NFHS-2

PN-ACL-980 109890

Bihar

National Family Health Survey India 1998-99

International Institute for Population Sciences

MEASURE *DHS+*
ORC MACRO

World Summit for Children Indicators: Bihar, NFHS-2, 1998–99		
BASIC INDICATORS		
Childhood mortality	Infant mortality rate[1]	73
	Under-five mortality rate[1]	105
Childhood malnutrition	Percent stunted (children age 0–35 months)	53.7
	Percent wasted (children age 0–35 months)	21.0
	Percent underweight (children age 0–35 months)	54.4
Clean water supply	Percent of households within 15 minutes of a safe water supply[2]	65.7
Sanitary excreta disposal	Percent of households with flush toilets	13.3
Basic education	Percent of women age 15–49 with completed primary education	26.8
	Percent of men age 15–49 with completed primary education	59.1
	Percent of girls age 6–12 attending school	55.1
	Percent of boys age 6–12 attending school	70.2
	Percent of women age 15–49 who are literate	31.3
Children in especially difficult situations	Percent of children age 0–14 who live in single adult households	3.1
SUPPORTING INDICATORS		
Birth spacing	Percent of births within 24 months of a previous birth	25.2
Safe motherhood	Percent of births with medical antenatal care	36.0
	Percent of births with antenatal care in first trimester	15.1
	Percent of births with medical assistance during delivery	23.4
	Percent of births in a medical facility	14.6
	Percent of births at high risk	57.1
Family planning	Contraceptive prevalence rate (any method, currently married women)	24.5
	Percent of currently married women with an unmet need for family planning	24.5
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	18.4
Maternal nutrition	Percent of women with low body mass index (BMI)	39.3
Low birth weight	Percent of births with low birth weight (of those reporting a numeric weight)	22.3
Breastfeeding	Percent of children under 4 months who are exclusively breastfed	55.2
Iodized salt intake	Percent of households that use iodized salt (at least 15 ppm)	46.9
Vaccinations	Percent of children whose mothers received tetanus toxoid vaccinations during pregnancy	62.8
	Percent of children age 12–23 months with measles vaccination	16.6
	Percent of children age 12–23 months fully vaccinated	11.0
Diarrhoea control	Percent of children with diarrhoea in the preceding 2 weeks who received ORS, sugar-salt-water solution, or gruel	24.5
Acute respiratory infection	Percent of children with acute respiratory infection in the preceding 2 weeks seen by medical personnel	58.2

[1]Per 1,000 live births
[2]Water from pipes, hand pump, covered well, or tanker truck

NATIONAL FAMILY HEALTH SURVEY (NFHS-2)

INDIA

1998–99

BIHAR

International Institute for Population Sciences
Mumbai, India

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

May 2001

C

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

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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 Bihar was the ORG Centre for Social Research in New Delhi. 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 four states (Bihar, 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 Bihar, which was covered in the first 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.

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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.

We gratefully acknowledge the immense help received from the Office of the Registrar General, India, New Delhi (particularly Dr. M. Vijayanunni, the then Registrar General of India, Mr. J.K. Banthia, the present Registrar General of India, Mr. S.P. Sharma, Consultant, and Mr. S.K. Sinha, Deputy Registrar General, Vital Statistics) in implementing the sample design and making the latest SRS results available to cite in the reports. We thank all the expert participants in the series of workshops to finalize the questionnaire design, the sample design, and tabulation plans for the survey. Special mention and thanks are due to Dr. Vijay Verma for his expert advice on the sample design and the calculation of sample weights.

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

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.

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

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FACT SHEET – BIHAR*

NATIONAL FAMILY HEALTH SURVEY, 1998–99

Sample Size

Households	6,345
Ever-married women age 15–49	7,024

Characteristics of Households

Percent with electricity	18.2
Percent within 15 minutes of safe water supply[1]	65.7
Percent with flush toilet	13.3
Percent with no toilet facility	83.2
Percent using govt. health facilities for sickness	9.1
Percent using iodized salt (at least 15 ppm)	46.9

Characteristics of Women[2]

Percent urban	10.2
Percent illiterate	76.6
Percent completed high school and above	8.4
Percent Hindu	83.6
Percent Muslim	14.8
Percent Christian	0.8
Percent regularly exposed to mass media	27.3
Percent working in the past 12 months	26.4

Status of Women[2]

Percent involved in decisions about own health	47.6
Percent with control over some money	66.7

Marriage

Percent never married among women age 15–19	54.0
Median age at marriage among women age 20–49	15.1

Fertility and Fertility Preferences

Total fertility rate (for the past 3 years)	3.49
Mean number of children ever born to women 40–49	5.25
Median age at first birth among women age 20–49	19.1
Percent of births[3] of order 3 and above	54.7
Mean ideal number of children[4]	3.3
Percent of women with 2 living children wanting another child	49.2

Current Contraceptive Use[5]

Any method	24.5
Any modern method	22.4
Pill	1.0
IUD	0.5
Condom	0.7
Female sterilization	19.2
Male sterilization	1.0
Any traditional method	1.6
Rhythm/safe period	0.9
Withdrawal	0.7
Other traditional or modern method	0.5

Unmet Need for Family Planning[5]

Percent with unmet need for family planning	24.5
Percent with unmet need for spacing	12.6

*Includes Jharkhand
[1]Water from pipes, hand pump, covered well, or tanker truck
[2]Ever-married women age 15–49
[3]For births in the past 3 years
[4]Excluding women giving non-numeric responses
[5]Among currently married women age 15–49

Quality of Family Planning Services[6]

Percent told about side effects of method	15.8
Percent who received follow-up services	77.1

Childhood Mortality

Infant mortality rate[7]	72.9
Under-five mortality rate[7]	105.1

Safe Motherhood and Women's Reproductive Health

Percent of births[8] within 24 months of previous birth	25.2
Percent of births[3] whose mothers received:	
Antenatal check-up from a health professional	36.0
Antenatal check-up in first trimester	15.1
Two or more tetanus toxoid injections	57.8
Iron and folic acid tablets or syrup	24.1
Percent of births[3] whose mothers were assisted at delivery by a:	
Doctor	14.5
ANM/Nurse/midwife/LHV	5.7
Traditional birth attendant	65.8
Percent[5] reporting at least one reproductive health problem	44.2

Awareness of AIDS

Percent of women who have heard of AIDS	11.7

Child Health

Percent of children age 0–3 months exclusively breastfed	55.2
Median duration of breastfeeding (months)	≥36.0
Percent of children[9] who received vaccinations:	
BCG	37.7
DPT (3 doses)	24.2
Polio (3 doses)	41.0
Measles	16.6
All vaccinations	11.0
Percent of children[10] with diarrhoea in the past 2 weeks who received oral rehydration salts (ORS)	15.4
Percent of children[10] with acute respiratory infection in the past 2 weeks taken to a health facility or provider	58.2

Nutrition

Percent of women with anaemia[11]	63.4
Percent of women with moderate/severe anaemia[11]	20.5
Percent of children age 6–35 months with anaemia[11]	81.3
Percent of children age 6–35 months with moderate/severe anaemia[11]	54.4
Percent of children chronically undernourished (stunted)[12]	53.7
Percent of children acutely undernourished (wasted)[12]	21.0
Percent of children underweight[12]	54.4

[6]For current users of modern methods
[7]For the 5 years preceding the survey (1994–98)
[8]For births in the past 5 years (excluding first births)
[9]Children age 12–23 months
[10]Children under 3 years
[11]Anaemia–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.
[12]Stunting assessed by height-for-age, wasting assessed by weight-for-height, underweight assessed by weight-for-age

FACT SHEET – JHARKHAND

NATIONAL FAMILY HEALTH SURVEY, 1998–99

Sample Size

Households	1,642
Ever-married women age 15–49	1,614

Characteristics of Households

Percent with electricity	23.6
Percent within 15 minutes of safe water supply[1]	33.8
Percent with flush toilet	12.1
Percent with no toilet facility	84.6
Percent using govt. health facilities for sickness	19.0
Percent using iodized salt (at least 15 ppm)	56.1

Characteristics of Women[2]

Percent urban	17.2
Percent illiterate	76.3
Percent completed high school and above	6.7
Percent Hindu	82.6
Percent Muslim	11.7
Percent Christian	3.0
Percent regularly exposed to mass media	28.8
Percent working in the past 12 months	31.7

Status of Women[2]

Percent involved in decisions about own health	66.8
Percent with control over some money	64.5

Marriage

Percent never married among women age 15–19	62.3
Median age at marriage among women age 20–49	15.8

Fertility and Fertility Preferences

Total fertility rate (for the past 3 years)	2.76
Mean number of children ever born to women 40–49	4.83
Median age at first birth among women age 20–49	19.0
Percent of births[3] of order 3 and above	53.7
Mean ideal number of children[4]	3.1
Percent of women with 2 living children wanting another child	48.4

Current Contraceptive Use[5]

Any method	27.6
Any modern method	24.9
Pill	1.5
IUD	0.3
Condom	1.1
Female sterilization	21.1
Male sterilization	0.9
Any traditional method	1.1
Rhythm/safe period	0.5
Withdrawal	0.7
Other traditional or modern method	1.6

Unmet Need for Family Planning[5]

Percent with unmet need for family planning	21.0
Percent with unmet need for spacing	11.1

[1]Water from pipes, hand pump, covered well, or tanker truck
[2]Ever-married women age 15–49
[3]For births in the past 3 years
[4]Excluding women giving non-numeric responses
[5]Among currently married women age 15–49

Quality of Family Planning Services[6]

Percent told about side effects of method	18.4
Percent who received follow-up services	80.9

Childhood Mortality

Infant mortality rate[7]	54.3
Under-five mortality rate[7]	78.3

Safe Motherhood and Women's Reproductive Health

Percent of births[8] within 24 months of previous birth	25.2
Percent of births[3] whose mothers received:	
Antenatal check-up from a health professional	41.7
Antenatal check-up in first trimester	18.0
Two or more tetanus toxoid injections	50.6
Iron and folic acid tablets or syrup	32.7
Percent of births[3] whose mothers were assisted at delivery by a:	
Doctor	11.7
ANM/Nurse/midwife/LHV	5.3
Traditional birth attendant	64.2
Percent[5] reporting at least one reproductive health problem	44.7

Awareness of AIDS

Percent of women who have heard of AIDS	15.4

Child Health

Percent of children age 0–3 months exclusively breastfed	55.8
Median duration of breastfeeding (months)	≥36.0
Percent of children[9] who received vaccinations:	
BCG	44.4
DPT (3 doses)	21.7
Polio (3 doses)	36.5
Measles	18.2
All vaccinations	8.8
Percent of children[10] with diarrhoea in the past 2 weeks who received oral rehydration salts (ORS)	20.4
Percent of children[10] with acute respiratory infection in the past 2 weeks taken to a health facility or provider	41.1

Nutrition

Percent of women with anaemia[11]	72.9
Percent of women with moderate/severe anaemia[11]	28.6
Percent of children age 6–35 months with anaemia[11]	82.4
Percent of children age 6–35 months with moderate/severe anaemia[11]	56.2
Percent of children chronically undernourished (stunted)[12]	49.0
Percent of children acutely undernourished (wasted)[12]	25.4
Percent of children underweight[12]	54.3

[6]For current users of modern methods
[7]For the 5 years preceding the survey (1994–98)
[8]For births in the past 5 years (excluding first births)
[9]Children age 12–23 months
[10]Children under 3 years
[11]Anaemia–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.
[12]Stunting 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 more than 90,000 ever-married women age 15–49. The NFHS-2 sample covers 99 percent of India's population living in all 26 states.

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 one-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 Bihar, NFHS-2 field staff collected information from 6,345 households between 3 December 1998 and 31 March 1999 and interviewed 7,024 eligible women in these households. In addition, the survey collected information on 2,947 children born to eligible women during the three years preceding the survey. One health investigator on each survey team measured the height and weight of women and young children and took blood samples to assess the prevalence of anaemia.

Background Characteristics of the Survey Population

According to the 1991 Census, 87 percent of the population of Bihar lives in rural areas. The age distribution is typical of high fertility populations, with a higher proportion of population in the younger age groups. Forty-two percent of the population is below age 15, and 4 percent is age 65 and above. The sex ratio is 955 females for every 1,000 males in rural areas but only 932 females for every 1,000 males in urban areas, suggesting that more men than women have migrated to urban areas.

The survey provides a variety of demographic and socioeconomic background information. In the state as a whole, 83 percent of household heads are Hindu, 15 percent are Muslim, and 1 percent are Christian. Muslims are more concentrated in urban areas, where they comprise 20 percent of household heads. Twenty-one percent of household heads belong to scheduled castes, 10 percent belong to scheduled tribes, and 50 percent belong to other backward classes (OBCs). Less than one-fifth of household heads do not belong to any of these groups.

Although there are some improvements since the time of NFHS-1, the housing conditions and the standard of living of household members remain very poor in Bihar. Only 18 percent of households in Bihar have electricity, and only 8 percent have piped drinking water, compared with 17 percent and 8 percent, respectively, in NFHS-1. Eighty-three percent of households in Bihar do not have any toilet facility.

Nearly two-thirds (63 percent) of males but only about one-third (35 percent) of females age six and above are literate, an increase of 3 percentage points for males and 6 percentage points for females from literacy rates at the time of NFHS-1. Sixty-three percent of children age

6–14 are attending school, an increase from 51 percent in NFHS-1. The proportions enrolled are rising rapidly at all levels of schooling, particularly for girls, but girls still lag behind boys in school attendance. Moreover, the disparity in school attendance by sex grows with increasing age of children. At age 15–17, 58 percent of boys attend school, compared with 35 percent of girls.

Women in Bihar tend to marry at an early age. Forty-six percent of women age 15–19 are already married. Age at marriage is much lower in rural areas than in urban areas. In rural areas, one-half (50 percent) of women age 15–19 are married, compared with only about one-quarter (24 percent) in urban areas. Older women are more likely than younger women to have married at an early age: 59 percent of women who are now age 45–49 married before they were 15, compared with 24 percent of women age 15–19. Although this indicates that the proportion of women who marry young is declining rapidly, the majority of women in Bihar still marry before reaching the legal minimum age of 18 years. On average, women are five years younger than the men they marry.

As part of an increasing emphasis on gender issues in NFHS-2, the survey asked women about their participation in household decisionmaking. In Bihar, 87 percent of women are involved in decisionmaking on at least one of four selected topics. A much lower proportion, however, are involved in decisionmaking about their own health care (48 percent), purchasing jewellery or other major household items (43 percent), or staying with parents or siblings (44 percent). Only 27 percent of women in Bihar do work other than housework, and 7 out of 10 of these women work for cash. Fifty-one percent of women who earn cash can decide independently how to spend the money that they earn.

Fertility and Family Planning

Fertility continues to decline in Bihar. At current fertility levels, women will have an average of 3.5 children each throughout their childbearing years. Although the total fertility rate has declined by about half a child in the six-year period between NFHS-1 and NFHS-2, it remains quite high and far from the replacement level.

Efforts to lower fertility might usefully focus on groups within the population that have higher fertility than average. In Bihar, rural women, illiterate women, poor women, and Muslim women have much higher fertility than other women. A more striking feature is the high level of childbearing among young women. The median age at first childbirth is 19 years, and women age 15–19 account for 16 percent of total fertility. Studies in India and elsewhere have shown that health and mortality risks increase when women give birth at such young ages—both for the women themselves and for their children. Family planning programmes focusing on women in this age group could make a significant impact on maternal and child health as well as reducing overall fertility 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 13 percent of births over the three years preceding NFHS-2, mothers report that they did not want the pregnancy at all, and for another 12 percent of these births, mothers say that they would have preferred to delay the pregnancy. When asked about their

preferred family size, 18 percent of women who already have three children and 11 percent of women with four or more children respond that they consider the two-child family ideal. This gap between women's actual fertility experience and what they want or would consider ideal suggests a need for expanded or improved family welfare services to help women achieve their fertility goals.

If many women in Bihar are not using family planning, it may not be due to lack of knowledge. Knowledge of contraception is nearly universal: 99 percent of currently married women know at least one modern family planning method. Women are most familiar with female sterilization (99 percent), followed by male sterilization (97 percent), the pill (75 percent), the condom (64 percent), and the IUD (59 percent). Knowledge of modern spacing methods has increased by 10–18 percentage points since the time of NFHS-1, although use rates for these methods remain extremely low.

Only 25 percent of married women are currently using some method of contraception, a slight increase from 23 percent at the time of NFHS-1. Contraceptive prevalence is considerably higher in urban areas (39 percent) than in rural areas (23 percent). Female sterilization is by far the most popular method: 19 percent of currently married women are sterilized, a slight increase from 17 percent at the time of NFHS-1. By contrast, only 1 percent of women reported that their husbands are sterilized in both NFHS-1 and NFHS-2. Overall, sterilization accounts for 82 percent of total contraceptive use. Use rates for the pill, IUD, and condom remain very low, each at 1 percent or less.

Contraceptive prevalence varies widely among socioeconomic groups. Rural women, illiterate women, Muslim women, scheduled-tribe women, and women belonging to low standard of living households have much lower levels of contraceptive use than other women. Urban women, women with high school or more education, and women from households with a high standard of living are all more likely than other women to use the three modern spacing methods—pill, IUD, and condom, but the use of these methods does not exceed 10 percent in any group.

Given the near-exclusive emphasis on sterilization, women tend to adopt family planning only after they have achieved their desired family size. As a result, contraceptive use can be expected to rise steadily with age and with number of living children. In Bihar, contraceptive use does indeed go up with age, peaking at 41 percent for women age 40–44. Use also goes up with the number of children, peaking at 37 percent for women with three living children. Son preference has considerable effect on contraceptive use. Women who have one or more sons are more likely to use contraception than are women who have the same number of children but have only daughters.

Thirteen 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 12 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. The unmet need for spacing declines from 30 percent among women age 15–19 to less than 2 percent among women age 35–49. The unmet need for limiting increases with age to peak at 22 percent among women age 30–34 and declines gradually among older women. These results underscore the need for strategies that provide

spacing as well as terminal methods in order to meet the changing needs of women over their lifecycle.

For many years, the Government of India has been using electronic and other mass media to promote family planning. Exposure to mass media is quite low in Bihar, where only 42 percent of rural residents live in villages that are electrified and only 5 percent live in villages that have a cable connection. Overall, only 20 percent of ever-married women listen to the radio at least once a week and only 17 percent watch television at least once a week. About three-quarters (73 percent) of women are not regularly exposed to radio, television, or other types of media. Exposure to each type of media is much higher among urban women, more-educated women, Christian women, women not belonging to a scheduled caste, scheduled tribe, or other backward class, and women from high standard of living households. Forty percent of women saw or heard a family planning message in the media during the few months preceding the survey. In addition to radio and television, wall paintings and hoardings are important sources of exposure to family planning messages in Bihar. As with the exposure to mass media itself, exposure to family planning messages is much lower among disadvantaged socioeconomic groups.

More than three-fourths (77 percent) of women who use modern contraception obtained their method from a government hospital or other source in the public sector. Only 18 percent obtained their method from the private medical sector. The private medical sector, along with shops, is the major source of pills and condoms, however. The private sector plays a larger role in urban areas (where it is the source of modern methods for 34 percent of users) than in rural areas (where it is the source of modern methods for 15 percent of users).

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 Bihar, only 15 percent of users of modern contraceptives who were motivated by someone to use their method were told about any other method. Only 16 percent were told by a health or family planning worker about possible side effects of the method they adopted, at the time of adopting the method. Seventy-seven percent of contraceptive users, however, have received follow-up services.

From the information provided in NFHS-2, a picture emerges of women marrying early, having their first child soon after marriage, and having two or three more children in close succession by the time they reach their late-20s. At that point, about one-third of women get sterilized. The median age for female sterilization has been declining in recent years and is now 27.7 years. Very few women use modern spacing methods that could help them delay their first births and increase intervals between pregnancies.

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 73 (deaths of infants per 1,000 live births), a decrease from the corresponding rate of 89 per 1,000 live births in NFHS-1. The child mortality rate, at 35 (deaths of children age 1–4 years per 1,000 children reaching age one), declined from 42 at the time of NFHS-1. Expressed differently, 1 in 14 children die in the first year of life, and 1 in 10 die before reaching age five. Child-survival programmes might usefully focus on specific groups of children with particularly high infant and

child mortality rates, such as children who live in rural areas, children whose mothers are illiterate, children belonging to scheduled castes, and children from poor households.

Along with various socioeconomic groups, efforts to promote child survival need to concentrate on very young mothers and mothers whose children are closely spaced. Infant mortality is 49 percent higher among children born to mothers under age 20 than among children born to mothers age 20–29 (98 deaths, compared with 66, per 1,000 live births). Infant mortality is more than two and one-half times as high among children born less than 24 months after a previous birth as among children born after a gap of 48 months or more (110 deaths, compared with 41, per 1,000 live births). Clearly, efforts to expand the use of temporary contraceptive methods for delaying and spacing births would help reduce infant mortality as well as fertility.

Health and Health Care

Promotion of maternal and child health has been one of the most important components of the Family Welfare 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 Bihar, mothers of only 36 percent of the children born in the three years preceding NFHS-2 received at least one antenatal check-up, and mothers of only 18 percent of these children received at least three antenatal check-ups. For 58 percent of these children, mothers received the recommended number of tetanus toxoid vaccinations, and for 24 percent of children, mothers received iron and folic acid supplementation. Coverage by all three interventions is somewhat lower for women in disadvantaged socioeconomic groups than for other women. Coverage is also lower for women who already have four or more children.

The Family Welfare 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, only 15 percent of births in Bihar were delivered in a medical facility. Among births delivered at home, only 10 percent were assisted by a health professional, but 78 percent by a traditional birth attendant. Only 1 out of 10 births outside a medical facility were followed by a postpartum check-up within two months of delivery. Overall, these results show that utilization of health services in Bihar during pregnancy, during delivery, and after childbirth remains very low. They also point to the important role of traditional birth attendants for the substantial proportion of births that occur at home.

The Government of India recommends that breastfeeding should begin immediately after childbirth and that infants should be exclusively breastfed for the first four months of life. Although breastfeeding is nearly universal in Bihar, very few children begin breastfeeding immediately after birth—only 6 percent in the first hour and 21 percent in the first day. Fifty-five percent of children under four months of age are exclusively breastfed. The median duration of breastfeeding is more than three years, but the median duration of exclusive breastfeeding is only 1.9 months. At age 6–9 months, all children should be receiving solid or mushy food in addition to breast milk. However, only 15 percent 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 international standards, 54 percent of children under age three years are underweight, a similar proportion (54 percent) are stunted, and 21 percent are wasted. Child nutritional status has improved in Bihar since the time of NFHS-1, when 63 percent of young children were underweight, 56 percent were stunted, and 24 percent were wasted, but undernutrition remains a serious problem in Bihar. Undernutrition is higher in rural areas than in urban areas and is particularly high among children from disadvantaged socioeconomic groups. The prevalence of undernutrition is about the same for girls as for boys. Four out of five children age 6–35 months are anaemic, including a large majority of children in every subgroup of the population.

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. In Bihar, only 11 percent of children age 12–23 months are fully vaccinated, 72 percent have received some but not all of the recommended vaccinations, and 17 percent have not been vaccinated at all.

Full immunization coverage in Bihar has remained at 11 percent since NFHS-1, but the percent not receiving any of the vaccinations has declined substantially from 54 percent in NFHS-1 to 17 percent in NFHS-2. This is primarily due to a big increase in the first two doses of polio vaccine, undoubtedly because of the introduction of the Pulse Polio Immunization Campaign in 1995. Full immunization coverage is so low primarily because only 17 percent of children have been vaccinated against measles. Dropout rates for the series of DPT and polio vaccinations are also a problem. Forty percent of children received the first DPT vaccination, but only 24 percent received all three doses; 81 percent received the first polio vaccination, but only 41 percent received all three doses. 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. However, only 10 percent of children age 12–35 months have received any vitamin A supplementation and only 7 percent have 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 Bihar, 31 percent of children under age three were ill with fever during the two weeks preceding the survey, 22 percent were ill with ARI, and 18 percent had diarrhoea. Fifty-eight percent of the children who became ill with ARI and 50 percent of the children who became ill with diarrhoea received advice or treatment from a health facility or health-care provider. Knowledge of the appropriate treatment of diarrhoea remains low. Only 38 percent of mothers of children age less than 3 years know about oral rehydration salt (ORS) packets and 32 percent of mothers incorrectly believe that when children are sick with diarrhoea, they should be given less to drink than usual. Only 41 percent of children with diarrhoea received some form of oral rehydration therapy (ORT), including 15 percent who received ORS. The percentage of children with diarrhoea who received ORS has increased slightly since NFHS-1, when it was

only 12 percent, suggesting that there has been very little improvement in the management of childhood diarrhoea.

Based on a weight-for-height index (the body mass index), two out of five (39 percent) women in Bihar are undernourished. Nutritional deficiency is particularly serious for women in rural areas and women in disadvantaged socioeconomic groups. Women who are undernourished themselves are also much more likely than other women to have children who are undernourished. Overall, 63 percent of women in Bihar have some degree of anaemia, and 21 percent are moderately to severly anaemic. Anaemia is a serious problem among women in every population group, with prevalence rates ranging from 50 to 87 percent. Pregnant women are more likely than nonpregnant women to be moderately to severely anaemic, but much less likely to be mildly anaemic.

Less than one-half of households (47 percent) use cooking salt that is iodized at the recommended level of 15 parts per million (ppm), suggesting that iodine deficiency disorders are likely to be a serious problem. Rural households and households with a low standard of living are much less likely than other households to be using adequately iodized cooking salt.

Forty-four percent of currently married women in Bihar report some type of reproductive-health problem, including abnormal vaginal discharge, symptoms of urinary tract infections, and pain or bleeding associated with intercourse. Among these women, 69 percent have not sought any advice or treatment. These results suggest a need to expand reproductive-health services and 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 Bihar there is widespread acceptance among ever-married women that the beating of wives by husbands is justified under some circumstances. About one-half (47 percent) of all ever-married women accept at least one of six reasons as a justification for a husband beating his wife. Domestic violence is also fairly common. Twenty-seven percent of ever-married women in Bihar have experienced beatings or physical mistreatment since age 15 and 18 percent 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 more prevalent in rural areas and among illiterate and poor women. Domestic violence is particularly high against working women.

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 about 1 percent of the population in Bihar suffers from tuberculosis, 2 percent suffers from asthma, 4 percent suffered from malaria during the three months preceding the survey, and 2 percent suffered from jaundice during the 12 months preceding the survey. Prevalence of asthma, tuberculosis, and malaria is much higher in rural areas than in urban areas, but prevalence of jaundice is slightly higher in urban areas. Men are more likely than women to suffer from tuberculosis, jaundice, and malaria, but women are slightly more likely to suffer from asthma.

Most households in Bihar (83 percent) go to private doctors or private hospitals or clinics for treatment when a family member is ill. Only 9 percent normally use the public medical sector. Even among poor households, only 8 percent normally use the public medical sector

when members become ill. Most respondents are generally satisfied with the health care they receive. Ratings on quality of services are lowest for public-sector facilities in rural areas, where the majority of respondents are critical of staff attitudes and cleanliness of the facilities.

Overall, only 2 percent of women received home visits from health or family planning workers during the 12 months preceding the survey. The few who did receive home visits were not visited regularly—receiving only one home visit, on average, in the year 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.

NFHS-2 also collected information on selected lifestyle indicators for household members. According to household respondents, 26 percent of adult men and 6 percent of adult women smoke, 22 percent of adult men and 3 percent of adult women drink alcohol, and 52 percent of adult men and 7 percent of adult women chew *paan masala* or tobacco.

Although the spread of HIV/AIDS is a major concern in India, nearly 9 out of 10 women in Bihar (88 percent) have not heard of AIDS. Awareness of AIDS is particularly low among women in rural areas, and among women who are socioeconomically disadvantaged. Among women who have heard of AIDS, 83 percent learned about the disease from television and 55 percent from radio. Among women who have heard of AIDS, however, one-half do not know of any way to avoid infection. Survey results suggest that health personnel could play a much larger role in promoting AIDS awareness. In Bihar, only 1 percent of women who know about AIDS learned 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 four states (Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh) and 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 Bihar.

The NFHS-2 sample covers more than 99 percent of India's population living in all 26 states. 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 data collection in one or more states. The Operations Research Group (ORG) in New Delhi was selected as the field organization for NFHS-2 in Bihar.

1.2 Basic Socioeconomic and Demographic Features of Bihar[1]

Bihar is the second most populous state, next to Uttar Pradesh, in India. It has an area of 173,877 km^2 and ranks ninth in terms of area among the states and union territories of India. According to the 1991 Census, the state is divided into 42 districts distributed in three regions: North Bihar Plain, comprising Saran, Siwan, Gopalganj, Pashchim Champaran, Purba Champaran, Sitamarhi, Vaishali, Darbhanga, Madhubani, Samastipur, Muzaffarpur, Purnia, Araria, Kishanganj, Katihar, Saharsa, and Madhepura districts; South Bihar Plain, comprising Patna, Nalanda, Gaya,

[1]Because the NFHS-2 was conducted before the state of Jharkhand was established, this report covers Bihar as it existed at the time of the survey. A fact sheet, which provides summary information about the new state of Jharkhand, is included in this report.

Jehanabad, Aurangabad, Nawada, Bhojpur, Rohtas, Begusarai, Munger, Khagaria, and Bhagalpur districts; and Jharkhand[2], comprising Godda, Sahibganj, Dumka, Deoghar, Dhanbad, Giridih, Hazaribag, Palamu, Lohardaga, Gumla, Ranchi, Purbi Singhbhum, and Pashchimi Singhbhum districts.

Although Bihar is predominantly an agricultural state, the state has been changing rapidly. The contribution of the agricultural sector to the state domestic product declined from 48 percent in 1980–81 to 31 percent in 1996–97. The contribution of the manufacturing sector to the state domestic product increased from around 11 percent in 1980–81 to 14 percent in 1996–97. The share of other sectors increased from 41 percent in 1980–81 to 55 percent in 1996–97 (EPW Research Foundation, 1998). At the time of the 1991 Census, the agricultural sector provided livelihood to 81 percent of the working population in the state (Office of the Registrar General and Census Commissioner, 1992). Paddy, *jowar*, *bazra*, *tur*, maize, potato, onion, tobacco, jute, and sugarcane are extensively cultivated. *Kharif* and *rabi* food grains constitute 64 and 36 percent of the total production of food grains in the state, respectively (Centre for Monitoring Indian Economy, 1991). Bihar is rich in mineral resources: bauxite, coal, copper ore, iron, limestone, mica, manganese, chromite, sulphur pyrites, graphite, silver, gold, and vanadium are the principal minerals of the state. The state has 32 percent of the mineral reserves in the country and contributes 35 percent to the all-India production. Although Bihar is rich in mineral resources, it is industrially not well developed. The state has a few industries, including manufacture of cement, fertilizer, caustic soda, and steel. In the core sector, the state has steel plants at Bokaro and Jamshedpur, alloy steel plants at Patratu and Adityapur, a sponge iron project at Chandel, coal mining industries, heavy engineering, and forging plants at Ranchi, a fertilizer factory at Sindri, a caustic soda plant at Garhwa road (Palamu), an oil refinery at Barauni, and a copper complex at Ghatsila.

The average annual per capita income of the state increased marginally from Rs. 917 in 1980–81 to Rs. 1,010 in 1996–97 at constant (1980–81) prices. At current prices, the average annual per capita income in the state in 1996–97 is Rs. 3,835 (EPW Research Foundation, 1998). As per the estimates given by the Planning Commission for 1993–94, 58 percent of the rural population and 35 percent of the urban population in Bihar were below the poverty line (Central Statistical Organisation, 1999).

According to the Census, the total population of Bihar was 56 million in 1971, 70 million in 1981, and 86 million in 1991, accounting for 10 percent of the total population of India. The decadal growth rate increased from 21 percent for the period 1961–71 to 24 percent for 1971–81 and remained at 24 percent during 1981–91. The 1981–91 intercensal increase in population in Bihar (23.5 percent) was about the same as that for the country as a whole (23.9 percent). The population density, which was 324 persons per km^2 in 1971, increased to 405 in 1981, and 497 in 1991. The increase in population density by 173 persons per km^2 during 1971–91 indicates an increasing pressure on land and other resources. The population density is much higher in Bihar than in India as a whole (497 compared with 273 persons per km^2).

Bihar has been undergoing a slow process of urbanization. The percentage of population in Bihar that is urban increased from 10 percent in 1971 to 13 percent in 1981. The percentage living in urban areas remained at 13 percent in 1991. The level of urbanization in Bihar (13 percent) is much lower than for India as a whole (26 percent). The sex ratio (number of females

[2]Orginally the Chota Nagpur Plateau region, which coincides with the newly formed state of Jharkhand.

per 1,000 males) in the state declined from 954 in 1971 to 946 in 1981 and 911 in 1991. The sex ratio in Bihar is lower than in India as a whole (911 compared with 927). The percentage of population age 0–14 years declined from 43 percent to 41 percent between 1971 and 1991. The percentage of population age 65 and above increased marginally during this period.

According to the 1991 Census, the proportions of the total population designated as scheduled castes and scheduled tribes[3] are lower in Bihar than in all of India. The scheduled-caste population increased marginally from 14 percent of the total population in 1971 to 15 percent in 1991. The scheduled-tribe population decreased slightly from 9 percent of the total population in 1971 to 8 percent in 1991.

Bihar is one of the educationally backward states in India. According to the 1991 Census, the literacy rate among the population age seven and above was 39 percent, compared with 52 percent for India as a whole. The literacy rates were 53 percent for males and 23 percent for females in Bihar, compared with 64 percent and 39 percent for males and females, respectively, for India. The gap in literacy rates between males and females in Bihar is higher than the gap in India as a whole.

According to the Sample Registration System (SRS), fertility in Bihar declined considerably during 1981–91, but it has been stagnating since. The crude birth rate declined from 39.1 per 1,000 population in 1981 to 30.7 in 1991, but has increased slightly to 31.7 in 1997. The total fertility rate also declined substantially, from 5.7 children per woman in 1981 to 4.4 children per woman in 1991—dropping by 1.3 children per woman during the 1981–91 decade, but has remained around that level since (4.4 children per woman in 1997). Mortality decline in Bihar also exhibits a similar pattern, i.e., a decline during the 1980s and stagnation during the 1990s. The crude death rate declined from 13.9 per 1,000 population in 1981 to 9.8 in 1991. The infant mortality rate declined from 118 per 1,000 live births in 1981 to 69 in 1991—a decline of 49 percent. The crude death rate and infant mortality rate in 1997 were 10.0 and 71, respectively, indicating no improvement since 1991.

The infant mortality rate estimated by the Sample Registration System for Bihar in 1997 was the same as that for India as a whole (i.e., 71 per 1,000 live births). For 1996–2001, life expectancy is projected to be 65.6 years for males and 62.1 years for females, a substantial increase from the estimates of 55.2 years for males and 53.0 years for females in 1981–86. The couple protection rate (defined as the percentage of eligible couples effectively protected against pregnancy by various methods of contraception) in Bihar was 21 percent in 1997, compared with 6 percent in 1971. The couple protection rate in Bihar in 1997 was much lower than the 45 percent estimate for all India.

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

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

the population and health fields, as well as experts working on gender issues. The questionnaires for Bihar were bilingual, with questions in both Hindi and English.

The Household Questionnaire lists 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, 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 family planning, questions are included about reasons for not using contraception and intentions for 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 a woman who had a birth since January 1995 received antenatal and postpartum care, who attended the delivery, and the nature of any complications during pregnancy.

Breastfeeding and health: Questions cover feeding practices, the length of breastfeeding, immunization coverage, and recent occurrences of diarrhoea, fever, and cough for the last two births since January 1995.

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 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 1995. 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 1995 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 those problems.

1.4 Survey Design and Sample Implementation

Sample Size and Reporting Domain

The overall target sample size for Bihar was 7,000 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, for urban and rural areas, and for the three major regions of the state. The sample is not large enough to provide reliable estimates for individual districts. Within a region, the required sampling rates for rural and urban areas were determined by allocating the sample proportionally to the population of the two areas and taking into account their expected urban and rural nonresponse rates (based on the nonresponse rates in NFHS-1).

The district composition of the three major regions and eight sub-regions (based on the 42 districts in Bihar at the time of the 1991 Census) is as follows:

Region I (North Bihar Plain):

Subregion 1: Saran, Siwan, Gopalganj, Pashchim Champaran, Purba Champaran
Subregion 2: Sitamarhi, Vaishali, Darbhanga, Madhubani, Samastipur, Muzaffarpur, Saharsa
Subregion 3: Purnia, Araria, Kishanganj, Katihar, Madhepura

Region II (South Bihar Plain):

Subregion 4: Patna, Bhojpur, Rohtas
Subregion 5: Munger, Khagaria, Bhagalpur
Subregion 6: Nalanda, Gaya, Jehanabad, Aurangabad, Nawada, Begusarai

Region III (Jharkhand):

Subregion 7: Godda, Sahibganj, Dumka, Deoghar, Dhanbad, Giridih
Subregion 8: Hazaribag, Palamu, Lohardaga, Gumla, Ranchi, Purbi Singhbhum, Pashchimi Singbhum

Sample Design

Within each of the six sampling domains (rural and urban areas of each of the three major regions), a systematic, multi-stage stratified sampling design was used. The rural sample within each region 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 selection of households using systematic sampling within each selected PSU in the second stage. In urban areas within each region, 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. Within each region, the list was stratified by a number of variables. The first level of stratification was geographic, with villages classified into the contiguous subregions described earlier. In each subregion, villages were further stratified by village size and the percentage of population designated as scheduled castes or scheduled tribes. 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 the strata, consisting of an ordering of villages within each stratum by level of female literacy (obtained from the 1991 Census Village Directory). From the list of villages within each major region 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.

Table 1.1 Sampling stratification

Sampling stratification procedure in rural areas, Bihar

	Stratification variables				
Stratum	Region	Geographic stratum	Village size (number of residential households)	Percent SC/ST population	Population[1]
1	1	1	≤ 250	≤ 12.0	2,306,766
2	1	1	≤ 250	> 12.0	2,175,975
3	1	1	> 250 and ≤ 400	NU	2,193,074
4	1	1	> 400	≤ 12.0	2,277,017
5	1	1	> 400	> 12.0	2,014,502
6	1	2	≤ 300	≤ 15.0	2,485,203
7	1	2	≤ 300	> 15.0	2,559,336
8	1	2	> 300 and ≤ 700	≤ 15.0	2,949,273
9	1	2	> 300 and ≤ 700	> 15.0	2,709,189
10	1	2	> 700	≤ 14.0	3,257,439
11	1	2	> 700	> 14.0	2,884,378
12	1	3	≤ 400	NU	2,593,327
13	1	3	> 400	≤ 15.0	2,273,382
14	1	3	> 400	> 15.0	2,002,179
15	2	4	≤ 175	NU	2,572,975
16	2	4	> 175 and ≤ 425	NU	2,806,041
17	2	4	> 425	NU	2,019,914
18	2	5	≤ 250	NU	2,192,461
19	2	5	> 250 and ≤ 600	NU	1,931,378
20	2	5	> 600	NU	2,167,643
21	2	6	≤ 150	NU	2,518,310
22	2	6	> 150 and ≤ 300	NU	2,631,669
23	2	6	> 300	≤ 20.0	2,337,752
24	2	6	> 300	> 20.0	1,945,155
25	3	7	≤ 225	≤ 20.0	1,737,860
26	3	7	≤ 225	> 20.0 and ≤ 60.0	1,641,823
27	3	7	≤ 225	> 60.0	1,522,336
28	3	7	> 225	≤ 20.0	1,242,886
29	3	7	> 225	> 20.0	1,284,785
30	3	8	≤ 200	≤ 27.0	1,335,740
31	3	8	≤ 200	> 27.0 and ≤ 73.0	2,109,974
32	3	8	≤ 200	> 73.0	2,132,484
33	3	8	> 200	≤ 35.0	1,884,695
34	3	8	> 200	> 35.0	2,290,617
Total	NA	NA	NA	NA	74,987,538

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

The domain sampling fraction, i.e., the probability of selecting a woman in a domain (the rural part of one of the three major regions) (f) was computed as:

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

where n_i = number of women to be interviewed in the ith domain (after adjusting upward to account for nonresponse and other loss),
N_i = projected population of eligible women in the ith domain in December 1998.

