was measured by asking respondents, 'Are you allowed to have some money set aside that you can use as you wish?'

Table 3.7 shows that the majority of ever-married women in Goa reported that they do not need permission either to go to the market (67 percent) or to visit friends and relatives (59 percent). Freedom of movement increases substantially with age, although even among the young (age 20-24), 50 percent of women do not need permission to go to the market and 44 percent of women do not need permission to visit friends and relatives. These proportions increase to 79 percent and 74 percent, respectively, at age 45-49. Women who have completed at least high school have more freedom of movement than less-educated or illiterate women. Freedom of movement is also relatively high for Christian women, for women living in households with a high standard of living, and for urban women. Women who earn cash have more freedom of movement than women in other employment categories. Freedom of movement is lower among scheduled-caste women than among 'other' women and women in other backward classes. Overall, 82 percent of women say that they are allowed to have some money set aside that they can spend as they wish. The differentials in access to money by the background characteristics of women follow almost the same pattern as the differentials in freedom to movement.

3.7 Women's Educational Aspirations for Children

The desire to invest in improving the quality of children, including investing in their education, is important for bringing about transition to greater gender equity and improved health. In order to obtain information on this subject, NFHS-2 asked ever-married women for their opinion about how much education should be given to a boy or a girl. Women's responses to these questions also provide an indication of the degree of son preference prevailing at the time of the survey.

Table 3.8 Perceived educational needs of girls and boys			
Percent distribution of ever-married women by their opinion on how much education should be given to girls and boys, according to residence, Goa, 1999			
Educational level	Urban	Rural	Total
Education for girls			
No education	0.4	0.3	0.3
Primary school	0.6	0.1	0.3
Middle school	1.2	1.9	1.6
High school	13.0	22.4	18.5
Higher secondary school	9.7	12.0	11.0
Graduate and above	25.5	20.0	22.3
Professional degree	5.5	2.1	3.5
As much as she desires	40.3	37.4	38.6
Depends	2.7	2.6	2.7
Don't know	1.0	1.2	1.1
Total percent	100.0	100.0	100.0
Education for boys			
No education	0.2	0.1	0.2
Primary school	0.0	0.1	0.1
Middle school	0.8	0.7	0.7
High school	6.5	9.0	8.0
Higher secondary school	5.5	10.9	8.7
Graduate and above	23.9	24.6	24.3
Professional degree	11.1	5.9	8.1
As much as he desires	48.3	44.5	46.1
Depends	2.8	2.9	2.9
Don't know	0.8	1.2	1.0
Total percent	100.0	100.0	100.0

As shown in Table 3.8, ever-married women's educational aspirations differ somewhat by the sex of the child. For example, 46 percent of women believe that a boy should be given as much education as he desires, compared with 39 percent who believe that a girl should be given as much education as she desires. Thirty-two percent of women believe that an education above higher secondary (graduate and above, or professional degree) is appropriate for boys, whereas 26 percent feel that it is appropriate for girls. Notably, almost none feel that girls should not be given any education or should be given less than a primary school education. Only 2 percent of women feel that girls should be given an education below the high school level.

Table 3.8 indicates important urban-rural differences in women's educational aspirations for girls and boys. Rural respondents are more likely than urban respondents to say that a child should be given education lower than higher secondary school, especially in the case of girls. They are slightly less likely than urban respondents to say that girls and boys should be given as much education as they desire. It is notable, however, that even in rural areas almost 60 percent of women say that girls should be given education up to graduation and above or as much education as they desire.

3.8 Domestic Violence: Attitudes and Prevalence

In recent years, there has been increasing concern about violence against women in general, and domestic violence in particular, in both developed and developing countries (United Nations General Assembly, 1991). Not only has domestic violence against women been acknowledged worldwide as a violation of the basic human rights of women, but an increasing amount of

research highlights the health burdens, intergenerational effects, and demographic consequences of such violence (Heise et al., 1998; 1994; Jejeebhoy, 1998; Ramasubban and Singh, 1998; Rao and Bloch, 1993). In patriarchal societies such as India, women are not only socialized into being silent about their experience of violence but traditional norms teach them to accept, tolerate, and even rationalize domestic violence (Jaisingh, 1995; Hegde, 1996; Prasad, 1999). The recent IndiaSAFE multi-site study of family violence in India, conducted at about the same time as NFHS-2, finds violence by husbands to be fairly widespread (International Clinical Epidemiology Network, 2000). Both tolerance of and experience of domestic violence are significant barriers to the empowerment of women, with consequences for women's health, their health-seeking behaviour, their adoption of a small family norm, and the health of their children. In NFHS-2, an attempt was made to assess whether women view wife-beating as justified and to measure the prevalence of violence against women including, but not limited to, violence committed by a woman's husband. Special training was provided to interviewers to sensitize them to the issue of domestic violence and impress upon them the necessity of ensuring privacy when asking these questions.

In order to assess women's attitudes towards wife-beating, before asking about personal experience with domestic violence, the survey asked all respondents whether they thought that a husband is justified in beating his wife for each of the following reasons: if he suspects her of being unfaithful; if her natal family does not give expected money, jewellery, or other items; if she shows disrespect for her in-laws; if she goes out without telling him; if she neglects the house or children; or if she does not cook food properly. These reasons, which range from reasons that involve suspicions about a wife's moral character to those that may be considered more trivial, such as not cooking properly, were chosen to provide variation in the perceived seriousness of behavioural-norm violation. Table 3.9 gives the percentages of ever-married women who agree with various reasons for wife-beating by background characteristics.

Almost three out of five women (57 percent) in Goa accept at least one reason as justification for wife-beating. Women are most likely to agree that wife-beating is justified if a wife neglects her house or children (46 percent), and they are least likely to agree that wife-beating is justified if her natal family does not give expected money or other items (5 percent). Thirty-six percent of women say that the husband is justified in beating his wife if he suspects that she is unfaithful, and an equal percentage agree that wife-beating is justified if the wife goes out without telling her husband. The proportions of women who say that the husband would be justified in beating his wife if she shows disrespect for in-laws and if she does not cook properly are 28 percent and 18 percent, respectively.

Table 3.9 indicates that the proportion of women agreeing with at least one reason for justifying a husband beating his wife varies inversely with age. Not only do a higher proportion of rural women (61 percent) than urban women (53 percent) agree with at least one reason justifying wife-beating, but rural women are also somewhat more likely to agree with each specific reason. Agreement with at least one reason and with each of the different reasons for wife-beating declines sharply with education. Seventy-one percent of illiterate women agree with at least one reason justifying wife-beating, compared with 39 percent of women who have completed at least high school.

Table 3.9 Reasons given for justifying a husband beating his wife

Percentage of ever-married women who agree with specific reasons for justifying a husband beating his wife by selected background characteristics, Goa, 1999

Background characteristic	Percentage who agree with specific reasons							Number of women
	Percentage who agree with at least one reason	Husband suspects wife is unfaithful	Natal family does not give expected money or other items	Wife shows disrespect for in-laws	Wife goes out without telling husband	Wife neglects house or children	Wife does not cook food properly	
Age								
20-29	62.2	37.3	4.4	29.6	38.8	50.1	18.3	341
30-39	57.1	35.3	5.3	27.4	36.2	47.6	19.0	489
40-49	52.5	35.5	5.7	25.5	33.1	41.0	16.2	396
Marital duration (in years)								
< 5	55.8	32.5	2.2	25.6	29.8	43.4	12.1	270
5-9	57.5	33.5	5.9	24.9	38.0	45.8	22.7	237
10 or more	57.2	36.5	5.2	28.3	36.6	47.2	17.9	664
Not currently married	62.4	49.2	12.1	34.7	43.7	52.9	23.8	75
Residence								
Urban	52.6	32.3	4.7	26.9	34.7	43.2	16.8	519
Rural	60.5	38.3	5.4	27.8	36.6	48.7	18.7	727
Education								
Illiterate	70.9	44.9	10.4	37.1	49.5	59.7	29.0	357
Literate, < middle school complete	64.3	40.1	4.2	31.6	41.4	54.7	22.6	339
Middle school complete	58.1	40.0	2.6	28.3	39.6	45.9	14.5	156
High school complete and above	38.5	22.4	2.0	14.8	17.2	27.6	5.3	395
Religion								
Hindu	58.3	38.3	6.1	28.9	37.2	47.2	18.8	827
Muslim	60.4	38.8	1.7	20.3	42.3	45.8	18.2	55
Christian	54.6	29.8	3.3	25.5	32.1	45.3	16.0	361
Caste/tribe								
Scheduled caste	69.5	39.1	5.5	41.3	52.2	62.9	25.4	93
Other backward class	62.3	39.0	1.4	22.0	41.7	53.8	25.2	79
Other ¹	55.7	35.2	5.3	26.6	33.9	44.4	16.7	1,070
Cash employment								
Working for cash	58.2	36.0	4.9	30.4	36.8	47.6	18.5	429
Working but not for cash	66.3	42.5	5.5	30.6	43.8	52.2	22.5	162
Not worked in past 12 months	54.4	34.1	5.1	24.7	33.2	44.2	16.4	655
Standard of living index								
Low	67.0	53.3	11.4	35.6	48.7	55.3	27.5	177
Medium	66.5	38.8	5.7	33.2	45.0	56.7	23.1	495
High	46.0	27.7	2.6	19.6	23.9	34.9	10.7	568
Total	57.2	35.8	5.1	27.5	35.8	46.4	17.9	1,246

Note: Total includes 20 women age 15-19, 4 women belonging to other religions, 3 women belonging to the scheduled tribes, and 2 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

As expected, the proportion of women who agree that wife-beating is justified declines as the standard of living increases. The difference is greatest between women with a low or medium standard of living (67 percent) and women with a high standard of living (46 percent). However, the expectation that women who work, especially those who work for cash, would be less likely

than other women to justify wife-beating, is not borne out for Goa. Women who have not worked in the past 12 months are somewhat less likely than women who have worked to agree that wife-beating is justified for most reasons given in Table 3.9. The percentage of respondents who agree with at least one reason for justifying wife-beating is lower among women who did not work during the past 12 months (54 percent) than among women who either worked for cash (58 percent) or worked but not for cash (66 percent). Overall, the majority of women in almost all population groups agree with at least one reason for wife-beating. This finding attests to the widespread socialization of women in norms that give husbands the right to use force to discipline wives who are perceived to be violating traditional gender norms.

In order to assess the prevalence of domestic violence, NFHS-2 asked women if they had been beaten or mistreated physically since age 15.¹ Women who reported being beaten or physically mistreated were asked who beat or physically mistreated them. Interviewers recorded all the persons mentioned by the respondent. As mentioned earlier, there is a culture of silence surrounding the topic of domestic violence that makes the collection of data on this sensitive topic particularly difficult. Even women who want to speak about their experience with domestic violence may find it difficult because of feelings of shame or fear. This may be more true if violence occurred recently (for example, in the preceding 12 months) than in the more distant past. In addition, depending on the varied cultural meanings ascribed to different acts, there may be women who do not report their experience of domestic violence because they do not view it as violence or physical mistreatment. For these reasons, NFHS-2 results on the prevalence of domestic violence need to be interpreted with caution.

Table 3.10 presents results on the prevalence of beatings or physical mistreatment since age 15 by women's background characteristics. Prevalence is also shown according to the person(s) who beat or physically mistreated them—their husbands, their in-laws, or other persons.

According to the reports of respondents, 18 percent of women in Goa have experienced violence since age 15 (somewhat lower than the national average of 21 percent), including 14 percent who have been beaten or physically mistreated by their husbands. This implies that among women who were beaten, 78 percent have been beaten by their husbands. Two percent of women have been beaten or physically mistreated by in-laws and 4 percent by other persons.

Women age 20–29 are less likely than older women to have been beaten, but because of their young age they have had less time to be exposed to the risk of being beaten since age 15. Similarly, women who have been married for less than five years are less likely to have been beaten (12 percent) than women who have been married longer (15–19 percent). The proportion of ever-married women who are not currently married (widowed, divorced, separated, or deserted women) who report having been beaten or physically mistreated, at 39 percent, is particularly high. Illiterate women (30 percent) are much more likely to have experienced violence than women who have completed at least high school (9 percent). The prevalence of domestic violence decreases substantially as the standard of living increases. Specifically, 29 percent of women with a low standard of living have experienced violence, compared with 22

¹The question does not limit women to reporting only domestic violence, but a large majority of women who report any violence report beatings or physical mistreatment only by husbands or relatives.

Table 3.10 Women's experience with beatings or physical mistreatment

Percentage of ever-married women who have been beaten or physically mistreated by their husband, in-laws, or other persons since age 15, according to selected background characteristics, Goa, 1999

Background characteristic	Percentage beaten or physically mistreated since age 15	Percentage beaten or physically mistreated since age 15 by:			Number of women
		Husband	In-laws	Other persons	
Age					
20-29	14.8	10.2	2.0	4.6	341
30-39	19.0	15.3	3.0	3.6	489
40-49	18.7	15.2	2.2	3.6	396
Marital duration (in years)					
< 5	11.6	6.6	0.7	5.0	270
5-9	15.2	11.9	3.3	2.6	237
10 or more	19.0	15.4	2.4	3.7	664
Not currently married	38.6	33.3	6.5	8.0	75
Residence					
Urban	17.5	14.2	1.7	4.1	519
Rural	18.1	13.6	3.0	4.0	727
Education					
Illiterate	30.4	25.1	3.8	4.8	357
Literate, < middle school complete	18.8	14.7	2.3	4.4	339
Middle school complete	10.1	8.3	1.2	2.5	156
High school complete and above	8.8	5.3	1.8	3.6	395
Religion					
Hindu	14.1	11.3	1.5	2.7	827
Muslim	25.8	24.1	1.7	1.7	55
Christian	25.1	18.0	4.8	7.4	361
Caste/tribe					
Scheduled caste	24.4	22.2	1.1	4.5	93
Other backward class	33.5	26.0	3.5	7.5	79
Other ¹	16.0	12.1	2.4	3.8	1,070
Household composition					
Nuclear household	20.4	16.4	3.1	3.3	682
Non-nuclear household	14.7	10.9	1.6	4.9	564
Cash employment					
Working for cash	25.3	21.2	3.4	4.7	429
Working but not for cash	14.6	12.3	2.5	2.3	162
Not worked in past 12 months	13.8	9.5	1.8	4.0	655
Standard of living index					
Low	29.3	25.9	3.3	3.0	177
Medium	21.8	17.6	2.9	4.1	495
High	10.8	6.8	1.8	4.4	568
Living children					
No living children	13.5	6.3	1.2	6.6	161
Only daughters	14.2	10.8	2.5	3.1	231
Only sons	13.1	10.2	1.3	3.6	313
Both daughters and sons	23.5	19.6	3.5	3.9	541
Total	17.9	13.9	2.4	4.0	1,246

Note: Total includes 20 women age 15-19, 4 women belonging to other religions, 3 women belonging to the scheduled tribes, and 2 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Table 3.11 Frequency of beatings or physical mistreatment

Percent distribution of ever-married women who report being beaten or physically mistreated since age 15 by frequency of beatings or physical mistreatment in the 12 months preceding the survey, according to selected background characteristics, Goa, 1999

Background characteristic	Beaten or physically mistreated in past 12 months				Total percent	Number of women
	Many times	A few times	Once	Not beaten		
Age						
20-29	15.5	13.9	5.5	65.1	100.0	51
30-39	19.1	15.8	9.5	55.6	100.0	93
40-49	15.7	5.1	2.6	76.5	100.0	74
Marital duration (in years)						
< 5	(21.5)	(15.8)	(8.8)	(53.9)	100.0	31
5-9	(19.1)	(16.5)	(5.6)	(58.8)	100.0	36
10 or more	17.2	12.4	6.3	64.2	100.0	126
Not currently married	(13.8)	(0.0)	(3.1)	(83.2)	100.0	29
Residence						
Urban	12.7	11.6	4.6	71.1	100.0	91
Rural	21.0	12.2	7.1	59.7	100.0	132
Education						
Illiterate	22.7	12.7	4.6	60.0	100.0	108
Literate, < middle school complete	15.6	15.5	7.2	61.8	100.0	64
High school complete and above	(11.0)	(6.1)	(3.1)	(79.9)	100.0	35
Religion						
Hindu	16.3	10.9	4.9	67.8	100.0	117
Christian	20.0	8.4	7.5	64.0	100.0	90
Caste/tribe						
Other backward class	(17.7)	(13.8)	(3.5)	(65.0)	100.0	26
Other ¹	17.9	10.4	7.4	64.4	100.0	172
Household composition						
Nuclear household	18.1	12.6	8.4	60.9	100.0	139
Non-nuclear household	16.8	10.8	2.2	70.2	100.0	83
Cash employment						
Working for cash	24.2	10.6	7.9	57.2	100.0	109
Not worked in past 12 months	11.1	13.3	3.4	72.2	100.0	90
Standard of living index						
Low	36.1	20.0	3.8	40.1	100.0	52
Medium	15.3	10.2	6.9	67.5	100.0	108
High	6.4	8.3	6.7	78.7	100.0	61
Living children						
Only daughters	(23.6)	(11.8)	(6.0)	(58.6)	100.0	33
Only sons	(17.0)	(12.2)	(9.3)	(61.6)	100.0	41
Both daughters and sons	14.9	13.9	6.1	65.0	100.0	127
Total	17.6	11.9	6.1	64.3	100.0	222

Note: Total includes 5 women age 15-19, 16 women who have completed middle school, 14 Muslim women, 1 woman belonging to an other religion, 23 scheduled-caste women, 2 scheduled-tribe women, 24 women who work but do not earn cash, 22 women with no living children, and 1 woman with missing information on the standard of living index, who are not shown separately.

() Based on 25-49 unweighted cases

¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

percent of women with a medium standard of living and 11 percent of women with a high standard of living.

Women from nuclear households are more likely than women from non-nuclear households to experience domestic violence (20 percent compared with 15 percent). A similar finding was reported by Visaria (1999) among women in rural Gujarat. Women working for cash are much more likely than non-working women or women working but not for cash to experience violence (25 percent compared with 14–15 percent).

The proportions of women who have been beaten or physically mistreated by their husbands according to various background characteristics are similar to the proportions of all women who have experienced domestic violence. This is not surprising since, as already noted, a large majority of women who report beatings are beaten by their husbands. The proportion of women who have been beaten or physically mistreated by their in-laws or by other persons is too small to allow for a meaningful discussion of differentials by women's background characteristics. Nonetheless, the relatively high proportion of ever-married women who are not currently married who report beatings or physical mistreatment by in-laws, at 7 percent, is notable.

NFHS-2 asked women who experienced violence since age 15 how often they were beaten or physically mistreated in the 12 months preceding the survey: many times, a few times, once, or not at all. Table 3.11 shows the frequency of beatings in the past 12 months for women who report beatings or physical mistreatment. One out of three women who experienced violence were beaten at least once during the 12 months preceding the survey, and 30 percent were beaten more than once in this period. As mentioned earlier, largely due to the inherent tendency for underreporting of domestic violence, these results need to be interpreted with caution. Nevertheless, the NFHS-2 estimates set a lower bound on the proportion of women experiencing domestic violence in Goa: *at least* 18 percent of ever-married women in Goa have experienced domestic violence since age 15, and *at least* 6 percent have experienced domestic violence in the past 12 months.

Among women who report being beaten, women who live in households with a low standard of living, women who have been married less than five years, women age 30–39, and women who are working for cash are more likely than other women to have been beaten in the past 12 months.

CHAPTER 4

FERTILITY AND FERTILITY PREFERENCES

A major objective of NFHS-2 is to provide detailed information on fertility levels, differentials, and trends. This chapter presents a description of current and past fertility, cumulative fertility and family size, birth intervals, age at first cohabitation with husband, age at first and last birth, age at menopause, and durations of postpartum amenorrhoea, abstinence, and insusceptibility to pregnancy. Also discussed are fertility preferences, ideal and actual number of children, preference for sons or daughters, planning status of pregnancies, and wanted and actual total fertility rates.

Most of the fertility measures presented in this chapter are based on the complete birth histories collected from ever-married women age 15–49 years. Several measures and procedures were used to obtain complete and accurate reporting of births, deaths, and the timing of these events. First, women were asked a series of questions aimed at recording all the live births that had occurred in their lifetime. Second, for each live birth, the survey collected information on the age, sex, and survival status of the child. For dead children, age at death was recorded. Interviewers were given extensive training in probing techniques designed to help respondents report this information accurately. For example, interviewers were instructed to check any documents (such as horoscopes, school certificates, or vaccination cards) that might provide additional information on dates of birth and to probe for the reason for each birth interval of four or more years in order to prevent omission of births, especially of children who died soon after birth. Birth intervals of four or more years were also probed for stillbirths, miscarriages, and induced abortions.

Despite these measures to improve data quality, NFHS-2 is subject to the same types 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 of each child accurately. These problems can bias estimates of fertility levels and trends.

4.1 Age at First Cohabitation

The number of children that a woman will have in her lifetime is strongly influenced by the age at which she marries. Formal marriage is not always immediately followed by cohabitation. A marriage may not be consummated immediately if it occurs at a very young age or for some other reason. In such instances, there is a difference between age at marriage and age at consummation of marriage. Age at consummation of marriage is, of course, what is relevant for fertility. NFHS-2 measured age at first cohabitation as a proxy for age at consummation of marriage. The practice of marriage at very young ages is not common in Goa. In Table 4.1, the median age at first cohabitation for a group of women is defined as the age by which half of the entire group began to cohabit, rather than the age by which half of all ever-cohabiting women in the group began to cohabit.

Table 4.1 shows that in Goa, the median age at first cohabitation with the husband is 23.2 years for women age 25–49, which is more than six years higher than the median age at first

Table 4.1 Age at first cohabitation with husband

Median age at first cohabitation with husband among women age 25–49 years by current age and selected background characteristics, Goa, 1999

Background characteristic	Current age				
	25–29	30–34	35–39	40–49	25–49
Residence					
Urban	NC	24.0	22.4	22.1	23.3
Rural	NC	24.0	22.6	20.6	23.1
Education					
Illiterate	19.0	20.3	18.9	18.8	18.9
Literate, < middle school complete	23.6	22.6	21.5	21.0	21.9
Middle school complete	NC	(24.9)	(24.7)	(21.4)	24.9
High school complete and above	NC	25.8	25.7	24.7	NC
Religion					
Hindu	24.7	23.4	21.9	20.5	22.4
Muslim	*	*	*	*	(18.3)
Christian	NC	25.4	24.2	23.3	NC
Caste/tribe					
Scheduled caste	(20.5)	(19.6)	*	*	18.9
Other backward class	*	*	*	(20.2)	21.6
Other ¹	NC	24.4	22.8	21.5	23.5
Standard of living index					
Low	(20.4)	(21.7)	(19.4)	(18.6)	19.8
Medium	24.5	22.8	21.7	20.1	22.1
High	NC	25.7	23.8	22.8	24.5
Total	NC	24.1	22.5	21.2	23.2

Note: Total includes small numbers of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.
 NC: Not calculated because less than 50 percent of the women have started living with their husband by age 25
 () Based on 25–49 unweighted cases
 *Median not shown; based on fewer than 25 unweighted cases
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

cohabitation for India as a whole (17.0 years). As noted earlier, there is virtually no lag between marriage and cohabitation in Goa so that the median age at marriage and the median age at cohabitation are the same (see Table 3.3). The median age at first cohabitation increases steadily from 21.2 for women age 40–49 to 24.1 for women age 30–34, suggesting a notable increase in the median age at first cohabitation in a relatively short period of time.

The median age at first cohabitation is almost identical for urban and rural women age 25–49. The median age at first cohabitation rises sharply with women's level of education, from 18.9 for illiterate women to at least 24.9 for women who have completed at least a middle school education. Hindus have a much higher median age at first cohabitation than Muslims. There is also wide variation by caste/tribe, with women from the scheduled castes having a lower median age at first cohabitation (18.9 years) than women belonging to other backward classes (21.6 years) or women not belonging to the scheduled castes, scheduled tribes, and other backward classes (23.5 years). The median age at first cohabitation is almost five years higher for women living in households with a high standard of living (24.5 years) than for women living in households with a low standard of living (19.8 years).

4.2 Current Fertility Levels

NFHS-2 provides estimates of age-specific fertility rates (ASFR), total fertility rates (TFR), and crude birth rates (CBR) for the three-year period preceding the survey, which, in Goa, corresponds roughly to the period 1996–98. This three-year period was chosen as a compromise between the need to obtain recent information (suggesting the use of a short period close to the survey date) and the need to reduce sampling variation and minimize problems related to displacement of births from recent years to earlier years (suggesting the use of a longer period). The ASFR for any specific age group is calculated by dividing the number of births to women in the age group during the period 1–36 months preceding the survey by the number of woman-years lived by women in the age group during the same three-year time period. The TFR is a summary measure, based on the ASFRs, that gives the number of children a woman would bear during her reproductive years if she were to experience the ASFRs prevailing at the time of the survey. Mathematically, the TFR is calculated as five times the sum of all the ASFRs for the five-year age groups. The CBR is defined as the annual number of births per 1,000 population.

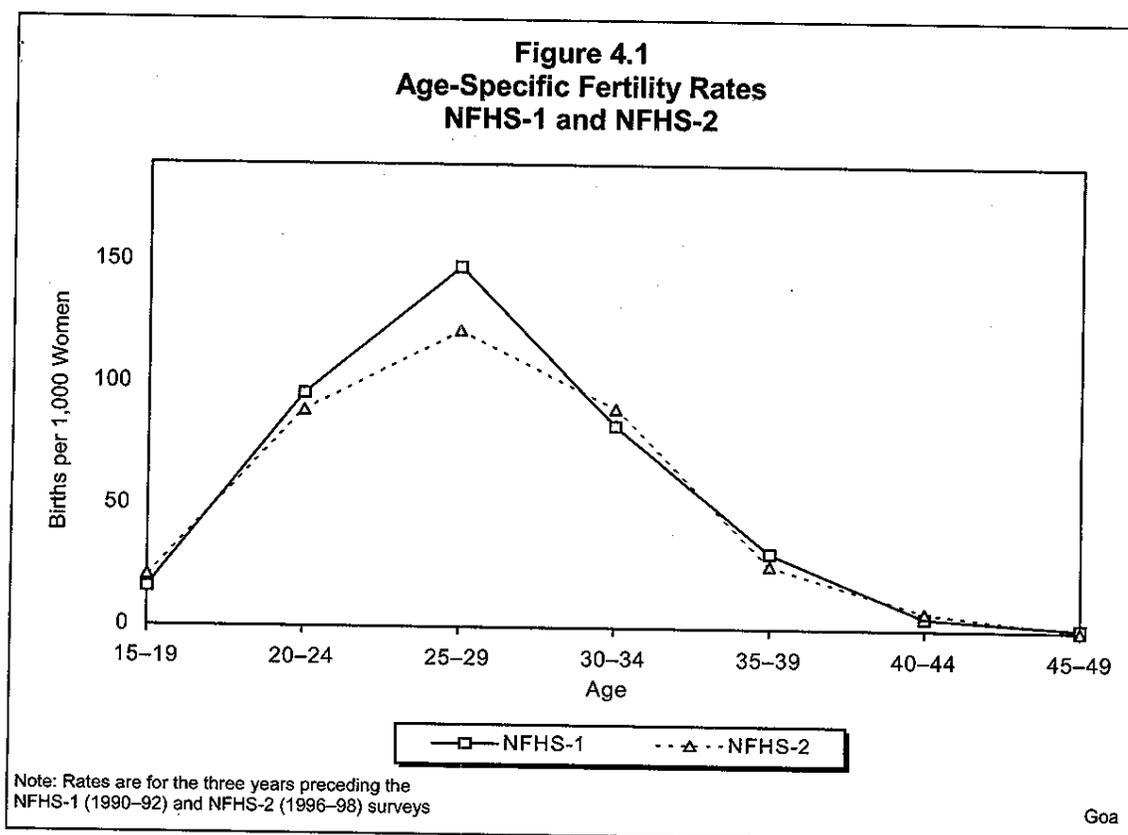
Based on data for the three-year period before NFHS-2, the CBR for Goa is estimated at 16.6 live births per 1,000 population, and the TFR is estimated at 1.77 births per woman, as shown in Table 4.2. The TFR of 1.77 births indicates below-replacement fertility and is much lower than the all-India TFR of 2.85 births.

As shown in Table 4.2, fertility rises with age, peaking at age 25–29, and declining thereafter. Eighty-five percent of total fertility is concentrated in the age group 20–34, with the age group 25–29 alone accounting for 34 percent of fertility. Fertility at age 35 and older accounts for only 9 percent of total fertility in Goa.

Based on data for the three-year periods preceding NFHS-1 and NFHS-2, the CBR fell marginally from 17.2 to 16.6 between the two surveys, a decline of 3 percent. Over the same period, the TFR fell from 1.90 to 1.77, a decline of 7 percent. Table 4.2 and Figure 4.1 show that

Age	NFHS-1 (1990–92)	NFHS-2 (1996–98)	SRS (1997)
15–19	0.016	0.021	0.005
20–24	0.096	0.089	0.059
25–29	0.148	0.122	0.110
30–34	0.083	0.090	0.074
35–39	0.031	0.026	0.028
40–44	0.005	0.007	0.007
45–49	0.001	0.000	0.001
TFR 15–44	1.89	1.77	1.40
TFR 15–49	1.90	1.77	1.40
CBR	17.2	16.6	14.2

Note: Rates from NFHS-1 and NFHS-2 are for the period 1–36 months preceding the survey. Rates for the age group 45–49 might be slightly biased due to truncation. Rates from the SRS are for one calendar year. Age-specific and total fertility rates are expressed per woman.
TFR: Total fertility rate
CBR: Crude birth rate, expressed per 1,000 population
Source for SRS: Office of the Registrar General, 1999



fertility declined in most age groups and the largest fertility decline occurred in the age group 25-29.

NFHS-2 fertility estimates can be compared with estimates from the Sample Registration System (SRS), which is maintained by the Office of the Registrar General, India. Since the NFHS-2 rates refer to 1996-98, it is appropriate to compare them with the SRS estimates for 1997, which are also shown in Table 4.2. The NFHS-2 estimates of the CBR (16.6) and TFR (1.77) are higher than the corresponding 1997 SRS estimates of 14.2 for the CBR and 1.4 for the TFR. The NFHS-2 age-specific fertility rates are, in general, also higher than the corresponding SRS age-specific fertility rates, with differences being especially marked at the younger ages.

4.3 Fertility Differentials and Trends

Table 4.3 shows how three different measures of fertility—the TFR, the percentage currently pregnant, and the mean number of children ever born to women age 40-49—vary by selected background characteristics. Fertility transitions in other countries have shown that fertility differentials typically diverge early in the transition and reconverge (though rarely completely) towards the end of the transition as fertility approaches the replacement level. This expectation is only partially true for Goa where fertility is already well below replacement level. Although differentials tend to be small for most population groups, some population groups continue to have much higher than average fertility.

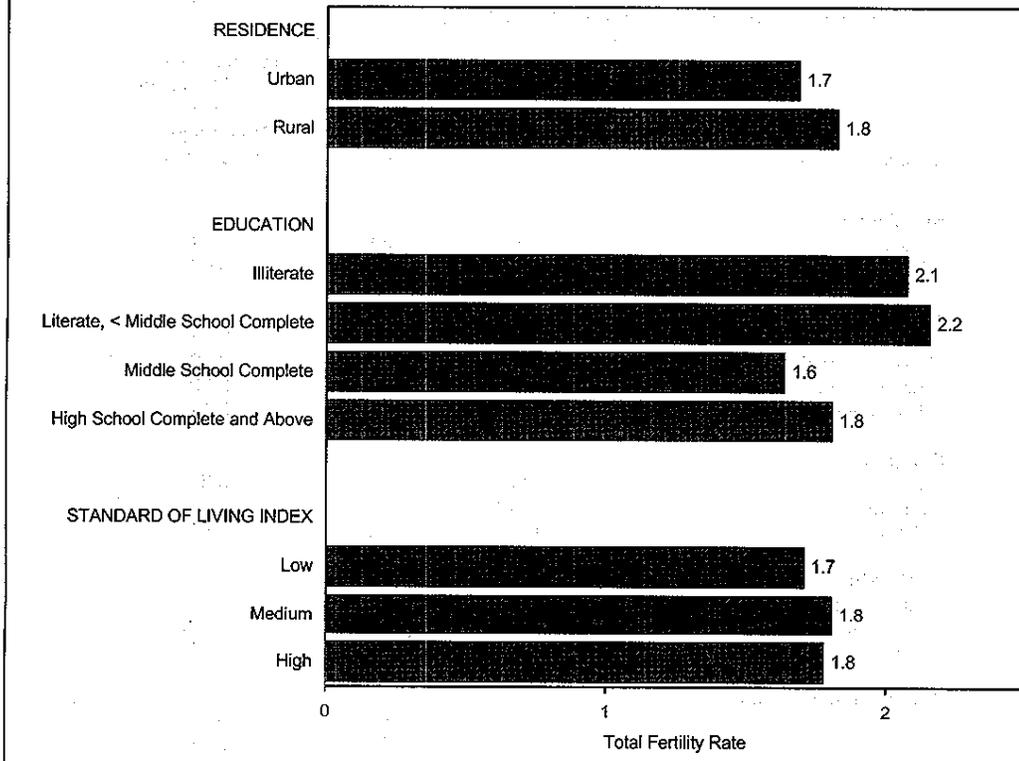
Table 4.3 Fertility by background characteristics			
Total fertility rate for the three years preceding the survey, percentage of all women age 15–49 currently pregnant, and mean number of children ever born to all women age 40–49 by selected background characteristics, Goa, 1999			
Background characteristic	Total fertility rate ¹	Percentage currently pregnant ²	Mean number of children ever born to all women age 40–49 years
Residence			
Urban	1.69	3.8	2.94
Rural	1.83	3.6	3.40
Education			
Illiterate	2.08	4.8	3.84
Literate, < middle school complete	2.16	2.2	3.32
Middle school complete	1.64	3.5	(3.59)
High school complete and above	1.81	4.2	2.11
Religion			
Hindu	1.68	3.5	3.31
Muslim	(2.80)	7.0	*
Christian	1.76	4.3	2.81
Caste/tribe			
Scheduled caste	2.31	4.0	*
Other backward class	2.40	5.8	(3.60)
Other ³	1.72	3.7	3.14
Standard of living index			
Low	1.71	4.5	(3.74)
Medium	1.81	3.2	3.68
High	1.78	3.9	2.77
Total	1.77	3.7	3.19

Note: Total includes small numbers of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.
 () Based on 125–249 women-years of exposure for the total fertility rate and 25–49 unweighted cases for the mean number of children ever born
 *Mean not shown; based on fewer than 25 unweighted cases
¹Rate for women age 15–49 years
²For this calculation, it is assumed that women who are never married, widowed, divorced, separated, or deserted are not currently pregnant.
³Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Table 4.3 and Figure 4.2 show that the TFR varies little by residence and by the household standard of living. Although the TFR does not vary consistently with mother's education, less-educated women generally have higher fertility rates than other women. The TFR is higher among Muslims, by about one child, than among Hindus and Christians. Women belonging to the scheduled castes (2.3) and other backward classes (2.4) have higher fertility levels than women not belonging to the scheduled castes, scheduled tribes, or other backward classes (1.7).

The second column of Table 4.3 shows the percentage of women currently pregnant. Overall, 4 percent of women in Goa report that they are currently pregnant (lower than the national average of 6 percent). Differentials in the percentage currently pregnant do not show the same pattern as differentials in the TFR, with the exception of differences by religion and

Figure 4.2
Total Fertility Rate by Selected Background Characteristics



Note: Rates are for the three years preceding the survey (1996-98)

NFHS-2, Goa, 1999

caste/tribe. This may be due partly to the fact that the TFR is not affected by the age structure, whereas the percentage currently pregnant is affected by the age structure.

The last column of Table 4.3 shows the mean number of children ever born to all women age 40-49 at the time of the survey. The average number of children ever born for these women, who are at the end of their childbearing years is 3.2, down by half a child from 3.7 at the time of NFHS-1. The substantial decline in fertility in Goa over time is evident from the difference of 1.4 children between the mean number of children for women who are currently in their forties and the number of children women would have in their lifetime if they were subject to the current age-specific fertility rates (the last column and first column of Table 4.3). Notably, the mean number of children ever born to women in their forties is almost half a child higher in rural than urban areas and among Hindu than among Christian women. Also, it is much lower for women who have completed high school education than women with less or no education and for women living in households with a high standard of living than women living in households with a low or medium standard of living.

The preceding section already discussed fertility trends based on estimates from NFHS-1 and NFHS-2 for the three-year periods preceding each survey. Table 4.4 shows fertility trends for five-year time periods preceding NFHS-2, estimated solely from NFHS-2 birth histories. It is not possible to show TFRs in this table because of progressively greater age truncation as one

Table 4.4 Fertility trends				
Age-specific fertility rates for five-year periods preceding the survey, Goa				
Age	Years preceding survey			
	0-4	5-9	10-14	15-19
15-19	0.026	0.033	0.039	0.049
20-24	0.087	0.110	0.130	0.177
25-29	0.123	0.149	0.181	0.197
30-34	0.093	0.091	0.098	[0.140]
35-39	0.028	0.030	[0.040]	U
40-44	0.005	[0.008]	U	U
45-49	[0.000]	U	U	U

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

goes back in time. For example, for the period 5-9 years preceding the survey, it is not possible to compute an ASFR for age 45-49 because the women in question would be 50-54 at the time of the survey, whereas NFHS-2 only collected birth histories for women up to age 49. Similarly, for the period 10-14 years preceding the survey, it is not possible to compute ASFRs for women age 40-49, and for the period 15-19 years preceding the survey, it is not possible to compute ASFRs for women age 35-49. Thus, Table 4.4 shows only the truncated trends in ASFRs. These results show substantial fertility declines in all age groups.

For the periods 0-4 years and 5-9 years before the survey, it is possible to calculate truncated TFRs (more appropriately called cumulative fertility rates, or CFRs) for the age range 15-39, based on the ASFRs shown in Table 4.4. This is done by summing ASFRs for the age groups 15-19 through 35-39 and multiplying the sum by five. For the state as a whole, CFR(15-39) declined from 2.1 to 1.8 between these two five-year periods, a decline of 0.3 children.

Another way of looking at fertility is to calculate fertility rates by the number of years since first cohabitation with the husband. These rates are measures of marital fertility, i.e., fertility within marriage. Table 4.5 shows fertility rates by duration since first cohabitation for ever-married women over the entire 20-year period preceding the survey.¹ Fertility has declined sharply at all durations, particularly for durations above five years since first cohabitation.

¹Since NFHS-2 collected information only on a woman's age at the time of first cohabitation and not on the year and month when she first began cohabiting with her husband, the exact number of months since first cohabitation cannot be calculated. For this reason, the first year since cohabitation contains only six months, on average, and the first five years since cohabitation contain only 4.5 years, on average.

Table 4.5 Fertility by marital duration				
Fertility rates for ever-married women by duration since first cohabitation with husband (in years) for five-year periods preceding the survey, Goa, 1999				
Duration since first cohabitation (in years)	Years preceding survey			
	0-4	5-9	10-14	15-19
< 5	0.265	0.291	0.318	0.328
5-9	0.133	0.185	0.181	0.239
10-14	0.047	0.065	0.081	0.141
15-19	0.015	0.018	0.047	*
20-24	0.003	0.009	*	*
25-29	0.000	*	*	U

Note: Duration-specific fertility rates are expressed per woman. The duration since first cohabitation with husband is defined as the difference between the woman's age at the specific time period and her age when she began living with her husband.
U: Not available
*Rate not shown; based on fewer than 125 woman-years of exposure

4.4 Children Ever Born and Living

The number of children a woman has ever borne is a cohort measure of fertility. Because it reflects fertility in the past, it provides a somewhat different picture of fertility levels, trends, and differentials than do period measures of fertility such as the CBR and the TFR. Table 4.6 shows the percent distribution of all women and currently married women by the number of children ever born (CEB). The table shows these distributions by the age of the woman at the time of the survey and also shows the mean number of children ever born and the mean number of living children by age.

Among women age 15-49, the mean number of children ever born is 1.4 for all women and 2.3 for currently married women. The mean number of children ever born increases steadily with women's age, reaching a high of 3.4 children among all women age 45-49 and 3.5 among currently married women in this age group. The table also shows that early childbearing is not common in Goa. Only 2 percent of all women age 15-19 have already had a child.

For women age 45-49, the number of children ever born is of particular interest because these women have virtually completed their childbearing. For all women in this age group, irrespective of marital status, the modal number of children ever born is four. Twenty-two percent of all women age 45-49 and 26 percent of currently married women in this age group have given birth to four children. Five percent of currently married women age 45-49 have never given birth, suggesting that primary infertility (which is the proportion of couples who are unable to have any children) is slightly higher in Goa than in India as a whole (2 percent).

For all women age 15-49, the average number of children who died is 0.1 per woman. For currently married women, the average number of dead children is 0.2 per woman, indicating that 7 percent of children ever born to currently married women have died. For currently married women, the proportion of children ever born who have died is highest, at 10 percent, among women age 40-44.

Table 4.6 Children ever born and living

Percent distribution of all women and currently married women by number of children ever born (CEB) and mean number of children ever born and living, according to age, Goa, 1999

Age	Children ever born											Total percent	Number of women	Mean number of CEB	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	97.6	1.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	336	0.03	0.03
20-24	78.1	12.5	4.7	3.2	1.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0	340	0.38	0.35
25-29	50.0	24.5	14.8	6.9	2.2	1.1	0.5	0.0	0.0	0.0	0.0	100.0	366	0.92	0.87
30-34	22.5	25.7	25.7	15.7	7.9	2.2	0.4	0.0	0.0	0.0	0.0	100.0	277	1.69	1.59
35-39	12.3	15.2	32.3	21.2	12.3	4.5	1.1	0.4	0.4	0.4	0.0	100.0	268	2.31	2.20
40-44	7.5	6.7	24.6	29.7	16.0	6.2	6.3	1.4	0.0	0.5	1.0	100.0	206	3.03	2.72
45-49	8.6	8.6	15.1	19.8	22.2	14.9	5.6	2.9	1.5	0.9	0.0	100.0	207	3.36	3.05
Total	45.3	14.1	15.6	11.9	7.3	3.3	1.5	0.5	0.2	0.2	0.1	100.0	2,000	1.44	1.33
CURRENTLY MARRIED WOMEN															
15-19	*	*	*	*	*	*	*	*	*	*	*	100.0	19	*	*
20-24	30.4	40.7	15.4	9.7	3.9	0.0	0.0	0.0	0.0	0.0	0.0	100.0	104	1.16	1.10
25-29	22.0	38.9	23.0	10.5	3.5	1.8	0.4	0.0	0.0	0.0	0.0	100.0	231	1.42	1.35
30-34	10.3	29.7	29.8	18.6	9.0	2.1	0.5	0.0	0.0	0.0	0.0	100.0	233	1.95	1.83
35-39	5.9	17.0	35.5	22.8	12.8	3.9	1.3	0.0	0.4	0.4	0.0	100.0	234	2.42	2.31
40-44	3.5	6.2	26.9	32.3	16.5	6.1	5.1	1.7	0.0	0.5	1.2	100.0	177	3.13	2.83
45-49	4.6	9.0	15.8	18.4	25.9	16.6	5.6	2.9	0.6	0.5	0.0	100.0	173	3.46	3.20
Total	12.4	23.4	25.5	18.8	11.7	4.9	2.0	0.7	0.2	0.2	0.2	100.0	1,171	2.25	2.10
*Percentage not shown; based on fewer than 25 unweighted cases															

4.5 Birth Order

The distribution of births by birth order is yet another way to view fertility. Table 4.7 shows the distribution of births during the three-year period preceding the survey by birth order for selected background characteristics. As expected, the proportion of births at each order is larger than the proportion of births at the next higher order: 46 percent of all births are first-order births, 29 percent are second-order births, 17 percent are third-order births, and 8 percent are fourth- or higher-order births. Three-fourths of all births in Goa are first- or second-order births, compared with 55 percent for India as a whole. This is consistent with the lower level of fertility in Goa than in the country as a whole, as is the much lower proportion of births of order four or higher in Goa (8 percent) compared with the country as a whole (28 percent).

Table 4.7 Birth order						
Percent distribution of births during the three years preceding the survey by birth order, according to selected background characteristics, Goa, 1999						
Background characteristic	Birth order				Total percent	Number of births
	1	2	3	4+		
Mother's current age						
20-29	55.2	26.5	12.6	5.7	100.0	192
30-39	30.7	35.5	23.7	10.1	100.0	116
Residence						
Urban	45.5	30.8	17.2	6.5	100.0	127
Rural	46.1	28.3	16.9	8.7	100.0	202
Mother's education						
Illiterate	27.6	14.8	28.2	29.4	100.0	61
Literate, < middle school complete	38.3	32.5	21.7	7.5	100.0	91
Middle school complete	52.4	31.8	13.9	1.9	100.0	51
High school complete and above	57.6	32.9	9.4	0.0	100.0	126
Religion						
Hindu	45.5	28.0	17.7	8.7	100.0	207
Christian	47.4	32.3	13.4	6.8	100.0	97
Caste/tribe						
Scheduled caste	(46.5)	(26.6)	(13.7)	(13.2)	100.0	30
Other ¹	46.1	29.7	17.5	6.6	100.0	274
Mother's work status						
Working in family farm/business	(35.2)	(16.5)	(29.2)	(19.1)	100.0	30
Employed by someone else	31.7	32.5	20.9	14.8	100.0	61
Not worked in past 12 months	50.3	31.6	14.2	4.0	100.0	226
Standard of living index						
Low	(33.2)	(20.1)	(25.7)	(21.0)	100.0	38
Medium	40.4	27.7	21.6	10.3	100.0	142
High	54.5	33.1	10.3	2.0	100.0	148
Total	45.9	29.3	17.0	7.8	100.0	329
Note: Total includes 10 births to women age 15-19, 10 births to women age 40-49, 24 births to Muslim women, 1 birth to a woman belonging to an other religion, 23 births to women belonging to other backward classes, 11 births to self-employed women, and 2 births with missing information on caste/tribe, which are not shown separately. () Based on 25-49 unweighted cases ¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class						

Fifty-five percent of births to women age 20–29 are first-order births. By contrast, 31 percent of births to women age 30–39 are first-order births. The proportion of births that are of order three or higher is relatively large for births to illiterate women, women living in households with a low standard of living, and women working on a family farm or in a family business. The variation in the proportion of births that are of order three or higher by mother's education is particularly striking: 58 percent of births to illiterate women are of order three or higher, compared with only 9 percent of births to women who have completed at least high school. The variation by household standard of living and mother's employment status, though not as large as by mother's education, is also substantial.

4.6 Birth Intervals

A birth interval, defined as the length of time between two successive live births, indicates the pace of childbearing. Short birth intervals may adversely affect a mother's health and her children's chances of survival. Past research has shown that children born too close to a previous birth are at increased risk of dying, especially if the interval between the births is less than 24 months (Pandey et al., 1998; Govindasamy et al., 1993; Hobcraft, 1994).

Table 4.8 shows the percent distribution of births during the five years preceding the survey by birth interval, according to selected demographic and socioeconomic background characteristics. In Goa, 9 percent of births occur within 18 months of a previous birth and 23 percent occur within 24 months. Forty-six percent of births occur after an interval of three years or more.

The median birth interval in Goa is 35 months. The median birth interval ranges from 26 months for women age 20–29 to 40 months for women age 30–39. Given the finding that the median birth interval increases with mother's age, it is surprising that it does not also increase substantially with the order of the previous birth. This may in part be due to a selection effect: mothers of higher-order births may be more fecund, on average, than mothers of lower-order births.

The median birth interval is four months longer for births to women in rural areas than births to women in urban areas. Birth intervals increase with mother's education, from 26 months for births to illiterate women to 45 months for births to women who have completed at least high school. The median birth interval is two months shorter for births to Hindu women than for births to Christian women. It is also much shorter for births to women from the scheduled castes than for births to 'other' women. The median birth interval increases substantially with the household standard of living. It is 16 months longer for births to women in households with a high standard of living than births to women in households with a low standard of living.

Notably, the median birth interval is two and a half months longer if the previous birth was a boy than if it was a girl. This pattern may result partly from the shorter duration of breastfeeding for girls, which may be indicative of son preference (Table 7.8).

Table 4.8 Birth interval

Percent distribution of births during the five years preceding the survey by interval since previous birth and median number of months since previous birth, according to selected background characteristics, Goa, 1999

Background 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+			
Mother's current age									
20-29	0.7	11.7	21.0	40.1	14.3	12.2	100.0	26.4	134
30-39	0.6	6.4	8.5	25.9	17.8	40.7	100.0	39.9	154
Residence									
Urban	0.0	6.6	13.3	36.9	12.5	30.6	100.0	31.9	127
Rural	1.1	10.1	14.0	26.5	19.4	28.9	100.0	35.5	179
Mother's education									
Illiterate	1.0	4.9	25.7	39.7	12.9	15.8	100.0	26.2	99
Literate, < middle school complete	0.0	15.3	7.6	30.1	20.7	26.3	100.0	35.3	88
Middle school complete	(2.5)	(13.1)	(7.4)	(21.1)	(20.2)	(35.8)	100.0	(39.2)	38
High school complete and above	0.0	4.0	8.8	25.4	14.7	47.3	100.0	45.4	81
Religion									
Hindu	0.5	6.3	13.5	32.8	20.6	26.4	100.0	35.2	203
Christian	1.2	12.3	10.6	24.6	9.7	41.6	100.0	37.0	81
Caste/tribe									
Scheduled caste	(0.0)	(0.0)	(27.5)	(45.1)	(14.1)	(13.3)	100.0	(26.1)	30
Other ¹	0.7	9.3	12.5	29.4	16.5	31.6	100.0	35.5	257
Standard of living index									
Low	0.0	6.3	23.4	39.8	17.6	12.9	100.0	28.6	60
Medium	0.7	10.9	13.3	30.2	20.7	24.1	100.0	32.9	135
High	0.9	7.3	8.1	26.9	10.8	45.9	100.0	44.5	110
Order of previous birth									
1	0.6	11.7	12.8	27.9	16.3	30.7	100.0	35.1	170
2	1.1	4.3	15.7	32.3	13.4	33.3	100.0	34.1	90
3	(0.0)	(6.8)	(11.1)	(39.6)	(21.3)	(21.3)	100.0	(35.0)	28
Sex of previous birth									
Male	0.0	10.3	13.0	28.0	14.6	34.1	100.0	35.7	162
Female	1.3	6.8	14.6	34.0	18.6	24.6	100.0	33.2	144
Total	0.6	8.7	13.7	30.8	16.5	29.6	100.0	34.8	306

Note: Table includes only second and higher-order births. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth. Total includes 2 births to women age 15-19, 17 births to women age 40-49, 22 births to Muslim women, 1 birth to a woman belonging to an other religion, 16 births to women belonging to other backward classes, 19 births for which the order of the previous birth was four or higher, and 4 and 1 births with missing information on caste/tribe and the standard of living index, respectively, which are not shown separately

() Based on 25-49 unweighted cases

¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

4.7 Age at First and Last Birth

The ages at which women start and stop childbearing are important demographic determinants of fertility. A higher median age at first birth and a lower median age at last birth are indicators of lower fertility. Table 4.9 shows the median age at first birth for various age groups by selected background characteristics. In this table, the median age at first birth for any group of women is defined as the age by which half of all women in the group have had a first birth, rather than the age by which half of all mothers in the group have had a first birth.

Table 4.9 Median age at first birth					
Median age at first birth among women age 30–49 years by current age and selected background characteristics, Goa, 1999					
Background characteristic	Current age				
	30–34	35–39	40–44	45–49	30–49
Residence					
Urban	26.3	24.8	25.0	22.7	24.7
Rural	26.2	25.1	23.2	22.5	24.5
Education					
Illiterate	22.5	21.6	20.4	20.9	21.2
Literate, < middle school complete	24.6	23.7	23.0	22.5	23.4
Middle school complete	(26.3)	(27.7)	*	*	25.8
High school complete and above	27.9	27.8	27.1	(26.6)	27.5
Religion					
Hindu	25.9	24.4	23.2	22.0	23.7
Muslim	*	*	*	*	(20.3)
Christian	27.5	26.3	26.1	24.9	26.4
Caste/tribe					
Scheduled caste	*	*	*	*	20.5
Other backward class	*	*	*	*	22.6
Other ¹	26.7	25.2	24.4	22.8	25.0
Standard of living index					
Low	(23.5)	(21.6)	(20.1)	*	21.7
Medium	24.8	23.7	22.9	21.6	23.3
High	27.7	26.3	25.3	23.9	26.0
Total	26.3	25.0	24.0	22.6	24.6

Note: Total includes small numbers of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.
 () Based on 25–49 unweighted cases
 *Median not shown; based on fewer than 25 unweighted cases
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

The median age at first birth for Goa is 24.6 years for women age 30–49. As shown in the last row of the table, the median age at first birth has increased from 22.6 years for women age 45–49 to 26.3 years for women age 30–34, a substantial increase in a time span of approximately 15 years.

The median age at first birth is relatively low among Muslim women, scheduled-caste women, illiterate women, and women living in households with a low standard of living. The median age at first birth is almost the same in urban (24.7) and in rural areas (24.5). It is nearly six years lower for illiterate women (21.2) than for women who have completed at least high school (27.5). The median is four years lower for women in households with a low standard of living (21.7) than for women in households with a high standard of living (26.0). Muslim women have a median age at first birth that is three years lower than that for Hindu women and six years lower than that for Christian women. The median age at first birth is approximately 2–5 years lower for scheduled-caste women than for other women.

For older women, the age at last childbirth is an indicator of cessation of childbearing. Table 4.10 presents the distribution of ever-married women age 40–49 by age at last birth, as well as the median age at last birth. Although a few of these women may have another birth later

Table 4.10 Age at last birth

Percent distribution of ever-married women age 40–49 years by age at last birth and median age at last birth, according to current age, Goa, 1999

Current age	Age at last birth								Total percent	Median age at last birth	Number of women
	No birth	< 20	20–24	25–29	30–34	35–39	40–44	45–49			
40–44	4.1	1.5	12.6	31.6	34.1	14.6	1.6	NA	100.0	30.5	198
45–49	4.0	1.0	15.9	29.0	33.9	13.6	2.5	0.0	100.0	30.3	197
40–49	4.1	1.2	14.3	30.3	34.0	14.1	2.0	0.0	100.0	30.4	396

NA: Not applicable

on, the very low fertility rates for women in this age group suggest that childbearing is virtually complete by these ages. In Goa, nearly half of women (46 percent) in this age group had their last birth before age 30, compared with 54 percent for India as a whole. The median age at last birth is almost the same for women in the age groups 40–44 and 45–49. The typical reproductive age span (which is the difference between the median age at last birth and the median age at first birth for women who have ever had a birth) is shorter in Goa (7.5 years) than in the country as a whole (9.9 years), a finding consistent with the much lower level of fertility in Goa (see International Institute for Population Sciences and ORC Macro, 2000: Table 4.15).

4.8 Postpartum Amenorrhoea, Abstinence, Insusceptibility, and Menopause

Among the factors that influence the risk of pregnancy following a birth are breastfeeding and sexual abstinence. Breastfeeding prolongs postpartum protection from conception through its effect on the period of amenorrhoea (the period prior to the return of menses) following a birth. Delaying the resumption of sexual relations following a birth also prolongs the period of postpartum protection. Women are defined as insusceptible to pregnancy following a birth if they are not at risk of conception because they are amenorrhoeic, abstaining from sexual relations, or both.

Table 4.11 shows the percentage of births occurring during the three years preceding the survey whose mothers are postpartum amenorrhoeic, abstaining, or insusceptible, by the number of months since the birth. These distributions are based on current status information, that is, on the proportions of births occurring within the 36 months before the survey whose mothers were amenorrhoeic, abstaining, or insusceptible at the time of the survey. In other words, the table is based on cross-sectional data and does not represent the experience of a real cohort of births over time. The data are grouped in six-month intervals to minimize fluctuations. The table also shows median and mean durations of amenorrhoea, abstinence, and insusceptibility. The prevalence/incidence mean is obtained by dividing the number of mothers who are amenorrhoeic, abstaining, or insusceptible by the average number of births per month over the 36-month period.

Given the very low fertility in Goa, the total number of births in the three years preceding the survey is small; nonetheless, the NFHS-2 data suggest that among women who had a birth less than six months before the survey, a majority were amenorrhoeic and a majority were abstaining. The percentage amenorrhoeic drops considerably 6–11 months after birth and continues to decline thereafter. The proportion of women abstaining from sexual intercourse

Table 4.11 Postpartum amenorrhoea, abstinence, and insusceptibility				
Percentage of births during the three years preceding the survey whose mothers are postpartum amenorrhoeic, abstaining, or insusceptible by number of months since birth and median and mean durations, Goa, 1999				
Months since birth	Percentage of births whose mothers are:			Number of births
	Amenorrhoeic	Abstaining	Insusceptible	
< 6	(62.9)	(59.9)	(80.3)	40
6-11	25.5	24.2	42.7	58
12-17	10.7	12.4	19.4	58
18-23	2.9	7.0	8.5	66
24-29	(2.2)	(8.3)	(10.4)	50
30-35	0.0	7.5	7.5	53
Median ¹	4.5	4.0	7.4	NA
Mean	6.8	7.8	10.6	NA
Prevalence/incidence mean	5.3	6.3	9.0	NA

Note: Median and mean durations are based on current status. Insusceptible is defined as amenorrhoeic, abstaining, or both.
NA: Not applicable
() Based on 25-49 unweighted cases
¹Based on a three-period moving average of percentages

within six months after a birth and 6-11 months after a birth are both slightly lower than the proportion amenorrhoeic. Like the proportion amenorrhoeic, the proportion abstaining also declines rapidly after the first six months. Overall, when amenorrhoea and abstinence are considered together, more than half (57 percent) of women are susceptible to pregnancy 6-11 months after giving birth, and 81 percent are susceptible 12-17 months after giving birth.

The median and mean durations of insusceptibility are 7 and 11 months, respectively. Because the mean is affected by extreme values and the median is not, and because the distribution is skewed towards the higher durations, the mean is higher than the median. The median durations of amenorrhoea and abstinence are almost the same (4.5 months and 4.0 months, respectively). These results indicate that women in Goa remain insusceptible to pregnancy for over 7 months, due to the effects of both postpartum amenorrhoea and abstinence.

Menopause is a primary limiting factor of fertility. It is the culmination of a gradual decline in fecundity with increasing age. After age 30, the risk of pregnancy declines with age as an increasing proportion of women become infecund. In NFHS-2, menopause is defined as the absence of menstruation for six or more months preceding the survey among currently married women. Women who report that they are menopausal or that they have had a hysterectomy are also included in this category. Women who are pregnant or postpartum amenorrhoeic are assumed not to be menopausal. Table 4.12 presents data on menopause among women age 30-49 years. As expected, menopause is not common among women in their thirties, but its incidence increases rapidly after age 40. By age 42-43, 17 percent of women in Goa are menopausal. The proportion menopausal rises to 41 percent for women age 46-47 and to 66 percent for women age 48-49.

Table 4.12 Menopause

Percentage of currently married women age 30–49 years who are in menopause by age, Goa, 1999

Age	Percentage	Number
30–34	1.7	233
35–39	4.7	234
40–41	15.0	66
42–43	17.0	70
44–45	27.6	74
46–47	40.9	71
48–49	66.1	69
30–49	16.1	817

Note: Percentage menopausal is defined as the percentage of currently married women who are not pregnant and not postpartum amenorrhoeic and who reported that their last menstrual period occurred six or more months preceding the survey or that they are menopausal or have had a hysterectomy.

4.9 Desire for More Children

In order to obtain information on fertility preferences, NFHS-2 asked non-sterilized, currently married, non-pregnant women: ‘Would you like to have (a/another) child or would you prefer not to have any (more) children?’ Pregnant women were asked, ‘After the child you are expecting, would you like to have another child or would you prefer not to have any more children?’ Women who expressed a desire for additional children were asked how long they would like to wait before the birth of their next child. The survey also collected information on the preferred sex of the next child and the ideal number of children by sex.

Table 4.13 and Figure 4.3 show future fertility preferences of currently married women. Thirty-three percent of currently married women say that they do not want any more children, 28 percent cannot have another child because either the wife or the husband has been sterilized, and another 7 percent of women say that they cannot get pregnant (that is, they are ‘declared infecund’). Thirty percent say that they would like to have another child (17 percent within two years, 12 percent after waiting at least two years, and 1 percent are undecided when they want the next child). Overall, 73 percent of women either want to space their next birth or do not want any more children, including women who are sterilized or whose husbands are sterilized.

The desire to have a child within two years drops rapidly with the number of living children, from 78 percent of women with no living children to 27 percent of women with one child and 7 percent or less for women with two or more living children. Notably, among women with one living child, 34 percent want to wait at least two years before having the next child and 30 percent want no more children including 2 percent who are sterilized or whose husbands are sterilized.

Fifty-seven percent of women who want another child say that the sex of the next child does not matter, 24 percent say that they want the next child to be a boy, 17 percent say that they want the next child to be a girl, and the rest say that the sex of the child is ‘up to God’ (2 percent). This suggests some, albeit a relatively low, preference for sons in Goa. Notably, however, both the proportion of women expressing a desire for a child of a particular sex and the

Table 4.13 Fertility preferences

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children, Goa, 1999

Desire for children	Number of living children ¹					Total
	0	1	2	3	4+	
Desire for additional child						
Wants another soon ²	77.8	26.9	6.8	2.8	1.0	17.4
Wants another later ³	7.0	33.6	7.6	2.9	0.5	12.0
Wants another, undecided when	0.0	3.3	1.2	0.4	0.5	1.3
Undecided	0.9	1.3	0.9	0.4	0.0	0.8
Up to God	0.0	0.3	1.2	0.8	0.0	0.6
Wants no more	2.6	27.9	51.5	32.2	28.5	32.8
Sterilized	0.0	1.7	23.8	53.7	62.2	28.2
Declared infecund	11.7	5.0	6.9	6.7	7.3	6.9
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	119	298	322	244	188	1,171
Preferred sex of additional child⁴						
Boy	10.0	20.0	(57.3)	*	*	24.2
Girl	4.1	24.2	(23.2)	*	*	17.0
Doesn't matter	84.9	53.4	(17.1)	*	*	57.0
Up to God	0.9	2.4	(2.4)	*	*	1.8
Total percent	100.0	100.0	100.0	*	*	100.0
Number of women wanting more ⁴	101	165	46	13	4	329

() Based on 25-49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

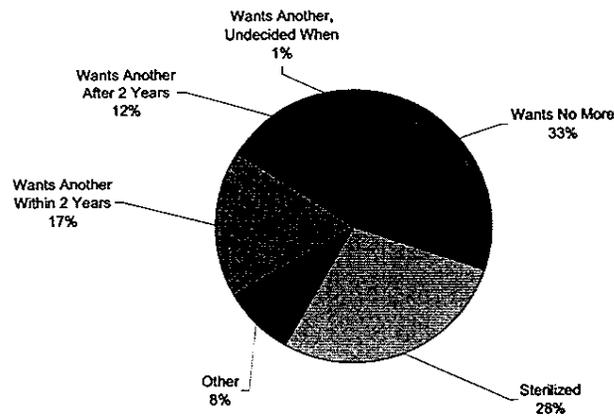
¹Includes current pregnancy, if any

²Wants next birth within 2 years

³Wants to delay next birth for 2 or more years

⁴Excludes currently pregnant women

**Figure 4.3
Fertility Preferences Among Currently Married Women**



Note: Percents add to less than 100.0 due to rounding

NFHS-2, Goa, 1999

proportion expressing a desire for a son generally increase with the number of living children. Among women with no living children, only 10 percent (compared with 35 percent for India as a whole) want their first child to be a son, 4 percent want a daughter, and 86 percent say that the sex of the child does not matter or is up to God. Even among women with one living child more than half do not specify the desired sex of their next child, and among those who do, more than half express a desire for a girl. However, among women with two living children, 57 percent want their next child to be a son, 23 percent want a daughter, and 20 percent say that the sex of the child does not matter or is up to God.

Table 4.14 provides information about differentials in the desire to limit family size by selected background characteristics. In this table, women who are sterilized (or whose husbands are sterilized) are included among those who say that they want no more children. It is striking that 75 percent of women with two living children want no more children. As expected, older women are much more likely than younger women to want no more children: 77 percent of women age 35 and above want no more children, compared with 51 percent of women age 25–34 and 23 percent of women age 15–24. The proportion who want no more children is higher among urban women (64 percent) than among rural women (59 percent). Overall, the proportion wanting no more children declines with education of women, from 67 percent among illiterate women and women who have not completed middle school to 48–56 percent among those who have completed at least middle school. However, these differences by education are partly due to the fact that less-educated women already have more children on average than their better-educated counterparts. When the number of living children is controlled, the relationship between education and the desire for no more children is either inconsistent or is reversed; for example, among women with 1–3 living children, those who have completed high school are more likely to want no more children than illiterate women. The proportion of women who want no more children is similar for Hindu and Muslim women (63 percent each), but lower for Christian women (56 percent). The proportion of women who want no more children is higher for scheduled-caste women (64 percent) than for women belonging to other backward classes and ‘other’ women (58–61 percent).

The background characteristic with the strongest effect on women’s desire to limit family size, however, is the sex composition of living children. Twenty-nine percent of women with no living sons want no more children, compared with 86 percent of women with three or more living sons. Differences associated with the number of living daughters are almost as large as for number of living sons, however. Forty percent of women with no living daughters want no more children, compared with 86 percent of women with three or more living daughters. These data suggest not only a preference for sons, but also a preference for having one daughter along with sons. A preference for sons is indicated by the fact that among women with 1–3 living children, women with no sons are less likely than women with one or more sons to want no more children. A preference for one daughter along with a son is most evident among women with two children: women with one daughter and one son are the ones most likely to want no more children.

Table 4.14 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, Goa, 1999

Background characteristic	Number of living children ¹					Total
	0	1	2	3	4+	
Age						
15-24	(0.0)	8.3	*	*	*	22.8
25-34	1.8	28.3	71.8	86.3	(96.9)	51.2
35-49	(6.8)	50.0	80.1	86.6	89.2	76.8
Residence						
Urban	(2.3)	33.7	79.5	85.6	93.5	64.3
Rural	2.8	27.0	72.1	86.3	89.2	58.6
Education						
Illiterate	*	(16.8)	62.8	83.3	89.0	67.4
Literate, < middle school complete	(0.0)	34.4	76.1	87.0	90.6	67.1
Middle school complete	*	(24.7)	(61.9)	(88.8)	*	48.0
High school complete and above	(4.7)	32.7	83.6	87.7	*	55.9
Religion						
Hindu	3.5	31.1	76.2	88.0	94.3	63.1
Muslim	*	*	*	*	*	62.6
Christian	(0.0)	27.6	74.9	82.0	(78.6)	55.6
Caste/tribe						
Scheduled caste	*	*	*	*	*	63.7
Other backward class	*	*	*	*	(91.9)	58.2
Other ²	2.9	32.6	75.5	85.7	89.2	60.9
Standard of living index						
Low	*	(19.3)	(62.6)	(81.6)	(91.5)	58.6
Medium	(2.1)	25.2	70.6	89.0	89.6	61.5
High	3.8	33.9	80.0	84.6	92.1	61.1
Number of living sons³						
0	2.6	27.8	52.1	(68.9)	*	(28.6)
1	NA	33.1	86.4	83.0	92.3	66.7
2	NA	NA	77.3	91.5	94.5	87.6
3+	NA	NA	NA	(91.2)	83.0	86.3
Number of living daughters³						
0	2.6	33.1	77.3	(91.2)	*	(39.5)
1	NA	27.8	86.4	91.5	(81.4)	71.5
2	NA	NA	52.1	83.0	92.4	76.1
3+	NA	NA	NA	(68.9)	90.7	85.5
Total	2.6	29.6	75.3	86.0	90.7	61.0

Note: Women who have been sterilized or whose husbands have been sterilized are considered to want no more children. Total includes small numbers of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.

NA: Not applicable

() Based on 25-49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

¹Includes current pregnancy, if any

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

³Excludes pregnant women

4.10 Ideal Number of Children

To assess women's ideal number of children, NFHS-2 asked each woman the number of children she would like to have if she could start over again. Women with 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 found it difficult to answer these hypothetical questions, and hence the question sometimes had to be repeated to ensure that the meaning was understood. Despite this, 98 percent of women in Goa were able to give a numerical response.

Table 4.15 shows that 59 percent of ever-married women in Goa consider two to be the ideal number of children. Twenty-nine percent have an ideal that is more than two children, and 10 percent consider one child to be ideal. Among women who gave a numeric response, the average number of children considered ideal is 2.3, higher than the current total fertility rate of 1.8. The average number of children considered ideal ranges from 2.0–2.1 for women with 0–2 children to 3.0 for women who have four or more children.

Table 4.15 Ideal and actual number of children						
Percent distribution of ever-married women by ideal number of children, and mean ideal number of children, by number of living children, Goa, 1999						
Ideal number of children	Number of living children ¹					Total
	0	1	2	3	4+	
0	0.0	0.3	0.0	0.0	0.0	0.1
1	16.4	18.8	6.8	4.2	2.4	9.5
2	65.1	66.5	72.4	50.1	35.9	59.4
3	10.0	8.7	16.7	35.4	24.2	19.2
4	5.2	3.2	1.8	6.1	29.1	8.0
5	0.8	0.3	0.3	1.6	2.8	1.0
6+	0.0	0.0	0.0	0.4	1.9	0.4
Non-numeric response	2.5	2.0	2.1	2.3	3.7	2.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	128	306	341	260	211	1,246
Mean ideal number ²	2.1	2.0	2.1	2.5	3.0	2.3
Number of women giving numeric response	125	300	334	254	203	1,216

¹Includes current pregnancy, if any
²Means are calculated excluding women who gave non-numeric responses.

Asking a question on ideal family size is sometimes criticized on the grounds that women tend to adjust their ideal family size upward as their number of living children increases, in a process of rationalizing previously unwanted children as wanted. It is argued that the question on ideal family size prompts many women to state the actual number of children they already have as their ideal. It is evident from Table 4.15, however, that this is not so for many women in Goa. Among women with four or more living children, for example, 63 percent state that fewer than four children would be ideal. Similarly, among women with three living children, 54 percent state that their ideal family size is smaller than three children. It is evident from these results that

Table 4.16 Ideal number of children by background characteristics

Mean ideal number of children reported by ever-married women, according to current age and selected background characteristics, Goa, 1999

Background characteristic	Current age						Total
	20-24	25-29	30-34	35-39	40-44	45-49	
Residence							
Urban	(2.4)	2.1	2.2	2.2	2.4	2.4	2.3
Rural	2.3	2.1	2.1	2.4	2.6	2.9	2.4
Education							
Illiterate	(2.8)	2.6	2.5	2.8	3.1	3.0	2.8
Literate, < middle school complete	(2.3)	2.1	2.1	2.4	2.4	2.6	2.3
Middle school complete	*	(2.1)	(2.0)	(1.8)	*	*	2.1
High school complete and above	(2.1)	1.8	2.0	1.9	2.2	(2.2)	2.0
Religion							
Hindu	2.3	2.1	2.1	2.2	2.5	2.5	2.3
Muslim	*	*	*	*	*	*	2.7
Christian	*	2.1	2.1	2.3	2.7	2.8	2.4
Caste/tribe							
Scheduled caste	*	*	*	*	*	*	2.6
Other backward class	*	*	*	*	*	*	2.6
Other ¹	2.3	2.1	2.1	2.3	2.5	2.6	2.3
Work status							
Working in family farm/business	*	*	(2.3)	(2.4)	(2.5)	(3.0)	2.5
Employed by someone else	*	2.1	2.1	2.5	2.7	2.6	2.4
Self-employed	*	*	*	(2.4)	*	*	2.3
Not worked in past 12 months	2.3	2.1	2.1	2.1	2.5	2.6	2.2
Standard of living index							
Low	*	(2.5)	(2.5)	(2.7)	(3.2)	*	2.6
Medium	2.3	2.2	2.1	2.5	2.6	2.8	2.4
High	(2.2)	1.9	2.0	2.0	2.4	2.6	2.2
Husband's education							
Illiterate	*	(2.5)	(2.5)	(2.8)	(3.2)	(3.0)	2.8
Literate, < primary school complete	*	*	(2.4)	(2.6)	(2.6)	(2.7)	2.6
Primary school complete	*	(2.2)	(2.2)	(2.3)	(2.7)	(2.5)	2.4
Middle school complete	*	(2.1)	(2.0)	(2.2)	*	*	2.2
High school complete	(2.3)	2.0	2.1	(2.0)	(2.3)	(2.5)	2.1
Higher secondary complete and above	*	1.9	1.9	(1.8)	(2.2)	(2.0)	2.0
Total	2.3	2.1	2.1	2.3	2.6	2.6	2.3

Note: Means are calculated excluding women who gave non-numeric responses. Total includes small numbers of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe, work status, the standard of living index, and husband's education, who are not shown separately.

() Based on 25-49 unweighted cases

*Mean not shown; based on fewer than 25 unweighted cases

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

a substantial proportion of women already have more children than they now consider ideal. This proportion may be taken as another indicator of surplus or unwanted fertility.

Table 4.16 shows the mean ideal number of children for ever-married women by age, according to selected background characteristics. The mean ideal number of children is 2.1-2.3 for all age groups of women under age 40 and increases only slightly to 2.6 for women age 40-49. The mean ideal number does not vary much by the background characteristics shown in the table, providing additional evidence that the two-child norm has taken widespread hold in Goa.

4.11 Sex Preference for Children

A strong preference for sons has been found to be pervasive in Indian society particularly in the northern states, affecting both attitudes and behaviour with respect to children (Arnold et al., 1998; Arnold, 1996; Basu, 1989; Das Gupta, 1987; Kishor, 1995; Koenig and Foo, 1992; Kulkarni et al., 1996; Murthi et al., 1995; Nag, 1991; Parasuraman et al., 1994). In NFHS-2, women who gave a numerical response to the question on the ideal number of children were asked how many of these children they would like to be boys, how many they would like to be girls, and for how many the sex would not matter. Table 4.17 shows women's mean ideal number of sons and daughters, the percentages who want more children of a particular sex, the percentage who want at least one son, and the percentage who want at least one daughter, according to selected background characteristics. Overall, the average ideal family size consists of 0.9 sons, 0.8 daughters, and 0.7 children of either sex. Seventeen percent of women want more sons than daughters, compared with 33 percent in India as a whole. Five percent of women want more daughters than sons.

The indicator that shows the percentage of women who want at least one son and the percentage who want at least one daughter exhibits the weakest son preference. In Goa, there is not much difference between the proportion of women who want at least one son (68 percent) and those who want at least one daughter (65 percent).

Son preference is particularly weak among women who have completed at least high school, Christian women, self-employed women, women living in households with a high standard of living, and women whose husbands have at least completed high school.

4.12 Fertility Planning

For each child born in the three years before the survey and for each current pregnancy, NFHS-2 asked women whether the pregnancy was wanted at that time (planned), wanted at a later time (mistimed), or not wanted at all. Because a woman may retrospectively describe an unplanned pregnancy as one that was wanted at that time, responses to these questions may lead to an underestimation of unplanned childbearing. Nevertheless, this information provides a potentially powerful indicator of the degree to which couples successfully control childbearing. It should be noted that the proportion of births that are unplanned is influenced not only by whether, and how effectively, couples use contraception, but also by the couple's ideal family size.

Table 4.18 shows the percent distribution of births during the three years preceding the survey and current pregnancies according to fertility planning status. Twenty-nine percent of all pregnancies that resulted in live births in the three years preceding the survey (including current pregnancies) were unplanned (that is, unwanted at the time the woman became pregnant), with 23 percent wanted later and 6 percent not wanted at all. Within the unplanned category, the proportion of births that were wanted later falls, and the proportion that were not wanted at all rises, as mother's age at birth increases. The percentage of unplanned births in Goa (29 percent) is higher than at the national level (21 percent).

The proportion of births that were unplanned is higher in rural areas than urban areas. Births to literate women who have not completed high school are much more likely to be unplanned than births to illiterate women and women who have completed high school (37–46 percent compared with 20–21 percent). Births to women living in households with a low

Table 4.17 Indicators of sex preference

Mean ideal number of sons, daughters, and children of either sex for ever-married women, percentage who want more sons than daughters, percentage who want more daughters than sons, percentage who want at least one son, and percentage who want at least one daughter by selected background characteristics, Goa, 1999

Background characteristic	Mean ideal number of:			Percentage who want more sons than daughters	Percentage who want more daughters than sons	Percentage who want at least one son	Percentage who want at least one daughter	Number of women
	Sons	Daughters	Either sex					
Residence								
Urban	0.9	0.7	0.6	17.5	4.4	67.2	63.0	508
Rural	0.9	0.8	0.7	16.6	5.6	68.3	66.3	706
Education								
Illiterate	1.2	1.0	0.6	24.1	7.3	78.2	75.3	343
Literate, < middle school complete	1.0	0.8	0.5	18.9	4.6	73.0	70.2	329
Middle school complete	0.8	0.6	0.7	16.9	2.6	63.2	55.6	156
High school complete and above	0.6	0.6	0.8	9.0	4.7	56.2	55.0	387
Religion								
Hindu	1.0	0.8	0.5	19.3	4.6	73.0	69.1	809
Muslim	1.0	0.8	0.8	19.9	3.6	70.4	65.0	55
Christian	0.7	0.7	1.0	11.1	6.6	55.2	54.9	346
Caste/tribe								
Scheduled caste	1.1	0.8	0.7	23.5	2.3	72.8	66.1	90
Other backward class	0.9	0.8	0.8	15.5	2.8	62.4	62.6	76
Other ¹	0.9	0.8	0.6	16.6	5.5	67.8	64.9	1,043
Work status								
Working in family farm/business	1.0	0.9	0.6	17.1	8.2	73.4	72.8	146
Employed by someone else	0.9	0.8	0.7	18.5	4.7	66.9	64.8	341
Self-employed	0.8	0.8	0.7	9.3	6.9	69.0	69.1	88
Not worked in past 12 months	0.9	0.7	0.7	17.1	4.4	66.9	62.6	639
Standard of living index								
Low	1.1	0.9	0.6	24.2	8.6	78.7	75.4	175
Medium	1.0	0.8	0.6	19.7	4.2	71.9	66.8	481
High	0.8	0.7	0.7	12.5	4.9	61.1	60.0	554
Husband's education								
Illiterate	1.1	1.0	0.7	20.6	7.2	74.0	73.0	194
Literate, < primary school complete	1.2	0.9	0.5	27.9	8.0	77.5	73.4	176
Primary school complete	1.0	0.8	0.6	19.7	5.7	73.0	67.9	176
Middle school complete	0.9	0.7	0.6	18.0	2.0	67.5	59.8	157
High school complete	0.8	0.7	0.6	14.5	4.3	66.4	64.9	275
Higher secondary complete and above	0.6	0.6	0.8	6.1	3.9	53.5	52.9	233
Total	0.9	0.8	0.7	17.0	5.1	67.9	64.9	1,214

Note: Table excludes women who gave non-numeric responses to the questions on ideal number of children or ideal number of sons and daughters. Total includes 4 women belonging to other religions, 3 women belonging to the scheduled tribes, and 2, 1, 4, and 3 women with missing information on caste/tribe, work status, the standard of living index, and husband's education, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

standard of living are much more likely to be unplanned than births to women living in households with a medium or high standard of living. Unplanned births are less common among Christian women than among Hindu or Muslim women. Not surprisingly, higher-order births are more likely than first- or second-order births to be unplanned. The proportion unplanned ranges from 20 percent for first-order births to 41–42 percent for births of order three or higher. The substantial proportion of women at all parities who would have liked to have their births later

Table 4.18. Fertility planning

Percent distribution of births during the three years preceding the survey and current pregnancies by fertility planning status, according to selected background characteristics, Goa, 1999

Background characteristic	Planning status of pregnancy				Total percent	Number of births and current pregnancies
	Wanted then	Wanted later	Not wanted at all	Missing		
Mother's age at birth¹						
< 20	(74.2)	(25.8)	(0.0)	(0.0)	100.0	27
20-24	65.0	32.1	1.9	1.0	100.0	110
25-29	72.8	22.0	5.2	0.0	100.0	152
30-34	75.8	14.1	10.2	0.0	100.0	84
Residence						
Urban	72.8	20.6	5.9	0.7	100.0	159
Rural	69.5	23.9	6.6	0.0	100.0	243
Education						
Illiterate	80.1	9.8	10.0	0.0	100.0	81
Literate, < middle school complete	63.3	29.9	6.8	0.0	100.0	101
Middle school complete	53.8	36.0	10.2	0.0	100.0	66
High school complete and above	78.1	18.7	2.5	0.7	100.0	154
Religion						
Hindu	69.2	22.9	7.4	0.4	100.0	253
Muslim	(68.8)	(27.7)	(3.5)	(0.0)	100.0	29
Christian	74.5	20.7	4.8	0.0	100.0	118
Caste/tribe						
Scheduled caste	(77.4)	(16.7)	(5.9)	(0.0)	100.0	36
Other backward class	(74.6)	(19.2)	(6.2)	(0.0)	100.0	29
Other ²	69.9	23.3	6.4	0.3	100.0	335
Standard of living index						
Low	63.9	21.9	14.2	0.0	100.0	49
Medium	71.4	22.3	6.3	0.0	100.0	168
High	71.9	23.1	4.3	0.6	100.0	183
Birth order³						
1	79.7	19.5	0.9	0.0	100.0	211
2	62.9	29.5	6.5	1.1	100.0	103
3	59.0	25.2	15.8	0.0	100.0	56
4+	(58.3)	(15.7)	(26.0)	(0.0)	100.0	31
Total	70.8	22.6	6.3	0.3	100.0	402

Note: Table includes the two most recent births in the three years preceding the survey and current pregnancies. Total includes 24 and 4 births to women age 35-39 and age 40-44 at the time of birth, respectively, 1 birth to a woman belonging to an other religion, and 2 and 1 births with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

¹For current pregnancy, estimated maternal age at birth

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

³Includes current pregnancy, if any

suggests that attention needs to be given to the promotion of spacing methods of contraception among these women. In addition, the fact that 26 percent of births of order four or higher were not wanted at all indicates that the family welfare programme has not met the needs of women who already have at least three children to control their fertility.

The impact of unwanted fertility can be measured by comparing the total wanted fertility rate with the total fertility rate (TFR). The total wanted fertility rate represents the level of fertility that theoretically would result if all unwanted births were prevented. A comparison of

Table 4.19 Wanted fertility rates		
Total wanted fertility rate and total fertility rate for the three years preceding the survey by selected background characteristics, Goa, 1999		
Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.45	1.69
Rural	1.50	1.83
Education		
Illiterate	1.53	2.08
Literate, < middle school complete	1.79	2.16
Middle school complete	1.17	1.64
High school complete and above	1.66	1.81
Religion		
Hindu	1.32	1.68
Muslim	(2.63)	(2.80)
Christian	1.59	1.76
Caste/tribe		
Scheduled caste	1.72	2.31
Other backward class	2.11	2.40
Other ¹	1.45	1.72
Standard of living index		
Low	1.14	1.71
Medium	1.47	1.81
High	1.58	1.78
Total	1.47	1.77
<p>Note: Rates are based on births in the period 1–36 months preceding the survey to women age 15–49. The total fertility rates are the same as those presented in Table 4.3. Total includes small numbers of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.</p> <p>() Based on 125–249 women-years of exposure</p> <p>¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class</p>		

the TFR with the total wanted fertility rate indicates the potential demographic impact of the elimination of all unwanted births. The total wanted fertility rates presented in Table 4.19 are calculated in the same way as the TFR except that unwanted births are excluded from the numerator. In this case, a birth is considered unwanted if the number of living children at the time of conception was greater than or equal to the ideal number of children reported by the respondent at the time of the survey. Women who did not give a numeric response to the question on ideal number of children are assumed to have wanted all the births they had.

Overall, the total wanted fertility rate of 1.47 in Goa is lower by 0.3 children (i.e., by 17 percent) than the total fertility rate of 1.77. This means that if unwanted births could be eliminated, the TFR would drop even further below replacement. Although total wanted fertility is lower than total fertility for every population group, the absolute difference between the wanted fertility rate and the TFR is more than 0.5 children only for scheduled-caste women, women living in households with a low standard of living, and illiterate women.

CHAPTER 5

FAMILY PLANNING

The National Family Welfare Programme in India has traditionally sought 'to promote responsible and planned parenthood through voluntary and free choice of family planning methods best suited to individual acceptors' (Ministry of Health and Family Welfare, 1998a). In April 1996, the programme was renamed the Reproductive and Child Health Programme and given a new orientation to meet the health needs of women and children more completely. The programme now aims to cover all aspects of women's reproductive health throughout their lives. With regard to family planning, the new approach emphasizes the target-free promotion of contraceptive use among eligible couples, the provision to couples of a choice of contraceptive methods (including condoms, oral pills, IUDs, and male and female sterilization), and the assurance of high-quality care. An important component of the programme is the encouragement of adequate spacing of births, with at least three years between births (Ministry of Health and Family Welfare, n.d.).

The new National Population Policy, 2000, adopted by the Government of India has set as its immediate objective the task of addressing unmet need for contraception in order to achieve the medium-term objective of bringing the total fertility rate down to replacement level by the year 2010. One of the 14 national socio-demographic goals identified for this purpose is to achieve universal access to information/counselling and services for fertility regulation and contraception with a wide range of choices (Ministry of Health and Family Welfare, 2000).

Information about the knowledge and use of contraceptive methods provided in this chapter is designed to be of practical relevance to programme administrators and policymakers responsible for monitoring existing programmes and formulating new strategies to meet the health and family planning needs of the population. The chapter begins with an appraisal of women's knowledge of contraceptive methods and then discusses women's past and present use of contraception, as well as the sources of supply of modern contraceptive methods. Special attention is focused on reasons for discontinuation and non-use of contraception and on intentions to use family planning methods in the future. The chapter also contains information on exposure to family planning messages through the media and on discussions about family planning with relatives and friends. It concludes with an assessment of the extent to which the need for family planning services in Goa is being met effectively.

5.1 Knowledge of Family Planning Methods

Lack of knowledge of contraceptive methods can be a major obstacle to their use. In NFHS-2, interviewers obtained information on knowledge and ever use of contraceptive methods by asking each respondent the following question: '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. For each method I mention, please tell me if you have ever heard of the method and whether you have ever used the method at any time in your life.' If a respondent did not recognize the name of a method, a short description was read. In this way, the survey assesses women's knowledge and ever use of seven contraceptive methods, namely the pill, condom, IUD, female sterilization, male sterilization, rhythm or safe-period method, and withdrawal. In addition, the survey

Table 5.1 Knowledge of contraceptive methods			
Percentage of currently married women who know any contraceptive method by specific method and residence, Goa, 1999			
Method	Urban	Rural	Total
Any method	99.8	99.7	99.7
Any modern method	99.8	99.7	99.7
Pill	93.6	87.0	89.7
IUD	81.3	78.4	79.6
Condom	90.6	83.9	86.7
Female sterilization	99.5	98.3	98.8
Male sterilization	83.0	72.3	76.7
Any traditional method	60.5	54.1	56.8
Rhythm/safe period	55.9	48.1	51.4
Withdrawal	44.2	33.2	37.7
Other method ¹	5.7	5.8	5.7
Number of women	484	687	1,171
¹ Includes both modern and traditional methods that are not listed separately			

collected information on respondents' knowledge and ever use of any other contraceptive methods (modern, traditional, or folkloric).

Table 5.1 shows the extent of knowledge of contraceptive methods among currently married women by specific method and urban-rural residence. Knowledge of contraceptive methods is universal in Goa, with almost all currently married women recognizing at least one method of contraception and at least one modern method of contraception.

Female sterilization is the most widely known method of contraception, followed by the pill. Overall, 99 percent of currently married women know about female sterilization and 90 percent know about the pill. Knowledge of the other officially-sponsored methods (IUD, male sterilization, and condom) is less widespread. The condom is known by 87 percent of women, the IUD is known by 80 percent, and male sterilization is known by 77 percent. Except for female sterilization, of which knowledge is almost the same in urban and rural areas, the proportion knowing specific methods is much lower in rural than in urban areas, especially in the case of condoms and male sterilization. For instance, 72 percent of rural women and 83 percent of urban women know about male sterilization.

In Goa, a majority of currently married women know at least one traditional method (57 percent). The rhythm/safe-period method is known more widely (51 percent) than withdrawal (38 percent). Knowledge of traditional methods is higher in urban areas (61 percent) than in rural areas (54 percent). Knowledge of each of the different methods has increased since NFHS-1, particularly in the case of the pill, the condom, and each of the two traditional methods.

5.2 Contraceptive Use

Ever Use of Family Planning Methods

NFHS-2 asked respondents if they had ever used each of the methods they knew about. Women who said they had not used any of the methods were asked if they had 'ever used anything or

Table 5.2 Ever use of contraception												
Percentage of currently married women who have ever used any contraceptive method by specific method, according to age, Goa, 1999												
Age	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Number of women
20–24	36.4	26.8	6.3	1.7	12.6	8.7	0.0	16.2	6.6	11.4	3.6	104
25–29	51.8	35.8	10.7	5.4	16.2	13.0	0.0	23.2	13.8	15.1	2.1	231
30–34	67.8	55.0	14.4	12.9	21.6	25.6	0.0	29.9	22.1	18.6	3.5	233
35–39	67.0	56.8	9.9	12.6	17.2	33.5	0.5	21.4	16.3	10.2	0.8	234
40–44	74.4	62.5	8.7	6.9	17.3	44.0	0.0	23.5	17.9	11.4	1.8	177
45–49	64.6	58.4	9.9	3.5	9.5	40.7	1.8	13.9	10.5	6.3	2.9	173
Total	61.7	50.4	10.4	7.9	16.7	27.8	0.4	22.0	15.2	12.5	2.3	1,171

Note: Total includes 19 women age 15–19, who are not shown separately.
¹Includes both modern and traditional methods that are not listed separately

tried in any way to delay or avoid getting pregnant'. Table 5.2 presents the pattern of ever use of family planning methods for currently married women by age.

Although nearly all currently married women know at least one method of contraception, only 62 percent have ever used a method, up from 56 percent at the time of NFHS-1. Half of currently married women have ever used a modern method and 22 percent have ever used a traditional method. The most commonly used methods are female sterilization (28 percent), followed by the condom (17 percent), rhythm or safe-period method (15 percent), withdrawal (13 percent), and the pill (10 percent). Less than 1 percent have adopted male sterilization and 8 percent have ever used the IUD.

Ever use of any method increases with women's age up to age 40–44 (peaking at 74 percent) and declines at older ages. The increase in contraceptive use with age reflects a life-cycle effect, with women increasingly adopting contraception as their fertility goals are met. Declining ever use of modern methods by older women reflects, at least in part, larger family size norms and lower levels of contraceptive prevalence in the past.

Current Use of Family Planning Methods

Table 5.3 provides information on current use of family planning methods for currently married women in Goa by age. Current contraceptive prevalence in Goa is moderate, with 48 percent of currently married women using some method of contraception—almost the same as the national average. The NFHS-2 estimates of current use of any method and specific methods in Goa are close to those obtained by the Rapid Household Survey (RHS) under the Reproductive and Child Health Project, which was carried out at about the same time as NFHS-2 (International Institute for Population Sciences, 2001). For women age 15–44, the use of modern methods was reported to be 34 percent in NFHS-2 and 39 percent in the RHS, and the use of traditional methods was 12 percent in NFHS-2 as well as in the RHS.

Table 5.3 Current use of contraception

Percent distribution of currently married women by contraceptive method currently used, according to age, Goa, 1999

Age	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
20-24	28.6	18.3	1.8	0.9	6.8	8.7	0.0	7.6	3.8	3.8	2.8	71.4	100.0	104
25-29	35.8	22.8	1.7	2.7	5.3	13.0	0.0	11.7	5.7	6.0	1.3	64.2	100.0	231
30-34	54.4	36.0	1.3	2.6	6.5	25.6	0.0	15.9	8.2	7.7	2.6	45.6	100.0	233
35-39	51.3	40.4	0.8	2.6	3.1	33.5	0.5	10.5	6.5	3.9	0.4	48.7	100.0	234
40-44	61.9	51.0	0.0	1.1	5.9	44.0	0.0	10.3	7.4	2.9	0.6	38.1	100.0	177
45-49	48.3	44.2	0.0	0.5	1.2	40.7	1.8	2.9	1.8	1.1	1.2	51.7	100.0	173
Total	47.5	35.9	0.9	1.9	4.9	27.8	0.4	10.3	5.8	4.5	1.4	52.5	100.0	1,171

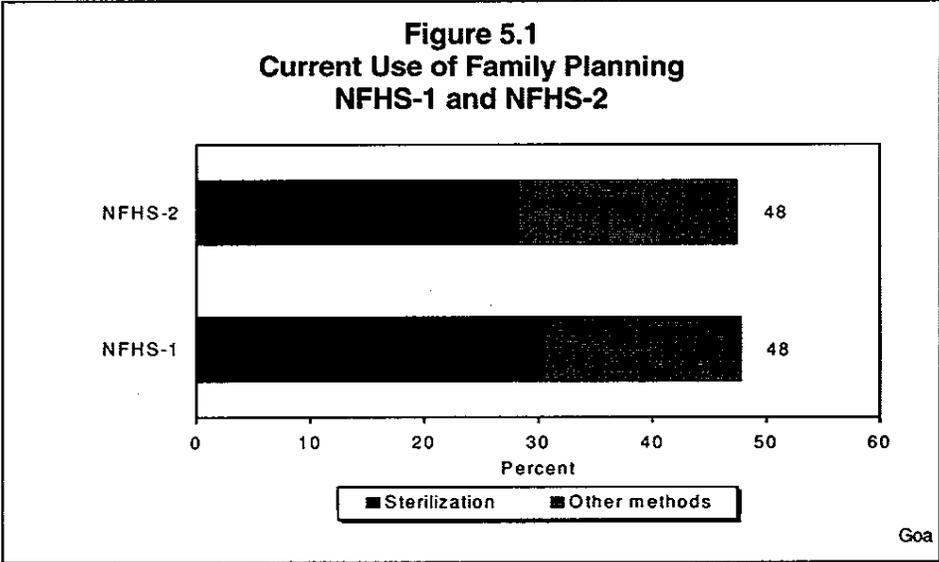
Note: Total includes 19 women age 15-19, who are not shown separately.

¹Includes both modern and traditional methods that are not listed separately

Tables 5.2 and 5.3 show that 77 percent of ever users of contraception are current users. More than three-quarters of current contraceptive users (76 percent) are using a modern method. In Goa, as in most of the states of India, sterilization dominates the contraceptive method mix. Twenty-eight percent of currently married women are sterilized, and female sterilization accounts for 59 percent of the total current contraceptive prevalence. Less than 1 percent of women report male sterilization as their current method. In fact, female sterilizations outnumber male sterilizations by 65 to 1. The three officially-sponsored spacing methods together account for only 16 percent of contraceptive prevalence. Specifically, condoms are used by 5 percent of women, IUDs by 2 percent, and pills by only 1 percent of women.

By age, current contraceptive use increases more or less steadily from 29 percent for women age 20–24 to 62 percent for women age 40–44 and decreases for older women. There is no clear age pattern in condom use; however, pill use declines with increasing age. No women above age 39 currently use the pill. Use of female sterilization peaks at 44 percent among women age 40–44. The majority of contraceptive users under age 30 currently use either a modern spacing method or a traditional method, whereas the majority of current users age 35 or above use female sterilization.

The contraceptive prevalence rate in Goa has remained unchanged at 48 percent between NFHS-1 and NFHS-2 (Figure 5.1). During this period, however, there has been a small decrease in the use of sterilization (from 31 percent to 28 percent) but almost no change in the use of the officially-sponsored spacing methods (their use increased from 15 percent to 16 percent). This has resulted in a slight decline in the share of modern methods in total contraceptive prevalence. In NFHS-1, modern-method use accounted for 79 percent of current contraceptive prevalence; in comparison, modern methods account for 76 percent of current contraceptive use in NFHS-2. These results suggest that, despite the increased emphasis on contraceptive choice and on modern spacing methods in the Reproductive and Child Health Programme and women’s increasing knowledge of modern spacing methods, female sterilization continues to dominate the method mix in Goa and modern spacing methods still account for a relatively small and almost unchanged percentage of total contraceptive use.



Socioeconomic Differentials in Current Use of Family Planning Methods

Table 5.4 shows differences in current contraceptive use by background characteristics. Current contraceptive use is higher in urban areas (53 percent) than in rural areas (44 percent). Women in urban areas are also somewhat more likely (10 percent) to use the three officially-sponsored spacing methods than women in rural areas (6 percent). Interestingly, current contraceptive use is higher among illiterate women (53 percent) than among literate women (40–47 percent). However, this is due to the high rate of female sterilization use among illiterate women (48 percent) relative to literate women (12–33 percent). Although overall contraceptive use is highest among illiterate women, they are least likely to use a traditional method or one of the three officially-sponsored spacing methods. Only 3 percent of illiterate women currently use any traditional method, compared with 15–17 percent of women who have at least completed middle school. Modern spacing methods account for only 2 percent of all contraceptive use among illiterate women but for 33 percent of all contraceptive use among women who have completed at least high school. Contraceptive use has increased slightly since NFHS-1 among illiterate women (from 47 percent to 53 percent), whereas it has decreased slightly among women with at least a high school education (from 50 percent in NFHS-1 to 47 percent in NFHS-2). Various studies based on NFHS-1 data have shown that even after controlling the effects of other factors, education is a key factor influencing contraceptive use in India (Retherford and Ramesh, 1996; Ramesh et al., 1996).

Current use of any method is lower among Christians (40 percent) than among Hindus (50 percent) and Muslims (48 percent). In all three religious groups, current use of modern methods is higher than current use of traditional methods; however, traditional method use accounts for 43 percent of contraceptive use by Christians but only 15 percent and 4 percent of contraceptive use by Hindus and Muslims, respectively. Muslim women are more likely than Hindu or Christian women to have adopted female sterilization. This is in sharp contrast to Muslims in India as a whole where Muslims are much less likely than women of most other religions to have adopted female sterilization.

Contraceptive use is higher among scheduled-caste women (67 percent) than among women belonging to other backward classes (47 percent) or women who do not belong to a scheduled caste or another backward class (46 percent). This difference is due to a higher use of sterilization and traditional methods among scheduled-caste women.

The use of any contraception is slightly higher among women with a low standard of living than among women with a medium or high standard of living. More striking, however, is the relationship between female sterilization use and the household standard of living. Sterilization use is much higher among women from households with a low standard of living (42 percent) than among women from households with a high standard of living (19 percent). In contrast, the use of modern spacing methods is much higher among women from households with a high standard of living (12 percent) than among women living in households with a lower standard of living (3–4 percent). Traditional method use also increases sharply with household standard of living.

Table 5.4 also shows differences in current use by the number and sex of living children. Contraceptive use increases sharply from 8 percent for women with no living children and 31 percent of women with one child to 69 percent for women with four or more living children. The

Table 5.4 Current use by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, Goa, 1999

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
Residence														
Urban	52.7	39.4	0.8	2.2	7.0	28.7	0.7	12.2	7.2	5.0	1.1	47.3	100.0	484
Rural	43.9	33.4	1.0	1.7	3.4	27.2	0.1	8.9	4.8	4.2	1.6	56.1	100.0	687
Education														
Illiterate	53.3	49.2	0.3	0.0	1.0	47.6	0.3	2.8	0.9	1.8	1.3	46.7	100.0	310
Literate, < middle school complete	46.0	38.3	0.6	1.5	2.4	33.4	0.3	6.8	2.5	4.3	0.9	54.0	100.0	321
Middle school complete	40.1	22.7	0.6	1.9	4.7	15.4	0.0	15.4	10.2	5.2	2.0	59.9	100.0	151
High school complete and above	47.0	28.3	1.7	3.6	10.2	12.2	0.5	17.2	10.7	6.5	1.5	53.0	100.0	389
Religion														
Hindu	50.3	41.5	0.9	1.7	5.6	32.8	0.5	7.7	4.1	3.6	1.2	49.7	100.0	776
Muslim	48.1	46.2	1.9	2.1	6.0	36.3	0.0	1.8	0.0	1.8	0.0	51.9	100.0	50
Christian	40.4	21.1	0.9	2.3	3.2	14.7	0.0	17.3	10.3	7.0	2.0	59.6	100.0	341
Caste/tribe														
Scheduled caste	67.2	47.9	1.1	0.0	2.5	44.3	0.0	16.8	8.3	8.5	2.5	32.8	100.0	83
Other backward class	46.7	38.4	1.5	3.8	0.0	33.1	0.0	8.3	2.8	5.5	0.0	53.3	100.0	72
Other ²	45.8	34.6	0.9	1.9	5.5	26.0	0.4	9.8	5.7	4.1	1.4	54.2	100.0	1,012
Standard of living index														
Low	50.2	45.6	0.0	1.2	2.0	42.4	0.0	1.9	0.0	1.9	2.6	49.8	100.0	152
Medium	47.2	39.2	0.9	1.3	2.0	34.4	0.7	7.1	2.8	4.3	0.9	52.8	100.0	457
High	47.0	30.4	1.2	2.4	8.2	18.5	0.2	15.1	9.7	5.5	1.4	53.0	100.0	556

Contd...

Table 5.4 Current use by background characteristics (contd.)

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, Goa, 1999

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
Number and sex of living children														
No children	8.2	2.1	0.0	0.0	2.1	0.0	0.0	5.4	4.1	1.3	0.7	91.8	100.0	152
1 child	30.9	13.6	1.3	2.8	7.8	1.7	0.0	14.9	7.7	7.2	2.4	69.1	100.0	289
1 son	28.7	13.0	0.5	3.0	7.7	1.7	0.0	12.9	5.3	7.6	2.9	71.3	100.0	173
No sons	34.2	14.7	2.5	2.6	7.8	1.8	0.0	18.0	11.4	6.6	1.6	65.8	100.0	116
2 children	53.5	37.4	1.9	2.9	7.6	24.2	0.7	15.2	8.7	6.5	1.0	46.5	100.0	308
2 sons	51.5	40.1	2.3	3.2	8.0	25.4	1.2	11.4	8.0	3.4	0.0	48.5	100.0	88
1 son	59.8	44.3	2.6	3.4	6.8	30.8	0.7	14.2	9.0	5.2	1.3	40.2	100.0	154
No sons	41.8	17.8	0.0	1.4	9.0	7.5	0.0	22.6	9.2	13.4	1.4	58.2	100.0	67
3 children	68.3	60.6	0.4	2.1	2.7	54.5	0.8	6.8	5.1	1.7	0.9	31.7	100.0	237
3 sons	(68.9)	(68.9)	(0.0)	(0.0)	(0.0)	(68.9)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(31.1)	100.0	35
2 sons	73.8	70.6	1.1	4.0	3.2	62.4	0.0	3.2	2.1	1.1	0.0	26.2	100.0	99
1 son	65.8	51.5	0.0	0.0	2.8	46.0	2.6	14.3	13.1	1.2	0.0	34.2	100.0	76
No sons	(53.2)	(37.7)	(0.0)	(3.8)	(4.1)	(29.8)	(0.0)	(7.7)	(0.0)	(7.7)	(7.8)	(46.8)	100.0	26
4+ children	69.1	64.2	0.0	0.0	1.1	63.1	0.0	3.3	0.0	3.3	1.6	30.9	100.0	185
2+ sons	74.4	69.5	0.0	0.0	0.0	69.5	0.0	3.2	0.0	3.2	1.7	25.6	100.0	122
1 son	61.1	57.3	0.0	0.0	1.9	55.4	0.0	1.9	0.0	1.9	1.9	38.9	100.0	54
Total	47.5	35.9	0.9	1.9	4.9	27.8	0.4	10.3	5.8	4.5	1.4	52.5	100.0	1,171

Note: Total includes 4 women belonging to other religions, 2 women belonging to the scheduled tribes, 9 women with 4+ living children with no sons, and 2 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

¹Includes both modern and traditional methods that are not listed separately

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

same pattern is evident for female sterilization. Use of modern spacing methods is highest for women with one or two living children (12 percent each). Women with one or two living children also have the highest use of traditional methods (15 percent each).

Prevalence rates by sex composition of living children indicate the existence of son preference simultaneously with a desire for one daughter. This is suggested by the fact that among women with two or three living children, contraceptive use is highest among women with one daughter and one or more sons. For example, among women with two children, 42 percent with no sons and 52 percent with no daughters use contraception, compared with 60 percent with one son and one daughter. Similarly, among women with three living children, contraceptive use is highest, at 74 percent, among women who have one daughter and two sons.

Number of Living Children at First Use of Contraception

In order to examine the timing of initial family planning use, NFHS-2 included a question on how many living children women had when they first used a method. Table 5.5 shows the distribution of ever-married women by the number of living children at the time of first contraceptive use, according to current age. Only 6 percent of ever-married women (10 percent of ever users of contraception) began using contraception when they did not have any living children, and another 22 percent (35 percent of ever users) began using when they had one living child. Thirty-nine percent of ever-married women (almost two-thirds of ever users) began using when they had two or fewer living children.

The demographic and health impact of contraception depends on both the percentage of couples that use contraception and the parity at which they start using a method. An emphasis on sterilization in the contraceptive method mix, however, increases the likelihood that women will begin contraceptive use only after achieving their desired family size. Clearly, spacing methods need to be promoted more deliberately to enable women to better protect their own health and the health of their children through adequate spacing of their births.

Table 5.5 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, Goa, 1999								
Current age	Never used	Number of living children at the time of first use					Total percent	Number of women
		0	1	2	3	4+		
20-24	63.4	6.6	20.6	1.9	6.6	1.0	100.0	106
25-29	48.3	13.0	22.1	7.6	5.2	3.9	100.0	235
30-34	33.4	7.6	31.8	12.2	10.4	4.7	100.0	240
35-39	32.7	5.2	25.2	13.9	11.8	11.3	100.0	250
40-44	27.2	1.0	15.8	16.4	22.8	16.8	100.0	198
45-49	38.8	1.0	11.1	10.7	11.1	27.3	100.0	197
Total	39.0	6.2	21.6	11.0	11.3	11.0	100.0	1,246

Note: Total includes 20 women age 15-19, who are not shown separately.

Problems with Current Method

Women who were using a modern contraceptive method were asked if they had experienced any problems with their current method. Table 5.6 shows the percentage of current contraceptive users who report specific problems. Overall, almost three-fourths (74 percent) of current users report having no problems with their method. This may be an underestimate of the extent of problems, however, because women who have experienced problems with spacing methods may have stopped using contraception altogether, and these women are not represented in the table.

The analysis of method-specific problems reveals that 57 percent of sterilized women, 98 percent each of women using condoms and the rhythm/safe period method, and 100 percent of women using withdrawal report having no problem with their method. The most common problems experienced by sterilized women are headache, bodyache, or backache (34 percent), abdominal pain (9 percent), weakness or tiredness (8 percent), white discharge (3 percent), weight gain (2 percent), and cramps (2 percent). These results point to a continuing need to strengthen post-operative care for sterilization acceptors and counselling and support for all contraceptive acceptors.

Problem	Contraceptive method				Total
	Condom	Female sterilization	Rhythm/safe period	Withdrawal	
No problem	98.2	57.4	98.4	100.0	73.5
Weight gain	0.0	1.8	0.0	0.0	1.1
Weight loss	0.0	0.3	0.0	0.0	0.2
Too much bleeding	0.0	1.3	0.0	0.0	1.1
Hypertension	0.0	0.6	0.0	0.0	0.4
Headache/bodyache/backache	0.0	34.0	0.0	0.0	20.2
Nausea/vomiting	0.0	0.3	0.0	0.0	0.2
No menstruation	0.0	0.6	0.0	0.0	0.4
Weakness/tiredness	0.0	8.2	0.0	0.0	5.0
Dizziness	0.0	1.2	0.0	0.0	0.7
Fever	0.0	0.6	0.0	0.0	0.3
Cramps	0.0	1.8	0.0	0.0	1.1
Abdominal pain	0.0	9.1	1.6	0.0	5.9
White discharge	0.0	2.7	0.0	0.0	1.9
Irregular periods	0.0	0.6	0.0	0.0	0.4
Breast tenderness	0.0	0.3	0.0	0.0	0.2
Allergy	0.0	0.3	0.0	0.0	0.2
Other	1.8	1.2	0.0	0.0	0.9
Number of users	57	325	68	53	556

Note: Total includes 11, 22, 4, and 16 users who had problems in using pills, IUDs, male sterilization, and other contraceptive methods, respectively, who are not shown separately. Percentages may add to more than 100.0 because multiple problems could be recorded.

5.3 Timing of Sterilization

Table 5.7 shows how many years before the survey women or their husbands were sterilized and how old the women were when the sterilization took place. Almost all (98 percent) of the 330 sterilizations documented in the survey are female sterilizations. Half of the female sterilizations

Table 5.7 Timing of sterilization									
Percent distribution of currently married, sterilized women and wives of sterilized men by age at the time of sterilization and median age of the woman at the time of sterilization, according to the number of years since sterilization, Goa, 1999									
Years since sterilization	Woman's age at the time of sterilization						Total percent	Number sterilized	Median age ¹
	< 20	20-24	25-29	30-34	35-39	40-44			
STERILIZED WOMEN									
< 2	(2.9)	(8.6)	(41.5)	(30.4)	(16.6)	(0.0)	100.0	36	29.8
2-3	(9.8)	(12.7)	(45.7)	(25.6)	(6.2)	(0.0)	100.0	31	27.8
4-5	(2.5)	(21.0)	(26.2)	(29.6)	(15.4)	(5.2)	100.0	38	29.5
6-9	3.5	24.2	27.7	32.2	12.4	0.0	100.0	58	29.4
10+	1.2	23.6	39.2	31.0	4.8	U	100.0	162	NC
Total	2.8	20.7	36.5	30.5	8.9	0.6	100.0	325	28.6
STERILIZED WOMEN AND WIVES OF STERILIZED MEN									
< 2	(2.9)	(8.6)	(41.5)	(30.4)	(16.6)	(0.0)	100.0	36	29.8
2-3	(9.8)	(12.7)	(45.7)	(25.6)	(6.2)	(0.0)	100.0	31	27.8
4-5	(2.5)	(21.0)	(26.2)	(29.6)	(15.4)	(5.2)	100.0	38	29.5
6-9	3.5	23.7	27.2	33.5	12.1	0.0	100.0	59	29.5
10+	1.2	23.8	39.8	30.4	4.8	U	100.0	165	NC
Total	2.8	20.7	36.7	30.4	8.8	0.6	100.0	330	28.5
NC: Not calculated due to censoring U: Not available () Based on 25-49 unweighted cases ¹ To avoid censoring, median age is calculated only for sterilizations that took place when the woman was less than 40 years old.									

took place more than 10 years before the survey, and another 32 percent took place less than six years before the survey. The median age of women at the time they or their husbands were sterilized was 28.5 years, almost three years older than the median of 25.7 years for India as a whole. Sixty percent of sterilized couples underwent sterilization before the wife was age 30. More than 9 out of 10 sterilizations took place before the wife was age 35. Among sterilized couples, 73 percent of women said that they had not used any other method of contraception before the sterilization took place (data not shown).

The median age of women at the time of sterilization has been fluctuating at around 29 years for most of the 10-year period before the survey. From NFHS-2 data, it is not possible to assess the trend in the median age at sterilization for more than 10 years before the survey because only women age 15-49 years were interviewed. Women in their forties 10 or more years before the survey would have been age 50-59 years at the time of the survey and would, therefore, not have been interviewed. A comparison with NFHS-1 data shows that women's age at sterilization was also 29 years 8-10 years before NFHS-1, suggesting that the age at sterilization in Goa has been more or less constant over time.

5.4 Sources of Contraceptive Methods

Family planning methods and services in Goa are provided primarily through a network of government hospitals and urban family welfare centres in urban areas and Primary Health Centres (PHC) and sub-centres in rural areas. Family planning services are also provided by private hospitals and clinics, as well as nongovernmental organizations (NGOs). Sterilizations and IUD insertions are carried out mostly in government hospitals and PHCs. Sterilization

Table 5.8 Source of modern contraceptive methods

Percent distribution of current users of modern contraceptive methods by most recent source, according to specific method, Goa, 1999

Source	Contraceptive method		All modern methods ¹
	Condom	Female sterilization	
Public medical sector	12.5	81.3	68.3
Government/municipal hospital	5.4	60.7	50.1
Government dispensary	0.0	0.0	0.2
UHC/UHP/UFWC	0.0	1.0	0.7
CHC/rural hospital/PHC	3.4	18.1	15.0
Sub-centre	3.6	0.0	0.5
Camp	0.0	1.2	1.2
Other public medical sector	0.0	0.3	0.5
NGO or trust			
Hospital/clinic	1.8	0.0	0.3
Private medical sector	80.5	18.0	30.2
Private hospital/clinic	0.0	16.7	15.2
Private doctor	1.9	1.3	1.9
Pharmacy/drugstore	78.6	0.0	13.1
Other source	1.7	0.3	0.5
Shop	1.7	0.0	0.2
Other	0.0	0.3	0.3
Don't know ²	3.5	0.0	0.5
Missing	0.0	0.3	0.3
Total percent	100.0	100.0	100.0
Number of users	57	325	420

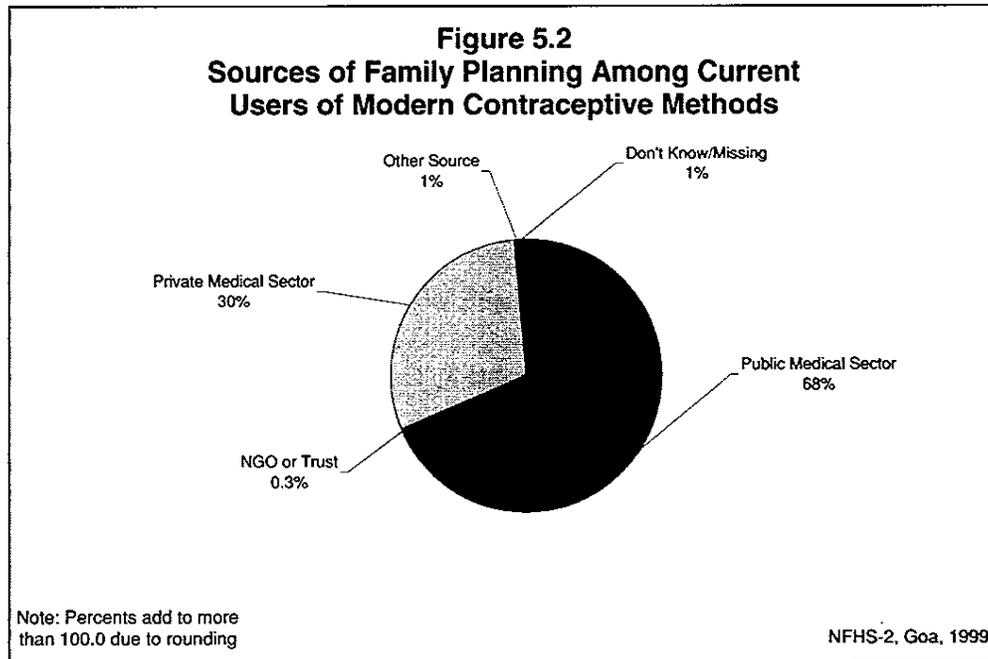
UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre; CHC: Community health centre; PHC: Primary Health Centre; NGO: Nongovernmental organization

¹All modern methods include 11 users of pills, 12 users of IUDs, and 4 users of male sterilization, who are not shown separately.

²For the condom, this category includes women who say their husband or a friend or other relative obtained the method, but they don't know the original source of supply.

camps, organized from time to time, also provide sterilization services. Modern spacing methods such as the IUD, pill, and condom are available through both the government and private sectors.

To assess the relative importance of various sources of contraceptive methods, NFHS-2 included a question on where current contraceptive users obtained their methods. Table 5.8 and Figure 5.2 show the percent distribution of current users of modern contraceptives by the source from which they obtained their method most recently, according to specific methods. The public medical sector, consisting of government/municipal hospitals, government dispensaries, Primary Health Centres, and other governmental health infrastructure, is the source of contraception for 68 percent of current users of modern methods, down from 72 percent in NFHS-1. The private medical sector, including private hospitals or clinics, private doctors, private mobile clinics, private paramedics, pharmacies or drugstores, and traditional birth attendants, is the source for 30 percent of current users, up from 27 percent in NFHS-1. One percent of current users obtain their methods from other sources such as shops and less than 1 percent get their methods from NGO or trust sources. Government/municipal hospitals are the main source (61 percent) for female sterilization, followed by community health centres, rural hospitals, or Primary Health Centres (18 percent) and private hospitals or clinics (17 percent). By contrast, private pharmacies or drugstores are the main



source for condoms (79 percent). Only 13 percent of current condom users obtain their supply from the public medical sector.

5.5 Reasons for Discontinuation/Non-Use of Contraception

Currently married, nonpregnant women who were not using a contraceptive method at the time of the survey fall into two categories with respect to their contraceptive experience: those who used contraception in the past and those who never used contraception. NFHS-2 asked women who had discontinued contraceptive use their main reason for discontinuing. The survey also asked women who had never used contraception the main reason they were not currently using a method. Table 5.9 shows that 145 nonpregnant, currently married women who ever used family planning methods (20 percent of ever users) have discontinued use. Among the group that discontinued contraception, the most commonly mentioned reason for discontinuing is that the couple wanted to have a child (35 percent). More than one-fifth (23 percent) of women mentioned that they discontinued use because the husband was away, and another 11 percent of women cited health problems due to contraceptive use as a reason for discontinuation. Other reasons cited for discontinuing use are lack of privacy (5 percent), lack of sexual satisfaction (3 percent), menstrual problems (2 percent), and inconvenience (2 percent).

Among women who never used contraception, the most commonly mentioned reason for not currently using a method is the desire for more children (35 percent), followed by the reason that the woman is menopausal or had hysterectomy (14 percent). Another 8 percent of women say they are infecund or subfecund. Eight percent mention different types of opposition, including 4 percent of women who say their husbands are opposed to contraception, and 2 percent of women who say that they themselves are opposed. Thirteen percent mention health-related reasons (health concerns or worry about side effects), and another 4 percent mention not liking any existing methods.

Table 5.9 Reasons for discontinuation/non-use

Percent distribution of nonpregnant, currently married women who stopped using contraception by main reason for stopping use and percent distribution of nonpregnant, currently married women who never used contraception by main reason for not currently using, according to residence, Goa, 1999

Reason	Urban	Rural	Total
REASON FOR STOPPING USE			
Method failed/got pregnant	0.0	2.4	1.4
Lack of sexual satisfaction	3.4	2.3	2.8
Created menstrual problem	3.3	1.1	2.1
Created health problem	7.0	14.2	11.1
Inconvenient to use	1.7	2.3	2.0
Did not like the method	1.8	1.1	1.4
Wanted to have a child	30.4	38.7	35.2
Lack of privacy for use	6.7	3.4	4.8
Husband away	30.6	18.0	23.4
Other	15.1	16.5	15.9
Total percent	100.0	100.0	100.0
Number of women	62	83	145
REASON FOR NOT CURRENTLY USING			
Husband away	4.7	3.2	3.7
Fertility-related reasons	70.9	65.4	67.3
Not having sex	1.6	2.9	2.4
Infrequent sex	2.3	4.4	3.7
Menopausal/had hysterectomy	21.9	9.2	13.5
Subfecund/infecund	5.5	9.6	8.2
Postpartum/breastfeeding	7.0	3.6	4.8
Wants more children	32.7	35.6	34.6
Opposition to use	5.6	9.4	8.1
Opposed to family planning	2.5	2.2	2.3
Husband opposed	0.8	5.6	4.0
Other people opposed	0.8	0.7	0.7
Against religion	1.5	0.8	1.0
Lack of knowledge			
Knows no method	0.0	1.5	1.0
Method-related reasons	16.5	19.1	18.2
Health concerns	4.7	5.5	5.3
Worry about side effects	7.1	8.1	7.8
Hard to get method	0.0	0.4	0.2
Costs too much	0.0	0.7	0.5
Afraid of sterilization	0.8	0.8	0.8
Doesn't like existing methods	3.9	3.6	3.7
Other	2.3	1.5	1.8
Total percent	100.0	100.0	100.0
Number of women	135	261	396

5.6 Future Intentions Regarding Contraceptive Use

Currently married women who were not using any contraceptive method at the time of the survey (including those who were pregnant at the time of the survey) were asked about their intentions to use a method in the future. If they intended to use a method, they were asked about their preferred method. This type of information can help managers of family welfare

Table 5.10 Future use of contraception						
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, Goa, 1999						
Intention to use in the future	Number of living children ¹					Total
	0	1	2	3	4+	
Intends to use in next 12 months	1.9	21.6	26.1	20.8	21.5	19.2
Intends to use later	52.6	34.4	23.2	12.0	9.6	29.3
Intends to use, unsure when	2.0	2.3	1.8	1.2	0.0	1.8
Unsure as to intention	11.3	5.7	3.1	3.6	0.0	5.2
Does not intend to use	32.2	35.6	45.8	62.4	68.9	44.5
Missing	0.0	0.4	0.0	0.0	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	106	209	157	82	60	615

¹Includes current pregnancy, if any

programmes to identify potential groups of contraceptive users and to provide the types of contraception that are likely to be in demand. Table 5.10 gives women's responses to the questions on future use according to the number of living children.

Half of currently married women who are not currently using any contraceptive method express an intention to use a method in the future. Among women who intend to use contraception, 38 percent intend to use a method within the next 12 months. The proportion of women who intend to use contraception any time in the future declines sharply from 51–58 percent for women with no or less than three living children to 31–34 percent for women with three or more living children.

The expressed timing of future use also varies by number of living children. The proportion of women who say that they intend to use contraception after 12 or more months falls steadily with the number of living children from 53 percent among women with no living children to 10 percent among those with four or more children. The proportion expressing an intention to use contraception within the next 12 months increases from 2 percent among those with no children to 26 percent among those with two living children and then declines to 21–22 percent among those with three or more children.

The survey asked currently married women who were not using any method of contraception and who said that they did not intend to use a method at any time in the future why they did not intend to use contraception. This type of information is crucial for understanding the obstacles to further increases in contraceptive use and for designing effective information programmes. Table 5.11 shows that 62 percent of women mention a fertility-related reason for not intending to use contraception in the future, 13 percent mention opposition to use, 21 percent mention a method-related reason, and less than 1 percent mention a reason related to lack of knowledge. The most frequently mentioned reason given for not intending to use contraception is that the woman is menopausal or she has undergone a hysterectomy (27 percent), followed by the reason that the woman is infecund or subfecund (16 percent). Other important fertility-related reasons are no or infrequent sex (11 percent) and the desire to have as many children as possible (8 percent). Fourteen percent of women do not intend to use contraception because of health concerns or concern about side effects.

Table 5.11 Reasons for not intending to use contraception			
Percent distribution of currently married women who are not using any contraceptive method and who do not intend to use any method in the future by main reason for not intending to use contraception, according to current age, Goa, 1999			
Reason	Current age		Total
	15-29	30-49	
Fertility-related reasons	(17.3)	68.1	62.0
Not having sex	(2.8)	7.0	6.5
Infrequent sex	(0.0)	5.0	4.4
Menopausal/had hysterectomy	(0.0)	31.2	27.4
Subfecund/infecund	(3.1)	17.3	15.6
Wants as many children as possible	(11.4)	7.7	8.1
Opposition to use	(30.9)	10.2	12.7
Opposed to family planning	(21.7)	2.9	5.2
Husband opposed	(6.0)	4.0	4.3
Against religion	(3.1)	3.4	3.3
Lack of knowledge			
Knows no method	(3.4)	0.0	0.4
Method-related reasons	(45.6)	18.1	21.4
Health concerns	(9.1)	7.4	7.6
Worry about side effects	(15.0)	5.4	6.6
Doesn't like existing methods	(21.5)	5.2	7.2
Other	(2.8)	3.6	3.5
Total percent	100.0	100.0	100.0
Number of women	33	240	273

() Based on 25-49 unweighted cases

The very small number of younger women who are not using and not intending to use contraception makes it difficult to examine age differentials in reasons for not intending to use contraception. Nevertheless, the data suggest that younger women are more likely than older women to cite reasons related to opposition to family planning when asked why they are not currently using any contraception. Younger women also appear to be more likely than older women to give method-related reasons, whereas older women are more likely to mention reasons related to menopause, hysterectomy, infecundity, or subfecundity.

NFHS-2 asked currently married women who were not using contraception but intended to use a method in the future which method of family planning they would prefer to use. Table 5.12 shows the results according to the timing of intended use. Among women who intend to use contraception, 46 percent say they would prefer to use female sterilization, 11 percent each say they would prefer to use the pill or the condom, and another 11 percent are unsure about the method they would prefer to use. Only 5 percent say they would prefer to use the IUD, and less than 1 percent would prefer that their husbands get sterilized. Nine percent would prefer to use the rhythm method, and 4 percent mentioned wanting to use the withdrawal method. There are important differences in the choice of preferred methods by timing of intended use. Women who intend to use contraception within the next 12 months show a greater preference for spacing methods, whereas women who plan to use contraception later are more likely to prefer female sterilization. Specifically, 43 percent of women who intend to use contraception within the next 12 months would prefer to use a modern spacing method, compared with 16 percent of women

Table 5.12 Preferred method			
Percent distribution of currently married women who are not currently using a contraceptive method but who intend to use a method in the future by preferred method, according to timing of intended use, Goa, 1999			
Preferred method	Timing of intended use		Total
	Next 12 months	Later	
Pill	17.2	7.8	11.1
IUD	11.7	1.0	5.1
Condom	14.4	7.5	10.5
Female sterilization	25.3	58.8	45.8
Male sterilization	0.9	0.0	0.3
Rhythm/safe period	10.5	9.3	9.4
Withdrawal	7.5	1.6	4.1
Other	2.5	2.2	2.3
Unsure	10.0	11.7	11.3
Total percent	100.0	100.0	100.0
Number	118	180	309

Note: Total includes 11 women who are not sure about the timing of intended use, who are not shown separately.

who intend to use later. By contrast, 59 percent of women who intend to use contraception after at least 12 months would prefer to use female sterilization, compared with 25 percent of women who want to use contraception within 12 months. Women intending to use contraception within 12 months also show a greater preference for traditional methods (18 percent) than women who intend to use later (11 percent).

Overall, the mix of contraceptive methods that intended future users say they would prefer to use is very different from the methods currently being used. These results suggest a desire among intended users to shift away from female sterilization to the officially-sponsored spacing methods. While 43 percent of those who intend to use a method within 12 months and 16 percent of those who intend to use contraception any time in the future say that they would prefer to use a modern spacing method, only 16 percent of current users are actually using a modern spacing method (Table 5.3). Furthermore, among those who intend to use contraception later in the future, the pill and the condom are the most preferred spacing methods (each preferred by 8 percent) whereas among current users of spacing methods, the condom is the most popular method, followed by the IUD.