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

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

where a = number of PSUs to be selected from the domain,

s_i = population size of the ith PSU within the domain,

Σs_i = total population of the domain.

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 500 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 nine teams, each comprising one lister and one mapper, under the supervision of four field supervisors and one field executive. The teams were trained from 16–20 September 1998 in Patna by an official from ORG, who was earlier trained in a workshop conducted by IIPS. The mapping and household listing operation was carried out between September 1998 and January 1999. The households to be interviewed were selected with equal probability from the household list in each area using systematic sampling.

The probability of selecting a household from a selected PSU in the domain (the rural part of one of the three major regions) (f_2) was computed as:

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

On average, 30 households were initially targeted for selection in each selected enumeration area. To avoid extreme variations in 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 allowed 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 in each of the three major regions was arranged according to districts and within districts by 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 a domain (the urban part of one of the three major regions) (f) was computed as:

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

where n_i = number of women to be interviewed in the ith domain (after adjusting upward to account for nonresponse and other loss),

N_i = projected population of eligible women in the ith domain in December 1998.

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

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

where a = number of wards selected from the domain,

s_i = population size of the ith ward within the domain,

Σs_i = total population of the domain.

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 ith block,

ΣB_i = total population of the ward.

A household listing operation carried out in each selected 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 have been calculated to adjust 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 ith domain (rural or urban part of one of the three major regions), calculated as the ratio of the overall sampling fraction ($F = n/N$) and the sampling fraction for the ith domain ($f = n_i/N_i$). Note that $n = \Sigma n_i$ and $N = \Sigma N_i$.

An 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 ith 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.

Table 1.2 Sample results

Sample results for households and ever-married women age 15–49 by residence, Bihar, 1998–99

Result	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
Households selected	747	100.0	5,887	100.0	6,634	100.0
Households completed (C)	701	93.8	5,644	95.9	6,345	95.6
Households with no household member at home or no competent respondent at home at the time of interview (HP)	9	1.2	48	0.8	57	0.9
Households absent for extended period (HA)	29	3.9	167	2.8	196	3.0
Households postponed (P)	1	0.1	2	0.0	3	0.0
Households refused (R)	3	0.4	6	0.1	9	0.1
Dwelling vacant/address not a dwelling (DV)	4	0.5	9	0.2	13	0.2
Dwelling not found (DNF)	0	0.0	11	0.2	11	0.2
Households occupied	714	100.0	5,711	100.0	6,425	100.0
Households interviewed	701	98.2	5,644	98.8	6,345	98.8
Households not interviewed	13	1.8	67	1.2	80	1.2
Household response rate (HRR)[1]	NA	98.2	NA	98.8	NA	98.8
Eligible women	727	100.0	6,574	100.0	7,301	100.0
Women interviewed (EWC)	687	94.5	6,337	96.4	7,024	96.2
Women not at home (EWNH)	26	3.6	165	2.5	191	2.6
Women postponed (EWP)	2	0.3	5	0.1	7	0.1
Women refused (EWR)	7	1.0	26	0.4	33	0.5
Women partly interviewed (EWPC)	2	0.3	15	0.2	17	0.2
Other (EWO)	3	0.4	26	0.4	29	0.4
Eligible women's response rate (EWRR)[2]	NA	94.5	NA	96.4	NA	96.2
Overall response rate (ORR)[3]	NA	92.8	NA	95.3	NA	95.0

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

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

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

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

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

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

Sample Implementation

A total of 233 PSUs were selected, of which 31 (13 percent) were urban and 202 (87 percent) 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 95 percent (93 percent in urban areas and 95 percent in rural areas). Table 1.3 shows that the overall response rate is lowest in the South Bihar Plain region (92 percent) and highest in the North Bihar Plain region (97 percent).

Table 1.3 Sample results by region

Sample results for households and ever-married women age 15–49 by region, Bihar, 1998–99

Result	Region			Total
	North Bihar Plain	South Bihar Plain	Jhar-khand	
Number of households interviewed	2,787	1,916	1,642	6,345
Number of eligible women interviewed	3,295	2,115	1,614	7,024
Household response rate	99.0	98.4	98.7	98.8
Eligible women's response rate	98.2	93.8	95.4	96.2
Overall response rate	97.2	92.3	94.2	95.0

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.

Of the 6,634 households selected in Bihar, interviews were completed in 96 percent of the cases, 3 percent of the selected households were absent for an extended period, and in 1 percent of the cases no household member or no competent respondent was at home at the time of interview (Table 1.2). The household response rate—the number of households interviewed per 100 occupied households—was 99 percent.

In the interviewed households, 7,301 women were identified as eligible for the individual interview. Interviews were successfully completed with 96 percent of the eligible women. Nonresponse at the individual level was primarily due to eligible women not being at home despite repeated household visits (3 percent). One-half of one percent of the eligible women refused to be interviewed.

1.5 Recruitment, Training, and Fieldwork

Field staff for the main survey were trained in Patna and Ranchi by officials of ORG, who were trained earlier in a Training of Trainers Workshop conducted by IIPS. Training in Bihar 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 IIPS in collaboration with the All India Institute of Medical Sciences (AIIMS), New Delhi. This specialized training took place in New Delhi. It included classroom training and extensive field practice in schools, *anganwadis*, and communities.

Eight interviewing teams conducted the main fieldwork in Bihar, each team consisting of one field supervisor, one female field editor, four female interviewers, and one health investigator. The fieldwork was carried out between 3 December 1998 and 31 March 1999. Coordinators and senior staff of ORG 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.

1.6 Data Processing

Completed questionnaires were sent to the ORG office in New Delhi 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 in New Delhi by eight data entry operators under the supervision of ORG senior staff who were trained at a data-processing workshop in Vadodara. Data entry and editing operations were completed by April 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 AND VILLAGES

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

2.1 Age-Sex Distribution of the Household Population

The NFHS 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 Bihar may differ because of temporary population movements. Table 2.1 shows the *de facto* population in the NFHS-2 household sample for Bihar, classified by age, residence, and sex. The total *de facto* sample population is 37,713. The sample is 11 percent urban and 89 percent rural.

The age distribution of the population in Bihar is typical of populations in which the level of fertility has been high (Figure 2.1). Forty-two percent are below 15 years of age, and 4 percent are age 65 or older. The proportion below age 15 is slightly higher in rural areas (42 percent) than in urban areas (38 percent). The proportion of persons age 65 or older is also slightly higher in rural areas (4 percent) than in urban areas (3 percent).

The single-year age distributions by sex in the *de facto* population (see Appendix Table B.1) indicate substantial misreporting of ages, including considerable preference for ages ending in particular digits, especially the digits 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. Values of Myers' Index computed for the age range 10–69 in the household sample population in Bihar are 18 for males and 11 for females. Comparable values from NFHS-1 are 20 for males and 12 for females[1]. The lower values of Myers' Index in NFHS-2 than in NFHS-1 (revised from the published NFHS-1 estimates) indicate that the quality of age reporting improved between the two surveys. The change in the pattern and extent of age misreporting in NFHS-1 and NFHS-2 has implications for the estimation of the trend in fertility between NFHS-1 and NFHS-2, as discussed in Chapter 4.

[1]The ages used in the calculation of Myers' Index are those obtained in the household interview, in which the household respondent (usually the head of the household) provided the age of each person in the household. In the NFHS-1 reports, a different set of ages was used for females when calculating Myers' index, inasmuch as the ages of ever-married women age 15–49 from the women's file were copied over to the household file so that some ages were provided by the household respondents and some by the women themselves. Because of this, the value of Myers' Index for females given here for NFHS-1 differs from the value given in the NFHS-1 report. It should also be noted that the values of Myers' Index in the NFHS-1 report for both men and women are twice as large as they should be, due to failure to complete the last step of the calculation of the index, which is division by two. This error is corrected in the present report. The values of Myers' Index presented here, for both NFHS-1 and NFHS-2, are comparable and correctly incorporate the final division by two.

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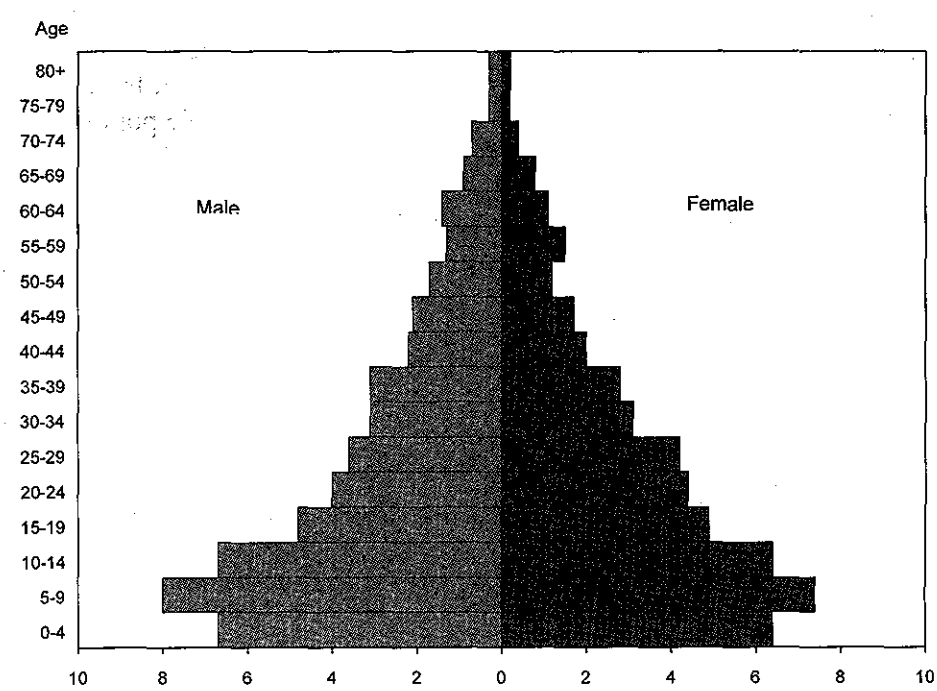
Table 2.1 Household population by age and sex

Percent distribution of the household population by age, according to residence and sex, Bihar, 1998–99

	Urban			Rural			Total		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
< 1	2.1	2.1	2.1	2.7	2.6	2.7	2.7	2.5	2.6
1–4	7.7	9.1	8.4	10.9	10.7	10.8	10.5	10.6	10.5
5–9	12.3	13.4	12.8	16.1	15.5	15.8	15.7	15.2	15.5
10–14	13.6	15.3	14.5	13.1	12.9	13.0	13.1	13.2	13.2
15–19	11.9	12.7	12.3	9.1	9.6	9.4	9.5	10.0	9.7
20–24	9.5	8.7	9.1	7.5	9.1	8.3	7.8	9.1	8.4
25–29	7.8	7.9	7.9	7.0	8.6	7.8	7.1	8.5	7.8
30–34	5.4	6.1	5.7	6.3	6.4	6.3	6.2	6.4	6.3
35–39	6.1	5.9	6.0	6.1	5.8	6.0	6.1	5.8	6.0
40–44	5.7	4.8	5.3	4.2	4.0	4.1	4.3	4.1	4.2
45–49	4.3	3.8	4.0	4.1	3.4	3.8	4.1	3.4	3.8
50–54	4.3	2.8	3.6	3.1	2.5	2.8	3.2	2.5	2.9
55–59	3.3	2.9	3.1	2.5	3.1	2.8	2.6	3.1	2.8
60–64	2.6	1.7	2.2	2.8	2.4	2.6	2.8	2.3	2.6
65–69	1.2	0.9	1.1	1.9	1.7	1.8	1.8	1.6	1.7
70–74	0.8	0.8	0.8	1.5	0.7	1.1	1.4	0.7	1.1
75–79	0.5	0.3	0.4	0.5	0.4	0.5	0.5	0.4	0.5
80+	0.8	0.5	0.7	0.6	0.4	0.5	0.6	0.5	0.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of persons	2,201	2,052	4,253	17,112	16,348	33,460	19,314	18,399	37,713
Sex ratio[1]	NA	NA	932	NA	NA	955	NA	NA	953

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
[1]Females per 1,000 males

Figure 2.1
Population Pyramid



NFHS-2, Bihar, 1998–99

Table 2.2 Population by age and sex from the SRS and NFHS-2

Percent distribution of population by age and sex from the SRS and NFHS-2, Bihar, 1997–1998/99

	SRS (1997)		NFHS-2 (1998–99)		
Age	Male	Female	Male	Female	Sex ratio[1]
< 5	12.6	12.5	13.0	13.0	953
5–14	28.3	27.5	28.4	28.2	943
15–29	26.0	25.3	24.8	27.7	1,062
30–49	21.4	22.6	21.0	19.8	897
50–64	8.0	8.3	8.5	8.0	890
65+	3.6	3.8	4.3	3.2	700
Total	100.0	100.0	100.0	100.0	949
Median age	U	U	19.2	19.3	NA

Note: Table is based on the *de jure* population, i.e., usual residents.
NA: Not applicable
U: Not available
[1]Females per 1,000 males
Source for SRS: Office of the Registrar General, 1999a

Table 2.2 compares the age distributions by sex from the NFHS-2 *de jure* sample with the age distributions by sex from the Sample Registration System (SRS) for 1997. The SRS baseline survey, which is *de jure*, counts all usual residents in a sample area (Office of the Registrar General, India, 1999a). The NFHS-2 and SRS age distributions are similar for broad age groups, despite the misreporting of age that is evident in the NFHS-2 single-year age data.

Tables 2.1 and 2.2 also present sex ratios (females per 1,000 males) in Bihar from NFHS-2. The sex ratio for the *de facto* population of the state is 953 (Table 2.1). The sex ratio of the *de jure* population (949) in Table 2.2 is almost the same as the sex ratio of the *de facto* population (953). The small difference is caused by slight differences in the composition of the *de facto* and *de jure* populations. Table 2.1 shows that the sex ratio for the *de facto* sample is 932 in urban areas and 955 in rural areas, suggesting that rural-urban migration has been dominated by males in Bihar.

2.2 Marital Status

NFHS-2 includes information on the marital status of all household members age six and above. Table 2.3 shows the percent distribution by marital status of the *de facto* household population, classified by age, residence, and sex. Among females age six and above, 54 percent are currently married and 38 percent have never been married. (Comparable percentages from NFHS-1 are 56 percent and 37 percent, indicating a minor change over the six years between the two surveys.) The proportion never married is higher for males (47 percent) than for females (38 percent) and higher in urban areas (53 percent for males and 45 percent for females) than in rural areas (47 percent for males and 37 percent for females). The proportion divorced, separated, or deserted is negligible in Bihar, and widowhood is quite limited until the older ages. Thirty-five percent of women age 50 or older are widowed.

Table 2.3 Marital status of the household population

Percent distribution of the household population age 6 and above by marital status, according to age, residence, and sex, Bihar, 1998–99

Age	Never married	Currently married	Married, *gauna* not performed	Widowed	Divorced	Separated	Deserted	Total percent
	Marital status							
				URBAN				
				Male				
6–12	99.2	0.8	0.0	0.0	0.0	0.0	0.0	100.0
13–14	99.1	0.0	0.9	0.0	0.0	0.0	0.0	100.0
15–19	97.3	2.3	0.4	0.0	0.0	0.0	0.0	100.0
20–24	77.5	21.1	1.0	0.5	0.0	0.0	0.0	100.0
25–29	36.3	63.1	0.0	0.6	0.0	0.0	0.0	100.0
30–49	5.5	92.3	0.0	1.9	0.0	0.0	0.2	100.0
50+	1.3	86.8	0.0	11.5	0.0	0.0	0.3	100.0
Total	53.0	44.3	0.2	2.4	0.0	0.0	0.1	100.0
				Female				
6–12	99.5	0.5	0.0	0.0	0.0	0.0	0.0	100.0
13–14	99.0	1.0	0.0	0.0	0.0	0.0	0.0	100.0
15–19	76.1	19.3	3.9	0.0	0.0	0.0	0.8	100.0
20–24	29.9	66.7	1.1	0.6	0.6	0.6	0.6	100.0
25–29	6.9	90.1	0.0	1.2	0.0	0.0	1.8	100.0
30–49	1.0	92.5	0.0	5.6	0.0	0.2	0.7	100.0
50+	0.0	67.0	0.0	32.5	0.0	0.5	0.0	100.0
Total	45.3	47.9	0.7	5.3	0.1	0.2	0.5	100.0
				RURAL				
				Male				
6–12	99.5	0.3	0.1	0.0	0.0	0.0	0.0	100.0
13–14	99.4	0.0	0.6	0.0	0.0	0.0	0.0	100.0
15–19	88.5	5.9	5.5	0.0	0.0	0.0	0.1	100.0
20–24	48.0	45.2	6.4	0.2	0.0	0.0	0.2	100.0
25–29	14.3	82.2	2.3	0.7	0.0	0.2	0.3	100.0
30–49	1.7	95.3	0.3	2.3	0.1	0.1	0.3	100.0
50+	0.4	85.3	0.0	14.1	0.0	0.0	0.2	100.0
Total	46.6	48.8	1.5	2.9	0.0	0.1	0.1	100.0
				Female				
6–12	99.2	0.2	0.6	0.0	0.0	0.0	0.0	100.0
13–14	92.4	0.7	6.9	0.0	0.0	0.0	0.0	100.0
15–19	50.4	39.3	9.5	0.1	0.0	0.1	0.6	100.0
20–24	8.4	87.2	2.7	0.5	0.3	0.1	0.9	100.0
25–29	1.4	95.5	0.4	1.2	0.1	0.4	1.0	100.0
30–49	0.1	92.6	0.0	6.0	0.1	0.2	0.9	100.0
50+	0.2	64.4	0.0	35.2	0.0	0.2	0.1	100.0
Total	36.5	54.5	1.9	6.4	0.1	0.1	0.5	100.0

Table 2.3 Marital status of the household population (contd.)

Percent distribution of the household population age 6 and above by marital status, according to age, residence, and sex, Bihar, 1998–99

Age	Never married	Currently married	Married, *gauna* not performed	Widowed	Divorced	Separated	Deserted	Total percent
	Marital status							
				TOTAL				
				Male				
6–12	99.5	0.3	0.1	0.0	0.0	0.0	0.0	100.0
13–14	99.4	0.0	0.6	0.0	0.0	0.0	0.0	100.0
15–19	89.7	5.4	4.8	0.0	0.0	0.0	0.1	100.0
20–24	52.1	41.9	5.6	0.3	0.0	0.0	0.1	100.0
25–29	17.0	79.8	2.0	0.7	0.0	0.1	0.2	100.0
30–49	2.1	94.9	0.3	2.3	0.1	0.1	0.3	100.0
50+	0.5	85.4	0.0	13.8	0.0	0.0	0.2	100.0
Total	47.4	48.2	1.4	2.8	0.0	0.0	0.1	100.0
				Female				
6–12	99.2	0.2	0.5	0.0	0.0	0.0	0.0	100.0
13–14	93.2	0.7	6.1	0.0	0.0	0.0	0.0	100.0
15–19	54.0	36.5	8.7	0.1	0.0	0.1	0.6	100.0
20–24	10.7	85.0	2.5	0.5	0.3	0.1	0.8	100.0
25–29	2.0	94.9	0.3	1.2	0.1	0.4	1.1	100.0
30–49	0.2	92.6	0.0	6.0	0.1	0.2	0.9	100.0
50+	0.2	64.6	0.0	34.9	0.0	0.2	0.1	100.0
Total	37.5	53.7	1.8	6.2	0.1	0.1	0.5	100.0

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). 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.

Also of interest is the proportion of persons who marry young. At age 15–19, the proportions ever married are 3 percent for males and 24 percent for females in urban areas, 11 percent for males and 50 percent for females in rural areas, and 10 percent for males and 46 percent for females in the state as a whole. By age 25–29, marriage is nearly universal for females. For males in this age group, the proportion ever married is 64 percent in urban areas, 86 percent in rural areas, and 83 percent in the state as a whole. Overall, the table shows that women marry at much younger ages than men, and that both men and women marry at much younger ages in rural areas than in urban areas.

Table 2.4 shows estimates of the singulate mean age at marriage (SMAM), which is 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 various censuses, which, as mentioned earlier, are modified *de jure* counts. According to the SMAM measure, men in Bihar tend to marry women 5.1 years younger than themselves. The census data indicate that age at marriage has been rising for both men and women. The NFHS-1 and NFHS-2 data indicate that age at marriage has risen considerably since 1991 for both men and women. During the six years between NFHS-1 and NFHS-2, the age at marriage has increased noticeably in both urban and rural areas for both males and females.

Table 2.4 Singulate mean age at marriage

Singulate mean age at marriage by sex from selected sources, Bihar, 1961–1998/99

Source	Singulate mean age at marriage (SMAM)		
	Male	Female	Difference
1961 Census	18.9	14.3	4.6
1971 Census	20.0	15.3	4.7
1981 Census	21.6	16.6	5.0
1991 Census	22.1	17.6	4.5
1993 NFHS-1			
Urban	25.4	20.3	5.1
Rural	22.7	17.6	5.1
Total	23.2.	18.0	5.2
1998–99 NFHS-2			
Urban	26.3	20.9	5.3
Rural	23.5	18.5	5.1
Total	23.8	18.8	5.1

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

2.3 Household Composition

Table 2.5 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 number of usual household members. The table is based on the *de jure* population because household type and number of usual household members pertain to the usual-resident population. The table shows that 92–95 percent of household heads are male, regardless of area (rural or urban) or region of residence. The median age of household heads varies slightly by residence or region, from 43 years in rural areas to 46 years in urban areas and from 42 years in the Jharkhand region to 46 years in the South Bihar Plain region. Household heads are somewhat more concentrated in the 45–59 age group in urban areas than in rural areas. Eighty-three percent of household heads are Hindu, 15 percent are Muslim, 1 percent are Christian, and less than 1 percent belong to other religions. Muslims are more concentrated in urban areas; they constitute 20 percent of urban households and 14 percent of rural households. Twenty-one percent of household heads belong to scheduled castes and 10 percent to scheduled tribes. Both of these groups constitute higher proportions of the population in rural areas than in urban areas. The largest group of household heads belongs to other backward classes (OBC)[2]. Fifty-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). Mean household size for the state as a whole is 6.1 persons per household, which is about the same in urban and rural areas. However, the mean household size is relatively low in the Jharkhand region (5.4 persons per household) and high in the South Bihar Plain region (6.7 persons per household).

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

Table 2.5 Household characteristics

Percent distribution of households by selected characteristics of the household head, household type, and household size, according to residence and region, Bihar, 1998–99

Characteristic	Residence		Region			Total
	Urban	Rural	North Bihar Plain	South Bihar Plain	Jhar-khand	
Sex of household head						
Male	93.4	93.3	92.8	92.3	95.2	93.3
Female	6.6	6.7	7.2	7.7	4.8	6.7
Age of household head						
< 30	10.0	13.9	14.8	11.0	14.2	13.5
30–44	37.3	39.1	39.3	34.8	42.8	38.9
45–59	36.4	28.1	28.4	29.9	29.1	29.1
60+	16.2	18.9	17.4	24.3	13.9	18.6
Don't know/missing	0.1	0.0	0.1	0.0	0.0	0.0
Median age	45.5	42.8	42.7	46.3	42.0	43.2
Religion of household head						
Hindu	77.4	83.9	80.7	86.8	82.8	83.2
Muslim	19.5	14.2	18.9	12.7	10.6	14.8
Christian	2.0	1.0	0.3	0.2	3.5	1.1
Sikh	0.1	0.0	0.0	0.1	0.1	0.0
Jain	0.4	0.0	0.1	0.1	0.0	0.0
Zoroastrian/Parsi	0.0	0.0	0.0	0.1	0.0	0.0
No religion	0.0	0.0	0.0	0.0	0.1	0.0
Other	0.4	0.9	0.0	0.1	2.9	0.8
Caste/tribe of household head						
Scheduled caste	15.6	21.5	20.6	26.1	15.0	20.8
Scheduled tribe	2.7	10.9	1.7	2.3	31.7	9.9
Other backward class	47.8	50.2	53.6	54.7	38.8	49.9
Other	33.9	17.4	24.1	16.9	14.5	19.3
Household type						
Nuclear household	56.0	52.7	54.2	44.4	61.3	53.1
Non-nuclear household	43.9	47.1	45.7	55.5	38.6	46.8
Household with no usual members	0.1	0.1	0.1	0.1	0.1	0.1
Number of usual members						
0	0.1	0.1	0.1	0.1	0.1	0.1
1	4.9	2.0	1.8	2.0	3.7	2.4
2	4.9	6.2	5.8	4.9	7.8	6.1
3	9.7	9.2	9.4	7.1	11.4	9.2
4	12.3	13.6	13.5	11.0	16.1	13.4
5	14.9	15.7	15.4	13.9	17.8	15.6
6	14.8	16.5	17.2	15.6	15.5	16.3
7	13.9	12.3	12.6	13.5	11.0	12.5
8	9.1	8.4	9.0	9.4	6.6	8.5
9+	15.5	16.0	15.1	22.4	10.1	16.0
Mean household size	6.0	6.1	6.1	6.7	5.4	6.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	720	5,625	2,701	1,937	1,707	6,345

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

2.4 Educational Attainment

The level of education of household members tends to affect reproductive behaviour, contraceptive use, the health of children, and proper hygienic practices. Table 2.6 shows the percent distribution of the *de facto* household population by educational level, according to age, residence, and sex. (This table and all subsequent tables and figures in this report are based on the *de facto* sample, unless otherwise specified.)

Table 2.6 shows that 65 percent of females and 37 percent of males age six and above are illiterate. Comparable figures from NFHS-1 are 71 percent of females and 40 percent of males, indicating a considerable decline in illiteracy in six years. The increase in educational attainment can also be seen by examining the differences in educational levels by age. For example, the proportion of males completing at least high school rises from 20 percent at age 50 and above to 40 percent at age 20–29. For females, the proportion completing at least high school is negligible (only 1 percent) at age 50 and above but reaches a level of 14 percent at age 20–29.

A higher percentage of males than females has completed each level of schooling. The proportion illiterate is lowest at age 10–14 and is highest at age 50 and above for either sex. The median number of years of schooling for males is 3.6, whereas the majority of women in Bihar have never been to school, implying a median of zero.

Education levels are much higher in urban areas than in rural areas. The proportion illiterate is almost twice as high for rural females (69 percent) as for urban females (35 percent), and more than twice as high for rural males (39 percent) as for urban males (18 percent).

Table 2.7 and Figure 2.2 show school attendance rates for the school-age household population by age, sex, and residence. In the state as a whole, 63 percent of children age 6–14 are attending school, up from 51 percent in NFHS-1. The attendance rate drops off sharply at age 15–17. For the age group 6–17, the attendance rate is 68 percent for males, 51 percent for females, and 60 percent for the state as a whole. Attendance rates are higher in urban areas than in rural areas. In urban areas, attendance rates are almost the same for males and females at age 11–14, but males record higher school attendance at ages 6–10 and 15–17. In rural areas, however, attendance rates are considerably higher for males than for females at all ages, and the differentials are higher in the older age groups.

Table 2.8 shows reasons for children never attending school or not currently attending school (for those who have dropped out of school). For both boys and girls, 'costs too much' and 'not interested in studies' stand out as main reasons for never attending school or not currently attending school. Not surprisingly, the need for children to work in the household is mentioned more frequently for girls than for boys. For girls, other frequently mentioned reasons for not currently attending school include 'got married', 'no proper school facilities for girls', and 'further education not considered necessary'. For both boys and girls, the accessibility of schools ('school too far away' and 'transport not available') is mentioned infrequently for both never attending and not currently attending school. The need for children to remain out of school in order to work (including household work, taking care of siblings, working in a family farm or business, and working outside for payment in cash or kind) is mentioned as the main reason for never attending school for 10 percent of boys and 16 percent of girls, and as the main reason for not currently attending school for 23 percent of boys and 22 percent of girls.

Table 2.6 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, residence, and sex, Bihar, 1998–99

	Educational level[1]									
Age	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing	Total percent	Number of persons	Median number of years of schooling
					URBAN					
					Male					
6–9	28.8	69.8	1.4	0.0	0.0	0.0	0.0	100.0	222	1.5
10–14	15.9	35.1	31.9	15.4	1.7	0.0	0.0	100.0	300	5.0
15–19	16.0	5.8	17.1	29.4	23.0	8.6	0.0	100.0	262	9.1
20–29	11.6	4.9	7.6	10.1	21.6	44.3	0.0	100.0	380	10.8
30–39	15.4	4.1	12.1	13.0	22.7	32.7	0.0	100.0	253	10.2
40–49	17.4	4.7	14.5	8.0	23.5	31.9	0.0	100.0	219	10.2
50+	24.9	8.5	16.0	7.9	19.8	22.8	0.0	100.0	300	8.2
Total	18.0	17.6	14.6	12.2	16.3	21.3	0.0	100.0	1,937	8.0
					Female					
6–9	33.7	65.5	0.9	0.0	0.0	0.0	0.0	100.0	224	1.2
10–14	18.1	36.7	28.8	15.4	1.0	0.0	0.0	100.0	314	4.9
15–19	19.6	6.3	15.0	28.6	21.7	8.8	0.0	100.0	260	9.0
20–29	30.0	6.0	11.5	10.3	20.0	22.3	0.0	100.0	342	8.6
30–39	44.6	6.2	9.2	7.5	15.0	17.5	0.0	100.0	246	4.9
40–49	52.1	7.0	17.0	6.4	10.5	7.0	0.0	100.0	176	0.0
50+	62.3	6.4	18.9	5.4	5.4	1.5	0.0	100.0	207	0.0
Total	34.9	19.2	14.8	11.2	11.0	8.9	0.0	100.0	1,770	4.3
					Total					
6–9	31.2	67.6	1.1	0.0	0.0	0.0	0.0	100.0	446	1.4
10–14	17.0	35.9	30.3	15.4	1.3	0.0	0.0	100.0	615	5.0
15–19	17.8	6.1	16.1	29.0	22.4	8.7	0.0	100.0	522	9.0
20–29	20.3	5.4	9.4	10.2	20.8	33.9	0.0	100.0	721	10.3
30–39	29.8	5.1	10.6	10.3	18.9	25.2	0.0	100.0	499	8.9
40–49	32.8	5.7	15.6	7.3	17.7	20.8	0.0	100.0	395	7.5
50+	40.1	7.7	17.2	6.9	14.0	14.1	0.0	100.0	507	5.3
Total	26.1	18.4	14.7	11.7	13.8	15.4	0.0	100.0	3,707	6.2

Table 2.6 Educational level of the household population (contd.)

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, residence, and sex, Bihar,1998–99

	Educational level[1]									
Age	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing	Total percent	Number of persons	Median number of years of schooling
					RURAL					
					Male					
6–9	44.0	55.3	0.7	0.0	0.0	0.0	0.0	100.0	2,158	1.0
10–14	27.8	40.8	24.1	6.8	0.5	0.0	0.0	100.0	2,238	3.5
15–19	28.4	9.1	20.7	25.3	12.5	4.1	0.0	100.0	1,564	6.8
20–29	31.2	6.2	13.8	13.1	17.3	18.2	0.0	100.0	2,482	7.7
30–39	44.7	6.3	12.5	9.3	13.1	14.1	0.0	100.0	2,114	4.7
40–49	45.7	7.4	13.6	9.3	15.4	8.5	0.0	100.0	1,421	4.1
50+	54.3	8.5	15.2	5.4	10.6	6.1	0.0	100.0	2,210	0.0
Total	39.4	19.9	14.2	9.3	9.6	7.5	0.0	100.0	14,187	3.0
					Female					
6–9	54.0	45.3	0.7	0.0	0.0	0.0	0.0	100.0	2,000	0.0
10–14	48.5	28.8	17.4	5.0	0.3	0.0	0.0	100.0	2,113	1.8
15–19	55.9	6.3	14.4	13.8	8.0	1.6	0.1	100.0	1,576	0.0
20–29	72.7	3.5	8.1	4.9	7.7	3.1	0.0	100.0	2,897	0.0
30–39	81.5	3.8	8.0	2.4	2.8	1.5	0.0	100.0	2,001	0.0
40–49	84.4	4.3	7.8	1.3	1.6	0.6	0.0	100.0	1,206	0.0
50+	91.5	3.0	3.8	0.9	0.6	0.2	0.0	100.0	1,845	0.0
Total	69.1	13.9	8.6	4.0	3.2	1.1	0.0	100.0	13,640	0.0
					Total					
6–9	48.8	50.5	0.7	0.0	0.0	0.0	0.0	100.0	4,157	0.0
10–14	37.9	34.9	20.8	5.9	0.4	0.0	0.0	100.0	4,351	2.9
15–19	42.2	7.7	17.5	19.5	10.2	2.8	0.0	100.0	3,140	5.0
20–29	53.6	4.8	10.7	8.7	12.2	10.1	0.0	100.0	5,379	0.0
30–39	62.6	5.1	10.3	5.9	8.1	8.0	0.0	100.0	4,115	0.0
40–49	63.5	6.0	10.9	5.6	9.1	4.9	0.0	100.0	2,627	0.0
50+	71.2	6.0	10.0	3.4	6.1	3.4	0.0	100.0	4,055	0.0
Total	54.0	17.0	11.4	6.7	6.5	4.4	0.0	100.0	27,827	0.0

Table 2.6 Educational level of the household population (contd.)

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, residence, and sex, Bihar,1998–99

	Educational level[1]									
Age	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing	Total percent	Number of persons	Median number of years of schooling
					TOTAL					
					Male					
6–9	42.6	56.6	0.8	0.0	0.0	0.0	0.0	100.0	2,380	1.1
10–14	26.4	40.1	25.0	7.8	0.6	0.0	0.0	100.0	2,538	3.7
15–19	26.7	8.6	20.1	25.9	14.0	4.7	0.0	100.0	1,825	7.3
20–29	28.6	6.1	13.0	12.7	17.9	21.7	0.0	100.0	2,862	8.4
30–39	41.6	6.1	12.5	9.7	14.2	16.0	0.0	100.0	2,367	5.5
40–49	41.9	7.0	13.7	9.1	16.5	11.7	0.0	100.0	1,640	5.2
50+	50.8	8.5	15.3	5.7	11.7	8.1	0.0	100.0	2,510	0.0
Total	36.8	19.7	14.2	9.7	10.4	9.2	0.0	100.0	16,124	3.6
					Female					
6–9	51.9	47.3	0.7	0.0	0.0	0.0	0.0	100.0	2,224	0.0
10–14	44.6	29.8	18.9	6.3	0.4	0.0	0.0	100.0	2,427	2.3
15–19	50.8	6.3	14.5	15.9	9.9	2.6	0.1	100.0	1,836	0.0
20–29	68.2	3.8	8.5	5.5	9.0	5.1	0.0	100.0	3,239	0.0
30–39	77.5	4.1	8.1	3.0	4.1	3.3	0.0	100.0	2,247	0.0
40–49	80.3	4.7	8.9	2.0	2.8	1.4	0.0	100.0	1,382	0.0
50+	88.5	3.4	5.3	1.4	1.1	0.3	0.0	100.0	2,051	0.0
Total	65.2	14.5	9.3	4.8	4.1	2.0	0.0	100.0	15,410	0.0
					Total					
6–9	47.1	52.1	0.8	0.0	0.0	0.0	0.0	100.0	4,604	0.0
10–14	35.3	35.1	22.0	7.1	0.5	0.0	0.0	100.0	4,965	3.1
15–19	38.8	7.5	17.3	20.9	11.9	3.7	0.0	100.0	3,661	5.7
20–29	49.6	4.8	10.6	8.9	13.2	12.9	0.0	100.0	6,101	2.5
30–39	59.1	5.1	10.3	6.4	9.3	9.8	0.0	100.0	4,614	0.0
40–49	59.5	5.9	11.5	5.8	10.2	7.0	0.0	100.0	3,022	0.0
50+	67.7	6.2	10.8	3.7	6.9	4.6	0.0	100.0	4,562	0.0
Total	50.7	17.1	11.8	7.3	7.4	5.7	0.0	100.0	31,534	0.0

Note: This table and all the subsequent tables (unless otherwise indicated) are based on the *de facto* population i.e., usual residents. Illiterate persons may have been to school, but they cannot read and write. Total includes 2 males and 4 females with missing information on age, who are not shown separately.

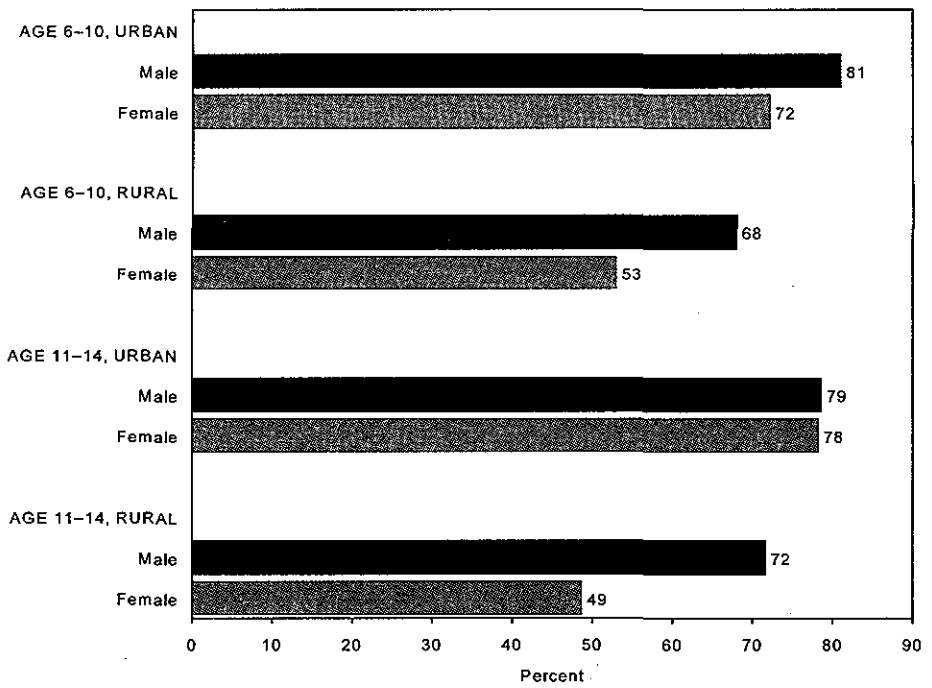
[1]In this report, 'primary school complete' means 5–7 completed years of education, 'middle school complete' means 8–9 completed years of education, 'high school complete' means 10–11 completed years of education, and 'higher secondary complete and above' means 12 or more completed years of education.

Table 2.7 School attendance

Percentage of the household population age 6–17 years attending school by age, sex, and residence, Bihar, 1998–99

	Male			Female			Total		
Age	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6–10	81.0	68.0	69.3	72.1	53.0	55.0	76.6	60.8	62.4
11–14	78.6	71.6	72.4	78.2	48.7	52.6	78.4	60.4	62.7
15–17	76.1	54.3	57.5	62.4	29.9	34.7	69.3	42.2	46.3
6–14	80.0	69.4	70.5	74.8	51.3	54.1	77.4	60.6	62.5
6–17	79.1	66.8	68.2	72.1	47.5	50.5	75.5	57.4	59.6

Figure 2.2
School Attendance by Age, Sex, and Residence



NFHS-2, Bihar, 1998–99

2.5 Housing Characteristics

Table 2.9 provides information on housing characteristics by residence and region. Only 18 percent of households in Bihar have electricity (compared with 17 percent in NFHS-1). The proportion of households with electricity is 72 percent in urban areas and 11 percent in rural areas. The proportion of households with electricity is much lower in the North Bihar Plain region (12 percent) than in other regions (23–24 percent).