5.7 Exposure to Family Planning Messages

For many years, the family planning programme has been using electronic and other mass media to promote family planning. Studies have confirmed that even after controlling the effect of residence and education, exposure to electronic mass media has a substantial effect on contraceptive use (Ramesh et al., 1996). Exposure to mass media has also been found to strengthen women’s motivation to prevent unwanted fertility (Kulkarni and Choe, 1998). In order to explore the reach of family planning messages through various mass media, NFHS-2 asked women whether they had heard or seen any message about family planning in the past few months. Table 5.13 shows the proportions of currently married women who report having heard or seen a

Table 5.13 Exposure to family planning messages								
Percentage of ever-married women who have heard or seen any message about family planning in the past few months by specific media source and selected background characteristics, Goa, 1999								
Background characteristic	Source of family planning message							Number of women
	Radio	Television	Cinema/ film show	News-paper/ magazine	Wall painting/ hoarding	Drama/ folk dance/ street play	Any source	
Age								
15-24	49.2	74.8	15.8	36.9	67.6	22.9	86.4	126
25-34	44.1	78.5	14.9	46.4	66.6	21.8	88.4	475
35-49	47.6	71.2	9.3	37.2	60.3	20.6	83.5	645
Residence								
Urban	44.7	81.4	14.8	52.0	69.9	19.6	89.8	519
Rural	47.7	69.3	10.2	32.5	58.9	22.5	82.7	727
Education								
Illiterate	35.9	49.9	8.1	0.6	35.6	17.0	65.2	357
Literate, < middle school complete	50.2	75.2	7.8	32.5	68.0	21.5	89.1	339
Middle school complete	50.0	87.2	18.6	51.7	72.4	30.5	95.0	156
High school complete and above	51.3	90.7	16.8	79.4	81.1	21.4	97.5	395
Religion								
Hindu	50.3	76.9	14.2	42.5	64.2	21.6	85.9	827
Muslim	46.6	70.5	16.8	23.6	61.8	3.6	79.7	55
Christian	37.7	68.8	6.7	38.8	61.9	23.6	85.9	361
Caste/tribe								
Scheduled caste	42.4	69.7	7.9	13.4	51.1	23.5	79.2	93
Other backward class	41.0	53.3	12.2	28.0	45.9	12.8	65.3	79
Other ¹	47.1	76.4	12.5	44.0	65.9	21.7	87.8	1,070
Standard of living index								
Low	32.3	36.6	6.8	7.2	37.8	19.3	59.6	177
Medium	47.6	69.6	9.8	28.9	59.4	20.5	82.9	495
High	50.1	90.0	15.9	61.3	75.3	22.5	96.1	568
Use of contraception								
Ever used	46.5	76.5	10.7	42.5	66.4	23.0	87.5	760
Never used	46.4	71.0	14.3	37.7	58.8	18.6	82.7	486
Total	46.4	74.4	12.1	40.6	63.5	21.3	85.7	1,246

Note: Total includes 4 women belonging to other religions, 3 women belonging to the scheduled tribes, and 2 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

family planning message in the past few months, according to various background characteristics. Messages disseminated through the mass media over the past few months have reached a large majority (86 percent) of ever-married women in Goa. The most common sources of recent exposure to family planning messages are the television and wall paintings or hoardings. Seventy-four percent of ever-married women report having seen a family planning message on the television, and 64 percent have seen a message on wall paintings or hoardings. Other important sources of family planning messages are radios (46 percent), newspapers or magazines (41 percent), and dramas, folk dances, or street plays (21 percent). Only 12 percent have been recently exposed to a family planning message through a cinema or film show.

Overall, exposure to mass media messages on family planning is somewhat higher in urban areas than in rural areas (90 percent compared with 83 percent). Exposure to family planning messages varies substantially by education. Ninety-eight percent of women who have completed at

least high school have heard or seen a family planning message from at least one media source in the past few months, compared with 65 percent of women who are illiterate. Exposure to family planning messages through most specific media sources is as closely linked to education as is exposure in general. For example, 91 percent of women who have completed at least high school have seen a family planning message on television, compared with 50 percent of women who are illiterate.

In addition to illiterate women, women from households with a low standard of living, women belonging to other backward classes, scheduled-caste women, and Muslim women are less likely than other women to have been exposed recently to family planning messages.

5.8 Discussion of Family Planning

Irrespective of whether they had ever used contraception, all currently married women were asked whether they had discussed family planning with their husband, friends, neighbours, or other relatives in the past few months. Information on whether women talk about family planning at all, and with whom they discuss it, sheds light on their level of interest in family planning and their familial and other sources of family planning information. Table 5.14 shows that 33 percent of currently married women in Goa discussed family planning with their husband, friends, neighbours, or other relatives in the past few months. One-fourth discussed family planning with their husbands and 11 percent discussed family planning with friends or neighbours. Discussions of family planning with relatives other than the husband are rare.

Women age 15–24 years are most likely to have discussed family planning with someone (50 percent), followed by women age 25–34 (42 percent) and women age 35–49 (23 percent). Urban women are more likely than rural women to have discussed family planning. The proportion of women reporting such discussions rises with women's education, husband's education, and the standard of living index. Muslim women are somewhat less likely to have discussed family planning than Hindu or Christian women. Women who do not belong to a scheduled caste, a scheduled tribe, or an other backward class are less likely to have discussed family planning than scheduled-caste women or women belonging to other backward classes. Women who have ever used contraception are much more likely to have discussed family planning (37 percent) than women who have never used contraception (27 percent).

5.9 Need for Family Planning

Currently married women who are not using any method of contraception but who do not want any more children or want to wait two or more years before having another child are defined as having an unmet need for family planning. Current contraceptive users 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. Table 5.15 shows the unmet need, met need, and total demand for family planning, according to whether the need is for spacing or limiting births. The footnotes in the table provide detailed definitions of these concepts.

According to these definitions, 17 percent of currently married women in Goa have an unmet need for family planning. The unmet need for limiting births is somewhat greater than the unmet need for spacing births (10 percent versus 7 percent). 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 48 percent to 65 percent in the state. This means that current programmes are meeting

Table 5.14 Discussion of family planning

Percentage of currently married women who discussed family planning with their husbands, friends, neighbours, or other relatives in the past few months by selected background characteristics, Goa, 1999

Background characteristic	Person with whom discussed family planning								Any of these persons	Number of women
	Husband	Mother	Sister	Daughter	Mother-in-law	Sister-in-law	Friend/ neighbour	Other relative		
Age										
15-24	41.5	4.9	1.6	0.0	3.1	3.1	12.6	0.0	49.7	123
25-34	35.5	4.4	2.9	0.0	2.8	4.6	10.2	1.1	42.4	464
35-49	13.3	1.0	2.4	0.9	0.5	3.0	10.8	1.3	22.9	584
Residence										
Urban	26.1	2.8	2.9	0.9	0.9	3.0	12.3	1.1	35.9	484
Rural	24.4	2.7	2.2	0.1	2.2	4.1	9.7	1.1	31.7	687
Education										
Illiterate	12.8	0.6	0.6	0.3	1.2	2.2	6.7	0.6	19.8	310
Literate, < middle school complete	22.5	2.5	2.5	0.3	1.8	4.0	10.5	0.3	29.7	321
Middle school complete	25.1	4.0	1.9	0.7	1.3	3.1	11.9	1.9	36.2	151
High school complete and above	36.9	4.2	4.2	0.5	2.0	4.7	13.8	1.9	46.3	389
Religion										
Hindu	25.2	2.6	1.9	0.5	1.5	4.0	10.8	0.9	32.5	776
Muslim	20.2	1.9	5.8	2.2	0.0	7.7	2.0	0.0	30.2	50
Christian	25.3	3.2	3.2	0.0	2.3	2.3	11.8	1.4	35.6	341
Caste/tribe										
Scheduled caste	32.5	0.0	2.3	1.2	0.0	6.1	8.6	1.3	38.8	83
Other backward class	20.3	4.3	5.3	0.0	6.4	5.3	16.1	0.0	36.0	72
Other ¹	24.7	2.9	2.3	0.4	1.5	3.3	10.6	1.2	32.8	1,012
Standard of living index										
Low	18.3	3.3	0.0	0.0	1.2	1.3	7.8	0.0	22.2	152
Medium	22.4	1.8	2.6	0.7	2.4	4.0	10.4	0.6	31.0	457
High	28.9	3.4	3.1	0.4	1.2	4.0	12.0	1.8	38.3	556
Use of contraception										
Ever used	28.4	2.2	3.3	0.6	1.9	4.4	12.8	1.4	37.2	722
Never used	19.7	3.6	1.2	0.2	1.3	2.4	7.5	0.7	27.4	448
Husband's education										
Illiterate	9.5	1.7	1.1	1.2	1.7	1.1	7.8	0.0	16.8	175
Literate, < middle school complete	19.1	1.2	1.5	0.3	2.0	4.6	8.5	1.1	27.2	341
Middle school complete	29.0	3.8	2.4	0.0	1.9	3.9	12.4	0.7	37.5	152
High school complete and above	33.5	3.9	3.5	0.4	1.4	3.8	12.6	1.6	42.2	501
Total	25.1	2.8	2.5	0.4	1.7	3.7	10.8	1.1	33.4	1,171

Note: Total includes 4 women belonging to other religions, 2 women belonging to the scheduled tribes, and 2, 6, and 2 women with missing information on caste/tribe, the standard of living index, and husband's education, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

about three-fourths (74 percent) of the family planning need (as shown in the last column of the Table 5.15). A comparison with the NFHS-1 data suggests that there has been almost no change in the proportion having an unmet need for family planning during the period since NFHS-1, and the proportion of demand satisfied also has remained almost unchanged during this period.

Table 5.15 Need for family planning services

Percentage of currently married women with unmet need, met need, and total demand for family planning (FP) services and percentage of total demand satisfied, by selected background characteristics, Goa, 1999

Background characteristic	Unmet need for FP ¹			Met need (currently using) ²			Total demand for FP			Percentage of demand satisfied
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total	
Age										
20-24	22.9	3.7	26.6	16.1	12.6	28.6	39.0	16.2	55.2	51.9
25-29	14.4	10.4	24.8	13.4	22.4	35.8	27.8	32.8	60.6	59.0
30-34	6.4	9.7	16.2	11.4	43.0	54.4	17.9	52.7	70.6	77.1
35-39	2.1	13.5	15.6	1.7	49.6	51.3	3.8	63.1	66.9	76.7
40-44	0.6	10.3	10.8	1.1	60.8	61.9	1.7	71.0	72.7	85.1
45-49	0.0	8.1	8.1	0.0	48.3	48.3	0.0	56.3	56.3	85.7
Residence										
Urban	6.4	9.1	15.5	7.8	44.8	52.7	14.2	53.9	68.1	77.3
Rural	8.0	10.2	18.2	6.6	37.3	43.9	14.6	47.5	62.1	70.6
Education										
Illiterate	3.6	5.7	9.3	2.2	51.1	53.3	5.8	56.7	62.6	85.2
Literate, < middle school complete	7.6	13.1	20.7	3.9	42.1	46.0	11.4	55.2	66.6	69.0
Middle school complete	12.0	7.7	19.7	9.8	30.3	40.1	21.7	38.0	59.8	67.1
High school complete and above	8.3	11.1	19.4	12.6	34.4	47.0	20.9	45.5	66.4	70.8
Religion										
Hindu	6.8	8.8	15.6	6.6	43.7	50.3	13.5	52.5	65.9	76.3
Muslim	16.5	6.0	22.5	6.0	42.1	48.1	22.4	48.1	70.5	68.2
Christian	7.2	12.7	19.9	8.5	31.9	40.4	15.7	44.6	60.3	67.0
Caste/tribe										
Scheduled caste	8.6	4.9	13.5	14.5	52.7	67.2	23.1	57.6	80.6	83.3
Other backward class	9.4	9.2	18.6	8.3	38.4	46.7	17.7	47.6	65.3	71.5
Other ³	7.1	10.2	17.4	6.4	39.4	45.8	13.6	49.6	63.2	72.5
Standard of living index										
Low	7.9	6.4	14.2	7.1	43.1	50.2	14.9	49.5	64.4	77.9
Medium	7.2	8.9	16.1	5.4	41.8	47.2	12.6	50.8	63.3	74.5
High	7.4	11.3	18.7	8.6	38.4	47.0	16.0	49.7	65.7	71.5
Number of living children										
0	8.6	0.0	8.6	6.8	1.4	8.2	15.4	1.4	16.8	48.7
1	16.9	9.3	26.2	19.0	11.9	30.9	36.0	21.2	57.2	54.1
2	6.2	13.3	19.4	4.2	49.4	53.5	10.3	62.6	72.9	73.4
3	1.7	10.9	12.6	1.7	66.5	68.3	3.4	77.4	80.8	84.5
4	0.0	12.9	12.9	0.8	70.0	70.8	0.8	82.9	83.7	84.6
5	(2.1)	(6.4)	(8.4)	(0.0)	(68.7)	(68.7)	(2.1)	(75.1)	(77.2)	89.1
Total	7.3	9.8	17.1	7.1	40.4	47.5	14.4	50.2	64.6	73.5

Note: Total includes small numbers of women age 15-19, women belonging to other religions, scheduled-tribe women, women who have 6 or more living children, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.

() Based on 25-49 unweighted cases

¹Unmet 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 who say they want to wait two 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 who are not using any method of family planning and who want no more children.

²Met need 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. Met need for *limiting* refers to women who are using some method and who want no more children. Note that *spacing* and *limiting* refer to the reason for using contraception rather than to the particular method used.

³Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Unmet need decreases from 27 percent among women age 20–24 to 8 percent among women age 45–49. For women age 20–24, unmet need is almost entirely for spacing rather than for limiting. The proportion of unmet need that is for spacing falls rapidly with age so that among women age 30–34 unmet need for spacing constitutes only 40 percent of total unmet need, compared with 86 percent for women age 20–24. Among women age 35 years and above, the met and unmet need for contraception are almost exclusively for limiting. Fifty-two percent of the total demand for family planning is being met for married women age 20–24. This proportion rises steadily with the age of women to 85–86 percent for women age 40–49.

Rural women have slightly higher unmet need than urban women. Unmet need is lower (9 percent) among illiterate women than among the literate (19–21 percent). The percentage of demand satisfied also is higher among illiterate women (85 percent) than among literate women (67–71 percent).

Muslim women have a higher unmet need for family planning (23 percent) than either Hindu women (16 percent) or Christian women (20 percent). The percentage of total demand satisfied is much higher for Hindu women (76 percent) than for Muslim women (68 percent) or Christian women (67 percent). Notably, although unmet need among Hindu and Christian women is more for limiting than for spacing births, 73 percent of the unmet need among Muslim women is for spacing. Unmet need is somewhat lower among scheduled-caste women (14 percent) than among women belonging to other backward classes (19 percent) or women who do not belong to scheduled castes, scheduled tribes, or other backward classes (17 percent). The percentage of demand satisfied is also higher for scheduled-caste women (83 percent) than women belonging to other backward classes or to the 'other' category (72–73 percent). Unmet need increases with the standard of living index, whereas the percentage of demand satisfied declines with the index.

Unmet need is highest for women with one living child (26 percent), followed by women with two living children (19 percent) and women with three or four children (13 percent). The unmet need for women with no children (9 percent) is almost the same as that for women with five children.

Among women with no children, unmet need is exclusively for spacing, and 65 percent of unmet need among women with one child is for spacing. By contrast, unmet need for women with two or more children is primarily for limiting. The total demand for family planning that is satisfied increases with an increasing number of living children from 49 percent for women with no living children to 54 percent for women with one child and to 89 percent for women with five children.

These results reveal high levels of unmet need among women in most subgroups and among women at all parities. The findings also suggest the need for further promoting spacing methods in the method mix offered to women. A family planning programme with an emphasis on sterilization fails to meet the needs of young women who are still in the process of family formation. In Goa, many women have an unmet need for spacing, especially before their first birth and between their first and second births. However, the high unmet need for limiting among older women suggests that many women who need permanent methods of contraception are also not being served well by current programmes. Thus, there is also a need to strengthen sterilization services for couples who want to use sterilization. At the same time, the family

planning programme in Goa needs to provide women who want to stop childbearing but who do not wish to adopt sterilization with methods and options that they find acceptable for long-term use.

CHAPTER 6

MORTALITY, MORBIDITY, AND IMMUNIZATION

This chapter presents mortality rates, particularly for infants and young children, and data on the prevalence of certain diseases (morbidity). It also presents information on the prevention and treatment of diseases, especially those that are life-threatening to young children. The chapter ends with data on women's knowledge of AIDS. This type of information is relevant both to an assessment of the demographic situation and to the design of appropriate health policies and programmes. Mortality estimates are also useful for projecting the future size of the population. Detailed information on mortality and morbidity (by demographic and socioeconomic characteristics) can be used to identify population groups that are at high risk and in need of health services. This chapter primarily presents information on child health, while other chapters of this report, particularly Chapter 8, present information on maternal and reproductive health.

The Government of India has repeatedly taken steps to strengthen maternal and child health services in India, starting during the First and Second Five-Year Plans (1951–56 and 1956–61) under the Ministry of Health, and continuing with the Minimum Needs Programme initiated during the Fifth Five-Year Plan (1974–79). More recently, efforts to improve maternal and child health have been enhanced by activities of the Family Welfare Programme and by the introduction of the Child Survival and Safe Motherhood Programme (Ministry of Health and Family Welfare, 1992). The Ministry of Health and Family Welfare has also sponsored special projects under the Maternal and Child Health Programme, including the Oral Rehydration Therapy (ORT) Programme, the establishment 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 Postpartum Programme (Ministry of Health and Family Welfare, 1992). These programmes are now integrated into the Reproductive and Child Health Programme that was launched in 1996.

Maternal and child health services in rural areas of India are delivered mainly by government-run Primary Health Centres and sub-centres. In urban areas, such services are available mainly through government or municipal hospitals, urban health posts, hospitals and nursing homes operated by nongovernmental organizations (NGOs), and private nursing homes and maternity homes.

The second National Family Health Survey (NFHS-2) includes questions on mortality and morbidity on both the Household Questionnaire and the Woman's Questionnaire. The Household Questionnaire has questions on individuals in the household suffering from asthma, tuberculosis, jaundice, and malaria, plus questions on deaths occurring to usual residents of the household during the two years preceding the survey. The Woman's Questionnaire collects information on the survival status of all births and the age at death of children who died. The Woman's Questionnaire also contains questions on child immunization coverage and sources; vitamin A supplementation for children; prevalence of acute respiratory infections, fever, and diarrhoea among children and the treatment of these illnesses; and mothers' knowledge of oral rehydration therapy.

Table 6.1 Age-specific death rates and crude death rates		
Age-specific death rates and crude death rates (CDR) from NFHS-1 and NFHS-2, Goa		
Age	NFHS-1 (1991–92)	NFHS-2 (1997–98)
< 5	4.9	6.7
5–14	0.8	0.4
15–49	1.9	4.9
50–59	16.1	15.2
60+	45.2	55.0
CDR	6.5	10.1

Note: Age-specific death rates and crude death rates from NFHS-1 and NFHS-2 are based on the annual number of deaths reported for the *de jure* population during the two years preceding the survey. Rates are specified on a per-thousand basis.

The information on child health and health-care practices was collected from mothers for children born since 1 January 1996. If a woman had more than two live births during that period, the information was collected for only the two most recent births. The information on child health presented in this chapter pertains to children born during the three years preceding the survey.

6.1 Crude Death Rates and Age-Specific Death Rates

Table 6.1 shows crude death rates (CDR) and age-specific death rates for the usual resident (*de jure*) population of Goa from NFHS-2 and from NFHS-1 for the total population (both sexes combined). The NFHS-1 and NFHS-2 death rates are based on the average annual number of deaths occurring to usual residents of the household during the two-year period preceding the survey (approximately 1991–92 for NFHS-1 and 1997–98 for NFHS-2). The denominators for the NFHS-2 death rates are obtained by projecting the number of usual residents at the time of the survey backwards to the midpoint of the time period on the basis of the intercensal population growth rate in the state. 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 often resulted in a substantial underreporting of deaths.

Table 6.1 shows an estimated average annual CDR for Goa of 10.1 deaths per 1,000 population based on NFHS-2 data (covering roughly 1997–98), higher than the CDR reported by the Sample Registration System (SRS) for 1997, at 7.7, and for 1998, at 8.1 (Office of the Registrar General, 1999). This suggests that the completeness of reporting of deaths in NFHS-2 is better than in the SRS.

The NFHS-2 CDR estimate of 10.1 is marginally higher than the all-India NFHS-2 estimate of 9.7 and is much higher than the corresponding NFHS-1 estimate of 6.5 for Goa (covering roughly 1991–92). A comparison of NFHS-1 and NFHS-2 age-specific death rates suggests that death rates increased for the age groups 0–4, 15–49, and 60 and above between the two surveys. However, due to the very large sampling errors associated with these estimates (see Appendix Table A.1 for sampling errors for the CDR estimate) these changes are unlikely to be statistically significant.

6.2 Infant and Child Mortality

Infant and child mortality rates reflect a country's level of socioeconomic development and quality of life and are used for monitoring and evaluating population and health programmes and policies. NFHS-2 asked all ever-married women age 15–49 to provide a complete history of their births including, for each live birth, the sex, month and year of birth, survival status, and age at the time of the survey or age at death. Age at death was recorded in days for children dying in the first month of life, in months for other 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 probability of dying after the first month of life but before the first birthday
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 birthdays
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 death are accurately reported and recorded. Estimated rates of infant and child mortality are subject to both sampling and nonsampling errors. While sampling errors for various mortality estimates are provided in Appendix A, this section describes the results of various checks for nonsampling 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 further in the past than for children born recently. Underreporting of infant deaths is usually most serious for deaths that occur very early in infancy. If deaths in the early neonatal period are selectively underreported, 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 further in the past than for births that occurred more recently. Failure to report deaths will result in mortality figures that are too low, and if underreporting is more severe for children born further in the past than children born recently, any decline in mortality will tend to be understated.

¹A 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. Deaths and exposure in any calendar 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:

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

Results from Table B.5 (Appendix B) suggest that early neonatal deaths have not been seriously underreported in the Goa NFHS-2, since the ratios of deaths under seven days to all neonatal deaths are consistently high (between 76 and 87 percent) for the different time periods preceding the survey (a ratio of less than 25 percent usually indicates underreporting of early neonatal deaths). The ratios of infant deaths that occurred during the neonatal period (Appendix Table B.6) are also consistently high (between 59 and 88 percent) for the different time periods preceding the survey.

Another problem inherent in most retrospective surveys is heaping of the age at death on certain digits, e.g., 6, 12, and 18 months. If the net result of age misreporting is the transference of deaths between age segments for which the rates are calculated, misreporting of the age at death will bias estimates of the age pattern of mortality. For instance, 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 year 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, may have actually occurred during infancy (i.e., at ages 0–11 months). In such cases, heaping would bias infant mortality (${}_1q_0$) downward and child mortality (${}_4q_1$) upward. In the Goa NFHS-2, however, there appears to be almost no evidence of digit preference for reporting age at death, especially in the most recent five-year period (Tables B.5 and B.6 in Appendix B).

An examination of the distribution of births and deaths since 1988 (Table B.4 in Appendix B) suggests that there may be only slight underreporting of deaths in the most recent five-year period. The proportion of deaths to births decreases from 5 percent in 1988–92 to 4 percent in 1993–98. Some of this decrease undoubtedly reflects a real reduction in mortality during that period, as well as the fact that younger children have had less exposure to the risk of mortality.

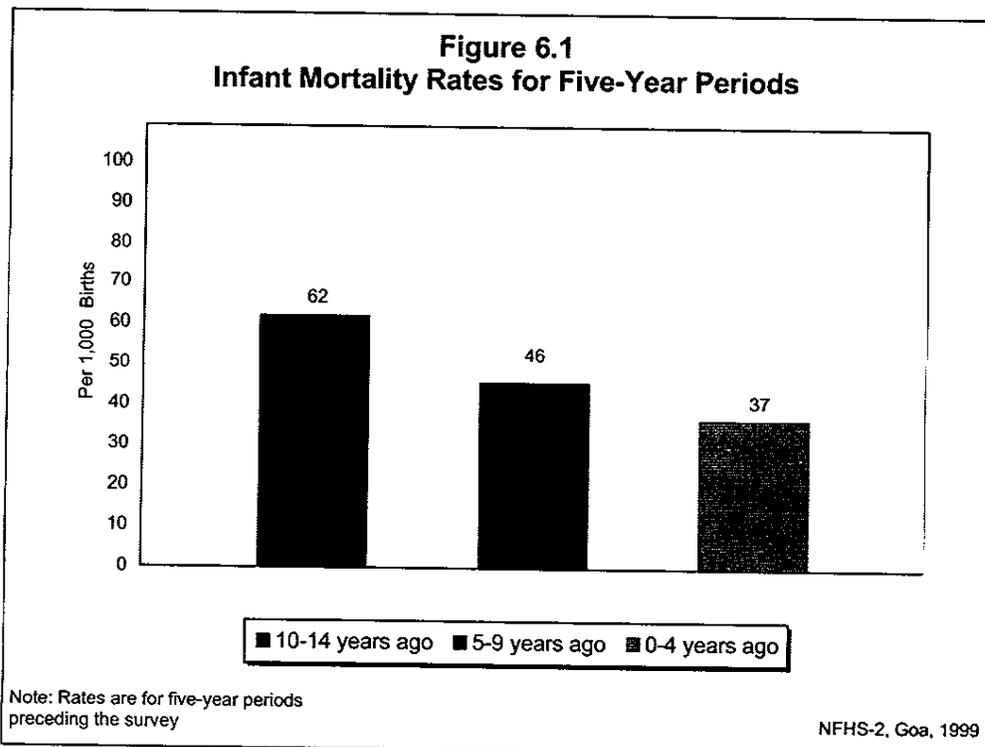
It is seldom possible to establish mortality levels with confidence for a period of more than 15 years before a survey. Even within the most recent 15-year period considered in this chapter, apparent trends in mortality rates should be interpreted with caution for several reasons. First, there may be 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 with time. Third, sampling variability of mortality rates tends to be high, especially for groups with relatively few births. Fourth, mortality rates are truncated as they go back in time because women currently age 50 or above who were bearing children during earlier periods were not included in the survey. This truncation affects mortality trends, in particular. For example, for the period 10–14 years before the survey, the rates do not include any births for women age 40–49 since these women were over age 50 at the time of the survey and were 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 rates for the period may be slightly underestimated. Estimates for more recent periods are less affected by truncation bias since fewer older women are excluded. The extent of this bias depends on the proportion of births omitted. In Goa, this proportion is a very small fraction of total births: women age 35 and above account for only 7 percent of all live births in the three years preceding the survey and current pregnancies (Table 4.18, Chapter 4). Given the small proportion of births excluded, selection bias for infant and child mortality statistics as far back as 15 years before the survey should be negligible.

Levels and Trends in Infant and Child Mortality

Table 6.2 and Figure 6.1 present various measures of infant and child mortality for the three five-year periods preceding the survey. The infant mortality rate in Goa declined from 62 deaths per 1,000 live births during 1984–88 (10–14 years before the survey) to 37 deaths per 1,000 live births during 1994–98 (0–4 years before the survey), an average rate of decline of two and a half infant deaths per 1,000 live births per year. However, a comparison of the infant mortality rate for the period 0–4 years before NFHS-2 (37) with the infant mortality rate 0–4 years before NFHS-1 (32) does not support the finding of a decline in infant mortality.

Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality ¹ (PNN)	Infant mortality ($1q_0$)	Child mortality ($4q_1$)	Under-five mortality ($5q_0$)
0–4	31.2	5.5	36.7	10.5	46.8
5–9	25.3	20.4	45.7	8.4	53.8
10–14	49.3	12.7	62.0	16.0	77.0

Note: The first five-year period preceding the survey does not include the month in which the interview took place. Rates are specified on a per-thousand basis. See text for definition of rates.
¹Computed as the difference between the infant and neonatal mortality rates



All other measures of infant and child mortality presented in Table 6.2 have declined by at least 34 percent in the past 15 years based on NFHS-2 data. According to NFHS-2, the infant mortality rate in Goa (37) is much lower than the national infant mortality rate of 68. In fact, the infant mortality rate in Goa is lower than or equal to the infant mortality rates of all other states except Kerala (16) and Himachal Pradesh (34). The estimated NFHS-2 infant mortality rate of 37 deaths per 1,000 live births during 1994–98 is much higher than the SRS value of 19 deaths per 1,000 live births averaged for the period 1995–97.

6.3 Morbidity

There is only limited experience in collecting morbidity data from population-based demographic sample surveys. NFHS-1 collected data on five major morbidity conditions—partial and complete blindness, tuberculosis, leprosy, physical impairment of the limbs, and malaria—among all persons in the sample households. The results were found to be generally plausible and useful. For these reasons, it was decided to include similar morbidity questions in NFHS-2. In NFHS-2, questions on blindness, leprosy, and physical impairment of the limbs were replaced by questions on asthma and jaundice. The questions on tuberculosis and malaria were retained, and a question on medical treatment of tuberculosis was added to get a better measure of the prevalence of tuberculosis. The household head or other knowledgeable adult in the household reported morbidity for all household members, and no effort was made to clinically test for any of the disease conditions.

Table 6.3 shows the prevalence of asthma, tuberculosis, jaundice, and malaria in the household population by age, sex, and place of residence. There are several reasons why the results of NFHS-2 may understate the prevalence of these conditions. Respondents may underreport diseases carrying a stigma, such as tuberculosis, due to intentional concealment. Underestimation may also occur because the household respondents are unaware that they or other members of the household have the condition. It is also possible that the respondents know that a household member suffers from a given condition, but fail to report it because they do not recognize the term used by the enumerator to describe the condition. On the other hand, a factor contributing to a possible overestimation of prevalence without clinical verification is that some other disease can be mistaken by the respondent as one of the listed diseases; for example, chronic bronchitis may be reported as asthma or tuberculosis, or common flu as malaria.

Asthma

Asthma is a chronic respiratory disease characterized by sudden attacks of laboured breathing, chest constriction, and coughing. There has been a rapid increase in asthma cases in recent years in many parts of the world. In Goa, 2 percent of the population was reported to be suffering from asthma at the time of NFHS-2. The reported level of asthma (1,984 per 100,000 population) in Goa is not very different from the level reported for India as a whole (2,468 per 100,000 population). There is not much difference by sex and urban-rural residence, although the prevalence of asthma is slightly higher among women than among men. Age differences are more marked, with the prevalence of asthma being much higher, at 4,237 per 100,000, for the population age 60 and above than for the younger population. However, the relatively high prevalence of asthma among children age 0–14 years (1,860 per 100,000) could also be a cause for concern.

Table 6.3 Morbidity						
Number of persons per 100,000 usual household residents suffering from asthma, tuberculosis, jaundice, or malaria by selected background characteristics, Goa, 1999						
Background characteristic	Number of persons per 100,000 suffering from:					Number of usual residents
	Asthma	Tuberculosis ¹	Medically treated tuberculosis	Jaundice during the past 12 months	Malaria during the past 3 months	
Age						
< 15	1,860	353	60	2,070	1,158	1,777
15–59	1,699	428	325	2,536	860	4,864
60+	4,237	1,004	871	698	737	713
Residence						
Urban	2,003	445	329	1,989	1,267	2,950
Rural	1,971	480	304	2,417	688	4,404
Sex						
Male	1,858	498	355	2,681	917	3,653
Female	2,109	434	273	1,816	923	3,701
Total	1,984	466	314	2,245	920	7,354

¹Includes medically treated tuberculosis

Tuberculosis

Tuberculosis, which is also resurgent worldwide, is an infectious disease that affects the lungs and other body tissues. Tuberculosis of the lungs, the most commonly known form, is characterized by coughing up mucus and sputum, fever, weight loss, and chest pain. According to NFHS-2, the overall prevalence of tuberculosis in Goa is 466 per 100,000 population, compared with the national estimate of 544. The prevalence of tuberculosis in Goa is more than two times higher than the level reported in NFHS-1 (180 per 100,000). The prevalence is 480 per 100,000 in rural areas and 445 per 100,000 in urban areas. Overall, it is slightly higher for males (498 per 100,000) than for females (434 per 100,000). Probable reasons for a higher prevalence of tuberculosis among males than females are that men are more likely than women to come in contact with people who suffer from active tuberculosis and that men in Goa smoke more than women. The prevalence of tuberculosis changes little by age, from 353 per 100,000 for the population age 0–14 to 428 per 100,000 for the population age 15–59, but then rises sharply to 1,004 per 100,000 for the population age 60 and above.

Medically treated tuberculosis is expected to give a more reliable measure of the prevalence of active tuberculosis than the measure based on all reported cases considered in the preceding paragraph. As expected, the prevalence of medically treated tuberculosis is lower (314 per 100,000) than the prevalence based on all reported cases (466 per 100,000). Differentials in the prevalence of medically treated tuberculosis by residence, age, and sex are similar to differentials in the prevalence of all reported cases. Notably, however, for children age 0–14, medically treated tuberculosis is only one-sixth of all reported cases for the age group.

Jaundice

Jaundice is characterized by yellowish discolouration of the eyes and skin, fever, liver enlargement, and abdominal pain. NFHS-2 asked household respondents if any member of the

household had suffered from jaundice at any time during the 12 months preceding the survey. In Goa, 2,245 persons per 100,000 population were reported to have suffered from jaundice during the 12 months preceding the survey, compared with only 1,361 per 100,000 in India as a whole. People living in rural areas are slightly more likely to have suffered from jaundice (2,417 per 100,000) than those living in urban areas (1,989 per 100,000). Males are more likely to have suffered from jaundice than females. The prevalence of jaundice does not increase steadily with age. It is highest for the age group 15–59 (2,536 per 100,000), followed by the age group 0–14 years (2,070 per 100,000), and is lowest for the age group 60 years and above (698 per 100,000).

Malaria

Malaria is characterized by recurrent high fever with shivering. NFHS-2 asked household respondents whether any member of their household suffered from malaria any time during the three months preceding the survey. In Goa, 920 persons per 100,000 population were reported to have suffered from malaria during the three months preceding the survey, much lower than the national average of 3,697 per 100,000 population. Since the prevalence of malaria is known to vary considerably by season, the NFHS-2 estimate should not be interpreted as representative of the level throughout the year. It is not advisable to compare this estimate with the NFHS-1 estimate because the months of the year comprising the reference period for the malaria estimates from the two surveys are quite different.

Urban residents are almost twice as likely to suffer from malaria (1,267 per 100,000) as are rural residents (688 per 100,000), but there is almost no difference by sex in the reported prevalence of malaria. The prevalence of malaria decreases with age, from 1,158 per 100,000 in the population age 0–14 to 737 per 100,000 in the population age 60 years and over.

6.4 Child Immunization

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

The Universal Immunization Programme (UIP) was introduced in 1985–86 with the following objectives: to cover at least 85 percent of all infants against the six vaccine-preventable diseases by 1990 and to achieve self-sufficiency in vaccine production and the manufacture of cold-chain equipment (Ministry of Health and Family Welfare, 1991). This scheme has been introduced in every district of the country, and the target now is to achieve 100 percent immunization coverage. Pulse Polio Immunization Campaigns began in December, 1995, as part of a major national effort to eliminate polio. The standard immunization schedule developed for the child immunization programme specifies the age at which each vaccine is to be administered, the number of doses to be given, and the route of vaccination (intramuscular, oral,

or subcutaneous). Routine vaccinations received by infants and children are usually recorded on a vaccination card that is issued for the child.

NFHS-2 asked mothers in Goa whether they had a vaccination card for each child born since January, 1996. If a card was available, the interviewer was required to copy carefully the dates when the child received vaccinations against each disease. For vaccinations not recorded on the card, the mother's report that the vaccination was or was not given was accepted. If the mother could not show a vaccination card, she was asked whether the child had received any vaccinations. If any vaccination had been received, the mother was asked whether the child had received a vaccination against tuberculosis (BCG); diphtheria, whooping cough (pertussis), and tetanus (DPT); poliomyelitis (polio); and measles. For DPT and polio, information was obtained on the number of doses of the vaccine given to the child. Mothers were not asked the dates of vaccinations. To distinguish Polio 0 (polio vaccine given at the time of birth) from Polio 1 (polio vaccine given about six weeks after birth), mothers were also asked whether the first polio vaccine was given just after birth or later².

Table 6.4 gives the percentages of children age 12–23 months who received specific vaccinations at any time before the survey and before 12 months of age, according to whether a vaccination card was shown to the interviewer or the mother was the source of all vaccination information. The 12–23 month age group was chosen for analysis because both international and Government of India guidelines specify that children should be fully immunized by the time they complete their first year of life. Because the date of vaccination was not asked of the mother if she could not show a vaccination card, the proportion of vaccinations given during the first year of life to 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 to children with an exact date of vaccination on the card.

In NFHS-2, children who have received BCG, measles, and three doses each of DPT and polio (excluding Polio 0) are considered to be fully vaccinated. Based on information obtained from a card or reported by the mother ('either source'), 83 percent of children age 12–23 months are fully vaccinated, and there are no children who have not received any vaccinations at all. Immunization coverage in Goa is almost twice as high as in India as a whole and only Tamil Nadu and Himachal Pradesh have been equally or even more successful in meeting childhood immunization goals.

Coverage for each vaccination, except Polio 0, is much higher in Goa than the percentage fully vaccinated. BCG, the first dose of DPT, and the first and second doses of polio vaccine have each been received by at least 98 percent of children (see Figure 6.2). Although DPT and polio vaccinations are given at the same time as part of the routine immunization programme, the coverage rates are slightly higher for polio than for DPT, undoubtedly because of the Pulse Polio campaigns. Drop-out before completion of the required DPT and polio series of vaccinations is quite limited in Goa: 4 percent of children who received the first dose of the DPT vaccine did not

²Because mothers sometimes report that the first dose was given just after birth even if it was given several weeks later, an adjustment was made to the estimates of the number of polio vaccinations given, based on reports of the number of DPT vaccinations. This adjustment is based on the fact that when children receive a DPT vaccination, they are almost always given a polio vaccination at the same time. Thus, if the number of polio vaccinations was reported to be less than the number of DPT vaccinations and the first polio vaccination was reported to be given just after birth, then Polio 0 is assumed to really be Polio 1, Polio 1 is assumed to be Polio 2, etc. For comparative purposes, this same adjustment was made to the NFHS-1 vaccination estimates.

Table 6.4 Childhood vaccinations by source of information

Percentage of children age 12–23 months who received specific vaccinations at any time before the interview and before 12 months of age by source of information on vaccination history, Goa, 1999

Source of information	Percentage vaccinated											Number of children
	BCG	Polio 0	DPT			Polio			Measles	All ¹	None	
			1	2	3	1	2	3				
Vaccinated at any time before the interview												
Vaccination card	100.0	45.3	98.8	98.8	98.8	98.8	98.8	98.8	91.7	91.7	0.0	85
Mother's report	(97.2)	(0.0)	(94.7)	(86.8)	(80.9)	(100.0)	(97.4)	(89.0)	(67.2)	(61.7)	(0.0)	37
Either source	99.2	31.6	97.6	95.2	93.4	99.2	98.4	95.8	84.3	82.6	0.0	122
Vaccinated by 12 months of age ²	98.0	31.6	95.2	94.0	92.3	96.7	96.7	94.7	77.8	76.1	2.4	122

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.
 () Based on 25–49 unweighted cases
¹BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)
²For children whose information was based on the mother's report, the proportion of vaccinations given by 12 months of age is assumed to be the same as for children with a written record of vaccinations.

receive the third one and 3 percent of children who received the first dose of the polio vaccine did not receive the third dose. Of all the required vaccinations, children are least likely to have received the measles vaccine. Only 84 percent of children age 12–23 months in Goa have received this vaccine.

There has been substantial improvement in full vaccination coverage in Goa since the time of NFHS-1 when the proportion of children age 12–23 who were fully vaccinated was 75 percent. The proportion of children who did not receive any vaccinations also declined substantially, from 5 percent in NFHS-1 to 0 percent in NFHS-2. The coverage of each of the different vaccinations has also improved considerably since NFHS-1. The coverage of the Polio 0 vaccine has more than doubled since NFHS-1 and the coverage of other vaccines has improved by 4 or more percentage points each.

Government statistics suggest an even higher level of vaccination coverage than NFHS-2 estimates for most vaccines, although the two sets of estimates are fairly close for some individual vaccines. According to government statistics for Goa for 1997–98, 94 percent of children age 12–23 months are fully vaccinated and coverage is 100 percent for the BCG vaccine, 99 percent for the third dose of the DPT vaccine, 98 percent for the third dose of the polio vaccine, and 94 percent for the measles vaccine (Ministry of Health and Family Welfare, 1999b).

According to the immunization schedule, all primary vaccinations, including measles, should be completed by the time a child is 12 months old. Table 6.4 shows that 76 percent of all children (or 92 percent of fully vaccinated children) were fully vaccinated by age 12 months. The percentages of children who received BCG, the third dose of DPT, and the third dose of polio by age 12 months are only slightly lower than the percentages who received these vaccines at any time before the survey. For the measles vaccination, however, which is supposed to be given when the child is nine months old, the gap is wider (84 percent at any time before the survey, compared with 78 percent by age 12 months). Eight percent of children who were vaccinated against measles received the vaccination after their first birthday.

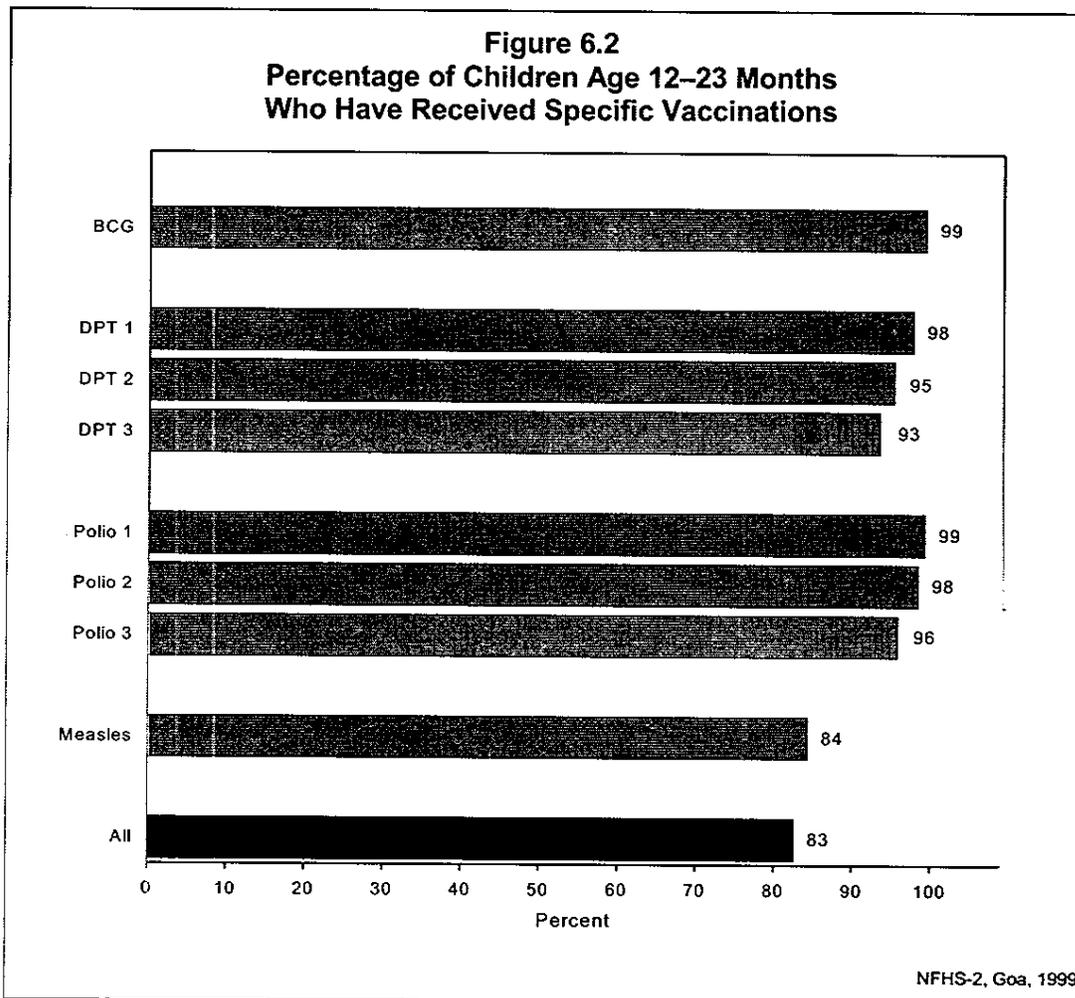


Table 6.5 and Figure 6.3 present vaccination coverage rates (according to the vaccination card or the mother) for children age 12–23 months by selected background characteristics. The table also shows the percentage of children with vaccination cards that were shown to the interviewer. Mothers showed vaccination cards for 70 percent of children age 12–23 months. Vaccination cards were shown for 68 percent of children in urban areas and 71 percent in rural areas.

Despite the high rate of childhood immunization in Goa, rural-urban differentials persist. Eighty-seven percent of children age 12–23 months have received all the required vaccinations in rural areas, compared with 75 percent in urban areas. Girls (86 percent) are more likely than boys (80 percent) to be fully vaccinated. Girls are also more likely than boys to have received most of the individual vaccinations. In NFHS-1, vaccination coverage was found to be almost the same for boys and girls. Hindu and Christian children are about equally likely to be fully vaccinated. The likelihood of being fully vaccinated and of receiving each of the different vaccinations is higher for children from households with a high standard of living than for children in households with a medium standard of living (except for the first polio vaccination, which was received by 100 percent of children in each of these groups). Eighty-three percent of children from households with a medium standard of living are fully vaccinated, compared with 86 percent of children from households with a high standard of living.

Table 6.5 Childhood vaccinations by background characteristics

Percentage of children age 12–23 months who received specific vaccinations at any time before the interview (according to the vaccination card or the mother) and percentage with a vaccination card that was shown to the interviewer by selected background characteristics, Goa, 1999

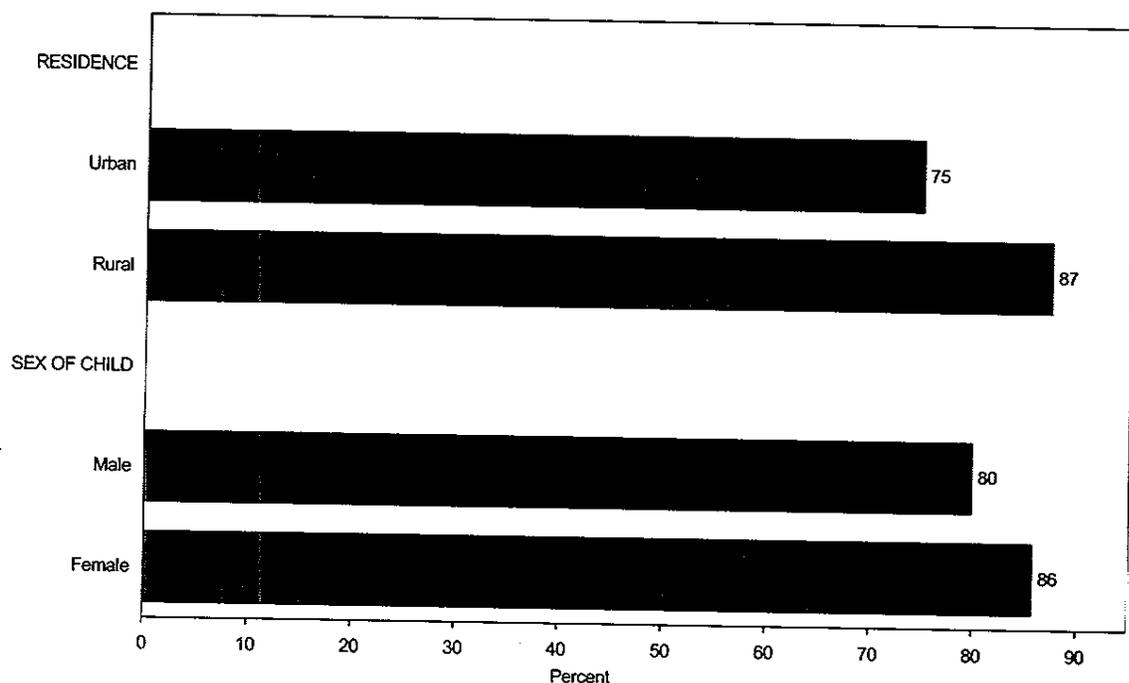
Background characteristic	Percentage vaccinated										Percentage showing vaccination card	Number of children
	BCG	Polio 0	DPT			Polio			Measles	All ¹		
			1	2	3	1	2	3				
Sex of child												
Male	98.4	31.6	96.9	95.4	92.0	98.4	98.4	95.2	81.6	79.9	70.8	65
Female	100.0	31.6	98.4	94.9	94.9	100.0	98.3	96.5	87.4	85.8	68.5	57
Residence												
Urban	(97.8)	(33.8)	(95.6)	(95.6)	(90.9)	(97.8)	(97.8)	(93.3)	(77.2)	(74.9)	(68.1)	47
Rural	100.0	30.3	98.8	94.9	94.9	100.0	98.7	97.4	88.6	87.4	70.7	75
Religion												
Hindu	100.0	28.0	97.5	95.0	95.0	98.7	97.5	97.5	88.6	87.4	69.7	79
Christian	(100.0)	(51.4)	(100.0)	(100.0)	(96.5)	(100.0)	(100.0)	(96.5)	(86.8)	(86.8)	(87.0)	30
Standard of living index												
Medium	98.1	22.8	98.1	94.6	92.6	100.0	98.2	96.4	85.2	83.2	72.3	55
High	100.0	40.1	100.0	100.0	97.9	100.0	100.0	97.9	86.1	86.1	66.8	50
Total	99.2	31.6	97.6	95.2	93.4	99.2	98.4	95.8	84.3	82.6	69.7	122

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 12 Muslim children, 1 child belonging to an 'other' religion, and 17 children from households with a low standard of living index, who are not shown separately.

() Based on 25–49 unweighted cases

¹BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

Figure 6.3
Percentage of Children Age 12–23 Months
Who Have Received All Vaccinations



NFHS-2, Goa, 1999

Table 6.6 shows the percentage of children age 12–35 months with a vaccination card that was shown to the interviewer and the percentage who received various vaccinations during the first year of life by current age of the child. The proportion vaccinated during the first year of life is estimated separately for children in each age group. The row labeled ‘No vaccinations’ indicates the percentage of children that have not received any vaccination by 12 months of age.

The proportion of children whose vaccination status was determined from a vaccination card is virtually the same for children age 24–35 months and children age 12–23 months. The proportion of children fully vaccinated by age 12 months increases slightly over time from 72 percent for children age 24–35 months to 76 percent for children age 12–23 months. However, there is slight deterioration in the coverage of most vaccines for children born more recently than for children born one year earlier, on average. This is also reflected in the fact that 0 percent of children age 24–35 months had not received any vaccinations by age 12 months, compared with 2 percent of children age 12–23 months.

Table 6.7 and Figure 6.4 give the percent distribution of children under age three years who have received any vaccinations by the source of most of the vaccinations, according to selected background characteristics. The public sector is the primary provider of childhood vaccinations in Goa. Seventy-seven percent of all children who have received vaccinations received most of them from a public sector source and only 22 percent received them mostly from a private sector medical source (compared with 13 percent in India as a whole). The use of the private medical sector for childhood vaccinations is slightly more common in urban areas, where private-sector services tend to be concentrated, than in rural areas. Even in urban areas,

Table 6.6 Childhood vaccinations received by 12 months of age

Percentage of children age 12–23 months and 24–35 months with a vaccination card that was shown to the interviewer and percentage who received specific vaccinations by 12 months of age, according child's current age, Goa, 1999

Vaccination status	12–23 months	24–35 months
Vaccination card shown to interviewer	69.7	68.9
Percentage vaccinated by 12 months of age¹		
BCG	98.0	100.0
Polio 0	31.6	34.8
DPT		
1	95.2	100.0
2	94.0	97.9
3	92.3	94.5
Polio		
1	96.7	100.0
2	97.2	99.0
3	94.7	95.6
Measles	77.8	75.2
All vaccinations ²	76.1	71.9
No vaccinations	2.4	0.0
Number of children	122	99

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.
¹Information 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 by 12 months of age is assumed to be the same as for children with a written record of vaccinations.
²BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

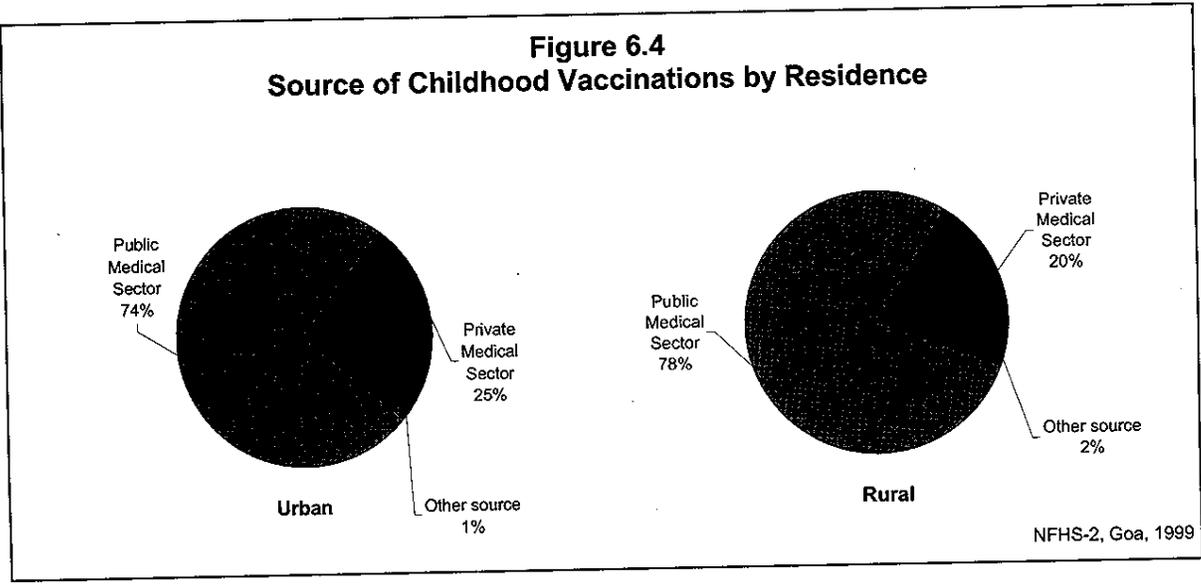


Table 6.7 Source of childhood vaccinations					
Percent distribution of children under age 3 who have received any vaccinations by source of most of the vaccinations, according to selected background characteristics, Goa, 1999					
Background characteristic	Source			Total percent	Number of children
	Public medical sector	Private medical sector	Other		
Age of child					
< 12 months	70.7	28.2	1.1	100.0	92
12–23 months	79.7	19.5	0.8	100.0	122
24–35 months	78.9	19.1	2.0	100.0	99
Sex of child					
Male	77.3	22.2	0.5	100.0	177
Female	76.2	21.7	2.2	100.0	136
Birth order					
1	70.2	28.4	1.4	100.0	145
2	75.5	22.4	2.1	100.0	91
3	88.5	11.5	0.0	100.0	53
Residence					
Urban	74.2	24.9	0.9	100.0	118
Rural	78.4	20.2	1.5	100.0	195
Mother's education					
Illiterate	93.2	3.3	3.4	100.0	57
Literate, < middle school complete	93.4	4.3	2.3	100.0	84
Middle school complete	76.2	23.8	0.0	100.0	50
High school complete and above	57.9	42.1	0.0	100.0	122
Religion					
Hindu	80.9	17.6	1.5	100.0	201
Christian	62.9	36.0	1.1	100.0	90
Caste/tribe					
Scheduled caste	(68.5)	(27.9)	(3.6)	100.0	28
Other ¹	76.8	22.1	1.1	100.0	263
Standard of living index					
Low	(94.7)	(0.0)	(5.3)	100.0	36
Medium	91.4	7.2	1.4	100.0	137
High	57.9	42.1	0.0	100.0	140
Total	76.8	21.9	1.3	100.0	313
Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 24 children of birth order 4 or more, 21 Muslim children, 1 child belonging to an 'other' religion, 20 children belonging to other backward classes, and 2 children with missing information on caste/tribe, who are not shown separately.					
() Based on 25–49 unweighted cases					
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class					

however, 74 percent of children received their vaccinations from the public sector. Notably, younger children (age less than 12 months) are more likely (28 percent) than older children (19–20 percent) to have received most of their vaccinations in the private sector.

The use of the private medical sector for vaccinations increases sharply by mother's education and household standard of living. Its use declines with the birth order of the child: 28 percent of first-born children received most of their vaccinations from a private medical source, compared with 12 percent of children at birth order three. Christian children are much more likely to receive vaccinations from the private medical sector than Hindu children.

6.5 Vitamin A Supplementation

Vitamin A deficiency is one of the most common nutritional deficiency disorders in the world, affecting more than 250 million children worldwide (Bloem et al., 1997). The National Programme on Prevention of Blindness targets children under age five years and administers oral doses of vitamin A every six months starting at age nine months. NFHS-2 asked mothers of children born during the three years before the survey whether their children ever received a dose of vitamin A. Those who said that their child had received at least one dose of vitamin A were asked how long ago the last dose of vitamin A was given. Table 6.8 shows the percentage of children age 12–35 months who received at least one dose of vitamin A and who received a dose of vitamin A within the past six months by selected background characteristics. In the state as a whole, 78 percent of children age 12–35 months received at least one dose of vitamin A, and 52

Table 6.8 Vitamin A supplementation for children			
Percentage of children age 12–35 months who received at least one dose of vitamin A and who received at least one dose of vitamin A within the six months preceding the survey by selected background characteristics, Goa, 1999			
Background characteristic	Percentage who received vitamin A		Number of children
	At least one dose	At least one dose within past six months	
Age of child			
12–23 months	76.1	62.5	122
24–35 months	80.4	39.7	99
Sex of child			
Male	75.0	52.1	121
Female	81.6	52.5	100
Birth order			
1	77.1	54.2	97
2	76.5	46.3	69
3	(88.4)	(55.6)	36
Residence			
Urban	71.0	48.7	83
Rural	82.3	54.4	137
Mother's education			
Illiterate	(76.8)	(54.9)	45
Literate, < middle school complete	85.0	48.4	53
Middle school complete	(77.2)	(57.4)	39
High school complete and above	74.6	50.9	83
Religion			
Hindu	80.1	54.3	142
Christian	75.6	49.1	62
Standard of living index			
Low	(68.4)	(53.7)	26
Medium	85.2	58.7	103
High	72.6	44.6	92
Total	78.0	52.3	221
Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 19 children of birth order 4 or more, 16 Muslim children, and 1 child belonging to an 'other' religion, who are not shown separately. () Based on 25–49 unweighted cases			

percent received a dose within the past six months. Vitamin A coverage is much higher in Goa than in any other state of India. Despite its success in this area, however, these data indicate that more than one out of every five children in Goa has not received vitamin A supplementation at all and more children need to receive vitamin A supplementation regularly.

There is relatively little variation in vitamin A coverage by background characteristics. Nonetheless, it is notable that girls are more likely than boys to receive vitamin A supplementation. Further, children in urban areas, children from households with a high standard of living, and children whose mothers have completed at least high school are somewhat less likely than most other children to have received at least one dose of vitamin A supplementation. However, differentials in the percentage that received at least one dose within the past six months do not necessarily follow the same pattern as differentials in the percentage that have received any vitamin A supplementation.

6.6 Child Morbidity and Treatment

This section discusses the prevalence and treatment of acute respiratory infection (ARI), fever, and diarrhoea. Mothers of children less than three years old were asked if their children suffered from cough, fever, or diarrhoea during the two weeks preceding the survey, and if so, the type of treatment given. Accuracy of all these measures is affected by the reliability of the mother's recall of when the disease episode occurred. The two-week recall period is thought to be most suitable for ensuring that there will be an adequate number of cases to analyze and that recall errors will not be too serious. Table 6.9 shows the percentages of children with cough accompanied by fast breathing (symptoms of acute respiratory infection), fever, and diarrhoea during the two weeks preceding the survey, by selected background characteristics.

Acute Respiratory Infection

Acute respiratory infection, primarily pneumonia, is a major cause of illness among infants and children and the leading cause of childhood mortality throughout the world (Murray and Lopez, 1996). Early diagnosis and treatment with antibiotics can prevent a large proportion of ARI/pneumonia deaths. NFHS-2 found that 17 percent of children under age three years in Goa suffered from acute respiratory infection (cough accompanied by short, rapid breathing) at some time during the two-week period before the interview (Table 6.9). This proportion was much higher in rural areas (20 percent) than in urban areas (12 percent). ARI was marginally more common among girls than boys. By age, the prevalence of ARI peaks at 26 percent for children age 6–11 months. Prevalence declines sharply with birth order and with household standard of living. It is higher among children of literate mothers who have not completed high school than among children of illiterate mothers, but is lowest among children of mothers who have completed at least high school. Prevalence is relatively high among children belonging to households that do nothing to purify drinking water, scheduled-caste children, Christian children, and children belonging to households that use well water for drinking. Almost all (98 percent) children suffering from ARI symptoms in the two weeks before the interview received advice or treatment from a health facility or health provider when ill with ARI (data not shown).

Table 6.9 Prevalence of acute respiratory infection, fever, and diarrhoea

Percentage of children under age 3 who were ill with a cough accompanied by fast breathing (symptoms of acute respiratory infection—ARI), fever, or diarrhoea during the two weeks preceding the survey by selected background characteristics, Goa, 1999

Background characteristic	Percentage of children suffering in past two weeks from:				Number of children
	Cough accompanied by fast breathing (ARI)	Fever	Diarrhoea		
			Any diarrhoea ¹	Diarrhoea with blood	
Age of child					
1–5 months	(22.6)	(22.8)	(15.2)	(2.4)	39
6–11 months	25.5	51.8	30.9	1.8	58
12–23 months	17.9	35.9	12.6	0.0	122
24–35 months	9.0	27.1	20.6	0.0	99
Sex of child					
Male	16.2	36.6	20.8	1.1	177
Female	18.2	31.7	16.2	0.0	140
Birth order					
1	21.0	34.6	16.5	0.6	146
2	13.5	30.8	18.5	0.0	92
3	12.8	34.9	27.5	1.8	55
Residence					
Urban	12.3	33.4	24.4	0.0	120
Rural	20.0	35.1	15.3	1.0	197
Mother's education					
Illiterate	16.5	30.5	17.1	0.0	60
Literate, < middle school complete	20.5	37.6	20.8	1.2	85
Middle school complete	23.1	39.3	27.6	0.0	50
High school complete and above	12.4	32.1	14.5	0.8	122
Religion					
Hindu	15.8	34.1	17.5	1.0	202
Christian	19.8	32.1	22.0	0.0	91
Caste/tribe					
Scheduled caste	(20.3)	(53.7)	(20.9)	(0.0)	30
Other ²	16.4	33.1	19.4	0.7	264
Standard of living index					
Low	(23.6)	(42.7)	(11.0)	(0.0)	37
Medium	18.9	31.7	17.3	0.0	139
High	13.5	34.9	22.3	1.4	140
Source of drinking water					
Piped water	15.7	34.7	22.6	0.5	182
Well water	19.4	35.6	13.9	0.9	116
Purification of water					
Boiling	15.6	29.1	17.1	1.0	189
Nothing	21.1	43.2	20.6	0.0	106
Total	17.1	34.4	18.7	0.6	317

Note: Table includes only surviving children age 1–35 months from among the two most recent births in the three years preceding the survey. Total includes 24 children of birth order 4 or more, 23 Muslim children, 1 child belonging to an 'other' religion, 21 children belonging to other backward classes, 19 children in households for whom the source of drinking water is surface water, 21, 4, 24, 1, and 7 children in households using cloth, alum, water filters, electronic water purifiers, or 'other' methods to purify water, and 2 children with missing information on caste/tribe, who are not shown separately.

() Based on 25–49 unweighted cases

¹Includes diarrhoea with blood

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Fever

Fever is the most common of the three conditions examined in Table 6.9, with 34 percent of children suffering from fever during the two weeks preceding the survey. The prevalence of fever first increases with age, peaking at 52 percent for children age 6–11 months, and then declines. Fever is slightly less prevalent among girls than among boys and among second-order births than among births at other birth orders, but its prevalence varies very little by residence. The prevalence of fever is much higher than average for scheduled-caste children, children from households that do nothing to purify their drinking water, children from households with a low standard of living, and children whose mothers are literate but have not completed high school.

Diarrhoea

Diarrhoea is the second most important killer of children under age five worldwide, following acute respiratory infection. Deaths from acute diarrhoea are most often caused by dehydration due to loss of water and electrolytes. Nearly all dehydration-related deaths can be prevented by prompt administration of rehydration solutions. Because deaths from diarrhoea are a significant proportion of all child deaths, the Government of India has launched the Oral Rehydration Therapy Programme as one of its priority activities for child survival. One major goal of this programme is to increase awareness among mothers and communities about the causes and treatment of diarrhoea. Oral rehydration salt (ORS) packets are made widely available and mothers are taught how to use them. NFHS-2 asked mothers of children less than three years old a series of questions about episodes of diarrhoea suffered by their children in the two weeks before the interview, including questions on feeding practices during diarrhoea, the treatment of diarrhoea, and their knowledge and use of ORS.