Table 2.8 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 residence and sex, Bihar, 1998–99

Reason	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Main reason for never attending school[1]						
School too far away	0.0	2.8	3.2	2.8	3.0	2.8
Transport not available	0.0	0.0	0.5	0.5	0.4	0.5
Education not considered necessary	6.8	13.8	9.1	12.4	8.9	12.5
Required for household work	0.9	11.1	5.5	14.2	5.2	14.0
Required for work on farm/family business	5.8	0.0	2.9	1.0	3.0	0.9
Required for outside work for payment in cash or kind	1.9	0.7	1.4	0.4	1.4	0.4
Costs too much	42.9	38.0	38.5	35.6	38.8	35.8
No proper school facilities for girls	0.0	0.0	0.0	3.4	0.0	3.2
Required for care of siblings	0.0	0.0	0.6	0.7	0.5	0.7
Not interested in studies	31.9	21.6	27.6	20.1	27.9	20.2
Other	9.8	11.2	9.1	7.7	9.1	7.9
Don't know	0.0	0.7	1.8	1.3	1.7	1.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of children	105	146	1,466	2,314	1,571	2,460
Main reason for not currently attending school[2]						
School too far away	(0.0)	(0.0)	1.0	6.5	0.9	5.6
Transport not available	(0.0)	(0.0)	0.0	0.6	0.0	0.6
Further education not considered necessary	(2.7)	(4.1)	3.0	6.3	3.0	6.0
Required for household work	(5.6)	(23.4)	9.6	18.7	9.1	19.3
Required for work on farm/family business	(8.0)	(0.0)	8.1	1.0	8.1	0.8
Required for outside work for payment in cash or kind	(8.0)	(0.0)	5.4	1.3	5.7	1.1
Costs too much	(40.6)	(29.6)	26.0	16.7	27.7	18.4
No proper school facilities for girls	(0.0)	(2.2)	0.0	7.7	0.0	6.9
Required for care of siblings	(0.0)	(0.0)	0.0	1.3	0.0	1.1
Not interested in studies	(27.0)	(34.1)	38.5	21.9	37.2	23.5
Got married	(0.0)	(2.2)	0.3	10.5	0.3	9.4
Other	(8.2)	(4.2)	5.5	6.9	5.8	6.5
Don't know	(0.0)	(0.0)	2.7	0.7	2.4	0.6
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of children	38	48	297	310	334	358

( ) Based on 25–49 unweighted cases
[1]For children who never attended school
[2]For children who have dropped out of school

Water sources and sanitary facilities have an important influence on the health of household members, especially children. NFHS-1 and NFHS-2 contained questions on sources of drinking water and types of sanitary facilities. NFHS-2 found that only 8 percent of households use piped drinking water (9 percent in NFHS-1), 68 percent get water from hand pumps, and 23 percent from wells. As in the case of electricity, there are large urban-rural and regional differences in the source of drinking water. For example, the proportion of households with piped drinking water is 35 percent in urban areas but only 4 percent in rural areas. Eighty percent of households can fetch drinking water in less than 15 minutes. The proportion of households that purify water by any method is 24 percent in urban areas and only 6 percent in rural areas. Households in the Jharkhand region are more likely to purify water than in other regions.

Table 2.9 Housing characteristics

Percent distribution of households by housing characteristics, according to residence and region, Bihar, 1998–99

Housing characteristic	Residence		Region			Total
	Urban	Rural	North Bihar Plain	South Bihar Plain	Jhar-khand	
Electricity						
Yes	72.0	11.3	11.6	22.7	23.6	18.2
No	28.0	88.7	88.4	77.3	76.4	81.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Source of drinking water						
Piped	34.6	4.3	3.1	8.9	13.9	7.8
Hand pump	50.4	69.8	88.5	68.7	33.3	67.6
Well water	14.2	23.5	7.3	22.0	47.1	22.5
Surface water	0.3	1.6	0.1	0.1	5.2	1.5
Other	0.4	0.7	1.0	0.3	0.6	0.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Time to get drinking water						
Percentage < 15 minutes	87.8	79.4	90.1	80.4	64.9	80.4
Median time (minutes)	0.0	0.0	0.0	0.0	9.2	0.0
Method of drinking water purification[1]						
Strains water by cloth	6.9	2.9	0.3	2.9	8.9	3.4
Uses alum	1.4	0.4	0.2	0.5	1.1	0.5
Uses water filter	9.1	0.7	1.1	1.5	2.5	1.6
Boils water	10.3	2.6	0.8	1.8	9.5	3.4
Uses electronic purifier	1.0	0.0	0.0	0.1	0.3	0.1
Uses other method	0.7	0.3	0.0	0.2	1.1	0.4
Does not purify water	75.9	93.9	97.8	94.4	79.7	91.9
Sanitation facility						
Flush toilet	57.1	7.7	11.1	17.3	12.1	13.3
Pit toilet/latrine	9.4	2.8	3.3	4.1	3.3	3.6
No facility	33.5	89.5	85.6	78.5	84.6	83.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Main type of fuel used for cooking						
Wood	20.2	53.0	51.8	33.3	63.6	49.3
Crop residues	3.2	15.6	25.8	9.3	1.6	14.2
Dung cakes	5.8	24.5	15.4	43.6	9.2	22.4
Coal/coke/lignite/charcoal	34.0	4.2	1.0	5.7	20.0	7.6
Kerosene	10.3	0.8	1.2	3.2	1.5	1.9
Electricity	1.7	0.0	0.0	0.2	0.6	0.2
Liquid petroleum gas	24.0	1.7	4.6	4.4	3.4	4.2
Biogas	0.9	0.1	0.1	0.3	0.1	0.1
Other	0.0	0.0	0.0	0.0	0.1	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Type of house						
Kachha	18.8	63.8	58.3	51.3	67.6	58.7
Semi-*pucca*	23.9	26.0	30.8	28.5	14.6	25.7
Pucca	57.2	10.1	10.7	20.1	17.8	15.5
Missing	0.1	0.1	0.1	0.1	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0

Contd...

Table 2.9 Housing characteristics (contd.)

Percent distribution of households by housing characteristics, according to residence and region, Bihar, 1998–99

Housing characteristic	Residence		Region			Total
	Urban	Rural	North Bihar Plain	South Bihar Plain	Jhar-khand	
Persons per room						
< 3	63.1	55.7	50.1	55.8	67.5	56.5
3–4	22.8	28.1	31.5	27.3	21.4	27.5
5–6	9.1	11.1	12.4	10.5	8.7	10.8
7+	5.1	5.1	5.9	6.4	2.4	5.1
Don't know/missing	0.0	0.1	0.0	0.1	0.1	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Mean number of persons per room	2.7	2.9	3.1	3.0	2.5	2.9
Number of households	720	5,625	2,701	1,937	1,707	6,345

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

Regarding sanitation facilities, only 13 percent of households have a flush toilet (using either piped water or bucket water for flushing), no change from NFHS-1; 4 percent have a pit toilet or latrine; and 83 percent have no facility. There are large urban-rural differences: 57 percent of urban households have a flush toilet compared with only 8 percent of rural households.

Several types of fuel are used for cooking in Bihar, with wood as the most common type. In the state as a whole, 49 percent of households rely mainly on wood, 22 percent on dung cakes, 14 percent on crop residues, 8 percent on coal/coke/lignite/charcoal, 4 percent on liquid petroleum gas, and 2 percent on kerosene. Use of biogas or electricity as a primary cooking fuel is rare. Again there are large urban-rural and regional differences. Fifty-eight percent of urban households rely mainly on liquid petroleum gas or coal/coke/lignite/charcoal, whereas 93 percent of rural households rely mainly on wood, crop residues, or dung cakes. By region, use of crop residues as a primary cooking fuel ranges from 2 percent in the Jharkhand region to 26 percent in the North Bihar Plain region, and use of coal/coke/lignite/charcoal ranges from 1 percent in the North Bihar Plain region to 20 percent in the Jharkhand region. Use of wood and dung cakes also varies considerably across regions.

Regarding type of house construction, 59 percent of houses are *kachha* (made from mud, thatch, or other low-quality materials), 26 percent are semi-*pucca* (partly low-quality and partly high-quality materials), and 16 percent are *pucca* (high-quality materials throughout, including roof, walls, and floor). By residence, the proportion of houses that are *pucca* is 57 percent in urban areas and 10 percent in rural areas.

Crowded conditions may also affect health as well as the quality of life. Forty-three percent of households live in houses with three or more persons per room. The mean number of persons per room is 2.7 in urban areas, 2.9 in rural areas, and 2.9 (compared with 2.8 in NFHS-1) in the state as a whole.

Table 2.10 gives a number of measures related to the socioeconomic status of the household, including ownership of land, house, and livestock. Overall, 45 percent of households

Table 2.10 Household ownership of agricultural land, house, and livestock

Percent distribution of households owning agricultural land and percentage owning a house and livestock by residence and region, Bihar, 1998–99

Asset	Residence		Region			Total
	Urban	Rural	North Bihar Plain	South Bihar Plain	Jhar-khand	
No agricultural land	69.6	42.0	50.7	49.8	30.9	45.1
Irrigated land only						
< 1 acre	3.0	15.5	18.2	16.2	5.1	14.1
1–5 acres	5.4	13.0	13.9	15.7	5.2	12.1
6+ acres	3.7	3.1	3.2	4.9	1.1	3.1
Nonirrigated land only						
< 1 acre	5.6	6.1	2.7	2.8	15.0	6.0
1–5 acres	5.9	8.8	1.7	2.5	25.8	8.4
6+ acres	1.3	2.3	0.2	0.6	7.0	2.2
Both irrigated and nonirrigated land						
< 1 acre	1.1	2.1	2.7	1.1	1.8	2.0
1–5 acres	2.3	5.5	5.3	4.8	5.2	5.1
6+ acres	1.7	1.6	1.3	1.6	2.4	1.7
Missing	0.3	0.2	0.1	0.1	0.4	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Percentage owning a house	84.7	95.7	99.0	90.9	91.3	94.5
Percentage owning livestock	20.4	60.9	57.9	55.5	54.7	56.3
Number of households	720	5,625	2,701	1,937	1,707	6,345

do not own any agricultural land. Forty-two percent of households in rural areas do not own agricultural land (41 percent in NFHS-1), compared with 70 percent of households in urban areas. In rural areas, among those who own land, 70 percent have at least some irrigated land. This proportion is much lower in the Jharkhand region (31 percent) than in the North or South Bihar Plain regions (88–91 percent). The proportion of households owning a house is 85 percent in urban areas, 96 percent in rural areas, and 95 percent overall. The proportion of households owning livestock is 20 percent in urban areas, 61 percent in rural areas, and 56 percent overall. The proportion owning a house or a livestock does not vary much by region.

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 transportation allows greater access to many services outside the local area. Table 2.11 shows that in the state as a whole, the majority of households have a cot or a bed (94 percent), or a clock or watch (51 percent). Other durable goods often found in households are bicycles (45 percent), chairs (40 percent), tables (34 percent), radios/transistors or mattresses (28 percent each), electric fans (17 percent), televisions (14 percent), and pressure cookers (13 percent), with smaller proportions owning sewing machines (9 percent), motorcycles or scooters or mopeds (5 percent), water pumps (5 percent), refrigerators or bullock carts (3 percent each), threshers or telephones (2 percent each), and tractors (1 percent). Only one-half of one percent own a car.

Table 2.11 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 and region, Bihar, 1998–99

Asset	Residence		Region			Total
	Urban	Rural	North Bihar Plain	South Bihar Plain	Jhar-khand	
Durable goods						
Mattress	58.2	23.9	30.0	30.9	20.9	27.8
Pressure cooker	49.5	8.2	11.4	15.7	11.9	12.9
Chair	70.4	36.0	44.3	37.3	35.9	39.9
Cot/bed	98.1	92.9	92.6	95.8	92.1	93.5
Table	70.7	29.7	36.5	32.9	32.6	34.4
Clock/watch	82.6	46.5	51.7	52.3	46.8	50.6
Electric fan	66.7	10.6	12.6	20.3	20.2	17.0
Bicycle	62.2	42.7	45.5	38.7	51.3	45.0
Radio/transistor	49.0	25.8	30.9	26.7	26.5	28.4
Sewing machine	30.3	6.6	8.5	10.6	8.8	9.3
Telephone	9.4	0.9	2.2	1.9	1.4	1.9
Refrigerator	14.9	1.0	2.1	2.3	3.6	2.6
Television (black and white)	46.1	7.5	10.0	11.8	15.1	11.9
Television (colour)	9.2	1.0	1.3	2.0	2.8	1.9
Moped/scooter/motorcycle	18.4	2.9	4.3	3.8	6.3	4.7
Car	2.3	0.3	0.5	0.4	0.7	0.5
Water pump	5.1	4.5	5.4	4.1	3.6	4.5
Bullock cart	1.4	2.9	2.2	0.9	5.8	2.8
Thresher	1.9	2.2	2.3	3.0	0.9	2.1
Tractor	1.3	0.9	1.4	0.9	0.3	0.9
None of the above	0.4	3.9	4.9	1.8	3.2	3.5
Main type of kitchenware used						
Clay	2.1	0.7	0.4	0.9	1.6	0.8
Aluminum	29.5	54.5	45.3	62.9	49.0	51.7
Cast iron	0.8	0.3	0.2	0.5	0.6	0.4
Brass/copper	0.1	0.3	0.0	0.1	1.0	0.3
Stainless steel	67.4	44.1	54.1	35.7	47.8	46.8
Don't know/missing	0.0	0.0	0.0	0.0	0.1	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Standard of living index						
Low	24.1	61.7	56.6	57.1	59.0	57.4
Medium	43.0	32.7	35.1	33.6	32.3	33.9
High	32.8	5.5	8.1	9.2	8.7	8.6
Missing	0.1	0.1	0.2	0.1	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	720	5,625	2,701	1,937	1,707	6,345

Urban households are much more likely than rural households to own each of these durable goods, except bullock carts and threshers. Four percent of households in Bihar do not own any of the above durable goods. In the state as a whole, 52 percent of households mainly use aluminum kitchenware and 47 percent use stainless steel kitchenware. Stainless steel kitchenware is used by 67 percent of urban households, compared with 44 percent of rural households.

Table 2.11 includes a standard of living (SLI) index, defined in terms of ownership of household goods 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/coke/lignite, 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 household 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, and 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 and 25–67 for a high SLI. By this measure, 57 percent of households in Bihar have a low standard of living, 34 percent have a medium standard of living, and 9 percent have a high standard of living. The proportion with a low standard of living is much higher in rural areas than in urban areas (62 and 24 percent, respectively), and the proportion with a high standard of living is much higher in urban areas than in rural areas (33 and 6 percent, respectively). The proportion with a medium standard of living is somewhat higher in urban areas (43 percent) than in rural areas (33 percent). There is little regional variation in the distribution of households by the standard of living index.

2.6 Lifestyle Indicators

The NFHS-2 Household Questionnaire asked about certain aspects of the lifestyle of household members. Table 2.12 shows the percentages of males and females 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 all have detrimental effects on health.

The respondent to the Household Questionnaire reports on these lifestyle indicators for all persons in the household who may not be aware of use that takes place outside the household environs, and therefore the results should be interpreted with caution. In addition, to the extent that social stigma may be attached to the use of some of the substances, underreporting is likely.

Table 2.12 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, Bihar, 1998–99

Background characteristic	Chew *paan masala* or tobacco	Drink alcohol	Currently smoke	Ever smoked[1]	Number of household members
MALE					
Age					
15–19	14.1	4.8	5.1	6.4	1,917
20–24	33.4	14.0	14.0	16.8	1,570
25–29	52.8	22.4	24.1	29.0	1,424
30–39	65.9	31.9	33.3	40.1	2,479
40–49	69.6	31.4	38.8	46.0	1,684
50–59	66.4	28.0	34.8	44.4	1,145
60+	64.0	23.4	36.7	45.6	1,409
Residence					
Urban	38.4	13.7	16.4	20.2	1,435
Rural	53.6	23.6	27.7	33.6	10,193
Education					
Illiterate	64.3	32.4	37.3	43.8	4,400
Literate, < middle school complete	52.6	22.2	25.4	31.6	2,568
Middle school complete	37.2	15.7	16.8	21.4	1,404
High school complete and above	40.4	11.7	16.1	20.9	3,257
Standard of living index					
Low	58.3	28.4	31.8	37.7	5,607
Medium	48.5	19.4	23.5	29.2	4,630
High	36.1	7.4	13.4	18.2	1,377
Total	51.7	22.4	26.3	32.0	11,629
FEMALE					
Age					
15–19	0.8	0.4	0.3	0.4	1,867
20–24	3.2	1.6	1.4	1.5	1,737
25–29	4.0	3.1	2.5	3.0	1,611
30–39	6.3	4.4	6.1	6.7	2,320
40–49	12.0	5.1	11.5	13.0	1,414
50–59	14.9	5.6	14.6	16.4	1,069
60+	15.1	4.5	16.6	18.8	1,041
Residence					
Urban	6.9	1.2	2.7	3.2	1,255
Rural	6.9	3.6	6.8	7.7	9,805
Education					
Illiterate	8.5	4.3	8.3	9.3	8,028
Literate, < middle school complete	4.6	1.1	2.4	2.7	1,448
Middle school complete	1.3	0.5	0.3	0.3	622
High school complete and above	1.4	0.2	0.3	0.3	960
Standard of living index					
Low	8.7	5.1	9.0	9.9	5,495
Medium	5.7	2.0	4.5	5.2	4,288
High	3.4	0.1	1.4	1.8	1,263
Total	6.9	3.3	6.4	7.2	11,060
Total male and female	29.9	13.1	16.6	19.9	22,689

Note: Totals include 1 female with missing information on education and 15 males and 15 females with missing information on the standard of living index, respectively, who are not shown separately.
[1]Includes household members who currently smoke

Fifty-two percent of males and 7 percent of females age 15 and above are reported to chew *paan masala* or tobacco. This proportion rises from 14 percent of males and 1 percent of females at age 15–19 to 66 percent and 15 percent, respectively, at age 50–59. For males the proportion is highest in the age group 40–49 (70 percent). Chewing of *paan masala* or tobacco is more common among rural males than among urban males. The proportion chewing *paan masala* or tobacco is much lower among more educated men and women and among those living in higher standard of living households.

Twenty-two percent of males, but only 3 percent of females, age 15 and above drink alcohol. The proportion who drink alcohol rises with age up to age 30–39 for men and age 50–59 for women. The proportion who drink is higher in rural areas than in urban areas and among illiterate men and women than among the literate. Drinking alcohol is negatively related to the household standard of living.

Twenty-six percent of males and 6 percent of females age 15 and above currently smoke. The proportion of males who smoke rises from 5 percent at age 15–19 to 39 percent at age 40–49 and then falls to 37 percent at age 60 and above. The proportion who smoke is much higher in rural areas than in urban areas. It is more than two times higher among illiterate males than among those with at least a middle school education, and also among males with a low standard of living than among males with a high standard of living. Eighty-two percent of males 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. Only 7 percent of females are reported to have ever smoked, and the pattern of differentials for females is similar to that for males.

2.7 Availability of Facilities and Services to the Rural Population

The NFHS-2 Village Questionnaire collected information on a number of characteristics that affect health and family planning. One of these characteristics is distance of the village from various types of health facilities, including Primary Health Centres (PHCs), sub-centres, hospitals, and dispensaries or clinics. Table 2.13 summarizes findings on distance from a health facility. The unit of analysis is ever-married women age 15–49 who reside in rural areas. Thirteen percent of rural women live in a village with a Primary Health Centre, 29 percent live in a village with a sub-centre, and 32 percent live in a village with either a PHC or a sub-centre. The proportions who live in a village with other health facilities are 6 percent for hospitals and 9 percent for dispensaries or clinics. Nearly one-third of women (34 percent) live in a village that has some kind of health facility. Median distances from particular health facilities are 5.6 km for a PHC, 7.4 km for a hospital, 7.5 km for a dispensary or a clinic, and 2.6 km for a sub-centre.

Table 2.14 shows the proportion of rural population in Bihar that lives in villages that have various facilities and services. Four-fifths of rural residents (82 percent) live in villages that have a primary school, two-fifths (40 percent) live in villages with a middle school, and nearly one-fifth (19 percent) live in villages that have a secondary school. Higher secondary schools are available in villages where 8 percent of rural people live. Two-fifths of rural residents (40 percent) live in villages that have an *anganwadi*[3] (a nursery school for children age 3–6 years) and 7 percent live in villages with an adult education centre. One-third of rural residents (33

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

Table 2.13 Distance from the nearest health facility

Percent distribution of ever-married rural women age 15–49 by distance from the nearest health facility, Bihar, 1998–99

Distance	Health facility					Any health facility
	Primary Health Centre	Sub-centre	Either PHC or sub-centre	Hospital[1]	Dispensary/ clinic	
Within village	13.1	28.5	31.6	5.7	9.2	34.2
< 5 km	31.1	41.8	41.5	29.3	24.9	44.3
5–9 km	28.5	17.8	16.4	23.4	25.3	13.4
10+ km	27.3	11.9	10.5	41.6	40.5	8.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Median distance (in km)	5.6	2.6	2.4	7.4	7.5	1.9

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

percent) live in villages that have a doctor and 42 percent live in villages with a traditional birth attendant.

Only two-fifths (42 percent) of rural residents live in villages that are at least partly electrified. Although only 12 percent of rural residents live in villages with an STD booth (for telephoning within India), 29 percent live in villages that have at least one household with a private telephone. Only 5 percent live in villages that have cable television service, indicating that exposure to modern influences through the mass media is minimal in the state. Eight percent live in villages with a *mahila mandal*, a government-sponsored women's community group that focusses on health and family welfare educational activities. Other facilities and services available within villages to a majority of rural residents include *kirana* shops and *paan* shops. The most widely available rural development programmes are the Indira Awas Yojana and the Integrated Rural Development Programme.

Table 2.14 Availability of facilities and services

Percentage of rural residents living in villages that have selected facilities and services, Bihar, 1998–99

Facility/service	Percentage of residents	Facility/service	Percentage of residents
Primary school	82.0	At least one village household has a telephone	29.2
Middle school	40.3	Mill/small-scale industry	5.7
Secondary school	18.5	Credit cooperative society	9.5
Higher secondary school	7.9	Agricultural cooperative society	10.2
College	3.9	Fishermen's cooperative society	1.2
		Milk cooperative society	6.5
Anganwadi	39.8	*Kirana*/general market shop	64.7
Adult education centre	7.0	Weekly market	32.2
		Fair price shop	48.9
Primary Health Centre	13.1	*Paan* shop	62.9
Sub-centre	28.0	Pharmacy/medical shop	30.4
Hospital[1]	5.9	*Mahila mandal*	7.8
Dispensary/clinic	9.4	Youth club	12.9
		Community centre	7.4
Private doctor	32.5	Community television set	2.9
Visiting doctor	17.8	Cable connection	5.3
Village health guide	12.2		
Traditional birth attendant	41.7	Integrated Rural Development Programme (IRDP)	35.3
Mobile health unit	1.3	National Rural Employment Programme (NREP)	7.1
		Training Rural Youth for Self-Employment (TRYSEM)	8.9
Electricity	42.0	Employment Guarantee Scheme (EGS)	4.4
Bank	12.7	Development of Women and Children of Rural Areas (DWACRA)	7.6
Post office	32.3	Indira Awas Yojana (IAY)	55.0
Telegraph office	5.6	Sanjay Gandhi Niradhar Yojana (SGNY)	0.1
STD (Subscriber Trunk Dialling) phone booth	12.2	Total population	34,339

Note: Table is based on *de jure* population.
[1]Includes 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 women's and men's education, exposure to mass media, and women's work participation, 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 by the Household Questionnaire as eligible respondents for the NFHS-2 Woman's Questionnaire. In addition, data are presented on the extent to which women in Bihar 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, coresidence with husband, education, religion, caste/tribe, work status, and husband's education. In Bihar, the proportion of respondents in five-year age groups increases from 12 percent in the age group 15–19 years to 20 percent in the age group 20–24, remains at the same level in the age group 25–29, and then falls steadily to 8 percent in the age group 45–49. The initial increase reflects the increasing share of ever-married women in each of these age groups. The decline after age 25–29 (an age by which most women have been married) reflects the normal pyramidal shape of the population's age distribution. A greater proportion of rural women fall in the younger age groups than of urban women. This higher share of young respondents among rural women is largely a consequence of the lower average age at marriage in rural areas.

Ninety-five percent of respondents are currently married, 3 percent are widowed, and 2 percent are divorced, separated, or deserted. Eighty-six percent of respondents are living with their husbands. The distribution of respondents by marital status and coresidence with husbands does not vary between urban and rural areas. By contrast, there are sharp differences between urban and rural areas in the composition of respondents by religion and caste/tribe. The proportion of women who are Hindu is lower in urban areas (77 percent) than in rural areas (84 percent), whereas the proportion who are Muslim is higher in urban areas (21 percent) than in rural areas (14 percent). For Bihar as a whole, 84 percent of all ever-married women are Hindu, 15 percent are Muslim, and less than 1 percent are Christian.

Table 3.1 Background characteristics of respondents

Percent distribution of ever-married women age 15–49 by selected background characteristics, according to residence and region, Bihar, 1998–99

Background characteristic	Residence		Region			Total	Number of women	
	Urban	Rural	North Bihar Plain	South Bihar Plain	Jhar-khand		Weighted	Unweighted
Age								
15–19	8.5	12.1	13.0	10.6	10.9	11.7	825	829
20–24	15.5	20.7	19.9	21.3	19.4	20.2	1,419	1,419
25–29	18.9	20.3	19.5	21.3	20.0	20.2	1,419	1,415
30–34	18.3	15.2	14.0	15.9	17.6	15.5	1,088	1,082
35–39	15.7	12.8	13.1	12.7	13.7	13.1	921	921
40–44	12.5	10.6	11.1	10.8	10.3	10.8	759	761
45–49	10.5	8.2	9.3	7.4	8.2	8.4	593	597
Marital status								
Currently married	94.2	94.9	94.9	94.3	95.3	94.8	6,661	6,662
Widowed	3.6	3.4	3.4	3.1	3.8	3.4	238	238
Divorced	0.3	0.2	0.3	0.1	0.2	0.2	15	15
Separated	1.7	1.4	1.2	2.3	0.6	1.4	99	98
Deserted	0.1	0.2	0.1	0.2	0.1	0.2	11	11
Coresidence with husband								
Living with husband	86.2	85.6	83.5	85.3	90.2	85.7	6,018	6,011
Not living with husband	8.1	9.3	11.4	9.1	5.1	9.2	643	651
Not currently married	5.8	5.1	5.1	5.7	4.7	5.2	363	362
Education								
Illiterate	46.2	80.1	79.4	72.9	76.3	76.6	5,383	5,397
Literate, < primary school complete	5.2	2.7	2.3	3.1	3.9	3.0	208	205
Primary school complete	12.8	7.6	7.1	9.7	8.1	8.1	570	568
Middle school complete	7.9	3.3	3.1	4.0	5.0	3.8	267	264
High school complete	14.6	4.7	5.3	7.9	3.8	5.7	403	401
Higher secondary complete and above	13.2	1.5	2.8	2.5	2.9	2.7	191	189
Religion								
Hindu	76.8	84.4	81.1	88.0	82.5	83.6	5,872	5,873
Muslim	20.5	14.1	18.6	11.7	11.7	14.8	1,038	1,044
Christian	1.9	0.7	0.2	0.0	3.0	0.8	59	56
Sikh	0.2	0.0	0.0	0.1	0.1	0.0	2	2
Jain	0.3	0.0	0.1	0.0	0.0	0.0	2	2
Zoroastrian/Parsi	0.0	0.1	0.0	0.1	0.0	0.0	3	3
No religion	0.0	0.0	0.0	0.0	0.1	0.0	2	2
Other	0.3	0.7	0.0	0.1	2.5	0.6	45	42
Caste/tribe								
Scheduled caste	16.6	21.1	20.0	25.8	15.2	20.7	1,452	1,446
Scheduled tribe	2.1	9.0	1.4	2.1	29.1	8.3	582	555
Other backward class	49.3	52.1	55.4	54.8	41.4	51.8	3,642	3,673
Other	32.0	17.7	23.1	17.4	14.3	19.2	1,348	1,350
Work status								
Working in family farm/business	3.8	9.7	7.5	9.4	11.7	9.1	639	632
Employed by someone else	5.3	12.3	10.6	12.9	11.7	11.6	814	817
Self-employed	3.9	6.0	4.3	5.9	8.3	5.7	404	398
Not worked in past 12 months	86.9	72.0	77.7	71.8	68.3	73.6	5,168	5,177

Contd...

Table 3.1 Background characteristics of respondents (contd.)

Percent distribution of ever-married women age 15–49 by selected background characteristics, according to residence and region, Bihar, 1998–99

Background characteristic	Residence		Region			Total	Number of women	
	Urban	Rural	North Bihar Plain	South Bihar Plain	Jhar-khand		Weighted	Unweighted
Husband's education								
Illiterate	20.4	45.0	44.4	38.3	44.4	42.5	2,986	2,992
Literate, < primary school complete	3.8	5.6	5.4	3.6	7.9	5.4	383	382
Primary school complete	12.5	13.0	13.9	12.2	12.4	13.0	912	917
Middle school complete	9.8	9.2	8.2	8.8	11.6	9.2	649	647
High school complete	21.2	15.4	14.8	20.7	12.1	16.0	1,122	1,120
Higher secondary complete and above	32.2	11.6	13.0	16.3	11.6	13.7	963	956
Missing	0.0	0.2	0.2	0.1	0.0	0.1	10	10
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	NA	NA
Number of women								
Weighted	718	6,306	3,133	2,199	1,692	7,024	7,024	NA
Unweighted	687	6,337	3,295	2,115	1,614	7,024	NA	7,024

NA: Not applicable

One-fifth (21 percent) of ever-married women in Bihar belong to scheduled castes, comprising 21 percent of women in rural areas and 17 percent of women in urban areas. Eight percent of ever-married women belong to scheduled tribes—9 percent of women in rural areas and 2 percent in urban areas. Scheduled tribes are mostly concentrated in the Jharkhand region. More than one-half of women in Bihar (52 percent) belong to other backward classes (OBC).

The educational levels of women and their husbands have an important influence on demographic and health-seeking behaviour. Seventy-seven percent of ever-married women age 15–49 are illiterate, about the same proportion observed at the time of NFHS-1 (78 percent). There has been a marginal decline in illiteracy among rural women, from 84 percent in NFHS-1 to 80 percent in NFHS-2, whereas illiteracy levels among urban women are almost the same in NFHS-1 (45 percent) and NFHS-2 (46 percent). The difference in literacy level between urban and rural areas remains high, however. Only 8 percent of all respondents have completed high school and above, the same percentage as in NFHS-1. Twenty-eight percent of women in urban areas have attained this educational level, compared with only 6 percent of women in rural areas. Among women who are literate, the largest proportion have completed primary school (but not middle school). Thirteen percent of women in urban areas have completed primary school (but not middle school), compared with only 8 percent in rural areas.

Forty-three percent of ever-married women have illiterate husbands, about the same level as in NFHS-1 (45 percent). The proportion of respondents with illiterate husbands is more than twice as high in rural areas (45 percent) as in urban areas (20 percent). The proportion of women with illiterate husbands has declined in rural areas since NFHS-1, however, when it was 49 percent. Nearly one-third (30 percent) of women have husbands who have at least completed high school. This percentage is much higher in urban areas (53 percent) than in rural areas (27

percent). By contrast, there are only negligible differences by residence in the proportions of women with husbands who have completed primary or middle school.

Three-fourths (74 percent) of ever-married women in Bihar did not participate in work other than their regular housework during the 12 months preceding NFHS-2. A larger proportion of women fall in this category in urban areas (87 percent) than in rural areas (72 percent). In both urban and rural areas, the highest proportions of working women were employed by someone else (12 percent of all rural women and 5 percent of all urban women). Ten percent of rural women worked on their own family farm or in a family business, compared with only 4 percent of urban women. A slightly higher proportion of women are self-employed in rural areas (6 percent) than in urban areas (4 percent).

3.2 Educational Level

Table 3.2 shows 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 levels of women in various age groups reflect progress in the spread of education over a period of about three decades. Illiteracy is lower among younger women than among older women: 73 percent of women age 15–24 are illiterate, compared with 81 percent of women age 40–49. The proportion of women who have at least completed high school, although still very low, is about four times as high for women age 20–24 (12 percent) as for women age 45–49 (3 percent).

A higher proportion of Muslim women are illiterate (83 percent) than Hindu women (76 percent) or Christian women (43 percent), and Hindu women are more likely to have completed high school or more education (9 percent) than Muslim women (3 percent). Women's educational attainment also varies widely by caste/tribe membership. Ninety percent of women who belong to schedules tribes, 88 percent who belong to schedules castes, and 80 percent who belong to other backward classes are illiterate, compared with only 51 percent of women who do not belong to any of these disadvantaged groups. Scheduled-tribe women and scheduled-caste women are also less likely than other women to have completed middle school or high school.

Ninety-eight percent of women with illiterate husbands are themselves illiterate. Fifty-six percent of women whose husbands have completed high school (but not higher secondary school) and 26 percent of women whose husbands have completed higher secondary school and above are also illiterate. Nearly all women whose husbands are literate have a lower level of education than their husbands. Specifically, the proportion of women with less education than their husbands is 87 percent for women whose husbands are literate but have not completed primary school, 89 percent for women whose husbands have completed primary school, 91 percent for women whose husbands have completed middle school, 88 percent for women whose husbands have completed high school, and 81 percent for women whose husbands have completed higher secondary school and above.

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, Bihar, 1998–99

	Respondent's level of education							
Background characteristic	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Total percent	Number of women
Age								
15–19	74.0	3.5	10.1	6.9	4.6	0.9	100.0	825
20–24	72.9	2.5	8.0	4.2	9.6	2.7	100.0	1,419
25–29	75.1	2.8	6.6	4.6	6.9	4.0	100.0	1,419
30–34	77.0	2.1	7.9	3.8	5.3	3.9	100.0	1,088
35–39	80.2	3.5	7.7	2.3	3.4	2.9	100.0	921
40–44	79.6	4.2	8.8	1.6	3.6	2.1	100.0	759
45–49	83.1	2.8	9.3	1.7	2.7	0.5	100.0	593
Religion								
Hindu	75.7	2.6	8.3	4.2	6.3	3.0	100.0	5,872
Muslim	83.4	5.1	7.7	1.0	1.9	0.9	100.0	1,038
Christian	42.7	3.7	7.3	18.0	19.5	8.8	100.0	59
Other	90.3	2.0	2.0	0.0	2.1	3.6	100.0	55
Caste/tribe								
Scheduled caste	88.3	2.1	4.0	2.4	2.6	0.7	100.0	1,452
Scheduled tribe	89.5	1.3	4.1	2.2	2.2	0.7	100.0	582
Other backward class	79.6	3.2	7.3	3.4	4.8	1.7	100.0	3,642
Other	50.6	4.0	16.5	7.0	13.4	8.5	100.0	1,348
Husband's education								
Illiterate	97.7	0.7	1.0	0.3	0.2	0.0	100.0	2,986
Literate, < primary school complete	87.1	8.1	3.5	0.8	0.5	0.0	100.0	383
Primary school complete	84.2	4.5	9.0	1.6	0.6	0.1	100.0	912
Middle school complete	73.4	4.8	13.1	5.4	2.8	0.5	100.0	649
High school complete	55.7	4.8	18.4	8.8	11.6	0.7	100.0	1,122
Higher secondary complete and above	26.2	3.0	15.8	11.1	25.1	18.7	100.0	963
Total	76.6	3.0	8.1	3.8	5.7	2.7	100.0	7,024

Note: Total includes 10 women with missing information on husband's education, who are not shown separately.

3.3 Age at First Marriage

Table 3.3 gives information on age at first marriage. The table shows the percentage of all women (ever-married and never-married) who first married by specified exact ages as well as the median age at first marriage and first cohabitation by current age and residence. The median age at first marriage/cohabitation for a cohort of women is the age by which 50 percent of the cohort marries/cohabits.

There is evidence that age at first marriage is rising in Bihar. The proportion married by age 15 falls steadily from the oldest to the youngest age group. More remarkable, the proportion falls from 40 percent for women age 20–24 to 24 percent for women age 15–19, who are only five years younger on average. This decline in the proportion of women married by age 15 is evident in both rural and urban areas. In rural areas, the proportion of women married by age 15 declines from 43 percent among women age 20–24 to 26 percent among women age 15–19; the corresponding decline in urban areas is from 20 percent to 9 percent. 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, Bihar, 1998–99

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	2.8	8.8	NA	NA	NA	NA	NC	NC
20–24	5.1	19.7	38.8	57.7	NA	NA	19.0	19.5
25–29	6.2	22.5	54.5	72.5	80.2	87.0	17.1	18.3
30–34	11.6	31.7	62.9	78.8	85.7	92.1	16.7	17.5
35–39	14.6	37.8	66.7	86.6	91.9	93.7	16.3	17.6
40–44	11.6	28.8	68.9	88.4	97.4	97.4	16.3	17.4
45–49	17.7	44.0	80.3	92.9	97.2	98.5	15.3	16.9
20–49	10.1	29.0	58.9	76.7	NA	NA	16.9	18.0
25–49	11.6	31.7	64.7	82.1	88.9	92.8	16.4	17.6
RURAL								
15–19	9.0	26.4	NA	NA	NA	NA	NC	NC
20–24	15.8	42.7	74.7	85.7	NA	NA	15.5	17.0
25–29	19.8	48.8	83.3	93.1	95.4	97.1	15.1	16.6
30–34	22.2	50.9	86.3	95.9	98.2	98.8	14.9	16.5
35–39	25.5	54.0	87.4	95.6	98.5	99.0	14.7	16.4
40–44	30.2	60.7	89.3	97.0	99.6	99.8	14.3	16.3
45–49	32.3	60.8	89.1	95.5	99.2	99.6	14.2	16.5
20–49	22.3	50.8	83.4	92.7	NA	NA	14.9	16.6
25–49	24.6	53.6	86.4	95.1	97.7	98.6	14.8	16.5
TOTAL								
15–19	8.2	24.0	NA	NA	NA	NA	NC	NC
20–24	14.7	40.4	71.0	82.7	NA	NA	15.7	17.2
25–29	18.4	46.1	80.4	91.0	93.9	96.2	15.3	16.7
30–34	20.9	48.5	83.4	93.7	96.6	98.0	15.1	16.6
35–39	24.2	52.1	84.9	94.6	97.8	98.5	14.9	16.5
40–44	28.0	57.0	86.8	96.0	99.4	99.5	14.5	16.4
45–49	30.5	58.7	87.9	95.2	98.9	99.4	14.4	16.6
20–49	20.9	48.3	80.6	90.8	NA	NA	15.1	16.7
25–49	23.0	51.0	83.9	93.6	96.7	97.9	14.9	16.6

NA: Not applicable
NC: Not calculated because less than 50 percent of women in the age group 15–19 have married or started living with their husband by age 15.
[1]The current age groups include both never-married and ever-married women.

marriage has also risen over the past three decades. In urban areas, the median age at first marriage is nearly four years higher for women age 20–24 than for women age 45–49; in rural areas, the corresponding increase in the median age at first marriage is more than one year.

Despite this evidence of a rising age at marriage, Table 3.3 shows that in Bihar most women age 20–49 were married before they reached the legal minimum age of 18 years, as set by the Child Marriage Restraint Act of 1978. Specifically, 81 percent of all women age 20–49, including 83 percent of rural women and 59 percent of urban women, married by exact age 18. Although the median age at first marriage for women age 20–49 is two years higher in urban

areas (16.9) than in rural areas (14.9), both are less than 18 years. The only group with a median age at first marriage of 18 years or higher is urban women age 20–24. Even among young urban women, more than one-third marry before reaching the legal minimum age. In Bihar, the difference between median age at first marriage and median age at first cohabitation is about one and one-half years among women age 20–49. It is also one and one-half years for women age 20–24. This suggests that *gauna* or similar cultural practices that create a lag between marriage and cohabitation are still observed in Bihar.