Table 6.9 shows that 19 percent of children under age three suffered from diarrhoea in the two-week period before the interview. There are seasonal variations in the prevalence of diarrhoea, however, so that the percentages shown in Table 6.9 cannot be assumed to reflect the situation throughout the year.

Among children age 1–35 months, diarrhoea is most common at age 6–11 months (31 percent). The prevalence of diarrhoea is higher in urban areas than in rural areas and is higher among male than among female children. It increases sharply with birth order and with household standard of living. The prevalence of diarrhoea is lower among children of mothers who have completed at least high school than among children of illiterate mothers and literate mothers who have not completed high school. Prevalence is relatively high among scheduled-caste children and Christian children. Contrary to general expectations, in Goa, the prevalence of diarrhoea is higher among children living in households that use piped water for drinking than among children living in households that use well water for drinking. It is, however, slightly lower among children living in the small number of households that boil water to purify it than among children that live in households that do nothing to purify their drinking water.

One percent of all children age 1–35 months (3 percent of children who suffered from diarrhoea in the two weeks preceding the survey) had diarrhoea with blood, a symptom of dysentery. Since the prevalence of diarrhoea with blood is very low, it is not meaningful to analyze the differentials with regard to various background characteristics.

Table 6.10 Knowledge of diarrhoea care

Among mothers with births during the three years preceding the survey, percentage who know about oral rehydration salt (ORS) packets, percent distribution by quantity to be given to drink during diarrhoea, and percentage who know two or more signs of diarrhoea that indicate the need for medical treatment by selected background characteristics, Goa, 1999

Background characteristic	Percentage who know about ORS packets	Reported quantity to be given to drink				Don't know/missing	Total percent	Percentage who know two or more signs for medical treatment of diarrhoea ¹	Number of mothers
		Less	Same	More					
Age									
20-24	84.1	34.5	28.6	29.2	7.7	100.0	44.2	63	
25-29	83.1	38.9	24.3	27.6	9.3	100.0	43.1	110	
30-34	88.9	39.7	16.8	35.3	8.2	100.0	44.8	71	
35-49	(89.4)	(25.2)	(29.6)	(43.0)	(2.2)	100.0	(42.3)	46	
Residence									
Urban	86.3	25.2	21.6	45.2	8.1	100.0	36.0	117	
Rural	85.5	42.9	26.0	24.2	6.9	100.0	47.7	182	
Education									
Illiterate	83.6	37.0	24.7	29.0	9.3	100.0	40.3	56	
Literate, < middle school complete	80.5	49.7	21.0	22.9	6.4	100.0	43.5	77	
Middle school complete	83.9	43.3	32.5	22.3	1.9	100.0	47.6	49	
High school complete and above	91.1	23.4	22.8	44.5	9.3	100.0	42.3	117	
Religion									
Hindu	86.9	30.9	29.2	32.0	8.0	100.0	43.1	192	
Christian	84.9	50.4	14.4	28.8	6.4	100.0	39.9	87	
Caste/tribe									
Scheduled caste	(89.0)	(27.9)	(32.1)	(32.9)	(7.0)	100.0	(48.1)	25	
Other ²	85.0	36.6	23.7	33.2	6.5	100.0	40.3	251	
Exposure to media									
Exposed to any media	85.3	34.5	25.0	33.4	7.1	100.0	43.3	266	
Watches television weekly	86.1	33.2	25.1	34.4	7.2	100.0	43.6	246	
Listens to radio weekly	84.9	38.1	24.5	31.2	6.2	100.0	45.9	158	
Reads newspaper/magazine weekly	89.0	29.2	20.0	42.2	8.6	100.0	42.4	149	
Not regularly exposed to any media	(90.2)	(47.9)	(18.0)	(24.4)	(9.7)	100.0	(41.5)	32	
Total	85.8	36.0	24.3	32.4	7.3	100.0	43.1	298	

Note: Total includes 8 women age 15-19, 18 Muslim women, 1 woman belonging to an 'other' religion, 20 women belonging to other backward classes, 16 women who visit the cinema/theatre at least once a month, and 2 women with missing information on caste/tribe, who are not shown separately.

() Based on 25-49 unweighted cases

¹Percentage who know two or more signs of illness that indicate that a child should be taken to a health facility or health worker

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Table 6.10 shows that 86 percent of mothers with births during the three years preceding the survey know about ORS packets, up sharply from 56 percent among women who gave birth during the three years preceding NFHS-1, and much higher than the national average of 62 percent. Knowledge of ORS packets is almost uniformly high for all mothers irrespective of their age and other background characteristics. Knowledge is highest, at 91 percent, among women who have at least completed high school, but is never lower than 81 percent for any population group.

In order to assess mothers' knowledge of children's need for extra fluids during episodes of diarrhoea, all mothers of children born in the three years preceding the survey were asked: 'When a child has diarrhoea, should he/she be given less to drink than usual, about the same amount, or more than usual?' Table 6.10 shows the responses of mothers to this question by selected background characteristics. In Goa, only 32 percent of mothers report that children should be given more to drink than usual during an episode of diarrhoea and, contrary to the standard recommendation, 36 percent report that children should be given less to drink. This suggests that mothers in Goa need much more education in the proper home management of diarrhoea. The proportion reporting correctly that children with diarrhoea should be given more to drink is particularly low among literate mothers who have not completed high school, rural mothers, and mothers not regularly exposed to any media.

To assess whether mothers are aware of one or more signs associated with diarrhoea which suggest the need for medical treatment, mothers were also asked: 'When a child is sick with diarrhoea, what signs of illness would tell you that he or she should be taken to a health facility or health worker?' All answers given by the respondent were recorded. The signs warranting medical treatment include repeated watery stools, repeated vomiting, blood in the stools, fever, marked thirst, not eating or drinking well, getting sicker or very sick, and not getting better. Table 6.10 shows that only 43 percent of mothers were able to name two or more signs that indicate that a child with diarrhoea should be given medical treatment. Contrary to expectations, the percentage is much lower among urban than rural mothers. However, knowledge of two or more signs of diarrhoea that suggest the need for medical treatment is universally low across all demographic and socioeconomic groups. This lack of knowledge suggests a need for further educating mothers about children's diarrhoea so that they are better able to recognize the signs of diarrhoea for which a health provider should be consulted.

Table 6.11 shows the percentage of children under age three with diarrhoea during the two weeks preceding the survey who were taken to a health facility or provider, the percentage who received various types of oral rehydration therapy (ORT), and the percentage who received other types of treatment. Sixty-five percent of children in Goa who suffered from diarrhoea during the two weeks preceding the survey were taken to a health facility or provider for medical advice or treatment (slightly more than the national level of 63 percent). Fourteen percent of children with diarrhoea did not receive any treatment at all.

More than half (56 percent) of the children age 1–35 months who suffered from diarrhoea during the two weeks preceding the survey were treated with a solution made from ORS packets. This is up from 27 percent in NFHS-1, indicating a two-fold increase in the use of ORS packets in Goa for the treatment of childhood diarrhoea in the six years between the two surveys. Use of ORS packets is much greater in Goa than in India as a whole, where only 27 percent of children with diarrhoea in the two weeks preceding the survey were given ORS. Only 16 percent of children in Goa received increased fluids when sick with diarrhoea, and 37 percent received gruel. Almost one-quarter of children with diarrhoea (24 percent) did not receive any oral rehydration therapy (ORT) at all.

The use of antibiotics and other antidiarrhoeal drugs is not generally recommended for the treatment of childhood diarrhoea. Yet 39 percent of the children who had diarrhoea in the two weeks before the interview were treated with pills or syrup, and 3 percent received an injection. These figures indicate poor knowledge about the proper treatment of diarrhoea not

Table 6.11 Treatment of diarrhoea	
Among children under age 3 who had diarrhoea in the past two weeks, percentage taken to a health facility or provider, percentage who received various types of oral rehydration therapy (ORT), and percentage who received other treatments, Goa, 1999	
Treatment	Percent
Taken to a health facility or provider	65.4
Oral rehydration	
Oral rehydration salt (ORS) packets	55.6
Gruel	37.2
Homemade sugar-salt-water solution	3.5
Increased fluids	15.5
ORT not given	24.1
Other treatment	
Pill or syrup	38.6
Injection	3.2
Home remedy/herbal medicine	4.9
Other	5.1
No treatment	14.1
Number of children with diarrhoea	59
Note: Table includes only surviving children age 1–35 months from among the two most recent births in the three years preceding the survey.	

only among mothers but also among health-care providers. The results underscore the need for informational programmes for mothers and supplemental training for health-care providers that emphasize the importance of ORT, increased fluid intake, and continued feeding, and discourages the use of drugs to treat childhood diarrhoea.

Table 6.12 shows the percent distribution of children who were treated with ORS for diarrhoea in the two weeks before the interview by the source of the ORS packets. The number of children who received ORS is very small. Nonetheless the data suggest that the private medical sector is the main source of ORS packets in Goa, with most packets being obtained from pharmacies or drugstores. For 79 percent of children with diarrhoea who were treated with ORS, the packets were obtained from the private medical sector. Only for 18 percent were the packets obtained from the public medical sector.

6.7 HIV/AIDS

Acquired Immune Deficiency Syndrome (AIDS) is an illness caused by the HIV virus, which weakens the immune system and leads to death through secondary infections such as tuberculosis or pneumonia. The virus is generally transmitted through sexual contact, through contact with contaminated needles (injections) or blood, or from an HIV-infected mother to her child during pregnancy, during delivery, or through breastfeeding. HIV and AIDS prevalence in India have been on the rise for more than a decade and have reached alarming levels in recent years. The Government of India established a National AIDS Control Organization (NACO) under the Ministry of Health and Family Welfare in 1989 to deal with the epidemic. Since then there have been various efforts to prevent HIV transmission, such as public health education through the media and the activities of many nongovernmental organizations (NGOs).

Table 6.12 Source of ORS packets	
Among children under age 3 who were treated with a solution made from oral rehydration salt (ORS) packets for diarrhoea in the two weeks preceding the survey, percent distribution of children by source of ORS packets, Goa, 1999	
Source	Percent
Public medical sector	(17.7)
Government/municipal hospital	(5.6)
UHC/UHP/UFWC	(3.1)
CHC/rural hospital/PHC	(6.2)
Other public medical sector	(2.8)
Private medical sector	(79.4)
Private doctor	(27.3)
Pharmacy/drugstore	(52.1)
Other	(2.9)
Total percent	100.0
Number of children treated with ORS	33
Note: Table includes only surviving children age 1–35 months from among the two most recent births in the three years preceding the survey. Table excludes children with missing information on source of ORS packets. UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre; CHC: Community health centre; PHC: Primary Health Centre () Based on 25–49 unweighted cases	

NFHS-2 included a set of questions on knowledge of AIDS and AIDS prevention. Ever-married women age 15–49 were first asked if they had ever heard of an illness called AIDS. Respondents who had heard of AIDS were asked further questions about their sources of information on AIDS, whether they believe that AIDS is preventable, and if so, what precautions, if any, a person can take to avoid infection.

Knowledge of AIDS

Table 6.13 shows the percentage of women who have heard about AIDS by background characteristics. More than three out of four women in Goa (76 percent) have heard of AIDS, up from 42 percent at the time of NFHS-1. Knowledge of AIDS is much more widespread in Goa than in India as a whole (40 percent).

There are substantial differentials in the knowledge of AIDS by most background characteristics. Women age 25–34 are more likely than younger or older women to have heard of AIDS. Eighty-two percent of women in urban areas have heard of AIDS, compared with 72 percent of women in rural areas. The difference in the knowledge of AIDS by women's educational level is dramatic. Knowledge of AIDS increases sharply from 44 percent for illiterate women to nearly 100 percent for women who have completed at least high school. There is also a strong positive relationship between knowledge of AIDS and household standard of living. Christians are much more likely to know about AIDS (90 percent) than either Muslims (74 percent) or Hindus (70 percent). Women not belonging to the scheduled castes, scheduled tribes, or other backward classes are more likely than women who belong to the scheduled castes or to other backward classes to know of AIDS. Knowledge of AIDS is strongly associated with

Table 6.13 Source of knowledge about AIDS

Percentage of ever-married women who have heard about AIDS and among women who have heard about AIDS, percentage who received information from specific sources by selected background characteristics, Goa, 1999

Background characteristic	Percentage who have heard about AIDS	Number of women	Among those who have heard about AIDS, percentage who received information from:										Number of women who have heard about AIDS
			Radio	Television	Cinema	Newspaper/magazine	Poster/hoarding	Health worker	Adult education programme	Friend/relative	School/teacher	Other source	
Age													
15-24	72.1	126	31.4	83.2	0.0	28.3	16.5	13.9	1.0	28.7	3.2	6.5	91
25-34	82.2	475	28.5	86.5	3.3	35.3	21.6	11.3	1.1	31.8	2.1	9.8	390
35-49	72.8	645	24.0	79.0	2.2	35.4	16.3	8.6	2.5	34.5	2.6	16.9	470
Residence													
Urban	82.1	519	25.4	87.9	3.3	40.5	22.1	10.0	1.5	30.1	3.2	14.9	426
Rural	72.2	727	27.4	78.1	1.8	30.0	15.6	10.4	2.0	35.1	1.8	11.5	525
Education													
Illiterate	43.6	357	12.2	52.9	0.0	0.7	1.8	6.0	0.0	52.4	0.0	10.8	156
Literate, < middle school complete	75.2	339	19.8	78.0	0.0	12.6	11.1	9.4	0.7	33.6	1.1	8.3	255
Middle school complete	94.0	156	29.8	88.2	1.2	26.9	20.4	12.1	2.0	28.6	0.6	13.6	147
High school complete and above	99.7	395	35.4	95.0	5.4	65.3	29.2	11.7	3.0	26.3	4.9	16.8	394
Religion													
Hindu	70.2	827	27.7	88.7	2.6	34.5	19.2	10.8	2.0	24.1	3.0	9.4	580
Muslim	74.2	55	(16.8)	(80.6)	(0.0)	(12.3)	(16.9)	(2.6)	(0.0)	(36.5)	(0.0)	(2.5)	41
Christian	90.3	361	25.5	71.5	2.2	38.0	17.2	9.7	1.2	47.8	1.9	20.7	326
Caste/tribe													
Scheduled caste	64.2	93	24.0	73.3	3.3	10.3	12.1	3.5	0.0	34.5	1.8	10.3	60
Other backward class	69.7	79	25.1	61.1	0.0	24.4	13.0	5.4	5.0	51.4	1.9	13.8	55
Other ¹	78.0	1,070	26.9	84.6	2.5	37.2	19.4	10.9	1.7	31.5	2.5	13.2	834

Contd...

Table 6.13 Source of knowledge about AIDS (contd.)

Percentage of ever-married women who have heard about AIDS and among women who have heard about AIDS, percentage who received information from specific sources by selected background characteristics, Goa, 1999

Background characteristic	Percentage who have heard about AIDS	Number of women	Among those who have heard about AIDS, percentage who received information from:										Number of women who have heard about AIDS
			Radio	Television	Cinema	Newspaper/ magazine	Poster/ hoarding	Health worker	Adult education programme	Friend/ relative	School/ teacher	Other source	
Standard of living index													
Low	40.2	177	21.0	46.7	0.0	6.0	11.6	13.0	0.0	46.8	2.8	15.5	71
Medium	70.6	495	23.8	77.4	1.4	20.2	13.8	7.6	1.1	33.3	0.3	10.5	349
High	92.3	568	29.4	90.9	3.5	48.1	22.6	11.7	2.5	30.7	3.9	14.1	524
Exposure to mass media													
Exposed to any media	82.3	1,102	27.5	85.7	2.6	36.2	19.2	10.6	1.8	31.3	2.6	12.8	906
Listens to radio weekly	83.5	648	38.5	84.0	2.2	38.0	18.5	11.7	1.6	30.5	1.9	13.4	541
Watches television weekly	83.2	1,007	26.3	88.9	2.5	37.4	19.5	10.9	1.9	30.2	2.8	12.6	838
Goes to cinema/theatre monthly	88.4	53	(33.3)	(85.1)	(6.5)	(52.0)	(17.8)	(6.8)	(0.0)	(29.7)	(4.3)	(13.1)	47
Reads newspaper/magazine weekly	94.9	603	32.6	92.6	3.9	52.7	25.7	9.8	2.4	25.8	3.5	13.8	572
Not regularly exposed to any media	30.6	144	(6.5)	(17.6)	(0.0)	(4.4)	(4.6)	(2.3)	(0.0)	(65.1)	(0.0)	(17.7)	44
Total	76.3	1,246	26.5	82.5	2.4	34.7	18.5	10.2	1.8	32.9	2.5	13.0	951

Note: Total includes small numbers of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.

() Based on 25-49 unweighted cases

† Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

exposure to media. Eighty-two percent of women who are regularly exposed to the radio, television, cinema, theatre, or print media say that they have heard about AIDS, compared with only 31 percent of women who are not regularly exposed to any of these forms of media. Knowledge is particularly high, at 95 percent, for women who read a newspaper or magazine at least weekly.

Source of Knowledge About AIDS

As part of its AIDS prevention programme, the Government of India has been using mass media, especially electronic media, extensively to create awareness among the general public about AIDS and its prevention. NFHS-2 asked women who had heard of AIDS about their sources of AIDS information. Table 6.13 shows the percentage of ever-married women who have heard about AIDS from specific sources. Television is by far the most important source of information about AIDS among ever-married women in Goa. Eighty-three percent of women who know about AIDS received information from that source. Other important media sources of information about AIDS are newspapers or magazines (35 percent), radio (27 percent), and posters or hoardings (19 percent). One-third of women received information about AIDS from friends or relatives and 10 percent received information from a health worker.

Television is the most important source of information about AIDS for all population groups except women not regularly exposed to any media and women from households with a low standard of living. In fact, among illiterate women and women from households with a low standard of living, friends and relatives are as important a source of information about AIDS as the television. Among women not regularly exposed to any media, 65 percent heard of AIDS from a friend or relative and only 18 percent heard about AIDS from the television.

Knowledge of Ways to Avoid AIDS

Respondents who have heard of AIDS were asked if a person can do anything to avoid becoming infected. Those who reported that something can be done were asked what a person can do to avoid AIDS. Table 6.14 shows the percentage of ever-married women who know of no way to avoid AIDS and the percentages who report that AIDS can be avoided in specific ways, by selected background characteristics.

Among women who have heard about AIDS, one-quarter do not know any way to avoid infection, compared with 33 percent for India as a whole. Among illiterate women and women not regularly exposed to any media, over 60 percent of women who have heard of AIDS do not know of any way to avoid getting infected. This proportion is also relatively high among women from households with a low standard of living (55 percent) and scheduled-caste women (49 percent). Lack of knowledge of ways to avoid becoming infected with AIDS decreases sharply with increasing levels of education and household standard of living. Its relationship with age is not consistent, although younger women (age 15–24) are more likely than older women to not know of a way to avoid AIDS.

Among women who have heard of AIDS, the most commonly mentioned ways of avoiding AIDS are avoiding injections or using clean needles (41 percent), avoiding sex with commercial sex workers (37 percent), having only one sex partner (34 percent), and avoiding blood transfusion (29 percent). A substantially lower proportion of respondents (15 percent) mention using condoms as a way to avoid AIDS. Three percent of women mention completely

Table 6.14 Knowledge about avoidance of AIDS

Among ever-married women who have heard about AIDS, percentage who believe AIDS can be avoided in specific ways by selected background characteristics, Goa, 1999

Background characteristic	Percentage who believe AIDS can be avoided by:										Number of women
	Abstaining from sex	Using condoms	Having only one sex partner	Avoiding sex with commercial sex workers	Avoiding sex with homo-sexuals	Avoiding blood transfusions	Avoiding injections/using clean needles	Avoiding IV drug use	Other ways	Knows no way to avoid AIDS	
Age											
15-24	3.1	18.3	33.7	32.6	2.2	20.7	34.7	0.0	7.8	32.6	91
25-34	2.0	18.2	37.2	36.7	1.3	29.5	41.6	1.3	7.4	22.3	390
35-49	3.7	11.7	30.8	37.3	0.6	29.5	41.1	3.0	11.6	26.0	470
Residence											
Urban	3.0	15.9	38.8	40.4	1.2	31.9	45.5	2.7	10.1	18.8	426
Rural	2.9	14.3	29.6	33.5	0.9	26.1	36.7	1.4	9.0	30.2	525
Education											
Illiterate	0.6	2.0	19.7	15.4	0.0	6.4	14.6	0.6	9.6	60.6	156
Literate, < middle school complete	0.8	8.3	25.8	37.0	0.8	11.7	26.2	0.4	9.8	35.3	255
Middle school complete	1.3	12.2	43.3	33.7	1.3	26.7	43.7	2.0	9.8	19.4	147
High school complete and above	5.8	25.6	40.7	45.8	1.6	49.2	59.3	3.6	9.2	6.6	394
Religion											
Hindu	2.8	16.6	34.1	35.2	0.9	27.1	39.0	0.7	9.3	25.3	580
Muslim	(4.8)	(9.3)	(37.3)	(38.7)	(2.3)	(16.6)	(38.8)	(0.0)	(2.3)	(34.1)	41
Christian	2.7	12.8	32.1	39.0	0.9	32.8	43.3	4.3	10.9	24.0	326
Caste/tribe											
Scheduled caste	0.0	3.5	25.7	27.6	1.8	17.0	23.9	1.8	10.4	48.9	60
Other backward class	3.4	14.1	29.9	29.1	0.0	24.7	30.7	0.0	14.7	35.8	55
Other ¹	3.1	15.9	34.5	37.8	1.1	29.8	42.5	2.2	9.1	22.6	834

Contd...

Table 6.14 Knowledge about avoidance of AIDS (contd.)

Among ever-married women who have heard about AIDS, percentage who believe AIDS can be avoided in specific ways by selected background characteristics, Goa, 1999

Background characteristic	Percentage who believe AIDS can be avoided by:										Number of women
	Abstaining from sex	Using condoms	Having only one sex partner	Avoiding sex with commercial sex workers	Avoiding sex with homo-sexuals	Avoiding blood transfusions	Avoiding injections/using clean needles	Avoiding IV drug use	Other ways	Knows no way to avoid AIDS	
Standard of living index											
Low	2.8	5.9	22.3	15.0	1.3	8.3	19.2	0.0	14.2	55.4	71
Medium	1.1	9.7	29.5	35.0	0.3	16.5	27.9	0.9	7.1	35.0	349
High	4.2	19.6	38.2	40.8	1.5	39.6	52.0	3.1	10.6	14.1	524
Exposure to mass media											
Exposed to any media	3.0	15.8	34.8	37.0	1.1	29.8	41.9	2.1	9.7	23.3	906
Listens to radio weekly	3.4	14.9	37.0	36.9	0.7	32.3	44.9	2.3	9.6	20.4	541
Watches television weekly	3.0	16.5	34.9	37.0	1.1	31.0	43.1	2.2	9.6	22.6	838
Goes to cinema/theatre monthly	(2.1)	(19.7)	(49.4)	(34.5)	(2.3)	(36.7)	(43.5)	(2.3)	(4.5)	(22.2)	47
Reads newspaper/magazine weekly	3.3	20.7	39.0	42.0	1.3	39.9	51.7	2.5	9.3	12.6	572
Not regularly exposed to any media	(2.1)	(0.0)	(11.0)	(28.6)	(0.0)	(6.5)	(14.9)	(0.0)	(4.6)	(63.2)	44
Total	2.9	15.0	33.7	36.6	1.1	28.7	40.7	2.0	9.5	25.1	951
Note: Total includes 4 women belonging to other religions, 1 woman belonging to a scheduled tribe, and 1 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately. () Based on 25-49 unweighted cases † Not belonging to a scheduled caste, a scheduled tribe, or an other backward class											

abstaining from sex and 2 percent mention avoiding intravenous drug use as a way of avoiding AIDS. The percentage reporting most specific ways of avoiding AIDS is lower among rural than among urban women and women not regularly exposed to mass media than other women. The level of education and the household standard of living are positively associated with women mentioning almost every way of avoiding AIDS. The use of condoms as a way of avoiding AIDS is mentioned most often by women who have at least completed high school, women who are regularly exposed to the print media or cinema/theatre, and women from households with a high standard of living.

Increasing the knowledge about AIDS, its modes of transmission, and ways to avoid infection among women in Goa is still a major challenge for efforts to fight the spread of AIDS. About one-quarter of ever-married women in their childbearing years have never heard of AIDS, and one-quarter of those who have heard of AIDS do not know of any way to avoid infection. From these data, it is clear that AIDS prevention organizations need to strengthen the educational components of their programmes, in addition to trying to reduce high-risk behaviour. They also need to devise innovative ways of reaching those harder to reach groups that are not covered by means of mass media.

CHAPTER 7

NUTRITION AND THE PREVALENCE OF ANAEMIA

This chapter focuses on the nutrition of women and young children, examining both the types of food consumed and the consequences of inadequate nutrition and poor feeding practices. NFHS-1 included basic information about feeding practices and the nutritional status of young children. NFHS-2 contains more comprehensive information on these topics, and, for the first time, information on the diet of women. Measurement of height and weight has been expanded to include ever-married women as well as young children. Two additional tests have been included for the first time—anaemia testing for women and young children and the testing of cooking salt to determine the extent of iodization. A specially trained health investigator attached to each interviewing team conducted height and weight measurements and anaemia testing.

7.1 Women's Food Consumption

The consumption of a wide variety of nutritious foods is important for a person's health. Adequate amounts of protein, fat, carbohydrates, vitamins, and minerals are required for a well-balanced diet. Meat, fish, eggs, and milk, as well as pulses and nuts, are rich in protein. Green, leafy vegetables are a rich source of iron, folic acid, vitamin C, carotene, riboflavin, and calcium. Many fruits are also good sources of vitamin C. Bananas are rich in carbohydrates. Papayas, mangoes, and other yellow fruits contain carotene, which is converted to vitamin A. Vitamin A is also present in milk and milk products, as well as egg yolks (Gopalan et al., 1996).

NFHS-2 asked ever-married women how often they consume various types of food (daily, weekly, occasionally, or never). With the exception of eggs, a majority of women in Goa consume each of the specific foods listed in Table 7.1 at least weekly. Fifty-two percent of women consume milk or curd every day. More than one-third (36 percent) eat chicken, meat, or fish daily. At least three-fourths of women consume pulses or beans (77 percent) or green, leafy vegetables (75 percent) at least once a week. Fruits are eaten at least once a week by two-thirds of women. Vegetables other than the green, leafy variety are consumed by 83 percent of women at least weekly. Only 5 percent of women in Goa never consume chicken, meat, or fish. Much higher proportions never consume eggs (19 percent) and milk or curd (12 percent).

<u>Table 7.1 Women's food consumption</u>						
Percent distribution of ever-married women by frequency of consumption of specific foods, Goa, 1999						
Type of food	Frequency of consumption					Total percent
	Daily	Weekly	Occasionally	Never	Missing	
Milk or curd	51.8	13.2	23.1	11.9	0.0	100.0
Pulses or beans	17.8	58.7	21.5	2.0	0.0	100.0
Green, leafy vegetables	21.2	53.4	24.2	1.1	0.1	100.0
Other vegetables	29.9	52.6	16.9	0.4	0.2	100.0
Fruits	28.3	37.4	32.7	1.4	0.2	100.0
Eggs	4.8	31.8	44.4	19.0	0.0	100.0
Chicken, meat, or fish	36.2	52.8	5.9	5.0	0.0	100.0

Table 7.2 Women's food consumption by background characteristics

Percentage of ever-married women consuming specific foods at least once a week by selected background characteristics, Goa, 1999

Background characteristic	Type of food						Chicken, meat, or fish	Number of women
	Milk or curd	Pulses or beans	Green, leafy vegetables	Other vegetables	Fruits	Eggs		
Age								
15-24	66.2	85.7	74.3	83.9	56.8	40.0	79.8	126
25-34	67.0	76.2	75.5	83.4	68.8	39.4	90.4	475
35-49	63.2	75.0	74.0	81.6	65.3	33.8	89.8	645
Residence								
Urban	73.1	83.9	81.0	88.5	72.5	42.3	86.4	519
Rural	59.2	71.3	70.0	78.2	61.0	32.5	90.9	727
Education								
Illiterate	43.2	72.3	67.7	76.3	52.8	26.8	87.8	357
Literate, < middle school complete	61.2	79.3	74.0	81.2	49.5	29.4	88.8	339
Middle school complete	69.6	72.6	69.8	80.9	73.7	42.7	90.8	156
High school complete and above	85.9	79.5	83.3	89.8	88.3	49.1	89.6	395
Religion								
Hindu	66.8	91.3	81.9	87.0	60.1	31.4	85.4	827
Muslim	77.9	91.2	80.4	85.8	78.3	49.6	85.4	55
Christian	59.0	40.5	56.7	71.6	76.5	46.8	98.6	361
Caste/tribe								
Scheduled caste	48.1	80.0	69.7	76.8	55.3	50.0	93.6	93
Other backward class	42.7	53.8	66.7	74.1	62.5	23.1	95.1	79
Other ¹	68.0	78.0	75.8	83.6	66.9	36.5	88.2	1,070
Standard of living index								
Low	39.4	74.5	65.1	69.0	41.8	28.8	87.5	177
Medium	57.2	79.2	70.9	81.1	55.6	27.2	87.1	495
High	79.3	75.5	81.0	88.0	81.9	46.8	91.0	568
Total	65.0	76.5	74.6	82.5	65.8	36.6	89.0	1,246

Note: Total includes 4 women belonging to other religions, 3 scheduled-tribe women, and 2 and 6 women with missing information on caste/tribe and the standard of living index, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Table 7.2 shows that there are substantial differentials in food consumption patterns by selected background characteristics. The weekly consumption of milk or curd and vegetables (including green, leafy vegetables) does not vary substantially by age. Young women (age 15-24) are more likely than older women to consume pulses or beans, but they are less likely to consume fruits and chicken, meat, or fish. Women age 35 and older are less likely than other women to eat eggs on a weekly basis. Urban women are more likely than rural women to consume each of the specific foods listed in the table, except chicken, meat, or fish. In general, the percentage of women consuming each type of food at least once a week increases with education. The variation by education is most striking for the consumption of milk or curd, followed by the consumption of fruits. For example, 86 percent of women who have completed at least high school consume milk or curd daily, compared with only 43 percent of illiterate women. With the exception of fruit, eggs, and chicken, meat, or fish, a lower proportion of Christian women consume each type of food than other women. Muslim and Hindu women have similar weekly consumption patterns for pulses or beans, vegetables (including green, leafy vegetables), and chicken, meat, or fish. Women who do not belong to a scheduled caste, a scheduled tribe, or an other backward caste are more likely than

other women to consume milk or curd, vegetables (including green, leafy vegetables), and fruits. Similar percentages of scheduled-caste women and women belonging to other backward classes consume green, leafy vegetables, other vegetables, and chicken, meat, or fish at least once a week. Poverty has a strong negative effect on the weekly consumption of all foods except chicken, meat, or fish. Fruits, milk or curd, and eggs, in particular, are much less likely to be consumed by women from households with a low or a medium standard of living.

7.2 Nutritional Status of Women

In NFHS-2, ever-married women age 15–49 were weighed using a solar-powered digital scale with an accuracy of ± 100 grams. Their height was measured using an adjustable wooden measuring board specially designed to provide accurate measurements (to the nearest 0.1 cm) of women and children in a field situation. The weight and height data were used to calculate several indicators of women's nutritional status, which are shown in Table 7.3. The height of an adult is an outcome of several factors including nutrition during childhood and adolescence. A woman's height can be used to identify women at risk of having a difficult delivery, since small stature is often related to small pelvic size. The risk of having a baby with a low birth weight is also higher for mothers who are short.

The cutoff point for height, below which a woman can be identified as nutritionally at risk, varies among populations, but it is usually considered to be in the range of 140–150 centimetres (cm). NFHS-2 found a mean height for women in Goa of 152 cm, not very different than the mean height for women in India as a whole (151 cm). The mean height varies only slightly (between 150 and 153 cm) for women in different population groups, as shown in Table 7.3. Mean height bears a consistent and positive relationship with education and household standard of living. Overall, 12 percent of women in Goa are under 145 cm in height, compared with 13 percent in India as a whole. The likelihood of being less than 145 cm tall is particularly high for illiterate women and women from households with a low standard of living (both 19 percent).

Table 7.3 also shows two measures of an index that relates a woman's weight to her height. These measures exclude women who were pregnant at the time of the survey or women who gave birth during the two months preceding the survey. The body mass index (BMI) can be used to assess both thinness and obesity. The BMI is defined as the weight in kilograms divided by the height in metres squared (kg/m^2). The mean BMI for women in Goa is 22 (varying within a narrow range of 18–23 for all the groups shown in the table), which is higher than the mean level of 20 for India as a whole. Chronic energy deficiency is usually indicated by a BMI of less than 18.5. Twenty-seven percent of women in Goa have a BMI below 18.5 (compared with 36 percent for all of India), indicating a moderate prevalence of nutritional deficiency. Undernutrition, as indicated by a BMI below 18.5, is much more common among women age 20–24 (46 percent) and women age 25–29 (36 percent) than older women. Chronic energy deficiency is also much more common among illiterate women, women belonging to other backward classes, women who are not currently married, and scheduled-caste women. However, women's undernutrition is most common in households with a low standard of living: 56 percent of ever-married women age 15–49 living in these households suffer from chronic energy deficiency.

Table 7.3 Nutritional status of women

Among ever-married women, mean height, percentage with height below 145 cm, mean body mass index (BMI), and percentage with BMI below 18.5 kg/m² by selected background characteristics, Goa, 1999

Background characteristic	Height			Weight-for-height ¹		
	Mean height (cm)	Percentage below 145 cm	Number of women for height	Mean body mass index (BMI)	Percentage with BMI below 18.5 kg/m ²	Number of women for BMI
Age						
20-24	150.5	13.3	104	19.6	45.7	89
25-29	152.0	10.9	231	20.4	35.7	216
30-34	152.9	10.7	235	21.4	25.3	221
35-49	151.4	13.4	631	22.5	21.8	625
Marital status						
Currently married	151.8	12.9	1,148	21.7	26.4	1,097
Not currently married	151.3	2.8	73	19.7	37.6	72
Residence						
Urban	151.9	9.5	508	22.4	22.5	483
Rural	151.6	14.4	713	21.1	30.3	686
Education						
Illiterate	150.0	18.6	347	20.1	40.4	330
Literate, < middle school complete	151.2	15.4	333	21.6	29.5	323
Middle school complete	152.5	11.3	155	20.9	30.5	143
High school complete and above	153.5	4.5	387	23.2	11.9	373
Religion						
Hindu	151.1	14.3	813	21.1	31.1	780
Muslim	151.6	11.2	54	(21.4)	(28.5)	48
Christian	153.3	8.0	350	22.7	17.8	337
Caste/tribe						
Scheduled caste	150.2	16.4	90	20.4	35.9	84
Other backward class	150.5	16.4	77	20.5	40.2	73
Other ²	152.0	11.7	1,049	21.8	25.4	1,007
Work status						
Working in family farm/business	152.3	11.1	145	20.7	28.8	142
Employed by someone else	151.6	10.9	340	20.9	33.9	331
Self-employed	152.7	5.5	88	22.2	20.8	86
Not worked in past 12 months	151.6	14.3	647	22.1	23.9	608
Standard of living index						
Low	150.1	18.6	169	18.4	56.0	158
Medium	151.0	13.0	485	20.7	33.8	468
High	153.0	9.5	561	23.3	12.8	536
Total	151.8	12.3	1,221	21.6	27.1	1,169

Note: Total includes small numbers of women age 15-19, women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe, work status, and the standard of living index, who are not shown separately.

() Based on 25-49 unweighted cases

¹ Excludes women who are pregnant and women with a birth in the preceding two months. The body mass index (BMI) is the ratio of the weight in kilograms to the square of the height in metres (kg/m²).

² Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

7.3 Anaemia Among Women

Anaemia is characterized by a low level of haemoglobin in the blood. Haemoglobin is necessary for transporting oxygen from the lungs to other tissues and organs of the body. Anaemia usually results from a nutritional deficiency of iron, folate, vitamin B₁₂, or some other nutrients. This type of anaemia is commonly referred to as iron-deficiency anaemia. Iron deficiency is the most widespread form of malnutrition in the world, affecting more than two billion people (Stolzfus and Dreyfuss, 1998). In India, anaemia affects an estimated 50 percent of the population (Seshadri, 1998).

Anaemia may have detrimental effects on the health of women and children and may become an underlying cause of maternal mortality and perinatal mortality. Anaemia results in an increased risk of premature delivery and low birth weight (Seshadri, 1997). Early detection of anaemia can help to prevent complications related to pregnancy and delivery as well as child-development problems. Information on the prevalence of anaemia can be useful for the development of health-intervention programmes designed to prevent anaemia, such as iron-fortification programmes.

In India, under the Government's Reproductive and Child Health Programme, iron and folic acid tablets are provided to pregnant women in order to prevent anaemia during pregnancy. Because anaemia is such a serious health problem in India, NFHS-2 undertook direct measurement of the haemoglobin levels of all ever-married women age 15–49 years and their children under three years of age. Measurements were taken in the field using the HemoCue system.¹ This system uses a single drop of blood from a finger prick (or a heel prick in the case of infants under six months old), which is drawn into a cuvette and then inserted into a portable, battery-operated instrument.² In less than one minute, the haemoglobin concentration is indicated on a digital read-out.

Before the anaemia testing was undertaken in a household, the health investigator read a detailed informed consent statement to the respondent, informing her about anaemia, describing the procedure to be followed for the test, and emphasizing the voluntary nature of the test. She was then asked whether or not she would consent to have the test done for herself and her young children, if any. The health investigator then signed the questionnaire at the bottom of the statement to indicate that it had been read to the respondent and recorded her agreement or lack of agreement to the testing. If the test was conducted, at the end of the test the respondent was given a written record of the results for herself and each of her young children. In addition, the health investigator described to her the meaning of the results and advised her if medical treatment was necessary. In cases of severe anaemia, the respondent was read an additional statement asking whether or not she would give her permission for the survey organization to inform a local health official about the problem. For each Primary Sampling Unit, a local health

¹The HemoCue instrument has been used extensively throughout the world for estimating the concentration of haemoglobin in capillary blood in field situations. The HemoCue has been found to give accurate results on venous blood samples, comparable to estimates from more sophisticated laboratory instruments (Von Schenk et al., 1986; McNulty et al., 1995; Krenzicheck and Tanseco, 1996). A recent small-scale study in India (Prakash et al., 1999), however, found that the HemoCue provided slightly higher estimates of haemoglobin than the standard blood cell counter (BCC) method.

²Because the first 2–3 drops of blood are wiped away to be sure that the sample used for analysis consists of fresh capillary blood, it is actually the third or fourth drop of blood that is drawn into the cuvette.

official was given a list of severely anaemic women (and children) who had consented to the referral.

Table 7.4 and Figure 7.1 show anaemia levels for ever-married women age 15–49. The table and figure distinguish three levels of severity of anaemia: mild anaemia (10.0–10.9 grams/decilitre for pregnant women and 10.0–11.9 g/dl for non-pregnant women), moderate anaemia (7.0–9.9 g/dl), and severe anaemia (less than 7.0 g/dl). Appropriate adjustments in these cutoff points are needed for women living at altitudes above 1,000 metres and women who smoke, since both of these groups require more haemoglobin in their blood (Centers for Disease Control and Prevention, 1998). In Goa, however, an adjustment had to be made for smoking only. The adjustment for altitude was not required since all the PSUs were at altitudes below 1,000 metres.

In Goa, the haemoglobin levels were tested for 96 percent of women (see Table B.3 in Appendix B), compared with 88 percent of women in India as a whole. Overall, 36 percent of women have some degree of anaemia³ (much lower than the corresponding all-India level of 52 percent). Twenty-seven percent of women are mildly anaemic, 8 percent are moderately anaemic, and 1 percent are severely anaemic. There are differences in the prevalence of anaemia by background characteristics, but more than one-fourth of women in every population group are anaemic. The prevalence of anaemia is highest, at 52 percent, among Muslim women. Prevalence is also particularly high (above 40 percent) for women who are not currently married, women who are chronically energy deficient (BMI < 18.5), women living in households with a low standard of living, women who work on a family farm or in a family business, illiterate women, and women who consume vegetables but not fruits on a weekly basis. Anemia prevalence does not vary substantially by age or residence, although women age 35–49 are more likely to be moderately anaemic than younger women. The prevalence of moderate anaemia is also relatively high (14–19 percent) for women who are not currently married, Muslim women, women who consume neither fruits nor vegetables, women living in households with a low standard of living, illiterate women, and self-employed women.

Anaemia is often considered to be particularly problematic for pregnant women. In Goa, however, pregnant women do not have significantly higher levels of anaemia than nonpregnant women. The prevalence of any anaemia is lower for breastfeeding women than for other women, but there is only a marginal difference in the prevalence of anaemia between pregnant women and nonpregnant women who are not breastfeeding. Pregnant women are, however, more likely than nonpregnant breastfeeding or non-breastfeeding women to have moderate anaemia. The provision of iron and folic acid supplements to pregnant women has undoubtedly reduced the overall prevalence of anaemia in pregnant women to some extent (women received IFA tablets or syrup during pregnancy for 95 percent of births in the three years before the survey—see Table 8.6).

³Rates that are not adjusted for smoking (36.4 for any anaemia, 27.4 percent for mild anaemia, 8.0 percent for moderate anaemia, and 1.0 percent for severe anaemia) are virtually identical to the corresponding adjusted rates. The small impact of the adjustment factor is to be expected since, in Goa, the proportion of women who smoke is very small (see Table 2.11).

Table 7.4 Anaemia among women					
Percentage of ever-married women classified as having iron-deficiency anaemia by degree of anaemia, according to selected background characteristics, Goa, 1999					
Background characteristic	Percentage of women with any anaemia	Percentage of women with:			Number of women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age					
20-24	35.4	29.6	4.9	0.9	104
25-29	35.2	29.0	5.3	0.9	227
30-34	34.5	28.0	6.1	0.4	231
35-49	37.3	26.0	10.2	1.1	616
Marital status					
Currently married	35.7	27.5	7.4	0.9	1,127
Not currently married	47.0	25.3	18.8	2.9	71
Residence					
Urban	36.0	27.5	8.2	0.4	499
Rural	36.7	27.2	8.0	1.4	699
Education					
Illiterate	43.3	27.4	13.8	2.0	341
Literate, < middle school complete	39.8	30.7	7.9	1.2	329
Middle school complete	28.5	23.9	4.6	0.0	155
High school complete and above	30.4	25.7	4.5	0.3	374
Religion					
Hindu	39.7	30.7	7.9	1.1	802
Muslim	52.3	37.7	14.6	0.0	55
Christian	26.1	17.7	7.6	0.9	338
Caste/tribe					
Scheduled caste	32.8	19.7	11.0	2.1	90
Other backward class	39.8	29.7	8.9	1.2	76
Other ¹	36.5	27.8	7.8	0.9	1,027
Work status					
Working in family farm/business	43.5	34.4	7.1	2.0	143
Employed by someone else	39.0	28.6	9.6	0.9	338
Self-employed	46.2	31.3	13.8	1.1	85
Not worked in past 12 months	32.1	24.6	6.8	0.8	630
Standard of living Index					
Low	44.5	27.2	14.3	3.0	167
Medium	39.9	30.8	8.3	0.8	477
High	30.8	24.4	5.9	0.5	551
Pregnancy/breastfeeding status					
Pregnant	35.0	22.6	11.0	1.4	71
Breastfeeding (not pregnant)	30.9	25.1	5.7	0.0	192
Not pregnant/not breastfeeding	37.6	28.1	8.4	1.2	936
Height					
< 145 cm	35.7	25.8	8.6	1.2	147
≥ 145 cm	36.4	27.6	7.9	0.9	1,050

Contd...

Table 7.4 Anaemia among women (contd.)

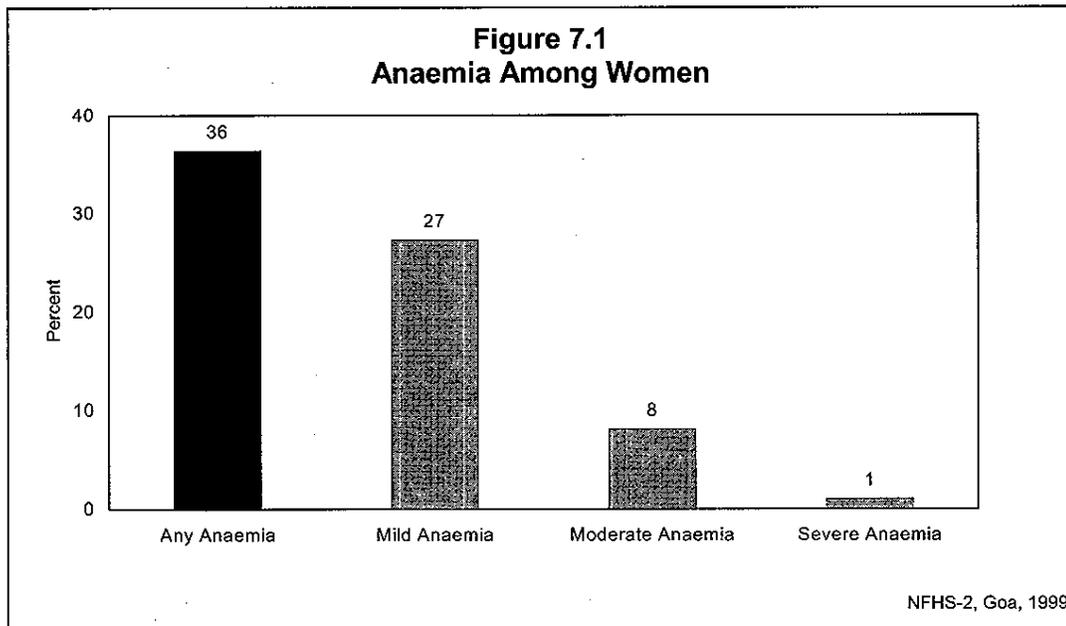
Percentage of ever-married women classified as having iron-deficiency anaemia by degree of anaemia, according to selected background characteristics, Goa, 1999

Background characteristic	Percentage of women with any anaemia	Percentage of women with:			Number of women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Body mass index					
< 18.5 kg/m ²	45.5	31.4	11.7	2.4	321
≥ 18.5 kg/m ²	33.0	25.8	6.7	0.5	873
Fruit and vegetable consumption²					
Fruits and vegetables	35.2	27.8	6.4	1.0	614
Fruits only	30.9	20.8	8.3	1.7	171
Vegetables only	40.8	31.0	8.7	1.0	281
Neither	38.7	24.3	14.4	0.0	131
Total	36.4	27.3	8.1	1.0	1,198

Note: The haemoglobin levels are adjusted for smoking when calculating the degree of anaemia. No adjustment for altitude of the enumeration area was made because all of the Primary Sampling Units in Goa are at an altitude below 1,000 metres. Total includes 20 women age 15–19, 4 women belonging to other religions, 3 scheduled-tribe women, and 2, 1, 4, 1, 4, and 2 women with missing information on caste/tribe, work status, the standard of living index, height, body mass index, and fruit and vegetable consumption, respectively, who are not shown separately.

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

²Based on consumption at least weekly. Vegetables include only green, leafy vegetables.



7.4 Infant Feeding Practices

Infant feeding practices have significant effects on both mothers and children. Mothers are affected through the influence of breastfeeding on the period of postpartum infertility, and hence on fertility levels and the length of birth intervals. These effects vary by both the duration and intensity of breastfeeding. Proper infant feeding, starting from the time of birth, is important for the physical and mental development of the child. Breastfeeding improves the nutritional status

of young children and reduces morbidity and mortality. Breast milk not only provides important nutrients but also protects the child against infection. The timing and type of supplementary foods introduced in an infant's diet also have significant effects on the child's nutritional status.

The Baby Friendly Hospitals Initiative, launched by the United Nations Children's Fund (UNICEF) recommends initiation of breastfeeding immediately after childbirth. The World Health Organization (WHO) and UNICEF recommend that infants should be given only breast milk for about the first six months of their life. Under the Reproductive and Child Health Programme, the Government of India recommends that infants should be exclusively breastfed from birth to age four months (Ministry of Health and Family Welfare, n.d.). Most babies do not require any other foods or liquids during this period. By age seven 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 recommended that breastfeeding should continue, along with complementary foods, through the second year of life or beyond. It is further recommended that a feeding bottle with a nipple should not be used at any age, for reasons related mainly to sanitation and the prevention of infections.

WHO has suggested several indicators of breastfeeding practices to guide countries in gathering information for measuring and evaluating infant feeding practices. These indicators include the ever breastfed rate, the exclusive breastfeeding rate, the timely complementary feeding rate, the continued breastfeeding rate, and the bottle feeding rate. The *exclusive breastfeeding rate* is defined as the proportion of infants under age four months who receive only breast milk.⁴ The *timely complementary feeding rate* is the proportion of infants age 6–9 months who receive both breast milk and solid or semi-solid food. The *continued breastfeeding rate through one year of age* is the proportion of children age 12–15 months who are still breastfed. The *continued breastfeeding rate until two years of age* is the proportion of children age 20–23 months who are still breastfed. The *bottle feeding rate* is the proportion of infants who are fed using a bottle with a nipple.

In NFHS-2, data on breastfeeding and complementary feeding were obtained from a series of questions in the Woman's Questionnaire. These questions pertain to births since January 1996, but the tables are restricted to children born in the three years preceding the survey. For any given woman, information was obtained for a maximum of two births.

Initiation of breastfeeding immediately after childbirth is important because it benefits both the mother and the infant. As soon as the infant starts suckling at the breast, the hormone oxytocin is released, resulting in uterine contractions that facilitate expulsion of the placenta and reduce the risk of postpartum haemorrhage. It is also recommended that the first breast milk (colostrum) should be given to the child rather than squeezed from the breast and discarded, because colostrum provides natural immunity to the child.

Table 7.5 shows the percentage of children born during the three years before the survey who started breastfeeding within one hour and one day of birth. It also gives the percentage of children whose mothers squeezed the first milk from the breast before breastfeeding, which is not recommended. More than one-third (34 percent) of children in Goa start breastfeeding within one hour of birth (compared with only 16 percent for all of India), and 62 percent begin breastfeeding within one day of birth (compared with 37 percent for India as a whole). Forty-seven percent of

⁴International recommendations have recently been revised to promote exclusive breastfeeding up to six months of age.

Table 7.5 Initiation of breastfeeding

Percentage of children born during the three years preceding the survey who started breastfeeding within one hour and within one day of birth and percentage whose mother squeezed the first milk from her breast before breastfeeding by selected background characteristics, Goa, 1999

Background characteristic	Percentage started breastfeeding within one hour of birth	Percentage started breastfeeding within one day of birth ¹	Percentage whose mother squeezed first milk from breast	Number of children
Residence				
Urban	39.8	62.0	47.3	127
Rural	31.1	61.7	47.5	201
Mother's education				
Illiterate	41.4	61.1	63.9	61
Literate, < middle school complete	30.3	63.9	43.3	90
Middle school complete	28.6	65.3	52.4	51
High school complete and above	36.3	59.3	40.4	126
Religion				
Hindu	35.8	66.6	50.0	207
Christian	33.8	59.0	45.9	96
Caste/tribe				
Scheduled caste	(42.7)	(56.0)	(69.4)	30
Other ²	34.1	63.3	43.5	274
Mother's work status				
Working in family fam/business	(25.9)	(58.1)	(54.0)	30
Employed by someone else	36.4	62.4	56.2	60
Not worked in past 12 months	34.5	61.6	43.8	226
Standard of living index				
Low	(41.5)	(69.6)	(64.4)	38
Medium	30.9	68.3	49.2	141
High	36.0	53.6	41.3	148
Place of delivery				
Public health facility	34.5	70.0	48.3	129
Private health facility	34.6	60.6	45.7	169
Total	34.4	61.8	47.4	328

Note: Table includes only the two most recent births during the three years preceding the survey, whether living or dead at the time of interview. Total includes 24 Muslim children, 1 child belonging to an 'other' religion, 22 children belonging to other backward classes, 11 children of self-employed mothers, 29 children delivered in own home, parents' home or 'other' place of delivery, and 2 and 1 children with missing information on caste/tribe and place of delivery, respectively, who are not shown separately.
 () Based on 25-49 unweighted cases
¹Includes children who started breastfeeding within one hour of birth
²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

women who gave birth to children during the three years preceding the survey squeezed the first milk from the breast before they began breastfeeding (compared with 63 percent for all of India).

Differentials in the early initiation of breastfeeding and in squeezing the first milk from the breast are also shown in Table 7.5. Early initiation of breastfeeding is highest for children whose mothers belong to scheduled castes, live in households with a low standard of living, are illiterate, and live in urban areas. The circumstances surrounding delivery of the baby can have an important effect on the early initiation of breastfeeding. Most births (91 percent, see Table 8.6) in Goa take place in health institutions. Even among these births however, only 35 percent started breastfeeding within one hour of birth. There is no variation in early initiation of breastfeeding by type of health facility (public or private), although a higher proportion of children delivered in public health

Table 7.6 Breastfeeding status by child's age

Percent distribution of children under age 3 years by breastfeeding status, according to child's age in months, Goa, 1999

Age in months	Breastfeeding status					Total percent	Number of living children
	Not breastfeeding	Exclusively breastfeeding	Breastfeeding and:				
			Receiving plain water only	Receiving supplements	Don't know if fed supplements		
< 6	(0.0)	(17.9)	(20.4)	(61.7)	(0.0)	100.0	39
6-11	12.5	0.0	0.0	85.9	1.6	100.0	58
12-17	26.8	0.0	0.0	73.2	0.0	100.0	57
18-23	42.5	0.0	0.0	57.5	0.0	100.0	65
24-29	(57.5)	(0.0)	(1.9)	(40.7)	(0.0)	100.0	49
30-35	66.4	0.0	0.0	33.6	0.0	100.0	50

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Breastfeeding status refers to the day or night before the interview. Children classified as 'breastfeeding and receiving plain water only' receive no supplements.

() Based on 25-49 unweighted cases

facilities started breastfeeding within the first day of life (70 percent) than children delivered in private health facilities (61 percent).

The practice of squeezing the first milk from the breast is most common among, scheduled-caste women, women living in households with a low standard of living, illiterate women, and employed women. What is particularly disturbing is the finding that mothers of at least 40 percent of births in every population group squeezed milk out of their breasts before starting to breastfeed.

Mothers of children born in the three years preceding the survey were asked if the child had been given plain water, other liquids, or solid or mushy (semi-solid) food at any time during the day or night before the interview. Results are shown in Tables 7.6 and 7.7. Children who received nothing but breast milk during that period are defined as being *exclusively breastfed*. The introduction of supplementary foods before four months of age may put infants at risk of malnutrition because other liquids and solid foods are nutritionally inferior to breast milk. Consumption of liquids and solid or mushy foods at an early age also increases children's exposure to pathogens and consequently puts them at a greater risk of getting diarrhoea. However, a recent study based on findings from NFHS-1 (Anandaiah and Choe, 2000) concluded that breastfeeding with supplements is more beneficial than exclusive breastfeeding even for children at very young ages (less than four months). That report suggests that mothers who are not well nourished and who are in poor health themselves may not be able to provide adequate breast milk for their infants.

Because of the small number of children born in the three years preceding the survey in Goa, the usual two-month age categories that are used to describe feeding practices for younger children have been combined into broader age groups. Even with the larger age categories, however, the number of cases in each category remains small and results should be interpreted with caution. In Goa, breastfeeding is universal among children under six months of age; however, less than one out of five are exclusively breastfed. By age 6-11 months, no children are being exclusively breastfed. The proportion of children receiving supplements along with breast milk increases substantially up to age 6-11 months but declines thereafter as the proportion of children being weaned from breastmilk increases. Breastfeeding continues through the third year of life for a

Table 7.7. Type of food received by children								
Percentage of children under age 3 years who received specific types of food the day or night before the interview and percentage using a bottle with a nipple by current breastfeeding status and child's age in months, Goa, 1999								
Age in months	Type of food received						Using bottle with a nipple	Number of living children
	Powdered milk	Any other milk	Any other liquid	Green, leafy vegetables	Fruits	Any solid or mushy food ¹		
BREASTFEEDING CHILDREN								
< 6	(16.8)	(27.8)	(26.9)	(2.7)	(2.3)	(22.5)	(52.2)	39
6-9	(17.8)	(55.6)	(70.6)	(7.8)	(44.7)	(70.6)	(71.1)	37
10-13	(17.0)	(72.7)	(71.9)	(13.9)	(47.6)	(92.9)	(66.0)	29
14-17	(7.6)	(37.9)	(72.3)	(30.7)	(61.9)	(100.0)	(27.2)	26
18-23	(5.6)	(47.6)	(64.7)	(55.0)	(57.8)	(100.0)	(24.4)	38
24-35	(5.1)	(61.8)	(67.5)	(48.7)	(61.7)	(94.7)	(43.2)	38
NON-BREASTFEEDING CHILDREN								
< 24	20.3	72.0	73.8	38.0	65.6	83.7	78.3	50
24-29	(9.9)	(69.0)	(71.4)	(46.1)	(56.7)	(92.6)	(60.7)	28
30-35	(5.6)	(82.1)	(71.4)	(36.1)	(82.4)	(97.0)	(47.0)	33
ALL CHILDREN								
< 6	(16.8)	(27.8)	(26.9)	(2.7)	(2.3)	(22.5)	(52.2)	39
6-9	(19.0)	(58.8)	(72.8)	(7.2)	(43.9)	(70.5)	(73.2)	40
10-13	(16.2)	(75.8)	(75.2)	(16.3)	(45.2)	(86.3)	(70.9)	37
14-17	(13.9)	(45.9)	(69.8)	(32.4)	(62.2)	(94.3)	(44.3)	37
18-23	10.7	56.2	67.4	51.4	66.7	96.8	44.3	65
24-29	(7.7)	(67.3)	(68.8)	(48.0)	(58.0)	(91.7)	(52.0)	49
30-35	5.6	74.0	71.0	39.5	76.2	98.0	46.9	50

Note: Table includes only surviving children from among the two most recent births during the three years preceding the survey.
 () Based on 25-49 unweighted cases
¹ Includes green, leafy vegetables and fruits

sizable proportion of children. By 30-35 months of age, 34 percent of children are still being breastfed.

Table 7.7 shows in more detail the types of food consumed by children under age three years the day or night before the interview. Once again, two-month age categories have been combined into broader age groups due to the small number of children born during the three years before the survey. Powdered milk is not routinely given to young children, but other milk (such as cow's milk or buffalo's milk) is given more often. More than two-thirds of non-breastfeeding children in each age group were given these other types of milk the day or night before the interview. In most age groups, other liquids, such as juice or tea, are given more often than 'other' types of milk. The consumption of green, leafy vegetables increases with age in the first two years of life. In general, fruit consumption also increases with age.

From about six months of age, the introduction of complementary food is critical for meeting the protein, energy, and micronutrient needs of children. It appears that complementary food is usually introduced in a timely fashion in Goa. A majority of breastfeeding children age 6-9 months consume solid or mushy foods and this proportion rises considerably with age, peaking at 100 percent at age 14-23 months. Among all children age 6-9 months, about two-thirds (65 percent) received breast milk and solid or mushy food in the 24 hours before the interview.

Table 7.8 Median duration of breastfeeding		
Median duration of breastfeeding among children under age 3 years by sex of child and residence, and mean duration of breastfeeding, Goa, 1999		
Background characteristic	Median duration of any breastfeeding (months) ¹	Number of children
Sex of child		
Male	(24.6)	182
Female	(22.2)	146
Residence		
Urban	(15.9)	127
Rural	(24.3)	201
Median duration	23.3	328
Mean duration (months) ¹	23.1	328
Prevalence/incidence mean	22.3	328
Note: Table includes only the two most recent births during the three years preceding the survey.		
() Based on 25–49 unweighted cases		
¹ Based on current status		

Bottle feeding has a direct effect on the mother's exposure to the risk of pregnancy because the period of amenorrhoea may be shortened when breastfeeding is reduced or replaced by bottle feeding. Because it is often difficult to sterilize the nipple properly, the use of bottles with nipples also exposes children to an increased risk of getting diarrhoea and other diseases. The use of bottles with nipples is more common in Goa than in any other state. At least half of all children below age 14 months drank from a bottle the day or night before the interview, irrespective of their breastfeeding status. The use of a bottle with a nipple is much more common for children who are not being breastfed, particularly in the early months of life.

Table 7.8 shows several statistics that describe the duration of breastfeeding. Estimates of both means and medians are based on the current proportions of children breastfeeding in each age group because information on current status is usually more accurate than information based on mother's recall. The median length of any breastfeeding in Goa is 23.3 months, and the mean duration is 23.1 months.

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 36-month period to overcome problems of seasonality of births and possible reference-period errors). In Goa, the prevalence-incidence mean is one month shorter than the mean calculated in the conventional manner.

The median duration of breastfeeding is about two months shorter for girls than for boys. This pattern is often observed in societies where a preference for sons exists because the parents may stop breastfeeding a girl at a younger age to increase their chances of having another child earlier (with the hope that the next child will be a boy). The median length of breastfeeding is eight months longer in rural areas than in urban areas.

7.5 Nutritional Status of Children

Nutritional status is a major determinant of the health and well-being of children. Inadequate or unbalanced diets and chronic illness are associated with poor nutrition among children. To assess their nutritional status, measurements of weight and height/length were obtained for children born in the three years preceding the survey. Children were weighed and measured with the same types of scales and measuring boards used for women. Children under two years of age were measured lying down and older children were measured standing up. Data on weight and height/length were used to calculate the following three summary indices of nutritional status:

- weight-for-age
- height-for-age
- weight-for-height

The nutritional status of children calculated according to these three measures is compared with the nutritional status of an international reference population recommended by the World Health Organization (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 scientific report from the Nutrition Foundation of India (Agarwal et al., 1991) has concluded that the WHO standard is generally applicable to Indian children.

The three indices of nutritional status are 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 on any of the indices are considered to be *undernourished*, and children who fall more than three standard deviations below the reference median are considered to be *severely undernourished*.

Each of these indices provides somewhat different information about the nutritional status of children. Weight-for-age is a composite measure that takes into account both chronic and acute undernutrition. Children who are more than two standard deviations below the reference median on this index are considered to be *underweight*. The height-for-age index measures linear growth retardation. Children who are more than two standard deviations below the median of the reference population in terms of height-for-age are considered short for their age or *stunted*. The percentage in this category indicates the prevalence of chronic undernutrition, which often results from a failure to receive adequate nutrition over a long period of time or from chronic or recurrent diarrhoea. Height-for-age, therefore, does not vary appreciably by the season in which data are collected.

The weight-for-height index examines body mass in relation to body length. Children who are more than two standard deviations below the median of the reference population in terms of weight-for-height are considered too thin or *wasted*. The percentage in this category indicates the prevalence of acute undernutrition. Wasting is associated with a failure to receive adequate nutrition in the period immediately before the survey and may be the result of seasonal variations in food supply or recent episodes of illness.