3.4 Exposure to Mass Media

In a country such as India, where the majority of women are illiterate or have little formal education, information channels such as the mass media play an important role in bringing about modernization. NFHS-2 asked women whether they read a newspaper or magazine, watch television, or listen to 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 media by selected background characteristics.

In Bihar, nearly three-fourths (73 percent) of women are not regularly exposed to any mass media. Media exposure is similar among women in different age groups, but exposure varies widely by women's education and household standard of living. As expected, regular exposure to mass media increases with education, ranging from 14 percent among illiterate women to 57–86 percent among women in other education categories. Regular exposure to media also increases with household standard of living, ranging from 8 percent among women living in households with a low standard of living to 87 percent among women in households with a high standard of living.

Seventy-seven percent of rural women are not regularly exposed to any media, compared with 33 percent of urban women. Slightly more Muslim women are not regularly exposed to any media (79 percent) than Hindu women (72 percent). Eighty-eight percent of scheduled-tribe women, 82 percent of scheduled-caste women, and 75 percent of women from other backward classes are not regularly exposed to any media, compared with only 50 percent of women who do not belong to any of these disadvantaged groups.

Among the different types of mass media, radio has the greatest reach across all categories of women including illiterate and poor women. Overall, 20 percent of ever-married women listen to the radio at least once a week, and 17 percent watch television at least once a week, compared with less than 10 percent who are regularly exposed to print media or cinema/theatre. The proportion of women who listen to the radio at least once a week has declined since the time of NFHS-1, however, when it was 26 percent. By contrast, regular exposure to television has risen over the same period—from 13 percent in NFHS-1 to 17 percent in NFHS-2. Cinema/theatre is the least widely used medium. Exposure to each type of media increases sharply with women's education and household standard of living.

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, Bihar, 1998–99

	Exposure to mass media					
Background characteristic	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	Number of women
Age						
15–19	9.5	13.9	19.5	4.9	72.7	825
20–24	10.3	15.9	22.4	5.1	71.5	1,419
25–29	9.5	17.7	21.5	4.7	72.4	1,419
30–34	10.7	17.6	20.2	4.9	71.5	1,088
35–39	8.8	16.6	18.2	4.2	75.2	921
40–44	7.6	17.5	19.1	3.8	73.6	759
45–49	6.3	18.1	18.8	1.3	73.7	593
Residence						
Urban	31.4	59.1	39.6	18.3	32.7	718
Rural	6.8	11.9	18.1	2.8	77.3	6,306
Region						
North Bihar Plain	9.2	14.6	22.0	4.3	73.8	3,133
South Bihar Plain	9.6	17.3	19.8	5.3	72.3	2,199
Jharkhand	9.0	20.0	17.8	3.4	71.2	1,692
Education						
Illiterate	0.0	7.0	10.6	1.4	85.9	5,383
Literate, < middle school complete	21.9	34.7	41.6	7.5	42.6	779
Middle school complete	40.7	46.9	50.2	13.4	26.3	267
High school complete and above	62.7	68.1	66.9	23.4	14.0	595
Religion						
Hindu	10.0	17.4	21.3	4.4	71.7	5,872
Muslim	4.2	13.2	14.1	4.0	78.9	1,038
Christian	24.8	23.2	40.7	12.2	57.5	59
Other	7.7	13.5	9.8	1.8	82.5	55
Caste/tribe						
Scheduled caste	4.2	9.6	13.1	2.7	82.1	1,452
Scheduled tribe	2.7	4.2	10.4	1.1	88.3	582
Other backward class	7.1	14.9	18.4	3.7	74.9	3,642
Other	23.4	34.9	37.5	9.4	50.0	1,348
Standard of living index						
Low	1.3	2.5	6.2	1.2	91.8	3,709
Medium	10.2	20.3	27.6	5.3	62.0	2,595
High	47.6	77.8	67.2	17.7	12.6	712
Total	9.3	16.8	20.3	4.4	72.7	7,024

Note: Total includes 8 women with missing information on the standard of living index, who are not shown separately.

3.5 Women's Employment

Labor force participation not only gives women an opportunity to earn income but also exposes them to the outside world and to networks and authority structures 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

Table 3.5 Employment

Percent distribution of ever-married women age 15–49 by employment characteristics, according to residence, Bihar, 1998–99

Employment characteristic	Urban	Rural	Total
Employment status			
Currently working	12.6	26.5	25.1
Worked in past 12 months (not currently working)	0.5	1.5	1.4
Not worked in past 12 months	86.9	72.0	73.6
Continuity of employment[1]			
Throughout the year	70.2	61.2	61.7
Seasonally/part of the year	24.1	35.4	34.9
Once in a while	5.6	3.4	3.5
Type of earning[1]			
Cash only	69.2	34.7	36.4
Cash and kind	17.3	34.2	33.4
Kind only	3.4	12.1	11.7
Not paid	10.1	19.0	18.5
Occupation[1]			
Professional	16.4	2.2	2.9
Sales worker	14.2	4.7	5.2
Service worker	4.3	0.3	0.5
Production worker	18.9	10.6	11.0
Agricultural worker	21.2	70.9	68.4
Other worker	23.7	10.6	11.3
Don't know/missing	1.1	0.7	0.7
Earnings contribution to total family earnings[2]			
Almost none	10.3	7.7	7.8
Less than half	42.2	33.1	33.7
About half	15.0	16.4	16.3
More than half	16.9	9.8	10.2
All	15.6	33.0	32.0
Total percent	100.0	100.0	100.0
Number of women	718	6,306	7,024
Number of employed women[1]	94	1,763	1,856
Number of women earning cash	81	1,215	1,296

[1]For currently working women and women who have worked in the past 12 months
[2]For women earning cash

the social context of women's work and their total work burden (Bardhan, 1985; Desai and Jain, 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 expected that women who work at a regular job, who earn cash, 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). Table 3.5 provides information on these aspects of women's employment for ever-married women age 15–49 according to residence.

In Bihar, 26 percent of ever-married women age 15–49 were either currently employed at the time of NFHS-2 or had been employed during the 12 months preceding the survey. Twenty-eight percent of rural respondents but only 13 percent of urban respondents worked at any time during the preceding 12 months. The majority of women in both urban (70 percent) and rural areas (61 percent) who worked at any time during the 12-month period worked throughout the

year. The majority who worked earned cash for their work, but the proportion earning cash was higher in urban areas (87 percent) than in rural areas (69 percent). Nearly one in five (19 percent) working women in rural areas and 1 in 10 (10 percent) in urban areas were unpaid workers.

Nearly three-quarters (71 percent) of rural women who work are farm workers. In urban areas, there is greater occupational diversity. Twenty-one percent of urban women who work are farm workers, 19 percent are production workers, 19 percent are in sales and services, and 16 percent are professionals.

A significant feature of women's work participation in Bihar is their substantial contribution to family earnings. One-third (33 percent) of rural women and nearly one-sixth (16 percent) of urban women who earned cash in the 12 months preceding the survey report that their family is entirely dependent on their earnings. Another one-third (32 percent) in urban areas and one-fourth (26 percent) in rural areas report that they contribute about half or more of total family earnings. Only 10 percent of women in urban areas and 8 percent in rural areas report that they contribute almost nothing to 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 their 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 because it affects women's relative control over fertility and contraceptive use and influences women's attitudes (for example, attitudes concerning 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: choosing what items to cook, obtaining health care for the woman, purchasing jewellery or other major household items, and deciding about the woman 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 ever-married women age 15–49 by the person (or persons) who makes each of the specified household decisions according to residence.

As expected, women in Bihar are most likely to participate in the decision about what to cook: 64 percent of women make this decision on their own, and another 18 percent make this decision jointly with their husband or someone else in the household. The remaining 18 percent of women are not involved in decisions regarding what to cook. More than half of women are not involved in decisions about seeking their own health care (52 percent), purchasing jewellery or other major household items (57 percent), or going and staying with parents or siblings (56 percent) (Figure 3.1). Among these three types of decisions, the decision that women are most likely to take on their own is the one about their own health care (19 percent); the decision that they are least likely to take on their own is about the purchase of jewellery or other major household items (9 percent). Surprisingly, there are no sharp differences by residence in the proportion of women participating in these different types of decisions.

Table 3.6 Household decisionmaking

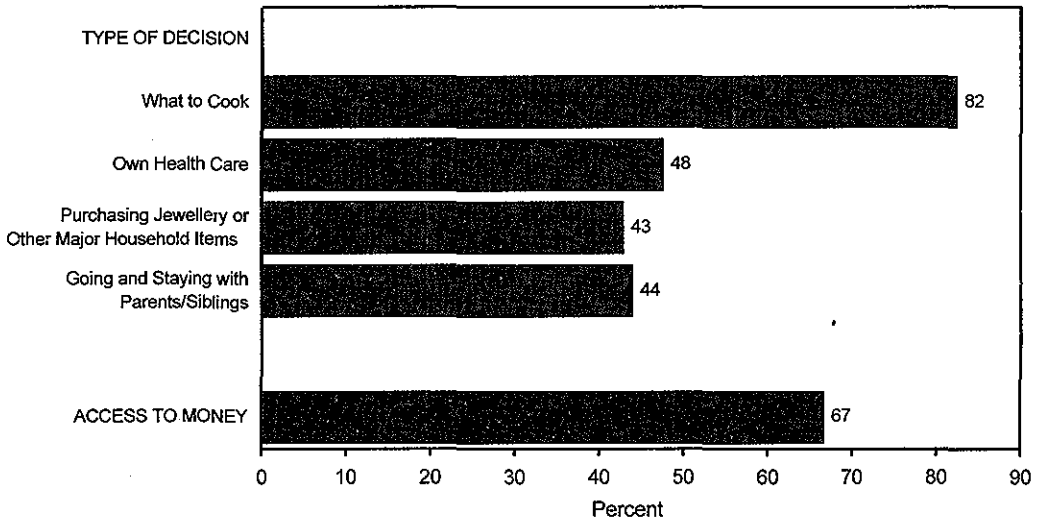
Percent distribution of ever-married women by person who makes specific household decisions, according to residence, Bihar, 1998–99

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	65.6	6.6	8.1	10.2	9.4	100.0
Obtaining health care for herself	22.8	36.8	24.0	9.0	7.4	100.0
Purchasing jewellery or other major household items	13.1	36.3	28.9	11.7	10.0	100.0
Going and staying with her parents or siblings	11.8	37.7	28.7	11.0	10.8	100.0
How the money she earns will be used[1]	63.3	12.7	20.2	2.6	1.2	100.0
		RURAL				
What items to cook	64.3	7.1	8.2	10.6	9.7	100.0
Obtaining health care for herself	19.0	41.8	19.4	11.3	8.5	100.0
Purchasing jewellery or other major household items	9.0	46.1	23.2	12.1	9.6	100.0
Going and staying with her parents or siblings	9.7	44.5	23.1	12.4	10.4	100.0
How the money she earns will be used[1]	50.4	26.7	19.9	0.4	2.6	100.0
		TOTAL				
What items to cook	64.4	7.1	8.2	10.6	9.7	100.0
Obtaining health care for herself	19.4	41.3	19.8	11.1	8.4	100.0
Purchasing jewellery or other major household items	9.4	45.1	23.8	12.0	9.7	100.0
Going and staying with her parents or siblings	9.9	43.8	23.7	12.2	10.4	100.0
How the money she earns will be used[1]	51.3	25.8	19.9	0.5	2.5	100.0

[1]For women earning cash

About half (51 percent) of women who earn cash report that they decide on their own how the money they earn will be used, and more than one-fifth (22 percent) make this decision together with their husbands or other members of the household. One-fourth of these women (26 percent) are not involved in decisions about how the money they earn will be used. The proportion of women who decide independently on the use of money they earn is higher in urban areas (63 percent) than in rural areas (50 percent), while the proportion who do not participate in such decisions is higher in rural areas (27 percent) than in urban areas (15 percent).

Figure 3.1
Percentage of Women Participating in Different Household Decisions and Percentage with Access to Money



NFHS-2, Bihar, 1998–99

The proportion of women who are not involved in any household decisionmaking tends to go down with age, ranging from 24 percent among women age 15–19 to 9 percent among women age 35–44 (Table 3.7). Participation in decisions about what to cook tends to increase with women's age, but there is not much variation by age in other areas of decisionmaking. Urban women are somewhat more likely than rural women to participate in decisions about their own health care, about purchasing jewellery or other major household items, and about going and staying with parents or siblings. Women in the Jharkhand region are consistently more involved in household decisionmaking than are women in the other two regions of Bihar.

Scheduled-tribe women are much more likely to be involved in household decisionmaking than are women in any other caste/tribe group. Women who worked in the 12 months preceding the survey, whether or not for cash, are more likely to be involved in household decisionmaking than are women who did not work. Hindu women are slightly more likely than Muslim women to be involved in household decisionmaking (except for decisions about what to cook), and Christian women and women of 'other' religions are much more likely to be involved. Women with at least a high school education are more likely than other women to participate in three of the four types of decisions covered by the survey, but illiterate women have the lowest proportion not involved in any decisionmaking. Similarly, women from households with a high standard of living are more likely than other women to participate in three out of four types of decisions, but they also have the highest proportion not involved in any decisionmaking.

Table 3.7 also gives information on two other dimensions of women's autonomy measured in NFHS-2, 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

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, Bihar, 1998–99

Background characteristic	Percentage not involved in any decision-making	Percentage involved in decisionmaking on:				Percentage who do not need permission to:		Percentage with access to money	Number of women
		What to cook	Own health care	Purchasing jewellery, etc.	Staying with her parents/ siblings	Go to the market	Visit friends/ relatives		
Age									
15–19	24.3	70.4	42.0	41.8	43.9	10.5	10.6	54.1	825
20–24	16.7	78.3	47.5	44.0	45.0	13.2	12.8	60.3	1,419
25–29	13.6	81.8	47.4	43.6	44.8	20.9	19.2	66.1	1,419
30–34	10.4	85.7	51.2	43.3	44.4	23.7	21.9	68.1	1,088
35–39	8.6	88.8	48.4	41.3	43.3	28.3	27.0	72.8	921
40–44	8.6	89.9	48.1	41.9	41.9	28.5	26.7	74.6	759
45–49	10.6	84.2	47.9	42.7	42.7	36.9	35.1	79.1	593
Residence									
Urban	10.4	83.2	54.2	52.0	51.3	30.5	28.2	77.0	718
Rural	13.9	82.3	46.9	41.8	43.1	20.7	19.6	65.6	6,306
Region									
North Bihar Plain	14.3	82.4	36.5	32.6	34.4	16.9	16.4	73.6	3,133
South Bihar Plain	19.0	76.1	48.7	40.2	41.0	15.2	14.4	58.6	2,199
Jharkhand	4.9	90.5	66.8	65.4	65.5	39.1	35.9	64.5	1,692
Education									
Illiterate	12.5	83.9	46.9	41.9	43.2	22.4	21.2	64.5	5,383
Literate, < middle school complete	16.5	78.0	47.1	41.3	41.9	19.2	17.9	72.6	779
Middle school complete	19.0	74.1	51.4	48.3	48.0	20.9	20.5	69.8	267
High school complete and above	16.0	77.8	52.9	51.6	51.8	19.3	17.7	78.0	595
Religion									
Hindu	13.9	81.8	47.9	43.0	44.3	21.5	20.4	66.6	5,872
Muslim	12.3	84.3	44.3	40.0	40.0	18.7	18.0	67.0	1,038
Christian	7.1	91.0	59.3	64.7	62.9	52.4	39.6	78.1	59
Other	4.1	95.9	68.7	64.8	66.7	68.3	60.5	68.0	55
Caste/tribe									
Scheduled caste	15.0	81.5	43.8	40.5	42.7	20.5	20.2	60.2	1,452
Scheduled tribe	5.6	90.6	73.2	61.2	63.8	48.3	41.6	63.8	582
Other backward class	14.2	81.5	45.7	41.6	42.4	19.2	18.1	67.3	3,642
Other	13.5	82.0	45.8	40.9	41.2	18.4	18.2	73.4	1,348
Cash employment									
Working for cash	8.2	89.4	53.3	48.0	49.9	28.6	28.2	67.0	1,296
Working but not for cash	7.7	90.0	54.7	51.4	54.3	32.2	30.5	61.4	561
Not worked in past 12 months	15.5	79.8	45.4	40.7	41.4	18.8	17.5	67.2	5,168
Standard of living index									
Low	12.1	85.1	47.7	42.1	43.5	24.2	22.7	63.2	3,709
Medium	14.4	80.5	46.5	42.7	43.4	18.0	17.5	68.7	2,595
High	17.9	74.7	51.5	47.4	48.7	22.2	20.0	78.1	712
Total	13.5	82.4	47.6	42.9	44.0	21.7	20.5	66.7	7,024

Note: Total includes 8 women with missing information on the standard of living index, who are not shown separately.

to spending money was measured by asking respondents, 'Are you allowed to have some money set aside that you can use as you wish?'

Most women say that they need permission to go to the market or to visit friends or relatives. Only 22 percent say that they do not need permission to go to the market, and 21 percent say that they do not need permission to visit friends or relatives. Freedom of movement tends to increase with age. It is relatively high for urban women, women who live in the Jharkhand region, Christian women and women of 'other' religions, scheduled-tribe women, and women who worked in the 12 months preceding the survey, whether or not they worked for cash. Freedom of movement does not vary widely according to women's educational level or household standard of living.

Women are much more likely to have access to money that they can spend as they wish than the freedom to go to the market or visit friends or relatives without permission. Two-thirds (67 percent) of women say that they are allowed access to some money. As with freedom of movement, access to money increases with age. Access is relatively high for urban women, women who live in North Bihar Plain region, women who have at least completed high school, Christian women, women in households with a high standard of living, and women who do not belong to a scheduled caste, scheduled tribe, or other backward class. Perhaps surprisingly, women who worked for cash in the 12 months preceding the survey are no more likely to have access to money than are women who did not work.

3.7 Women's Educational Aspirations for Children

The desire to invest in children, including investing in their education, is an important aspect of the transition from uncontrolled to controlled fertility. In order to obtain information on this subject, NFHS-2 asked ever-married women how much education, in their opinion, should be given to a girl or a boy. Women's responses to these questions also provide an indication of the degree of son preference prevailing at the time of the survey.

As shown in Table 3.8, 28 percent of women believe that a boy should be given as much education as he wants, compared with only 16 percent who believe that a girl should be given as much education as she wants. Although women are somewhat more likely to say that boys should receive higher education than girls, the largest proportion of women specifying any particular level of education feel that both boys and girls should complete high school. Very few women feel that girls should not be given any education at all (3 percent), and even fewer feel that boys should not be educated (1 percent). One-third (34 percent) of women said that the level of education appropriate for boys 'depends' on the circumstances, compared with less than one-fourth (22 percent) who gave this response for girls.

Table 3.8 indicates that there are sharp differences in educational aspirations for both girls and boys among women in rural and urban areas. Rural women have lower educational aspirations for their children than do urban women, particularly for girls.

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, Bihar, 1998–99

Educational level	Urban	Rural	Total
Education for girls			
No education	1.0	3.0	2.8
Less than primary school	0.9	2.3	2.1
Primary school	1.3	6.6	6.1
Middle school	3.5	16.4	15.1
High school	17.9	24.4	23.8
Higher secondary school	6.1	5.8	5.8
Graduate and above	7.4	3.0	3.5
Professional degree	5.2	1.5	1.9
As much as she desires	31.2	13.8	15.5
Depends	24.5	21.9	22.1
Don't know	1.0	1.3	1.3
Total percent	100.0	100.0	100.0
Education for boys			
No education	0.1	0.6	0.6
Less than primary school	0.2	0.3	0.3
Primary school	0.1	0.8	0.7
Middle school	1.0	3.0	2.8
High school	6.4	15.1	14.2
Higher secondary school	3.0	7.4	6.9
Graduate and above	9.0	7.7	7.9
Professional degree	7.3	3.4	3.8
As much as he desires	39.9	26.5	27.9
Depends	32.0	34.4	34.1
Don't know	0.9	0.9	0.9
Total percent	100.0	100.0	100.0

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 basic human rights, but a growing body of research is highlighting the health burdens, intergenerational effects, and demographic consequences of such violence (Heise et al., 1994, 1998; 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). 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 suspicions about a wife's moral character to issues that might be considered rather trivial, were chosen to provide variation in the perceived seriousness of violations of behavioural norms. Table 3.9 gives the percentages of ever-married women who agree with specific reasons for wife-beating according to sociodemographic background characteristics.

Nearly one-half of women in Bihar (47 percent) accept at least one reason as justification for wife-beating. Women are most likely to agree that wife-beating is justified when a husband suspects his wife is unfaithful (28 percent). They are slightly less likely to agree that wife-beating is justified if a wife neglects her house or children, if she goes out without telling her husband, if she shows disrespect for her in-laws, or if she does not cook food properly (21–25 percent). Women are least likely to agree that wife-beating is justified if a wife's natal family does not give expected money, jewellery, or other items (4 percent).

There are no sharp differences in women's attitudes towards wife-beating by age or marital duration, but there are consistent differences between women in rural and urban areas. Not only do a higher proportion of rural women (48 percent) than urban women (37 percent) agree with at least one reason justifying wife-beating, but rural women are also more likely than urban women to agree with each specific reason. Among the regions, agreement is much higher in the North Bihar Plain than in the other regions. Agreement with at least one reason for wife-beating and with each specific reason declines consistently with increases in women's level of education and household standard of living. Women who work but not for cash are more likely than women in the other employment categories to agree with at least one reason for wife-beating and with all of the specific reasons.

Overall, one-third to one-half of women in almost every group agree with at least one reason justifying wife-beating. These findings indicate that women in Bihar are socialized 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 also asked women if they had been beaten or physically mistreated since age 15.[1] Women who reported being beaten or physically mistreated were asked who beat or physically mistreated them, and interviewers recorded all the persons mentioned. The culture of silence surrounding the topic of domestic violence makes the collection of data on this sensitive topic particularly difficult. Even women who want to speak about their experience of domestic violence may find it difficult because of feelings of shame or fear. This may be particularly true if violence occurred recently (for example, in the preceding 12 months) rather 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 domestic violence because they do not view what they experienced as violence or physical mistreatment. For all of these reasons, NFHS-2 results on the prevalence of domestic violence need to be interpreted with caution.

[1]The question does not limit women to reporting only domestic violence. Nonetheless, almost all women who reported any violence only reported beatings or physical mistreatment by husbands or other relatives.

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, Bihar, 1998–99

Background characteristic	Percentage who agree with at least one reason	Percentage who agree with specific reasons: 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	Number of women
Age								
15–19	48.5	30.4	4.1	22.1	28.9	25.0	22.3	825
20–29	44.2	26.4	3.7	20.7	23.6	23.9	20.3	2,838
30–39	47.1	29.6	3.7	20.6	23.4	25.5	20.0	2,009
40–49	49.4	29.7	5.3	22.5	27.2	27.7	22.3	1,353
Marital duration (in years)								
< 5	43.9	26.8	4.0	19.8	24.6	22.3	20.0	1,603
5–9	46.5	27.7	3.4	21.8	24.1	24.8	21.5	1,102
10 or more	48.1	29.6	4.1	21.6	25.2	26.7	21.1	3,955
Not currently married	40.5	24.7	5.2	21.2	24.5	23.5	19.1	363
Residence								
Urban	36.7	19.9	2.9	18.4	19.3	21.2	16.6	718
Rural	47.6	29.4	4.2	21.5	25.5	25.7	21.3	6,306
Region								
North Bihar Plain	54.1	33.1	4.6	21.8	26.9	26.3	22.0	3,133
South Bihar Plain	42.2	21.4	4.3	21.4	23.3	27.8	26.1	2,199
Jharkhand	38.1	28.8	2.6	19.8	23.1	19.8	11.9	1,692
Education								
Illiterate	50.0	31.0	4.7	22.5	27.0	27.5	22.9	5,383
Literate, < middle school complete	41.5	25.1	2.2	18.9	21.5	22.3	17.2	779
Middle school complete	34.5	19.4	3.0	16.3	18.9	19.0	14.3	267
High school complete and above	27.1	13.5	1.0	14.3	12.6	11.5	9.9	595
Religion								
Hindu	46.2	27.1	3.9	20.7	24.3	25.0	21.0	5,872
Muslim	49.1	35.7	4.3	23.4	28.0	26.3	20.4	1,038
Christian	41.4	35.8	1.9	23.6	20.1	25.4	11.2	59
Other	34.1	20.1	12.1	26.1	32.1	24.2	20.2	55
Caste/tribe								
Scheduled caste	49.8	32.6	4.9	23.8	28.5	26.4	23.8	1,452
Scheduled tribe	40.3	28.9	2.8	20.2	24.5	21.9	13.2	582
Other backward class	47.9	27.5	4.3	21.5	24.6	26.7	22.7	3,642
Other	41.9	26.0	2.9	18.2	21.7	21.3	16.0	1,348
Cash employment								
Working for cash	48.0	29.0	6.0	25.5	28.0	28.4	24.3	1,296
Working but not for cash	54.7	37.0	6.5	29.8	31.2	35.1	25.9	561
Not worked in past 12 months	45.2	27.3	3.3	19.2	23.4	23.3	19.4	5,168
Standard of living index								
Low	50.2	32.8	4.4	22.4	28.0	26.7	22.2	3,709
Medium	45.1	25.5	3.8	20.5	23.6	25.5	21.1	2,595
High	32.3	15.6	3.2	17.5	13.3	17.0	13.0	712
Total	46.5	28.4	4.0	21.2	24.9	25.2	20.8	7,024

Note: Total includes 8 women with missing information on the standard of living index, who are not shown separately.

Table 3.10 presents results on the prevalence of beatings or physical mistreatment since age 15 according women's background characteristics. Prevalence is also shown according to the person(s) who beat or physically mistreated the women reporting violence—their husbands, their in-laws, or other persons. Twenty-seven percent of women in Bihar have experienced violence, and 25 percent have been beaten or physically mistreated by their husbands. Relatively few have been beaten or physically mistreated by their in-laws (2 percent) or other persons (3 percent). These findings indicate that more than 9 out of 10 women (94 percent) who report violence have been beaten or physically mistreated by their husbands.

Women age 15–19 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 also less likely to have been beaten (19 percent) than women who have been married longer (29–30 percent). Rural women (28 percent) are more likely than urban women (19 percent) to have experienced violence, and illiterate women (30 percent) are three times more likely to have experienced violence than are women who have completed high school or more education (10 percent). The prevalence of violence also decreases substantially as the household standard of living increases, ranging from 32 percent of women in households with a low standard of living to 11 percent of women in households with a high standard of living.

Women from nuclear households are more likely than women from non-nuclear households to experience domestic violence. A similar finding was reported by Visaria (1999) among women in rural Gujarat. Women who worked in the 12 months preceding the survey, and particularly women who did not work for cash, are more likely than nonworking women to have experienced violence.

In Bihar, women with no living children are somewhat less likely than other women to have experienced violence (19 percent compared with 25–29 percent). This may be due in part to the fact that childless women tend to be younger, and younger women have had less time to experience violence than do older women. There is no apparent variation in the prevalence of violence among women who do or do not have a son.

Among women with specific socioeconomic background characteristics, the proportions who have been beaten or physically mistreated by their husbands are similar to the proportions who have experienced violence in general. This is not surprising since, as already noted, most women who report beatings are beaten by their husbands. The proportions of women who have been beaten or physically mistreated by their in-laws or by other persons are too small to allow a meaningful discussion of differentials by background characteristics. Nonetheless, it is notable that women who are not currently married (divorced, separated, deserted, or widowed) are more likely than currently married women to have been beaten or physically mistreated by their in-laws or other persons

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, Bihar, 1998–99

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					
15–19	16.5	14.3	2.2	2.9	825
20–29	28.1	26.5	2.7	3.3	2,838
30–39	30.7	29.2	2.4	2.8	2,009
40–49	23.6	21.6	2.0	3.0	1,353
Marital duration (in years)					
< 5	18.6	16.6	2.0	3.0	1,603
5–9	29.0	27.6	2.1	3.5	1,102
10 or more	29.7	28.2	2.5	2.7	3,955
Not currently married	20.7	17.4	4.2	5.2	363
Residence					
Urban	18.9	18.0	1.5	1.5	718
Rural	27.5	25.7	2.5	3.2	6,306
Region					
North Bihar Plain	27.5	26.2	2.0	3.1	3,133
South Bihar Plain	29.3	26.9	3.2	3.7	2,199
Jharkhand	21.5	20.0	2.2	2.0	1,692
Education					
Illiterate	30.2	28.4	2.7	3.4	5,383
Literate, < middle school complete	17.7	16.2	2.1	2.2	779
Middle school complete	17.0	15.4	2.0	2.3	267
High school complete and above	10.4	8.8	0.8	1.7	595
Religion					
Hindu	26.2	24.6	2.4	2.7	5,872
Muslim	28.9	27.2	2.7	5.0	1,038
Christian	19.9	18.1	3.6	0.0	59
Other	34.1	28.1	0.0	8.0	55
Caste/tribe					
Scheduled caste	34.5	32.0	3.6	3.3	1,452
Scheduled tribe	23.8	22.5	1.5	2.3	582
Other backward class	26.5	25.1	2.4	2.8	3,642
Other	19.6	17.9	1.7	3.9	1,348
Household type					
Nuclear household	29.7	28.3	2.0	3.2	2,879
Non-nuclear household	24.5	22.6	2.7	3.0	4,140
Cash employment					
Working for cash	38.0	36.4	3.3	3.9	1,296
Working but not for cash	40.7	38.4	3.6	6.9	561
Not worked in past 12 months	22.2	20.6	2.1	2.4	5,168
Standard of living index					
Low	31.6	29.8	2.8	3.0	3,709
Medium	23.9	22.3	2.3	3.4	2,595
High	10.8	9.4	1.2	1.9	712

Contd...

Table 3.10 Women's experience with beatings or physical mistreatment (contd.)

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, Bihar, 1998–99

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	
Living children					
No living children	19.1	16.5	2.9	3.4	984
Only daughters	25.7	23.8	2.1	2.9	885
Only sons	25.3	23.5	2.6	3.8	1,232
Both daughters and sons	29.1	27.7	2.3	2.8	3,922
Total	26.6	24.9	2.4	3.1	7,024

Note: Total includes 5 women in households with no usual residents and 8 women with missing information on the standard of living index, who are not shown separately.

NFHS-2 asked women who experienced violence 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 violence in the past 12 months for all women who report beatings or physical mistreatment. Two-thirds (69 percent) of women who experienced violence were beaten or physically mistreated at least once during the 12 months preceding the survey. Fifty-one percent were beaten or physically mistreated more than once during this period. Among women who have experienced violence since age 15, women with the following characteristics are most likely to have been beaten or physically mistreated in the 12 months preceding the survey: younger women, women married less than 10 years, and women with no living children.

As mentioned earlier, largely due to a general tendency to underreport 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 violence in Bihar: *at least* one in four ever-married women in Bihar has experienced violence since age 15, and *at least* one in five has experienced violence in the 12 months preceding the survey. These estimates of the prevalence of physical violence in Bihar are somewhat higher than the estimates provided by the IndiaSAFE study of family violence in India conducted at about the same time as NFHS-2. According to the IndiaSAFE study, one in five women report ever being hit, kicked, or beaten by husbands and 1 in 10 women report violent physical behaviours by husbands in the past 12 months (International Clinical Epidemiology Network, 2000).

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, Bihar, 1998–99

Background characteristic	Beaten or physically mistreated in the past 12 months				Total percent	Number of women
	Many times	A few times	Once	Not beaten		
Age						
15–19	14.8	43.9	23.1	18.2	100.0	136
20–29	23.0	29.8	20.1	27.2	100.0	798
30–39	19.5	31.6	17.2	31.7	100.0	616
40–49	13.0	27.7	17.0	42.4	100.0	319
Marital duration (in years)						
< 5	17.6	35.6	23.7	23.1	100.0	298
5–9	24.8	28.3	20.4	26.4	100.0	320
10 or more	18.6	31.8	17.8	31.9	100.0	1,176
Not currently married	19.0	13.6	9.4	58.0	100.0	75
Residence						
Urban	28.6	23.9	13.9	33.5	100.0	136
Rural	18.8	31.6	19.2	30.4	100.0	1,733
Region						
North Bihar Plain	13.3	30.5	20.4	35.8	100.0	860
South Bihar Plain	28.5	26.3	18.3	26.9	100.0	645
Jharkhand	18.3	41.0	15.9	24.8	100.0	364
Education						
Illiterate	20.0	32.1	18.4	29.5	100.0	1,624
Literate, < middle school complete	16.6	25.7	19.7	38.0	100.0	138
Middle school complete	(15.8)	(20.7)	(25.1)	(38.4)	100.0	45
High school complete and above	16.4	22.8	22.5	38.3	100.0	62
Religion						
Hindu	19.7	31.0	19.3	30.1	100.0	1,538
Muslim	19.0	30.7	16.6	33.7	100.0	300
Caste/tribe						
Scheduled caste	23.5	35.9	15.8	24.9	100.0	501
Scheduled tribe	17.1	38.8	20.5	23.7	100.0	138
Other backward class	19.4	28.0	20.1	32.4	100.0	965
Other	13.7	29.2	18.9	38.3	100.0	265
Household type						
Nuclear household	18.3	35.1	16.9	29.7	100.0	855
Non-nuclear household	20.5	27.7	20.5	31.3	100.0	1,014
Cash employment						
Working for cash	26.9	30.5	19.3	23.3	100.0	493
Working but not for cash	15.9	31.2	17.7	35.2	100.0	228
Not worked in past 12 months	17.1	31.3	18.8	32.8	100.0	1,148
Standard of living index						
Low	21.4	34.1	17.6	26.8	100.0	1,172
Medium	17.8	26.1	21.0	35.0	100.0	619
High	4.1	23.8	19.6	52.5	100.0	77
Living children						
No living children	25.9	27.7	23.2	23.2	100.0	188
Only daughters	21.0	30.4	20.4	28.2	100.0	227
Only sons	19.2	33.8	18.5	28.5	100.0	311
Both daughters and sons	18.3	31.0	17.9	32.8	100.0	1,142
Total	19.5	31.1	18.8	30.6	100.0	1,869

Note: Total includes 12 and 19 women belonging to Christian and 'other' religions, respectively, and 1 woman with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases

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, fertility by sociodemographic characteristics, pregnancy outcomes, 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. 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, information was collected 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 any birth interval of four or more years in order to prevent omission of births, especially of children who died soon after birth. Stillbirths, miscarriages, and induced abortions that occurred between live births were also recorded.

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 difficulties 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. In many parts of India, however, formal marriage is not always immediately followed by cohabitation. Rather, the husband and the wife only begin to cohabit after the *gauna* ceremony. Even in states where *gauna* is not practiced, a marriage may not be consummated immediately if it occurs at a very young age. 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. Accordingly, Table 4.1 presents information on the median age at first cohabitation to supplement the information on the median age at first marriage presented in Chapter 3. 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. If the median calculated for an age group lies above the lower limit of that age group, it is not valid because

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Table 4.1 Age at first cohabitation with husband

Median age at first cohabitation with husband among women age 20–49 years by current age and selected background characteristics, Bihar, 1998–99

Background characteristic	Current age						
	20–24	25–29	30–34	35–39	40–49	20–49	25–49
Residence							
Urban	19.5	18.3	17.5	17.6	17.2	18.0	17.6
Rural	17.0	16.6	16.5	16.4	16.4	16.6	16.5
Region							
North Bihar Plain	17.0	16.4	16.3	16.4	16.2	16.4	16.3
South Bihar Plain	17.7	17.3	17.2	17.1	17.1	17.3	17.2
Jharkhand	16.9	16.7	16.6	16.3	16.4	16.6	16.5
Education							
Illiterate	16.5	16.3	16.3	16.4	16.2	16.3	16.3
Literate, < middle school complete	18.3	17.0	17.5	16.6	17.0	17.3	17.0
Middle school complete	19.0	18.3	(17.1)	(16.8)	(17.3)	18.1	17.4
High school complete and above	NC	19.5	19.0	19.1	18.5	19.5	19.2
Religion							
Hindu	17.3	16.7	16.6	16.5	16.5	16.7	16.6
Muslim	16.7	16.4	16.4	16.7	16.1	16.5	16.4
Christian	*	*	*	*	*	19.0	18.9
Other	NC	*	*	*	*	17.3	(16.7)
Caste/tribe							
Scheduled caste	16.7	16.1	16.3	16.1	16.1	16.3	16.1
Scheduled tribe	16.8	17.0	16.5	16.7	16.8	16.8	16.8
Other backward class	17.0	16.7	16.4	16.4	16.3	16.6	16.5
Other	19.0	17.3	17.7	17.2	17.1	17.7	17.3
Standard of living index							
Low	16.4	16.2	16.3	16.3	16.2	16.3	16.2
Medium	17.9	17.1	16.7	16.6	16.5	16.9	16.7
High	NC	19.1	18.3	18.0	17.5	18.5	18.2
Total	17.2	16.7	16.6	16.5	16.5	16.7	16.6

NC: Not calculated because less than 50 percent of the women have started living with husband by age 20
( ) Based on 25–49 unweighted cases
*Median not shown; based on fewer than 25 unweighted cases

some younger women in the age group who have not yet begun to cohabit will not have reached the median age by the time of the survey. In such cases, the estimated median is biased and is not shown.

Table 4.1 shows that, in Bihar, the median age at first cohabitation with husband is 16.7 years for women age 20–49. The lowest median age at first cohabitation is 16.5 years for women age 35–49, and the highest is 17.2 years for women age 20–24, suggesting a modest increase of 0.7 years in the median age at first cohabitation over a period of approximately 20 years. The value of 17.2 for the younger age group is still low, however, suggesting that whatever decline in

fertility that has occurred in Bihar has resulted mainly from family limitation within marriage rather than from an increase in age at first cohabitation.

Table 4.1 also shows that the median age at first cohabitation is 1.4 years higher for urban women than for rural women. Over time, the median age at first cohabitation has risen in both urban and rural areas, but the rise has been greater in urban areas. Differentials by education in the median age at first cohabitation are even larger than differentials by residence. For example, for women age 20–49, the median age at first cohabitation ranges from 16.3 for illiterate women to 19.5 for women who have at least completed high school. Within education categories, the median age has increased over time among literate women, but not among illiterate women. By religion, the median age at first cohabitation for women age 20–49 ranges from 16.5 for Muslims to 19.0 for Christians. By caste/tribe, it ranges from 16.3 for scheduled-caste women to 17.7 for women in the 'other' category. The median age of first cohabitation increases steadily with the standard of living, from 16.3 for women living in households with a low standard of living to 18.5 for women living in households with a high standard of living.

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 Bihar 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 closer 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 women-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 five times the sum of all the ASFRs of the five-year age groups. The CBR is defined as the annual number of births per 1,000 population.

Based on estimates for the three-year period before NFHS-2, the CBR was 28.1 births per thousand population and the TFR (15–49) was 3.49 births per woman, as shown in Table 4.2. Both the CBR and TFR are considerably higher in rural areas than in urban areas (28.8 and 3.59 compared with 22.3 and 2.75, respectively).

Table 4.2 and Figure 4.1 show that ASFRs are higher in rural areas than in urban areas for all the age groups. The urban-rural differential in ASFRs for the 15–19 age group is highest. For the other age groups, urban-rural differences in ASFRs are relatively small. Sixty-five percent of urban total fertility and 57 percent of rural total fertility is concentrated in the prime childbearing ages of 20–29. There is also a substantial amount of early childbearing. Fertility at age 15–19 accounts for 13 percent of total fertility in urban areas, 17 percent in rural areas, and 16 percent overall. Fertility at ages 35 and older accounts for 5 percent of total fertility in urban areas, 11 percent in rural areas, and 10 percent overall.

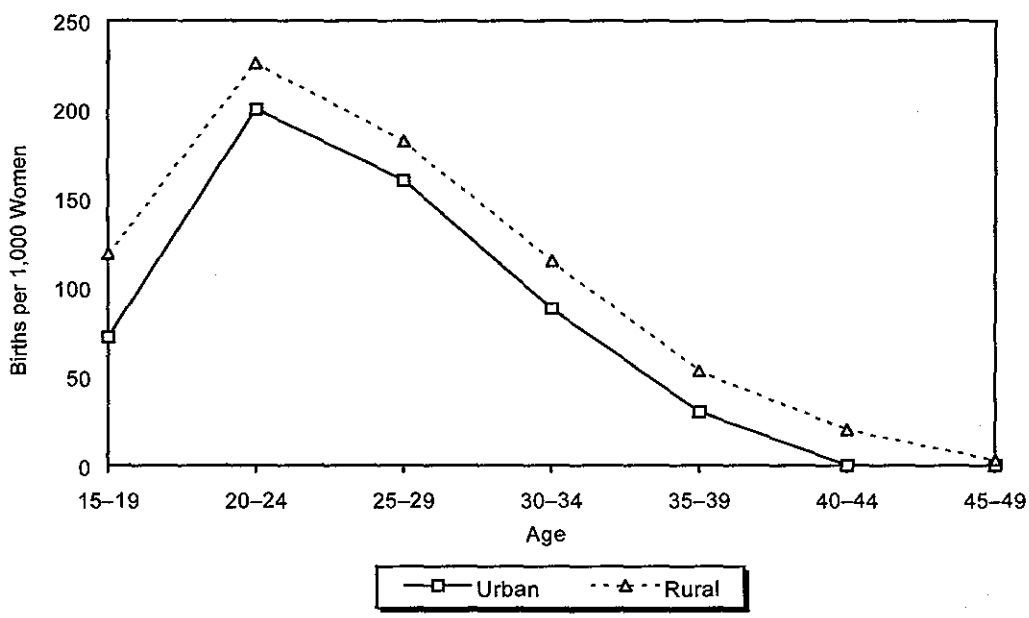
Table 4.2 Current fertility

Age-specific and total fertility rates and crude birth rates from NFHS-1, NFHS-2, and the SRS by residence, Bihar

	NFHS-1 (1990–92)	NFHS-2 (1996–98)			SRS (1997)		
Age	Total	Urban	Rural	Total	Urban	Rural	Total
15–19	0.121	0.072	0.119	0.113	0.037	0.057	0.055
20–24	0.241	0.200	0.226	0.223	0.183	0.250	0.242
25–29	0.190	0.160	0.182	0.180	0.187	0.236	0.231
30–34	0.141	0.088	0.115	0.112	0.121	0.185	0.178
35–39	0.078	0.030	0.053	0.050	0.056	0.104	0.099
40–44	0.026	0.000	0.020	0.018	0.029	0.055	0.052
45–49	(0.004)	(0.000)	0.003	0.002	0.006	0.017	0.015
TFR 15–44	3.98	2.75	3.57	3.48	3.07	4.44	4.29
TFR 15–49	4.00	2.75	3.59	3.49	3.10	4.52	4.36
CBR	32.1	22.3	28.8	28.1	23.6	32.7	31.7

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
( ) Based on 125–249 woman-years of exposure
Source for SRS: Office of the Registrar General, 1999a

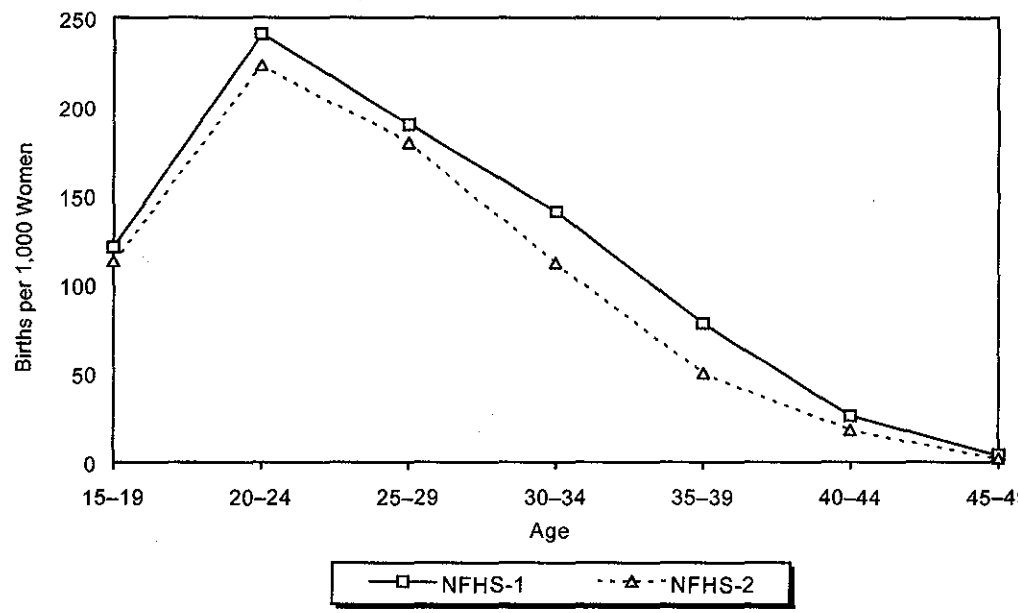
Figure 4.1
Age-Specific Fertility Rates by Residence



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

NFHS-2, Bihar, 1998–99

Figure 4.2
Age-Specific Fertility Rates
NFHS-1 and NFHS-2



Note: Rates are for the three years preceding the NFHS-1 (1990–92) and NFHS-2 (1996–98) surveys

Bihar

Based on estimates for the three-year periods preceding NFHS-1 and NFHS-2, the CBR fell from 32.1 to 28.1 between the two surveys, a decline of 12 percent in about six years. Over the same period, the TFR fell from 4.00 to 3.49, a decline of 13 percent. Table 4.2 and Figure 4.2 show that fertility fell for all age groups between the two surveys. Although fertility fell considerably for both 40–44 and 45–49 age groups from NFHS-1 to NFHS-2, fertility for these age groups was already low in NFHS-1, so that the fertility decline above age 40 had a very small impact on the CBR and the TFR during the six years between the two surveys.

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 (Office of the Registrar General, 1999a). The NFHS-2 estimate of the CBR, at 28.1, is lower than the SRS estimate of the CBR, at 31.7. Also, the NFHS-2 estimate of the TFR, at 3.49, is 0.87 children per woman lower than the SRS estimate, at 4.36. Differences between NFHS-2 and the SRS estimates may be attributed to different methodologies adopted in the collection of data on ages of women and their children. The greater discrepancy in rural areas may be caused by more age misreporting in rural areas, which tends to result in the displacement of births further into the past. Retrospective surveys such as NFHS-1 and NFHS-2 are subject to such displacement, whereas the SRS, in which births are recorded during the year in which they occur, is not. Narasimhan et al. (1997) compared NFHS-1 and SRS estimates of fertility and concluded that both are probably underestimates. Nonetheless, since the SRS estimates are not subject to displacement, they are likely to be closer to the true level of fertility than NFHS-1 estimates. This argument is probably equally valid for NFHS-2 estimates

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 ever-married women age 40–49 by selected background characteristics, Bihar, 1998–99

Background characteristic	Total fertility rate[1]	Percentage currently pregnant[2]	Mean number of children ever born to ever-married women age 40–49 years
Residence			
Urban	2.75	4.2	4.84
Rural	3.59	7.1	5.31
Region			
North Bihar Plain	3.82	7.4	5.40
South Bihar Plain	3.63	6.9	5.36
Jharkhand	2.76	5.2	4.83
Education			
Illiterate	3.78	7.6	5.41
Literate, < middle school complete	2.93	4.4	4.99
Middle school complete	2.69	3.5	*
High school complete and above	2.50	5.1	3.63
Religion			
Hindu	3.36	6.5	5.04
Muslim	4.44	8.0	6.41
Christian	(1.90)	5.2	*
Other	(2.41)	9.0	*
Caste/tribe			
Scheduled caste	3.91	7.9	5.44
Scheduled tribe	2.45	5.2	4.60
Other backward class	3.64	6.8	5.46
Other	3.13	6.2	4.81
Standard of living index			
Low	3.89	7.7	5.51
Medium	3.24	6.3	5.19
High	2.47	3.6	4.56
Total	3.49	6.7	5.25

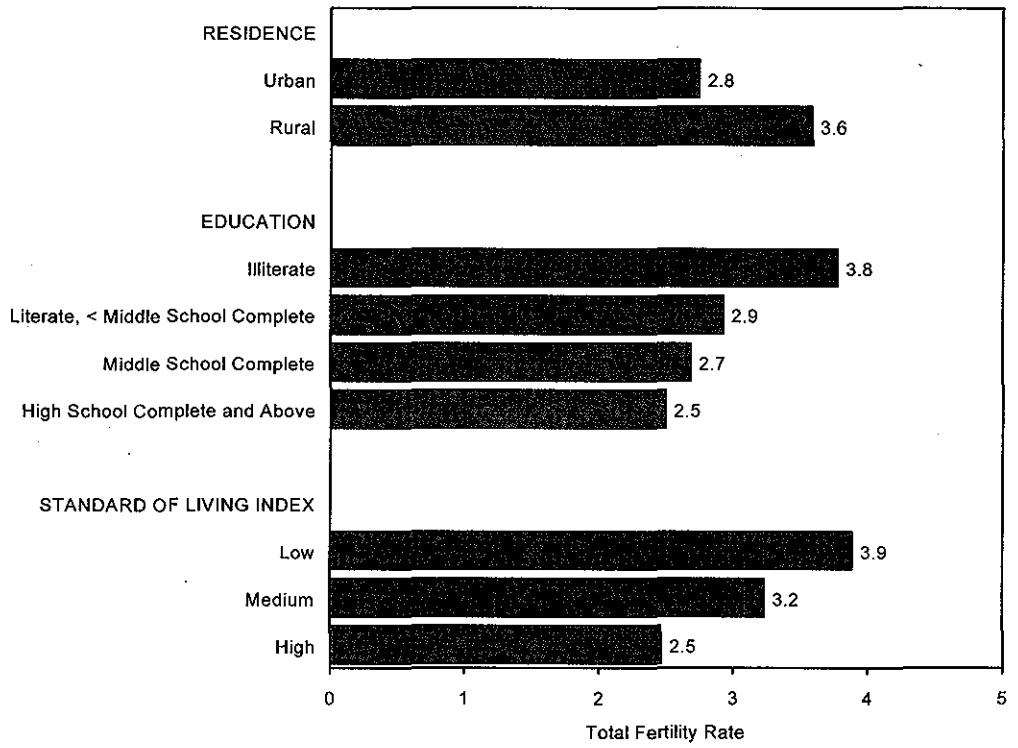
( ) Rate is based on 125–249 woman-years of exposure
*Mean not shown; based on fewer than 25 unweighted cases
[1]Rate for women age 15–49 years
[2]For this calculation, it is assumed that women who are never married, widowed, divorced, separated, or deserted are not currently pregnant.

of fertility as compared with the corresponding SRS estimates.

4.3 Fertility Differentials and Trends

Table 4.3 and Figure 4.3 show how the TFR, the percentage currently pregnant, and the mean number of children ever born to women age 40–49 vary by selected background characteristics. The TFR varies considerably by residence, being 0.84 children higher in rural areas than in urban areas. It varies substantially by education, being 1.28 children higher among illiterate women than among women who have at least completed high school. The TFR also varies substantially

Figure 4.3
Total Fertility Rate by Selected Background Characteristics



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

NFHS-2, Bihar, 1998–99

by religion, being 1.08 children higher among Muslims than among Hindus. By caste/tribe, the TFR is 0.78 children higher among scheduled-caste women and 0.51 children higher among other backward class women than among women in the 'other' category. The TFR is lowest, at 2.45, among scheduled-tribe women, 0.68 children lower than among women in the 'other' caste/tribe/class category. The characteristic showing the greatest variation is household standard of living. The TFR is 1.42 children higher among women living in households with a low standard of living than among women living in households with a high standard of living. These results indicate that fertility differentials by background characteristics remain quite substantial in Bihar.

Differentials in the percentage of all women who are currently pregnant are larger than the differentials in the TFR. The percentage currently pregnant is much higher in rural areas compared with urban areas. The percentage currently pregnant is also higher among illiterate women than among literate women. Muslims have higher fertility than Hindus, and they also have higher percentages currently pregnant. As in the case of fertility, the proportion currently pregnant is highest among scheduled-caste women and lowest among scheduled-tribe women, and it declines rapidly with increase in the household standard of living index.

The last column of Table 4.3 shows the mean number of children ever born to ever-married women age 40–49 at the time of the survey. Because only women age 40–49 are

considered, age variations among the different categories of women do not affect the interpretation of differentials. In each case, the pattern of differentials in the mean number of children ever born parallels the pattern of differentials in the TFR. The mean number of children ever born is higher among rural women than among urban women. As in the case of the total fertility rate, Muslims have by far the highest mean number of children ever born of all categories of women.

Table 4.4 shows fertility trends for five-year time periods preceding the survey. It is not possible to show TFRs because of progressively greater age truncation as one goes back in time. In NFHS-2, birth histories were collected only for women age 15–49. This means that for the period 5–9 years before the survey it is not possible to compute an ASFR for age 45–49. Similarly, for the period 10–14 years preceding the survey, it is not possible to compute ASFRs for the oldest two age groups, and for the period 15–19 years preceding the survey, it is not possible to compute ASFRs for the oldest three age groups. Thus Table 4.4 shows only the truncated trends in ASFRs. Results are shown separately for urban and rural areas as well as for the entire state. These results show considerable fertility declines in all age groups over a 15-year period in both urban and rural areas. The proportionate decline is somewhat greater at the older reproductive ages.

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 5.16 to 3.65 over the five year period, a decline of 1.5 children. The decline was 1.1 for urban areas and 1.6 for rural areas, indicating that fertility fell more rapidly in rural areas than in urban areas during the five years before the survey. This is to be expected because the practice of family limitation tends to start in urban areas and spread to rural areas. It should be noted that these estimated fertility declines may exaggerate to some degree the magnitude of the decline between these two five-year periods because there is considerable age misreporting in Bihar which could result in displacement of births from the first five-year period into the second five-year period before the survey (Narasimhan et al. 1997).

Another way of looking at fertility is to calculate fertility rates by years since first cohabitation. These rates are measures of marital fertility, i.e., fertility within marriage. Table 4.5 shows fertility rates by duration of cohabitation for ever-married women for four five-year periods preceding the survey[1]. Fertility has declined for all durations, but more so for the longer durations. The limited fertility decline during the first 0–4 years after cohabitation is typical of populations in which contraception is initiated only after the first birth or later, as is the case in Bihar (see Table 5.5). The declines in fertility rates by duration confirm the earlier observation that fertility within marriage has declined to some extent in Bihar.

[1]Because NFHS-2 collected information only on a woman's age at the time of first cohabitation and not 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 4.4 Fertility trends

Age-specific fertility rates for five-year periods preceding the survey by residence, Bihar, 1998–99

	Years preceding survey			
Age	0–4	5–9	10–14	15–19
		URBAN		
15–19	0.080	0.130	0.183	0.164
20–24	0.214	0.267	0.301	0.287
25–29	0.170	0.221	0.278	0.262
30–34	0.101	0.127	0.156	[0.164]
35–39	0.033	0.071	[0.068]	U
40–44	0.007	[0.036]	U	U
45–49	[0.000]	U	U	U
		RURAL		
15–19	0.134	0.198	0.198	0.176
20–24	0.244	0.330	0.314	0.298
25–29	0.198	0.266	0.275	0.266
30–34	0.113	0.175	0.176	[0.186]
35–39	0.057	0.091	[0.107]	U
40–44	0.021	[0.047]	U	U
45–49	[0.002]	U	U	U
		TOTAL		
15–19	0.128	0.191	0.196	0.175
20–24	0.241	0.323	0.313	0.297
25–29	0.195	0.260	0.275	0.266
30–34	0.111	0.169	0.174	[0.184]
35–39	0.054	0.089	[0.102]	U
40–44	0.019	[0.046]	U	U
45–49	[0.002]	U	U	U

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

It is also evident from Table 4.5 that marital fertility is lower in urban areas than in rural areas for most durations and time periods. During the first five years after cohabitation, however, urban women have higher fertility than rural women for most of the time periods. This pattern is not uncommon in populations in which the age at first cohabitation is higher in urban areas than in rural areas, as is the case in Bihar (Table 4.1). Women who marry when they are older tend to have their first birth sooner after marriage and concentrate their births earlier in their marriages than women who marry when they are younger (Basu, 1993; Pandey et al., 1990). In addition, because breastfeeding is shorter in urban areas (see Table 7.8), another contributing factor may be a shorter period of postpartum amenorrhoea, which results in shorter birth intervals in the absence of birth control (which is rarely practised during the first few years of marriage in Bihar).

Table 4.5 Fertility by marital duration

Fertility rates for ever-married women by duration since first cohabitation with husband (in years) and residence for five-year periods preceding the survey, Bihar, 1998–99

Duration since first cohabitation (in years)	Years preceding survey			
	0–4	5–9	10–14	15–19
		URBAN		
< 5	0.324	0.314	0.357	0.309
5–9	0.214	0.285	0.312	0.283
10–14	0.139	0.191	0.214	0.255
15–19	0.077	0.107	0.158	*
20–24	0.019	0.056	*	*
25–29	0.009	*	*	U
		RURAL		
< 5	0.274	0.323	0.315	0.283
5–9	0.247	0.341	0.317	0.302
10–14	0.172	0.233	0.249	0.245
15–19	0.097	0.155	0.160	0.186
20–24	0.050	0.080	0.105	*
25–29	0.017	0.034	*	U
		TOTAL		
< 5	0.279	0.323	0.319	0.286
5–9	0.244	0.335	0.316	0.300
10–14	0.169	0.228	0.245	0.246
15–19	0.094	0.149	0.160	0.185
20–24	0.046	0.077	0.104	*
25–29	0.016	0.034	*	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 the number of children ever born (CEB) to all women and to currently married women by women's age at the time of the survey. The table also shows the mean number of children ever born and the mean number of living children by women's age.

Among women age 15–49 in Bihar, the mean number of children ever born is 2.8 for all women, irrespective of marital status, and 3.3 for currently married women. The mean number of children ever born increases steadily with age, reaching a high of 5.3 children among all women age 45–49 and 5.5 among currently married women in this age group. The table also shows that early childbearing is common in Bihar. Nineteen percent of all women age 15–19 have already had a child.

Table 4.6 Children ever born and living

Percent distribution of all women and of currently married women by number of children ever born (CEB) and mean number of children ever born and living, according to age, Bihar, 1998–99

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	81.0	14.3	4.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,888	0.24	0.22
20–24	29.8	24.4	25.6	14.3	5.1	0.6	0.1	0.0	0.0	0.0	0.0	100.0	1,647	1.43	1.27
25–29	9.0	8.3	20.5	25.1	19.7	10.9	4.7	1.3	0.3	0.1	0.1	100.0	1,467	2.99	2.69
30–34	3.7	5.8	9.8	19.0	21.5	16.4	12.6	6.9	2.9	1.1	0.3	100.0	1,097	4.10	3.59
35–39	3.6	2.6	9.3	16.6	18.9	17.9	13.7	7.8	5.3	3.2	1.3	100.0	925	4.57	3.97
40–44	2.0	2.9	6.5	10.3	17.5	19.7	14.0	12.3	6.2	4.5	4.1	100.0	760	5.19	4.48
45–49	2.1	3.0	5.7	9.9	19.7	15.1	15.1	11.2	7.5	5.1	5.6	100.0	595	5.34	4.37
Total	26.9	11.0	12.9	13.3	12.3	9.0	6.3	3.9	2.1	1.3	1.0	100.0	8,380	2.75	2.39
CURRENTLY MARRIED WOMEN															
15–19	56.1	33.0	9.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	802	0.56	0.51
20–24	18.2	28.4	29.9	16.8	5.8	0.7	0.2	0.0	0.0	0.0	0.0	100.0	1,379	1.66	1.48
25–29	5.7	8.3	21.2	25.9	20.8	11.3	5.0	1.4	0.3	0.1	0.1	100.0	1,373	3.11	2.80
30–34	2.3	5.4	9.7	19.2	21.6	17.1	12.9	7.3	3.1	1.2	0.3	100.0	1,027	4.21	3.68
35–39	2.5	2.2	9.1	16.1	19.8	18.1	13.9	8.1	5.7	3.2	1.3	100.0	859	4.67	4.07
40–44	2.0	2.7	5.5	10.3	17.7	19.5	14.4	12.5	6.5	4.9	4.2	100.0	698	5.26	4.56
45–49	1.5	2.1	5.0	10.2	19.2	15.2	16.2	11.2	7.9	5.4	6.0	100.0	522	5.48	4.51
Total	12.7	13.1	15.4	15.9	14.7	10.7	7.6	4.6	2.6	1.6	1.1	100.0	6,661	3.29	2.87

For women age 45–49, the number of children ever born is of particular interest because these women have virtually completed their childbearing. Among all women in this age group, irrespective of marital status, the modal number of children is four. Twenty percent of these women have reached the end of childbearing with four children ever born. Among currently married women age 45–49, the modal number of children is also four. Nineteen percent of these women have reached the end of childbearing with four children ever born. Only two percent of currently married women age 45–49 have never given birth. This suggests that primary infertility (which is the proportion of couples who are unable to have any children) is very low in Bihar.

Among all women age 15–49, the average number of dead children per woman is 0.36. Among currently married women it is 0.42. Thirteen percent of children ever born to currently married women have died. The proportion of children ever born who have died increases with women's age. Among currently married women, for example, the proportion of children ever born who have died increases from 9 percent for women age 15–19 to 18 percent for women age 45–49.

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 before the survey by birth order for selected background characteristics. Twenty-three percent of all births are first-order births, 22 percent are second-order births, 17 percent are third-order births, and 37 percent are of order four or higher.

The highest proportion of births to mothers age 15–19 are of order one; by contrast, the highest proportion births to mothers age 30–49 are of order four or higher. The proportion of births that are of order four or higher is 29 percent in urban areas and 38 percent in rural areas. The proportion of births of order four or higher is relatively large for births to illiterate women, Muslim women, and scheduled-caste and scheduled-tribe women. By work status, 51–56 percent of births to women who work are of order four or higher compared with 33 percent among women who did not work in the past 12 months. This suggests a positive association between fertility and work status that requires further investigation. Among women with a low standard of living, the proportion of births of order four or higher is 44 percent, compared with 18 percent among women with a high standard of living.

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).

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 Bihar, 11 percent of births occur within 18 months of a previous birth, and 25 percent occur within 24 months. Forty percent of births occur after an interval of three years or more.

Table 4.7 Birth order

Percent distribution of births during the three years preceding the survey by birth order, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Birth order 1	2	3	4+	Total percent	Number of births
Mother's current age						
15–19	75.6	21.9	2.4	0.0	100.0	371
20–29	20.6	28.8	23.6	27.0	100.0	1,924
30–39	1.2	3.2	8.0	87.6	100.0	593
40–49	0.0	0.0	4.6	95.4	100.0	66
Residence						
Urban	32.8	20.2	18.4	28.6	100.0	259
Rural	22.2	22.3	17.3	38.1	100.0	2,695
Region						
North Bihar Plain	23.0	22.0	15.8	39.2	100.0	1,380
South Bihar Plain	22.8	22.3	17.6	37.3	100.0	983
Jharkhand	24.1	22.1	20.8	32.9	100.0	591
Mother's education						
Illiterate	20.3	19.6	17.1	43.0	100.0	2,267
Literate, < middle school complete	28.2	27.0	18.8	26.0	100.0	282
Middle school complete	33.0	28.9	19.3	18.8	100.0	127
High school complete and above	36.7	34.9	17.9	10.5	100.0	277
Religion						
Hindu	24.2	22.5	18.2	35.1	100.0	2,384
Muslim	18.5	21.1	13.0	47.4	100.0	533
Caste/tribe						
Scheduled caste	22.0	21.2	16.5	40.3	100.0	672
Scheduled tribe	22.4	16.6	21.0	40.0	100.0	197
Other backward class	22.9	22.1	18.3	36.8	100.0	1,550
Other	25.7	25.6	14.7	34.0	100.0	534
Mother's work status						
Working in family farm/business	11.5	17.1	17.1	54.3	100.0	231
Employed by someone else	15.1	14.7	19.2	51.0	100.0	291
Self-employed	11.4	20.3	12.6	55.7	100.0	135
Not worked in past 12 months	26.1	23.7	17.5	32.8	100.0	2,296
Standard of living index						
Low	19.9	19.4	17.0	43.8	100.0	1,680
Medium	26.0	23.7	19.1	31.3	100.0	1,030
High	33.9	34.7	13.8	17.7	100.0	237
Total	23.2	22.1	17.4	37.3	100.0	2,954

Note: Total includes 17 and 20 births to mothers belonging to Christian and 'other' religions, respectively, and 6 births with missing information on the standard of living index, who are not shown separately.

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, Bihar, 1998–99

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									
15–19	6.3	19.9	13.8	35.4	19.6	5.0	100.0	26.0	97
20–29	2.5	8.9	15.8	36.3	20.7	15.9	100.0	31.3	2,492
30–39	2.1	5.6	12.9	31.3	22.6	25.4	100.0	35.1	1,184
40–49	1.7	9.4	9.9	26.8	18.9	33.2	100.0	36.5	169
Residence									
Urban	2.7	10.6	17.6	31.7	17.5	20.0	100.0	30.0	317
Rural	2.4	8.0	14.3	34.6	21.5	19.2	100.0	32.5	3,625
Region									
North Bihar Plain	2.2	6.8	13.1	36.9	21.8	19.1	100.0	33.0	1,775
South Bihar Plain	2.9	10.0	16.4	33.0	19.5	18.2	100.0	30.8	1,349
Jharkhand	2.2	8.1	14.9	31.3	22.4	21.1	100.0	33.2	818
Mother's education									
Illiterate	2.3	7.9	13.8	34.1	21.8	20.1	100.0	33.0	3,191
Literate, < middle school complete	3.2	8.4	17.0	36.5	18.8	16.2	100.0	30.3	356
Middle school complete	3.2	9.6	16.5	30.8	22.4	17.6	100.0	31.2	127
High school complete and above	1.8	11.3	20.1	37.2	15.7	13.9	100.0	29.1	268
Religion									
Hindu	2.3	7.8	14.4	34.6	21.3	19.7	100.0	32.4	3,125
Muslim	2.9	9.8	15.6	33.7	20.4	17.6	100.0	32.0	765
Other	(3.9)	(15.6)	(11.6)	(37.9)	(19.5)	(11.5)	100.0	(27.9)	28
Caste/tribe									
Scheduled caste	2.1	8.8	12.0	37.1	21.4	18.5	100.0	32.5	893
Scheduled tribe	2.5	8.9	13.4	32.8	20.7	21.6	100.0	32.7	296
Other backward class	2.5	7.6	15.2	33.9	21.9	18.9	100.0	32.5	2,082
Other	2.4	9.1	16.6	33.0	18.8	20.1	100.0	31.6	671
Standard of living index									
Low	2.2	7.6	13.1	34.9	22.1	20.1	100.0	33.1	2,385
Medium	2.6	8.6	16.5	33.9	20.2	18.1	100.0	32.0	1,293
High	3.1	11.6	18.9	32.7	16.8	16.9	100.0	28.1	261
Order of previous birth									
1	2.4	9.6	15.0	33.1	20.5	19.4	100.0	32.1	1,086
2	2.1	7.5	14.3	37.6	21.7	16.9	100.0	32.3	907
3	2.4	8.3	16.2	32.8	20.0	20.3	100.0	31.8	695
4+	2.7	7.5	13.5	34.1	21.9	20.3	100.0	33.0	1,254
Sex of previous birth									
Male	2.1	8.0	15.0	34.8	21.0	19.1	100.0	32.2	1,937
Female	2.7	8.4	14.2	34.0	21.3	19.4	100.0	32.5	2,005
Survival of previous birth									
Living	1.9	6.8	14.6	34.3	22.0	20.4	100.0	33.2	3,465
Dead	6.0	18.2	14.8	34.8	15.3	10.8	100.0	26.5	477
Total	2.4	8.2	14.6	34.4	21.2	19.2	100.0	32.3	3,942

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 24 births to mothers belonging to the Christian religion and 3 births with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases

The median birth interval in Bihar is 32 months. The median birth interval for women age 15–19 is 26 months, which is substantially lower than the median interval of 37 months for women age 40–49. The relatively short birth interval for women age 15–19 at the time of the survey may result partly from a selection effect: Only women who have had two or more births are included in the table, and women age 15–19 with more than one birth are likely to be more fecund than average. 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. Perhaps this is due to the absence of the selection effect just noted in the case of age. There may also be another type of selection effect operating: Mothers of higher-order births may be more fecund, on average, than mothers of lower-order births.

The median birth interval varies little by sex of previous child. Birth intervals are much shorter if the previous child died (27 months) than if the previous child survived (33 months). In part, this reflects the shortening of postpartum amenorrhoea that occurs when the preceding child dies in infancy and breastfeeding stops prematurely. Women are also less likely to use temporary methods of contraception to postpone fertility if the previous child died and they want to replace the dead child. Temporary methods of contraception are used by very few women in Bihar, however, so that the main effect is probably through prematurely terminated breastfeeding.

Birth intervals are three months shorter among urban women than among rural women, perhaps because breastfeeding is shorter among urban women. There is also a tendency for birth intervals to decrease with education. Mothers with at least a high school education have a median birth interval that is four months shorter than the interval for illiterate mothers. It is significant to note that a greater proportion of births occur within 24 months among mothers with at least high school education (33 percent) than among illiterate mothers (24 percent). Similarly, mothers living in households with a high standard of living have a median birth interval that is five months shorter than the interval for mothers who live in households with a low standard of living. Differences in birth intervals by religion and caste/tribe of household head tend to be small.

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. The median age at first birth for any group of women is defined in this table 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. If the median age at first birth calculated for an age group lies above the lower limit of that age group, it is not valid because some younger women in the age group who have not yet had a first birth will not have reached the median age by the time of the survey. In such cases, the estimate of the median is not shown.

As shown in the last row of the table, the median age at first birth in the state as a whole has increased in recent years. This is shown by the fact that the median increases from 18.9 years for women age 25–29 to 19.6 years for women age 20–24.

Among all women age 25–49, the median age at first birth is 0.8 years higher in urban areas than in rural areas. Hindu women have a slightly higher median age at first birth (19.0

Table 4.9 Median age at first birth

Median age at first birth among women age 20–49 years by current age and selected background characteristics, Bihar, 1998–99

Background characteristic	Current age							
	20–24	25–29	30–34	35–39	40–44	45–49	20–49	25–49
Residence								
Urban	NC	20.3	19.7	19.4	19.6	18.9	NC	19.7
Rural	19.4	18.8	18.9	18.9	18.8	18.8	19.0	18.9
Region								
North Bihar Plain	19.3	18.5	18.6	18.8	18.6	18.4	18.7	18.6
South Bihar Plain	19.9	19.4	19.6	19.5	19.3	19.8	19.6	19.5
Jharkhand	19.6	19.0	18.7	18.6	18.8	18.7	19.0	18.8
Education								
Illiterate	18.9	18.5	18.6	18.8	18.8	18.6	18.7	18.7
Literate, < middle school complete	NC	19.0	19.6	18.8	18.6	19.6	19.3	19.1
Middle school complete	NC	19.7	(19.5)	*	*	*	20.0	19.7
High school complete and above	NC	21.5	21.1	21.9	(21.1)	*	NC	21.4
Religion								
Hindu	19.6	18.9	19.1	19.0	18.9	19.0	19.1	19.0
Muslim	19.1	18.6	18.7	18.8	18.9	17.7	18.7	18.6
Christian	*	*	*	*	*	*	NC	(20.5)
Other	NC	*	*	*	*	*	(19.8)	(19.1)
Caste/tribe								
Scheduled caste	19.1	18.5	18.6	18.5	18.5	18.2	18.6	18.5
Scheduled tribe	19.5	19.1	18.7	19.4	19.5	(18.7)	19.1	19.0
Other backward class	19.3	18.9	18.9	19.0	18.8	18.9	19.0	18.9
Other	NC	19.3	19.7	19.3	19.3	19.4	19.8	19.4
Standard of living index								
Low	18.8	18.3	18.5	18.8	18.8	18.8	18.6	18.6
Medium	19.9	19.3	19.3	18.8	18.8	18.8	19.3	19.1
High	NC	21.1	20.3	20.5	19.5	18.8	NC	20.2
Total	19.6	18.9	19.0	19.0	18.9	18.8	19.1	18.9

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

years) than Muslim women (18.6 years). By caste/tribe, the 'other' category has a median of 19.4, which is 0.9 years higher than the median for scheduled-caste women, 0.4 years higher than the median for scheduled-tribe women, and 0.5 years higher than the median for women from other backward classes. Women living in households with a high standard of living have a median age at first birth of 20.2, which is 1.6 years higher than the median for women living in households with a low standard of living. The differentials by education are also substantial. The median age at first birth is 18.7 years among illiterate women compared with 21.4 years among women who have at least completed high school.

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 in the age group 40–49 by age at last

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, Bihar, 1998–99

Current age	No birth	Age at last birth							Total percent	Median age at last birth	Number of women
		< 20	20–24	25–29	30–34	35–39	40–44	45–49			
40–44	1.9	1.8	11.4	28.9	28.3	23.4	4.3	NA	100.0	31.3	759
45–49	1.9	2.6	8.4	26.2	27.8	21.8	10.9	0.5	100.0	31.6	593
40–49	1.9	2.2	10.1	27.7	28.1	22.7	7.2	0.2	100.0	31.4	1,353

NA: Not applicable

birth, as well as the median age at last birth. Although a few of these women may have another birth later on, the very low fertility rates for women in this age group suggest that childbearing is virtually complete by these ages. Seventy percent of women (including women who never gave birth) had their last birth by age 35, and 93 percent by age 40. The median age at last birth in Bihar for women age 40–49 is 31.4 years. It is 31.3 for women age 40–44 and 31.6 for women age 45–49. The difference between the median age at first birth and the median age at last birth provides an estimate of the typical reproductive age span. Among women age 45–49, this estimated reproductive age span is the difference between 18.8 and 31.6, or 12.8 years.

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 if they are not at risk of conception because they are amenorrhoeic, are abstaining from sexual relations, or both, following a birth.

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 number of months since birth. These distributions are based on current status information, i.e., on the proportions of births occurring within the 36 months before the survey whose mothers were amenorrhoeic, abstaining, and 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 two-month intervals to minimize fluctuations in the distributions. Median and mean durations of amenorrhoea, abstinence, and insusceptibility are also shown in the table. 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.

Ninety-five percent of all women who had a birth in the two months before the survey are still amenorrhoeic, and 82 percent of women who had a birth 2–3 months before the survey are still amenorrhoeic. The proportion amenorrhoeic gradually decreases as the number of months

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, Bihar, 1998–99

Months since birth	Percentage of births whose mothers are: Amenorrhoeic	Abstaining	Insusceptible	Number of births
< 2	94.5	84.0	96.4	144
2–3	82.2	51.8	87.4	239
4–5	72.0	33.7	75.9	215
6–7	60.1	19.6	63.4	185
8–9	63.3	13.6	67.3	129
10–11	55.7	13.6	58.6	107
12–13	47.3	8.1	51.0	186
14–15	32.5	9.4	36.6	213
16–17	21.5	7.4	25.5	180
18–19	25.9	3.5	27.9	148
20–21	24.5	1.7	24.5	114
22–23	24.0	5.1	28.1	99
24–25	14.9	5.0	18.5	140
26–27	7.2	2.9	9.4	149
28–29	5.3	1.9	7.2	168
30–31	10.0	2.4	11.9	209
32–33	5.0	0.6	5.6	158
34–35	4.3	3.6	7.9	143
Median[1]	11.3	2.9	11.9	NA
Mean	13.3	5.7	14.3	NA
Prevalence/incidence mean	13.4	5.7	14.4	NA

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

since last birth increases. About one-half (47 percent) of all women who had births 12–13 months before the survey are still amenorrhoeic, but the proportion amenorrhoeic drops off rapidly thereafter. More than four-fifths of all mothers abstain from sexual intercourse within two months after the birth of a child. The proportion abstaining at all durations is substantially lower than the proportion amenorrhoeic. About one-third of all women still abstain from sexual intercourse 4–5 months after a birth, but this percentage drops off rapidly at longer durations. Overall, when amenorrhoea and abstinence are considered together, half of women become susceptible to pregnancy by 12–13 months after giving birth, and about three-fourths become susceptible by 16–17 months.

The median and mean durations of insusceptibility are 11.9 and 14.3 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 somewhat higher than the median. The median duration of amenorrhoea (11.3 months) is almost four times as high as the median duration of abstinence (2.9 months). The results indicate that women in Bihar remain nonsusceptible to conception for a little more than one year after a birth, primarily due to the effect of postpartum amenorrhoea.

Table 4.12 Menopause

Percentage of currently married women age 30–49 years who are in menopause by age and residence, Bihar, 1998–99

	Urban		Rural		Total	
Age	Percentage	Number	Percentage	Number	Percentage	Number
30–34	4.4	124	2.7	903	2.9	1,027
35–39	5.9	107	9.7	753	9.2	859
40–41	(30.0)	31	22.9	268	23.6	299
42–43	(42.1)	39	34.0	227	35.2	266
44–45	(60.4)	32	49.8	224	51.1	256
46–47	(53.5)	27	61.7	190	60.7	217
48–49	*	22	75.1	159	75.8	181
30–49	23.3	382	21.4	2,725	21.7	3,107

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.
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases

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 increasing proportions 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 for women age 30–49. In Bihar, menopause is not common for women in their thirties, but its incidence increases rapidly after age 40. By age 42–43, slightly over one-third of women are in menopause, and the proportion rises to over three-fourths for women age 48–49. The onset of menopause appears to be later in rural areas, but this observation is based on a fairly small number of women in some of the age groups.

4.9 Desire for More Children

In order to obtain information on fertility preferences, NFHS-2 asked nonsterilized, currently married, nonpregnant 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 4.4 show future fertility preferences of currently married women, classified by their number of living children. Overall, 30 percent of currently married women say that they do not want any more children, an additional 20 percent cannot have another child because either the wife or the husband has been sterilized, and 6 percent of woman say that they cannot get pregnant (that is, they are 'declared infecund'). One-third of the women say they

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 and residence, Bihar, 1998–99

Desire for children	Number of living children[1] 0	1	2	3	4+	Total
			URBAN			
Desire for additional child						
Wants another soon[2]	65.4	22.1	5.0	0.9	2.0	10.8
Wants another later[3]	15.2	56.3	14.8	10.3	2.0	15.9
Wants another, undecided when	11.5	7.5	0.8	2.5	2.4	3.7
Undecided	0.0	0.0	0.9	1.6	0.4	0.6
Up to God	4.1	1.9	2.6	2.4	1.6	2.2
Wants no more	0.0	5.6	42.1	35.4	41.1	31.1
Sterilized	2.0	1.9	27.1	40.1	40.1	28.3
Declared infecund	1.8	4.6	6.7	6.7	10.4	7.4
Missing	0.0	0.0	0.0	0.0	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	54	112	125	122	263	677
Preferred sex of additional child[4]						
Boy	(47.6)	52.5	(55.6)	*	*	56.9
Girl	(0.0)	20.1	(24.1)	*	*	13.3
Doesn't matter	(14.5)	8.6	(3.8)	*	*	8.2
Up to God	(38.0)	18.8	(16.5)	*	7.1	21.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more[4]	50	84	26	15	15	189
			RURAL			
Desire for additional child						
Wants another soon[2]	69.4	28.4	17.5	7.9	3.1	18.1
Wants another later[3]	7.9	42.7	27.3	11.6	3.8	15.8
Wants another, undecided when	14.0	13.9	7.9	3.9	2.0	6.6
Undecided	0.7	0.9	0.8	0.9	0.7	0.8
Up to God	4.6	6.1	3.7	2.9	3.6	4.0
Wants no more	0.6	4.2	22.6	37.2	50.2	30.1
Sterilized	0.3	1.7	16.5	30.4	28.2	19.2
Declared infecund	2.6	2.1	3.8	5.2	8.4	5.4
Missing	0.0	0.0	0.0	0.1	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	696	928	1,038	1,097	2,226	5,984
Preferred sex of additional child[4]						
Boy	51.7	59.1	62.4	81.3	74.4	61.0
Girl	0.4	11.6	14.1	7.6	8.2	8.2
Doesn't matter	15.1	6.5	4.2	2.3	1.9	7.8
Up to God	32.8	22.8	19.2	8.7	15.5	23.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more[4]	640	651	471	216	167	2,145

Table 4.13 Fertility preferences (contd.)