The validity of these indices is determined by many factors, including the coverage of the population of children and the accuracy of the anthropometric measurements. The survey was not

Table 7.9 Nutritional status of children by demographic characteristics

Percentage of children under age 3 years classified as undernourished on three anthropometric indices of nutritional status, according to selected demographic characteristics, Goa, 1999

Demographic characteristic	Weight-for-age		Height-for-age		Weight-for-height		Number of children
	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	
Age of child							
< 6 months	(0.0)	(2.9)	(0.0)	(0.0)	(0.0)	(20.0)	35
6–11 months	0.0	16.8	1.9	11.1	0.0	7.6	53
12–23 months	5.0	25.6	7.1	22.9	1.7	13.7	117
24–35 months	8.7	48.9	5.4	22.9	0.0	12.8	93
Sex of child							
Male	6.5	34.5	7.3	23.8	0.6	12.6	168
Female	2.3	21.0	1.6	10.7	0.8	13.7	129
Birth order							
1	1.4	22.1	2.2	16.0	0.8	10.2	136
2–3	4.3	30.2	5.2	17.9	0.0	12.1	140
Previous birth interval²							
First birth	1.4	21.8	2.2	15.7	0.7	10.8	138
< 24 months	(14.7)	(55.6)	(11.9)	(38.5)	(2.8)	(14.4)	34
24–47 months	6.5	27.2	5.4	11.9	0.0	10.4	78
48+ months	(4.3)	(31.9)	(6.6)	(20.8)	(0.0)	(23.0)	48
Total	4.7	28.6	4.8	18.1	0.7	13.1	297

Note: Each index is expressed in standard deviation units (SD) from the median of the International Reference Population. Total includes 19 children of birth order 4–5 and 3 children of birth order 6 or more, who are not shown separately.

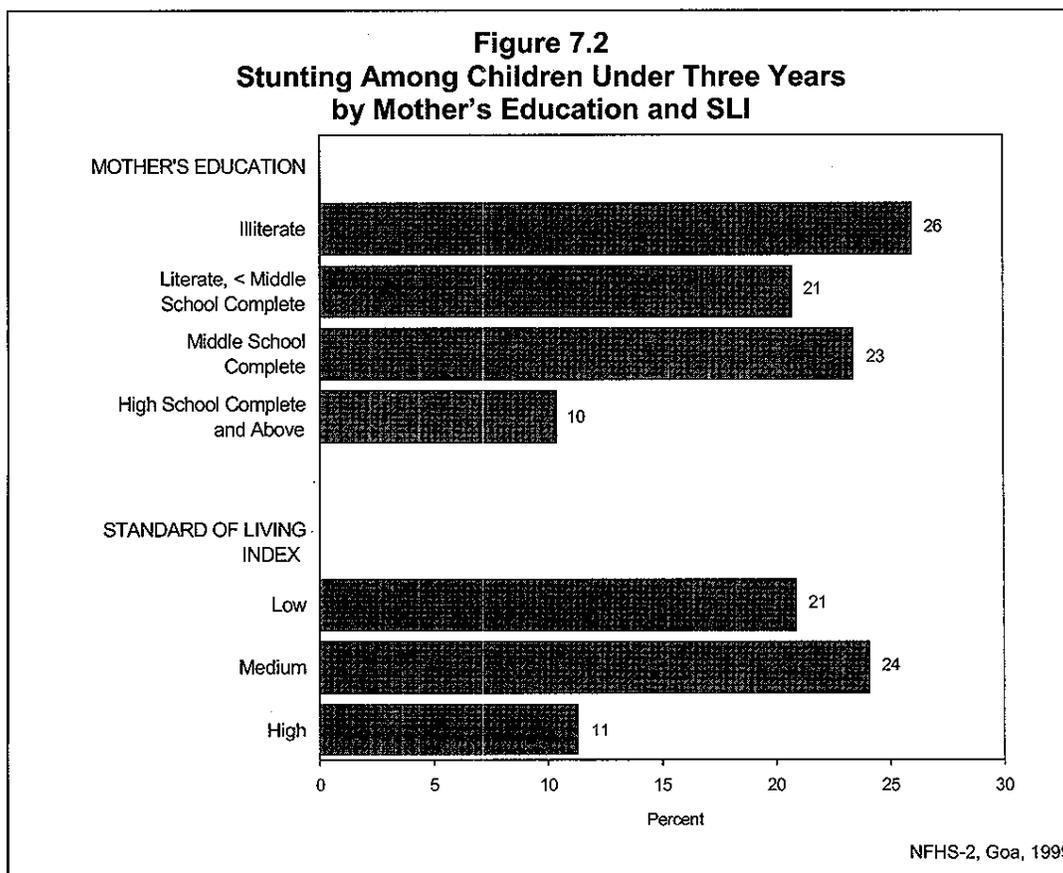
() Based on 25–49 unweighted cases

¹Includes children who are below -3 SD from the International Reference Population median

²First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

able to measure the height and weight of all eligible children, usually because the child was not at home at the time of the health investigator's visit or because the mother refused to allow the child to be weighed and measured. In Goa, NFHS-2 did not weigh and measure 6 percent of children under age three (see Table B.3 in Appendix B), a much lower nonresponse rate than the national rate of 13 percent. Also excluded from the analysis are children whose month and year of birth were not known and those with grossly improbable height or weight measurements. In addition, two of the three indices (weight-for-age and height-for-age) are sensitive to misreporting of children's ages, including heaping on preferred digits.

Table 7.9 shows the percentage of children classified as undernourished by selected demographic characteristics. Twenty-nine percent of children under three years of age are underweight and 18 percent are stunted. The corresponding estimates at the national level are 47 percent and 46 percent, respectively. The proportion of children who are severely undernourished is substantial—5 percent each according to weight-for-age and height-for-age. In addition, wasting is quite evident in Goa, affecting 13 percent of children under three years of age. The prevalence of wasting in Goa is lower than the national estimate of 16 percent. Although undernutrition remains a problem in Goa, it has declined since NFHS-1. The proportion of children under three years of age who are underweight decreased from 34 percent in NFHS-1 to 29 percent in NFHS-2, and the proportion severely underweight decreased from 8 percent to 5 percent. Similarly, the proportion of children stunted declined between the two surveys from 30 percent to 18 percent and the proportion



severely stunted declined from 10 percent to 5 percent. In the same time period, the decline in the proportion wasted has been much smaller (from 16 percent to 13 percent).

The proportion of children who are underweight and stunted increases steadily with the child's age. It is notable that at age 24–35 months, when most children have been weaned from breast milk, 5 percent are severely stunted and 9 percent are severely underweight.

There are notable differences between males and females in terms of child undernutrition, with boys being much more likely than girls to be underweight or stunted. Males and females do not differ substantially in terms of the prevalence of wasting. There is a positive relationship between undernutrition and birth order. First births have lower-than-average levels of undernutrition. Nutritional status does not, however, vary consistently with the length of the previous birth interval.

Table 7.10 shows the nutritional status of children by selected background characteristics. By urban-rural residence, underweight is slightly higher in rural areas, wasting is slightly higher in urban areas, and there is almost no difference in the percent stunted. The percentage severely underweight and stunted are both slightly higher in urban than rural areas. Based on the percentage underweight and the percentage stunted, children whose mothers have not completed high school are much more likely to be undernourished than children whose mothers have completed at least high school (see Figure 7.2). Wasting is also, in general, strongly negatively associated with maternal education. Hindu children are much more likely than Christian children to be underweight, stunted, and wasted. Children belonging to the scheduled castes appear to be more wasted than children who do not belong to scheduled castes, scheduled tribes, or other backward classes.

Table 7.10 Nutritional status of children by background characteristics

Percentage of children under age 3 years classified as undernourished on three anthropometric indices of nutritional status, according to selected background characteristics, Goa, 1999

Background characteristic	Weight-for-age		Height-for-age		Weight-for-height		Number of children
	Percent-age below -3 SD	Percent-age below -2 SD ¹	Percent-age below -3 SD	Percent-age below -2 SD ¹	Percent-age below -3 SD	Percent-age below -2 SD ¹	
Residence							
Urban	6.5	26.5	6.6	17.9	0.0	14.2	111
Rural	3.6	29.9	3.8	18.3	1.1	12.4	187
Mother's education							
Illiterate							
Literate, < middle school complete	7.4	36.4	9.6	26.0	0.0	16.3	55
Middle school complete	8.5	38.5	3.7	20.7	1.2	19.8	80
High school complete and above	(6.6)	(33.5)	(10.9)	(23.4)	(2.2)	(8.4)	47
	0.0	16.1	0.9	10.4	0.0	8.8	115
Religion							
Hindu	6.4	33.4	6.9	22.1	0.5	14.2	192
Christian	2.2	17.6	0.0	8.0	1.2	9.3	82
Caste/tribe							
Scheduled caste	(14.1)	(25.2)	(3.7)	(17.2)	(0.0)	(21.4)	28
Other ²	4.1	28.1	5.4	17.9	0.8	12.5	247
Mother's work status							
Working in family farm/business	(11.4)	(49.1)	(7.4)	(22.3)	(3.8)	(26.8)	27
Employed by someone else	9.4	27.8	9.3	25.4	0.0	11.3	54
Not worked in past 12 months	2.8	26.7	3.0	15.6	0.5	11.9	206
Mother's height							
< 145 cm	(6.4)	(46.4)	(9.3)	(27.5)	(0.0)	(15.7)	33
≥ 145 cm	4.5	26.4	4.3	17.0	0.7	12.7	264
Mother's body mass index							
< 18.5 kg/m ²	8.6	41.6	4.0	24.8	1.0	14.2	105
≥ 18.5 kg/m ²	2.6	21.5	5.3	14.5	0.5	12.4	192
Standard of living index							
Low	(9.1)	(34.9)	(9.4)	(20.9)	(0.0)	(12.2)	34
Medium	6.8	36.4	6.1	24.1	1.5	13.5	133
High	1.5	19.1	2.4	11.3	0.0	12.9	130
Total	4.7	28.6	4.8	18.1	0.7	13.1	297

Note: Each index is expressed in standard deviation units (SD) from the median of the International Reference Population. Total includes 23 Muslim children, 1 child belonging to an 'other' religion, 20 children belonging to other backward classes, 10 children of self-employed mothers, and 2 children with missing information on caste/tribe, who are not shown separately.

() Based on 25-49 unweighted cases

¹Includes children who are below -3 SD from the International Reference Population median

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Undernutrition is relatively low for children whose mothers have not worked in the past 12 months, which is not unexpected in the Indian situation where non-working women are likely to be from better off families.

The nutritional status of children is strongly related to maternal nutritional status. Undernutrition is more common for children of mothers whose height is less than 145 centimetres or whose body mass index is below 18.5 than for other children. The stunting and underweight measures are strongly related to the household's standard of living. Children from households with a

low or medium standard of living are almost two times as likely to be underweight or stunted as children from households with a high standard of living.

7.6 Anaemia Among Children

Anemia is a serious concern for young children because it can result in impaired cognitive performance, behavioral and motor development, coordination, language development, and scholastic achievement, as well as increased morbidity from infectious diseases (Seshadri, 1997). One of the most vulnerable groups is children age 6–24 months (Stoltzfus and Dreyfuss, 1998).

In Goa, haemoglobin levels were tested for 90 percent of children (see Table B.3 in Appendix B). Table 7.11 and Figure 7.3 show anaemia levels for children age 6–35 months. Overall, more than half (53 percent) of these children have some level of anaemia, including 24 percent who are mildly anaemic (10.0–10.9 g/dl), 28 percent who are moderately anaemic (7.0–9.9 g/dl), and 2 percent who are severely anaemic (less than 7.0 g/dl). The prevalence of moderate anaemia (28 percent) is much lower in Goa than in India as a whole (46 percent). Notably, a much larger proportion of children (53 percent) than women (36 percent) are anaemic in Goa, and the difference is particularly pronounced for moderate anaemia.

Several groups of children have particularly high levels of anaemia. These include children of illiterate mothers, children age 6–23 months, Hindu children, and children from households with a low standard of living. Boys are more likely than girls to be anaemic. The prevalence of anaemia is only slightly higher in rural areas than in urban areas. As expected, there is a strong positive relationship between the anaemia status of mothers and prevalence of anaemia among children. Sixty-five percent of children whose mothers are anaemic are themselves anaemic, compared with 48 percent of children whose mothers are not anaemic. Despite these differentials, anaemia among children is very widespread in Goa. With the exception of Christian children, at least one-third of children in all population groups are anaemic. Thirty percent of Christian children are anaemic. In most population groups, anaemic children are more likely to be moderately to severely anaemic than to be mildly anaemic. The

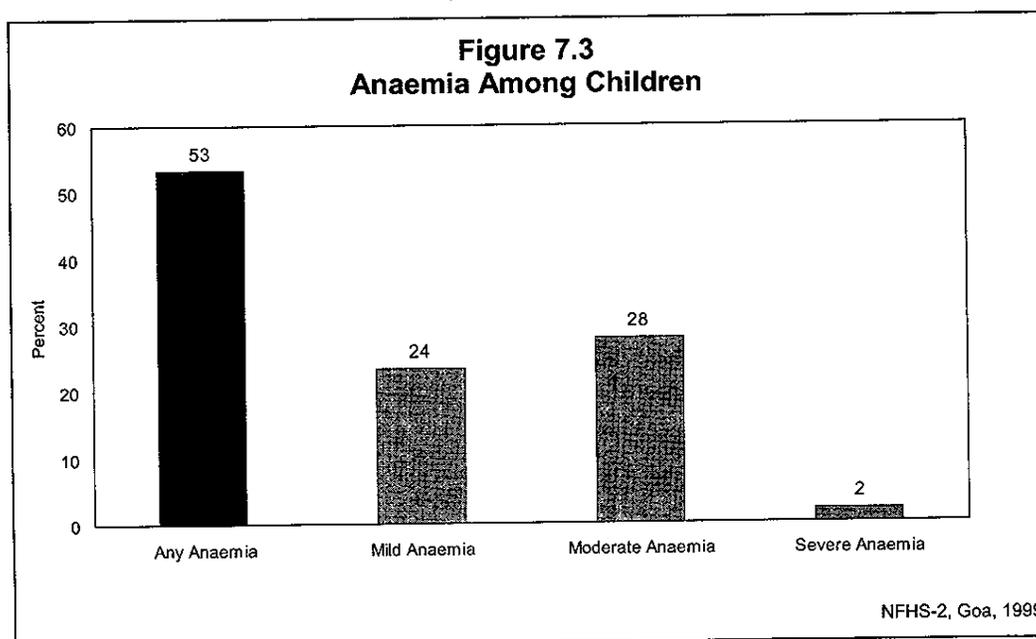


Table 7.11 Anaemia among children					
Percentage of children age 6–35 months classified as having iron-deficiency anaemia by selected background characteristics, Goa, 1999					
Background characteristic	Percentage of children with any anaemia	Percentage of children with:			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child					
6–11 months	68.0	31.2	36.8	0.0	51
12–23 months	61.0	28.0	31.3	1.7	113
24–35 months	35.0	13.3	18.3	3.5	88
Sex of child					
Male	57.4	20.7	34.6	2.1	143
Female	48.1	27.3	19.0	1.8	109
Birth order					
1	48.1	22.2	25.1	0.8	117
2–3	55.0	23.4	28.2	3.4	118
Residence					
Urban	50.7	20.5	28.0	2.2	92
Rural	54.9	25.3	27.8	1.9	161
Mother's education					
Illiterate	(72.6)	(33.2)	(37.3)	(2.1)	48
Literate, < middle school complete	54.0	19.7	32.8	1.6	64
Middle school complete	(50.8)	(17.2)	(31.4)	(2.3)	44
High school complete and above	44.7	24.2	18.4	2.1	97
Religion					
Hindu	61.0	26.8	31.8	2.4	166
Christian	29.5	14.2	15.3	0.0	69
Mother's work status					
Working in family farm/business	(54.4)	(19.6)	(34.9)	(0.0)	25
Employed by someone else	(55.9)	(18.6)	(31.0)	(6.3)	48
Not worked in past 12 months	52.9	25.2	26.6	1.1	173
Standard of living index					
Low	(66.9)	(23.5)	(40.1)	(3.4)	29
Medium	55.3	22.3	31.2	1.8	110
High	48.0	24.7	21.4	1.8	113
Mother's anaemia status					
Not anaemic	47.5	21.8	23.9	1.8	171
Mildly anaemic	65.3	32.1	31.6	1.6	62
Total	53.4	23.5	27.9	2.0	252

Note: The haemoglobin levels are not adjusted for altitude when calculating the degree of anaemia among children because all of the Primary Sampling Units in Goa are at an altitude below 1,000 metres. Total includes 17 children of birth order 4–5, 1 child of birth order 6 or more, 16 Muslim children, 1 child belonging to an 'other' religion, 7 children of self-employed mothers, and 19 children whose mothers are moderately anaemic, who are not shown separately.
() Based on 25–49 unweighted cases

exceptions are female children, children whose mothers have completed at least high school, and children who belong to households with a high standard of living. Children of anaemic mothers are about equally likely to be moderately and mildly anaemic.

7.7 Iodization of Salt

Iodine is an important micronutrient. A lack of iodine in the diet can lead to Iodine Deficiency Disorders (IDD), which, according to the World Health Organization, can cause miscarriages, brain disorders, cretinism, and retarded psychomotor development. Iodine deficiency is the single most important and preventable cause of mental retardation worldwide.

It has been estimated that 200 million people in India are exposed to the risk of iodine deficiency and 70 million suffer from goitre and other IDDs (IDD & Nutrition Cell, 1998). In addition, about one-fifth of pregnant women are at considerable risk of giving birth to children who will not reach their optimum physical and mental potential because of maternal iodine deficiency (Vir, 1995).

Iodine deficiency can be avoided by using salt that has been fortified with iodine. In 1983–84, the Government of India adopted a policy to achieve universal iodization of edible salt by 1992. In 1988, the Prevention of Food Adulteration Act was amended to fix the minimum iodine content of salt at 30 parts per million (ppm) at the manufacturing level and 15 ppm at the consumer level (Ministry of Health and Family Welfare, 1994). The Government of India advised all states and union territories to issue notifications banning the sale of edible salt that is not iodized. However, the ban on non-iodized salt was lifted in September 2000.

NFHS-2, with its representative sample of households throughout Goa, is an ideal vehicle for measuring the degree of salt iodization in the state. Iodine levels in salt can be measured in the laboratory using a standard titration test or in the field using a rapid-test kit. In NFHS-2, interviewers measured the iodine content of cooking salt in each interviewed household using a rapid-test kit. The test kit consists of ampoules of a stabilized starch solution and of a weak acid-based solution. The interviewer squeezes one drop of the starch solution on a sample of cooking salt obtained from the household respondent. If the colour changes (from light blue through dark violet), the interviewer matches the colour of the salt as closely as possible to a colour chart on the test kit and records the iodine level as 7, 15, or 30 ppm. If the initial test is negative (no change in colour), the interviewer is required to conduct a second confirmatory test on a new salt sample, using the acid-based solution in addition to the starch solution. This test is necessary because the starch solution will not show any colour change even on iodized salt if the salt is alkaline or is mixed with alkaline free-flow agents. If the colour of the salt does not change even after the confirmatory test, the salt is not iodized. Because of uncertainties and subjective judgement in the matching process, the rapid test should not be seen as giving an exact quantitative estimate of salt iodization, but it does provide useful information on whether or not salt is iodized, as well as the extent of iodization. A recent multicentric study in eight centres in India concluded that the rapid test kit can be used for semi-quantitative estimation of the iodine content of salt to monitor the quality of salt being used in a community (Kapil et al., 1999).

Table 7.12 shows the extent of salt iodization at the household level. Overall, only 42 percent of households in Goa use cooking salt that is iodized at the recommended level of 15 ppm or more, compared to 49 percent of households in India as a whole. This level is quite low in light of the government regulations on salt iodization that were in effect at the time of the survey. More than one-third of households (37 percent) use salt that is not iodized at all and 20 percent use salt that is inadequately iodized (less than 15 ppm). Differentials in salt iodization by background characteristics are pronounced. Rural households are much less likely than other

Table 7.12 Iodization of salt

Percent distribution of households by degree of iodization of salt, according to selected background characteristics, Goa, 1999

Background characteristic	Not iodized	7 ppm	15 ppm	30 ppm	Missing	Total percent	Number of households
Type of place of residence							
City	(5.9)	(5.9)	(0.0)	(85.3)	(2.9)	100.0	36
Town	30.1	13.0	3.2	52.7	1.0	100.0	630
Rural area	43.3	25.7	4.6	26.1	0.3	100.0	932
Religion of household head							
Hindu	39.5	18.3	3.7	37.6	0.9	100.0	1,007
Muslim	18.5	8.5	1.5	69.8	1.8	100.0	61
Christian	35.5	25.5	4.8	34.2	0.0	100.0	527
Caste/tribe of household head							
Scheduled caste	49.3	26.4	3.0	19.5	1.9	100.0	100
Other backward class	31.8	33.6	4.6	28.9	1.0	100.0	103
Other ¹	36.7	18.7	3.9	40.1	0.5	100.0	1,388
Standard of living index							
Low	56.8	22.1	5.7	14.6	0.8	100.0	229
Medium	42.7	24.8	3.2	28.6	0.8	100.0	653
High	26.2	15.6	4.1	53.9	0.3	100.0	708
Total	37.3	20.2	4.0	37.9	0.6	100.0	1,599

Note: Total includes 5 households headed by persons belonging to other religions, 5 households headed by persons belonging to the scheduled tribes, and 4 and 9 households with missing information on caste/tribe and the standard of living index, respectively, which are not shown separately.
ppm: Parts per million
() Based on 25-49 unweighted cases
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

households to use adequately iodized salt. Households with Muslim heads of household (71 percent) are much more likely to use iodized salt than households with either Hindu (41 percent) or Christian (39 percent) heads of household. The use of iodized salt is lower in households headed by persons from the scheduled castes than in households headed by persons from other backward classes or others. Wide differentials are also observed by household standard of living. Fifty-eight percent of households with a high standard of living use salt with 15 ppm or more of iodine, compared with only 20 percent of households with a low standard of living.

CHAPTER 8

MATERNAL AND REPRODUCTIVE HEALTH

Promotion of maternal and child health has been one of the most important objectives of the Family Welfare Programme in India. The Government of India took steps to strengthen maternal and child health services as early as the First and Second Five-Year Plans (1951–56 and 1956–61). As part of the Minimum Needs Programme initiated during the Fifth Five-Year Plan (1974–79), maternal health, child health, and nutrition services were integrated with family planning services. The primary aim at that time was to provide at least a minimum level of public health services to pregnant women, lactating mothers, and preschool children (Kanitkar, 1979).

In 1992–93, the Child Survival and Safe Motherhood Programme continued the process of integration by bringing together several key child survival interventions with safe motherhood and family planning activities (Ministry of Health and Family Welfare, 1992). In 1996, safe motherhood and child health services were incorporated into the Reproductive and Child Health Programme. This new programme seeks to integrate maternal health, child health, and fertility regulation interventions with reproductive health programmes for both women and men. With regard to maternal and reproductive health (Ministry of Health and Family Welfare, 1997; 1998b), the important elements of the programme include:

- Provision of antenatal care, including at least three antenatal care visits, iron prophylaxis for pregnant and lactating women, two doses of tetanus toxoid vaccine, detection and treatment of anaemia in mothers, and management and referral of high-risk pregnancies
- Encouragement of institutional deliveries or home deliveries assisted by trained health personnel
- Provision of postnatal care, including at least three postnatal visits
- Identification and management of reproductive tract and sexually transmitted infections

In rural areas, the government delivers reproductive and other health services through its network of Primary Health Centres (PHCs), sub-centres, and other health facilities. In addition, pregnant women and children can obtain services from private maternity homes, hospitals, private practitioners, and in some cases, nongovernmental organizations (NGOs). In urban areas, reproductive health services are available mainly through government or municipal hospitals, urban health posts, hospitals and nursing homes operated by NGOs, and private nursing and maternity homes.

In rural areas, a female paramedical worker, called an auxiliary nurse midwife (ANM), is posted at a sub-centre to provide basic maternal health, child health, and family welfare services to women and children either in their homes or in the health clinic. Her work is overseen by a lady health visitor (LHV) posted at the PHC. With regard to safe motherhood, the ANM is responsible for registering pregnant women, motivating them to obtain antenatal and postnatal care, assessing their health throughout pregnancy and in the postpartum period, and referring women with high-risk pregnancies. The ANM is assisted by a male health worker whose duties

include motivating men to participate in the family welfare programme and educating men about reproductive tract and sexually transmitted infections. The ANM and LHV also assist the medical officer at the PHC where health services, including antenatal and postnatal care, are provided (Ministry of Health and Family Welfare, 1997; 1998b).

The National Population Policy adopted by the Government of India in 2000 (Ministry of Health and Family Welfare, 2000) reiterates the government's commitment to safe motherhood programmes within the wider context of reproductive health. Among the national socio-demographic goals for 2010 specified by the policy, several goals pertain to safe motherhood, namely that 80 percent of all deliveries should take place in institutions by 2010, 100 percent of deliveries should be attended by trained personnel, and the maternal mortality ratio should be reduced to a level below 100 per 100,000 live births. Empowering women for improved health and nutrition is 1 of the 12 strategic themes identified in the policy to be pursued in stand-alone or intersectoral programmes.

An important objective of NFHS-2 is to provide information on the use of safe motherhood services provided by the public and private sectors. In addition, the survey included questions on the prevalence and treatment of reproductive health problems. The Woman's Questionnaire included relevant maternal and safe motherhood information for women age 15–49 who have given birth since 1 January 1996. The topics covered include pregnancy complications, utilization and specific components of antenatal and postnatal care, place of and assistance during delivery, delivery characteristics, and postpartum complications. Although NFHS-2 obtained information for the two most recent live births since 1 January 1996, the information presented in this chapter pertains only to the subset of those births that took place during the three years preceding the woman's interview. With regard to reproductive health, all women were asked about their experience of specific symptoms of reproductive health problems, and if problems were reported, whether and where they received treatment.

8.1 Antenatal Problems and 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, professional antenatal care (Harrison, 1990). Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counselling on preventive care, diet during pregnancy, delivery care, postnatal care, and related issues. The Reproductive and Child Health Programme recommends that as part of antenatal care, women receive two doses of tetanus toxoid vaccine, adequate amounts of iron and folic acid tablets or syrup to prevent and treat anaemia, and at least three antenatal check-ups that include blood pressure checks and other procedures to detect pregnancy complications (Ministry of Health and Family Welfare, 1997; 1998b).

NFHS-2 collected information from women on specific problems they may have had during their pregnancies and whether they received any antenatal check-ups. Women who did not receive antenatal check-ups were asked why they did not. Women who received antenatal check-ups were asked about the care provider, the timing of the first antenatal check-up, the total number of check-ups, the procedures conducted during the check-ups, and the advice given. In addition, the survey asked women whether they received tetanus toxoid injections and iron and

folic acid tablets or syrup during the pregnancy. Results from each of these questions are discussed in this chapter.

Problems During Pregnancy

For each of the two most recent births in the three years preceding the survey, the mother was asked if at any time during the pregnancy she experienced any of the following pregnancy-related problems: night blindness, blurred vision, convulsions (not from fever), swelling (of the legs, body, or face), excessive fatigue, anaemia, or vaginal bleeding. Night blindness, or difficulty seeing at dusk, is the result of chronic vitamin A deficiency and is often seen in pregnant women in areas where vitamin A deficiency is endemic. Convulsions accompanied by signs of hypertension can be symptomatic of eclampsia, a potentially fatal condition. The potential health risk posed by vaginal bleeding during pregnancy varies by when in the pregnancy the bleeding takes place. Although documenting the prevalence of the symptoms of pregnancy complications is vital for planning services to reduce maternal morbidity and mortality, the information presented here is based on women's self reports, rather than medical diagnoses, and should be interpreted with care.

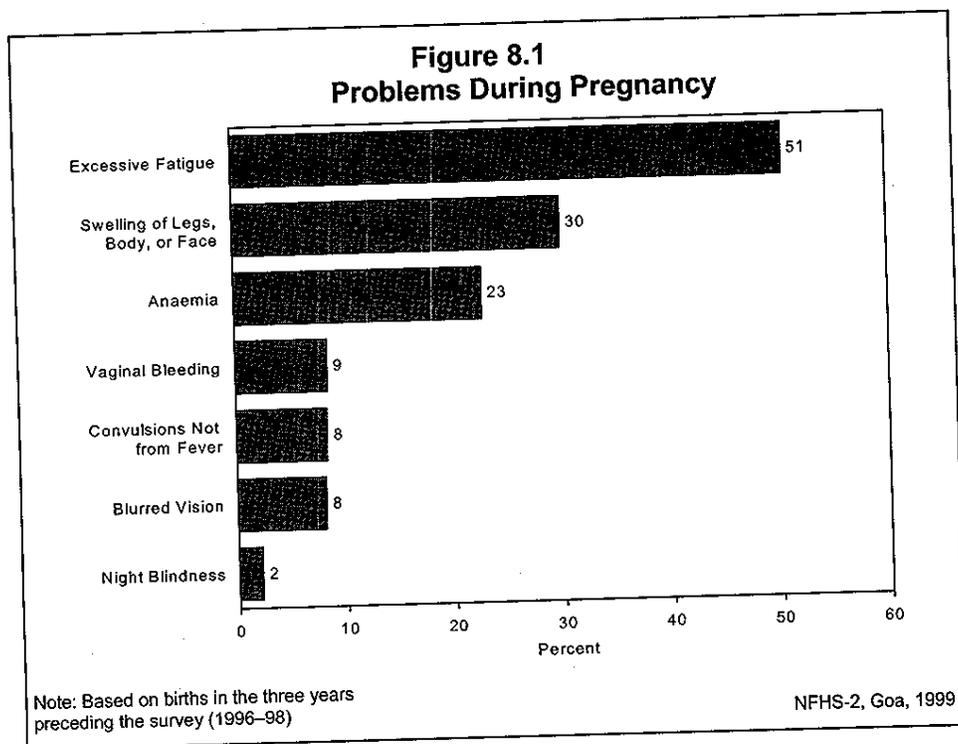
As shown in Table 8.1 and Figure 8.1, the problems most commonly reported are excessive fatigue (51 percent), swelling of the legs, body, or face (30 percent), and anaemia (23 percent). Nine percent of women reported vaginal bleeding and 8 percent each reported blurred vision and convulsions not from fever. Similar patterns are, in general, observed in urban and rural areas. With the exception of anaemia, vaginal bleeding, and swelling of the legs, body, or face all other conditions are reported slightly more often by women in rural areas than by women in urban areas.

Table 8.1 Health problems during pregnancy			
Among births during the three years preceding the survey, percentage of mothers experiencing specific health problems during pregnancy by residence, Goa, 1999			
Problem during pregnancy	Urban	Rural	Total
Night blindness	1.7	2.5	2.2
Blurred vision	6.6	9.2	8.2
Convulsions not from fever	5.1	10.5	8.4
Swelling of the legs, body, or face	30.6	29.8	30.1
Excessive fatigue	47.9	52.1	50.5
Anaemia	24.8	21.5	22.8
Vaginal bleeding	10.0	7.6	8.5
Number of births	127	201	328

Note: Table includes only the two most recent births during the three years preceding the survey.

Antenatal Check-Ups

A pregnant woman can have an antenatal check-up by visiting a doctor or another health professional in a medical facility, receiving a home visit from a health worker, or both. NFHS-2 asked women who had a birth during the three years preceding the survey whether any health worker had visited them at home to provide antenatal check-ups. The survey also asked whether



women had gone for antenatal check-ups outside the home, and if they had, what type of service provider gave them the check-ups.

Table 8.2 and Figure 8.2 show the percent distribution of births in the three years preceding the survey by the source of antenatal check-ups received during pregnancy. Women who received antenatal check-ups both at home and outside the home are categorized as having received care outside the home. If a woman received check-ups from more than one type of health provider, only the provider with the highest qualification is considered. NFHS-2 results for Goa show that virtually all mothers (99 percent) received antenatal check-ups for births during the three years preceding the survey (compared with 96 percent in NFHS-1). Ninety-eight percent received check-ups from doctors and 2 percent from other health professionals outside the home. There is not much variation in antenatal check-ups by the selected background characteristics presented in Table 8.2. Mothers of 95 percent or more births in every population group received antenatal care and for 90 percent or more births they received this care from doctors.

Number and Timing of Antenatal Check-Ups

The number of antenatal check-ups and the timing of the first check-up are important for the health of the mother and the outcome of the pregnancy. The conventional recommendation for normal pregnancies is that once pregnancy is confirmed, antenatal check-ups should be scheduled at four-week intervals during the first seven months, then every two weeks until the last month, and weekly thereafter (MacDonald and Pritchard, 1980). Four antenatal check-ups—one each during the third, sixth, eighth, and ninth months of pregnancy—have been recommended as the minimum necessary (Park and Park, 1989). The conventional recommendation is to schedule the first check-up within six weeks of a woman's last menstrual period. Studies on the timing of the initial antenatal check-up, however, show that even when

Table 8.2 Antenatal check-ups						
Percent distribution of births during the three years preceding the survey by source of antenatal check-up, according to selected background characteristics, Goa, 1999						
Background characteristic	Antenatal check-up outside home ¹ from:				Total percent	Number of births
	Doctor	Other health professional	No antenatal check-up	Missing		
Birth order						
1	99.4	0.6	0.0	0.0	100.0	151
2-3	96.5	2.7	0.0	0.7	100.0	151
Residence						
Urban	95.9	1.7	1.6	0.9	100.0	127
Rural	98.5	1.5	0.0	0.0	100.0	201
Mother's education						
Illiterate	95.1	1.6	3.3	0.0	100.0	61
Literate, < middle school complete	96.5	3.5	0.0	0.0	100.0	90
Middle school complete	98.0	2.0	0.0	0.0	100.0	51
High school complete and above	99.1	0.0	0.0	0.9	100.0	126
Religion						
Hindu	96.0	2.5	1.0	0.5	100.0	207
Christian	100.0	0.0	0.0	0.0	100.0	96
Caste/tribe						
Scheduled caste	(100.0)	(0.0)	(0.0)	(0.0)	100.0	30
Other ²	97.0	1.9	0.7	0.4	100.0	274
Standard of living index						
Low	(89.7)	(5.0)	(5.2)	(0.0)	100.0	38
Medium	97.8	2.2	0.0	0.0	100.0	141
High	99.3	0.0	0.0	0.7	100.0	148
Total	97.5	1.5	0.6	0.3	100.0	328

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 22 and 4 births of birth orders 4-5 and 6 or more, respectively, 24 births to Muslim women, 1 birth to a woman from an 'other' religion, 22 births to women belonging to other backward classes, and 2 births with missing information on caste/tribe, which are not shown separately.

() Based on 25-49 unweighted cases

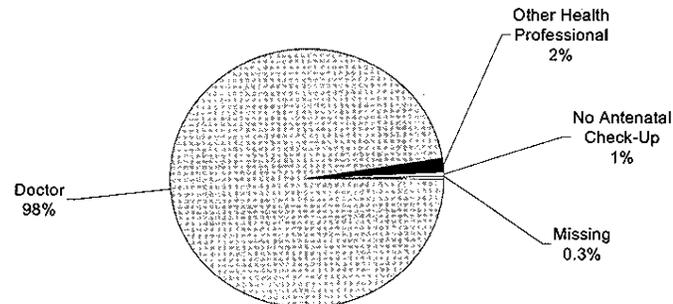
¹Includes all births for which the mothers received an antenatal check-up outside the home, even if they also received an antenatal check-up at home from a health worker. If more than one type of antenatal check-up provider was mentioned, only the provider with the highest qualification is shown.

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

antenatal care is initiated as late as the third trimester, there is a substantial reduction in perinatal mortality (Ramachandran, 1992).

In India, the Reproductive and Child Health Programme includes the provision of at least three antenatal care visits for pregnant women. Guidelines for the programme require that each pregnancy be registered in the first 12-16 weeks (Ministry of Health and Family Welfare, 1997). Accordingly, the first antenatal check-up should take place at the latest during the second trimester of pregnancy. NFHS-2 asked women who received antenatal check-ups for births in the three years preceding the survey about the total number of check-ups they received and when in their pregnancies they received their first check-up.

Figure 8.2
Source of Antenatal Check-Ups
During Pregnancy



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Goa, 1999

Table 8.3 and Figure 8.3 show the percent distribution of births in the three years preceding the survey by the number and timing of antenatal check-ups. In Goa, mothers of 96 percent of births received at least three antenatal check-ups (compared with 44 percent in India as a whole). For 9 out of 10 cases, the mother received at least four check-ups. The median number of check-ups for those who received at least one check-up was 6.5, compared with 2.8 for all of India. Notably, there is almost no difference by urban-rural residence in the proportions of mothers who received three or more antenatal check-ups during pregnancy. However, among births to mothers who received at least one antenatal check-up, the median number of check-ups is slightly higher in urban areas (7.0) than in rural areas (6.2).

Almost three-fourths (73 percent) of births that took place in the three years preceding the survey were to mothers who received their first antenatal check-up in the first trimester of pregnancy (up from 62 percent in NFHS-1), and another 22 percent were to mothers who received their first check-up in the second trimester. Although there is very little variation by residence in the number of antenatal check-ups, there are differences in terms of the timing of the first antenatal check-up. Check-ups during the first trimester were much more common in urban areas (83 percent) than in rural areas (68 percent). In the state as a whole, the first check-up was received in the third trimester for only 3 percent of births. The median timing of the first antenatal check-up was 1.9 months in urban areas, 2.6 months in rural areas, and 2.3 months in the state as a whole.

Components of Antenatal Check-Ups

The effectiveness of antenatal check-ups in ensuring safe motherhood depends in part on the tests and measurements done and the advice given during the check-ups. NFHS-2 collected information on this important aspect of antenatal care for the first time by asking mothers who received antenatal check-ups whether they received each of several components of antenatal check-ups at least once during any of their check-ups during pregnancy. For births during the

Table 8.3 Number and timing of antenatal check-ups and stage of pregnancy

Percent distribution of births during the three years preceding the survey by number of antenatal check-ups and by the stage of pregnancy at the time of the first antenatal check-up, according to residence, Goa, 1999

Number and timing of check-ups	Urban	Rural	Total
Number of antenatal check-ups			
0	1.6	0.0	0.6
1	1.6	1.0	1.2
2	0.8	2.9	2.1
3	2.5	7.7	5.7
4+	92.6	88.4	90.1
Don't know/missing	0.9	0.0	0.3
Total percent	100.0	100.0	100.0
Median number of check-ups (for those who received at least one antenatal check-up)			
	7.0	6.2	6.5
Stage of pregnancy at the time of the first antenatal check-up			
No antenatal check-up	1.6	0.0	0.6
First trimester	82.6	67.5	73.4
Second trimester	12.4	28.7	22.4
Third trimester	2.5	3.3	3.0
Don't know/missing	0.9	0.5	0.6
Total percent	100.0	100.0	100.0
Median months pregnant at first antenatal check-up (for those who received at least one antenatal check-up)			
	1.9	2.6	2.3
Number of births	127	201	328

Note: Table includes only the two most recent births during the three years preceding the survey.

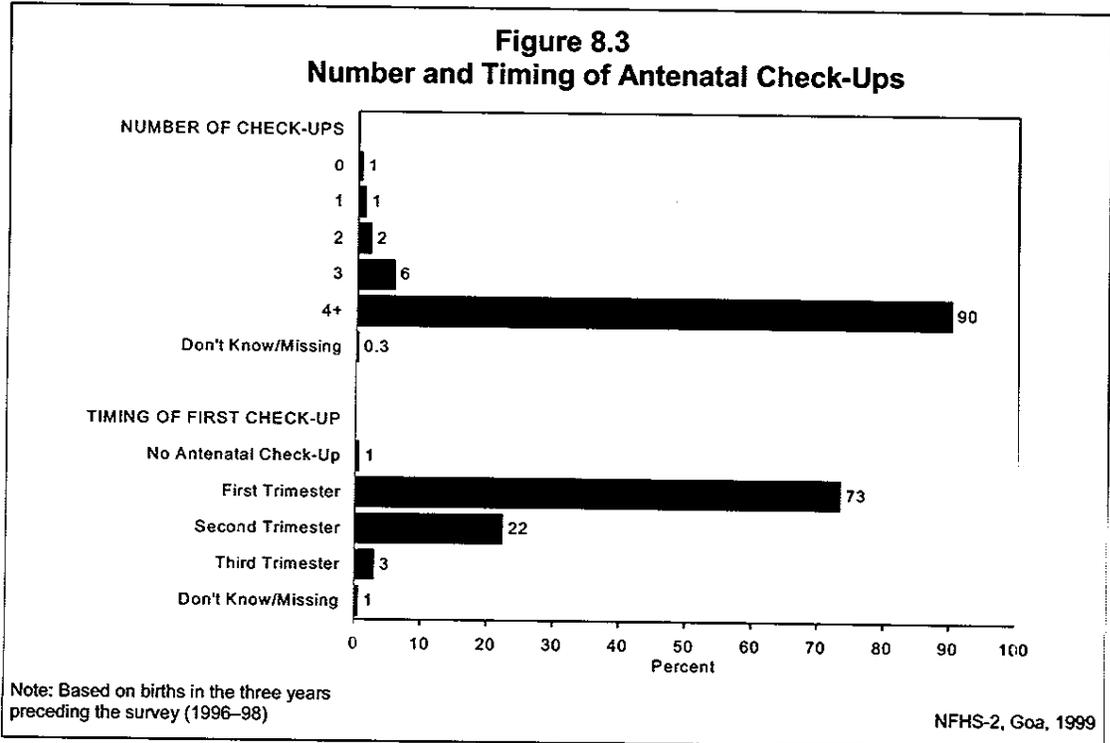


Table 8.4 Components of antenatal check-ups			
Among births during the three years preceding the survey for which an antenatal check-up was received, percentage receiving specific components of antenatal check-ups by residence, Goa, 1999			
Components of antenatal check-ups	Urban	Rural	Total
Antenatal measurements/tests			
Weight measured	87.2	85.8	86.3
Height measured	26.3	31.2	29.3
Blood pressure checked	97.5	97.6	97.5
Blood tested	96.6	93.3	94.5
Urine tested	94.8	89.9	91.8
Abdomen examined	97.5	97.6	97.5
Internal examination	78.8	76.7	77.5
X-ray	6.7	11.5	9.6
Sonography or ultrasound	68.5	57.5	61.7
Amniocentesis	1.7	0.0	0.6
Antenatal advice			
Diet	71.1	67.3	68.8
Danger signs of pregnancy	34.9	37.2	36.3
Delivery care	55.4	57.8	56.9
Newborn care	57.8	59.8	59.0
Family planning	24.7	22.6	23.4
Number of births for which the mother received at least one antenatal check-up	124	201	325
Note: Table includes only the two most recent births during the three years preceding the survey.			

three years preceding the survey for which antenatal check-ups were received, Table 8.4 presents the percentage whose mothers received specific components of check-ups by residence. Except for X-rays (which are not recommended as a standard component of antenatal care), all of the measurements and tests are part of essential obstetric care or are required for monitoring high-risk pregnancies.

Among all births for which mothers received antenatal check-ups, mothers had an abdominal examination or a blood pressure check in 98 percent of cases, their blood tested in 95 percent of cases, and their urine tested in 92 percent of cases. Eighty-six percent had their weight measured, 78 percent had an internal examination, and 62 percent had sonography or ultrasound. In almost 3 out of 10 cases, height measurement was a component of the antenatal check-up. X-ray examinations were performed for 1 out of 10 cases, whereas amniocentesis was rarely performed. In general, there are minor differences by residence in the components of antenatal check-ups. Urban-rural differences are most pronounced for height measurement, urine testing, X-ray examinations, and sonography or ultrasound examinations. Sonography or ultrasound examinations and urine tests were more often performed for women living in urban areas than those living in rural areas. In contrast, X-rays and height measurements were performed more often for women living in rural areas than for women living in urban areas.

Table 8.4 also shows the type of advice received by mothers who had antenatal check-ups for births in the three years preceding the survey. Dietary advice was given to mothers most often, being mentioned for 69 percent of the cases. For the majority of cases, mothers reported receiving advice on newborn care (59 percent) and delivery care (57 percent). Mothers were less likely to receive advice on danger signs of pregnancy (36 percent) and on family planning (23

percent). The proportions receiving advice on each of these topics do not differ substantially between urban and rural areas.

Tetanus Toxoid Vaccination

In India, an important cause of death in infancy is neonatal tetanus, which is caused by newborn infants becoming infected by tetanus organisms, usually at the umbilical stump. Neonatal tetanus is most common among children who are delivered in unhygienic environments and when unsterilized instruments are used to cut the umbilical cord. Tetanus typically develops during the first or second week of life and is fatal in 70–90 percent of cases (Foster, 1984). If neonatal tetanus infection occurs where expert medical help is not available, as is common in many rural areas in India, death is almost certain. Neonatal tetanus, however, 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 both newborn infants and their mothers. Immunity against tetanus is transferred to the foetus through the placenta when the mother is vaccinated.

In India, the tetanus toxoid 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). To step up the pace of the immunization programme, the Government of India initiated the Universal Immunization Programme (UIP) in 1985–86. An important objective of the UIP was to vaccinate all pregnant women against tetanus by 1990. In 1992–93, the UIP was integrated into the Child Survival and Safe Motherhood Programme, which in turn has been integrated into the Reproductive and Child Health Programme. According to the National Immunization Schedule, a pregnant woman should receive two doses of tetanus toxoid vaccine, the first when she is 16 weeks pregnant and the second when she is 20 weeks pregnant (Central Bureau of Health Intelligence, 1991). Re-inoculation is recommended every three years. If two doses were received less than three years earlier, a single booster injection is recommended.

For each of the two most recent births during the three years preceding the survey, NFHS-2 asked women whether they were given an injection in the arm to prevent them and their baby from getting tetanus. Women who said they had received a tetanus injection were asked how many times they had received the injection during the pregnancy.

Table 8.5 shows the distribution of births by the number of tetanus toxoid injections given to mothers, according to selected background characteristics. Tetanus toxoid coverage (two or more injections) in Goa is not yet universal, although it is far better than the national average (67 percent). For births in the three years preceding the survey, 86 percent of mothers in Goa received at least two tetanus toxoid injections during pregnancy, and another 11 percent received one injection. The proportion receiving two or more tetanus toxoid injections during the pregnancy has not changed much between NFHS-1 (84 percent) and NFHS-2 (86 percent). However, the proportion of mothers receiving no tetanus toxoid injections declined from 5 percent to 1 percent between the two surveys.

Tetanus toxoid coverage (two or more injections) does not vary much by residence or religion. There is, however, greater variation by birth order, mother's education, caste/tribe, and the household standard of living. Tetanus toxoid coverage is 91 percent for first births, compared with 83 percent for births of order 2–3. Coverage is positively related to mother's education, ranging from 77 percent for births to illiterate women to 90–91 percent for births to women who

Table 8.5 Tetanus toxoid vaccination and iron and folic acid tablets or syrup

Percent distribution of births during the three years preceding the survey by the number of tetanus toxoid injections received by the mother, percentage of births for which the mothers were given iron and folic acid (IFA) tablets or syrup during pregnancy, and among those who received iron and folic acid tablets or syrup, percentage who received enough for three months or longer and percentage who consumed all the supply given, according to selected background characteristics, Goa, 1999

Background characteristic	Number of tetanus toxoid injections				Total percent	Percentage given iron and folic acid tablets or syrup	Number of births	Percentage who received supply for 3+ months ¹	Percentage who consumed all the supply ¹	Number of births whose mothers received IFA
	None	One	Two or more	Don't know/missing						
Birth order										
1	0.7	7.3	91.4	0.7	100.0	95.4	151	91.7	84.2	144
2-3	0.0	15.5	82.5	2.0	100.0	95.1	151	92.6	83.3	144
Residence										
Urban	1.6	7.4	88.4	2.6	100.0	91.7	127	94.6	81.3	117
Rural	0.5	13.9	84.6	1.0	100.0	96.6	201	91.6	85.0	194
Mother's education										
Illiterate	3.3	17.7	77.1	1.8	100.0	88.2	61	88.9	77.4	54
Literate, < middle school complete	0.0	15.3	83.7	1.1	100.0	94.5	90	92.1	78.9	85
Middle school complete	0.0	9.3	90.7	0.0	100.0	98.1	51	84.3	84.8	50
High school complete and above	0.8	6.4	90.3	2.5	100.0	96.7	126	98.3	89.1	122
Religion										
Hindu	1.0	12.7	84.8	1.5	100.0	95.0	207	91.1	86.1	197
Christian	1.0	8.3	88.6	2.1	100.0	98.0	96	95.8	78.1	94
Caste/tribe										
Scheduled caste	(0.0)	(6.6)	(93.4)	(0.0)	100.0	(93.0)	30	(100.0)	(74.5)	28
Other ²	1.1	12.3	84.7	1.9	100.0	94.8	274	91.3	84.6	259
Standard of living index										
Low	(5.2)	(27.6)	(64.3)	(2.9)	100.0	(89.5)	38	(85.4)	(74.7)	34
Medium	0.0	12.5	86.8	0.7	100.0	95.6	141	91.4	79.1	135
High	0.7	6.2	91.1	2.1	100.0	95.2	148	95.8	90.1	141
Total	0.9	11.4	86.1	1.6	100.0	94.7	328	92.7	83.6	311

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes a small number of births of birth orders 4-5 and 6 or more, births to Muslim mothers and mothers of 'other' religions, births to mothers belonging to other backward classes, and births with missing information on caste/tribe, which are not shown separately.
 () Based on 25-49 unweighted cases
¹Among births whose mothers received iron and folic acid tablets or syrup
²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

have completed at least a middle school education. Tetanus toxoid coverage also increases sharply with increasing household standard of living. These results suggest that although coverage of tetanus toxoid vaccinations is quite high in Goa, the coverage for socioeconomically disadvantaged women lags behind the level for the state as a whole.

Iron and Folic Acid Supplementation

Nutritional deficiencies in women are often exacerbated during pregnancy because of the additional nutrient requirements of foetal growth. Iron deficiency anaemia is the most common micronutrient deficiency in the world. It is a major threat to safe motherhood and to the health and survival of infants because it contributes to low birth weight, lowered resistance to infection, impaired cognitive development, and decreased work capacity. Studies in different parts of India

have estimated that the proportion of births with a low birth weight (less than 2,500 grams) ranges from 15 percent in Trivandrum to 46 percent in Baroda (Nutrition Foundation of India, 1993). Overall, about one-third of newborn children in India are of low birth weight, indicating that many pregnant women in India suffer from nutritional deficiencies. Improvement in a woman's nutritional status, coupled with proper health care during pregnancy, can substantially increase her child's birth weight (Ramachandran, 1992). To this end, the provision of iron and folic acid (IFA) tablets to pregnant women to prevent nutritional anaemia forms an integral part of the safe-motherhood services offered as part of the Reproductive and Child Health Programme. The programme recommendation is that pregnant women consume 100 tablets of iron and folic acid during pregnancy.

For each birth during the three years preceding the survey, NFHS-2 collected information on whether the mother received IFA tablets or syrup during pregnancy. IFA syrup was included in the question along with IFA tablets since IFA syrup is sometimes prescribed in the private sector and may even be prescribed in the public sector when and where tablets are not available. Table 8.5 shows that mothers in Goa received IFA supplements for 95 percent of births. This level is not only much higher than the national average of 58 percent, but is also higher than for any other state except for Kerala. In Goa, socioeconomic differentials in IFA coverage are not as marked as differentials in tetanus toxoid coverage. Nevertheless, IFA coverage is lower for births to illiterate women and women from households with a low standard of living than other women. IFA coverage is also somewhat lower in urban areas (92 percent) than in rural areas (97 percent).

Not all mothers who received IFA received the recommended three-month supply of tablets or syrup, although the proportion is still extremely high. Among births to women who received IFA during pregnancy, 93 percent received at least a three-month supply, and 84 percent consumed all the supplements that were given to them. There are minor differences by birth order and residence in the proportion that received at least a three-month supply and the proportion that consumed all the supply received. Differences by mother's education and the household standard of living are much more striking. Both the percentage receiving a three-month supply and the percentage consuming all the supply received increases with mother's education and the household standard of living. Interestingly, although the percentage who received a three-month supply is slightly higher in urban areas (95 percent) than in rural areas (92 percent), the percentage who consumed all the supply is slightly higher in rural areas.

8.2 Delivery Care

Place of Delivery

Another important thrust of the Reproductive and Child Health Programme is to encourage deliveries under proper hygienic conditions under the supervision of trained health professionals. For each birth during the three years preceding the survey, NFHS-2 asked the mother where she gave birth and who assisted during the delivery. Table 8.6 and Figure 8.4 show that 91 percent of births in Goa took place in health facilities (up from 88 percent in NFHS-1), 5 percent took place in the women's own homes, 4 percent took place in their parents' homes, and less than 1 percent took place in other places. Goa is surpassed only by one other state, Kerala, in terms of the rate of institutional deliveries. More than 5 out of 10 births in Goa took place in private health facilities, and 4 out of 10 took place in public institutions (such as government-operated district, *taluk*, town, or municipal hospitals and Primary Health Centres). The NFHS-2 overall estimate of

Table 8.6 Place of delivery							
Percent distribution of births during the three years preceding the survey by place of delivery, according to selected background characteristics, Goa, 1999							
Background characteristic	Place of delivery					Total percent	Number of births
	Health facility/institution		Home				
	Public	Private	Own home	Parents' home	Other ¹		
Birth order							
1	36.1	59.4	3.3	1.3	0.0	100.0	151
2-3	39.8	50.2	3.2	6.1	0.7	100.0	151
Residence							
Urban	32.2	58.7	1.6	5.8	1.7	100.0	127
Rural	44.0	46.7	6.3	2.9	0.0	100.0	201
Mother's education							
Illiterate	54.2	17.8	14.5	13.4	0.0	100.0	61
Literate, < middle school complete	56.4	32.5	5.5	4.5	1.1	100.0	90
Middle school complete	48.3	47.9	1.9	1.9	0.0	100.0	51
High school complete and above	16.6	82.5	0.0	0.0	0.9	100.0	126
Religion							
Hindu	46.0	44.8	5.2	3.5	0.5	100.0	207
Christian	24.9	73.0	2.1	0.0	0.0	100.0	96
Caste/tribe							
Scheduled caste	(40.6)	(42.5)	(3.2)	(13.6)	(0.0)	100.0	30
Other ²	39.6	52.0	4.3	3.3	0.8	100.0	274
Standard of living index							
Low	(66.7)	(15.5)	(12.8)	(5.1)	(0.0)	100.0	38
Medium	56.0	29.8	7.0	7.2	0.0	100.0	141
High	16.5	81.3	0.0	0.7	1.4	100.0	148
Total	39.5	51.4	4.5	4.0	0.7	100.0	328

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 22 and 4 births of birth orders 4-5 and 6 or more, respectively, 24 births to Muslim women, 1 birth to a woman from an 'other' religion, 22 births to women belonging to other backward classes, and 2 births with missing information on caste/tribe, which are not shown separately.

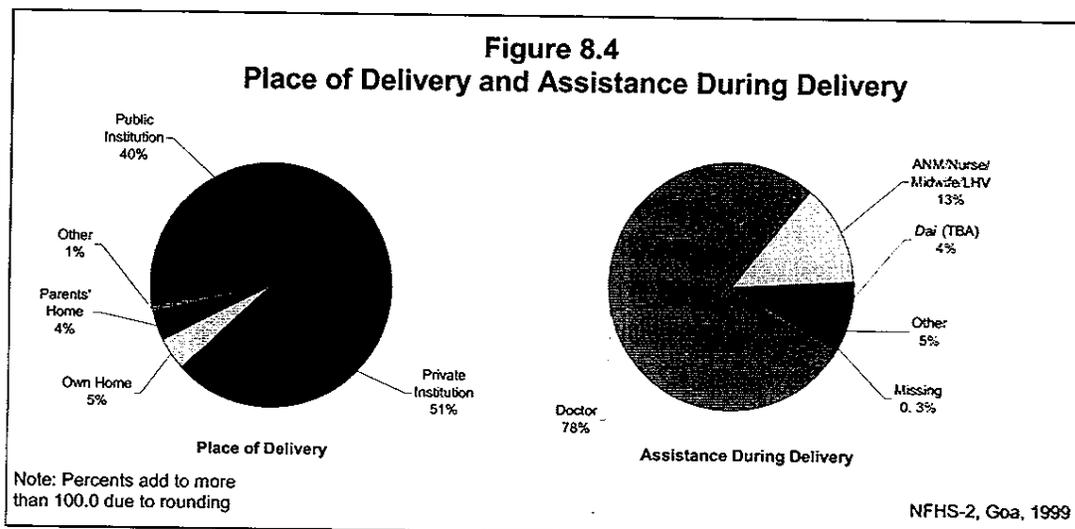
() Based on 25-49 unweighted cases

¹Includes missing

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

91 percent of births in health facilities is almost the same as the estimate of 94 percent from the Rapid Household Survey under the RCH Programme (International Institute for Population Sciences, 2001). Both estimates are much higher than the 1997 SRS estimate of 84 percent.

In NFHS-2, the proportion of births that took place in health facilities is the same (91 percent) in both urban and rural areas. However, institutional deliveries in rural areas are more likely to take place in public-sector health facilities than institutional deliveries in urban areas. Institutional deliveries are more common for first births (96 percent) than for higher-order births (90 percent). Institutional deliveries, particularly those in private health facilities, increase sharply with mother's education and the household standard of living. The proportion of institutional deliveries is higher for Christians (98 percent) than for Hindus (91 percent).



With regard to deliveries at home, the proportion of deliveries in a woman's own home does not differ by birth order; however, the proportion of deliveries in her parents' home increases with birth order. Mother's education and the household standard of living are both strongly negatively associated with delivery in women's own homes.

Assistance During Delivery

Table 8.7 and Figure 8.4 provide information on assistance during delivery by selected background characteristics. If more than one type of attendant assisted at delivery, only the most qualified attendant is shown. Ninety-one percent of births in the three years preceding the survey were attended by a health professional, including 78 percent by a doctor and 13 percent by an ANM, nurse, midwife, or LHV. Goa's rate of deliveries assisted by a health professional is the second highest in all of India. Comparable estimates at the national level are 42 percent by any health professional, 30 percent by a doctor, and 11 percent by an ANM, nurse, midwife, or LHV. In Goa, only 4 percent of births were attended by a traditional birth attendant, and 5 percent were attended only by friends, relatives, or other persons. According to the two NFHS surveys, the proportion of deliveries attended by a health professional increased from 89 percent in NFHS-1 to 91 percent in NFHS-2.

Table 8.7 examines assistance during delivery according to selected background characteristics. Differentials in delivery attendance are most pronounced by mother's education and the household standard of living. Seventy-four percent of births to illiterate women were delivered by a health professional, compared with 96–99 percent of births to women who completed at least middle school. The proportion of births delivered by doctors increases from 59 percent for illiterate mothers to 96 percent for mothers who have completed at least high school. Differences by the household standard of living are most pronounced between births to women with a low or medium standard of living and births to women with a high standard living. Doctor-assisted deliveries are more common among Christians (88 percent) than among Hindus (76 percent), although more than 9 out of 10 deliveries for women of both religions were attended by a health professional. Almost all deliveries (98 percent) that took place in private health facilities were attended by a doctor, compared with only 69 percent of those that took place in public health facilities.

Table 8.7 Assistance during delivery

Percent distribution of births during the three years preceding the survey by attendant assisting during delivery, according to selected background characteristics, Goa, 1999

Background characteristic	Attendant assisting during delivery ¹					Total percent	Number of births
	Doctor	ANM/nurse/ midwife/ LHV	Dai (TBA)	Other	Missing		
Birth order							
1	83.6	11.9	1.9	2.6	0.0	100.0	151
2-3	77.6	13.0	4.0	4.6	0.7	100.0	151
Residence							
Urban	77.8	13.1	3.3	4.9	0.9	100.0	127
Rural	77.3	13.4	4.4	4.9	0.0	100.0	201
Mother's education							
Illiterate	58.5	15.2	6.6	19.7	0.0	100.0	61
Literate, < middle school complete	64.1	23.7	7.8	4.4	0.0	100.0	90
Middle school complete	78.0	18.2	3.8	0.0	0.0	100.0	51
High school complete and above	96.1	3.0	0.0	0.0	0.9	100.0	126
Religion							
Hindu	75.8	15.0	3.4	5.3	0.5	100.0	207
Christian	87.9	10.0	0.0	2.1	0.0	100.0	96
Caste/tribe							
Scheduled caste	(62.9)	(20.3)	(6.6)	(10.2)	(0.0)	100.0	30
Other ²	78.2	13.3	3.6	4.4	0.4	100.0	274
Standard of living index							
Low	(61.5)	(20.6)	(5.0)	(12.8)	(0.0)	100.0	38
Medium	66.1	20.4	6.3	7.1	0.0	100.0	141
High	92.6	4.6	1.4	0.7	0.7	100.0	148
Place of delivery							
Public health facility	68.5	30.7	0.0	0.8	0.0	100.0	129
Private health facility	97.7	2.3	0.0	0.0	0.0	100.0	169
Total	77.5	13.3	3.9	4.9	0.3	100.0	328

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 22 and 4 births of birth orders 4-5 and 6 or more, respectively, 24 births to Muslim women, 1 birth to a woman from an 'other' religion, 22 births to women belonging to other backward classes, 15, 13, and 2 births delivered in own home, parents' home, and 'other' places, respectively, and 2 births with missing information on caste/tribe, which are not shown separately.

ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant

() Based on 25-49 unweighted cases

¹If the respondent mentioned more than one attendant, only the most qualified attendant is shown.

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Delivery Characteristics

Table 8.8 shows the percentage of births during the three years preceding the survey that were delivered by caesarian section and the percent distribution of births by birth weight and the mother's estimate of the baby's size at birth. Based on mothers' reports, 20 percent of children born in Goa in the past three years were delivered by caesarian section (compared with 7 percent for India as a whole). The proportion of deliveries by caesarian section was much higher in urban areas (26 percent) than in rural areas (17 percent). The rate of caesarian section has increased from 14 percent of births in NFHS-1 to 20 percent in NFHS-2.

Table 8.8 Characteristics of births			
Percentage of births during the three years preceding the survey that were delivered by caesarian section and percent distribution of births by birth weight and by the mother's estimate of the baby's size at birth, according to residence, Goa, 1999			
Characteristic of births	Urban	Rural	Total
Percentage delivered by caesarian section	25.8	16.6	20.2
Birth weight			
< 2.5 kg	14.1	20.8	18.2
2.5 kg or more	63.0	48.0	53.8
Don't know/missing	11.5	17.6	15.2
Not weighed	11.4	13.6	12.7
Total percent	100.0	100.0	100.0
Size at birth			
Large	11.8	8.1	9.6
Average	61.1	57.1	58.7
Small	20.5	20.2	20.3
Very small	5.8	14.6	11.2
Don't know/missing	0.9	0.0	0.3
Total percent	100.0	100.0	100.0
Number of births	127	201	328

Note: Table includes only the two most recent births during the three years preceding the survey.

Babies with low birth weights face substantially higher risks of dying than do babies with normal birth weights. For each birth that took place in the three years preceding the survey, respondents were asked the baby's birth weight. Even though the majority of deliveries take place in health facilities, some babies delivered in institutions might not be weighed. It is also possible that the mother might not remember her child's birth weight even if the baby was weighed. The survey asked all mothers to estimate the size of each baby at birth (large, average, small, or very small).

In Goa, 13 percent of babies born in the three years preceding the survey were not weighed at birth. The proportion not weighed at birth is not very different between urban areas (11 percent) and rural areas (14 percent). The mother did not remember the child's birth weight (or the information was missing) for 15 percent of the cases. In light of the sizable proportion of cases with no birth weight information (28 percent), the resulting sample of births for which weights are reported is subject to a potential selection bias, so the results should be interpreted with caution. Among children for whom birth weights are reported, 25 percent weighed less than 2.5 kilograms. This proportion is much lower in urban areas (18 percent) than in rural areas (30 percent).

According to mothers' estimates, 10 percent of births in the three years preceding the survey were large, 59 percent were of average size, 20 percent were small, and 11 percent were very small. The proportion of babies reported as 'very small' was more than twice as high in rural areas (15 percent) as in urban areas (6 percent).