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children and residence, Bihar, 1998–99

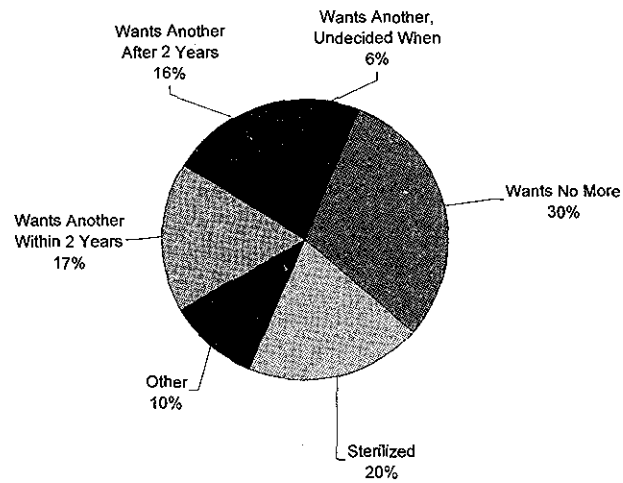
Desire for children	Number of living children[1]					Total
	0	1	2	3	4+	
		TOTAL				
Desire for additional child						
Wants another soon[2]	69.1	27.7	16.1	7.2	2.9	17.3
Wants another later[3]	8.4	44.2	25.9	11.5	3.7	15.8
Wants another, undecided when	13.8	13.2	7.2	3.7	2.0	6.3
Undecided	0.7	0.8	0.8	1.0	0.7	0.8
Up to God	4.6	5.7	3.6	2.8	3.4	3.8
Wants no more	0.5	4.4	24.7	37.0	49.2	30.2
Sterilized	0.4	1.7	17.6	31.4	29.5	20.1
Declared infecund	2.5	2.4	4.1	5.4	8.6	5.6
Missing	0.0	0.0	0.0	0.1	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	750	1,040	1,163	1,220	2,489	6,661
Preferred sex of additional child[4]						
Boy	51.4	58.3	62.1	81.6	75.4	60.7
Girl	0.4	12.6	14.6	7.6	8.1	8.6
Doesn't matter	15.0	6.8	4.2	2.2	1.8	7.8
Up to God	33.2	22.3	19.1	8.6	14.8	22.9
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more[4]	690	735	497	231	182	2,334

( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases
[1]Includes current pregnancy, if any
[2]Wants next birth within 2 years
[3]Wants to delay next birth for 2 or more years
[4]Excludes currently pregnant women

would like to have another child. Seventeen percent want a child within two years, and 16 percent want to wait at least two years before the birth of the next child. The desire to stop childbearing increases rapidly with the number of living children. Only 1 percent of women with no living children do not want any children (the woman or her husband is sterilized or the woman says she wants no more children) compared with 42 percent of women with two living children and 68 percent or more of women with three or more living children. About 4 percent of women say that the decision about having any (more) children is up to God. Overall, 66 percent of women want to either space their next birth, are sterilized, or do not want any more children. This proportion is 75 percent in urban areas and 65 percent in rural areas.

The desire to have a child within two years drops rapidly with the number of living children, from 69 percent for women without any living children to 7 percent or less for women with three or more living children. Forty-four percent of women with one living child (56 percent in urban areas and 43 percent in rural areas) would like to wait at least two years before having the next child. And yet, as will be seen in the next chapter, very few women in Bihar use any temporary method of contraception. These findings suggest that encouraging the use of

Figure 4.4
Fertility Preferences Among Currently Married Women



Note: Percents add to less than 100.0 due to rounding

NFHS-2, Bihar, 1998–99

temporary methods would lower overall fertility and population growth, as well as provide health benefits to mothers and their children through increased birth spacing.

Sixty-one percent of women who want another child say they want the next child to be a boy, 9 percent say they want the child to be a girl, and the rest say that the sex of the child does not matter (8 percent) or that it is up to God (23 percent). Irrespective of their number of living children, women are much more likely to express a desire for a son than for a daughter, indicating a strong preference for sons in Bihar. In addition, the proportion of women expressing a desire specifically for a son increases with the number of living children. Among women who have no living children, very few women (less than one-half of one percent) express a specific desire for a daughter, 15 percent say it does not matter whether they have a son or a daughter, and 33 percent say it is up to God. Even among this group, 51 percent say they would like their first child to be a boy.

Table 4.14 provides information about differentials in the desire to limit family size by selected background characteristics. Women who are sterilized (or whose husbands are sterilized) are included among those who say they want no more children. As expected, older women are much more likely than younger women to want no more children. Already by age 25–34, 61 percent of women want no more children. The proportion who want no more children is somewhat higher among urban women (59 percent) than among rural women (49 percent). The proportion who want no more children is higher among Hindus (53 percent) than among Christians (45 percent) or Muslims (38 percent). By caste/tribe, the proportion who want no more

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, Bihar, 1998–99

Background characteristic	Number of living children[1] 0	1	2	3	4+	Total
Age						
15–24	0.2	2.4	28.2	55.0	73.6	15.7
25–34	2.1	9.8	47.0	68.3	77.5	60.5
35–49	6.7	36.5	70.4	76.8	79.8	75.1
Residence						
Urban	2.0	7.5	69.2	75.5	81.2	59.4
Rural	0.8	5.9	39.1	67.6	78.4	49.4
Region						
North Bihar Plain	1.1	6.6	43.0	69.4	79.3	51.3
South Bihar Plain	1.4	3.8	40.1	63.0	77.0	48.1
Jharkhand	0.0	8.2	43.8	72.7	79.9	51.6
Education						
Illiterate	1.1	5.9	33.8	63.9	77.5	49.4
Literate, < middle school complete	1.0	4.8	45.8	79.0	84.9	54.7
Middle school complete	(0.0)	(4.5)	58.2	83.7	81.4	48.5
High school complete and above	0.0	9.1	72.3	83.0	88.1	53.9
Religion						
Hindu	0.9	6.2	45.1	70.6	83.4	52.6
Muslim	1.0	3.4	25.5	48.3	59.4	38.4
Christian	*	*	*	*	*	44.9
Other	*	*	*	*	*	(42.0)
Caste/tribe						
Scheduled caste	1.2	5.8	31.4	64.0	82.0	48.1
Scheduled tribe	0.0	6.5	36.1	58.6	70.0	40.9
Other backward class	1.0	5.0	38.6	68.4	80.1	50.6
Other	0.9	9.3	60.5	77.2	74.2	56.2
Standard of living index						
Low	1.0	5.1	33.7	60.1	75.7	46.4
Medium	0.3	6.4	43.2	74.2	80.8	52.5
High	2.7	11.1	68.3	86.2	89.1	63.0
Number of living sons[2]						
0	0.9	3.7	16.2	20.3	38.7	6.3
1	NA	9.6	42.8	55.8	71.7	42.7
2	NA	NA	59.9	85.4	85.0	79.8
3+	NA	NA	NA	78.6	80.4	80.1
Number of living daughters[2]						
0	0.9	9.6	59.9	78.6	80.7	25.4
1	NA	3.7	42.8	85.4	81.4	54.9
2	NA	NA	16.2	55.8	84.7	66.5
3+	NA	NA	NA	20.3	74.6	70.8
Total	0.9	6.1	42.3	68.4	78.7	50.4

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

children is highest for women in the 'other' category (56 percent) and lowest for scheduled-tribe women (41 percent). The proportion who want no more increases with the standard of living from 46 percent for women with a low standard of living to 63 percent for women with a high standard of living. The proportion who want no more children is highest for women with two or more living sons (80 percent) and lowest for women with no living sons (6 percent). Differences associated with number of living daughters are also large but not as large as differences associated with the number of living sons, again indicating a considerable amount of son preference. The proportion who want no more children is highest for women with three or more living daughters (71 percent) and lowest for women with no living daughters (25 percent). Overall, the table shows that an overwhelming majority of women in every subgroup with two or more living children want no more children. It also shows that within each subgroup, the proportion who want no more children rises sharply with the number of living children.

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 had difficulty in answering these hypothetical questions, and hence the questions often had to be repeated to ensure that the meaning was understood. Ninety-three percent of respondents were able to give a numerical response when asked for their ideal number of children.

Table 4.15 shows that 25 percent of ever-married women in Bihar consider two children to be the ideal. Another 31 percent consider three children to be the ideal. For 37 percent of women, the ideal number of children is four or more. Seven percent of women were unable to give a numeric response to the question. Among all women who gave a numeric response, the average number of children considered ideal is 3.3, ranging from 2.8–2.9 for women who have two or fewer children to 3.8 for women who already have four or more children.

Asking a question on ideal family size is sometimes criticized on the grounds that women tend to adjust their ideal family size upward as the number of their 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 Bihar. Among women with four or more living children, for example, about one-third state that fewer than four children would be ideal. Similarly, among women with three living children, 18 percent state that their ideal family size is smaller than three children. It is evident that a considerable 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 increases steadily from 2.9 children for women age 15–19 to 3.7 children for women age 45–49. The mean ideal number is higher in rural areas compared with urban areas, by 0.5 children. By education, it ranges from 3.4 for illiterate women down to 2.4 for women with at least a high school education. Muslim

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, Bihar, 1998–99

	Number of living children[1]					
Ideal number of children	0	1	2	3	4+	Total
1	1.6	2.0	0.9	0.4	0.3	0.8
2	36.5	40.0	41.5	17.5	10.8	24.9
3	32.9	30.6	31.6	49.5	20.9	30.9
4	18.7	18.7	18.9	24.1	40.7	27.9
5	2.3	2.0	1.9	3.1	10.2	5.3
6+	1.0	2.2	1.6	1.8	6.5	3.5
Non-numeric response	7.1	4.4	3.6	3.6	10.7	6.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	814	1,091	1,229	1,282	2,608	7,024
Mean ideal number[2]	2.9	2.9	2.8	3.2	3.8	3.3
Number of women giving numeric response	756	1,043	1,184	1,235	2,330	6,549

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

women report a considerably higher mean ideal number of children than other women. Differences in the mean ideal number by caste/tribe of household head and work status of women are small. Women who live in households with a low standard of living have a mean ideal family size that is 0.7 children higher than the ideal for women who live in households with a high standard of living. For women whose husbands are illiterate, the mean ideal family size is 0.8 children higher than for women whose husbands have completed at least a higher secondary education.

4.11 Sex Preference for Children

A strong preference for sons has been found to be pervasive in Indian society, 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; Murthi et al., 1995; Nag, 1991; Parasuraman et al., 1994). In NFHS-2, women who gave a numerical response to the question on ideal number of children were also 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 the mean ideal number of sons and daughters, the percentage who desire more sons than daughters, the percentage who desire at least one son, and the percentage who desire at least one daughter according to selected background characteristics. The table shows a consistent, rather strong preference for sons over daughters. Overall, the average ideal family size of 3.3 children consists of 1.9 sons, 1.3 daughters, and 0.1 children of either sex. Forty-eight percent of women want more sons than daughters but only 2 percent want more daughters than sons. Almost all women (97 percent) say they want at least one son among their children and a slightly smaller percentage (94 percent) want at least one daughter.

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, Bihar, 1998–99

Background characteristic	Current age							Total
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	
Residence								
Urban	2.4	2.4	2.8	2.8	3.0	3.1	3.3	2.8
Rural	3.0	3.1	3.2	3.4	3.5	3.6	3.7	3.3
Region								
North Bihar Plain	3.0	3.1	3.3	3.5	3.5	3.6	3.8	3.3
South Bihar Plain	3.0	3.0	3.2	3.4	3.5	3.8	3.8	3.3
Jharkhand	2.8	3.0	3.0	3.2	3.2	3.1	3.3	3.1
Education								
Illiterate	3.0	3.2	3.4	3.5	3.6	3.7	3.8	3.4
Literate, < middle school complete	2.9	2.8	3.0	3.0	3.1	3.3	3.4	3.0
Middle school complete	2.5	2.6	2.7	(2.8)	*	*	*	2.7
High school complete and above	(2.3)	2.4	2.4	2.5	2.4	(2.6)	*	2.4
Religion								
Hindu	2.8	2.9	3.1	3.3	3.4	3.5	3.6	3.2
Muslim	3.6	3.6	3.9	4.0	4.1	4.0	4.3	3.9
Christian	*	*	*	*	*	*	*	2.9
Other	*	*	*	*	*	*	*	(3.0)
Caste/tribe								
Scheduled caste	2.9	3.1	3.3	3.4	3.7	3.6	3.5	3.3
Scheduled tribe	3.0	3.2	3.4	3.5	3.4	(3.5)	(3.4)	3.4
Other backward class	2.9	3.0	3.2	3.4	3.5	3.6	3.9	3.3
Other	3.2	2.9	2.9	3.1	3.1	3.3	3.5	3.1
Work status								
Working in family farm/business	(2.8)	3.0	3.4	3.4	3.3	3.6	3.5	3.3
Employed by someone else	2.9	3.1	3.5	3.5	3.7	3.8	3.7	3.5
Self-employed	*	3.3	3.4	3.2	3.3	(3.6)	(3.4)	3.4
Not worked in past 12 months	2.9	3.0	3.1	3.3	3.4	3.5	3.7	3.2
Standard of living index								
Low	3.1	3.2	3.4	3.6	3.7	3.7	3.8	3.4
Medium	2.8	2.9	3.1	3.3	3.3	3.6	3.7	3.2
High	(2.5)	2.4	2.5	2.5	2.7	2.7	3.5	2.7
Husband's education								
Illiterate	3.1	3.3	3.5	3.6	3.6	3.7	3.8	3.5
Literate, < primary school complete	(3.1)	3.1	3.3	(3.4)	3.5	(3.8)	(3.8)	3.4
Primary school complete	2.9	3.1	3.4	3.5	3.8	3.7	3.9	3.4
Middle school complete	2.7	3.0	3.0	3.3	3.5	3.3	3.4	3.1
High school complete	2.7	2.8	3.0	3.2	3.2	3.3	3.6	3.1
Higher secondary complete and above	2.7	2.5	2.6	2.7	2.7	3.1	3.3	2.7
Total	2.9	3.0	3.2	3.4	3.4	3.5	3.7	3.3

Note: Means are calculated excluding women who gave non-numeric responses.
( ) Based on 25–49 unweighted cases
*Mean not shown; based on fewer than 25 unweighted cases

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, Bihar, 1998–99

Background characteristic	Mean ideal number of: Sons	Daughters	Either sex	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
Residence								
Urban	1.5	1.1	0.2	35.7	2.8	93.0	90.0	693
Rural	1.9	1.3	0.1	49.3	2.0	97.7	94.0	5,851
Region								
North Bihar Plain	2.0	1.3	0.1	52.6	1.3	98.5	94.6	2,832
South Bihar Plain	1.9	1.3	0.1	48.2	2.3	98.6	94.2	2,036
Jharkhand	1.7	1.2	0.2	39.5	3.2	93.3	91.1	1,675
Education								
Illiterate	2.0	1.3	0.1	50.8	2.2	97.7	94.2	4,949
Literate, < middle school complete	1.8	1.2	0.1	47.4	2.0	97.2	93.9	739
Middle school complete	1.5	1.1	0.1	38.4	2.0	98.1	94.2	265
High school complete and above	1.3	1.0	0.2	28.6	1.6	92.5	88.0	591
Religion								
Hindu	1.8	1.2	0.1	48.1	2.0	97.2	93.5	5,623
Muslim	2.3	1.5	0.1	48.8	2.7	98.1	95.1	809
Christian	1.5	1.1	0.3	35.8	3.6	87.8	86.0	59
Other	(1.5)	(1.2)	(0.3)	(30.7)	(5.9)	(90.1)	(88.2)	53
Caste/tribe								
Scheduled caste	1.9	1.3	0.1	52.6	1.7	98.0	94.3	1,367
Scheduled tribe	1.8	1.3	0.2	40.1	3.5	93.2	91.1	574
Other backward class	1.9	1.3	0.1	49.4	1.8	97.8	94.4	3,389
Other	1.8	1.2	0.1	42.2	2.6	96.4	91.7	1,214
Work status								
Working in family farm/business	1.9	1.3	0.1	46.2	1.4	96.3	93.1	566
Employed by someone else	2.0	1.3	0.1	52.1	2.8	96.3	93.4	767
Self-employed	2.0	1.3	0.1	53.2	2.5	97.3	92.1	380
Not worked in past 12 months	1.9	1.3	0.1	47.0	2.0	97.4	93.8	4,831
Standard of living index								
Low	2.0	1.3	0.1	51.0	2.3	97.7	93.9	3,390
Medium	1.8	1.3	0.1	46.8	1.9	97.4	94.5	2,453
High	1.5	1.0	0.2	36.7	2.0	94.0	88.8	694
Husband's education								
Illiterate	2.0	1.4	0.1	50.7	2.4	97.6	94.3	2,687
Literate, < primary school complete	2.0	1.4	0.1	49.9	2.8	98.0	95.8	361
Primary school complete	2.0	1.3	0.1	49.7	1.7	97.4	94.6	845
Middle school complete	1.8	1.2	0.1	50.2	1.4	97.7	93.0	626
High school complete	1.8	1.2	0.1	45.9	1.7	98.1	94.5	1,081
Higher secondary complete and above	1.5	1.0	0.1	38.3	2.2	94.1	89.1	940
Total	1.9	1.3	0.1	47.9	2.1	97.2	93.6	6,544

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 8 and 4 women with missing information on the standard of living index and husband's education, respectively, who are not shown separately.
( ) Based on 25–49 unweighted cases

Son preference is relatively moderate in urban areas, in the Jharkhand region, among more educated women, among women belonging to a religion other than Hindu or Muslim, and among women from higher standard of living households. Son preference does not vary much by work status of women. The proportion of ever-married women who desire more sons than daughters is 36 percent in urban areas and 49 percent in rural areas. By women's education, this proportion ranges from 51 percent for illiterate women to 29 percent for women who have completed high school or more education. The proportion wanting more sons than daughters ranges from 51 percent among women from low standard of living households to 37 percent among women from high standard of living households. The proportion wanting more sons than daughters is also relatively low among scheduled-tribe women and among women whose husbands have at least completed high school. The proportion wanting more daughters than sons is universally low across all groups of women.

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 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. One-quarter 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 (12 percent were wanted later and 13 percent were not wanted at all). The proportion of births that were unplanned is highest for women age 35–44 (40–42 percent) and lowest for women below age 20 (14 percent). Within the unplanned category, the proportion of births that were wanted later goes down and the proportion that were not wanted at all goes up with the age of the mother. The proportion of births that were unplanned is slightly higher in urban areas (33 percent) than in rural areas (24 percent). By region, the Jharkhand region has the highest proportion of births that were wanted later and the lowest proportion of births that were not wanted at all. The proportion wanted later increases and the proportion not wanted at all decreases as mother's education increases. A similar percentage of births were reported as unplanned for both Hindus and Muslims (24 percent each). By caste/tribe, scheduled-caste women were most likely (14 percent) and scheduled-tribe women were least likely (8 percent) to have births that were not wanted at all. The proportion wanted later increases with the household standard of living, but the proportion not wanted at all does not show any clear relationship with living standard. Not surprisingly, births of higher order are more likely to be unplanned. Specifically, the proportion unplanned increases from 11 percent among first-order births to 37 percent among births of order four or higher.

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, Bihar, 1998–99

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 birth[1]						
< 20	85.2	10.2	3.4	1.1	100.0	756
20–24	77.7	14.2	7.2	0.9	100.0	1,237
25–29	71.5	11.3	16.4	0.8	100.0	891
30–34	61.4	11.0	26.8	0.8	100.0	428
35–39	58.2	6.4	33.5	2.0	100.0	152
40–44	(53.0)	(2.4)	(39.1)	(5.5)	100.0	41
Residence						
Urban	65.5	15.5	17.5	1.5	100.0	300
Rural	75.5	11.4	12.2	1.0	100.0	3,210
Region						
North Bihar Plain	78.0	9.2	12.7	0.1	100.0	1,650
South Bihar Plain	70.6	12.7	14.3	2.4	100.0	1,162
Jharkhand	73.3	16.1	9.7	0.9	100.0	698
Mother's education						
Illiterate	74.3	11.0	13.6	1.1	100.0	2,718
Literate, < middle school complete	77.5	12.0	9.8	0.7	100.0	324
Middle school complete	75.2	14.9	8.5	1.5	100.0	145
High school complete and above	73.9	16.2	9.3	0.7	100.0	322
Religion						
Hindu	74.7	11.6	12.7	1.1	100.0	2,828
Muslim	74.9	11.7	12.6	0.7	100.0	634
Caste/tribe						
Scheduled caste	73.2	11.0	14.4	1.4	100.0	803
Scheduled tribe	77.6	13.3	8.3	0.9	100.0	234
Other backward class	74.2	11.4	13.3	1.1	100.0	1,832
Other	76.3	13.1	10.3	0.3	100.0	640
Standard of living index						
Low	75.8	10.6	12.4	1.2	100.0	2,000
Medium	73.2	12.7	13.5	0.6	100.0	1,230
High	72.7	15.5	11.0	0.8	100.0	271
Birth order[2]						
1	88.1	6.8	4.0	1.1	100.0	968
2	79.9	14.2	5.0	1.0	100.0	753
3	70.8	17.9	10.4	0.9	100.0	582
4+	62.3	11.2	25.5	1.0	100.0	1,206
Total	74.6	11.7	12.7	1.0	100.0	3,510

Note: Table includes only the two most recent births in the three years preceding the survey. Total includes 4 births to women age 45–49 at the time of birth, 21 and 26 births to mothers belonging to Christian and 'other' religions, respectively, and 8 births with missing information on the standard of living index, which are not shown separately.
( ) Based on 25–49 unweighted cases
[1]For current pregnancy, estimated maternal age at birth
[2]Includes current pregnancy, if any

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 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. (Women who did not give 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 2.58 is lower by 0.91 children (i.e., 26 percent) than the total fertility rate of 3.49. This means that if all unwanted births could be eliminated, the TFR in Bihar would drop by about one child per woman. The difference between the total fertility rate and the total wanted fertility rate is about the same for both rural and urban women. The difference is larger for illiterate women (0.97 children) than for women with at least high school complete (0.56 children). It is larger for Muslims (1.09 children) than for Hindus (0.89 children) or Christians (0.66 children). It is also larger for scheduled-caste women (1.11 children) than for women from other backward classes (0.94 children), women in the 'other' caste/tribe category (0.76 children), or scheduled-tribe women (0.64 children). The difference is larger for women living in households with a low standard of living (1.02 children) than for women living in households with a high standard of living (0.54 children). Overall, the TFR exceeds the total wanted fertility rate most for scheduled-caste women, Muslim women, and women from low standard of living households.

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, Bihar, 1998–99

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.84	2.75
Rural	2.68	3.59
Region		
North Bihar Plain	2.88	3.82
South Bihar Plain	2.65	3.63
Jharkhand	1.97	2.76
Education		
Illiterate	2.81	3.78
Literate, < middle school complete	2.20	2.93
Middle school complete	1.87	2.69
High school complete and above	1.94	2.50
Religion		
Hindu	2.47	3.36
Muslim	3.35	4.44
Christian	(1.24)	(1.90)
Other	(1.51)	(2.41)
Caste/tribe		
Scheduled caste	2.80	3.91
Scheduled tribe	1.81	2.45
Other backward class	2.70	3.64
Other	2.37	3.13
Standard of living index		
Low	2.87	3.89
Medium	2.36	3.24
High	1.93	2.47
Total	2.58	3.49

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.
( ) Based on 125–249 woman-years of exposure

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 Reproductive and Child Health Programme aims to cover all aspects of women's reproductive health throughout their lives. With regard to family planning, this new approach emphasizes the target-free promotion of contraceptive use among eligible couples, the provision to couples of a choice of various contraceptive methods (including condoms, oral pills, IUDs, and male and female sterilization), and the assurance of high-quality care. In addition, the programme encourages the spacing of births with at least three years between births (Ministry of Health and Family Welfare, n.d.(b)).

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 before moving on to the sources of supply of modern contraceptive methods. Special attention is focussed on reasons for discontinuation and nonuse 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 Bihar is being met effectively.

5.1 Knowledge of Family Planning Methods

Lack of knowledge of contraceptive methods is 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, Bihar, 1998–99

Method	Urban	Rural	Total
Any method	99.7	99.2	99.2
Any modern method	99.7	99.1	99.2
Pill	90.5	73.2	74.9
IUD	82.8	56.0	58.7
Condom	85.9	61.8	64.3
Female sterilization	99.7	98.8	98.9
Male sterilization	98.1	97.2	97.3
Any traditional method	57.3	37.5	39.5
Rhythm/safe period	52.1	34.4	36.2
Withdrawal	41.4	22.5	24.4
Other method[1]	4.2	3.4	3.4
Number of women	677	5,984	6,661

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

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

Table 5.1 shows the extent of knowledge of contraceptive methods among currently married women by specific method and residence. Knowledge of contraceptive methods is nearly universal in Bihar, with 99 percent of 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 in Bihar, followed by male sterilization. Overall, 99 percent of currently married women know about female sterilization and 97 percent know about male sterilization. There is little difference by residence in knowledge of male and female sterilizations. Knowledge of the officially sponsored spacing methods (the pill, IUD, and condom) is less widespread. The best known spacing method is the pill, which is known by 75 percent of currently married women, followed by the condom (64 percent), and then the IUD (59 percent). There are large differences in knowledge of spacing methods by residence. For example, only 56 percent of rural women know about the IUD, compared with 83 percent of urban women. Although knowledge of these spacing methods is lower than knowledge of sterilization, these results suggest that knowledge of spacing methods has grown since NFHS-1. At the time of NFHS-1, only 57 percent of currently married women knew about pills, 44 percent knew about IUDs, and 55 percent knew about condoms (PRC, Patna and IIPS, 1995).

In Bihar, traditional methods of contraception are less well known than modern methods. Forty percent of currently married women report knowledge of a traditional method, with the rhythm or safe period method being better known (36 percent) than withdrawal (24 percent). Knowledge of traditional methods is much higher in urban areas (57 percent) than in rural areas (38 percent).

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 and residence, Bihar, 1998–99

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
URBAN												
15–19	7.3	3.6	1.9	0.0	1.8	0.0	0.0	3.6	1.7	1.9	0.0	59
20–24	23.3	19.1	9.1	0.9	6.1	3.0	0.0	6.2	3.1	4.1	3.2	105
25–29	48.0	44.9	14.0	2.4	11.3	24.6	1.6	7.0	4.7	4.6	0.8	131
30–34	55.1	49.9	16.9	2.4	10.3	32.2	0.0	5.2	1.8	3.4	0.9	124
35–39	61.3	57.5	7.1	4.8	4.9	42.7	2.8	5.6	3.8	2.8	2.1	107
40–44	54.5	51.0	7.4	3.7	9.8	38.7	3.7	9.7	7.3	4.8	1.2	83
45–49	48.0	46.4	4.7	0.0	1.5	40.3	6.3	4.7	3.1	1.5	1.7	69
Total	44.8	41.1	9.9	2.3	7.3	26.6	1.8	6.1	3.7	3.5	1.5	677
RURAL												
15–19	4.2	2.4	1.3	0.0	0.8	0.3	0.0	2.0	1.1	1.3	0.0	743
20–24	11.2	7.6	2.5	0.4	1.0	4.0	0.2	4.0	2.7	1.9	0.3	1,274
25–29	25.0	22.2	4.4	1.2	2.1	15.9	0.7	4.4	3.1	2.4	1.0	1,242
30–34	35.6	34.1	4.8	1.4	1.2	27.5	0.4	3.2	2.3	1.9	1.6	903
35–39	40.1	38.9	3.2	0.8	0.9	33.4	1.5	3.3	2.6	1.3	1.5	753
40–44	41.9	40.0	3.4	0.3	0.8	33.8	2.6	2.9	2.7	0.5	1.6	615
45–49	37.9	36.9	1.8	0.9	0.7	30.8	3.4	2.2	1.8	1.1	1.3	454
Total	25.7	23.5	3.2	0.8	1.2	18.3	1.0	3.4	2.5	1.6	1.0	5,984
TOTAL												
15–19	4.4	2.5	1.4	0.0	0.9	0.2	0.0	2.1	1.2	1.3	0.0	802
20–24	12.1	8.5	3.0	0.5	1.4	3.9	0.2	4.1	2.7	2.1	0.5	1,379
25–29	27.2	24.4	5.3	1.3	3.0	16.7	0.7	4.6	3.3	2.6	1.0	1,373
30–34	37.9	36.0	6.2	1.6	2.3	28.0	0.4	3.4	2.2	2.0	1.5	1,027
35–39	42.7	41.2	3.7	1.3	1.4	34.6	1.6	3.6	2.8	1.5	1.6	859
40–44	43.4	41.3	3.9	0.7	1.9	34.4	2.7	3.7	3.3	1.0	1.6	698
45–49	39.3	38.1	2.2	0.8	0.8	32.0	3.8	2.5	1.9	1.2	1.4	522
Total	27.6	25.3	3.9	0.9	1.8	19.2	1.0	3.6	2.6	1.8	1.0	6,661

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

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 further asked if they had 'ever used anything or 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 and residence.

Although nearly all currently married women know at least one method of contraception, only 28 percent have ever used a method, which is a slight increase from 26 percent at the time of NFHS-1. Twenty-five percent of currently married women have ever used modern methods, but

only 4 percent have ever used traditional methods. Ever use of any method is higher in urban areas (45 percent) than in rural areas (26 percent). Ever use of both modern methods and traditional methods is also higher in urban areas. The most commonly used method is female sterilization, which has been adopted by 19 percent of currently married women. Only 1 percent have adopted male sterilization, and only 1–4 percent have ever used each of the modern spacing methods (the pill, condom, or IUD). Ever use of every method of family planning is much higher in urban areas than in rural areas.

Ever use of any modern method increases with women's age, from 3 percent for women age 15–19 to a peak of 41 percent for women age 40–44, and decreases at older ages to 38 percent for women age 45–49. This increase in contraceptive use with age likely reflects a life-cycle effect, with women adopting contraception as their fertility goals are met. On the other hand, the lower level of ever use of modern methods by older women reflects, at least in part, the lower acceptability and availability of modern contraceptive methods at the time when these women were having their children. The pattern of ever use by age is the same for urban and rural areas, although urban women are more likely to have used contraception than rural women at every age.

Current Use of Family Planning Methods

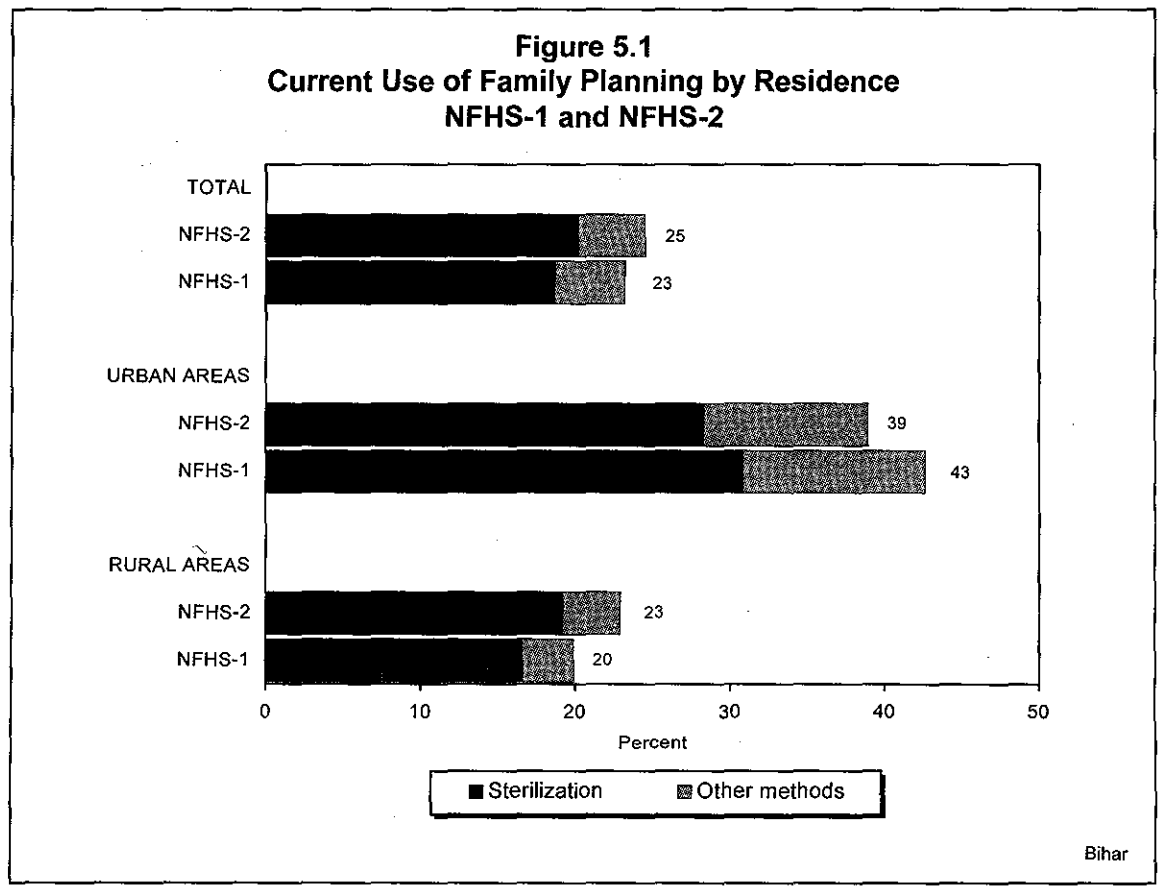
Table 5.3 provides information on current use of family planning methods for currently married women in Bihar by age and residence. Current contraceptive prevalence in Bihar is low, with only 25 percent of currently married women using some method of contraception. Current use of any method is considerably higher in urban areas (39 percent) than in rural areas (23 percent). Almost all current users are using a modern method, and almost all currently married women who have ever used contraception are current users. This is because in Bihar, as in most of the other states of India, sterilization dominates the contraceptive method mix. Nineteen percent of currently married women are sterilized, and female sterilization accounts for 78 percent of the total current contraceptive prevalence. Another 1 percent of currently married women reported that their husbands are sterilized. Female sterilization and male sterilization together account for 82 percent of current contraceptive prevalence in Bihar. No other individual method of family planning is used by more than 1 percent of currently married women. By residence, female and male sterilization together account for 73 percent of contraceptive prevalence in urban areas and 84 percent in rural areas. Only two percent of currently married women in Bihar are currently using a modern spacing method. Current use of all modern methods is higher in urban areas than in rural areas. By age, current contraceptive use increases from 2 percent for women age 15–19 to a peak of 41 percent for women age 40–44, and decreases for older women. The pattern of variation by age is similar in both urban areas (peaking at 56 percent in 35–39 age group) and rural areas (peaking at 40 percent in 40–44 age group).

Table 5.3 Current use of contraception

Percent distribution of currently married women by contraceptive method currently used, according to age and residence, Bihar, 1998–99

Age	Any method	Any modern method	Pill	IUD	Condom	Female ster-ilization	Male ster-ilization	Any traditional method	Rhythm/ safe period	Withdrawal	Other method[1]	Not using any method	Total percent	Number of women
URBAN														
15–19	7.3	3.6	1.9	0.0	1.8	0.0	0.0	3.6	1.7	1.9	0.0	92.7	100.0	59
20–24	14.4	8.1	2.0	0.0	3.1	3.0	0.0	5.2	3.1	2.1	1.1	85.6	100.0	105
25–29	38.3	36.0	5.0	1.6	3.2	24.6	1.6	2.3	0.8	1.5	0.0	61.7	100.0	131
30–34	46.6	44.1	5.1	1.6	5.2	32.2	0.0	2.5	0.0	2.5	0.0	53.4	100.0	124
35–39	56.3	53.5	2.1	3.0	2.9	42.7	2.8	2.8	1.9	0.9	0.0	43.7	100.0	107
40–44	53.3	47.3	1.3	1.2	2.5	38.7	3.7	4.8	3.6	1.2	1.2	46.7	100.0	83
45–49	46.4	44.9	0.0	0.0	0.0	40.3	4.6	1.5	0.0	1.5	0.0	53.6	100.0	69
Total	38.9	35.4	2.9	1.2	3.0	26.6	1.7	3.2	1.5	1.7	0.3	61.1	100.0	677
RURAL														
15–19	2.0	1.0	0.5	0.0	0.3	0.3	0.0	1.0	0.4	0.5	0.0	98.0	100.0	743
20–24	7.3	5.1	0.6	0.1	0.3	4.0	0.1	2.1	1.2	0.9	0.1	92.7	100.0	1,274
25–29	21.9	19.4	1.0	1.0	0.9	15.9	0.6	1.6	0.7	0.9	0.8	78.1	100.0	1,242
30–34	32.3	30.3	1.4	0.8	0.4	27.5	0.3	1.0	0.6	0.5	0.9	67.7	100.0	903
35–39	38.6	36.5	0.8	0.4	0.5	33.4	1.3	1.0	0.6	0.4	1.1	61.4	100.0	753
40–44	39.8	37.5	0.5	0.3	0.3	33.8	2.6	1.8	1.4	0.3	0.5	60.2	100.0	615
45–49	36.2	34.6	0.2	0.2	0.0	30.8	3.4	0.9	0.4	0.4	0.6	63.8	100.0	454
Total	22.9	20.9	0.8	0.4	0.4	18.3	0.9	1.4	0.8	0.6	0.6	77.1	100.0	5,984
TOTAL														
15–19	2.4	1.2	0.6	0.0	0.4	0.2	0.0	1.1	0.5	0.6	0.0	97.6	100.0	802
20–24	7.8	5.3	0.7	0.1	0.5	3.9	0.1	2.3	1.3	1.0	0.2	92.2	100.0	1,379
25–29	23.4	21.0	1.4	1.1	1.1	16.7	0.7	1.7	0.7	1.0	0.8	76.6	100.0	1,373
30–34	34.0	32.0	1.8	0.9	1.0	28.0	0.3	1.2	0.5	0.7	0.8	66.0	100.0	1,027
35–39	40.8	38.6	0.9	0.7	0.8	34.6	1.5	1.3	0.8	0.5	1.0	59.2	100.0	859
40–44	41.4	38.7	0.6	0.4	0.6	34.4	2.7	2.1	1.7	0.4	0.6	58.6	100.0	698
45–49	37.5	36.0	0.2	0.2	0.0	32.0	3.6	1.0	0.4	0.6	0.6	62.5	100.0	522
Total	24.5	22.4	1.0	0.5	0.7	19.2	1.0	1.6	0.9	0.7	0.5	75.5	100.0	6,661

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



Comparison of NFHS-2 results for current contraceptive use with those from NFHS-1 reveals a 2 percentage-point increase in contraceptive prevalence since NFHS-1, when the prevalence was 23 percent (Figure 5.1). The share of female sterilization in contraceptive prevalence has increased from 75 percent to 78 percent over the six-year period. Since the share of male sterilization has declined from 6 percent in NFHS-1 to 4 percent in NFHS-2, however, the share of female and male sterilization together in total contraceptive prevalence did not change much between the two surveys (81 percent in NFHS-1 compared with 82 percent in NFHS-2). The proportion of currently married women using the officially sponsored spacing methods declined from 3 percent in NFHS-1 to 2 percent in NFHS-2. These results suggest that despite the increased emphasis on contraceptive choice and on spacing methods in the Reproductive and Child Health Programme, female sterilization continues to dominate the method mix in Bihar, and spacing methods still account for only a negligible amount of contraceptive use.

Socioeconomic Differentials in Current Use of Family Planning Methods

Table 5.4 shows differences in current contraceptive use by background characteristics. Current use of contraceptive methods is considerably higher in urban areas (39 percent) than in rural areas (23 percent). This is true for each specific modern or traditional method. By geographic region, current contraceptive use is somewhat higher in the Jharkhand region (28 percent) than in the North Bihar Plain region (24 percent) and in the South Bihar Plain region (22 percent).

Current use of contraceptive methods is much lower among illiterate women (21 percent) than among literate women (36–40 percent). The differences by education are largely the result of two factors: the predominance of sterilization in the method mix and the fact that more-educated women tend to be younger women who may not yet have reached their desired level of fertility. The use of spacing methods (which are particularly appropriate for women who have not yet reached their desired family size) generally rises with education. Use of traditional methods also rises with education. Modern spacing methods are used by 1 percent of illiterate women and 9 percent of women who have completed at least high school. Female and male sterilization account for 87 percent of contraceptive use by illiterate women and only 67 percent of contraceptive use by women who have completed at least high school. Contraceptive use has increased since NFHS-1 among illiterate women, but declined among literate women.

Contraceptive prevalence is much lower among Muslims (9 percent) than among Hindus (27 percent) and Christians (26 percent). Lower use of contraceptive methods among Muslims is mainly due to a much lower use of sterilization among Muslims than among Hindus and Christians. The use of modern temporary methods is about the same among Muslims and Hindus (2 percent each). Christians in Bihar are unique in that they are much less likely to use modern temporary methods but much more likely to use traditional methods than Hindus or Muslims.

Contraceptive prevalence is highest (34 percent) among women who do not belong to a scheduled caste, scheduled tribe, or other backward class, followed by women belonging to other backward classes (25 percent) and scheduled castes (20 percent). Contraceptive use is lowest among women belonging to scheduled tribes (14 percent). The use of male sterilization, however, is marginally higher for husbands of women from the 'other' caste/tribe category (2 percent) than for husbands of women from a scheduled caste, scheduled tribe, or other backward class (less than 1 percent each).

The use of any contraception as well as the use of each specific contraceptive method is positively related to the household standard of living index (SLI). Whereas contraceptive prevalence is only 17 percent among the poorest women (low SLI), it is 49 percent among women with a high SLI. The use of officially-sponsored spacing methods is also much higher among women with a high SLI (9 percent) than among women with a medium SLI (3 percent) or low SLI (1 percent).

Table 5.4 also shows differences in current use by the number and sex of living children. Contraceptive use increases sharply from only 2 percent for women with no living children to 37 percent for women with three living children and then falls to 35 percent for women with four or more living children. A similar pattern is evident for both male and female sterilization. Prevalence rates by sex composition of living children indicate the existence of some son preference. At each parity, current use of family planning is lower among women with no sons than among women with one or more sons. Son preference does not completely outweigh parity in determining contraceptive use, however, as is evident from the fact that a considerable proportion of higher-parity women with no sons use family planning, including permanent methods.

Table 5.4 Current use by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female ster-ilization	Male ster-ilization	Any traditional method	Rhythm/ safe period	With-drawal	Other method[1]	Not using any method	Total percent	Number of women
Residence														
Urban	38.9	35.4	2.9	1.2	3.0	26.6	1.7	3.2	1.5	1.7	0.3	61.1	100.0	677
Rural	22.9	20.9	0.8	0.4	0.4	18.3	0.9	1.4	0.8	0.6	0.6	77.1	100.0	5,984
Region														
North Bihar Plain	24.4	22.8	0.7	0.6	0.6	19.9	1.0	1.6	1.0	0.6	0.1	75.6	100.0	2,974
South Bihar Plain	22.2	19.8	1.0	0.6	0.5	16.7	1.0	2.0	1.0	1.0	0.4	77.8	100.0	2,074
Jharkhand	27.6	24.9	1.5	0.3	1.1	21.1	0.9	1.1	0.5	0.7	1.6	72.4	100.0	1,613
Education														
Illiterate	20.5	18.7	0.6	0.2	0.2	17.0	0.8	1.2	0.8	0.4	0.6	79.5	100.0	5,083
Literate, < middle school complete	36.1	33.3	1.5	1.2	1.5	28.0	1.2	2.0	0.5	1.5	0.7	63.9	100.0	748
Middle school complete	36.3	33.4	3.9	0.8	3.1	24.3	1.2	2.9	0.8	2.1	0.0	63.7	100.0	256
High school complete and above	40.3	35.9	2.9	2.5	3.2	24.9	2.3	4.4	1.9	2.5	0.0	59.7	100.0	573
Religion														
Hindu	27.3	25.1	1.0	0.6	0.7	21.8	1.1	1.6	0.8	0.8	0.6	72.7	100.0	5,574
Muslim	9.1	7.5	1.3	0.2	0.5	5.0	0.5	1.4	0.9	0.4	0.2	90.9	100.0	982
Christian	25.8	14.9	0.0	0.0	0.0	13.0	1.9	7.3	3.6	3.7	3.7	74.2	100.0	57
Other	(15.5)	(13.1)	(0.0)	(0.0)	(2.0)	(11.1)	(0.0)	(0.0)	(0.0)	(0.0)	(2.4)	(84.5)	100.0	48
Caste/tribe														
Scheduled caste	19.5	17.7	0.7	0.2	0.5	15.8	0.6	1.4	1.0	0.4	0.4	80.5	100.0	1,383
Scheduled tribe	14.1	9.8	0.6	0.0	0.2	8.6	0.4	1.4	0.6	0.8	2.9	85.9	100.0	546
Other backward class	24.6	22.4	1.0	0.6	0.7	19.2	0.9	1.8	1.0	0.8	0.4	75.4	100.0	3,454
Other	34.3	32.8	1.6	0.9	1.2	27.3	1.7	1.5	0.6	0.9	0.0	65.7	100.0	1,277
Standard of living index														
Low	16.5	14.7	0.3	0.1	0.2	13.6	0.5	1.1	0.8	0.3	0.7	83.5	100.0	3,480
Medium	29.1	26.9	1.3	0.4	0.9	23.2	1.0	1.7	0.8	0.9	0.5	70.9	100.0	2,491
High	48.8	45.0	3.3	3.3	2.4	32.6	3.4	3.7	1.3	2.4	0.0	51.2	100.0	682

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, Bihar, 1998–99

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female ster-ilization	Male ster-ilization	Any traditional method	Rhythm/ safe period	With-drawal	Other method[1]	Not using any method	Total percent	Number of women
Number and sex of living children														
No children	1.5	0.5	0.2	0.0	0.0	0.2	0.1	0.9	0.4	0.5	0.0	98.5	100.0	920
1 child	6.4	4.0	1.1	0.2	0.8	1.6	0.2	2.2	1.0	1.1	0.2	93.6	100.0	988
1 son	7.6	5.4	1.2	0.2	1.1	2.6	0.2	2.1	1.2	0.9	0.2	92.4	100.0	529
No sons	5.0	2.5	1.1	0.2	0.5	0.5	0.2	2.3	0.9	1.4	0.2	95.0	100.0	460
2 children	24.2	21.4	1.3	1.2	1.1	16.6	1.2	2.3	1.0	1.2	0.5	75.8	100.0	1,152
2 sons	37.5	34.1	0.6	0.8	1.1	29.2	2.4	2.8	0.8	2.0	0.6	62.5	100.0	359
1 son	20.9	18.2	2.1	1.6	0.7	12.9	0.9	2.1	1.2	0.9	0.6	79.1	100.0	580
No sons	11.0	8.7	0.0	1.0	2.4	5.3	0.0	1.8	0.9	0.9	0.4	89.0	100.0	213
3 children	37.3	35.4	1.1	0.8	1.4	30.8	1.4	1.1	0.6	0.5	0.8	62.7	100.0	1,188
3 sons	47.2	44.8	2.4	1.2	0.6	38.3	2.2	1.2	1.2	0.0	1.2	52.8	100.0	173
2 sons	48.6	46.0	0.2	0.2	1.2	43.2	1.2	1.8	1.0	0.8	0.8	51.4	100.0	520
1 son	25.0	24.2	1.7	1.5	2.0	17.5	1.5	0.5	0.0	0.5	0.2	75.0	100.0	403
No sons	9.9	7.7	1.2	0.0	1.1	5.3	0.0	0.0	0.0	0.0	2.2	90.1	100.0	93
4+ children	34.6	32.2	1.0	0.4	0.4	29.1	1.3	1.6	1.0	0.6	0.8	65.4	100.0	2,412
2+ sons	37.0	34.7	0.9	0.3	0.3	31.7	1.5	1.6	1.1	0.5	0.7	63.0	100.0	1,944
1 son	25.9	23.1	1.8	1.0	0.7	18.9	0.7	1.5	0.5	1.0	1.3	74.1	100.0	398
No sons	15.8	14.4	0.0	0.0	0.0	14.4	0.0	1.5	1.5	0.0	0.0	84.2	100.0	70
Total	24.5	22.4	1.0	0.5	0.7	19.2	1.0	1.6	0.9	0.7	0.5	75.5	100.0	6,661

Note: Total includes 8 women with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases
[1]Includes both modern and traditional methods that are not listed separately

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 and residence, Bihar, 1998–99

Current age	Never used	Number of living children at the time of first use					Missing	Total percent	Number of women
		0	1	2	3	4+			
URBAN									
15–19	93.0	1.9	5.2	0.0	0.0	0.0	0.0	100.0	61
20–24	78.0	3.7	7.7	8.7	1.8	0.0	0.0	100.0	111
25–29	52.3	3.9	9.1	11.4	12.6	10.6	0.0	100.0	136
30–34	47.8	4.2	4.0	14.6	10.2	19.3	0.0	100.0	132
35–39	40.4	0.9	6.3	10.7	13.0	28.8	0.0	100.0	113
40–44	46.5	0.0	2.3	6.9	13.6	30.7	0.0	100.0	90
45–49	55.2	0.0	4.2	2.7	7.0	30.8	0.0	100.0	76
Total	56.6	2.4	5.8	9.0	9.0	17.2	0.0	100.0	718
RURAL									
15–19	95.8	1.3	2.5	0.1	0.2	0.0	0.0	100.0	763
20–24	89.1	1.4	2.9	3.7	2.1	0.8	0.0	100.0	1,308
25–29	75.3	0.9	3.0	6.3	7.5	7.0	0.0	100.0	1,283
30–34	65.2	0.2	1.5	4.6	12.1	16.4	0.1	100.0	956
35–39	61.8	0.1	1.5	4.6	9.0	23.1	0.0	100.0	808
40–44	60.2	0.1	0.3	4.1	7.0	28.0	0.2	100.0	669
45–49	64.1	0.0	0.8	2.5	6.6	26.1	0.0	100.0	518
Total	74.8	0.7	2.0	4.0	6.3	12.2	0.0	100.0	6,306
TOTAL									
15–19	95.6	1.4	2.7	0.1	0.2	0.0	0.0	100.0	825
20–24	88.2	1.6	3.3	4.0	2.1	0.8	0.0	100.0	1,419
25–29	73.1	1.2	3.6	6.8	8.0	7.4	0.0	100.0	1,419
30–34	63.1	0.7	1.8	5.8	11.9	16.7	0.1	100.0	1,088
35–39	59.2	0.2	2.1	5.3	9.4	23.8	0.0	100.0	921
40–44	58.6	0.1	0.5	4.4	7.8	28.3	0.1	100.0	759
45–49	62.9	0.0	1.2	2.5	6.6	26.7	0.0	100.0	593
Total	73.0	0.9	2.4	4.5	6.5	12.7	0.0	100.0	7,024

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 and residence. Only 1 percent of ever-married women (3 percent of women who have ever used contraception) began using contraception when they did not have any children and another 2 percent (9 percent of ever users) began using when they had only one living child. Although early use of contraception is rare, 53 percent of ever users began when they had three or fewer living children. This pattern of first acceptance at low parities means that family planning has a larger demographic impact than it would if contraceptive use were initiated later. A similar age pattern is observed among women in urban and rural areas, but urban women are more likely to begin using when they have fewer than three living children. Given the near-exclusive emphasis on sterilization in the contraceptive method

Table 5.6 Problems with current method

Percentage of current users of specific contraceptive methods who have had problems in using the method, Bihar, 1998–99

	Contraceptive method								
Problem	Pill	IUD	Condom	Female sterili-zation	Male sterili-zation	Rhythm/ safe period	With-drawal	Other method[1]	Total
No problem	82.9	(85.3)	(93.6)	77.4	96.8	95.1	(95.8)	(100.0)	80.7
Weight gain	4.6	(0.0)	(0.0)	1.5	1.5	1.6	(0.0)	(0.0)	1.5
Weight loss	4.7	(0.0)	(0.0)	2.0	1.5	0.0	(0.0)	(0.0)	1.8
Too much bleeding	4.7	(8.7)	(0.0)	1.7	0.0	0.0	(0.0)	(0.0)	1.7
Hypertension	1.5	(0.0)	(2.1)	1.4	0.0	0.0	(4.2)	(0.0)	1.3
Headache/bodyache/backache	6.4	(0.0)	(4.1)	6.6	0.0	1.6	(4.2)	(0.0)	5.8
Nausea/vomiting	3.1	(3.2)	(0.0)	0.8	0.0	1.6	(2.0)	(0.0)	0.9
No menstruation	1.4	(0.0)	(0.0)	0.2	0.0	1.6	(0.0)	(0.0)	0.2
Weakness/tiredness	6.3	(0.0)	(0.0)	6.8	0.0	0.0	(2.0)	(0.0)	5.6
Dizziness	0.0	(0.0)	(0.0)	1.8	0.0	0.0	(0.0)	(0.0)	1.4
Fever	1.4	(0.0)	(0.0)	3.2	0.0	1.6	(0.0)	(0.0)	2.6
Cramps	0.0	(0.0)	(0.0)	1.3	0.0	0.0	(0.0)	(0.0)	1.0
Spotting	0.0	(0.0)	(0.0)	0.3	0.0	0.0	(0.0)	(0.0)	0.2
Inconvenient to use	0.0	(0.0)	(0.0)	0.2	0.0	1.6	(0.0)	(0.0)	0.2
Abdominal pain	3.2	(5.8)	(0.0)	8.2	0.0	0.0	(2.0)	(0.0)	6.7
White discharge	0.0	(2.8)	(2.0)	3.1	0.0	0.0	(2.0)	(0.0)	2.6
Irregular periods	0.0	(2.8)	(2.4)	0.5	1.5	0.0	(0.0)	(0.0)	0.6
Breast tenderness	0.0	(0.0)	(0.0)	0.6	1.5	0.0	(0.0)	(0.0)	0.5
Allergy	0.0	(0.0)	(0.0)	0.1	1.5	0.0	(0.0)	(0.0)	0.2
Reduced sexual satisfaction	0.0	(3.0)	(4.1)	0.1	0.0	0.0	(2.2)	(0.0)	0.3
Other	0.0	(0.0)	(0.0)	1.1	1.7	0.0	(0.0)	(0.0)	0.9
Number of users	66	35	47	1,277	65	58	49	36	1,633

Note: Percentages may add to more than 100.0 because multiple problems could be recorded.
( ) Based on 25–49 unweighted cases
[1]Includes both modern and traditional methods that are not listed separately

mix, women usually begin contraceptive use only after achieving their desired family size. Clearly, spacing methods need to be promoted if further reductions are sought in the parity at which women first accept contraception.

Problems with Current Method

Women who were using a contraceptive method were asked if they had experienced any problem with their current method. Table 5.6 presents the percentage of current contraceptive users who report specific problems. Overall, four-fifths (81 percent) of current users report having no problem 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 77 percent of sterilized women and 97 percent of women whose husbands are sterilized report having no problem with their method. The most common problems experienced by sterilized women are abdominal pain (8 percent), weakness/tiredness (7 percent), headache/bodyache/backache (7 percent), fever (3 percent), and white discharge (3 percent). These results point to a continuing need to strengthen post-operative care and counselling for sterilization acceptors. It is not possible to assess the problems

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, Bihar, 1998–99

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	45–49			
STERILIZED WOMEN										
< 2	1.3	25.1	44.7	20.3	6.7	2.0	0.0	100.0	150	27.6
2–3	2.3	23.3	40.2	22.9	8.9	1.7	0.5	100.0	180	27.8
4–5	3.8	27.2	37.6	19.2	8.9	2.8	0.4	100.0	212	26.9
6–7	2.0	25.6	35.0	22.5	11.6	3.3	U	100.0	155	28.1
8–9	0.0	27.8	39.0	27.0	6.2	0.0	U	100.0	132	28.2
10+	2.5	24.4	42.1	26.2	4.7	U	U	100.0	449	NC
Total	2.2	25.3	40.2	23.5	7.2	1.3	0.1	100.0	1,277	27.7
WIVES OF STERILIZED MEN										
< 10	(3.2)	(13.7)	(42.1)	(13.6)	(20.8)	(0.0)	U	100.0	29	28.5
10+	(2.7)	(25.3)	(47.4)	(19.0)	(5.6)	U	U	100.0	36	NC
Total	2.9	20.0	45.0	16.6	12.4	0.0	3.0	100.0	65	27.7
STERILIZED WOMEN AND WIVES OF STERILIZED MEN										
< 2	1.2	25.1	44.9	19.3	7.0	1.9	0.6	100.0	158	27.5
2–3	2.3	22.9	40.4	23.0	8.8	1.7	1.0	100.0	184	27.8
4–5	3.7	26.9	37.1	19.6	9.6	2.7	0.4	100.0	218	27.0
6–7	1.9	25.2	35.6	22.1	12.0	3.2	U	100.0	158	28.1
8–9	0.7	26.9	39.0	26.2	7.2	0.0	U	100.0	140	28.3
10+	2.5	24.5	42.5	25.7	4.8	U	U	100.0	484	NC
Total	2.2	25.1	40.5	23.2	7.5	1.3	0.3	100.0	1,342	27.7

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.

experienced by women using spacing methods because the number of women using these methods is too small.

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. Of 1,342 sterilizations reported, 95 percent are female sterilizations. Forty-two percent of female sterilizations took place less than 6 years before the survey, another 22 percent took place 6–9 years before the survey, and the remaining 35 percent took place 10 or more years before the survey. By contrast, 55 percent of male sterilizations took place 10 or more years before the survey. The median age of women at the time they or their husbands were sterilized was only 27.7 years, with 27 percent of sterilized couples undergoing sterilization before the wife was age 25. Two-thirds (68 percent) of

sterilizations took place before the wife was age 30 and less than 2 percent took place when wife was in her forties.

Male sterilization is not as common as it was 10 or more years ago. Only 3 percent of sterilizations during the 10 years preceding the survey were male sterilizations, compared with 7 percent of sterilizations 10 or more years before the survey.

The median age of women at the time of sterilization has declined marginally, from age 28.3 during the period 8–9 years before the survey to age 27.5 during the 2 years 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 50–59 years at the time of the survey and would therefore not have been interviewed. A comparison with NFHS-1 data, however, suggests that the decline in women's age at sterilization began more than 10 years ago. Women's median age at sterilization declined by about one year between about 1984–85 (8–9 years before NFHS-1) and the mid-to-late 1990s.

5.4 Sources of Contraceptive Methods

Family planning methods and services in Bihar 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 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.

In order to assess the relative importance of various sources of contraceptive methods, NFHS-2 included a question about where current contraceptive users obtained their methods. Table 5.8 and Figure 5.2 show the percent distribution of current modern contraceptive users by the most recent source, according to specific method and residence. The public medical sector, consisting of government or municipal hospitals, government dispensaries, Primary Health Centres, and other governmental health infrastructure, is the source of contraception for over three-fourths (77 percent) of current users of modern methods. The private medical sector, including private hospitals or clinics, private doctors, private mobile clinics, private paramedics, *vaidyas*, *hakims*, homeopaths, traditional healers, and pharmacies or drugstores, is the source for 18 percent of current users. Four percent of current users obtain their methods from other sources such as shops, friends, and relatives, and less than 1 percent from NGOs. Government or municipal hospitals are the main source (70 percent) for female sterilization, followed by private hospitals or clinics (13 percent), camps (7 percent), and community health centres, rural hospitals, or Primary Health Centres (4 percent). Similar sources are used for male sterilizations. About one-half (49 percent) of IUD users obtain their IUD from the public medical sector and the other half (49 percent) from the private medical sector. Private shops are the major source for condoms and pills (55–56 percent).

Eighty-one percent of rural users obtain their contraceptives from the public medical sector compared with 56 percent of urban users. The role of the private medical sector in providing female sterilization services in urban areas is especially notable. In urban areas, 34 percent of female sterilizations are performed by the private medical sector, compared with 14 percent in rural areas.

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 and residence, Bihar, 1998–99

Source	Contraceptive method					All modern methods
	Pill	IUD	Condom	Female sterilization	Male sterilization	
			URBAN			
Public medical sector	*	*	*	65.6	*	56.0
Government/municipal hospital	*	*	*	59.8	*	50.3
Government dispensary	*	*	*	0.0	*	0.5
UHC/UHP/UFWC	*	*	*	0.0	*	0.0
CHC/rural hospital/PHC	*	*	*	1.7	*	1.3
Sub-centre	*	*	*	0.0	*	0.0
Government mobile clinic	*	*	*	0.0	*	0.0
Government paramedic	*	*	*	0.0	*	0.0
Camp	*	*	*	2.9	*	2.2
Other public medical sector	*	*	*	1.2	*	1.8
NGO or trust	*	*	*	0.6	*	0.4
Hospital/clinic	*	*	*	0.6	*	0.4
Private medical sector	*	*	*	33.8	*	33.9
Private hospital/clinic	*	*	*	25.8	*	23.3
Private doctor	*	*	*	7.5	*	6.9
Private mobile clinic	*	*	*	0.0	*	0.4
Private paramedic	*	*	*	0.0	*	0.9
Pharmacy/drugstore	*	*	*	0.0	*	1.4
Other private medical sector	*	*	*	0.6	*	0.9
Other source	*	*	*	0.0	*	8.2
Shop	*	*	*	0.0	*	7.8
Other	*	*	*	0.0	*	0.4
Don't know[1]	*	*	*	0.0	*	1.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	19	8	20	180	11	239

Table 5.8 Source of modern contraceptive methods (contd.)

Percent distribution of current users of modern contraceptive methods by most recent source, according to specific method and residence, Bihar, 1998–99

Source	Contraceptive method					All modern methods
	Pill	IUD	Condom	Female sterilization	Male sterilization	
			RURAL			
Public medical sector	(15. 9)	(55.6)	(11.6)	86.0	79.2	80.9
Government/municipal hospital	(9.0)	(33.4)	(11.6)	71.5	73.3	67.1
Government dispensary	(2.3)	(0.0)	(0.0)	0.0	0.0	0.1
UHC/UHP/UFWC	(0.0)	(7.1)	(0.0)	1.1	0.0	1.1
CHC/rural hospital/PHC	(2.3)	(11.6)	(0.0)	4.5	2.0	4.3
Sub-centre	(0.0)	(3.5)	(0.0)	0.0	0.0	0.1
Government mobile clinic	(0.0)	(0.0)	(0.0)	0.4	0.0	0.4
Government paramedic	(2.2)	(0.0)	(0.0)	0.0	0.0	0.1
Camp	(0.0)	(0.0)	(0.0)	8.1	3.9	7.3
Other public medical sector	(0.0)	(0.0)	(0.0)	0.5	0.0	0.4
NGO or trust	(0.0)	(0.0)	(0.0)	0.4	0.0	0.3
Hospital/clinic	(0.0)	(0.0)	(0.0)	0.4	0.0	0.3
Private medical sector	(18.8)	(44.4)	(11.6)	13.5	20.8	14.6
Private hospital/clinic	(2.3)	(33.4)	(0.0)	11.0	17.0	11.2
Private doctor	(8.0)	(11.1)	(7.6)	2.3	3.7	2.9
Private mobile clinic	(0.0)	(0.0)	(0.0)	0.0	0.0	0.0
Private paramedic	(2.1)	(0.0)	(0.0)	0.0	0.0	0.1
Pharmacy/drugstore	(6.4)	(0.0)	(3.9)	0.0	0.0	0.3
Other private medical sector	(0.0)	(0.0)	(0.0)	0.2	0.0	0.2
Other source	(59.0)	(0.0)	(62.0)	0.1	0.0	3.6
Shop	(59.0)	(0.0)	(62.0)	0.0	0.0	3.5
Other	(0.0)	(0.0)	90.0)	0.1	0.0	0.1
Don't know[1]	(6.3)	(0.0)	(14.8)	0.0	0.0	0.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	47	27	26	1,097	53	1,250

Table 5.8 Source of modern contraceptive methods (contd.)

Percent distribution of current users of modern contraceptive methods by most recent source, according to specific method and residence, Bihar, 1998–99

Source	Contraceptive method					All modern methods
	Pill	IUD	Condom	Female sterilization	Male sterilization	
			TOTAL			
Public medical sector	16.2	(48.5)	(11.1)	83.1	78.3	76.9
Government/municipal hospital	8.1	(31.6)	(11.1)	69.8	71.7	64.4
Government dispensary	3.3	(0.0)	(0.0)	0.0	0.0	0.1
UHC/UHP/UFWC	0.0	(5.4)	(0.0)	0.9	0.0	0.9
CHC/rural hospital/PHC	1.6	(8.8)	(0.0)	4.1	1.6	3.8
Sub-centre	0.0	(2.6)	(0.0)	0.0	0.0	0.1
Government mobile clinic	0.0	(0.0)	(0.0)	0.4	0.0	0.3
Government paramedic	1.6	(0.0)	(0.0)	0.0	0.0	0.1
Camp	0.0	(0.0)	(0.0)	7.4	3.2	6.5
Other public medical sector	1.6	(0.0)	(0.0)	0.6	1.7	0.6
NGO or trust	0.0	(0.0)	(0.0)	0.4	0.0	0.4
Hospital/clinic	0.0	(0.0)	(0.0)	0.4	0.0	0.4
Private medical sector	20.1	(48.7)	(23.0)	16.4	21.7	17.7
Private hospital/clinic	3.4	(34.0)	(7.0)	13.1	17.1	13.1
Private doctor	7.3	(11.5)	(4.3)	3.1	4.6	3.6
Private mobile clinic	0.0	(0.0)	(2.3)	0.0	0.0	0.1
Private paramedic	3.2	(0.0)	(2.3)	0.0	0.0	0.2
Pharmacy/drugstore	6.2	(0.0)	(7.1)	0.0	0.0	0.5
Other private medical sector	0.0	(3.1)	(0.0)	0.2	0.0	0.3
Other source	55.9	(2.8)	(55.2)	0.1	0.0	4.3
Shop	55.9	(0.0)	(55.2)	0.0	0.0	4.2
Other	0.0	(2.8)	(0.0)	0.1	0.0	0.1
Don't know[1]	7.9	(0.0)	(10.8)	0.0	0.0	0.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	66	35	47	1,277	65	1,490

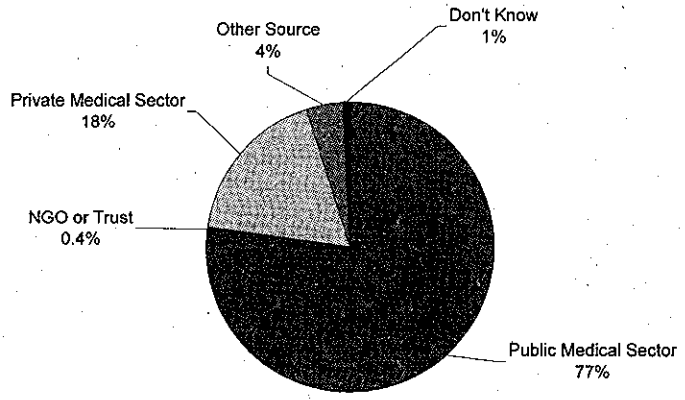
UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre; CHC: Community health centre; PHC: Primary Health Centre; NGO: Nongovernmental organization

( ) Based on 25–49 unweighted cases

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

[1]For the pill and 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.

Figure 5.2
Sources of Family Planning Among Current Users of Modern Contraceptive Methods



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Bihar, 1998–99

5.5 Reasons for Discontinuation/Non-Use of Contraception

All 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 only 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 asked women who had never used contraception the main reason for not currently using a method. Table 5.9 shows that in the NFHS-2 Bihar sample only 170 nonpregnant women who ever used family planning methods have discontinued use. Because 73 percent of ever users are sterilized, only a small percentage of ever users even have the option of discontinuing use. Among the small group who discontinued contraception, the most commonly mentioned reason for discontinuing is that the couple wanted to have a child (32 percent). Eleven percent of the users mentioned 'husband away' as their main reason for discontinuation, 10 percent reported that the method failed or they got pregnant, 9 percent reported that the method created a health problem, and 7 percent reported that the method created a menstrual problem. Another 7 percent discontinued contraception because they did not like the method.

Among women who never used contraception, the most commonly mentioned reason for never using a method is the desire for more children (43 percent). Another 13 percent of women say they are not using contraception because they are menopausal, have had a hysterectomy, or are infecund or subfecund. Only 4 percent mention a health-related problem (health concerns or worry about side effects), 9 percent mention any type of opposition to family planning, and 8 percent mention a lack of knowledge as reasons for not currently using contraception. Four percent say they are not using contraception because they are afraid of sterilization (thereby implicitly equating family planning with sterilization). There are no substantial urban-rural differences in reasons for non-use of contraception, except that the proportion reporting lack of knowledge is much greater in rural areas (8 percent) than in urban areas (4 percent).

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, Bihar, 1998–99

Reason	Urban	Rural	Total
REASON FOR STOPPING USE			
Method failed/got pregnant	(9.1)	9.9	9.7
Lack of sexual satisfaction	(0.0)	3.1	2.4
Created menstrual problem	(6.1)	7.5	7.2
Created health problem	(12.2)	8.3	9.1
Inconvenient to use	(2.9)	1.6	1.9
Hard to get method	(0.0)	1.4	1.1
Did not like the method	(9.5)	6.6	7.2
Wanted to have a child	(33.3)	31.7	32.1
Wanted to replace dead child	(0.0)	0.7	0.6
Lack of privacy for use	(0.0)	0.8	0.7
Husband away	(5.8)	11.7	10.5
Costs too much	(3.3)	6.1	5.5
Other	(17.9)	10.6	12.1
Total percent	100.0	100.0	100.0
Number of women	35	135	170
REASON FOR NOT CURRENTLY USING			
Husband away	3.7	2.5	2.6
Fertility-related reasons	70.4	64.6	65.1
Not having sex	0.6	0.4	0.4
Infrequent sex	3.0	1.5	1.7
Menopausal/had hysterectomy	17.7	9.6	10.2
Subfecund/infecund	4.5	3.1	3.2
Postpartum/breastfeeding	8.2	6.8	6.9
Wants more children	36.4	43.2	42.6
Opposition to use	8.7	9.3	9.2
Opposed to family planning	1.2	0.9	0.9
Husband opposed	3.8	3.9	3.9
Other people opposed	0.3	0.6	0.6
Against religion	3.4	3.9	3.9
Lack of knowledge	3.9	8.4	8.1
Knows no method	0.3	1.7	1.6
Knows no source	3.6	6.7	6.5
Method-related reasons	10.0	13.2	12.9
Health concerns	3.4	1.9	2.0
Worry about side effects	2.8	2.1	2.2
Hard to get method	0.0	0.5	0.4
Costs too much	0.6	2.0	1.9
Inconvenient to use	0.0	0.1	0.1
Afraid of sterilization	1.6	4.5	4.3
Doesn't like existing methods	1.6	2.1	2.1
Other	2.3	1.2	1.3
Don't know/missing	0.9	0.8	0.8
Total percent	100.0	100.0	100.0
Number of women	337	3,957	4,295

( ) Based on 25–49 unweighted cases

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 currently pregnant) 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 programmes to identify potential groups of 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 residence and number of living children.

Fifty-seven percent 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, only 28 percent intend to use a method within the next 12 months. About two-thirds (63–68 percent) of women with two or fewer living children intend to use contraception any time in the future, compared with 58 percent of women with three living children. By contrast, 55 percent of women with four or more living children say they have no intention of using contraception at any time in the future.

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 59 percent among women with no living children to 22 percent among those with four or more children. The proportion expressing an intention to use contraception within the next 12 months increases from 4 percent among those with no children to 25 percent among those with three children and then falls to 20 percent among those with four or more children. The overall proportion of women who intend to use contraception at some time in the future does not differ greatly by residence, but the timing of intended future use is quite different for women in rural and urban areas. Fifteen percent of women in rural areas intend to use contraception in the next 12 months, compared with 23 percent in urban areas. By contrast, 41 percent of women in rural areas intend to use contraception at some time after 12 months, compared with 33 percent in urban areas. The proportion intending to use contraception after 12 months is higher for women in rural areas than in urban areas at each parity.

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 47 percent of women mention a fertility-related reason for not intending to use contraception in the future, 24 percent mention a method-related reason, and 25 percent mention a reason related to opposition to use or lack of knowledge. The major single reason given for not intending to use contraception is that the woman is menopausal or she has undergone a hysterectomy (24 percent). Other important reasons are that the woman wants as many children as possible (15 percent) or that the couple is subfecund or infecund (7 percent). Thirty-one percent of younger women (age less than 30) mention the desire to have as many children as possible as the main reason for not intending to use contraception, compared with 6 percent of women age 30–49. By contrast, 45 percent of older women mention reasons related to menopause, hysterectomy, infecundity, or subfecundity, compared with only 3 percent of younger women. Twenty-four percent of younger women mention that they do not intend to use family planning because it is

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 and residence, Bihar, 1998–99

Intention to use in the future	Number of living children[1] 0	1	2	3	4+	Total
URBAN						
Intends to use in next 12 months	(10.2)	23.9	38.2	31.5	17.6	23.4
Intends to use later	(56.4)	53.4	26.5	22.0	17.9	32.8
Intends to use, unsure when	(0.0)	0.0	0.0	0.0	0.8	0.3
Unsure as to intention	(8.2)	3.3	1.5	3.5	2.9	3.5
Does not intend to use	(25.2)	19.4	33.8	42.9	60.7	40.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	50	97	66	56	144	414
RURAL						
Intends to use in next 12 months	3.5	8.7	14.8	24.6	20.4	15.3
Intends to use later	58.7	57.2	49.4	33.3	22.5	41.0
Intends to use, unsure when	0.7	1.4	1.5	0.4	0.3	0.8
Unsure as to intention	8.6	4.7	3.8	3.2	2.8	4.3
Does not intend to use	28.6	28.0	30.5	38.4	53.9	38.6
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	686	879	818	719	1,511	4,614
TOTAL						
Intends to use in next 12 months	3.9	10.2	16.5	25.1	20.2	16.0
Intends to use later	58.5	56.8	47.7	32.5	22.1	40.3
Intends to use, unsure when	0.6	1.3	1.4	0.4	0.4	0.8
Unsure as to intention	8.6	4.6	3.7	3.2	2.9	4.2
Does not intend to use	28.4	27.1	30.8	38.8	54.5	38.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	736	976	884	776	1,655	5,027

( ) Based on 25–49 unweighted cases
[1]Includes current pregnancy, if any

against their religion, compared with 12 percent of older women. The much greater proportion of younger women reporting 'want as many children as possible' and 'against religion' as main reasons for not intending to use family planning than older women suggests that younger women may not have thought enough about using family planning in the future, not that they really want more children or that they are more religious than older women.

Since younger women (age 15–29) account for 74 percent of total current fertility in Bihar, the reasons they give for not intending to use contraception are extremely important from a policy perspective. Of the 62 percent of younger women who give reasons not related to fertility, 51 percent report opposition to use of family planning, 16 percent mention that they are afraid of sterilization, 15 percent mention health concerns or concerns about side effects, and

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, Bihar, 1998–99

Reason	Current age 15–29	30–49	Total
Fertility-related reasons	34.6	54.3	47.1
Not having sex	0.2	1.2	0.8
Infrequent sex	0.6	1.4	1.1
Menopausal/had hysterectomy	1.4	36.1	23.5
Subfecund/infecund	1.7	9.3	6.5
Wants as many children as possible	30.7	6.2	15.2
Opposition to use	31.8	16.4	22.0
Opposed to family planning	1.0	1.6	1.3
Husband opposed	5.2	2.6	3.6
Other people opposed	1.4	0.3	0.7
Against religion	24.2	11.9	16.4
Lack of knowledge	4.5	2.4	3.2
Knows no method	2.8	1.0	1.7
Knows no source	1.7	1.4	1.5
Method-related reasons	26.0	23.0	24.1
Health concerns	2.9	2.1	2.3
Worry about side effects	6.3	3.0	4.2
Hard to get method	0.2	0.8	0.6
Costs too much	2.5	1.8	2.0
Inconvenient	0.1	0.2	0.2
Afraid of sterilization	9.9	11.2	10.7
Doesn't like existing methods	4.2	3.9	4.0
Other	0.7	3.4	2.5
Don't know/missing	2.4	0.5	1.2
Total percent	100.0	100.0	100.0
Number of women	709	1,239	1,948

another 7 percent mention lack of knowledge. This suggests that improved quality of services and information programmes could enhance the family welfare programme in Bihar. Nevertheless, among younger women who are not using contraception, the desire for high fertility remains the major reason for not intending to use contraception in the future.

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. A large majority of women who intend to use contraception (68 percent) say they intend to use female sterilization. The next most preferred method is the pill, which is the preference of 25 percent of women. Only one percent of women prefer that their husbands get sterilized, and 1 percent prefer to use the IUD.

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 and residence, Bihar, 1998–99

Preferred method	Timing of intended use: Next 12 months	Later	Unsure about timing	Total
URBAN				
Pill	31.6	21.2	*	25.4
IUD	7.5	0.8	*	3.5
Condom	3.1	1.5	*	2.1
Female sterilization	50.0	69.5	*	61.1
Male sterilization	1.2	0.8	*	0.9
Rhythm/safe period	2.2	0.0	*	0.9
Withdrawal	0.0	0.0	*	0.0
Other	0.0	0.8	*	1.0
Unsure/missing	4.4	5.5	*	5.0
Total percent	100.0	100.0	100.0	100.0
Number	97	136	1	234
RURAL				
Pill	34.1	21.5	(10.8)	24.7
IUD	1.1	0.6	(2.5)	0.8
Condom	0.7	0.3	(0.0)	0.4
Female sterilization	56.3	73.0	(83.8)	68.7
Male sterilization	1.3	1.1	(0.0)	1.1
Rhythm/safe period	0.7	0.3	(0.0)	0.4
Withdrawal	1.0	0.2	(0.0)	0.4
Other	3.5	1.1	(0.0)	1.7
Unsure/missing	1.3	2.0	(2.8)	1.8
Total percent	100.0	100.0	100.0	100.0
Number	707	1,890	37	2,633
TOTAL				
Pill	33.8	21.4	(10.5)	24.8
IUD	1.9	0.6	(2.4)	1.0
Condom	1.0	0.3	(0.0)	0.5
Female sterilization	55.5	72.8	(81.3)	68.0
Male sterilization	1.3	1.0	(0.0)	1.1
Rhythm/safe period	0.9	0.3	(0.0)	0.5
Withdrawal	0.9	0.2	(0.0)	0.4
Other	3.0	1.1	(3.0)	1.7
Unsure/missing	1.7	2.2	(2.8)	2.1
Total percent	100.0	100.0	100.0	100.0
Number	803	2,025	38	2,867

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

There are important differences in the choice of preferred methods by timing of intended use. Women who intend to use within the next 12 months show a much greater preference for spacing methods, whereas women who plan to use contraception later intend to rely primarily on female sterilization. Among the spacing methods mentioned by women intending to use contraception within the next 12 months, the pill is mentioned most often (34 percent), followed by the IUD (2 percent), and the condom (1 percent). Very few women (1 percent) mention male sterilization as their preferred method, both among women planning to use contraception within the next 12 months and among women planning to use contraception later. Results are similar for urban and rural areas with some exceptions. Among women who intend to use a method within the next 12 months, a higher proportion of rural women prefer the pill than urban women, whereas a higher proportion of urban women prefer the IUD and condom than rural women.