Table 8.9 Symptoms of postpartum complications			
Among births during the three years preceding the survey, percentage for which the mother had massive vaginal bleeding or very high fever within two months after the delivery by selected background characteristics, Goa, 1999			
Background characteristic	Massive vaginal bleeding	Very high fever	Number of births
Residence			
Urban	17.9	9.4	124
Rural	18.5	7.0	194
Birth order			
1	21.2	6.1	147
2–3	16.4	8.5	146
Place of delivery			
Public health facility	16.7	7.2	125
Private health facility	21.3	7.3	165
Assistance during delivery			
Doctor	20.5	6.9	250
ANM/nurse/midwife/LHV	(9.6)	(9.5)	41
Total	18.2	7.9	318
<p>Note: Table includes only the two most recent births during the 2–35 months preceding the survey. Table includes 22 and 4 births of birth orders 4–5 and 6 or more, respectively, 14, 12, and 2 births delivered in own home, parents' home, and 'other' places, respectively, and 12 and 16 births assisted by <i>dais</i> (traditional birth attendants), and 'other' persons, respectively, which are not shown separately.</p> <p>ANM: Auxiliary nurse midwife; LHV: Lady health visitor () Based on 25–49 unweighted cases</p>			

8.3 Postnatal Care

The health of a mother and her newborn child depends not only on the health care she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery. Postpartum check-ups within two months after delivery are particularly important for births that take place in noninstitutional settings. Recognizing the importance of postpartum check-ups, the Reproductive and Child Health Programme recommends three postpartum visits (Ministry of Health and Family Welfare, 1998b). NFHS-2 was designed to collect information on postpartum check-ups for noninstitutional births only. In light of the fact that only 9 percent of deliveries in Goa take place outside of health facilities, the total number of noninstitutional deliveries in the sample is too small for meaningful analysis. Nonetheless, the data suggest that few noninstitutional births (7 percent) receive a postpartum check-up within two days, when such a check-up is most critical.

Postpartum Complications

Every woman who had a birth in the three years preceding the survey was asked if she had massive vaginal bleeding or a very high fever—both symptoms of possible postpartum complications—at any time during the two months after delivery. For 18 percent of births, the mother reported massive vaginal bleeding following the birth, and for 8 percent of births, the mother reported a very high fever (Table 8.9). There is not much difference in the proportion reporting either of these two conditions by urban-rural residence. Reports of fever also do not vary greatly by any of the other background characteristics. However, massive vaginal bleeding

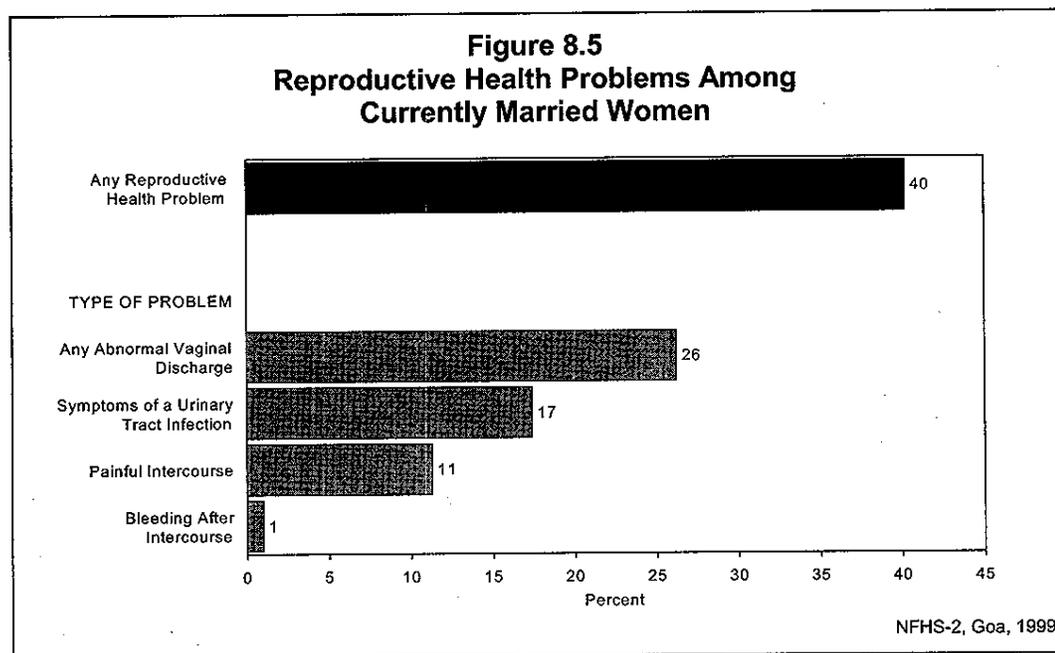
is more common for first-order births than for births of order 2–3. It is also more common for births that were delivered in private health facilities than for births that were delivered in public health facilities. As mentioned earlier, the vast majority of deliveries were attended by doctors. Despite the small number of deliveries attended by other health professionals, it appears that massive vaginal bleeding is much more prevalent for deliveries assisted by a doctor than for deliveries assisted by another health professional. This may be a reflection of the fact that a doctor is more likely to be summoned when a complication occurs.

8.4 Reproductive Health Problems

Absence of reproductive tract infections (RTIs) is essential for the reproductive health of both women and men and is critical for their ability to meet their reproductive goals. There are three different types of reproductive tract infections for women: endogenous infections that are caused by the multiplying of organisms normally present in the vagina; iatrogenic infections caused by the introduction of bacteria or other infection-causing micro-organisms through medical procedures such as an IUD insertion; and sexually transmitted infections (STIs). Endogenous infections and several of the iatrogenic and sexually transmitted infections are often easily cured if detected early and given proper treatment. If left untreated, RTIs can cause pregnancy-related complications, congenital infections, infertility, and chronic pain. They are also a risk factor for pelvic inflammatory disease and HIV (Population Council, 1999).

A number of studies (Bang et al., 1989; Bang and Bang, 1991; Pachauri and Gittelsohn, 1994; Jeejeebhoy and Rama Rao, 1992) have shown that many Indian women suffer from RTIs. Several researchers have also shown that women in India often bear the symptoms of RTIs silently without seeking health care. RTIs and their sequelae are an important component of programmes for family planning, child survival, women's health, safe motherhood, and HIV prevention. RTIs have profound implications for the success of each of these initiatives, and conversely, these initiatives provide a critical opportunity for the prevention and control of RTIs (Germain et al., 1992). Studies have demonstrated that RTIs are an important reason for the poor acceptance and low continuation rates of contraceptive methods such as the IUD. Bhatia and Cleland (1995) found a higher incidence of gynaecological symptoms among women who had undergone a tubectomy than among other women. The Government of India recognized the importance of RTIs and STIs in undermining the health and welfare of individuals and couples in a policy statement on the Reproductive and Child Health Programme, which states that couples should be 'able to have sexual relations free of fear of pregnancy and contracting diseases' (Ministry of Health and Family Welfare, 1997:2). The Reproductive and Child Health Programme includes the following interventions: establishment of RTI/STI clinics at district hospitals (where not already available), provision of technicians for laboratory diagnosis of RTIs/STIs, and in selected districts, screening and treatment of RTIs/STIs (Ministry of Health and Family Welfare, 1997).

NFHS-2 collected information from women on some common symptoms of RTIs, namely problems with abnormal vaginal discharge or urinary tract infections in the three months preceding the survey, intercourse-related pain (often), and bleeding after intercourse (ever). Specifically, the prevalence of reproductive health problems among ever-married women is estimated from women's self-reported experience with each of the following problems: vaginal discharge accompanied by itching, by irritation around the vaginal area, by bad odour, by severe



lower abdominal pain, by fever, or by any other problem; pain or burning while urinating or frequent or difficult urination; and (among currently married women only) painful intercourse or bleeding after intercourse. Women who experience one or more of these reproductive health problems could either have or be at risk of getting an RTI/STI. However, since information on health problems is based on self reports rather than clinical tests or examinations, the results should be interpreted with caution.

Table 8.10 shows the prevalence of different reproductive health problems among women in Goa by background characteristics. Twenty-six percent of ever-married women reported at least one type of problem related to vaginal discharge, and 17 percent reported symptoms of a urinary tract infection. Overall, 35 percent of women reported either problems with vaginal discharge or symptoms of a urinary tract infection. Among problems related to vaginal discharge, itching or irritation was mentioned most frequently (15 percent), followed by severe lower abdominal pain (14 percent) and bad odour (9 percent).

Table 8.10 and Figure 8.5 show that 40 percent of currently married women report one or more reproductive health problems (similar to the national average of 39 percent). Eleven percent report painful intercourse and only 1 percent report bleeding after intercourse.

Among ever-married women, the percentage reporting any abnormal vaginal discharge is higher for women age 30–34 than for other women. Notably, among currently married women, the percentage reporting any reproductive health problem is higher for women age 20–24 than for older women. Reproductive health problems are also more common among currently married women in rural areas (44 percent) than in urban areas (36 percent). The percentage of currently married women reporting reproductive health problems does not vary in a consistent way by education, although the percentage is higher for literate women with low to moderate levels of education than for illiterate women or women who have completed at least high school. Muslim women are more likely to report any reproductive health problem than Hindu or Christian women. By caste/tribe, the prevalence of reproductive health problems is highest among women

Table 8.10 Symptoms of reproductive health problems

Percentage of ever-married women reporting abnormal vaginal discharge or symptoms of a urinary tract infection during the three months preceding the survey and percentage of currently married women reporting painful intercourse or bleeding after intercourse by selected background characteristics, Goa, 1999

Background characteristic	Ever-married women							Currently married women					Number of currently married women
	Any abnormal vaginal discharge	Vaginal discharge accompanied by:					Symptoms of a urinary tract infection ²	Any abnormal vaginal discharge or symptoms of a urinary tract infection ²	Number of ever-married women	Painful intercourse (often)	Bleeding after intercourse (ever) ¹	Any reproductive health problem	
		Itching or irritation	Bad odour	Severe lower abdominal pain ¹	Fever	Other problem							
Age													
20-24	26.5	13.8	14.7	10.2	0.9	10.1	23.6	40.8	106	15.1	0.9	48.2	104
25-29	24.6	14.8	8.4	13.1	1.2	4.8	17.4	35.6	235	13.6	0.8	42.2	231
30-34	32.6	18.9	9.6	20.6	3.0	11.0	18.4	39.7	240	15.6	1.3	44.8	233
35-39	27.8	15.9	8.4	14.4	3.2	8.0	11.9	31.3	250	13.0	1.2	37.5	234
40-44	19.2	9.7	6.1	10.9	1.5	3.5	9.2	24.9	198	4.0	0.5	28.7	177
45-49	21.2	11.1	6.6	11.9	0.5	3.6	23.9	35.4	197	5.2	0.6	38.9	173
Residence													
Urban	21.1	11.6	7.5	10.5	1.4	6.7	16.4	30.0	519	9.8	0.9	35.5	484
Rural	29.0	16.6	9.4	16.6	2.1	6.8	17.5	37.8	727	12.4	1.1	43.5	687
Education													
Illiterate	21.0	10.5	5.6	12.0	2.5	6.6	19.9	31.0	357	8.7	0.6	34.4	310
Literate, < middle school complete	29.5	17.4	10.2	16.0	2.1	7.6	18.9	38.9	339	9.6	0.3	42.7	321
Middle school complete	32.2	21.0	12.7	18.6	1.2	9.7	22.4	45.1	156	17.5	1.4	53.9	151
High school complete and above	24.2	12.9	8.4	12.4	1.2	4.9	10.8	29.9	395	12.5	1.8	37.3	389
Religion													
Hindu	25.0	14.7	8.5	12.9	1.8	6.6	17.6	34.6	827	9.3	0.9	39.2	776
Muslim	28.6	14.0	7.1	21.5	0.0	10.9	14.7	39.8	55	17.7	0.0	53.5	50
Christian	27.2	14.1	9.3	15.8	2.2	6.6	16.3	33.9	361	15.1	1.4	40.8	341
Caste/tribe													
Scheduled caste	21.4	10.8	7.6	13.0	2.2	8.7	27.1	37.8	93	10.5	1.3	39.4	83
Other backward class	27.2	14.2	7.0	10.9	0.0	4.7	15.7	32.2	79	3.8	2.5	35.2	72
Other ³	26.0	14.8	8.9	14.4	2.0	6.8	16.3	34.4	1,070	11.9	0.9	40.6	1,012

Contd...

Table 8.10 Symptoms of reproductive health problems (contd.)

Percentage of ever-married women reporting abnormal vaginal discharge or symptoms of a urinary tract infection during the three months preceding the survey and percentage of currently married women reporting painful intercourse or bleeding after intercourse by selected background characteristics, Goa, 1999

Background characteristic	Ever-married women								Number of ever-married women	Currently married women			Number of currently married women
	Vaginal discharge accompanied by:						Symptoms of a urinary tract infection ²	Any abnormal vaginal discharge or symptoms of a urinary tract infection ²		Painful intercourse (often)	Bleeding after intercourse (ever) ¹	Any reproductive health problem	
	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain ¹	Fever	Other problem							
Standard of living index													
Low	21.6	13.3	8.5	12.9	2.9	6.8	21.3	33.9	177	7.9	0.7	40.7	152
Medium	26.9	15.2	8.3	13.6	2.2	8.4	18.9	36.7	495	11.9	0.6	41.4	457
High	26.2	14.4	9.0	14.9	1.2	5.3	14.2	33.2	568	11.6	1.4	39.1	556
Work status													
Working in family farm/business	22.7	11.7	7.8	13.7	0.7	5.4	18.0	32.1	150	10.3	1.4	36.0	145
Employed by someone else	27.4	17.0	8.6	13.9	3.1	6.5	17.9	35.3	350	9.0	1.3	41.3	303
Self-employed	22.7	11.8	7.6	10.9	2.2	9.7	15.6	32.7	91	23.9	2.4	42.9	84
Not worked in past 12 months	25.8	14.2	9.0	14.5	1.4	6.7	16.6	34.9	655	11.0	0.6	40.2	639
Number of children ever born													
0	22.9	13.7	11.1	10.4	1.9	6.4	23.2	36.1	151	21.3	2.0	47.4	145
1	26.7	14.0	9.1	14.1	1.4	6.1	13.7	34.5	282	15.8	1.8	43.8	274
2-3	27.8	16.3	7.6	15.8	1.5	6.5	15.0	34.4	550	7.8	0.5	37.4	519
4-5	21.5	10.2	8.1	12.1	2.9	9.0	23.0	34.7	213	8.7	0.5	36.7	195
6+	23.6	17.5	12.0	13.6	3.8	3.8	14.1	32.0	51	(2.8)(0.0)	(41.7)	39	
All ever-married women	25.7	14.5	8.6	14.1	1.8	6.7	17.0	34.6	1,246	NA	NA	NA	NA
All currently married women	26.2	14.8	9.0	14.3	1.9	6.8	17.4	35.3	1,171	11.3	1.0	40.2	1,171

Note: Total includes a small number of women age 15-19, women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe, the standard of living index, and work status, who are not shown separately.

NA: Not applicable

() Based on 25-49 unweighted cases

¹Not related to menstruation

²Includes pain or burning while urinating or more frequent or difficult urination

³Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Table 8.11 Treatment of reproductive health problems			
Among women with a reproductive health problem, percentage who sought advice or treatment from specific providers by residence, Goa, 1999			
Provider	Urban	Rural	Total
Public medical sector	7.7	7.3	7.4
Government doctor	7.7	6.3	6.8
Public health nurse	0.0	0.3	0.2
Other public medical sector	0.0	0.6	0.4
Private medical sector	39.0	33.5	35.5
Private doctor	39.0	32.5	34.9
Private nurse	0.0	0.9	0.6
Vaidya/hakim/homeopath	0.0	0.6	0.4
Other	1.2	1.6	1.5
None	52.2	59.6	56.9
Number of women	178	307	485

Note: Table includes currently married women who report abnormal vaginal discharge, symptoms of a urinary tract infection, painful intercourse, or bleeding after intercourse and women who are ever married but not currently married who report abnormal vaginal discharge or symptoms of a urinary tract infection. Percentages may add to more than 100.0 because women could report treatment from multiple providers.

who do not belong to a scheduled caste, a scheduled tribe, or another backward class (41 percent) and lowest among women from other backward classes (35 percent). Reproductive health problems do not vary much by the standard of living index. Women who work on a family farm or in a family business are less likely than other women to report a reproductive health problem. Women who have never given birth are more likely than other women to report reproductive health problems.

Among women who report any reproductive health problems, 57 percent have not seen anyone for advice or treatment (Table 8.11). Overall, 82 percent of women who sought advice or treatment were seen by someone from the private medical sector. Among women who sought advice or treatment, 81 percent saw a private doctor and 16 percent saw a government doctor.

NFHS-2 results in Goa show that although two in every five currently married women report at least one reproductive health problem that could be symptomatic of a more serious reproductive tract infection, more than half of them bear the problems silently without seeking advice or treatment. These findings highlight the need to educate women regarding the symptoms and consequences of reproductive health problems and the urgent need to expand counseling and reproductive health services in both rural and urban areas.

CHAPTER 9

QUALITY OF CARE

The historic International Conference on Population and Development in Cairo in 1994 brought about a paradigm shift in population-related policies. The conference helped focus the attention of governments on making programmes more client-oriented with an emphasis on the quality of services and care. In line with the conference recommendations, the Government of India acknowledged the need to abandon the use of targets for monitoring its family welfare programme. It recognized that the top-down target approach does not reflect user needs and preferences and de-emphasizes the quality of care provided (Ministry of Health and Family Welfare, 1998b). Recent research on the different aspects of service delivery, especially at the grass-roots level, including programme coverage, client-provider interactions, and informed choice, also endorses the need to take a different approach to meeting the reproductive and health needs of the Indian population (Koenig and Khan, 1999). This research suggests that inadequate attention to the quality of care has contributed to the inability of the government's family welfare programme to meet its goals.

In 1996, the existing family welfare programme was transformed into the new Reproductive and Child Health (RCH) Programme. This new programme integrates all family welfare and women and child health services with the explicit objective of providing beneficiaries with 'need based, client centred, demand driven, high quality integrated RCH services' (Ministry of Health and Family Welfare, 1998b:6). The strategy for the RCH Programme shifts the policy emphasis from achieving demographic targets to meeting the reproductive needs of individual clients (Ministry of Health and Family Welfare, 1996).

NFHS-2 included several questions on the quality of care of health and family welfare services provided in the public sector and the private sector. In this chapter, sources of health care for households are described first. The chapter then examines different aspects of home visits by health and family planning workers and visits by respondents to health facilities, including frequency of visits, source of care, and quality of care. Finally, information is presented on the quality of care with respect to family planning services.

9.1 Source of Health Care for Households

To examine the role of different health providers in meeting the health-care needs of households, the NFHS-2 Household Questionnaire included the question, 'When members of your household get sick, where do they generally go for treatment?' Table 9.1 shows the main source of health care according to residence and the standard of living index. More than three-fourths (77 percent) of households normally use the private medical sector when a household member gets sick. Only 22 percent normally use the public medical sector. Overall, there are four types of health providers that are generally used as a source of treatment by 95 percent of households: private doctors (66 percent), private hospitals or clinics (10 percent), government/municipal hospitals (10 percent), and CHCs/rural hospitals/PHCs (9 percent). The pattern of service utilization differs little by urban-rural residence, but does vary substantially by the household standard of living. Private doctors are the most popular source of health care, irrespective of the household standard of living, but a much higher proportion of households with a high standard of

Table 9.1 Source of health care						
Percent distribution of households by main source of health care when household members get sick, according to residence and the standard of living index, Goa, 1999						
Source	Residence		Standard of living index			Total
	Urban	Rural	Low	Medium	High	
Public medical sector	19.2	24.3	41.5	28.9	9.6	22.2
Government/municipal hospital	10.1	9.1	17.5	12.8	4.0	9.6
Government dispensary	0.0	0.8	1.7	0.4	0.1	0.5
UHC/UHP/UFWC	2.5	1.0	4.4	1.7	0.7	1.6
CHC/rural hospital/PHC	5.6	11.1	16.2	11.6	3.7	8.8
Sub-centre	0.0	1.3	0.8	1.3	0.3	0.8
Other public medical sector	0.9	0.8	0.9	1.1	0.7	0.9
NGO or trust worker	0.6	0.3	0.0	0.5	0.6	0.4
Private medical sector	79.5	74.4	57.3	69.8	89.0	76.5
Private hospital/clinic	10.2	10.4	6.5	10.6	11.4	10.3
Private doctor	68.7	63.9	50.3	59.0	77.2	65.9
Vaidya/hakim/homeopath	0.3	0.0	0.0	0.0	0.3	0.1
Pharmacy/drugstore	0.3	0.1	0.4	0.2	0.2	0.2
Other source	0.6	1.1	1.3	0.8	0.9	0.9
Home treatment	0.5	0.5	1.3	0.5	0.3	0.5
Other	0.2	0.5	0.0	0.3	0.6	0.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	667	932	229	653	708	1,599

Note: Total includes 9 households with missing information on the standard of living index, which are not shown separately.
UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre;
CHC: Community health centre; PHC: Primary Health Centre; NGO: Nongovernmental organization

living (77 percent) use private doctors than households with a low (50 percent) or medium (59 percent) standard of living. Less than 10 percent of households with a high standard of living use the public medical sector for treatment, compared with 42 percent of households with a low standard of living. Use of the public medical sector for health care is lower in Goa (22 percent) than in India as a whole (29 percent), especially in households with a high standard of living (10 percent in Goa, compared with 19 percent in the whole country). The opposite is true with respect to the use of the private medical sector for health care.

9.2 Contacts at Home with Health and Family Planning Workers

Under the family welfare programme, health or family planning workers are required to regularly visit each household in their assigned area. During these contacts, the female health or family planning worker is supposed to monitor various aspects of the health of women and children, provide information related to health and family planning, counsel and motivate women to adopt appropriate health and family planning practices, and deliver other selected services. These contacts are also important for enhancing the credibility of services and establishing necessary rapport with the clients. Only 18 percent of women in Goa, however, report that they received a home visit from a health or family planning worker during the 12 months preceding the survey (Table 9.2), compared with 13 percent of women in India as a whole. Given the small proportion of women reporting a home visit, the variation in home visits by background characteristics is perforce limited. Only women belonging to other backward classes and women from households

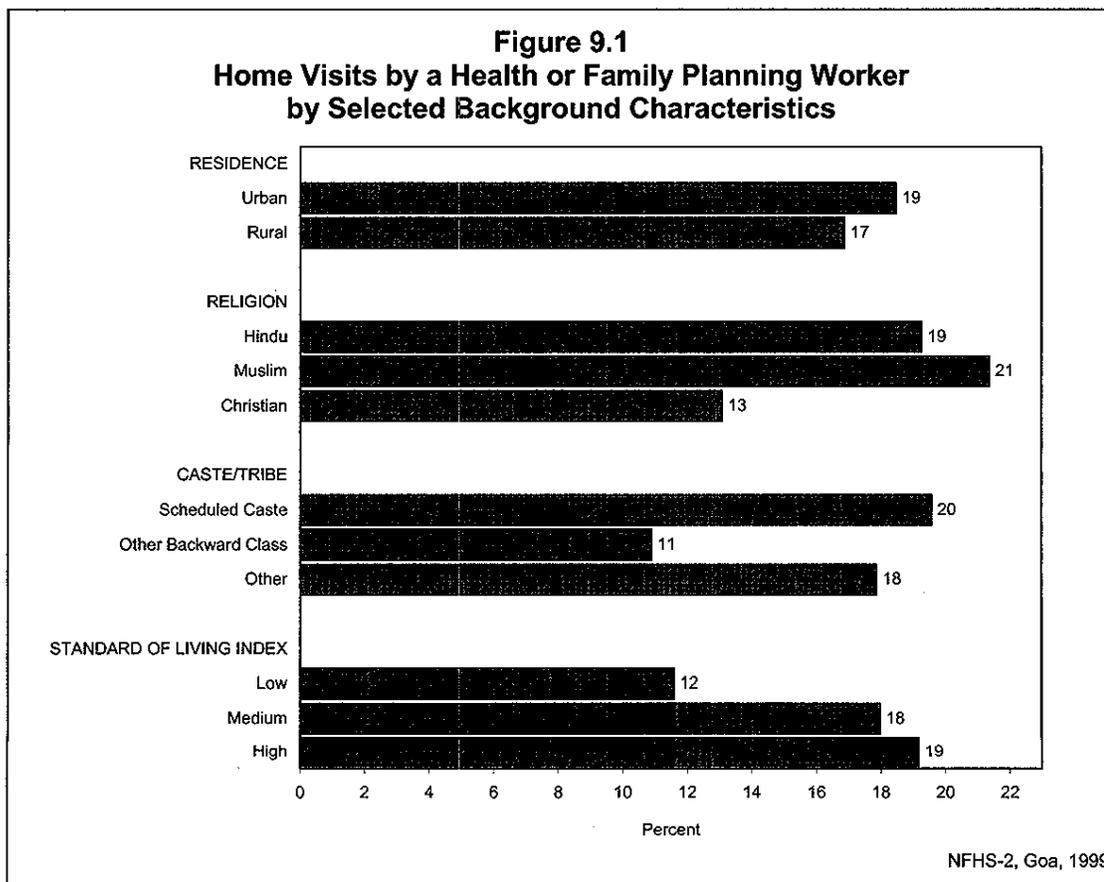
Table 9.2 Home visits by a health or family planning worker

Percentage of ever-married women who had at least one home visit by a health or family planning worker in the 12 months preceding the survey and, among women who had home visits, median number of visits and median number of months since the most recent visit by background characteristics, Goa, 1999

Background characteristic	Percentage with at least one visit	Number of women	Median number of visits ¹	Median months since the most recent visit ¹	Number of women with home visit
Age					
15-24	19.9	126	(1.0)	(3.6)	25
25-34	19.0	475	1.4	3.9	90
35-49	16.0	645	1.4	3.7	103
Residence					
Urban	18.5	519	1.4	3.6	96
Rural	16.9	727	1.4	4.0	123
Education					
Illiterate	14.8	357	1.6	3.5	53
Literate, < middle school complete	19.5	339	1.3	4.0	66
Middle school complete	19.7	156	(1.1)	(3.2)	31
High school complete and above	17.5	395	1.4	4.2	69
Religion					
Hindu	19.3	827	1.5	3.4	160
Muslim	21.4	55	*	*	12
Christian	13.1	361	(1.1)	(5.0)	47
Caste/tribe					
Scheduled caste	19.6	93	*	*	18
Other backward class	10.9	79	*	*	9
Other ²	17.9	1,070	1.4	3.7	191
Standard of living index					
Low	11.6	177	*	*	21
Medium	18.0	495	1.5	3.3	89
High	19.2	568	1.2	4.3	109
Number of children ever born					
0	14.6	151	*	*	22
1	16.0	282	(1.0)	(3.8)	45
2	20.9	311	1.5	3.8	65
3	19.7	238	(1.5)	(3.7)	47
4	16.1	147	*	*	24
5+	13.9	116	*	*	16
Family planning status					
Sterilized	17.0	330	1.5	3.7	56
Using method other than sterilization	21.9	227	(1.3)	(4.2)	50
Non-user	16.4	690	1.4	3.7	113
Total	17.6	1,246	1.4	3.8	219

Note: Total includes a small number of women belonging to other religions, scheduled-tribe women, and women with missing information on caste/tribe and the standard of living index, who are not shown separately.
 () Based on 25-49 unweighted cases
 *Percentage not shown; based on fewer than 25 unweighted cases
¹For women who received at least one visit
²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

with a low standard of living are much less likely than most other women to receive a visit at home by a health or family planning worker (Figure 9.1).



Women who reported a home visit from a health or family planning worker during the 12 months preceding the survey were asked the frequency of visits during the past 12 months and the number of months since the most recent visit. These women, on average, received less than two home visits during the year, with the median duration since the most recent visit of 3.8 months. The median number of home visits and the duration since the most recent visit did not vary substantially according to any of the background characteristics measured.

9.3 Quality of Home Visits

The quality of the care provided during home visits can be assessed in terms of client satisfaction with the services received during the visit. Each woman who reported that a health or family planning worker had visited her during the 12 months preceding the survey was asked about the quality of the care received. Questions were asked with reference only to the most recent home visit. The questions covered how the worker talked to the woman during the visit and whether the worker spent enough time with her. Table 9.3 provides this information by the type of services received.

Among women who received services at home, 80 percent received services related to health or family planning. Among women who received health or family planning services, 65 percent were satisfied with the amount of time the worker spent with them and a large majority (83 percent) reported that the worker talked to them nicely. No women said that the worker did not speak nicely to them.

Table 9.3 Quality of home visits		
Quality of care indicators for the most recent home visit by a health or family planning worker during the 12 months preceding the survey, according to type of services received during the visit, Goa, 1999		
Quality indicator	Type of services received	
	Family planning or health	Neither family planning nor health
Percentage who said worker spent enough time with them	65.3	(95.4)
Percentage who said worker talked to them:		
Nicely	83.4	(100.0)
Somewhat nicely	16.6	(0.0)
Total percent	100.0	100.0
Number of women visited at home	176	43
() Based on 25–49 unweighted cases		

9.4 Matters Discussed During Home Visits or Visits to Health Facilities

Women who were visited at home by a health or family planning worker, as well as those who visited a health facility during the 12 months preceding the survey, were asked about the different topics discussed with the workers during any of these visits. Table 9.4 shows the percentage of women who discussed specific topics during home visits or visits to a health facility during the past 12 months.

The topic discussed most often during home visits by health or family planning workers was disease prevention, which was mentioned by 55 percent of women. Other topics commonly discussed were immunization (31 percent) and family planning (18 percent). Discussions about family planning were mentioned more often by pregnant women or women who had a child less than three years old (27 percent) than by current users of contraception (16 percent) or by current non-users (11 percent). As expected, pregnant women and women who had a child less than three years old were much more likely than other women to report discussions of immunization and antenatal care. However, discussions of antenatal, delivery, and postpartum care are rare during home visits even among women who are pregnant or have a young child.

The topics most frequently discussed during visits to health facilities were treatment of health problems (79 percent), followed by childcare (24 percent), immunization (18 percent), and antenatal care (12 percent). Only 2 percent of women reported that family planning was discussed during any of their visits to a health facility in the past year. Even among currently pregnant women and women with children under age three (many of whom are potentially in need of family planning), only 4 percent discussed family planning. More than one-third of these women discussed antenatal care (37 percent) and childcare (35 percent), and 20 percent each reported having discussed delivery care and postpartum care. These data suggest that health facilities and workers in the process of providing health and childcare services often do not take the opportunity to discuss family planning with women. It is also evident that many important

Table 9.4 Matters discussed during contacts with a health or family planning worker				
Among ever-married women who had at least one contact with a health or family planning worker in the 12 months preceding the survey, percentage who discussed specific topics with the health or family planning worker, Goa, 1999				
Topic discussed	Pregnant women or women with children under age 3	Other women		Total
		Current contraceptive users	Current non-users	
During home visit				
Family planning	26.9	15.5	11.3	17.9
Breastfeeding	0.0	0.0	1.5	0.5
Immunization	50.0	27.8	15.7	31.3
Nutrition	5.3	2.5	1.5	3.1
Disease prevention	36.6	60.9	68.3	55.2
Treatment of health problem	3.9	7.0	8.2	6.4
Antenatal care	8.0	0.0	0.0	2.7
Delivery care	1.5	0.0	0.0	0.5
Postpartum care	2.8	0.0	0.0	1.0
Childcare	8.0	6.9	8.1	7.6
Sanitation/cleanliness	4.0	11.3	8.3	7.8
Other	2.6	2.8	5.4	3.6
Number of women	74	73	72	219
During visit to health facility				
Family planning	4.1	0.5	0.9	1.8
Breastfeeding	8.2	0.0	0.0	2.7
Supplementary feeding	0.6	0.0	0.0	0.2
Immunization	50.4	2.0	1.2	17.8
Nutrition	0.3	0.0	0.0	0.1
Disease prevention	0.0	0.0	1.2	0.4
Treatment of health problem	53.4	90.8	91.9	78.8
Antenatal care	36.8	0.0	0.3	12.3
Delivery care	19.8	0.0	0.0	6.5
Postpartum care	19.6	0.0	0.0	6.5
Childcare	35.2	21.9	15.5	24.2
Oral rehydration	0.3	0.0	0.0	0.1
Other	0.3	0.3	2.6	1.1
Number of women	339	346	339	1,023
Note: Percentages add to more than 100.0 because of multiple responses.				

health-related topics (feeding practices, nutrition, and oral rehydration) are rarely discussed during either home visits or visits to a health facility.

9.5 Quality of Services Received at the Most Recent Visit to a Health Facility

NFHS-2 asked women who visited a health facility in the 12 months preceding the survey a number of questions to ascertain their perception of the quality of care they received during their most recent visit. Specific dimensions covered were whether women received the service they went for, the waiting time before receiving the service (or before finding out that the service was not available), whether the staff at the health facility spent enough time with them, whether the staff talked nicely to them, and whether the staff respected their privacy, if they needed privacy. Women were also asked to assess the cleanliness of the facility.

Virtually all respondents who visited public and private health facilities said that they received the services for which they visited the facility (Table 9.5). The median waiting time to

Table 9.5 Quality of care during the most recent visit to a health facility

Among ever-married women, indicators of quality of care during the most recent visit to a health facility in the 12 months preceding the survey by sector of most recent visit and residence, Goa, 1999

Quality indicator	Public sector			Private sector/NGO/trust			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Percentage who received the service they went for	97.8	98.8	98.5	100.0	100.0	100.0	99.5	99.7	99.6
Median waiting time (minutes)	29.6	39.2	29.9	29.1	29.2	29.2	29.2	29.4	29.3
Percentage who said the staff spent enough time with them	91.5	91.4	91.5	98.7	97.6	98.0	96.9	95.9	96.3
Percentage who said the staff talked to them:									
Nicely	77.8	80.8	79.7	95.9	91.4	93.3	91.5	88.5	89.7
Somewhat nicely	19.0	17.4	18.0	4.1	8.4	6.6	7.7	10.9	9.6
Not nicely	3.2	1.7	2.3	0.0	0.2	0.1	0.8	0.6	0.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage who said the staff respected their need for privacy ¹	92.3	91.6	91.8	99.3	98.6	98.9	97.7	96.7	97.1
Percentage who rated facility as:									
Very clean	61.6	62.7	62.3	86.8	85.0	85.7	80.7	78.8	79.6
Somewhat clean	33.0	35.6	34.6	12.8	14.1	13.6	17.7	20.0	19.1
Not clean	4.3	1.7	2.7	0.3	0.7	0.6	1.3	1.0	1.1
Missing	1.0	0.0	0.4	0.0	0.2	0.1	0.3	0.2	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	99	168	267	309	439	748	408	607	1,015
Number of women who said they needed privacy	82	150	233	284	410	695	367	561	927

Note: Cases where the source of service was neither the public sector nor the private sector/NGO/trust are excluded from the table.

NGO: Nongovernmental organization

¹Among women who said they needed privacy

receive services was 29 minutes (30 minutes at public facilities and 29 minutes at private facilities). For private facilities, there was no difference in the median waiting time by urban-rural residence. For public facilities, however, the median waiting time was 39 minutes for rural women, compared with 30 minutes for urban women. Satisfaction with the amount of time the staff spent with the woman was generally high, but it was slightly lower in the public health sector (92 percent) than in the private health sector (98 percent).

Users also rated the private health sector more positively than the public health sector on all of the other indicators of quality. Ninety-three percent of women who received services in a private-sector facility said that the staff talked to them nicely, compared with 80 percent of women who received services in a public-sector facility. Among women who said they needed privacy during their visit, 97 percent were satisfied that the staff respected their need for privacy. This percentage was higher for private-sector facilities (99 percent) than for public-sector facilities (92 percent).

The majority of the women (80 percent) rated the health facility they visited most recently as very clean. Both women living in urban areas and women living in rural areas rated private-sector facilities as cleaner than public-sector facilities. Overall, 86 percent of women who visited a private-sector facility said that the facility was very clean, compared with 62 percent of women who visited a public-sector facility. These data indicate that private-sector facilities on average appear to provide better quality services than public-sector facilities.

9.6 Family Planning Information and Advice Received

To gain a better understanding of the information provided to women about different contraceptive methods, women were asked to recollect all the specific methods that had ever been discussed during any of the contacts they had ever had with a health or family planning worker. Overall, 46 percent of women said that they had either no contact or no discussion about any method of family planning with health or family planning personnel (Table 9.6). Among women who discussed contraception, the most frequently discussed method was female sterilization. Notably, 35 percent of all women report discussing female sterilization, compared with only 2 percent who report discussing male sterilization. Eighteen percent of women reported ever discussing IUDs, and 13 and 12 percent reported ever discussing condoms and pills, respectively. Seven percent of women reported ever discussing the rhythm method and 3 percent ever discussed withdrawal.

Method	Urban	Rural	Total
Pill	11.4	12.2	11.9
Condom	11.4	13.4	12.5
IUD	18.8	17.6	18.1
Female sterilization	33.3	36.7	35.3
Male sterilization	1.2	2.1	1.7
Rhythm/safe period	6.9	6.9	6.9
Withdrawal	2.5	4.1	3.4
Other method	0.4	0.4	0.4
No method/no contact	47.3	45.7	46.3
Number of women	519	727	1,246

Note: Percentages add to more than 100.0 because more than one method may have been discussed.

9.7 Person Motivating Users of a Modern Contraceptive Method

To help understand the dynamics of the adoption of contraceptive methods and the roles that different persons play, NFHS-2 asked current users of modern methods who mainly motivated them to use their current method. In Goa, more than two-fifths (42 percent) of the current users of a modern method said that they were not motivated by anyone; rather they adopted the method on their own (Table 9.7 and Figure 9.2). Twenty-eight percent said that a government health worker was the person who mainly motivated them and 10 percent said they were motivated by a private-sector health worker. The remaining 20 percent reported that the motivator was someone other than a government or private-sector health worker. Women using female sterilization are

Table 9.7 Motivation to use family planning

Percent distribution of current users of modern contraceptive methods by type of person who motivated them to use the method, according to residence, Goa, 1999

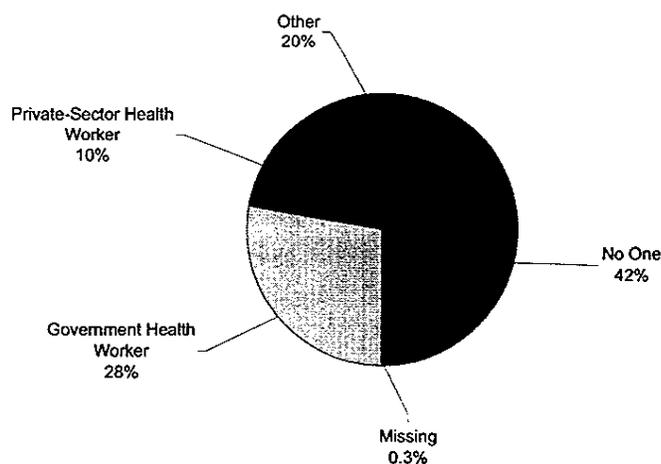
Current method	Type of person who motivated the user to use current method					Total percent	Number of users
	Government health worker	Private-sector health worker	Other	No one	Missing		
URBAN							
Condom	(12.4)	(19.0)	(43.5)	(25.1)	(0.0)	100.0	34
Female sterilization	22.2	10.7	21.1	45.2	0.8	100.0	139
All modern methods	20.6	12.8	23.7	42.4	0.6	100.0	191
RURAL							
Condom	*	*	*	*	*	100.0	24
Female sterilization	34.5	5.1	15.5	44.9	0.0	100.0	187
All modern methods	34.1	8.0	17.2	40.7	0.0	100.0	229
TOTAL							
Condom	16.1	18.2	42.5	23.2	0.0	100.0	57
Female sterilization	29.3	7.5	17.9	45.0	0.3	100.0	325
All modern methods	27.9	10.2	20.2	41.5	0.3	100.0	420

Note: 'All modern methods' includes current users of the pill, the IUD, and male sterilization, who are not shown separately because there are fewer than 25 unweighted cases in each panel.

() Based on 25-49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

**Figure 9.2
Motivator for Current Users of Modern Contraceptive Methods**



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Goa, 1999

much more likely to be self motivated (45 percent) than women using condoms (23 percent). As expected, the role of government workers was more important for motivating women in rural areas than in urban areas.

9.8 Quality of Care of Family Planning Services

NFHS-2 investigated several other aspects of quality of care. Each current user of a modern family planning method was asked whether the person who motivated her to use her current method informed her about alternative methods of family planning; whether she was told by a health or family planning worker about the possible side effects of her current method at the time she accepted the method; and whether she received any follow-up care after accepting the method either at home or in a health facility. Tables 9.8 and 9.9 present the results of this investigation.

Table 9.8 Discussions about alternative methods of family planning				
Percentage of current users of modern contraceptive methods who were told about at least one other method by the person who motivated them to use the current method, according to the sector of the motivator and residence, Goa, 1999				
Sector of motivator	Urban	Rural	Total	Number of users
Public health sector	26.9	21.0	23.0	117
Private health sector	(39.5)	(53.0)	(45.3)	43
Other	4.6	5.0	4.8	85
Total	20.5	20.7	20.6	245

Note: Table excludes women who said that no one motivated them to use their current method.

An important indicator of the quality of family planning services is whether women are informed about a variety of available methods and are allowed to make an informed choice about the method most suited to their family planning and reproductive health needs. Women who reported that someone had motivated them to use family planning were asked whether the motivator told them about alternative methods that they could use. Overall, only 21 percent of users of modern contraceptive methods who were motivated by someone were informed about at least one alternative method (Table 9.8). Even among women who were motivated by a government health worker, only 23 percent were told about any other method. Despite the small number of cases, the data suggest that users who were motivated by a private-sector worker were much more likely to be told about alternative methods of family planning. Rural women who were motivated by a worker in the private health sector were most likely to be told about alternative methods (53 percent).

Another important element of informed contraceptive choice is being fully informed about any side effects and any other problems associated with the method. Table 9.9 shows the percentage of current users of modern contraception who were told about side effects or other problems by a health or family planning worker at the time they accepted their current method. Women were also asked if they received follow-up services after they accepted the method. In Goa, only 16 percent of users of any modern method were informed about possible side effects or problems associated with their current method at the time of adopting the method. This

Table 9.9 Information on side effects and follow-up for current method			
Percentage of current users of modern contraceptive methods who were told about side effects or other problems of the current method by a health or family planning worker at the time of accepting the method and percentage who received follow-up services after accepting method by current method and residence, Goa, 1999			
Information/follow-up	Urban	Rural	Total
Told about side effects			
Sterilization	12.6	19.1	16.3
Other modern method	(10.6)	(23.3)	16.5
Any modern method	12.1	19.8	16.3
Received follow-up			
Sterilization	84.3	82.0	83.0
Other modern method	(21.7)	(32.1)	26.5
Any modern method	68.4	72.9	70.9

proportion does not vary by the type of method adopted. Among current users of any modern method, a higher proportion of users in rural areas reported being told about possible side effects (20 percent) than users in urban areas (12 percent). From these results, it is apparent that health or family planning workers in Goa are not providing couples with the information they need to make an informed choice about contraceptive methods.

The situation is much better with respect to follow-up services. Overall, 71 percent of users of modern contraceptives received follow-up services (73 percent in rural areas and 68 percent in urban areas). However, users of sterilization were much more likely to receive follow-up services (83 percent) than users of other modern methods (27 percent).

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APPENDIX A

ESTIMATES OF SAMPLING ERRORS

Two types of errors affect the estimates from a sample survey: (1) nonsampling errors and (2) sampling errors. Nonsampling errors are the result of errors committed during 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 NFHS-2 to minimize nonsampling errors, they 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 NFHS-2 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 among 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 by the *standard error* for a particular statistic (for example, a 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, calculated as the value of the statistic 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, for many statistics, to use straightforward formulas for calculating sampling errors. However, the NFHS-2 sample is the result of a multi-stage stratified sample design, and it is therefore necessary to use more complex formulas. The computer software used to calculate sampling errors for NFHS-2 is ISSA (the Integrated System for Survey Analysis). The linear Taylor series approximation method for variance estimation is used for estimates of means, proportions, and ratios. The JACKKNIFE repeated replication method is used with ISSA for variance estimation for more complex statistics such as fertility and mortality rates.

The ISSA package treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the sample value for variable y , and x represents the number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$\text{var}(r) = \frac{1-f}{x^2} \sum_{h=1}^H \left[\frac{m_h}{m_h-1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - rx_{hi}$$

$$z_h = y_h - rx_h$$

where

- h = the stratum that varies from 1 to H,
- m_h = the total number of PSUs selected in the h^{th} stratum,
- y_{hi} = the sum of the values of variable y in PSU i in the h^{th} stratum,
- x_{hi} = the sum of the number of cases in PSU i in the h^{th} stratum,
- f = the overall sampling fraction, which is so small that the program ignores it.

In addition to the standard error, ISSA computes the relative standard error, confidence limits for the estimates, and the design effect (DEFT) for each estimate. The design effect is defined as the ratio of the standard error using the given sample design to 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.

Sampling errors for NFHS-2 are calculated for selected variables considered to be of primary interest. The results in this appendix are presented for the state as a whole and for urban and rural areas separately for variables with sufficient number of cases. The only exception is the variable on salt iodization for which the results are shown separately for large cities, small cities, towns, and rural areas. 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 relative standard error (SE/R), and the 95 percent confidence limits ($R \pm 2SE$) for each variable. In addition, for all variables except the fertility and mortality rates, the table shows the unweighted number of cases (N), the weighted number of cases (WN), the standard error assuming a simple random sample (SER), and the design effect (DEFT).

Table A.1 List of selected variables for sampling errors, Goa, 1999

Variable	Estimate	Base population
Sex ratio	Ratio	<i>De facto</i> household population
Illiterate	Proportion	<i>De facto</i> household population age 6 and above
Have tuberculosis	Rate	1,000 <i>de jure</i> household population
Salt iodized at 15 ppm or more	Proportion	Households
Illiterate	Proportion	Ever-married women age 15-49
High school complete and above	Proportion	Ever-married women age 15-49
Currently married	Proportion	Ever-married women age 15-49
Number of children ever born	Mean	Currently married women age 15-49
Number of living children	Mean	Currently married women age 15-49
Have ever used any method	Proportion	Currently married women age 15-49
Currently using any method	Proportion	Currently married women age 15-49
Currently using any modern method	Proportion	Currently married women age 15-49
Currently using pills	Proportion	Currently married women age 15-49
Currently using IUD	Proportion	Currently married women age 15-49
Currently using condoms	Proportion	Currently married women age 15-49
Currently using female sterilization	Proportion	Currently married women age 15-49
Currently using male sterilization	Proportion	Currently married women age 15-49
Currently using rhythm/safe period	Proportion	Currently married women age 15-49
Using public source for modern method	Proportion	Current users of modern methods
Do not want any more children	Proportion	Currently married women age 15-49
Want to delay birth at least 2 years	Proportion	Currently married women age 15-49
Ideal number of children	Mean	Ever-married women age 15-49
Ideal number of sons	Mean	Ever-married women age 15-49
Ideal number of daughters	Mean	Ever-married women age 15-49
Visited by health/family planning worker	Proportion	Ever-married women age 15-49
Received no antenatal check-up	Proportion	Births in the past 3 years
Received iron and folic acid tablets or syrup	Proportion	Births in the past 3 years
Received medical assistance during delivery	Proportion	Births in the past 3 years
Received postpartum check-up	Proportion	Non-institutional births in the past 3 years
Had diarrhoea in the past 2 weeks	Proportion	Children under 3 years
Treated with ORS packets	Proportion	Children under 3 with diarrhoea in past 2 weeks
Taken to a health facility/provider for diarrhoea	Proportion	Children under 3 with diarrhoea in past 2 weeks
Showing a vaccination card	Proportion	Children age 12-23 months
Received BCG vaccination	Proportion	Children age 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children age 12-23 months
Received polio vaccination (3 doses)	Proportion	Children age 12-23 months
Received measles vaccination	Proportion	Children age 12-23 months
Fully vaccinated	Proportion	Children age 12-23 months
Received vitamin A	Proportion	Children age 12-35 months
Had reproductive health problem	Proportion	Currently married women age 15-49
Not involved in any decisionmaking	Proportion	Ever-married women age 15-49
Ever beaten or physically mistreated since age 15	Proportion	Ever-married women age 15-49
Not worked in past 12 months	Proportion	Ever-married women age 15-49
Anaemic women	Proportion	Ever-married women age 15-49
Anaemic children	Proportion	Children age 6-35 months
Fertility rates	Rate	All women, population
Mortality rates	Rate	Births, population

Table A.2 Sampling errors, Goa, 1999

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Sex ratio (<i>De facto</i> household population)									
Urban	1054	25.430	1348	1442	31.620	0.804	0.024	1003	1105
Rural	1012	23.775	2277	2179	25.628	0.928	0.024	964	1059
Total	1028	17.900	3625	3621	19.959	0.897	0.017	993	1064
Illiterate (<i>De facto</i> household population age 6 and above)									
Total	0.184	0.013	6648	6642	0.006	2.255	0.071	0.158	0.210
Have tuberculosis (1,000 <i>de jure</i> household population)									
Urban	4.445	1.762	2758	2950	1.635	1.078	0.396	0.921	7.970
Rural	4.800	1.374	4605	4404	1.504	0.913	0.286	2.052	7.547
Total	4.657	1.071	7363	7354	1.118	0.958	0.230	2.515	6.800
Salt iodized at 15 ppm or more (Households)									
City	0.853	0.017	34	36	0.062	0.277	0.020	0.819	0.887
Town	0.559	0.045	589	630	0.020	2.214	0.081	0.469	0.650
Rural	0.307	0.030	976	932	0.015	2.064	0.099	0.246	0.368
Total	0.419	0.032	1599	1599	0.012	2.582	0.076	0.355	0.483
Illiterate (Ever-married women age 15-49)									
Urban	0.229	0.045	491	519	0.019	2.381	0.197	0.139	0.319
Rural	0.327	0.036	755	727	0.017	2.108	0.110	0.255	0.399
Total	0.286	0.029	1246	1246	0.013	2.232	0.100	0.229	0.343
High school complete and above (Ever-married women age 15-49)									
Urban	0.412	0.042	491	519	0.022	1.872	0.101	0.328	0.495
Rural	0.249	0.030	755	727	0.016	1.931	0.122	0.188	0.310
Total	0.317	0.027	1246	1246	0.013	2.054	0.085	0.263	0.371
Currently married (Ever-married women age 15-49)									
Urban	0.933	0.013	491	519	0.011	1.168	0.014	0.907	0.959
Rural	0.944	0.009	755	727	0.008	1.086	0.010	0.926	0.962
Total	0.940	0.008	1246	1246	0.007	1.118	0.008	0.925	0.955
Number of children ever born (Currently married women age 15-49)									
Total	2.246	0.062	1171	1171	0.047	1.332	0.028	2.121	2.371
Number of living children (Currently married women age 15-49)									
Total	2.098	0.052	1171	1171	0.042	1.239	0.025	1.993	2.203
Have ever used any method (Currently married women age 15-49)									
Total	0.617	0.019	1171	1171	0.014	1.354	0.031	0.579	0.656
Currently using any method (Currently married women age 15-49)									
Urban	0.527	0.032	458	484	0.023	1.359	0.060	0.463	0.590
Rural	0.439	0.023	713	687	0.019	1.220	0.052	0.393	0.484
Total	0.475	0.020	1171	1171	0.015	1.363	0.042	0.435	0.515
Currently using any modern method (Currently married women age 15-49)									
Urban	0.394	0.034	458	484	0.023	1.489	0.086	0.326	0.462
Rural	0.334	0.022	713	687	0.018	1.241	0.066	0.290	0.378
Total	0.359	0.020	1171	1171	0.014	1.391	0.054	0.320	0.398

Table A.2 Sampling errors, Goa, 1999 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Currently using pills (Currently married women age 15-49)									
Urban	0.008	0.007	458	484	0.004	1.525	0.773	0.000	0.021
Rural	0.010	0.003	713	687	0.004	0.906	0.341	0.003	0.016
Total	0.009	0.003	1171	1171	0.003	1.169	0.354	0.003	0.016
Currently using IUD (Currently married women age 15-49)									
Urban	0.022	0.006	458	484	0.007	0.928	0.291	0.009	0.034
Rural	0.017	0.005	713	687	0.005	1.062	0.306	0.006	0.027
Total	0.019	0.004	1171	1171	0.004	0.994	0.210	0.011	0.027
Currently using condoms (Currently married women age 15-49)									
Urban	0.070	0.013	458	484	0.012	1.118	0.190	0.043	0.097
Rural	0.034	0.007	713	687	0.007	1.040	0.207	0.020	0.048
Total	0.049	0.007	1171	1171	0.006	1.149	0.148	0.035	0.064
Currently using female sterilization (Currently married women age 15-49)									
Urban	0.287	0.041	458	484	0.021	1.945	0.144	0.204	0.369
Rural	0.272	0.024	713	687	0.017	1.428	0.088	0.224	0.319
Total	0.278	0.022	1171	1171	0.013	1.646	0.078	0.235	0.321
Currently using male sterilization (Currently married women age 15-49)									
Urban	0.007	0.004	458	484	0.004	0.951	0.542	0.000	0.014
Rural	0.001	0.001	713	687	0.001	0.981	1.001	0.000	0.004
Total	0.004	0.002	1171	1171	0.002	0.985	0.482	0.000	0.007
Currently using rhythm/safe period (Currently married women age 15-49)									
Urban	0.072	0.017	458	484	0.012	1.378	0.231	0.039	0.106
Rural	0.048	0.009	713	687	0.008	1.179	0.198	0.029	0.066
Total	0.058	0.009	1171	1171	0.007	1.308	0.155	0.040	0.076
Using public source for modern method (Current users of modern methods)									
Total	0.683	0.032	417	420	0.023	1.389	0.046	0.620	0.746
Do not want any more children (Currently married women age 15-49)									
Total	0.328	0.018	1171	1171	0.014	1.290	0.054	0.293	0.364
Want to delay birth at least two years (Currently married women age 15-49)									
Total	0.120	0.009	1171	1171	0.010	0.927	0.073	0.103	0.138
Ideal number of children (Ever-married women age 15-49)									
Urban	2.252	0.054	482	509	0.040	1.331	0.024	2.144	2.359
Rural	2.372	0.062	734	707	0.034	1.838	0.026	2.248	2.497
Total	2.322	0.043	1216	1216	0.026	1.655	0.019	2.236	2.408
Ideal number of sons (Ever-married women age 15-49)									
Urban	0.880	0.054	481	508	0.035	1.520	0.061	0.773	0.987
Rural	0.915	0.046	733	706	0.028	1.603	0.050	0.824	1.006
Total	0.900	0.034	1214	1214	0.022	1.523	0.037	0.833	0.968
Ideal number of daughters (Ever-married women age 15-49)									
Urban	0.738	0.040	481	508	0.031	1.281	0.054	0.658	0.818
Rural	0.791	0.040	733	706	0.025	1.599	0.050	0.712	0.870
Total	0.769	0.028	1214	1214	0.019	1.445	0.037	0.713	0.825

Table A.2. Sampling errors, Goa, 1999 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Visited by health/family planning worker (Ever-married women age 15-49)									
Urban	0.185	0.034	491	519	0.018	1.964	0.186	0.116	0.254
Rural	0.169	0.023	755	727	0.014	1.663	0.134	0.124	0.214
Total	0.176	0.019	1246	1246	0.011	1.787	0.110	0.137	0.214
Received no antenatal check-up (Births in past 3 years)									
Urban	0.016	0.016	121	127	0.011	1.397	1.006	0.000	0.048
Rural	0.000	0.000	209	201	0.000	NC	NC	0.000	0.000
Total	0.006	0.006	330	328	0.004	1.425	1.002	0.000	0.018
Received iron and folic acid tablets or syrup (Births in past 3 years)									
Urban	0.917	0.027	121	127	0.025	1.064	0.029	0.864	0.971
Rural	0.966	0.013	209	201	0.013	1.070	0.014	0.939	0.993
Total	0.947	0.014	330	328	0.012	1.100	0.014	0.920	0.974
Received medical assistance during delivery (Births in past 3 years)									
Urban	0.910	0.037	121	127	0.028	1.332	0.041	0.835	0.984
Rural	0.907	0.032	209	201	0.023	1.416	0.036	0.843	0.972
Total	0.908	0.024	330	328	0.018	1.364	0.027	0.860	0.957
Had diarrhoea in the past 2 weeks (Children under 3 years)									
Urban	0.244	0.045	114	120	0.040	1.102	0.182	0.155	0.334
Rural	0.153	0.030	205	197	0.025	1.175	0.194	0.094	0.212
Total	0.187	0.026	319	317	0.022	1.180	0.138	0.136	0.239
Treated with ORS packets (Children under 3 with diarrhoea in past 2 weeks)									
Total	0.556	0.070	59	59	0.066	1.070	0.127	0.415	0.697
Taken to a health facility/provider for diarrhoea (Children under 3 with diarrhoea in past 2 weeks)									
Total	0.654	0.076	59	59	0.064	1.192	0.116	0.502	0.806
Showing a vaccination card (Children age 12-23 months)									
Urban	0.681	0.082	44	47	0.070	1.168	0.120	0.517	0.845
Rural	0.707	0.071	79	75	0.051	1.374	0.100	0.566	0.849
Total	0.697	0.053	123	122	0.042	1.268	0.076	0.592	0.803
Received BCG vaccination (Children age 12-23 months)									
Urban	0.978	0.024	44	47	0.022	1.065	0.024	0.931	1.000
Rural	1.000	0.000	79	75	0.000	NC	0.000	1.000	1.000
Total	0.992	0.009	123	122	0.008	1.046	0.009	0.974	1.000
Received DPT vaccination (3 doses) (Children age 12-23 months)									
Urban	0.909	0.044	44	47	0.043	1.006	0.048	0.822	0.996
Rural	0.949	0.024	79	75	0.025	0.947	0.025	0.902	0.996
Total	0.934	0.022	123	122	0.023	0.959	0.023	0.890	0.977
Received polio vaccination (3 doses) (Children age 12-23 months)									
Urban	0.933	0.039	44	47	0.038	1.037	0.042	0.854	1.000
Rural	0.974	0.017	79	75	0.018	0.965	0.018	0.939	1.000
Total	0.958	0.018	123	122	0.018	0.988	0.019	0.923	0.994

Table A.2 Sampling errors, Goa, 1999 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Received measles vaccination (Children age 12–23 months)									
Urban	0.772	0.079	44	47	0.063	1.250	0.102	0.614	0.930
Rural	0.886	0.035	79	75	0.036	0.965	0.039	0.817	0.955
Total	0.843	0.036	123	122	0.033	1.084	0.042	0.771	0.914
Fully vaccinated (Children age 12–23 months)									
Urban	0.749	0.086	44	47	0.065	1.317	0.115	0.576	0.921
Rural	0.874	0.035	79	75	0.038	0.940	0.040	0.803	0.944
Total	0.826	0.038	123	122	0.034	1.116	0.046	0.749	0.903
Received vitamin A (Children age 12–35 months)									
Urban	0.710	0.060	79	83	0.051	1.178	0.084	0.591	0.830
Rural	0.823	0.036	143	137	0.034	1.059	0.044	0.750	0.895
Total	0.780	0.031	222	221	0.029	1.065	0.039	0.719	0.841
Had reproductive health problem (Currently married women age 15–49)									
Urban	0.355	0.020	458	484	0.022	0.911	0.057	0.314	0.396
Rural	0.435	0.018	713	687	0.019	0.984	0.042	0.398	0.471
Total	0.402	0.014	1171	1171	0.014	1.001	0.036	0.373	0.430
Not involved in any decisionmaking (Ever-married women age 15–49)									
Urban	0.051	0.010	491	519	0.010	1.022	0.199	0.031	0.071
Rural	0.026	0.006	755	727	0.006	1.115	0.250	0.013	0.038
Total	0.036	0.006	1246	1246	0.005	1.120	0.164	0.024	0.048
Ever beaten or physically mistreated since age 15 (Ever-married women age 15–49)									
Urban	0.175	0.021	491	519	0.017	1.202	0.118	0.134	0.216
Rural	0.181	0.026	755	727	0.014	1.871	0.145	0.129	0.234
Total	0.179	0.017	1246	1246	0.011	1.594	0.097	0.144	0.213
Not worked in past 12 months (Ever-married women age 15–49)									
Urban	0.588	0.034	491	519	0.022	1.521	0.058	0.520	0.655
Rural	0.482	0.028	755	727	0.018	1.544	0.058	0.425	0.538
Total	0.526	0.023	1246	1246	0.014	1.620	0.044	0.480	0.572
Anaemic women (Ever-married women age 15–49)									
Urban	0.360	0.028	477	499	0.022	1.286	0.078	0.304	0.417
Rural	0.367	0.019	721	699	0.018	1.079	0.053	0.328	0.405
Total	0.364	0.016	1198	1198	0.014	1.149	0.044	0.332	0.396
Anaemic children (Children age 6–35 months)									
Urban	0.507	0.085	88	92	0.054	1.584	0.168	0.337	0.677
Rural	0.549	0.051	166	161	0.039	1.328	0.094	0.447	0.652
Total	0.534	0.044	254	252	0.031	1.395	0.082	0.446	0.621

Table A.2 Sampling errors, Goa, 1999 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Relative standard error (SE/R)	Confidence limits	
				R-2SE	R+2SE
Total fertility rate (Women age 15–49)					
Urban	1.690	0.132	0.078	1.426	1.954
Rural	1.834	0.111	0.060	1.612	2.056
Total	1.773	0.084	0.047	1.605	1.940
Age-specific fertility rate (Women age 15–19)					
Total	0.021	0.005	0.247	0.011	0.031
Age-specific fertility rate (Women age 20–24)					
Total	0.089	0.007	0.075	0.076	0.103
Age-specific fertility rate (Women age 25–29)					
Total	0.122	0.010	0.079	0.102	0.141
Age-specific fertility rate (Women age 30–34)					
Total	0.090	0.011	0.125	0.068	0.113
Age-specific fertility rate (Women age 35–39)					
Total	0.026	0.007	0.263	0.012	0.040
Age-specific fertility rate (Women age 40–44)					
Total	0.007	0.003	0.480	0.000	0.013
Neonatal mortality (5-year period preceding survey)					
Total	31.183	6.588	0.211	18.007	44.358
Infant mortality ${}_1q_0$ (5-year period preceding survey)					
Total	36.714	7.161	0.195	22.392	51.036
Child mortality ${}_4q_1$ (5-year period preceding survey)					
Total	10.492	4.084	0.389	2.323	18.661
Under-five mortality ${}_5q_0$ (5-year period preceding survey)					
Total	46.821	7.878	0.168	31.065	62.577
Crude death rate (Based on Household Questionnaire)					
Total	10.068	0.942	0.094	8.185	11.952
Crude birth rate (Based on women's birth history)					
Total	16.571	0.849	0.051	14.881	18.278
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 overview of the general quality of the NFHS-2 data. Whereas Appendix A is concerned with sampling errors and their effects on the survey results, the tables in this appendix refer to possible *nonsampling* errors: for example, 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 workload; noncooperation of the respondent in providing information; or refusal to have children measured for height and weight or tested for anaemia. A description of the likely magnitude of such nonsampling errors is provided in this appendix.

The distribution of the *de facto* household population by single years of age and sex is presented in Table B.1. In many (but not all) cases, the respondent was the head of the household. 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 NFHS-2, 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 NFHS-2 shares the same problems inherent in all Indian censuses and surveys. Heaping on ages ending in 0, 2, 5, and 8 is considerable and is particularly severe in the older age groups. Another measure of the quality of the NFHS-2 age data is the percentage of persons whose ages were recorded as not known or missing. In Goa, information on age was recorded for all but 1 person out of 7,345 persons who stayed in the sample households the night before the interview.

Table B.2 examines the possibility that some eligible women (that is, ever-married women age 15–49) were not properly identified in NFHS-2. In some surveys, interviewers may try to reduce their workload 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-2 data. It can, therefore, be concluded that there was no concerted effort to misidentify eligible women in NFHS-2 in Goa.

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 data collection was not carried out with sufficient care. In NFHS-2 in Goa, information is complete for woman's education and for the age at death for children born in the past 15 years had died. The extent of missing information is very low for age at first marriage and prevalence of diarrhoea in the two weeks preceding the survey (Table B.3). Information is missing for the month of birth for 2 percent of births in the 15 years preceding the survey, but it is important to note that the year of birth is recorded in every case in which the month is missing. Data on height and weight of children are available for about 94–95 percent of the members of the reference group. This level of response is excellent, as some children could not be measured

Table B.1 Household age distribution

Single-year age distribution of *de facto* household population by sex (weighted), Goa, 1999

Age	Male		Female		Age	Male		Female	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
< 1	60	1.7	50	1.4	38	63	1.7	47	1.3
1	72	2.0	61	1.6	39	44	1.2	38	1.0
2	55	1.5	44	1.2	40	107	3.0	82	2.2
3	60	1.7	62	1.7	41	21	0.6	21	0.6
4	50	1.4	47	1.3	42	45	1.2	40	1.1
5	82	2.3	60	1.6	43	23	0.6	15	0.4
6	59	1.6	46	1.2	44	37	1.0	27	0.7
7	45	1.2	62	1.7	45	74	2.0	85	2.3
8	60	1.7	66	1.8	46	19	0.5	27	0.7
9	58	1.6	74	2.0	47	18	0.5	29	0.8
10	58	1.6	58	1.6	48	37	1.0	40	1.1
11	43	1.2	61	1.6	49	27	0.8	26	0.7
12	64	1.8	68	1.8	50	59	1.6	46	1.2
13	69	1.9	70	1.9	51	23	0.6	34	0.9
14	71	2.0	63	1.7	52	39	1.1	35	0.9
15	75	2.1	66	1.8	53	21	0.6	32	0.9
16	59	1.6	75	2.0	54	30	0.8	41	1.1
17	75	2.1	69	1.8	55	43	1.2	54	1.4
18	78	2.2	93	2.5	56	30	0.8	20	0.5
19	70	1.9	72	1.9	57	16	0.5	14	0.4
20	93	2.6	92	2.5	58	26	0.7	33	0.9
21	68	1.9	51	1.4	59	15	0.4	16	0.4
22	87	2.4	98	2.6	60	62	1.7	70	1.9
23	72	2.0	67	1.8	61	15	0.4	13	0.3
24	65	1.8	76	2.1	62	16	0.4	32	0.9
25	95	2.6	111	3.0	63	13	0.4	16	0.4
26	67	1.8	65	1.7	64	16	0.4	21	0.6
27	58	1.6	59	1.6	65	39	1.1	57	1.5
28	84	2.3	76	2.0	66	12	0.3	12	0.3
29	52	1.4	54	1.5	67	6	0.2	13	0.3
30	115	3.2	133	3.6	68	10	0.3	15	0.4
31	29	0.8	29	0.8	69	6	0.2	9	0.3
32	82	2.3	60	1.6	70+	111	3.1	149	4.0
33	46	1.3	24	0.6	Don't				
34	51	1.4	46	1.2	know/				
35	93	2.6	126	3.4	missing	0	0.0	1	0.0
36	41	1.1	36	1.0	Total	3,621	100.0	3,724	100.0
37	36	1.0	42	1.1					

Note: The *de facto* population includes both usual residents and visitors who stayed in the household the night before the interview.

because they were not at home or they were ill at the time of the survey. In some cases when the child was at home, either the child refused to be measured or the mother refused to allow the child to be measured. Data on woman's haemoglobin level are available for 96 percent of respondents and data on child's haemoglobin level are available for 90 percent of children. Before undertaking haemoglobin measurements, a separate 'informed consent' statement was read to the respondent explaining that participation in the haemoglobin testing was completely voluntary. At this point, some women declined to take part in the anaemia testing and/or to have their children participate.

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 that may indicate that births have been omitted or that the ages of children have been displaced. Overall, 98 percent of living children listed in the birth history had complete birth

Table B.2 Age distribution of eligible and interviewed women					
Age distribution of the <i>de facto</i> household population of women age 10–54 and of interviewed women age 15–49, and percentage of eligible women who were interviewed (weighted), Goa, 1999					
Age	All women	Ever-married women	Interviewed women		Percent interviewed
			Number	Percent	
10–14	319	0	NA	NA	NA
15–19	375	22	21	1.7	95.6
20–24	385	116	108	8.6	93.1
25–29	365	253	243	19.5	95.8
30–34	293	271	260	20.8	95.9
35–39	289	272	258	20.7	94.9
40–44	185	181	173	13.9	95.2
45–49	207	196	185	14.8	94.4
50–54	188	184	NA	NA	NA
15–49	2,099	1,311	1,247	100.0	95.1

Note: The *de facto* population includes both usual residents and visitors who stayed in the household the night before the interview. For all columns, the age distribution is taken from ages reported in the Household Questionnaire. The total number of interviewed women in this table differs from the total number in earlier tables because this table uses household weights rather than women's weights for the calculations.
NA: Not applicable

Table B.3 Completeness of reporting			
Percentage of observations with missing information for selected demographic and health indicators (weighted), Goa, 1999			
Indicator	Reference group	Percentage missing information	Number of cases
Birth date	Births in past 15 years		
Month only		1.80	1,701
Month and year		0.00	1,701
Age at death	Deaths to births in past 15 years	0.00	101
Age at first marriage	Ever-married women age 15–49	0.24	1,246
Woman's education	Ever-married women age 15–49	0.00	1,246
Anthropometry	Living children age 0–35 months		
Height		5.31	319
Weight		5.60	319
Height or weight		5.60	319
Woman's haemoglobin level	Ever-married women age 15–49	3.81	1,246
Child's haemoglobin level	Living children age 6–35 months	9.66	279
Diarrhoea in past 2 weeks	Living children age 1–35 months	0.61	317

dates recorded, as did 93 percent of children who had died. The completeness of data on birth dates for both surviving and nonsurviving children is very good overall and is absolutely complete in recent years. The annual data on the number of births can be examined to see if there is an abnormally large decline in the number of births after January 1996, the cutoff point for the health questions and measurements made on young children in the survey. It is typical for the annual number of births to fluctuate somewhat, so small annual fluctuations are to be expected.

Table B.4 Births by calendar year

Number of births, percent with complete birth date, sex ratio at birth, and calendar year ratio for children still alive at the time of the survey (L), children who died by the time of the survey (D), and total children (T), by calendar year (weighted), Goa, 1999

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
1999	28	1	29	100.0	100.0	100.0	832	0	776	NA	NA	NA
1998	113	2	115	100.0	100.0	100.0	726	1,076	731	NC	NC	NC
1997	114	2	117	100.0	100.0	100.0	938	0	906	104.2	36.8	100.9
1996	107	9	116	100.0	100.0	100.0	793	1,269	823	89.4	439.5	95.4
1995	124	2	126	99.2	100.0	99.2	982	NC	1,015	124.7	26.1	117.4
1994	93	7	99	100.0	100.0	100.0	881	381	835	78.5	146.9	81.1
1993	112	7	119	97.2	100.0	97.4	779	1,380	807	109.3	97.5	108.5
1992	112	8	119	96.3	100.0	96.6	718	610	711	107.4	141.5	109.2
1991	96	4	100	97.9	100.0	98.0	1,140	2,795	1,178	81.1	62.5	80.2
1990	126	5	131	99.2	80.1	98.4	991	1,497	1,006	127.1	75.9	123.9
1989	101	9	111	94.9	100.0	95.3	1,278	1,947	1,321	93.7	201.9	98.0
1988	91	4	95	96.7	51.7	94.8	871	364	842	89.1	43.2	85.3
1993-97	549	27	577	99.2	100.0	99.3	874	942	878	NA	NA	NA
1988-92	526	30	556	97.1	90.3	96.7	976	1,144	984	NA	NA	NA
1983-87	546	46	592	98.7	93.4	98.3	962	1,179	978	NA	NA	NA
1978-82	467	45	512	97.3	95.6	97.1	1,068	534	1,006	NA	NA	NA
1977 or earlier	440	58	498	98.0	88.3	96.9	1,114	707	1,057	NA	NA	NA
All	2,668	210	2,878	98.2	93.0	97.8	974	828	963	NA	NA	NA

NA: Not applicable

NC: Not calculated because full-year data were not collected for 1999 or because the sex ratio at birth is undefined.

¹Both year and month of birth given

² $(B_f/B_m) \times 1000$, where B_f and B_m are the numbers of female and male births, respectively

³ $[2B_x / (B_{x-1} + B_{x+1})] \times 100$, where B_x is the number of births in calendar year x

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 percentage of neonatal deaths reported to occur at age 0–6 days, for births occurring during five-year periods preceding the survey (weighted), Goa, 1999				
Age at death (days)	Years preceding survey			
	0–4	5–9	10–14	0–14
< 1	6	6	15	27
1	3	6	0	9
2	2	2	4	8
3	1	0	5	6
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	2	0	0	2
9	0	1	2	3
10	0	0	1	1
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	1	0	0	1
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	1	1	0	2
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	0	1	1
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	0	0
30	0	0	1	1
0–30	16	16	29	61
Percent early neonatal ¹	75.6	87.1	83.3	82.3

¹ Deaths during the first 6 days divided by deaths during the first 30 days

However, the sharp drop in the annual number of births in 1996 (particularly for living children) suggests that there has been some omission of recent births or displacement of birth dates that could result in an underestimate of both fertility and infant mortality rates for recent years.

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 NFHS-2 began, therefore, interviewer training stressed this issue to try to reduce the extent of biases due to age displacement. Apparently, the training was not entirely successful in avoiding this type of problem, however.

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 seriously underreported in Goa, because the

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 percentage of infant deaths reported to occur at age under one month, for births occurring during five-year periods preceding the survey (weighted), Goa, 1999

Age at death (months)	Years preceding survey			
	0-4	5-9	10-14	0-14
< 1	16	16	29	61
1	0	1	1	2
2	0	3	2	5
3	1	3	1	5
4	0	2	1	3
5	0	1	0	1
6	0	0	0	0
7	0	0	2	2
8	0	1	0	1
9	0	0	0	0
10	1	0	0	1
11	0	0	0	0
12	0	2	0	2
13	0	0	0	0
14	0	0	2	2
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	2	2
19	0	0	1	1
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
1 year	0	0	0	0
0-11 months	18	27	36	82
Percent neonatal ¹	88.1	59.1	80.2	75.0

¹Deaths during the first month divided by deaths during the first year

ratios of deaths under seven days to all neonatal deaths are consistently high (a ratio of less than 25 percent is often used as a guideline to indicate underreporting of early neonatal deaths). The ratios are 76, 87, and 83 for the periods 0-4 years, 10-14 years, and 5-9 years preceding the survey, respectively (Table B.5).

Table B.6 shows the percentage of infant deaths that occurred during the neonatal period. These percentages 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 ages, 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 year 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 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 the child mortality rate upward.

Examination of the distribution of deaths under age two years during the 15 years before the survey by month of death (Table B.6) indicates that Goa data is largely free of the error of heaping. The strong emphasis on this problem during the training of interviewers for the NFHS-2 fieldwork has produced the expected results and estimates of infant mortality and child mortality are not affected by quality of data.

APPENDIX C
GOA NFHS-2 STAFF

Population Research Centre, Dharwad

Dr. B.M. Ramesh
(Project Director)

Dr. T. Rajaretnam
Dr. S. Rajaram
(Survey Coordinators)

Team Supervisors

Mr. G.C. Jadar
Mr. A.S. Kulkarni
Mr. K.E.T. Rajarama

Field Editors

Mrs. Maria S. Fernandes
Ms. Preetam Barros

Health Investigators

Ms. Liberatha D. Mello

Ms. Sumitra H. Goankar

Interviewers

Ms. Bharati Kale
Ms. Fermina Fernandes
Ms. Veena Fadte
Ms. Purnima Lotlikar

Ms. Milangrina Ferrao
Ms. Sugandha Prabhu
Ms. Dolcie Pereira
Mrs. Manisha R. Sapre

Household Listing Coordinators/Supervisors

Mr. R.V. Deshpande

Mr. D.G. Satihal

Household Listers & Mappers

Mr. Ashok Kalangutkar
Mr. Nivrutti Gawas

Mr. Nitin Mahale
Mr. Prabhakar Mandrekar

Office Editors

Dr. S. Rajaram
Mr. S.B. Ganiger

Mr. G.C. Jadar
Mr. A.S. Kulkarni

Data Entry Supervisors

Dr. S. Rajaram
Mrs. Jyoti S. Hallad

Data Entry Operators

Mrs. A.S. Joshi
Mrs. M.N. Korakoppa

Data Processing Coordinators

Mr. D.G. Satihal

Mrs. Jyoti S. Hallad

Other Staff

Mr. U.L.N. Rao, Office Superintendent
Mrs. J.Y. Sulibhavi, Stenographer
Mr. D.S. Phadke, Computer
Mr. S.N. Joshi, Upper Division Clerk

Mr. S.U. Mathad, Lower Division Clerk
Mr. M.S. Badiger, Driver
Mr. S.N. Tonapi, Office Boy
Mr. Govind Kategar, Office Boy

International Institute for Population Sciences, Mumbai

Prof. K.B. Pathak
Prof. T.K. Roy
(Project Directors)

Prof. Sumati Kulkarni
Prof. Arvind Pandey
Dr. Kamla Gupta
Dr. Parveen Nangia
(Project Coordinators)

Senior Research Officers

Dr. Rajeshri Chitanand
Dr. Damodar Sahu
Dr. Yonah Bhutia

Health Coordinators

Dr. Vikash Chandra
Dr. P.V. Kaushik
Dr. Sanjeev P. Walokar

Research Officers

Mr. Mukul Agarwal
Mr. Praween Kumar Agrawal
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Ms. Pavani Upadrashtha
Ms. Y. Vaidehi

Accounts & Administrative Staff

Mr. R.S. Hegde, Sr. Accountant
Mr. D. Lokanathan, Sr. Secretarial Assistant
Mr. Sadashiv Jathade, Jr. Secretarial Assistant
Mr. John D'Souza, Jr. Secretarial Assistant

Mr. Ashok Pawar, Office Boy
Mr. Pramod T. Sawant, Office Boy
Mr. Parasnath Verma, Office Boy

Consultants

Dr. Rajib Acharya
Dr. Fred Arnold
Ms. Elizabeth Britton
Ms. Donna Espeut
Dr. Umesh Kapil
Mr. Zaheer Ahmad Khan
Dr. Sunita Kishor
Mr. Sushil Kumar

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Steering Committee for NFHS-2

Secretary (Family Welfare)
Ministry of Health and Family Welfare
New Delhi

Joint Secretary (S)
Department of Family Welfare
Ministry of Health and Family Welfare
New Delhi

Joint Secretary and Financial Advisor
Ministry of Health and Family Welfare
New Delhi

Chief Director (S)
Department of Family Welfare
Ministry of Health and Family Welfare
New Delhi

Advisor (Health)
Planning Commission
New Delhi

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Department of Statistics
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Ministry of Human Resource Development
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Registrar General, India
New Delhi

Director General of Health Services
Ministry of Health and Family Welfare
New Delhi

Representative
United States Agency for International
Development
New Delhi

Prof. M.M. Gandotra
Additional Director
Population Research Centre
M.S. University of Baroda
Vadodara

Dr. K. Srinivasan
Executive Director
Population Foundation of India
New Delhi

Prof. Pravin Visaria
Director
Institute of Economic Growth
New Delhi

Director
International Institute for Population
Sciences
Mumbai

Administrative and Financial Management Committee for NFHS-2

Joint Secretary and Financial Advisor
Ministry of Health and Family Welfare
New Delhi

Joint Secretary (S)
Department of Family Welfare
Ministry of Health and Family Welfare
New Delhi

Chief Director (S)
Department of Family Welfare
Ministry of Health and Family Welfare
New Delhi

Prof. A.K. Sengupta
Honorary Director
Population Research Centre
Department of Economics
Lucknow University
Lucknow

Dr. Sumati Kulkarni
Professor & Head
Department of Development Studies
International Institute for Population
Sciences
Mumbai

Director
International Institute for Population
Sciences
Mumbai

Representative
ORC Macro
Calverton, Maryland, USA

Representative
United States Agency for International
Development
New Delhi

Technical Advisory Committee for NFHS-2

Prof. T.K. Roy
Director
International Institute for Population
Sciences
Mumbai

Chief Director (S)
Department of Family Welfare
Ministry of Health and Family Welfare
New Delhi

Secretary
Department of Statistics
Ministry of Planning and Programme
Implementation
New Delhi

Prof. P.N. Mari Bhat
Head
Population Research Centre
Institute of Economic Growth
New Delhi

Prof. M.M. Gandotra
Additional Director
Population Research Centre
M.S. University of Baroda, Vadodara

Prof. P. Hanumantha Rayappa
Former Head
Population Research Centre
Institute for Social and Economic Change
Bangalore

Representative
ORC Macro
Calverton, Maryland, USA

Representative
East-West Center
Honolulu, Hawaii, USA
Representative
United States Agency for International
Development
New Delhi

Dr. Sumati Kulkarni
Professor & Head
Department of Development Studies
International Institute for Population
Sciences
Mumbai

LIST OF CONTRIBUTORS

Dr. T.K. Roy, Director, International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai-400 088, India

Ms. Donna Espeut, Research Analyst, ORC Macro, 11785 Beltsville Drive, Calverton, Maryland 20705, USA

Dr. B.M. Ramesh, Director, Population Research Centre, JSS Institute of Economic Research, Vidyagiri, Dharwad - 580004, Karnataka, India

Dr. G. Rama Rao, Professor and Head, Department of Mathematical Demography and Statistics, International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai-400 088, India

Dr. Sunita Kishor, Senior Gender Specialist, ORC Macro, 11785 Beltsville Drive, Calverton, Maryland 20705, USA

Dr. Rajeshri Chitanand, Senior Research Officer, NFHS-2, International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai-400 088, India

Dr. Rajib Acharya, Consultant, ORC Macro, 11785 Beltsville Drive, Calverton, Maryland 20705, USA

APPENDIX D
SURVEY INSTRUMENTS

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
HOUSEHOLD QUESTIONNAIRE

CONFIDENTIAL
For Research
Purposes Only

INDIA

IDENTIFICATION																																	
STATE _____	<table border="1"> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table>																																
DISTRICT _____																																	
TEHSIL/TALUK _____																																	
CITY/TOWN/VILLAGE _____																																	
URBAN/RURAL (urban=1, rural=2).....																																	
LARGE CITY/SMALL CITY/TOWN/RURAL AREA..... (large city=1, small city=2, town=3, rural area=4)																																	
PSU NUMBER.....																																	
HOUSEHOLD NUMBER.....																																	
NAME OF HOUSEHOLD HEAD _____																																	
ADDRESS OF HOUSEHOLD _____																																	

INTERVIEWER VISITS										
	1	2	3	FINAL VISIT						
DATE				DAY <table border="1"><tr><td></td><td></td></tr></table>						
				MONTH <table border="1"><tr><td></td><td></td></tr></table>						
				YEAR <table border="1"><tr><td>1</td><td>9</td></tr></table>	1	9				
1	9									
INTERVIEWER'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr></table>						
RESULT*				RESULT CODE <table border="1"><tr><td></td><td></td></tr></table>						
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td><td></td></tr></table>						
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT THE TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD <table border="1"><tr><td></td><td></td></tr></table> TOTAL ELIGIBLE WOMEN <table border="1"><tr><td></td><td></td></tr></table> LINE NO. OF RESP. TO HOUSEHOLD SCHEDULE <table border="1"><tr><td></td><td></td></tr></table>						

DATE	SUPERVISOR <table border="1"><tr><td></td><td></td></tr></table>			FIELD EDITOR <table border="1"><tr><td></td><td></td></tr></table>			OFFICE EDITOR <table border="1"><tr><td></td><td></td></tr></table>			KEYED BY <table border="1"><tr><td></td><td></td></tr></table>		
NAME												

HOUSEHOLD SCHEDULE

1	RECORD THE TIME.	HOUR..... MINUTES.....	<table border="1" style="width: 20px; height: 20px;"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>				

Now I would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	RESIDENCE		SEX	AGE	IF AGE 6 YEARS OR OLDER		EDUCATION					
			Does (NAME) usually live here? (5)	Did (NAME) stay here last night? (6)			MARITAL STATUS	ELIGIBILITY	IF NEVER ATTENDED SCHOOL	IF EVER ATTENDED SCHOOL		IF NOT IN SCHOOL		
										What is the current marital status of (NAME)?*** (9)	CIRCLE LINE NUMBER OF EVER-MARRIED FEMALES AGE 15-49 (EXCLUDE NG AND NM) (10)		What is the highest grade (NAME) has completed? ***** (14)	IF AGE LESS THAN 18 YEARS
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	RESIDENCE		SEX	AGE	IF AGE 6 YEARS OR OLDER		ELIGIBILITY	IF NEVER ATTENDED SCHOOL		IF EVER ATTENDED SCHOOL		IF NOT IN SCHOOL
			YES NO	YES NO			CM	NG		S	DS	D	W	
01			1 2	1 2	M F	IN YEARS	1 2 3 4 5 6 7	01	1 2	1 2	REASON	GRADE	1 2	REASON
02			1 2	1 2	1 2		1 2 3 4 5 6 7	02	1 2	1 2			1 2	
03			1 2	1 2	1 2		1 2 3 4 5 6 7	03	1 2	1 2			1 2	
04			1 2	1 2	1 2		1 2 3 4 5 6 7	04	1 2	1 2			1 2	
05			1 2	1 2	1 2		1 2 3 4 5 6 7	05	1 2	1 2			1 2	
06			1 2	1 2	1 2		1 2 3 4 5 6 7	06	1 2	1 2			1 2	
07			1 2	1 2	1 2		1 2 3 4 5 6 7	07	1 2	1 2			1 2	
08			1 2	1 2	1 2		1 2 3 4 5 6 7	08	1 2	1 2			1 2	

HOUSEHOLD SCHEDULE (CONTINUED)

(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
			YES NO	YES NO	M F	IN YEARS	CM NG S DS D W NM		YES NO	YES NO	REASON	GRADE	YES NO	REASON
09			1 2	1 2	1 2		1 2 3 4 5 6 7	09	1 2	1 2			1 2	
10			1 2	1 2	1 2		1 2 3 4 5 6 7	10	1 2	1 2			1 2	
11			1 2	1 2	1 2		1 2 3 4 5 6 7	11	1 2	1 2			1 2	
12			1 2	1 2	1 2		1 2 3 4 5 6 7	12	1 2	1 2			1 2	
13			1 2	1 2	1 2		1 2 3 4 5 6 7	13	1 2	1 2			1 2	
14			1 2	1 2	1 2		1 2 3 4 5 6 7	14	1 2	1 2			1 2	
15			1 2	1 2	1 2		1 2 3 4 5 6 7	15	1 2	1 2			1 2	
16			1 2	1 2	1 2		1 2 3 4 5 6 7	16	1 2	1 2			1 2	

TICK HERE IF CONTINUATION SHEET USED TOTAL NUMBER OF ELIGIBLE WOMEN

219

* CODES FOR Q.4

RELATIONSHIP TO HEAD OF HOUSEHOLD:

- 01= HEAD
- 02= WIFE OR HUSBAND
- 03= SON OR DAUGHTER
- 04= SON-IN-LAW OR DAUGHTER-IN-LAW
- 05= GRANDCHILD
- 06= PARENT
- 07= PARENT-IN-LAW
- 08= BROTHER OR SISTER
- 09= BROTHER-IN-LAW OR SISTER-IN-LAW
- 10= NIECE OR NEPHEW
- 11= OTHER RELATIVE
- 12= ADOPTED/FOSTER CHILD
- 13= NOT RELATED

** CODES FOR Q.8

- 00= AGE LESS THAN ONE YEAR
- 95= AGE 95 YEARS OR MORE

*** CODES FOR Q.9

- MARITAL STATUS:
- 1= CURRENTLY MARRIED
 - 2= MARRIED, BUT GAUNA NOT PERFORMED
 - 3= SEPARATED
 - 4= DESERTED
 - 5= DIVORCED
 - 6= WIDOWED
 - 7= NEVER MARRIED

****CODES FOR Q.13

- 01= SCHOOL TOO FAR AWAY
- 02= TRANSPORT NOT AVAILABLE
- 03= EDUCATION NOT CONSIDERED NECESSARY
- 04= REQUIRED FOR HOUSEHOLD WORK
- 05= REQUIRED FOR WORK ON FARM/FAMILY BUSINESS
- 06= REQUIRED FOR OUTSIDE WORK FOR PAYMENT IN CASH OR KIND
- 07= COST TOO MUCH
- 08= NO PROPER SCHOOL FACILITIES FOR GIRLS
- 09= REQUIRED FOR CARE OF SIBLINGS
- 10= NOT INTERESTED IN STUDIES
- 96= OTHER
- 98= DK

*****CODES FOR Q.14

- GRADE:
- 00= LESS THAN 1 YEAR COMPLETED

*****CODES FOR Q.16

- 01= SCHOOL TOO FAR AWAY
- 02= TRANSPORT NOT AVAILABLE
- 03= FURTHER EDUCATION NOT CONSIDERED NECESSARY
- 04= REQUIRED FOR HOUSEHOLD WORK
- 05= REQUIRED FOR WORK ON FARM/FAMILY BUSINESS
- 06= REQUIRED FOR OUTSIDE WORK FOR PAYMENT IN CASH OR KIND
- 07= COST TOO MUCH
- 08= NO PROPER SCHOOL FACILITIES FOR GIRLS
- 09= REQUIRED FOR CARE OF SIBLINGS
- 10= NOT INTERESTED IN STUDIES
- 11= REPEATED FAILURES
- 12= GOT MARRIED
- 96= OTHER
- 98= DK

PSU NO. _____

HH NO. _____

LINE NO.	IF AGE 6 YEARS OR OLDER		AFTER COMPLETING COLUMNS 1-18 FOR ALL LISTED PERSONS, ASK:																		
	OCCUPATION		Does anyone listed suffer from:					Does anyone listed:					Has any (other) person listed ever smoked regularly? RECORD FOR CURRENT NONSMOKERS ONLY (27)								
	What kind of work does (NAME) do most of the time? (17)	IF WORKING Does (NAME) earn cash for this work? (18)	Asthma?	Tuberculosis?	IF SUFFERS FROM TUBERCULOSIS Has (NAME) received medical treatment for tuberculosis? (21)	Did anyone listed suffer from malaria at any time during the last <u>three</u> months? RECORD FOR EACH PERSON (22)	Did anyone listed suffer from jaundice at any time during the last <u>twelve</u> months? RECORD FOR EACH PERSON (23)	Chew paan masala or tobacco? RECORD FOR EACH PERSON (24)	Drink alcohol? RECORD FOR EACH PERSON (25)	Smoke? RECORD FOR EACH PERSON (26)											
RECORD FOR EACH PERSON (19)			RECORD FOR EACH PERSON (20)	YES		NO	YES	NO	YES	NO	YES	NO		YES	NO	YES	NO	YES	NO	DK	
01			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
02			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
03			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
04			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
05			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
06			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
07			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
08			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3

PSU NO. _____

HH NO. _____

	(17)	(18)		(19)		(20)		(21)		(22)		(23)		(24)		(25)		(26)		(27)		
		YES	NO	DK																		
09	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
10	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
11	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
12	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
13	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
14	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
15	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
16	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3

28 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?

YES → ENTER EACH IN TABLE NO

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?

YES → ENTER EACH IN TABLE NO

3) Do you have any guests or temporary visitors staying here, or anyone else who stayed here last night?

YES → ENTER EACH IN TABLE NO

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
29	When members of your household get sick, where do they generally go for treatment?	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSPITAL/PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSPITAL/CLINIC.....21 NGO WORKER.....22 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 PVT. PARAMEDIC.....34 VAIDYA/HAKIM/HOMEOPATH.....35 TRADITIONAL HEALER.....36 PHARMACY/DRUGSTORE.....37 DAI (TBA).....38 OTHER PRIVATE SECTOR HEALTH FACILITY.....39 OTHER SHOP.....41 HOME TREATMENT.....42 OTHER _____ 96 (SPECIFY)	
30	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT.....11 → 32 PUBLIC TAP.....12 GROUND WATER HANDPUMP IN RESIDENCE/ YARD/PLOT.....21 → 32 PUBLIC HANDPUMP.....22 WELL WATER WELL IN RESIDENCE/YARD/PLOT COVERED WELL.....31 OPEN WELL.....32 → 32 PUBLIC WELL COVERED WELL.....33 OPEN WELL.....34 SURFACE WATER SPRING.....41 RIVER/STREAM.....42 POND/LAKE.....43 DAM.....44 RAINWATER.....51 TANKER TRUCK.....61 OTHER _____ 96 (SPECIFY)	
31	How long does it take to go there, get water, and come back in one trip?	MINUTES..... <input type="text"/> <input type="text"/> <input type="text"/>	
32	What do you do to purify drinking water, if anything? RECORD ALL MENTIONED.	STRAIN BY CLOTH.....A ALUM.....B WATER FILTER.....C BOILING.....D ELECTRONIC PURIFIER.....E NOTHING.....F OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
33	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 _____ 96 (SPECIFY)	
34	What is the main source of lighting for your household?	ELECTRICITY.....1 KEROSENE.....2 GAS.....3 OIL.....4 OTHER _____ 6 (SPECIFY)	
35	How many rooms are there in your household?	ROOMS..... <input type="text"/> <input type="text"/>	
36	Do you have a separate room which is used as a kitchen?	YES.....1 NO.....2	
37	What type of fuel does your household mainly use for cooking?	WOOD.....01 CROP RESIDUES.....02 DUNG CAKES.....03 COAL/COKE/LIGNITE.....04 CHARCOAL.....05 KEROSENE.....06 ELECTRICITY.....07 LIQUID PETROLEUM GAS.....08 BIO-GAS.....09 OTHER _____ 96 (SPECIFY)	
38	What other types of fuel does your household commonly use for cooking or heating? RECORD ALL MENTIONED.	WOOD.....A CROP RESIDUES.....B DUNG CAKES.....C COAL/COKE/LIGNITE.....D CHARCOAL.....E KEROSENE.....F ELECTRICITY.....G LIQUID PETROLEUM GAS.....H BIO-GAS.....I OTHER _____ X (SPECIFY) NO OTHER TYPE.....Y	
39	What is the religion of the head of the household?	HINDU.....01 MUSLIM.....02 CHRISTIAN.....03 SIKH.....04 BUDDHIST/NEO BUDDHIST.....05 JAIN.....06 JEWISH.....07 ZORASTRIAN/PARSI.....08 NO RELIGION.....09 OTHER _____ 96 (SPECIFY)	
40	What is the caste or tribe of the head of the household?	CASTE _____ 1 (SPECIFY) TRIBE _____ 2 (SPECIFY) NO CASTE/TRIBE.....3 →42	
41	Is this a scheduled caste, a scheduled tribe, other backward caste, or none of them?	SC.....1 ST.....2 OBC.....3 NONE OF THEM.....4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																																															
42	Does this household own this house or any other house?	YES.....1 NO.....2																																																																
43	Does this household own any agricultural land?	YES.....1 NO.....2	→46																																																															
44	_____ (SIZE AND UNIT) How much agricultural land does this household own?	ACRES.....	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																																																															
45	_____ (SIZE AND UNIT) Out of this land, how much is irrigated?	ACRES.....	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																																																															
46	Does this household own any livestock?	YES.....1 NO.....2																																																																
47	Does the household own any of the following:	<table border="1"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr><td>MATTRESS.....</td><td>1</td><td>2</td></tr> <tr><td>PRESSURE COOKER.....</td><td>1</td><td>2</td></tr> <tr><td>CHAIR.....</td><td>1</td><td>2</td></tr> <tr><td>COT/BED.....</td><td>1</td><td>2</td></tr> <tr><td>TABLE.....</td><td>1</td><td>2</td></tr> <tr><td>CLOCK/WATCH.....</td><td>1</td><td>2</td></tr> <tr><td>ELECTRIC FAN.....</td><td>1</td><td>2</td></tr> <tr><td>BICYCLE.....</td><td>1</td><td>2</td></tr> <tr><td>RADIO/TRANSISTOR.....</td><td>1</td><td>2</td></tr> <tr><td>SEWING MACHINE.....</td><td>1</td><td>2</td></tr> <tr><td>TELEPHONE.....</td><td>1</td><td>2</td></tr> <tr><td>REFRIGERATOR.....</td><td>1</td><td>2</td></tr> <tr><td>TELEVISION (B&W).....</td><td>1</td><td>2</td></tr> <tr><td>TELEVISION (COLOUR).....</td><td>1</td><td>2</td></tr> <tr><td>MOPED/SCOOTER/MOTORCYCLE.....</td><td>1</td><td>2</td></tr> <tr><td>CAR.....</td><td>1</td><td>2</td></tr> <tr><td>WATER PUMP.....</td><td>1</td><td>2</td></tr> <tr><td>BULLOCK CART.....</td><td>1</td><td>2</td></tr> <tr><td>THRESHER.....</td><td>1</td><td>2</td></tr> <tr><td>TRACTOR.....</td><td>1</td><td>2</td></tr> </tbody> </table>		YES	NO	MATTRESS.....	1	2	PRESSURE COOKER.....	1	2	CHAIR.....	1	2	COT/BED.....	1	2	TABLE.....	1	2	CLOCK/WATCH.....	1	2	ELECTRIC FAN.....	1	2	BICYCLE.....	1	2	RADIO/TRANSISTOR.....	1	2	SEWING MACHINE.....	1	2	TELEPHONE.....	1	2	REFRIGERATOR.....	1	2	TELEVISION (B&W).....	1	2	TELEVISION (COLOUR).....	1	2	MOPED/SCOOTER/MOTORCYCLE.....	1	2	CAR.....	1	2	WATER PUMP.....	1	2	BULLOCK CART.....	1	2	THRESHER.....	1	2	TRACTOR.....	1	2	
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48	What is the main type of kitchenware this household uses?	<table border="1"> <tbody> <tr><td>CLAY.....</td><td>1</td></tr> <tr><td>ALUMINIUM.....</td><td>2</td></tr> <tr><td>CAST IRON.....</td><td>3</td></tr> <tr><td>BRASS/COPPER.....</td><td>4</td></tr> <tr><td>STAINLESS STEEL.....</td><td>5</td></tr> <tr><td>OTHER.....</td><td>6</td></tr> </tbody> </table>	CLAY.....	1	ALUMINIUM.....	2	CAST IRON.....	3	BRASS/COPPER.....	4	STAINLESS STEEL.....	5	OTHER.....	6	(SPECIFY)																																																			
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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
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51	Did any usual resident of this household die since January 1997?	YES.....1 NO.....2 → 63	
----	--	----------------------------	--

52	How many persons died?	TOTAL DEATHS..... <input style="width: 40px;" type="text"/>	
----	------------------------	---	--

53	54	55	56	57	58	59	60	61	62
What (was/were) the name(s) of the person(s) who died?	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?	What did (NAME) die of?	CHECK 54 AND 55: DECEASED WAS FEMALE AGED 15-49 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?

226

01	(NAME)	MALE.....1 FEMALE...2	DAYS....1 <input style="width: 20px; height: 20px;" type="text"/> MONTHS..2 <input style="width: 20px; height: 20px;" type="text"/> YEARS...3 <input style="width: 20px; height: 20px;" type="text"/>	MONTH.. <input style="width: 20px; height: 20px;" type="text"/> YEAR... <input style="width: 20px; height: 20px;" type="text"/>		YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 (GO TO 62) <	YES.....1 (GO TO NEXT DEATH) < NO.....2	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2
02	(NAME)	MALE.....1 FEMALE...2	DAYS....1 <input style="width: 20px; height: 20px;" type="text"/> MONTHS..2 <input style="width: 20px; height: 20px;" type="text"/> YEARS...3 <input style="width: 20px; height: 20px;" type="text"/>	MONTH.. <input style="width: 20px; height: 20px;" type="text"/> YEAR... <input style="width: 20px; height: 20px;" type="text"/>		YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 (GO TO 62) <	YES.....1 (GO TO NEXT DEATH) < NO.....2	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2
03	(NAME)	MALE.....1 FEMALE...2	DAYS....1 <input style="width: 20px; height: 20px;" type="text"/> MONTHS..2 <input style="width: 20px; height: 20px;" type="text"/> YEARS...3 <input style="width: 20px; height: 20px;" type="text"/>	MONTH.. <input style="width: 20px; height: 20px;" type="text"/> YEAR... <input style="width: 20px; height: 20px;" type="text"/>		YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 (GO TO 62) <	YES.....1 (GO TO NEXT DEATH) < NO.....2	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2

63	RECORD THE TIME.	HOUR..... <input style="width: 20px; height: 20px;" type="text"/> MINUTES..... <input style="width: 20px; height: 20px;" type="text"/>
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NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
WOMAN'S QUESTIONNAIRE

CONFIDENTIAL
For Research
Purposes Only

INDIA

IDENTIFICATION																																									
STATE _____	<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																																								
DISTRICT _____																																									
TEHSIL/TALUK _____																																									
CITY/TOWN/VILLAGE _____																																									
URBAN/RURAL (urban=1, rural=2).....																																									
LARGE CITY/SMALL CITY/TOWN/RURAL AREA..... (large city=1, small city=2, town=3, rural area=4)																																									
PSU NUMBER.....																																									
HOUSEHOLD NUMBER.....																																									
NAME AND LINE NUMBER OF WOMAN _____																																									
ADDRESS OF HOUSEHOLD _____																																									

INTERVIEWER VISITS										
	1	2	3	FINAL VISIT						
DATE				DAY <table border="1"><tr><td></td><td></td></tr></table> MONTH <table border="1"><tr><td></td><td></td></tr></table> YEAR <table border="1"><tr><td>1</td><td>9</td></tr></table>					1	9
1	9									
INTERVIEWER'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr></table>						
RESULT*				RESULT CODE <table border="1"><tr><td></td></tr></table>						
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td></tr></table>						

*RESULT CODES:

- 1 COMPLETED 3 POSTPONED 5 PARTLY COMPLETED
2 NOT AT HOME 4 REFUSED 6 OTHER (SPECIFY) _____

NATIVE LANGUAGE OF RESPONDENT**.....

--	--

**LANGUAGE CODES:

- | | | | |
|--------------------------|--------------|-------------|------------|
| 01 Assamese | 05 Hindi | 09 Manipuri | 14 Konkani |
| 02 Bengali | 06 Kannada | 10 Marathi | 15 Sindhi |
| 03 English | 07 Kashmiri | 11 Nepali | 16 Tamil |
| 04 Gujarati | 08 Malayalam | 12 Oriya | 17 Telugu |
| 19 Other (SPECIFY) _____ | 13 Punjabi | 18 Urdu | |

DATE	SUPERVISOR <table border="1"><tr><td></td><td></td></tr></table>			FIELD EDITOR <table border="1"><tr><td></td><td></td></tr></table>			OFFICE EDITOR <table border="1"><tr><td></td><td></td></tr></table>			KEYED BY <table border="1"><tr><td></td><td></td></tr></table>		
NAME												

SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR..... MINUTES.....	<input type="checkbox"/> <input type="checkbox"/>
<p>Namaste. My name is _____ and I am working with (NAME OF THE ORGANISATION). We are conducting a national survey about the health of women and children. We would very much appreciate your participation in this survey.</p> <p>I would like to ask you about your health (and the health of your children). This information will help the government to plan health services. The amount of time needed will be less than one hour. Participation in this survey is voluntary. If you decide to participate, you may stop answering questions at any time. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.</p> <p>We hope that you will participate in the survey since your views are important. Do you want to ask me anything about the survey at this time?</p> <p>Signature of Interviewer: _____ Date: _____</p> <p>RESPONDENT AGREES FOR INTERVIEW.....1 RESPONDENT DOES NOT AGREE FOR INTERVIEW.....2 → END</p>			
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, a town, or a village?	CITY/TOWN.....1 VILLAGE.....2	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?	YEARS..... SINCE BIRTH.....95 VISITOR.....96 →105	<input type="checkbox"/> <input type="checkbox"/>
104	Just before you moved here, did you live in a city, a town, or a village?	CITY/TOWN.....1 VILLAGE.....2	
105	In what month and year were you born?	MONTH..... DK MONTH.....98 YEAR..... DK YEAR.....9998	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
106	How old were you at your last birthday? COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS.....	<input type="checkbox"/>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
107	What is your current marital status?	CURRENTLY MARRIED.....1 MARRIED BUT GAUNA NOT PERFORMED..2 SEPARATED.....3 DESERTED.....4 DIVORCED.....5 WIDOWED.....6 NEVER MARRIED.....7	→END →110 →END
108	Are you living with your husband now or is he staying elsewhere?	LIVING WITH HUSBAND.....1 STAYING ELSEWHERE.....2	→110
109	For how long have you and your husband not been living together? IF LESS THAN 1 YEAR, RECORD MONTHS; OTHERWISE RECORD COMPLETED YEARS.	MONTHS.....1 YEARS.....2	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
110	Now I would like to ask you some questions about your marriage. Have you been married only once or more than once?	ONCE.....1 MORE THAN ONCE.....2	→114
111	How old were you at the time of your <u>first</u> marriage?	AGE IN COMPLETED YEARS.....	<input type="text"/> <input type="text"/>
112	How old were you when you started living with your <u>first</u> husband?	AGE IN COMPLETED YEARS..... GAUNA HAD NOT TAKEN PLACE..... 96	<input type="text"/> <input type="text"/>
113	How old were you when your <u>first</u> marriage dissolved?	AGE IN COMPLETED YEARS.....	<input type="text"/> <input type="text"/>
114	How old were you at the time of your (current) marriage?	AGE IN COMPLETED YEARS.....	<input type="text"/> <input type="text"/>
115	How old were you when you started living with your (current) husband?	AGE IN COMPLETED YEARS..... GAUNA HAS NOT TAKEN PLACE.....96	→END

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
116	Have you ever attended school?	YES.....1 NO.....2	→119
117	What is the highest grade you completed?	GRADE.....	
118	CHECK 117: GRADE 0-5 <input type="checkbox"/> GRADE 6 AND ABOVE <input type="checkbox"/>		→120
119	Can you read and write?	YES.....1 NO.....2	→121
120	Do you usually read a newspaper or a magazine at least once a week?	YES.....1 NO.....2	
121	Do you usually listen to a radio at least once a week?	YES.....1 NO.....2	
122	Do you usually watch television at least once a week?	YES.....1 NO.....2	
123	Do you usually go to a cinema hall or theatre to see a movie at least once a month?	YES.....1 NO.....2	
124	How often do you yourself consume the following items: daily, weekly, occasionally, or never:		
	Milk or Curd?	DAILY WEEKLY OCCASIONALLY NEVER MILK OR CURD..1 2 3 4	
	Pulses or beans?	PULSES/BEANS..1 2 3 4	
	Green leafy vegetables?	GREEN LEAFY...1 2 3 4	
	Other vegetables?	OTH. VEG.....1 2 3 4	
	Fruits?	FRUITS.....1 2 3 4	
	Eggs?	EGGS.....1 2 3 4	
	Chicken, meat, or fish?	CHICKEN/MEAT/ FISH.....1 2 3 4	

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP				
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES.....1 NO.....2	→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.....	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				
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.....	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				
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.....	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE RECORD '00'.	TOTAL.....	<table border="1"><tr><td></td><td></td></tr></table>				
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL ___ births during your life. Is that correct? YES <input type="checkbox"/> NO <input type="checkbox"/> PROBE AND CORRECT 201-208 AS NECESSARY						
210	CHECK 208: ONE OR MORE BIRTHS <input type="checkbox"/> NO BIRTHS <input type="checkbox"/>		→225				

211

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 LIVE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

212	213	214	215	216	217	218	218A	219	220*
What name was given to your (first, next) baby?	Were any of these twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	IF ALIVE: Is (NAME) living with you?	IF ALIVE: RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	IF DEAD: How old was (NAME) 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.	Between (NAME OF PREVIOUS BIRTH) and (NAME OF THIS BIRTH) did you have any stillbirth, spontaneous abortion, or induced abortion? (* FOR FIRST CHILD ASK: Before (NAME), did you have any stillbirth, spontaneous abortion, or induced abortion?) IF NONE, RECORD '0'. FOR SECOND TWIN, RECORD '0' IN EACH BOX WITHOUT ASKING.

232

01 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 ↓ 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
02 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 ↓ 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
03 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 ↓ 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
04 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 ↓ 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

212	213	214	215	216	217	218	218A	219	220*
05 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 ↓ 219	AGE IN YEARS [][]	YES.....1 NO.....2	LINE NUMBER [][] ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
06 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 ↓ 219	AGE IN YEARS [][]	YES.....1 NO.....2	LINE NUMBER [][] ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
07 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 ↓ 219	AGE IN YEARS [][]	YES.....1 NO.....2	LINE NUMBER [][] ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
08 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 ↓ 219	AGE IN YEARS [][]	YES.....1 NO.....2	LINE NUMBER [][] ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
09 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 ↓ 219	AGE IN YEARS [][]	YES.....1 NO.....2	LINE NUMBER [][] ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
10 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 ↓ 219	AGE IN YEARS [][]	YES.....1 NO.....2	LINE NUMBER [][] ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
11 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 ↓ 219	AGE IN YEARS [][]	YES.....1 NO.....2	LINE NUMBER [][] ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

212	213	214	215	216	217	218	218A	219	220*
12 (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS....1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

221

After the last birth, did you have any stillbirth, spontaneous abortion, or induced abortion?
IF NONE, RECORD '0'

NUMBER OF STILLBIRTHS.....
NUMBER OF SPON. ABORTIONS.....
NUMBER OF INDUCED ABORTIONS.....

222

CHECK 220 AND 221:

Just to make sure that I have this right: you have had in TOTAL _____ STILLBIRTHS, _____ SPONTANEOUS ABORTIONS, and _____ INDUCED ABORTIONS during your life: Is that correct?

YES, NO → PROBE AND CORRECT 220 - 221 AS NECESSARY

223

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 MORE YEARS: EXPLANATION IS GIVEN.

224

CHECK 215 AND ENTER THE NUMBER OF BIRTHS SINCE JANUARY 1996.
IF NONE, RECORD '0'.

→ 229

234

SECTION 3A. QUALITY OF CARE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
301	During the last 12 months, has a health or family planning worker visited you at home?	YES.....1 NO.....2	→308
302	How many times did a worker visit you in the last 12 months?	NUMBER OF TIMES..... <input type="text"/>	
303	During these visits, what were the different matters talked about? Anything else? RECORD ALL MENTIONED.	FAMILY PLANNING.....A BREASTFEEDING.....B SUPPLEMENTARY FEEDING.....C IMMUNIZATION.....D NUTRITION.....E DISEASE PREVENTION.....F TREATMENT OF HEALTH PROBLEM...G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J CHILD CARE.....K SANITATION/CLEANLINESS.....L ORAL REHYDRATION.....M OTHER _____ X (SPECIFY)	
304	When was the last time a health or family planning worker visited you at home? IF LESS THAN ONE MONTH, RECORD '00' MONTHS.	MONTHS AGO..... <input type="text"/>	
305	Who visited you at that time?	PUBLIC SECTOR WORKER GOVT. DOCTOR.....11 PUBLIC HEALTH NURSE.....12 ANM/LHV.....13 MALE MPW/SUPERVISOR.....14 ANGANWADI WORKER.....15 VILLAGE HEALTH GUIDE.....16 OTHER PUBLIC SECTOR HEALTH WORKER.....17 NGO DOCTOR.....21 NGO WORKER.....22 PRIVATE SECTOR WORKER PRIVATE DOCTOR.....31 PRIVATE NURSE.....32 COMPOUNDER.....33 TRADITIONAL HEALER.....34 DAI (TBA).....35 OTHER PRIVATE SECTOR HEALTH WORKER.....36 OTHER _____ 96 (SPECIFY)	
305A	What type of services did you receive during this visit? Any other service? RECORD ALL MENTIONED.	PILL SUPPLY.....A CONDOM SUPPLY.....B FOLLOW-UP FOR STERILIZATION...C FOLLOW-UP FOR IUD INSERTION...D FAMILY PLANNING ADVICE.....E OTHER FAMILY PLANNING SERVICE...F IMMUNIZATION.....G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J DISEASE PREVENTION.....K MEDICAL TREATMENT FOR SELF...L TREATMENT FOR SICK CHILD...M TREATMENT FOR OTHER PERSON...N OTHER _____ X (SPECIFY)	
306	Did she/he spend enough time with you?	YES.....1 NO.....2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
307	Did she/he talk to you nicely, somewhat nicely, or not nicely?	NICELY.....1 SOMEWHAT NICELY.....2 NOT NICELY.....3	
308	Have you visited a health facility or camp for any reason for yourself (or your children) in the last 12 months?	YES.....1 NO.....2	>317
309	During these visits in the last 12 months, what were the different matters talked about? Anything else? RECORD ALL MENTIONED.	FAMILY PLANNING.....A BREASTFEEDING.....B SUPPLEMENTARY FEEDING.....C IMMUNIZATION.....D NUTRITION.....E DISEASE PREVENTION.....F TREATMENT OF HEALTH PROBLEM...G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J CHILD CARE.....K SANITATION/CLEANLINESS.....L ORAL REHYDRATION.....M OTHER.....X (SPECIFY)	
310	What type of health facility did you visit most recently for yourself (or your children)?	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFNC.....13 CHC/RURAL HOSPITAL/PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 CAMP.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSPITAL/CLINIC.....21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....31 PVT. MOBILE CLINIC.....32 PHARMACY/DRUGSTORE.....33 OTHER PRIVATE SECTOR HEALTH FACILITY.....34 OTHER.....96 (SPECIFY)	
311	What service did you go for? Any other service? RECORD ALL MENTIONED.	PILL SUPPLY.....A CONDOM SUPPLY.....B IUD/LOOP INSERTION.....C STERILIZATION OPERATION.....D FOLLOW-UP FOR STERILIZATION.....E FOLLOW-UP FOR IUD INSERTION.....F FAMILY PLANNING ADVICE.....G OTHER FAMILY PLANNING SERVICE...H IMMUNIZATION.....I ANTENATAL CARE.....J DELIVERY CARE.....K POSTPARTUM CARE.....L DISEASE PREVENTION.....M MEDICAL TREATMENT FOR SELF.....N TREATMENT FOR SICK CHILD.....O TREATMENT FOR OTHER PERSON.....P OTHER.....X (SPECIFY)	
311A	Did you receive the service that you went for?	YES.....1 NO.....2	

SECTION 3B. CONTRACEPTION

318. 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.

For each method I mention, please tell me if you have ever heard of the method and whether you have ever used the method at any time in your life?

<p>01] <u>Pill</u> Women can take a pill daily or weekly.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>02] <u>Condom or Nirodh</u> Men can use a rubber sheath during sexual intercourse.</p>	<p>HAS USED1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>03] <u>IUD or Loop</u> Women can have a loop or coil placed inside them by a doctor or a nurse.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>04] <u>Female sterilization</u> Women can have an operation to avoid having any more children.</p>	<p>Have you ever heard of female sterilization? IF YES: Have you ever had an operation to avoid having any more children?</p> <p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>05] <u>Male sterilization</u> Men can have an operation to avoid having any more children.</p>	<p>Have you ever heard of male sterilization? IF YES: Has your husband ever had an operation to avoid having any more children?</p> <p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>06] <u>Rhythm or safe period method</u> Couples can avoid having sexual intercourse on certain days of the month when the woman is more likely to become pregnant.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>07] <u>Withdrawal</u> Men can be careful and pull out before climax.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>08] Have you ever heard of any other ways or methods that women or men can use to delay or avoid pregnancy? IF YES: Have you ever used this method?</p> <p>1 _____ (SPECIFY)</p> <p>2 _____ (SPECIFY)</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p> <p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
319	CHECK 318: NOT A SINGLE CODE '1' (NEVER USED) <input type="checkbox"/>	AT LEAST ONE CODE '1' (EVER USED) <input type="checkbox"/> → SKIP TO 322	
320	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES.....1 NO.....2 → 356	
321	What have you used or done? CORRECT 318 AND 319.		
322	Now I would like to ask you about the time when you first did something or used a method to delay or avoid getting pregnant. How many living children did you have at that time, if any? IF NONE, RECORD '00'.	NUMBER OF CHILDREN..... <input type="text"/> <input type="text"/>	
323	CHECK 107: CURRENTLY MARRIED <input type="checkbox"/>	SEPARATED <input type="checkbox"/> DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED <input type="checkbox"/> → 364	
324	CHECK 230: NOT PREGNANT OR UNSURE <input type="checkbox"/>	PREGNANT <input type="checkbox"/> → 358	
325	CHECK 318: NEITHER STERILIZED <input type="checkbox"/>	HE OR SHE STERILIZED <input type="checkbox"/> → 327A	
326	Are you or your husband currently doing something or using any method to delay or avoid getting pregnant?	YES.....1 NO.....2 → 355	
327	Which method are you using? 327A CIRCLE '04' FOR FEMALE STERILIZATION. CIRCLE '05' FOR MALE STERILIZATION.	PILL.....01 CONDOM/NIRODH.....02 IUD/LOOP.....03 → 336 FEMALE STERILIZATION.....04 MALE STERILIZATION.....05 → 339 RHYTHM/SAFE PERIOD.....06 WITHDRAWAL.....07 → 350 OTHER.....96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
328	<p>For how many months have you been using pills/condoms continuously? IF LESS THAN 1 MONTH, RECORD '00'.</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>8 YEARS OR LONGER.....96</p>	
329	<p>Where did you obtain the pills/condoms the last time?</p> <p>IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHP/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>GOVT. PARAMEDIC.....17</p> <p>CAMP.....18</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....19</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>PVT. PARAMEDIC.....34</p> <p>VAIDYA/HAKIM/HOMEOPATH.....35</p> <p>TRADITIONAL HEALER.....36</p> <p>PHARMACY/DRUGSTORE.....37</p> <p>DAI (TBA).....38</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....39</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>HUSBAND.....42</p> <p>FRIEND/OTHER RELATIVE.....43</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p>	<p>->331</p> <p>->331</p>
330	<p>Do you know where this person obtained the pills/condoms the last time?</p> <p>IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHP/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>GOVT. PARAMEDIC.....17</p> <p>CAMP.....18</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....19</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>PVT. PARAMEDIC.....34</p> <p>VAIDYA/HAKIM/HOMEOPATH.....35</p> <p>TRADITIONAL HEALER.....36</p> <p>PHARMACY/DRUGSTORE.....37</p> <p>DAI (TBA).....38</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....39</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p> <p>DK.....98</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
331	May I see the packet of pills/condoms you are using now? IF PACKET SEEN, RECORD BRAND NAME.	PACKET SEEN.....1 BRAND NAME _____ [] [] [] PACKET NOT SEEN.....2	->333
332	Do you know the brand name of the pills/condoms you are using now?	BRAND NAME _____ [] [] [] DK.....998	
333	How much does one packet of pills/condoms cost you?	COST Rs:..... [] [] [] FREE.....995 DK.....998	->335
334	For that cost how many condoms/pill cycles do you get?	NUMBER..... [] []	
335	Have you been able to get the supply of pills/condoms whenever you need them?	YES.....1 NO.....2	->344
336	For how many months have you been using the IUD/LOOP continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... [] [] 8 YEARS OR LONGER.....96	
337	Who inserted the IUD/LOOP?	GOVERNMENT DOCTOR.....01 GOVERNMENT NURSE/PARAMEDIC.....02 NGO DOCTOR.....03 NGO NURSE/PARAMEDIC.....04 PRIVATE DOCTOR.....05 PRIVATE NURSE/PARAMEDIC.....06 OTHER _____ 96 (SPECIFY)	
338	Where did you go to get the IUD/LOOP inserted? _____ (NAME OF PLACE IF HOSPITAL OR CLINIC)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSPITAL/PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 CAMP.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSPITAL/CLINIC.....21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 OTHER PRIVATE SECTOR HEALTH FACILITY.....34 OTHER _____ 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
338A	How much did the IUD/LOOP insertion cost you? IF NO CHARGE, RECORD '0000'.	COST Rs:..... [] [] [] [] [] DK.....9998	→342
339	In what month and year was your/your husband's sterilization operation performed?	MONTH..... [] [] YEAR..... [] [] [] []	
340	Where did you/your husband get sterilized? _____ (NAME OF PLACE IF HOSPITAL OR CLINIC)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 UHC/UHE/UFWC.....12 CHC/RURAL HOSPITAL/PHC.....13 GOVT. MOBILE CLINIC.....14 CAMP.....15 OTHER PUBLIC SECTOR HEALTH FACILITY.....16 NGO/TRUST HOSPITAL/CLINIC.....21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 OTHER PRIVATE SECTOR HEALTH FACILITY.....34 OTHER _____ 96 (SPECIFY)	
341	How much did the operation cost you? IF NO CHARGE, RECORD '0000'	COST Rs..... [] [] [] [] [] DK.....9998	
342	How would you rate the care you/your husband received during or immediately after the operation/IUD insertion: very good, all right, not so good, or bad?	VERY GOOD.....1 ALL RIGHT.....2 NOT SO GOOD.....3 BAD.....4	
343	What improvements would you suggest in the care you/your husband received during or immediately after the operation/IUD insertion? Anything else? RECORD ALL MENTIONED.	MORE CLEANLINESS.....A MORE PRIVACY.....B BETTER CARE BY THE DOCTOR.....C BETTER CARE BY THE OTHER STAFF...D SHORTER WAITING TIME.....E LOWER COST.....F OTHER _____ X (SPECIFY) NONE.....Y	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
344	Who mainly motivated you to use (CURRENT METHOD)?	GOVT. DOCTOR.....01 PUBLIC HEALTH NURSE.....02 ANM/LHV.....03 MALE MPW/SUPERVISOR.....04 ANGANWADI WORKER.....05 OTHER GOVT. HEALTH WORKER.....06 NGO WORKER.....07 PRIVATE DOCTOR.....08 PRIVATE PARAMEDIC.....09 DAI (TBA).....10 TEACHER.....11 RELIGIOUS LEADER.....12 POLITICAL LEADER.....13 HUSBAND.....14 MOTHER/MOTHER-IN-LAW.....15 OTHER RELATIVE/FRIEND.....16 NO ONE/SELF.....17 OTHER _____ 96 (SPECIFY)	->347
345	Did he/she tell you about any other methods that you might use?	YES.....1 NO.....2	->347
346	Which other methods were you told about? RECORD ALL MENTIONED.	PILL.....A CONDOM/NIRODH.....B IUD/LOOP.....C FEMALE STERILIZATION.....D MALE STERILIZATION.....E RHYTHM/SAFE PERIOD.....F WITHDRAWAL.....G OTHER _____ X (SPECIFY)	
347	At the time when you accepted the (CURRENT METHOD) did any health or family planning worker tell you about side effects or other problems you might have using the (CURRENT METHOD)?	YES.....1 NO.....2	
348	Were you told what to do in case you experienced problems with the method?	YES.....1 NO.....2	
349	Did you receive any follow-up, either at home or in a health facility, after you accepted the (CURRENT METHOD)? PROBE FOR TYPE OF VISIT.	AT HOME ONLY.....1 IN A FACILITY ONLY.....2 BOTH.....3 NEITHER.....4	->351
350	For how long have you been using this method continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... <input type="text"/> <input type="text"/> 8 YEARS OR LONGER.....96	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
351	<p>Have you had any problems related to the use of (CURRENT METHOD)?</p>	<p>YES.....1 NO.....2</p>	→362
352	<p>What problems have you had related to the use of (CURRENT METHOD)?</p> <p>PROBE: Any other problems?</p> <p>RECORD ALL MENTIONED.</p>	<p>WEIGHT GAIN.....A WEIGHT LOSS.....B TOO MUCH BLEEDING.....C HYPERTENSION.....D HEADACHE/BODYACHE/BACKACHE.....E NAUSEA/VOMITING.....F NO MENSTRUATION.....G WEAKNESS/TIREDDNESS.....H DIZZINESS.....I FEVER.....J CRAMPS.....K SPOTTING.....L INCONVENIENT TO USE.....M ABDOMINAL PAIN.....N WHITE DISCHARGE.....O IRREGULAR PERIODS.....P BREAST TENDERNESS.....Q ALLERGY.....R EXPULSION.....S REDUCED SEXUAL SATISFACTION.....T OTHER.....X (SPECIFY)</p>	
353	<p>When you first started having these problems, did you talk to anyone about these problems?</p>	<p>YES.....1 NO.....2</p>	→362
354	<p>Who did you talk to about these problems?</p> <p>Any other person?</p> <p>RECORD ALL PERSONS TALKED TO.</p>	<p>GOVT. DOCTOR.....A PUBLIC HEALTH NURSE.....B ANM/LHV.....C ANGANWADI WORKER.....D OTHER GOVT. HEALTH WORKER.....E NGO DOCTOR.....F NGO WORKER.....G PRIVATE DOCTOR.....H PRIVATE PARAMEDIC.....I COMPOUNDER/PHARMACIST.....J TRADITIONAL HEALER.....K HUSBAND.....L FRIEND/OTHER RELATIVE.....M OTHER.....X (SPECIFY)</p>	→362
355	<p>What is the main reason you stopped using family planning?</p>	<p>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 HUSBAND AWAY.....12 COST TOO MUCH.....13 OTHER.....96 (SPECIFY)</p>	→358

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
356	CHECK 107: CURRENTLY MARRIED <input type="checkbox"/>	SEPARATED DESERTED DIVORCED WIDOWED <input type="checkbox"/>	→364
356A	CHECK 230: NOT PREGNANT OR UNSURE <input type="checkbox"/>	PREGNANT <input type="checkbox"/>	→358
357	What is the main reason you are not using a method of contraception to delay or avoid pregnancy?	HUSBAND AWAY.....11 FERTILITY-RELATED REASONS NOT HAVING SEX.....21 INFREQUENT SEX.....22 MENOPAUSAL/HAD HYSTERECTOMY..23 →362 SUBFECUND/INFECUND.....24 POSTPARTUM/BREASTFEEDING.....25 WANTS MORE CHILDREN.....26 OPPOSITION TO USE OPPOSED TO FAMILY PLANNING...31 HUSBAND OPPOSED.....32 OTHER PEOPLE OPPOSED.....33 AGAINST RELIGION.....34 LACK OF KNOWLEDGE KNOWS NO METHOD.....41 KNOWS NO SOURCE.....42 METHOD-RELATED REASONS HEALTH CONCERNS.....51 WORRY ABOUT SIDE EFFECTS...52 HARD TO GET METHOD.....53 COSTS TOO MUCH.....54 INCONVENIENT.....55 AFRAID OF STERILIZATION.....56 DON'T LIKE EXISTING METHODS..57 OTHER _____ 96 (SPECIFY) DK.....98	
358	Do you think you will use a method to delay or avoid pregnancy within the next 12 months?	YES.....1 →360 NO.....2 DK.....8	
359	Do you think you will use a method to delay or avoid pregnancy at any time in the future?	YES.....1 NO.....2 DK.....8 →361	
360	Which method would you prefer to use?	PILL.....01 CONDOM/NIRODH.....02 IUD/LOOP.....03 FEMALE STERILIZATION.....04 MALE STERILIZATION.....05 →362 RHYTHM/SAFE PERIOD.....06 WITHDRAWAL.....07 OTHER _____ 96 (SPECIFY) DK/UNSURE.....98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																					
361	<p>What is the main reason that you think you will not use a family planning method at any time in the future?</p>	<p>FERTILITY-RELATED REASONS NOT HAVING SEX.....11 INFREQUENT SEX.....12 MENOPAUSAL/HAD HYSTERECTOMY..13 SUBFECUND/INFECUND.....14 WANTS AS MANY CHILDREN AS POSSIBLE.....15</p> <p>OPPOSITION TO USE OPPOSED TO FAMILY PLANNING...21 HUSBAND OPPOSED.....22 OTHER PEOPLE OPPOSED.....23 AGAINST RELIGION.....24</p> <p>LACK OF KNOWLEDGE KNOWS NO METHOD.....31 KNOWS NO SOURCE.....32</p> <p>METHOD-RELATED REASONS HEALTH CONCERNS.....41 WORRY ABOUT SIDE EFFECTS.....42 HARD TO GET METHOD.....43 COSTS TOO MUCH.....44 INCONVENIENT.....45 AFRAID OF STERILIZATION.....46 DON'T LIKE EXISTING METHODS..47</p> <p>OTHER _____ 96 (SPECIFY)</p> <p>DK.....98</p>																						
362	<p>In the last few months, have you discussed the practice of family planning with your husband, friends, neighbours, or relatives?</p>	<p>YES.....1</p> <p>NO.....2</p>	<p>>364</p>																					
363	<p>With whom?</p> <p>Anyone else?</p> <p>RECORD ALL MENTIONED.</p>	<p>HUSBAND.....A MOTHER.....B SISTER(S).....C DAUGHTER.....D MOTHER-IN-LAW.....E SISTER-IN-LAW.....F FRIEND/NEIGHBOUR.....G</p> <p>OTHER _____ X (SPECIFY)</p>																						
364	<p>In the last few months, have you heard or seen any message about family planning:</p> <p>on radio?</p> <p>on television?</p> <p>in a cinema or film show?</p> <p>in a newspaper or magazine?</p> <p>on a wall painting or hoarding?</p> <p>in a drama, folk dance, or street play?</p>	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>RADIO.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>TELEVISION.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>CINEMA/FILM SHOW.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>NEWSPAPER/MAGAZINE.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>WALL PAINTING/HOARDING... 1</td> <td>2</td> <td></td> </tr> <tr> <td>DRAMA/FOLK DANCE/STREET PLAY..... 1</td> <td>2</td> <td></td> </tr> </tbody> </table>		YES	NO	RADIO.....	1	2	TELEVISION.....	1	2	CINEMA/FILM SHOW.....	1	2	NEWSPAPER/MAGAZINE.....	1	2	WALL PAINTING/HOARDING... 1	2		DRAMA/FOLK DANCE/STREET PLAY..... 1	2		
	YES	NO																						
RADIO.....	1	2																						
TELEVISION.....	1	2																						
CINEMA/FILM SHOW.....	1	2																						
NEWSPAPER/MAGAZINE.....	1	2																						
WALL PAINTING/HOARDING... 1	2																							
DRAMA/FOLK DANCE/STREET PLAY..... 1	2																							

SECTION 4A. ANTENATAL, NATAL, AND POSTNATAL CARE

401	CHECK 224 ONE OR MORE BIRTHS SINCE JAN. 1996 <input type="checkbox"/>	NO BIRTHS SINCE JAN. 1996 <input type="checkbox"/> → (SKIP TO 486)	
402	ENTER THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF LAST TWO BIRTHS SINCE JANUARY 1996 IN THE TABLE. ASK THE QUESTIONS ABOUT THESE TWO BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, RECORD ONLY LAST TWO BIRTHS.) Now I would like to ask you some questions about the health of your children born since January 1996. (We will talk about one child at a time.)		
	LINE NUMBER FROM Q. 212	LAST BIRTH <input type="text"/> <input type="text"/>	NEXT-TO-LAST BIRTH <input type="text"/> <input type="text"/>
	FROM Q. 212 AND Q. 216	NAME ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>	NAME ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>
403	At the time you became pregnant with (NAME), did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you want <u>no (more)</u> children <u>at all</u> ?	THEN.....1 (SKIP TO 405) <-----1	THEN.....1 (SKIP TO 405) <-----1
		LATER.....2	LATER.....2
		NO MORE.....3 (SKIP TO 405) <-----3	NO MORE.....3 (SKIP TO 405) <-----3
404	How much longer would you like to have waited?	MONTHS.....1 <input type="text"/> <input type="text"/> YEARS.....2 <input type="text"/> <input type="text"/> DK.....998	MONTHS.....1 <input type="text"/> <input type="text"/> YEARS.....2' <input type="text"/> <input type="text"/> DK.....998
405	When you were pregnant with (NAME), did you go for an antenatal check-up?	YES.....1 NO.....2 (SKIP TO 407) <-----2	YES.....1 NO.....2 (SKIP TO 407) <-----2
406	Whom did you see? Anyone RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFSSNL...C TRADITIONAL BIRTH ATTENDANT (DAI).....D OTHER.....X (SPECIFY)	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFSSNL...C TRADITIONAL BIRTH ATTENDANT (DAI).....D OTHER.....X (SPECIFY)
407	When you were pregnant with (NAME), did any health worker visit you at home for an antenatal check-up?	YES.....1 NO.....2	YES.....1 NO.....2
408	CHECK 405 AND 407:	YES IN EITHER <input type="checkbox"/> NO IN BOTH <input type="checkbox"/> (SKIP TO 413)	YES IN EITHER <input type="checkbox"/> NO IN BOTH <input type="checkbox"/> (SKIP TO 413)

	NAME _____	LAST BIRTH	NAME _____	NEXT-TO-LAST BIRTH				
409	How many months pregnant were you when you first received an antenatal check-up?	MONTHS.....	<input type="text"/>	<input type="text"/>				
410	How many times did you receive antenatal check-ups during this pregnancy?	NO. OF TIMES.....	<input type="text"/>	<input type="text"/>				
411	Did you have the following performed at least once during any of your antenatal check-ups for this pregnancy:		YES	NO	YES	NO		
		Weight measured?	WEIGHT.....	1	2	WEIGHT.....	1	2
		Height measured?	HEIGHT.....	1	2	HEIGHT.....	1	2
		Blood pressure checked?	BLOOD PRESSURE....	1	2	BLOOD PRESSURE....	1	2
		Blood test?	BLOOD TEST.....	1	2	BLOOD TEST.....	1	2
		Urine test?	URINE TEST.....	1	2	URINE TEST.....	1	2
		Abdomen examined?	ABDOMEN EXAMINED..	1	2	ABDOMEN EXAMINED..	1	2
		Internal exam?	INTERNAL EXAM.....	1	2	INTERNAL EXAM.....	1	2
		X-ray?	X-RAY.....	1	2	X-RAY.....	1	2
		Sonogram or ultrasound?	SONOGRAM/ULTRAS... 1	2	SONOGRAM/ULTRAS... 1	2		
		Amniocentesis?	AMNIOCENTESIS..... 1	2	AMNIOCENTESIS..... 1	2		
412	Did you receive advice on any of the following during at least one of your antenatal check-ups for this pregnancy		YES	NO	YES	NO		
		Diet?	DIET.....	1	2	DIET.....	1	2
		Danger signs of pregnancy?	DANGER SIGNS.....	1	2	DANGER SIGNS.....	1	2
		Delivery care?	DELIVERY CARE.....	1	2	DELIVERY CARE.....	1	2
		Newborn care?	NEWBORN CARE.....	1	2	NEWBORN CARE.....	1	2
		Family planning?	FAMILY PLANNING.... 1	2	FAMILY PLANNING.... 1	2		
		(SKIP TO 414)<	<input type="checkbox"/>	<input type="checkbox"/>	(SKIP TO 414)<	<input type="checkbox"/>	<input type="checkbox"/>	
413	What is the main reason you did not receive an antenatal check-up?	NOT NECESSARY.....	01	NOT NECESSARY.....	01			
		NOT CUSTOMARY.....	02	NOT CUSTOMARY.....	02			
		COST TOO MUCH.....	03	COST TOO MUCH.....	03			
		TOO FAR/NO TRANSPORT....	04	TOO FAR/NO TRANSPORT....	04			
		POOR QUALITY SERVICE....	05	POOR QUALITY SERVICE....	05			
		NO TIME TO GO.....	06	NO TIME TO GO.....	06			
		FAMILY DID NOT ALLOW....	07	FAMILY DID NOT ALLOW....	07			
		LACK OF KNOWLEDGE.....	08	LACK OF KNOWLEDGE.....	08			
		NO HEALTH WORKER VISITED.....	09	NO HEALTH WORKER VISITED.....	09			
		OTHER _____	96	OTHER _____	96			
	(SPECIFY)		(SPECIFY)					

	NAME	LAST BIRTH	NAME	NEXT-TO-LAST BIRTH
414				
	When you were pregnant with (NAME), did you experience any of the following problems at any time:	YES NO		YES NO
	Night blindness? (USE LOCAL TERM)	NIGHT BLINDNESS.... 1 2		NIGHT BLINDNESS.... 1 2
	Blurred vision?	BLURRED VISION..... 1 2		BLURRED VISION..... 1 2
	Convulsions not from fever?	CONVULSIONS..... 1 2		CONVULSIONS..... 1 2
	Swelling of the legs, body, or face?	SWELLING..... 1 2		SWELLING..... 1 2
	Excessive fatigue?	EXCESSIVE FATIGUE.. 1 2		EXCESSIVE FATIGUE.. 1 2
	Anaemia?	ANAEMIA..... 1 2		ANAEMIA..... 1 2
	Any vaginal bleeding?	VAGINAL BLEEDING... 1 2		VAGINAL BLEEDING... 1 2
415	When you were pregnant with (NAME), were you given any iron folic tablets or syrup?	YES.....1 NO.....2 (SKIP TO 418) <-----		YES.....1 NO.....2 (SKIP TO 418) <-----
416	Did you receive enough iron folic tablets or syrup to last about three months or longer?	YES.....1 NO.....2 DK.....8		YES.....1 NO.....2 DK.....8
417	Did you consume all the iron folic tablets or syrup you were given ?	YES.....1 NO.....2		YES.....1 NO.....2
418	When you were pregnant with (NAME), were you given an injection in the arm to prevent you and the baby from getting tetanus (USE LOCAL TERM FOR TETANUS)?	YES.....1 NO.....2 (SKIP TO 420) <----- DK.....8		YES.....1 NO.....2 (SKIP TO 420) <----- DK.....8
419	During this pregnancy, how many times did you get this injection?	TIMES..... <input type="text"/> DK.....8		TIMES..... <input type="text"/> DK.....8

		LAST BIRTH	NEXT-TO-LAST BIRTH
		NAME	NAME
420	Where did you give birth to (NAME)?	HOME YOUR HOME.....11 PARENTS' HOME.....12 OTHER HOME.....13 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP...21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC...24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC..31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96- (SPECIFY) (SKIP TO 422)<	HOME YOUR HOME.....11 PARENTS' HOME.....12 OTHER HOME.....13 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP...21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC...24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC..31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96- (SPECIFY) (SKIP TO 422)<
421	What is the main reason you did not go to a health facility for delivery?	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 POOR QUALITY SERVICE...05 NO TIME TO GO.....06 FAMILY DID NOT ALLOW...07 BETTER CARE AT HOME...08 LACK OF KNOWLEDGE.....09 OTHER _____ 96 (SPECIFY)	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 POOR QUALITY SERVICE...05 NO TIME TO GO.....06 FAMILY DID NOT ALLOW...07 BETTER CARE AT HOME...08 LACK OF KNOWLEDGE.....09 OTHER _____ 96 (SPECIFY)
422	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS WHO ASSISTED.	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFESSNL..C OTHER PERSON DAI (TBA).....D FRIEND/RELATIVE.....E OTHER _____ X (SPECIFY) NO ONE.....Y	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFESSNL..C OTHER PERSON DAI (TBA).....D FRIEND/RELATIVE.....E OTHER _____ X (SPECIFY) NO ONE.....Y
423	CHECK 422:	ANY <input type="checkbox"/> NO <input type="checkbox"/> CODE v CODE A, B, (SKIP TO A, B, OR C 425) OR C	ANY <input type="checkbox"/> NO <input type="checkbox"/> CODE v CODE A, B, (SKIP TO A, B, OR C 425) OR C
424	What is the main reason you did not take the help of a health professional?	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 PROFES. NOT AVAI'BLE...05 NO CONFIDENCE IN AVAILABLE PROFESSIONAL.06 NO TIME TO GET HELP...07 FAMILY DID NOT ALLOW...08 OTHER _____ 96- (SPECIFY) (SKIP TO 426)<	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 PROFES. NOT AVAI'BLE...05 NO CONFIDENCE IN AVAILABLE PROFESSIONAL.06 NO TIME TO GET HELP...07 FAMILY DID NOT ALLOW...08 OTHER _____ 96- (SPECIFY) (SKIP TO 426)<

	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
425	Was (NAME) delivered by caesarian section? YES.....1 NO.....2	YES.....1 NO.....2
426	When (NAME) was born, was he/she: large, average, small, or very small? LARGE.....1 AVERAGE.....2 SMALL.....3 VERY SMALL.....4	LARGE.....1 AVERAGE.....2 SMALL.....3 VERY SMALL.....4
427	Was (NAME) weighed at birth? YES.....1 NO.....2 (SKIP TO 429) <-----2	YES.....1 NO.....2 (SKIP TO 429) <-----2
428	How much did (NAME) weigh? GRAMS..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DK.....9998	GRAMS..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DK.....9998
429	Now I would like to ask you about the 2-month period after the delivery of (NAME). During that period, did a doctor or other health professional check your health or the health of your baby? YES.....1 NO.....2 (SKIP TO 433) <-----2	YES.....1 NO.....2 (SKIP TO 433) <-----2
430	How soon after the birth of (NAME) did you first get a check-up? DAYS.....1 <input type="text"/> <input type="text"/> WEEKS.....2 <input type="text"/> <input type="text"/>	DAYS.....1 <input type="text"/> <input type="text"/> WEEKS.....2 <input type="text"/> <input type="text"/>
431	Where did you get the check-up? HOME VISIT.....11 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC....24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC...31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96 (SPECIFY)	HOME VISIT.....11 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC....24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC...31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96 (SPECIFY)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
432	<p>Did any of the following happen when you had the check-up:</p> <p>Was your abdomen examined?</p> <p>Did you receive advice on family planning?</p> <p>Did you receive advice on breastfeeding?</p> <p>Did you receive advice on baby care?</p>	<p>YES NO</p> <p>ABDOMEN EXAMINED... 1 2</p> <p>FAMILY PLANNING.... 1 2</p> <p>BREASTFEEDING..... 1 2</p> <p>BABY CARE..... 1 2</p>	<p>YES NO</p> <p>ABDOMEN EXAMINED... 1 2</p> <p>FAMILY PLANNING.... 1 2</p> <p>BREASTFEEDING..... 1 2</p> <p>BABY CARE..... 1 2</p>
433	<p>At any time during the two months after the delivery of (NAME), did you have any of the following:</p> <p>Massive vaginal bleeding?</p> <p>Very high fever?</p>	<p>YES NO</p> <p>VAGINAL BLEEDING... 1 2</p> <p>VERY HIGH FEVER.... 1 2</p>	<p>YES NO</p> <p>VAGINAL BLEEDING... 1 2</p> <p>VERY HIGH FEVER.... 1 2</p>
434	<p>Has your period returned since the birth of (NAME)?</p>	<p>YES1 (SKIP TO 436) <-----</p> <p>NO.....2 (SKIP TO 437) <-----</p>	
435	<p>Did your period return between the birth of (NAME) and your next pregnancy?</p>		<p>YES1</p> <p>NO.....2 (SKIP TO 439) <-----</p>
436	<p>For how many months after the birth of (NAME) did you not have a period?</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>DK.....98</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>DK.....98</p>
437	<p>CHECK 230: RESPONDENT PREGNANT?</p>	<p>NOT PREGNANT <input type="checkbox"/> OR PREGNANT <input type="checkbox"/> OR Q230 <input type="checkbox"/> OR UNSURE <input type="checkbox"/> NOT ASKED <input type="checkbox"/> (SKIP TO 439)</p>	
438	<p>Have you resumed sexual relations since the birth of (NAME)?</p>	<p>YES.....1</p> <p>NO.....2 (SKIP TO 440) <-----</p>	

	NAME	LAST BIRTH	NAME	NEXT-TO-LAST BIRTH
439		MONTHS..... <input type="text"/> <input type="text"/> DK.....98		MONTHS..... <input type="text"/> <input type="text"/> DK.....98
	For how many months after the birth of (NAME) did you not have sexual relations?			
440	YES.....1 (SKIP TO 442)<-----	NO.....2	YES.....1 (SKIP TO 442)<-----	NO.....2
	Did you ever breastfeed (NAME)?			
441	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.....96 (SPECIFY) (SKIP TO 448)<-----		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.....96 (SPECIFY) (SKIP TO 448)<-----	
	Why did you not breastfeed (NAME)?			
442	IMMEDIATELY.....000 HOURS.....1 <input type="text"/> <input type="text"/> DAYS.....2 <input type="text"/> <input type="text"/>		IMMEDIATELY.....000 HOURS.....1 <input type="text"/> <input type="text"/> DAYS.....2 <input type="text"/> <input type="text"/>	
	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.			
443	YES.....1 NO.....2		YES.....1 NO.....2	
	Did you squeeze out the milk from the breast before you first put (NAME) to the breast?			
444	CHECK 216: CHILD ALIVE? ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (SKIP TO 446)		ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (SKIP TO 446)	
445	YES.....1 (SKIP TO 449)<-----	NO.....2	YES.....1 (SKIP TO 449)<-----	NO.....2
	Are you still breastfeeding (NAME)?			
446	MONTHS..... <input type="text"/> <input type="text"/> UNTIL DIED.....96 (SKIP TO 452)<-----		MONTHS..... <input type="text"/> <input type="text"/> UNTIL DIED.....96 (SKIP TO 452)<-----	
	For how many months did you breastfeed (NAME)?			
447	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.....96 (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.....96 (SPECIFY)	
	Why did you stop breastfeeding (NAME)?			

		LAST BIRTH		NEXT-TO-LAST BIRTH	
		NAME _____		NAME _____	
448	CHECK 216: CHILD ALIVE?	ALIVE <input type="checkbox"/>	DEAD <input type="checkbox"/> v (SKIP TO 452)	ALIVE <input type="checkbox"/>	DEAD <input type="checkbox"/> v (SKIP TO 452)
449	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES.....1	NO.....2	YES.....1	NO.....2
		DK.....8		DK.....8	
450	At any time yesterday or last night, was (NAME) given any of the following:	YES NO DK		YES NO DK	
	Plain water?	PLAIN WATER..... 1 2 8		PLAIN WATER..... 1 2 8	
	Powdered milk?	POWDERED MILK.... 1 2 8		POWDERED MILK.... 1 2 8	
	Any other milk (other than breast milk)?	OTHER MILK..... 1 2 8		OTHER MILK..... 1 2 8	
	Any other liquid?	ANY OTHER LIQUID. 1 2 8		ANY OTHER LIQUID. 1 2 8	
	Green, leafy vegetables?	GREEN/LEAFY VEG.. 1 2 8		GREEN/LEAFY VEG.. 1 2 8	
	Fruits?	FRUITS..... 1 2 8		FRUITS..... 1 2 8	
	Any other solid or mushy food?	SOLID/MUSHY FOOD. 1 2 8		SOLID/MUSHY FOOD. 1 2 8	
451	How often during the last seven days was (NAME) given any of the following:	1 = EVERY DAY 2 = SOME DAYS 3 = NOT AT ALL 8 = DK		1 = EVERY DAY 2 = SOME DAYS 3 = NOT AT ALL 8 = DK	
	Plain water?	PLAIN WATER..... <input type="checkbox"/>		PLAIN WATER..... <input type="checkbox"/>	
	Powdered milk?	POWDERED MILK..... <input type="checkbox"/>		POWDERED MILK..... <input type="checkbox"/>	
	Any other milk (other than breast milk)?	OTHER MILK..... <input type="checkbox"/>		OTHER MILK..... <input type="checkbox"/>	
	Any other liquid?	OTHER LIQUID..... <input type="checkbox"/>		OTHER LIQUID..... <input type="checkbox"/>	
	Green, leafy vegetables?	GREEN/LEAFY VEG..... <input type="checkbox"/>		GREEN/LEAFY VEG..... <input type="checkbox"/>	
	Fruits?	FRUITS..... <input type="checkbox"/>		FRUITS..... <input type="checkbox"/>	
	Any other solid or mushy food?	SOLID/MUSHY FOOD..... <input type="checkbox"/>		SOLID/MUSHY FOOD..... <input type="checkbox"/>	
452	—————>	GO BACK TO 403 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 453		GO TO 453	

SECTION 4B. IMMUNIZATION AND HEALTH

453 ENTER THE LINE NUMBER AND NAME OF LAST TWO BIRTHS SINCE JANUARY 1996 IN THE TABLE. ASK THE QUESTIONS ABOUT THESE TWO BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, RECORD ONLY LAST TWO BIRTHS.)

LINE NUMBER FROM Q. 212	LAST BIRTH	NEXT-TO-LAST BIRTH
	<input type="text"/>	<input type="text"/>
FROM Q. 212	NAME	NAME
AND Q. 216	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>
	(GO TO NEXT COLUMN, OR IF NO MORE BIRTHS, GO TO 481)	(GO TO 481)

454

Do you have a card where (NAME'S) vaccinations are written down?
IF YES: May I see it, please?

YES, SEEN.....1 (SKIP TO 456) < <input type="text"/>	YES, SEEN.....1 (SKIP TO 456) < <input type="text"/>
YES, NOT SEEN.....2 (SKIP TO 458) < <input type="text"/>	YES, NOT SEEN.....2 (SKIP TO 458) < <input type="text"/>
NO CARD.....3	NO CARD.....3

455

Did you ever have a vaccination card for (NAME)?

YES.....1 (SKIP TO 458) < <input type="text"/>	YES.....1 (SKIP TO 458) < <input type="text"/>
NO.....2	NO.....2

456

(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 IS RECORDED.

	DAY	MO	YEAR		DAY	MO	YEAR
BCG	BCG				BCG		
POLIO 0	P0				P0		
DPT 1	D1				D1		
DPT 2	D2				D2		
DPT 3	D3				D3		
POLIO 1	P1				P1		
POLIO 2	P2				P2		
POLIO 3	P3				P3		
MEASLES	MEA				MEA		

457

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 456) < <input type="text"/>	YES.....1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 456) < <input type="text"/>
NO.....2	NO.....2
DK.....8 (SKIP TO 460) < <input type="text"/>	DK.....8 (SKIP TO 460) < <input type="text"/>

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
458	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases?	YES.....1 NO.....2 (SKIP TO 462) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 462) <-----> DK.....8
459	Please tell me if (NAME) has received any of the following vaccinations:		
459A	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
459B	A DPT vaccination against diphtheria, whooping cough, and tetanus given as an injection?	YES.....1 NO.....2 (SKIP TO 459D) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 459D) <-----> DK.....8
459C	How many times?	NUMBER OF TIMES..... <input type="checkbox"/>	NUMBER OF TIMES..... <input type="checkbox"/>
459D	Polio vaccine, that is, drops in the mouth?	YES.....1 NO.....2 (SKIP TO 459G) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 459G) <-----> DK.....8
459E	How many times?	NUMBER OF TIMES..... <input type="checkbox"/>	NUMBER OF TIMES..... <input type="checkbox"/>
459F	When was the first polio vaccine given -- just after birth or later?	JUST AFTER BIRTH.....1 LATER.....2	JUST AFTER BIRTH.....1 LATER.....2
459G	An injection against measles?	YES.....1 NO.....2 DK.....8 (SKIP TO 461) <----->	YES.....1 NO.....2 DK.....8 (SKIP TO 461) <----->
460	CHECK 456: ANY VACCINATIONS RECEIVED?	YES <input type="checkbox"/> NO <input type="checkbox"/> (SKIP TO 462)	YES <input type="checkbox"/> NO <input type="checkbox"/> (SKIP TO 462)

	NAME	LAST BIRTH	NAME	NEXT-TO-LAST BIRTH
461	Where did (NAME) receive most of his/her vaccinations?	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC....16 CAMP.....17 PULSE POLIO LOCATION....18 OTHER PUBLIC SECTOR HEALTH FACILITY.....19 NGO/TRUST HOSP./CLINIC...21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....35 OTHER PRIVATE SECTOR HEALTH FACILITY.....36 OTHER _____ 96 (SPECIFY)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC....16 CAMP.....17 PULSE POLIO LOCATION....18 OTHER PUBLIC SECTOR HEALTH FACILITY.....19 NGO/TRUST HOSP./CLINIC...21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....35 OTHER PRIVATE SECTOR HEALTH FACILITY.....36 OTHER _____ 96 (SPECIFY)	
462	Was a dose of vitamin A liquid or capsule ever given to (NAME) to protect him/her from night blindness (USE LOCAL TERM)?	YES.....1 NO.....2 (SKIP TO 464) <----- DK.....8	YES.....1 NO.....2 (SKIP TO 464) <----- DK.....8	
463	How many months ago did (NAME) receive the last dose of Vitamin A?	MONTHS AGO..... <input type="text"/> <input type="text"/>	MONTHS AGO..... <input type="text"/> <input type="text"/>	
464	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	
465	Has (NAME) been ill with a cough at any time in the last 2 weeks?	YES.....1 NO.....2 (SKIP TO 469) <----- DK.....8	YES.....1 NO.....2 (SKIP TO 469) <----- DK.....8	
466	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	
467	Did you seek advice or treatment for the cough?	YES.....1 NO.....2 (SKIP TO 469) <-----	YES.....1 NO.....2 (SKIP TO 469) <-----	

	LAST BIRTH	NEXT-TO-LAST BIRTH
	NAME	NAME
468	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....A GOVT. DISPENSARY.....B UHC/UHP/UFWC.....C CHC/RURAL HOSP./PHC.....D SUB-CENTRE.....E GOVT. MOBILE CLINIC.....F GOVT. PARAMEDIC.....G CAMP.....H OTHER PUBLIC SECTOR HEALTH FACILITY.....I NGO/TRUST HOSP./CLINIC...J NGO WORKER.....K PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....L PVT. DOCTOR.....M PVT. MOBILE CLINIC.....N PVT. PARAMEDIC.....O VAIDYA/HAKIM/HOMEOPATH...P TRADITIONAL HEALER.....Q PHARMACY/DRUGSTORE.....R OTHER PRIVATE SECTOR HEALTH FACILITY.....S OTHER SOURCE SHOP.....T FRIEND/RELATIVE.....U OTHER _____ X (SPECIFY)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....A GOVT. DISPENSARY.....B UHC/UHP/UFWC.....C CHC/RURAL HOSP./PHC.....D SUB-CENTRE.....E GOVT. MOBILE CLINIC.....F GOVT. PARAMEDIC.....G CAMP.....H OTHER PUBLIC SECTOR HEALTH FACILITY.....I NGO/TRUST HOSP./CLINIC...J NGO WORKER.....K PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....L PVT. DOCTOR.....M PVT. MOBILE CLINIC.....N PVT. PARAMEDIC.....O VAIDYA/HAKIM/HOMEOPATH...P TRADITIONAL HEALER.....Q PHARMACY/DRUGSTORE.....R OTHER PRIVATE SECTOR HEALTH FACILITY.....S OTHER SOURCE SHOP.....T FRIEND/RELATIVE.....U OTHER _____ X (SPECIFY)
	Where did you seek advice or treatment?	
	Anywhere else?	
	RECORD ALL MENTIONED.	
469	YES.....1 NO.....2 (SKIP TO 480)<_____ DK.....8	YES.....1 NO.....2 (SKIP TO 480)<_____ DK.....8
	Has (NAME) had diarrhoea in the last two weeks?	
470	YES.....1 NO.....2	YES.....1 NO.....2
	Was there any blood in the stools?	
471	SAME.....1 MORE.....2 LESS.....3 DK.....8	SAME.....1 MORE.....2 LESS.....3 DK.....8
	(Including breast milk) Was he/she given the same amount to drink as before the diarrhoea, or more, or less?	
472	SAME.....1 MORE.....2 LESS.....3 STOPPED COMPLETELY.....4 DK.....8	SAME.....1 MORE.....2 LESS.....3 STOPPED COMPLETELY.....4 DK.....8
	Was he/she given the same amount of food as before the diarrhoea, or more, or less?	
473	YES.....1 NO.....2 (SKIP TO 475)<_____ DK.....8	YES.....1 NO.....2 (SKIP TO 475)<_____ DK.....8
	Did you seek advice or treatment for the diarrhoea?	

	LAST BIRTH	NEXT-TO-LAST BIRTH	
	NAME _____	NAME _____	
474	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UFWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC...J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UFWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC...J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>	
	<p>Where did you seek advice or treatment?</p> <p>Anywhere else?</p> <p>RECORD ALL MENTIONED.</p>		
475	<p>When (NAME) had diarrhoea, was he/she given any of the following to drink:</p> <p>A fluid made from a special packet called [LOCAL NAME]?</p> <p>Gruel made from rice [OR OTHER LOCAL GRAIN, TUBER, OR PLANTAIN]?</p>	<p>YES NO DK</p> <p>FLUID FROM ORS PACKET..... 1 2 8</p> <p>GRUEL..... 1 2 8</p>	<p>YES NO DK</p> <p>FLUID FROM ORS PACKET..... 1 2 8</p> <p>GRUEL..... 1 2 8</p>
476	<p>CHECK 475:</p> <p>FLUID FROM ORS PACKET GIVEN?</p>	<p>YES <input type="checkbox"/> NO OR DK <input type="checkbox"/></p> <p>(SKIP TO 478)</p>	<p>YES <input type="checkbox"/> NO OR DK <input type="checkbox"/></p> <p>(SKIP TO 478)</p>

	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
477	<p>Where did you obtain the ORS packet?</p> <p>PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18</p> <p>NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 PVT. PARAMEDIC.....35 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....36 DAI (TBA).....37 OTHER PRIVATE SECTOR HEALTH FACILITY.....38</p> <p>OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE...43</p> <p>OTHER _____ 96 (SPECIFY)</p>	<p>PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18</p> <p>NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 PVT. PARAMEDIC.....35 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....36 DAI (TBA).....37 OTHER PRIVATE SECTOR HEALTH FACILITY.....38</p> <p>OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE...43</p> <p>OTHER _____ 96 (SPECIFY)</p>
478	<p>Was anything (else) given to treat the diarrhoea?</p> <p>YES.....1 NO.....2 (SKIP TO 480)← DK.....8</p>	<p>YES.....1 NO.....2 (SKIP TO 480)← DK.....8</p>
479	<p>What was given to treat the diarrhoea?</p> <p>Anything else?</p> <p>RECORD ALL MENTIONED.</p> <p>PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E</p> <p>OTHER _____ X (SPECIFY)</p>	<p>PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E</p> <p>OTHER _____ X (SPECIFY)</p>
480	<p>→</p> <p>GO BACK TO 454 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481</p>	<p>GO TO 481</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
481	<p>CHECK 475 ALL COLUMNS:</p> <p>ORS FLUID FROM PACKET GIVEN TO ANY CHILD <input type="checkbox"/></p> <p>ORS FLUID FROM PACKET NOT GIVEN TO ANY CHILD OR 475 NOT ASKED <input type="checkbox"/></p>		483
482	<p>Have you ever heard of a special product called [LOCAL TERM FOR ORS] you can get for the treatment of diarrhoea?</p> <p>IF SHE NEVER HEARD OF ORS, SHOW GOVERNMENT AND COMMERCIAL ORS PACKETS AND ASK:</p> <p>Have you ever seen a packet like one of these before?</p>	<p>YES, WITHOUT SHOWING PACKETS....1</p> <p>YES, AFTER SHOWING PACKETS.....2</p> <p>NO.....3</p>	
483	<p>When a child has diarrhoea, should he/she be given less to drink than usual, about the same amount, or more than usual?</p>	<p>LESS TO DRINK.....1</p> <p>ABOUT SAME AMOUNT TO DRINK.....2</p> <p>MORE TO DRINK.....3</p> <p>DK.....8</p>	
484	<p>When a child is sick with diarrhoea, what signs of illness would tell you that he or she should be taken to a health facility or health worker?</p> <p>Any other signs?</p> <p>RECORD ALL MENTIONED.</p>	<p>REPEATED WATERY STOOLS.....A</p> <p>ANY WATERY STOOLS.....B</p> <p>REPEATED VOMITING.....C</p> <p>ANY VOMITING.....D</p> <p>BLOOD IN STOOLS.....E</p> <p>FEVER.....F</p> <p>MARKED THIRST.....G</p> <p>NOT EATING/NOT DRINKING WELL.....H</p> <p>GETTING SICKER/VERY SICK.....I</p> <p>NOT GETTING BETTER.....J</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> <p>DK.....Z</p>	
485	<p>When a child is sick with a cough, what signs of illness would tell you that he or she should be taken to a health facility or health worker?</p> <p>Any other signs?</p> <p>RECORD ALL MENTIONED.</p>	<p>RAPID BREATHING.....A</p> <p>DIFFICULT BREATHING.....B</p> <p>NOISY BREATHING.....C</p> <p>FEVER.....D</p> <p>UNABLE TO DRINK.....E</p> <p>NOT EATING/NOT DRINKING WELL.....F</p> <p>GETTING SICKER/VERY SICK.....G</p> <p>NOT GETTING BETTER.....H</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> <p>DK.....Z</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
486	<p>Now I would like to ask you about some health symptoms you yourself may have.</p> <p>During the past three months, have you had any of the following problems with your vaginal discharge:</p> <p>Any itching or irritation in vaginal area with the discharge?</p> <p>A bad odour along with the discharge?</p> <p>Severe lower abdominal pain with the discharge, not related with menstruation?</p> <p>A fever along with the discharge?</p> <p>Any other problem with the discharge?</p>	<p>YES NO</p> <p>ITCHING/IRRITATION... 1 2</p> <p>BAD ODOUR..... 1 2</p> <p>ABDOMINAL PAIN..... 1 2</p> <p>FEVER..... 1 2</p> <p>OTHER PROBLEM..... 1 2</p>	
487	<p>During the past three months have you had a problem with pain or burning while urinating, or have you had more frequent or difficult urination?</p>	<p>YES.....1</p> <p>NO.....2</p>	
488	<p>CHECK 107:</p> <p>CURRENTLY MARRIED <input type="checkbox"/> SEPARATED <input type="checkbox"/></p> <p>DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/></p> <p>WIDOWED <input type="checkbox"/></p>	<p>→491</p>	
489	<p>Another problem some women have is feeling pain in their abdomen or vagina during intercourse. Do you often experience this kind of pain?</p>	<p>YES.....1</p> <p>NO.....2</p>	
490	<p>Do you ever see blood after having sex, at times when you are not menstruating?</p>	<p>YES.....1</p> <p>NO.....2</p>	
491	<p>CHECK 486, 487, 489 and 490: YES TO ANY <input type="checkbox"/> OTHER <input type="checkbox"/></p>	<p>→501</p>	
492	<p>Have you seen anyone for advice or treatment to help you with (this problem/these problems)?</p> <p>IF YES, ASK:</p> <p>Whom did you see?</p> <p>Anyone else?</p> <p>RECORD ALL PERSONS SEEN.</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT. DOCTOR.....A</p> <p>PUBLIC HEALTH NURSE.....B</p> <p>ANM/LHV.....C</p> <p>MALE MPW/SUPERVISOR.....D</p> <p>ANGANWADI WORKER.....E</p> <p>VILLAGE HEALTH GUIDE.....F</p> <p>OTHER PUBLIC SECTOR HEALTH WORKER.....G</p> <p>NGO WORKER.....H</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE DOCTOR.....I</p> <p>PRIVATE NURSE.....J</p> <p>COMPOUNDER/PHARMACIST.....K</p> <p>VAID/HAKIM/HOMEOPATH.....L</p> <p>DAI (TBA).....M</p> <p>TRADITIONAL HEALER.....N</p> <p>OTHER PRIVATE SECTOR HEALTH WORKER.....O</p> <p>OTHER.....X</p> <p>(SPECIFY)</p> <p>NO, NOBODY SEEN.....Y</p>	

SECTION 5B. STATUS OF WOMAN

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																												
511	<p>Who makes the following decisions in your household:</p> <p>What items to cook?</p> <p>Obtaining health care for yourself?</p> <p>Purchasing jewellery or other major household items?</p> <p>Your going and staying with parents or siblings?</p>	<p>1 = RESPONDENT 2 = HUSBAND 3 = JOINTLY WITH HUSBAND 4 = OTHERS IN HOUSEHOLD 5 = JOINTLY WITH OTHERS IN HOUSEHOLD</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </table>	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5									
1	2	3	4	5																											
1	2	3	4	5																											
1	2	3	4	5																											
1	2	3	4	5																											
512	<p>Do you need permission to:</p> <p>go to the market?</p> <p>visit relatives or friends?</p>	<table border="1"> <tr> <td></td> <td></td> <td></td> <td>NOT ALLOWED</td> </tr> <tr> <td></td> <td>YES</td> <td>NO</td> <td>TO GO</td> </tr> <tr> <td>GO TO THE MARKET....</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>VISIT RELATIVES/ FRIENDS.....</td> <td>1</td> <td>2</td> <td>3</td> </tr> </table>				NOT ALLOWED		YES	NO	TO GO	GO TO THE MARKET....	1	2	3	VISIT RELATIVES/ FRIENDS.....	1	2	3													
			NOT ALLOWED																												
	YES	NO	TO GO																												
GO TO THE MARKET....	1	2	3																												
VISIT RELATIVES/ FRIENDS.....	1	2	3																												
513	<p>Are you allowed to have some money set aside that you can use as you wish?</p>	<p>YES.....1</p> <p>NO.....2</p>																													
514	<p>Sometimes a wife can do things that bother her husband. Please tell me if you think that a husband is justified in beating his wife in each of the following situations:</p> <p>If he suspects her of being unfaithful?</p> <p>If her natal family does not give expected money, jewellery, or other items?</p> <p>If she shows disrespect for in-laws?</p> <p>If she goes out without telling him?</p> <p>If she neglects the house or children?</p> <p>If she doesn't cook food properly?</p>	<table border="1"> <tr> <td></td> <td>YES</td> <td>NO</td> <td>DK</td> </tr> <tr> <td>UNFAITHFUL.....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>MONEY/JEWELLERY/ OTHER ITEMS.....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>DISRESPECT.....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>GOING WITHOUT TELLING.</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>NEGLECT.....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>NOT COOK PROPERLY.....</td> <td>1</td> <td>2</td> <td>8</td> </tr> </table>		YES	NO	DK	UNFAITHFUL.....	1	2	8	MONEY/JEWELLERY/ OTHER ITEMS.....	1	2	8	DISRESPECT.....	1	2	8	GOING WITHOUT TELLING.	1	2	8	NEGLECT.....	1	2	8	NOT COOK PROPERLY.....	1	2	8	
	YES	NO	DK																												
UNFAITHFUL.....	1	2	8																												
MONEY/JEWELLERY/ OTHER ITEMS.....	1	2	8																												
DISRESPECT.....	1	2	8																												
GOING WITHOUT TELLING.	1	2	8																												
NEGLECT.....	1	2	8																												
NOT COOK PROPERLY.....	1	2	8																												
515	<p>Since you completed 15 years of age, have you been beaten or mistreated physically by any person?</p>	<p>YES.....1</p> <p>NO.....2</p>	→601																												

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
516	<p>Who has beaten you or mistreated you physically?</p> <p>Anyone else?</p> <p>RECORD ALL PERSONS MENTIONED.</p>	MOTHER.....A FATHER.....B STEP MOTHER.....C STEP FATHER.....D SON.....E DAUGHTER.....F BROTHER/SISTER.....G BOYFRIEND.....H HUSBAND.....I EX-HUSBAND.....J SON-IN-LAW.....K DAUGHTER-IN-LAW.....L MOTHER-IN-LAW.....M FATHER-IN-LAW.....N BROTHER-IN-LAW.....O SISTER-IN-LAW.....P OTHER RELATIVE.....Q FRIEND/ACQUAINTANCE.....R TEACHER.....S EMPLOYER.....T STRANGER.....U OTHER _____ X (SPECIFY)	
517	<p>How often have you been beaten or mistreated physically in the last 12 months: once, a few times, many times, or not at all?</p>	ONCE.....1 A FEW TIMES.....2 MANY TIMES.....3 NOT BEATEN.....4	

SECTION 6. HUSBAND'S BACKGROUND AND WOMAN'S WORK

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	CHECK 107: CURRENTLY MARRIED <input type="checkbox"/> SEPARATED <input type="checkbox"/> DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED <input type="checkbox"/>		603
602	How old was your husband on his last birthday?	AGE IN COMPLETED YEARS..... <input type="text"/>	
603	Did your (last) husband ever attend school?	YES.....1 NO.....2	606
604	What is the highest grade he completed?	GRADE..... <input type="text"/>	
605	CHECK 604: GRADE 0-5 <input type="checkbox"/> GRADE 6 AND ABOVE <input type="checkbox"/>		607
606	(Can/Could) he read and write?	YES.....1 NO.....2	
607	What kind of work (does/did) your (last) husband mainly do?	<input type="text"/> <input type="text"/> <input type="text"/>	
608	CHECK 607: WORKS (WORKED) ON FARM <input type="checkbox"/> DOES (DID) NOT WORK ON FARM <input type="checkbox"/>		610
609	(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 LAND.....1 FAMILY LAND.....2 RENTED LAND.....3 SOMEONE ELSE'S LAND.....4	
610	Aside from your own housework, are you currently working?	YES.....1 NO.....2	613
611	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	613

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
612	Have you done any work in the last 12 months?	YES.....1 NO.....2	→701
613	What is your occupation, that is, what kind of work do/did you mainly do?	_____ <input type="checkbox"/> <input type="checkbox"/> _____ _____	
614	Do you do this work for your family's farm or business, for someone else, or are you self-employed?	FAMILY FARM/BUSINESS.....1 SOMEONE ELSE.....2 SELF-EMPLOYED.....3	
615	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR.....1 SEASONALLY/PART OF THE YEAR.....2 ONCE IN A WHILE.....3	
616	Are you paid in cash or kind for this work, or are you not paid at all?	CASH ONLY.....1 CASH AND KIND.....2 KIND ONLY.....3 NOT PAID.....4	→619
617	Generally, how much do your earnings contribute to the total family earnings: almost none, less than half, about half, more than half, or all?	ALMOST NONE.....1 LESS THAN HALF.....2 ABOUT HALF.....3 MORE THAN HALF.....4 ALL.....5	
618	Who mainly decides how the money you earn will be used?	RESPONDENT DECIDES.....1 HUSBAND DECIDES.....2 JOINTLY WITH HUSBAND.....3 SOMEONE ELSE DECIDES.....4 JOINTLY WITH SOMEONE ELSE.....5	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
619	Do you usually work at home or away from home?	HOME.....1 AWAY.....2	→701
620	CHECK 215/218: HAS CHILD BORN SINCE JAN. 1996 AND LIVING AT HOME? YES <input type="checkbox"/> NO <input type="checkbox"/> v		→701
621	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 SOMETIMES.....2 NEVER.....3	→701
622	Who usually takes care of (NAME OF YOUNGEST CHILD AT HOME) while you are working?	HUSBAND.....01 OLDER BOYS.....02 OLDER GIRLS.....03 OTHER RELATIVES.....04 NEIGHBOURS.....05 FRIENDS.....06 SERVANTS/HIRED HELP.....07 CHILD IS IN SCHOOL.....08 INSTITUTIONAL CHILDCARE.....09 OTHER.....96 (SPECIFY)	

SECTION 7 - AIDS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	TO																		
701	Have you ever heard of an illness called AIDS?	YES.....1 NO.....2	→705																		
702	From which sources of information have you learned about AIDS? Any other source? RECORD ALL MENTIONED.	RADIO.....A TELEVISION.....B CINEMA.....C NEWSPAPERS/MAGAZINES.....D POSTERS/BOARDS.....E EXHIBITION/MELA.....F HEALTH WORKERS.....G ADULT EDUCATION PROGRAMME.....H RELIGIOUS LEADERS.....I POLITICAL LEADERS.....J SCHOOLS/TEACHERS.....K COMMUNITY MEETINGS.....L FRIENDS/RELATIVES.....M WORK PLACE.....N OTHER _____ X (SPECIFY)																			
703	Is there anything a person can do to avoid getting AIDS?	YES.....1 NO.....2 DK.....8	→705																		
704	What can a person do? Any other ways? RECORD ALL MENTIONED.	ABSTAIN FROM SEX.....A USE CONDOMS.....B HAVE ONLY ONE SEX PARTNER.....C AVOID SEX WITH COMMERCIAL SEX WORKERS.....D AVOID SEX WITH HOMOSEXUALS.....E AVOID BLOOD TRANSFUSIONS.....F AVOID INJECTIONS/USE CLEAN NEEDLES.....G AVOID I.V. DRUG USE.....H AVOID KISSING.....I AVOID HUGGING.....J AVOID HAND SHAKING.....K AVOID SHARING CLOTHES.....L AVOID SHARING UTENSILS.....M AVOID SHARING SHAVING KITS/RAZORS.....N AVOID STEPPING ON URINE/STOOL.....O AVOID MOSQUITO BITES.....P OTHER _____ X (SPECIFY) DK.....Z																			
705	RECORD THE TIME	HOUR..... <table border="1"><tr><td></td><td></td></tr></table> MINUTES..... <table border="1"><tr><td></td><td></td></tr></table>																			
706	PRESENCE OF OTHERS DURING MOST OF THE INTERVIEW TIME.	<table border="1"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>CHILDREN UNDER 10.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>HUSBAND.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>MOTHER-IN-LAW.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER MALES.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER FEMALES.....1</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	CHILDREN UNDER 10.....1	1	2	HUSBAND.....1	1	2	MOTHER-IN-LAW.....1	1	2	OTHER MALES.....1	1	2	OTHER FEMALES.....1	1	2	
	YES	NO																			
CHILDREN UNDER 10.....1	1	2																			
HUSBAND.....1	1	2																			
MOTHER-IN-LAW.....1	1	2																			
OTHER MALES.....1	1	2																			
OTHER FEMALES.....1	1	2																			

HEALTH INVESTIGATOR VISITS								
	1	2	3	FINAL VISIT				
DATE				DAY <table border="1"><tr><td></td><td></td></tr></table>				
				MONTH <table border="1"><tr><td></td><td></td></tr></table>				
				YEAR <table border="1"><tr><td>1</td><td>9</td><td></td><td></td></tr></table>	1	9		
1	9							
INVESTIGATOR'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr></table>				
RESULT*				RESULT CODE <table border="1"><tr><td></td></tr></table>				
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td></tr></table>				
*RESULT CODES: 1 COMPLETED 3 POSTPONED 5 PARTLY COMPLETED 2 NOT AT HOME 4 REFUSED 6 OTHER (SPECIFY) _____								

SECTION 8: HEIGHT AND WEIGHT

INTERVIEWER: IN 801 (COLUMNS 2-3) RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1996 AND STILL ALIVE. IN 802 AND 803 RECORD THE NAME OF THE RESPONDENT AND ALL HER LIVING CHILDREN BORN SINCE JANUARY 1996, AND THE DATE OF BIRTH OF THE CHILDREN. IN 804 AND 806 RECORD THE HEIGHT AND WEIGHT OF THE RESPONDENT AND LIVING CHILDREN.

(NOTE: IF THERE ARE MORE THAN 2 LIVING CHILDREN BORN SINCE JANUARY 1996, CHECK BOX AND USE ADDITIONAL QUESTIONNAIRE)

	1 RESPONDENT	2 YOUNGEST LIVING CHILD	3 NEXT-TO-YOUNGEST LIVING CHILD
801 LINE NO. FROM Q.212		<input type="text"/>	<input type="text"/>
802 NAME FROM Q.212 FOR CHILDREN	(NAME) _____	(NAME) _____	(NAME) _____
803 DATE OF BIRTH FROM Q.215 FOR CHILDREN, COPY MONTH AND YEAR OF BIRTH AND ASK FOR DAY OF BIRTH		DAY..... <input type="text"/> <input type="text"/> MONTH..... <input type="text"/> <input type="text"/> YEAR. <input type="text"/> <input type="text"/> <input type="text"/>	DAY..... <input type="text"/> <input type="text"/> MONTH..... <input type="text"/> <input type="text"/> YEAR. <input type="text"/> <input type="text"/> <input type="text"/>
804 HEIGHT (in centimetres)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
805 WAS HEIGHT/LENGTH OF CHILD MEASURED LYING DOWN OR STANDING UP?		LYING.....1 STANDING.....2	LYING.....1 STANDING.....2
806 WEIGHT (in kilograms)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	0 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	0 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
807 DATE WEIGHED AND MEASURED	DAY..... <input type="text"/> <input type="text"/> MONTH..... <input type="text"/> <input type="text"/> YEAR. <input type="text"/> <input type="text"/> <input type="text"/>	DAY..... <input type="text"/> <input type="text"/> MONTH..... <input type="text"/> <input type="text"/> YEAR. <input type="text"/> <input type="text"/> <input type="text"/>	DAY..... <input type="text"/> <input type="text"/> MONTH..... <input type="text"/> <input type="text"/> YEAR. <input type="text"/> <input type="text"/> <input type="text"/>
808 RESULT	COMPLETED.....1 NOT PRESENT.....2 REFUSED.....3 OTHER.....6 (SPECIFY) _____	COMPLETED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.5 OTHER.....6 (SPECIFY) _____	COMPLETED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.5 OTHER.....6 (SPECIFY) _____
809 NAME OF MEASURER: _____	<input type="text"/>	NAME OF ASSISTANT: _____	<input type="text"/>

SECTION 9. ANAEMIA

901

As a part of this survey, we are studying anaemia among women and children. We request your co-operation in this regard. This will assist the Government of India to develop programmes to prevent and treat anaemia.

Anaemia is a serious health problem in India, which results from poor nutrition. However, if a person is found to have anaemia, the person can be given iron folic tablets to cure the disease.

If you decide to be tested for anaemia, we will request that you give a drop of blood from your finger for the test. (Also, if you have a child under 3 years old, please allow me to take a (few) drop(s) of blood from him/her for anaemia testing). We will use disposable sterile instruments that are clean and completely safe. Your child will feel a slight pinch when the blood is drawn. There is essentially no risk to your child from this procedure. The blood will be analyzed with new equipment provided by the United Nations. The result(s) of the test(s) will be given to you right after the blood is taken. The results of the tests will be kept confidential and will not be shown to other persons. Are there any questions about the blood testing that you would like to ask me now?

May I ask you now to give your consent to have the test(s) done. If you decide not to have the test(s), it is your right, and we will respect your decision. Now please tell me whether you agree to have the test(s) (and allow me to test your child).

AFTER EXPLAINING THE ABOVE, I HAVE FOUND THAT _____ AGREED TO GIVE
(NAME OF RESPONDENT)

A (FEW) DROP(S) OF BLOOD FOR HERSELF [AND FOR HER CHILD(REN) NAMED _____
] (NAME OF CHILD(REN))

Signature of Interviewer: _____ Date : _____

RESPONDENT AGREES TO TESTING OF
HERSELF AND/OR HER CHILD(REN)...1

RESPONDENT DOES NOT AGREE
TO TESTING.....2 →END

Signature of Witness: _____ Date : _____

902

RESPONDENT'S HAEMOGLOBIN
LEVEL (G/DL)

--	--	--

903	RESULT	MEASURED.....1	
		REFUSED.....2	
		OTHER.....6	(SPECIFY)
904	CHECK 215/216:		
	ONE OR MORE LIVING CHILDREN BORN SINCE JANUARY 1996	<input type="checkbox"/>	NO LIVING CHILDREN BORN SINCE JANUARY 1996 <input type="checkbox"/> → 910

IN 905 RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1996 AND STILL ALIVE.
 IN 906 RECORD THE NAMES OF THE LIVING CHILDREN.
 IN 907 RECORD THE HAEMOGLOBIN LEVEL IN THE BLOOD OF THE LIVING CHILDREN.

(NOTE: IF THERE ARE MORE THAN 2 LIVING CHILDREN BORN SINCE JANUARY 1996, CHECK BOX AND USE ADDITIONAL QUESTIONNAIRE)

		YOUNGEST LIVING CHILD	NEXT-TO-YOUNGEST LIVING CHILD
905	LINE NUMBER FROM Q. 212	<input type="text"/>	<input type="text"/>
906	NAME FROM Q. 212	NAME _____	NAME _____
907	HAEMOGLOBIN LEVEL IN THE BLOOD (G/DL)	<input type="text"/> <input type="text"/> . <input type="text"/>	<input type="text"/> <input type="text"/> . <input type="text"/>
908	RESULT	MEASURED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.....5 OTHER.....6 (SPECIFY)	MEASURED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.....5 OTHER.....6 (SPECIFY)

909	NAME OF MEASURER	_____ <input type="text"/>
-----	------------------	----------------------------

910	CHECK 902 AND 907:	
	NO VALUES BELOW 7 G/DL	<input type="checkbox"/> → GIVE MOTHER RESULT OF HAEMOGLOBIN MEASUREMENT AND END THE INTERVIEW
	ANY VALUE BELOW 7 G/DL FOR MOTHER AND/OR CHILD(REN)	<input type="checkbox"/> → GIVE MOTHER RESULT OF HAEMOGLOBIN MEASUREMENT AND CONTINUE WITH 911.

911	<p>CHECK COLUMN (5) OF HOUSEHOLD SCHEDULE:</p> <p>RESPONDENT IS USUAL RESIDENT <input type="checkbox"/></p> <p>RESPONDENT IS VISITOR <input type="checkbox"/> → END</p> <p style="text-align: center;">↓</p>
912	<p>We detected a low level of haemoglobin in your (your child's) blood. This indicates you (your child) have developed severe anaemia, which is a serious health problem. We would like to inform the doctor at _____ about your (your child's) condition. This will assist you to obtain appropriate treatment of your (your child's) condition.</p> <p>Do you agree that the information about the level of haemoglobin in your (your child's) blood may be given to the doctor.</p> <p>AFTER EXPLAINING THE ABOVE, I HAVE FOUND THAT _____ AGREED FOR (NAME OF RESPONDENT)</p> <p>REFERRAL FOR HERSELF [AND FOR HER CHILD(REN) NAMED _____] (NAME OF CHILD(REN))</p> <p>Signature of Interviewer: _____ Date : _____</p> <p>RESPONDENT AGREES FOR REFERRAL FOR HERSELF AND/OR HER CHILD(REN)....1</p> <p>RESPONDENT DOES NOT AGREE FOR REFERRAL.....2 → END</p> <p style="text-align: center;">↓</p>
913	<p>RECORD NAMES OF WOMAN AND CHILD(REN) WITH HAEMOGLOBIN LEVEL LESS THAN 7 G/DL ON REFERRAL FORM.</p>

INTERVIEWER'S OBSERVATIONS
(To be filled in after completing interview)

Comments About Respondent:

Comments on Specific Questions:

Any Other Comments:

SUPERVISOR'S OBSERVATIONS/COMMENTS

Name of Supervisor: _____ Date: _____

EDITOR'S OBSERVATIONS/COMMENTS

Name of Editor: _____ Date: _____

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES, MUMBAI

RESULTS OF HAEMOGLOBIN MEASUREMENT IN THE BLOOD:

Date: _____

Haemoglobin level in the blood (G/DL)	Woman NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> </div> You have	Child NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> </div> Your child has	Child NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> </div> Your child has	
WHO CLASSIFICATION OF ANAEMIA	NORMAL LEVEL HB LEVEL ABOVE 11 G/DL MILD ANAEMIA HB (10-10.9 G/DL) MODERATE ANAEMIA HB (7-9.9 G/DL) SEVERE ANAEMIA HB (LESS THAN 7 G/DL)	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA

In case of severe anaemia (Hb less than 7 G/DL), we recommend that you immediately contact your doctor.

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
 VILLAGE QUESTIONNAIRE

CONFIDENTIAL
 For Research
 Purpose only

INDIA

IDENTIFICATION																										
STATE _____	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																									
DISTRICT _____																										
TEHSIL/TALUK _____																										
VILLAGE _____																										
PSU NUMBER.....																										
TOTAL POPULATION OF THE VILLAGE ACCORDING TO THE 1991 CENSUS.....	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																									

INTERVIEWER'S NAME _____	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>				
DATE OF INTERVIEW _____	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>				
DATE.....	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>				
MONTH.....	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>				
YEAR.....	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>				

RESULT:	
BOTH VILLAGE SCHEDULE AND VILLAGE HEAD SCHEDULE COMPLETED.....	1
ONLY VILLAGE SCHEDULE COMPLETED.....	2
OTHER _____	6
(SPECIFY)	

	SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY								
DATE	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>			<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>			<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>			<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>		
NAME	_____	_____	_____	_____								

VILLAGE SCHEDULE

NO.	QUESTIONS	CODING CATEGORIES													
1	Current population of the village:	<table border="1"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>													
2	Area of the village (in Hectares):	<table border="1"> <tr> <td> </td><td> </td><td> </td> </tr> </table>													
3	Total number of households in the village:	<table border="1"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>													
4	Total arable land in the village (in Hectares):	IRRIGATED LAND..... <table border="1"><tr><td> </td><td> </td><td> </td></tr></table> NON-IRRIGATED LAND..... <table border="1"><tr><td> </td><td> </td><td> </td></tr></table>													
5	Main source of irrigation in the village:	RAIN WATER.....01 TANK/POND.....02 STREAM/RIVER.....03 CANAL.....04 WELL.....05 TUBE WELL.....06 OTHER.....96 (SPECIFY)													
6	Major crops grown in the village:	<table border="1"> <tr> <td>1</td> <td>_____</td> <td rowspan="3"> <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table> </td> </tr> <tr> <td>2</td> <td>_____</td> </tr> <tr> <td>3</td> <td>_____</td> </tr> </table>	1	_____	<table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>							2	_____	3	_____
1	_____	<table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>													
2	_____														
3	_____														
7	Distance to the nearest town (in kilometres):	<table border="1"> <tr> <td> </td><td> </td> </tr> </table>													
8	Distance to the District Headquarters (in kilometres):	<table border="1"> <tr> <td> </td><td> </td> </tr> </table>													
9	Distance to the nearest railway station (in kilometres):	<table border="1"> <tr> <td> </td><td> </td> </tr> </table>													
10	Distance to available transport service to other place (in kilometres):	<table border="1"> <tr> <td> </td><td> </td> </tr> </table>													
11	Distance of the village from all-weather road in connection to other place (in kilometres):	<table border="1"> <tr> <td> </td><td> </td> </tr> </table>													
12	Village Electrification:	NOT ELECTRIFIED..... 1 ELECTRIFIED, BUT IRREGULAR SUPPLY..... 2 ELECTRIFIED AND REGULAR SUPPLY..... 3													

NO.	QUESTIONS	CODING CATEGORIES
13	<p>Educational Facilities:</p> <p>Primary School</p> <p>Middle School</p> <p>Secondary School</p> <p>Higher Secondary School</p> <p>College</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>PRIMARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>MIDDLE SCHOOL..... <input type="text"/> <input type="text"/></p> <p>SECONDARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>HIGHER SECONDARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>COLLEGE..... <input type="text"/> <input type="text"/></p>
14	<p>Health Facilities:</p> <p>Sub-Centre</p> <p>Primary Health Centre</p> <p>Community Health Centre/Rural Hospital</p> <p>Government Dispensary</p> <p>Government Hospital</p> <p>Private Clinic</p> <p>Private Hospital</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>SUB-CENTRE..... <input type="text"/> <input type="text"/></p> <p>PRIMARY HEALTH CENTRE..... <input type="text"/> <input type="text"/></p> <p>COMMUNITY HEALTH CENTRE/RURAL HOSPITAL..... <input type="text"/> <input type="text"/></p> <p>GOVERNMENT DISPENSARY..... <input type="text"/> <input type="text"/></p> <p>GOVERNMENT HOSPITAL..... <input type="text"/> <input type="text"/></p> <p>PRIVATE CLINIC..... <input type="text"/> <input type="text"/></p> <p>PRIVATE HOSPITAL..... <input type="text"/> <input type="text"/></p>
15	<p>Other facilities:</p> <p>Post Office</p> <p>Telegraph Office</p> <p>STD Booth</p> <p>Bank</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>POST OFFICE..... <input type="text"/> <input type="text"/></p> <p>TELEGRAPH OFFICE..... <input type="text"/> <input type="text"/></p> <p>STD BOOTH..... <input type="text"/> <input type="text"/></p> <p>BANK..... <input type="text"/> <input type="text"/></p>

NO.	QUESTIONS	CODING CATEGORIES																																																									
16	Availability of health provider in the village: Private doctor Visiting doctor Village health guide (VHG) Traditional birth attendant (dai) Mobile health unit/visit	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>PRIVATE DOCTOR.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>VISITING DOCTOR.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>VHG.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>TBA (DAI).....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>MOBILE HEALTH UNIT.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	PRIVATE DOCTOR.....	1	2	VISITING DOCTOR.....	1	2	VHG.....	1	2	TBA (DAI).....	1	2	MOBILE HEALTH UNIT.....	1	2																																							
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17	Other facilities: Mills/small scale industries (M/SSI) Credit cooperative society (CCS) Agricultural cooperative society (ACS) Fishermen's cooperative society (FCS) Milk cooperative society (MCS) Kirana/General Market Shop (K/GMS) Weekly market Fair price shop Paan shop Pharmacy/Medical shop Mahila Mandal Youth club Anganwadi centre Community centre Adult education centre Community television set Cable connection	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">AVAILABLE IN THE VILLAGE</th> </tr> <tr> <th></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>M/SSI.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>CCS.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ACS.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>FCS.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>MCS.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>K/GMS.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>WEEKLY MARKET.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>FAIR PRICE SHOP.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>PAAN SHOP.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>PHARMACY/MEDICAL SHOP....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>MAHILA MANDAL.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>YOUTH CLUB.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ANGANWADI CENTRE.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>COMMUNITY CENTRE.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ADULT EDUCATION CENTRE... </td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>COMMUNITY TV SET.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>CABLE CONNECTION.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>	AVAILABLE IN THE VILLAGE				YES	NO	M/SSI.....	1	2	CCS.....	1	2	ACS.....	1	2	FCS.....	1	2	MCS.....	1	2	K/GMS.....	1	2	WEEKLY MARKET.....	1	2	FAIR PRICE SHOP.....	1	2	PAAN SHOP.....	1	2	PHARMACY/MEDICAL SHOP....	1	2	MAHILA MANDAL.....	1	2	YOUTH CLUB.....	1	2	ANGANWADI CENTRE.....	1	2	COMMUNITY CENTRE.....	1	2	ADULT EDUCATION CENTRE...	1	2	COMMUNITY TV SET.....	1	2	CABLE CONNECTION.....	1	2
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18	Total number of television sets in the village:	<table border="1" style="display: inline-table; width: 40px; height: 18px;"> <tr> <td style="width: 20px; height: 18px;"></td> <td style="width: 20px; height: 18px;"></td> </tr> </table>																																																									
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20	The type of drainage facility in the village:	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>UNDERGROUND DRAINAGE.....</td> <td style="text-align: center;">1</td> </tr> <tr> <td>OPEN DRAINAGE.....</td> <td style="text-align: center;">2</td> </tr> <tr> <td>NO.....</td> <td style="text-align: center;">3</td> </tr> </tbody> </table>	UNDERGROUND DRAINAGE.....	1	OPEN DRAINAGE.....	2	NO.....	3																																																			
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21	Any epidemic in the village during the last one year:	1. _____ <input type="checkbox"/> <input type="checkbox"/> 2. _____ <input type="checkbox"/> <input type="checkbox"/>
22	Number of health or family welfare camps in the last one year?	<input type="checkbox"/> <input type="checkbox"/>
23	Any beneficiaries in the village from the following programmes:	BENEFICIARIES
	Integrated Rural Development Programme (IRDP)	IRDP..... <input type="checkbox"/> <input type="checkbox"/>
	National Rural Employment Programme (NREP)	NREP..... <input type="checkbox"/> <input type="checkbox"/>
	Training Rural Youth for Self Employment (TRYSEM)	TRYSEM..... <input type="checkbox"/> <input type="checkbox"/>
	Employment Guarantee Scheme (EGS)	EGS..... <input type="checkbox"/> <input type="checkbox"/>
	Development of Women and Children of Rural Areas (DWARCA)	DWARCA..... <input type="checkbox"/> <input type="checkbox"/>
	Indira Awas Yojana (IAY)	IAY..... <input type="checkbox"/> <input type="checkbox"/>
	Sanjay Gandhi Niradhar Yojana (SGNY)	SGNY..... <input type="checkbox"/> <input type="checkbox"/>
24	Community level IEC activities for health and family welfare during the last one year:	YES NO
	Film show	FILM SHOW..... 1 2
	Exhibition	EXHIBITION..... 1 2
	Drama/song/dance performance	DRAMA/SONG/DANCE PERFORM. 1 2
	Puppet show	PUPPET SHOW..... 1 2
	Group meeting	GROUP MEETING..... 1 2
25	Persons providing information for the village schedule:	SARPANCH..... A PATWARI..... B GRAM SEVAK..... C SCHOOL TEACHER..... D HEALTH PERSONNEL..... E
	RECORD ALL THE SOURCES.	OTHERS _____ X (SPECIFY)