Overall, the mix of contraceptive methods that intended future users say they would prefer to use is not very different from the methods currently being used, with the heavy reliance on female sterilization. Yet, the fact that 37 percent of the women intending to use contraception within the next year prefer to use a spacing method suggests that there is a significant short-term potential demand for spacing methods that will need to be met.

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; Retherford and Mishra, 1997). 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 ever-married women who report having heard or seen a family planning message in the past few months, according to various background characteristics. Results indicate that messages disseminated through the mass media have reached 40 percent of ever-married women in Bihar. The most common source of exposure to family planning messages is radio. Twenty-six percent of ever-married women report having heard a family planning message on radio, followed by wall paintings or hoardings (22 percent) and television (21 percent). Only 8 percent were exposed to a message through a newspaper or magazine, 7 percent through cinema or film show, and 3 percent through a drama, folk dance, or street play.

Ever-married women below age 35 years report slightly greater exposure to family planning messages from mass media than women age 35 years and above. Overall exposure to mass media messages on family planning is much higher in urban areas than in rural areas. Seventy-two percent of urban ever-married women report seeing or hearing a family planning message from at least one media source, compared with only 36 percent of rural women. Urban women are much more likely than rural women to have been exposed to family planning messages through each form of mass media.

Exposure to mass media messages on family planning among ever-married women is lower in the Jharkhand region than in the North and South Bihar Plain regions. Exposure to family planning messages varies greatly by education. More than 65 percent of women who are literate have heard

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, Bihar, 1998–99

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	26.5	19.3	7.5	8.0	23.0	3.2	41.1	2,244
25–34	26.9	22.0	7.3	8.1	21.9	2.4	40.3	2,507
35–49	24.3	21.2	6.1	7.1	20.2	3.2	37.7	2,274
Residence								
Urban	45.5	61.7	26.6	26.2	35.7	3.6	71.7	718
Rural	23.7	16.2	4.8	5.7	20.1	2.9	36.1	6,306
Region								
North Bihar Plain	26.2	18.4	5.9	7.9	26.9	3.4	40.4	3,133
South Bihar Plain	27.1	22.9	7.7	7.7	20.6	2.6	40.8	2,199
Jharkhand	23.9	22.9	8.1	7.5	13.5	2.5	37.2	1,692
Education								
Illiterate	16.6	10.8	2.4	1.0	14.7	2.5	29.0	5,383
Literate, < middle school complete	45.6	39.2	11.0	13.5	35.2	3.1	65.1	779
Middle school complete	57.3	55.4	24.2	30.1	41.6	3.8	78.7	267
High school complete and above	70.3	72.8	35.3	51.2	58.3	6.3	86.1	595
Religion								
Hindu	26.8	21.6	7.4	8.4	22.6	3.1	40.8	5,872
Muslim	20.6	16.9	4.9	3.8	17.3	2.1	34.0	1,038
Christian	42.6	23.3	9.2	16.2	19.7	1.9	46.4	59
Other	17.6	17.4	3.6	5.7	11.7	5.8	29.0	55
Caste/tribe								
Scheduled caste	17.4	12.5	4.6	3.2	16.1	1.8	30.6	1,452
Scheduled tribe	15.7	8.0	2.0	1.7	10.5	3.9	25.6	582
Other backward class	23.8	19.1	6.2	6.3	21.4	2.6	37.9	3,642
Other	45.3	40.2	13.8	19.2	33.2	4.5	60.7	1,348
Standard of living index								
Low	11.2	6.2	1.6	1.0	12.2	1.7	22.6	3,709
Medium	35.2	26.1	8.6	8.4	26.7	4.3	51.5	2,595
High	68.9	78.5	29.3	40.8	52.5	4.4	86.0	712
Use of contraception								
Ever used	38.7	34.7	12.5	14.8	30.6	4.8	55.5	1,898
Never used	21.2	15.8	5.0	5.1	18.4	2.2	33.9	5,126
Total	25.9	20.9	7.0	7.8	21.7	2.9	39.7	7,024

Note: Total includes 8 women with missing information on the standard of living index, who are not shown separately.

or seen a family planning message from at least one media source in the past few months, compared with only 29 percent of women who are illiterate. Exposure to family planning messages through specific media sources is even more closely linked to education than is exposure in general. For example, 73 percent of women who have completed at least high school

have heard or seen a family planning message on television, compared with only 11 percent of women who are illiterate.

Exposure to family planning messages also differs by religion. Forty-six percent of Christian women say they have heard or seen a family planning message through the media, followed by 41 percent of Hindu women, 34 percent of Muslim women, and 29 percent of women belonging to 'other' religions. Christian women also report more exposure through radio, television, cinema or film show, and newspapers or magazines than do women of other religions.

Sixty-one percent of ever-married women not belonging to scheduled castes/tribes or other backward classes have seen or heard a family planning message, followed by 38 percent of women from other backward classes, 31 percent of women from scheduled castes, and 26 percent of women from scheduled tribes. This pattern of differential exposure by caste/tribe/class status is also observed for most specific media sources. Exposure to family planning messages rises sharply with an increasing standard of living, both for media in general and for each specific media source. Finally, as expected, women who have ever used contraception are more likely to report hearing or seeing a media message on family planning than are women who have never used contraception. All of these differentials are likely to reflect some combination of the greater access to broadcast signals in urban areas, the greater ability of higher-income households to own radios and televisions, and variations in attentiveness to media messages associated with differing levels of education, leisure, and interest.

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 husbands, 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 only 20 percent of currently married women in Bihar discussed family planning with their husbands, friends, neighbours, or other relatives in the past few months. Only 14 percent of currently married women discussed family planning with their husbands, and 12 percent discussed family planning with their friends or neighbours. Discussions of family planning with relatives other than the husband are even less common.

Women age 25–34 years are more likely to have discussed family planning with someone (25 percent) than women age 15–24 (19 percent) or women age 35–49 (15 percent). Women in the South Bihar Plain region are more likely to have discussed family planning with someone (24 percent) than women in the North Bihar Plain region (19 percent) or women in the Jharkhand region (16 percent). In general, the proportion of women who have discussed family planning with other persons varies predictably by most other background characteristics. 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 household standard of living index. Hindu women are more likely to have discussed family planning than Muslim or Christian women. Discussions of family planning are considerably lower for scheduled-caste and scheduled-tribe women than for other groups. As expected, women who have ever used contraception are much more likely to have discussed family planning (28 percent) than women who have never used contraception (17 percent).

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, Bihar, 1998–99

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	13.4	1.2	0.4	0.1	1.7	3.6	11.9	0.2	18.8	2,181
25–34	17.7	2.0	0.6	0.0	2.1	5.0	15.0	0.2	24.9	2,400
35–49	10.2	0.7	0.4	0.3	1.0	3.2	9.7	0.1	15.1	2,079
Residence										
Urban	16.6	1.9	0.9	0.6	1.4	5.1	12.2	0.0	23.2	677
Rural	13.6	1.3	0.4	0.1	1.6	3.8	12.4	0.2	19.5	5,984
Region										
North Bihar Plain	12.8	1.1	0.4	0.1	1.5	5.4	14.4	0.3	19.0	2,974
South Bihar Plain	16.6	1.7	0.9	0.2	2.1	4.5	14.0	0.2	24.0	2,074
Jharkhand	12.5	1.3	0.2	0.1	1.1	0.6	6.4	0.1	15.9	1,613
Education										
Illiterate	11.8	1.0	0.3	0.1	1.2	3.0	11.0	0.1	17.1	5,083
Literate, < middle school complete	15.9	2.0	0.4	0.1	2.1	4.6	12.5	0.1	22.7	748
Middle school complete	24.0	2.5	1.2	0.0	3.8	8.6	17.3	1.1	30.8	256
High school complete and above	25.4	2.7	1.9	0.0	3.3	9.6	21.8	0.7	35.4	573
Religion										
Hindu	14.7	1.4	0.5	0.1	1.7	4.2	13.0	0.2	20.8	5,574
Muslim	9.5	1.1	0.3	0.0	1.4	2.4	8.9	0.1	14.3	982
Christian	12.8	0.0	0.0	0.0	0.0	1.7	9.3	0.0	16.6	57
Other	(15.5)	(2.4)	(0.0)	(0.0)	(0.0)	(2.3)	(13.6)	(0.0)	(22.4)	48
Caste/tribe										
Scheduled caste	11.5	0.7	0.4	0.1	1.0	2.2	10.9	0.1	16.8	1,383
Scheduled tribe	9.4	1.8	0.0	0.0	0.6	0.4	5.1	0.0	11.9	546
Other backward class	15.1	1.3	0.4	0.1	1.7	4.1	12.6	0.2	20.8	3,454
Other	15.2	1.8	1.1	0.2	2.5	6.9	16.2	0.4	23.8	1,277
Standard of living index										
Low	11.4	0.7	0.2	0.1	1.0	2.3	11.5	0.1	16.9	3,480
Medium	15.3	1.9	0.5	0.1	2.1	4.2	11.8	0.4	21.1	2,491
High	21.3	2.4	1.5	0.4	2.9	11.1	18.5	0.3	30.3	682
Use of contraception										
Ever used	19.6	2.2	0.8	0.2	2.4	7.8	17.5	0.2	28.0	1,840
Never used	11.8	1.0	0.3	0.1	1.3	2.5	10.4	0.2	16.7	4,821
Husband's education										
Illiterate	10.2	0.7	0.3	0.1	0.8	2.1	10.3	0.1	15.3	2,783
Literate, < middle school complete	13.0	1.1	0.2	0.1	1.3	3.1	11.6	0.0	18.2	1,241
Middle school complete	15.0	1.7	0.7	0.2	1.8	3.8	11.1	0.3	20.9	621
High school complete and above	19.3	2.2	0.9	0.2	2.7	7.0	16.0	0.3	26.8	2,008
Total	13.9	1.3	0.5	0.1	1.6	3.9	12.3	0.2	19.8	6,661

Note: Total includes 8 women with missing information on the standard of living index and 8 women with missing information on husband's education, who are not shown separately.
( ) Based on 25–49 unweighted cases

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, 25 percent of currently married women in Bihar have an unmet need for family planning. The unmet need is about the same for spacing births (13 percent) as for limiting births (12 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 25 percent to 49 percent of currently married women. This means that current programmes are meeting only about one-half of the family planning need in the state (as shown in the last column of the Table 5.15). These results suggest that there has been no change in unmet need during the six-year period since NFHS-1 when unmet need for Bihar was also estimated to be 25 percent. The proportion of demand satisfied has also remained virtually unchanged during this period (48 percent in NFHS-1 and 50 percent in NFHS-2).

Unmet need generally declines with women's age. As expected, unmet need at younger ages is primarily for spacing and at older ages it is primarily for limiting. For women under age 20, the unmet need is almost entirely for spacing rather than for limiting. Unmet need is highest for women age 20–24 (33 percent), with 76 percent of the need being for spacing. Among women age 25–29, 31 percent have an unmet need, and 58 percent of this need is for limiting. Only 7 percent of the total demand for family planning is being met for currently married women age 15–19. This proportion rises sharply to 19 percent for women age 20–24, 43 percent for women age 25–29, 55 percent for women age 30–34, and 71 percent or more for women age 35–49. The met and unmet need for contraception among women age 30 years and above is almost exclusively for limiting.

The unmet need for family planning is slightly higher in rural areas (25 percent) than in urban areas (23 percent), whereas the percentage of demand satisfied is considerably lower in rural areas. The unmet need for family planning is higher in the South Bihar Plain region (28 percent) than in the North Bihar Plain region (24 percent) or in the Jharkhand region (21 percent). The total unmet need shows no relationship with women's level of education, but unmet need for spacing is greater among literates and unmet need for limiting is greater among illiterates. Because met need increases with women's education, the percentage of demand satisfied is lower among illiterate women (45 percent) than among literate women (58–62 percent).

Hindu women have somewhat lower unmet need for family planning (24 percent) than either Muslim women (29 percent) or Christian women (26 percent). Because met need is much lower among Muslim women (9 percent) compared with Hindu or Christian women (26–27 percent), the percentage of total demand satisfied is also much lower among Muslim women (24 percent) than among Hindu or Christian women (50–53 percent). Unmet need is higher for scheduled-caste women (27 percent) than for women in 'other' caste/tribe/class groups (21–25 percent). The percent of demand satisfied is lower for scheduled-caste and scheduled-tribe women

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, Bihar, 1998–99

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										
15–19	29.7	1.7	31.4	1.9	0.5	2.4	31.6	2.2	33.8	7.1
20–24	25.1	7.9	33.0	2.5	5.3	7.8	27.7	13.1	40.8	19.1
25–29	12.7	17.9	30.6	2.3	21.1	23.4	15.0	39.0	54.0	43.4
30–34	6.1	21.7	27.8	0.4	33.6	34.0	6.5	55.3	61.8	55.0
35–39	1.9	14.5	16.4	0.4	40.4	40.8	2.3	55.0	57.2	71.3
40–44	0.4	8.8	9.3	0.3	41.1	41.4	0.7	49.9	50.7	81.7
45–49	0.2	2.9	3.1	0.0	37.5	37.5	0.2	40.4	40.6	92.4
Residence										
Urban	11.6	11.5	23.1	3.3	35.6	38.9	14.9	47.1	61.9	62.8
Rural	12.8	11.9	24.7	1.2	21.7	22.9	13.9	33.7	47.6	48.1
Region										
North Bihar Plain	11.6	12.2	23.8	1.0	23.5	24.4	12.6	35.7	48.2	50.7
South Bihar Plain	15.4	13.0	28.4	1.7	20.6	22.2	17.0	33.5	50.6	43.9
Jharkhand	11.1	9.9	21.0	1.7	25.9	27.6	12.8	35.9	48.7	56.8
Education										
Illiterate	11.9	13.0	24.9	0.8	19.7	20.5	12.7	32.6	45.3	45.1
Literate, < middle school complete	13.4	8.5	21.8	2.3	33.8	36.1	15.7	42.2	57.9	62.3
Middle school complete	18.4	7.5	25.9	4.1	32.2	36.3	22.5	39.7	62.2	58.3
High school complete and above	15.6	8.9	24.5	4.1	36.1	40.3	19.7	45.0	64.7	62.2
Religion										
Hindu	12.3	11.5	23.8	1.3	26.0	27.3	13.6	37.5	51.1	53.4
Muslim	14.6	14.4	29.0	1.5	7.6	9.1	16.0	22.0	38.0	23.8
Christian	16.8	9.5	26.3	3.5	22.4	25.8	20.3	31.8	52.2	49.5
Other	(9.1)	(6.5)	(15.7)	(2.4)	(13.1)	(15.5)	(11.5)	(19.6)	(31.1)	(49.7)
Caste/tribe										
Scheduled caste	13.6	13.6	27.2	1.3	18.2	19.5	14.8	31.8	46.7	41.8
Scheduled tribe	9.7	10.9	20.6	1.4	12.7	14.1	11.1	23.7	34.7	40.6
Other backward class	13.2	12.0	25.2	1.4	23.1	24.6	14.7	35.1	49.8	49.4
Other	11.4	10.3	21.6	1.3	33.0	34.3	12.7	43.2	55.9	61.3
Standard of living index										
Low	13.1	13.8	26.9	0.6	15.8	16.5	13.7	29.7	43.3	38.0
Medium	12.6	10.2	22.8	1.5	27.7	29.1	14.1	37.8	51.9	56.1
High	10.6	8.4	19.0	4.7	44.1	48.8	15.3	52.5	67.8	72.0

Contd...

Table 5.15 Need for family planning services (contd.)

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, Bihar, 1998–99

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	
Number of living children										
0	16.0	0.0	16.0	1.1	0.3	1.5	17.1	0.3	17.4	8.4
1	27.5	1.6	29.1	3.8	2.6	6.4	31.3	4.2	35.5	18.0
2	17.6	8.2	25.8	2.2	22.0	24.2	19.8	30.2	50.1	48.4
3	9.4	13.9	23.4	1.0	36.4	37.3	10.4	50.3	60.7	61.5
4	6.3	17.6	23.9	0.3	40.0	40.3	6.6	57.6	64.2	62.8
5	3.6	22.0	25.6	0.0	35.3	35.3	3.6	57.3	60.9	58.0
6+	2.7	26.4	29.1	0.4	24.9	25.4	3.1	51.3	54.5	46.6
Total	12.6	11.9	24.5	1.4	23.1	24.5	14.0	35.0	49.1	50.0

( ) Based on 25–49 unweighted cases

[1]Unmet need for *spacing* includes pregnant women whose pregnancy was mistimed, amenorrhoeic women whose last birth was mistimed, and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and 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 and who are not using any method of family planning and who want no more children.

[2]Met 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 child. 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.

(41–42 percent) than for women in other groups (49–61 percent). Unmet need for family planning declines and the percentage of demand satisfied increases steadily with the standard of living index.

Unmet need for family planning is lower for women with no children (16 percent) than for women with one or more living children (23–29 percent). Among women with no children or one child, unmet need is almost exclusively for spacing, whereas for women with two children 32 percent of unmet need is for limiting, and for women with three or more children unmet need is almost exclusively for limiting. For women with no living children, only 8 percent of the total demand for family planning is satisfied, and for women with one child, only 18 percent of the demand is satisfied. The percentage of demand satisfied rises sharply to 48 percent for women with two children and 62–63 percent for women with 3–4 children. These results show that the almost exclusive emphasis of the family planning programme on sterilization fails to meet the needs of young women who are still in the process of family formation. Many of these women have an unmet need for spacing, especially before their first birth and between their first and second births.

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 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 past two years. 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 infection, fever, and diarrhoea among children and the treatment of these illnesses; and mothers' knowledge of oral rehydration therapy.

The information on child health and health-care practices was collected from mothers for children born since 1 January 1995. If a woman had more than two live births during the three years preceding the survey, 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 by sex for the usual resident (*de jure*) population of Bihar from NFHS-2 and the Sample Registration System (SRS). The table also presents crude death rates and age-specific death rates from NFHS-1 for the total population (both sexes combined). The SRS death rates are based on deaths to the usual resident population in 1997. 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 mid-point of the time period in question on the basis of the intercensal population growth rate in the state. The intercensal growth rate is assumed to be the same for all age and sex groups.

Questions on the number of deaths occurring to usual residents in each household during a particular time period have been included in demographic surveys in many countries and have often resulted in a substantial underreporting of deaths. The Sample Registration System (SRS), maintained by the Office of the Registrar General of India, provides the most useful comparison. The most recent report on mortality estimates by age for Bihar is for 1997 (Office of the Registrar General, 1999a).

Table 6.1 shows an estimated average annual CDR for Bihar of 11.3 deaths per 1,000 population based on NFHS-2 data (covering roughly 1997–98) compared with 10.0 from the 1997 SRS. Thus, contrary to expectations, the CDR estimated from NFHS-2 is higher than the corresponding SRS estimate. NFHS-2 age-specific death rates are also higher than the SRS rates for all of the broad age groups above age 5, especially for the 60+ age group. For ages below 5 years, the NFHS-2 rate is lower than the SRS rate.

The NFHS-2 CDR estimate of 11.3 is almost the same as the corresponding NFHS-1 estimate of 11.5 (covering roughly 1991–92). The age-specific death rate at age 60 and above is higher in NFHS-2 than in NFHS-1, but death rates for children less than 15 years of age are lower in NFHS-2 than in NFHS-1. This comparison suggests an increase in death rates at older ages and a decrease in death rates for children in Bihar since 1991–92 if the completeness of reporting of deaths is the same in the two surveys.

In most countries, male death rates are higher than female death rates at nearly all ages. South Asia generally has been an exception in this respect, with higher death rates for females over much of the age span (Tabutin and Willems, 1995; Preston, 1989; Ghosh, 1987). The NFHS-2 shows that the male CDR is slightly higher than the female CDR, but according to the SRS the reverse is true. The age-specific death rates are also reversed between NFHS-2 and the SRS. According to the NFHS-2, male death rates are higher at younger ages (0–14) and lower at older ages (50+), but according to the SRS, female death rates are higher at younger ages (0–14)

Table 6.1 Age-specific death rates and crude death rates

Age-specific death rates and crude death rates (CDR) by sex from NFHS-1, NFHS-2, and the SRS, Bihar

	NFHS-1 (1991–92)	NFHS-2 (1997–98)			SRS (1997)		
Age	Total	Male	Female	Total	Male	Female	Total
< 5	28.0	19.3	18.7	19.0	24.8	27.1	25.9
5–14	3.3	3.1	2.5	2.8	1.8	2.9	2.4
15–49	4.0	4.6	5.1	4.8	3.7	4.1	3.9
50–59	17.5	16.6	17.7	17.1	16.7	16.4	16.6
60+	54.7	69.2	79.6	73.6	58.9	50.7	55.1
CDR	11.5	11.5	11.1	11.3	9.9	10.2	10.0

Note: Age-specific death rates and crude death rates by sex 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. The SRS rates are also *de jure*, based on deaths during 1997. Rates are specified on a per-thousand basis.
Source for SRS: Office of the Registrar General, 1999b

and lower at older ages (50+). According to both the NFHS-2 and the SRS, female death rates are slightly higher than male death rates during the reproductive years (15–49).

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

[1]A detailed description of the method for calculating the probabilities presented here is given in Rutstein (1984). The mortality estimates are not rates, but are true probabilities, calculated according to the conventional life-table approach. 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:

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

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 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 low and if underreporting is more severe for children born longer ago than for children born recently, any decline in mortality will tend to be understated.

Results from Table B.5 (Appendix B) suggest that early neonatal deaths have not been seriously underreported in the NFHS-2 results for Bihar, since the ratios of deaths under seven days to all neonatal deaths are consistently high (between 71 and 78 percent) for the different time periods preceding the survey (a ratio of less than 25 percent is often used as a guideline to indicate 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 66 and 67 percent) for the different time periods preceding the survey.

Another problem inherent in most retrospective surveys is heaping of age at death on certain digits, e.g., 6, 12, and 18 months. If the net result of 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 or older. Thus, heaping at 12 months can bias the mortality estimates because a certain fraction of these deaths 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 Bihar NFHS-2, there appears to be a slight preference for reporting age at death at 1, 6, 8, 12, 15, 20, and 30 days (Table B.5 in Appendix B). An examination of the distribution of deaths under age two years during the 15 years preceding the survey by month of death (Appendix Table B.6) indicates a heaping of deaths at 6, 12, and 18 months of age. The amount of heaping on 12 months is minor, probably due to the strong emphasis on this problem during the training of interviewers for NFHS–2 fieldwork[2]. This brief assessment of the internal consistency of NFHS-2 childhood mortality data for Bihar suggests that, although there may be

[2]Interviewers were trained to probe for the exact number of months lived by the child if the age at death was reported as 'one year'.

some heaping of age at death at certain ages, the heaping is minimal and any resulting bias in infant and child mortality rates is negligible.

It is seldom possible to establish mortality levels with confidence for a period of more than 15 years before a survey. Even within the recent 15-year period considered here, apparent trends in mortality rates should be interpreted with caution for several reasons. First, there may 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 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. Table 4.18 (Chapter 4) shows that very few of the children born in the five years before NFHS-2 were born to women age 35 and above. 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, Trends, and Differentials in Infant and Child Mortality

Table 6.2 and Figure 6.1 present various measures of infant and child mortality by residence for the three five-year periods preceding the survey. Infant mortality in Bihar declined from 78 deaths per 1,000 live births during 1989–94 (5–9 years before the survey) to 73 deaths per 1,000 live births during 1994–98 (0–4 years before the survey), an average rate of decline of one infant death per 1,000 live births per year. However, when compared with the period 10–14 years before the survey, the infant mortality rate in Bihar does not show any decline during the past 15 years. A comparison of the infant mortality rate for the period 0–4 years before NFHS-2 (73) with the infant mortality rate 0–4 years before NFHS-1 (89) suggests a more rapid decline of 16 deaths per 1,000 live births over the six years between the two surveys.

Neonatal mortality and child mortality rates presented in Table 6.2 also suggest a very slow pace of decline, and postneonatal mortality shows no decline during the past 15 years. As in the case of infant mortality, however, a comparison with the corresponding rates derived from NFHS-1 suggests that the declines may have been more rapid than indicated by NFHS–2 data alone.

Despite the overall decline in infant and child mortality, 1 in every 14 children born in Bihar during the five years before NFHS-2 died within the first year of life, and 1 in every 10 children died before reaching age five. Clearly child-survival programmes in Bihar need to be intensified to achieve further reductions in infant and child mortality. Overall, 64 percent of infant deaths recorded in Bihar during the five-year period before NFHS-2 occurred during the first month of life, up slightly from 61 percent for the comparable period before NFHS-1. This indicates that the decline in the infant mortality rate in recent years has come disproportionately from improvement in postneonatal mortality.

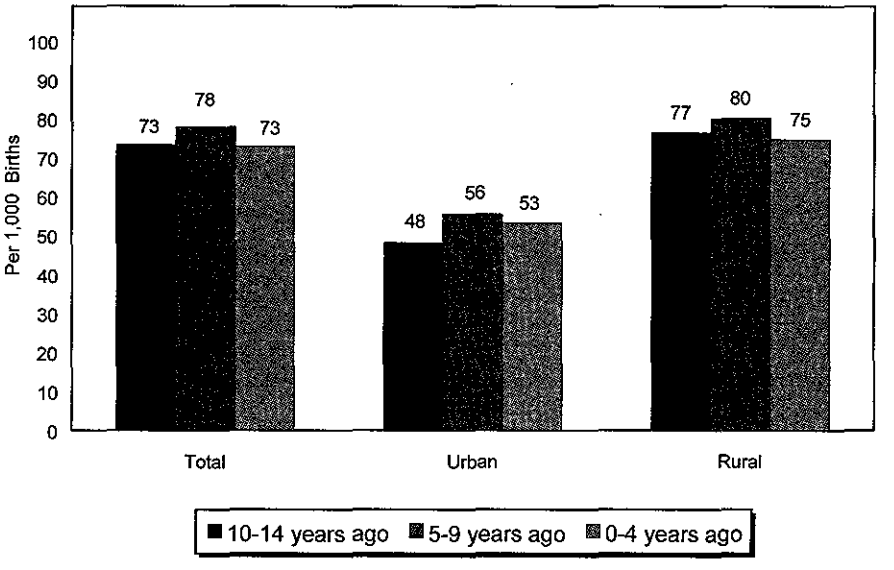
Table 6.2 Infant and child mortality

Neonatal, postneonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey by residence, Bihar, 1998–99

Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
			URBAN		
0–4	(32.8)	(20.5)	(53.3)	(15.8)	(68.3)
5–9	37.6	18.0	55.6	(23.4)	77.7
10–14	37.3	10.9	48.2	(25.4)	72.4
			RURAL		
0–4	47.8	27.0	74.8	36.5	108.6
5–9	53.2	27.0	80.2	42.2	119.1
10–14	49.4	27.2	76.6	48.8	121.7
			TOTAL		
0–4	46.5	26.4	72.9	34.7	105.1
5–9	51.8	26.2	78.0	40.2	115.1
10–14	48.1	25.3	73.3	45.9	115.8

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

Figure 6.1
Infant Mortality Rate for Five-Year Periods by Residence



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

NFHS-2, Bihar, 1998–99

Rural mortality rates are considerably higher than urban mortality rates. During the five years preceding the survey, infant mortality is 40 percent higher in rural areas and child mortality is 131 percent higher in rural areas. Under-five mortality is 59 percent higher in rural areas than in urban areas.

In both urban and rural areas, child mortality has declined gradually during the 15 years preceding the survey. But, neonatal, postneonatal, and infant mortality rates do not show any consistent decline during this period in either urban or rural areas. A comparison with corresponding figures from NFHS-1, however, suggests a considerable decline in both urban and rural areas in all indicators of infant and child mortality during the six and one-half years between the two surveys.

The estimated NFHS-2 infant mortality rate of 73 deaths per 1,000 live births during 1994–98 is in close agreement with the SRS value of 70 deaths per 1,000 live births averaged for the period 1994–98. The NFHS-2 and average SRS estimates of the infant mortality rate for rural and urban areas over the same period are also in close agreement. For rural areas, NFHS-2 estimated the infant mortality rate at 75 deaths per 1,000 live births, compared with the SRS value of 71 deaths per 1,000 live births; and for urban areas, NFHS-2 estimated the infant mortality rate at 53 deaths per 1,000 live births, compared with the SRS value of 55 deaths per 1,000 live births.

Socioeconomic Differentials in Infant and Child Mortality

The probability of dying in early childhood is higher in some population groups than in others. Table 6.3 presents differentials in infant and child mortality rates for the 10-year period preceding the survey by selected background characteristics. Children in rural areas of Bihar experience a 42 percent higher probability of dying before their first birthday and 55 percent higher probability of dying before their fifth birthday than urban children. Infant and child mortality rates are somewhat lower in the Jharkhand region than in other regions.

All the infant and child mortality rates decline sharply with an increase in education of mothers, as expected. Infant mortality rate ranges from a high of 82 deaths per 1,000 live births for illiterate mothers to a low of 37 deaths per 1,000 live births for mothers who have at least completed high school. Under-five mortality similarly ranges from a high of 121 for illiterate mothers to a low of 47 for mothers who have at least completed high school.

All the infant and child mortality rates are higher for Hindus than for Muslims. Under-five mortality is 112 death per 1,000 live births for Hindu children and 99 deaths per 1,000 live births for Muslim children. At the time of NFHS-1, by contrast, all the infant and child mortality rates were higher for Muslims than for Hindus. The sample size for Muslim children is relatively small, however. Mortality differentials by religion presumably reflect influences other than religion. This is confirmed by a study based on NFHS-1 data, which noted that the difference in infant and child mortality rates between Hindu and Muslim children is reduced considerably when other demographic and socioeconomic variables are controlled statistically (Pandey et al., 1998).

Children whose mothers belong to scheduled castes, scheduled tribes, and other backward classes have considerably higher levels of infant and child mortality than do children whose mothers do not belong to any of these groups. As expected, all indicators of infant and

Table 6.3 Infant and child mortality by background characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey by selected background characteristics, Bihar, 1998–99

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Residence					
Urban	35.3	19.2	54.6	19.8	73.3
Rural	50.7	27.0	77.7	39.2	113.9
Region					
North Bihar Plain	49.6	25.4	75.0	40.2	112.2
South Bihar Plain	50.4	29.1	79.5	40.5	116.8
Jharkhand	47.1	24.0	71.1	27.1	96.3
Mother's education					
Illiterate	53.2	29.0	82.2	42.0	120.8
Literate, < middle school complete	39.2	19.9	59.1	22.1	79.9
Middle school complete	(35.5)	(10.2)	(45.7)	(17.0)	(61.9)
High school complete and above	26.3	10.7	37.0	10.6	47.2
Religion					
Hindu	49.9	26.5	76.5	38.7	112.2
Muslim	46.5	24.8	71.3	29.6	98.7
Caste/tribe					
Scheduled caste	52.8	33.5	86.3	52.0	133.8
Scheduled tribe	56.3	25.6	81.9	37.8	116.6
Other backward class	51.0	24.3	75.3	34.1	106.8
Other	37.2	24.0	61.2	29.9	89.3
Standard of living index					
Low	58.3	31.0	89.3	48.4	133.4
Medium	37.9	20.4	58.3	23.4	80.4
High	31.2	15.0	46.2	17.2	62.6
Total	49.3	26.3	75.7	37.3	110.2

Note: The 10-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.
( ) Based on 250–499 children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates

child mortality decline substantially with increases in the household standard of living. For example, for children in the households with a high standard of living the infant mortality rate is 46 deaths per 1,000 live births and the under-five mortality rate is 63 deaths per 1,000 live births; the corresponding rates for children in households with a low standard of living are about twice as high at 89 and 133, respectively. The neonatal and postneonatal mortality rates are also about two times higher and the child mortality rate is almost three times higher in households with a low standard of living than in households with a high standard of living.

Demographic Differentials in Infant and Child Mortality

This section examines differentials in early childhood mortality by demographic characteristics of both the child and the mother. Table 6.4 and Figure 6.2 present various indicators of infant and child mortality for the 10 years preceding the survey by sex of the child, mother's age at childbirth, birth order, length of the previous birth interval, and medical care received by the mother during pregnancy, delivery, and the early postpartum period.

Table 6.4 Infant and child mortality by demographic characteristics

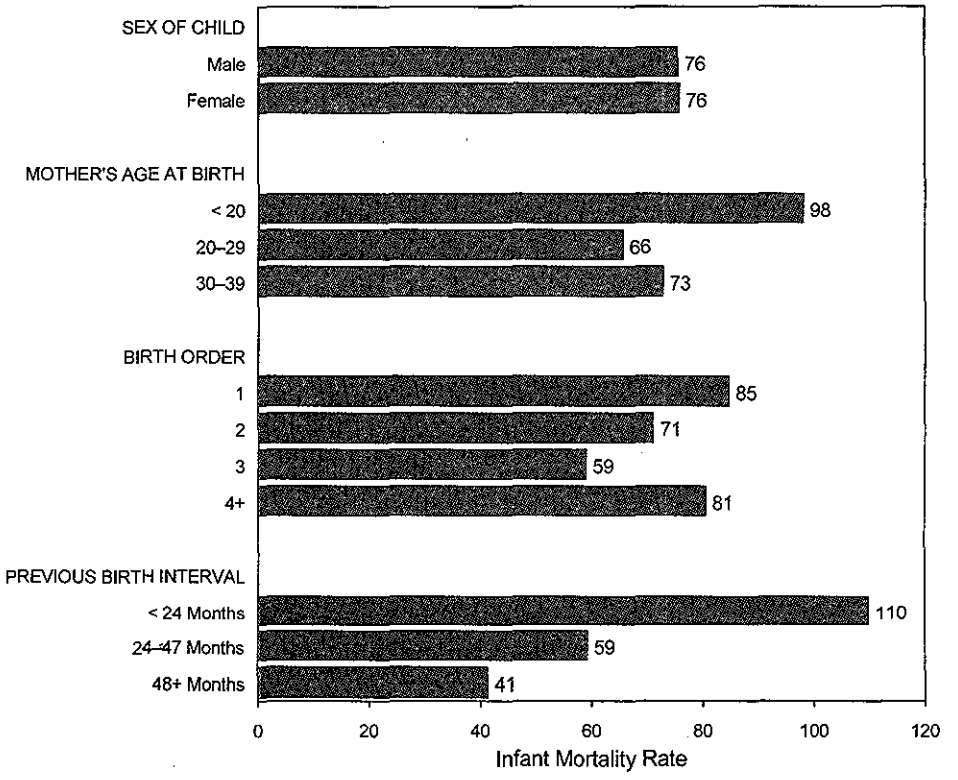
Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey by selected demographic characteristics, Bihar, 1998–99

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Sex of child					
Male	51.9	23.6	75.5	31.4	104.6
Female	46.6	29.1	75.8	43.6	116.0
Mother's age at birth					
< 20	65.9	32.2	98.1	33.6	128.5
20–29	42.8	22.9	65.7	37.3	100.5
30–39	45.8	27.2	73.0	43.9	113.7
Birth order					
1	62.9	21.9	84.8	28.1	110.5
2	44.9	26.2	71.1	32.4	101.2
3	38.7	20.3	59.0	37.3	94.1
4+	48.8	31.8	80.6	45.9	122.8
Previous birth interval					
< 24 months	68.9	41.1	109.9	59.3	162.7
24–47 months	36.8	22.5	59.3	34.8	92.1
48+ months	25.2	16.2	41.4	14.7	55.4
Medical care[2]					
No care	43.7	25.3	69.1	U	U
One or two types of care	34.4	18.0	52.4	U	U
Birth size[3]					
Large	(44.9)	(17.7)	(62.6)	U	U
Average	24.2	21.4	45.6	U	U
Small	(81.3)	(32.1)	(113.4)	U	U

Note: The 10-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.
U: Not available
( ) Based on 250–499 children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates
[2]Medical care includes (i) antenatal care received from a health worker, (ii) delivery assistance given by a doctor, nurse, trained midwife, or other health professional, and (iii) postnatal care received in a health facility or at home within two months of delivery; rates are for the three-year period preceding the survey.
[3]Birth size as reported by mother; rates are for the three-year period preceding the survey.

Table 6.4 shows that under-five mortality in Bihar is slightly higher for girls than for boys. Excess female mortality occurs mainly after the first year of life. The infant mortality rate during the 10-year period before the survey is about the same for boys and girls (76 deaths per 1,000 live births), but the child mortality rate ($_4q_1$) is considerably higher for girls (44 deaths per 1,000 live births) than for boys (31 deaths per 1,000 live births). This reversal of sex differentials in mortality with increasing age has been observed in other studies in South Asia and is thought to reflect the relative medical and nutritional neglect of the girl-child (Das Gupta, 1987; Basu, 1989). Within the first year of life, neonatal mortality is higher for boys (52 deaths per 1,000 live births) than for girls (47 deaths per 1,000 live births), but postneonatal mortality is higher for girls (29 deaths per 1,000 live births) than for boys (24 deaths per 1,000 live births). This pattern of gender differentials in mortality during the first year of life is expected because neonatal mortality (which reflects largely congenital conditions) tends to be higher for boys than girls in most populations. The male-female differences in the neonatal and postneonatal mortality rates

Figure 6.2
Infant Mortality Rate by Selected Demographic Characteristics



Note: Based on births in the 10 years preceding the survey (1989–98)

NFHS-2, Bihar, 1998–99

in Bihar are, however, unlikely to be significant given the large sampling errors associated with the different estimates of infant and child mortality (Appendix Table A.2).

For both social and biological reasons, infant mortality rates and child mortality rates often exhibit a U-shaped pattern with respect to the mother's age at childbirth, with children of both very young and very old mothers experiencing higher mortality rates than children whose mothers are in the prime reproductive ages. Bihar exhibits the expected U-shaped pattern of mortality by mother's age, with higher infant mortality rate among children of mothers under age 20 (98 deaths per 1,000 live births) and children of mothers age 30–39 (73 deaths per 1,000 live births) than among children of mothers age 20–29 (66 deaths per 1,000 live births). Similar patterns are observed for neonatal and postneonatal mortality rates. Infants born to young mothers are more likely to be of low birth weight, which is probably an important factor contributing to their higher neonatal mortality rate. Similarly, children born to mothers above age 30 are at higher risk than other children of experiencing congenital problems. The U-shaped relationship is not observed in the case of child mortality. Mortality among children age 1–4 years increases steadily with mother's age at childbirth.

Birth order also tends to have a U-shaped relationship to infant deaths, with first births and high-order births having elevated mortality rates. In Table 6.4, birth order shows the expected U-shaped pattern for neonatal, postneonatal, and infant mortality rates, although postneonatal mortality rate is higher for birth order two than for birth order one. This association

is likely to reflect not only the effect of birth order but also the effect of the age of the mother at childbirth. Child mortality tends to increase with birth order, as with mother's age at childbirth. The increase in the child mortality rate with birth order may reflect a more intense competition faced by higher birth-order children for the caregiver's time, for medical resources, and for nutritious food once children are weaned. It is also likely that higher birth-order children are disproportionately from lower socioeconomic groups, where mortality tends to be higher. Under-five mortality, combining infant and child mortality, has a U-shaped relationship with birth order, as expected.

The timing of successive births has a powerful effect on the survival chances of children in Bihar. Infant and child mortality rates decrease as the length of the previous birth interval increases and both measures are especially high for children born less than 24 months after a previous birth. The infant mortality rate is 165 percent higher for children with a preceding birth interval of less than 24 months than for children with a preceding birth interval of 48 months or more (110 deaths compared with 41 deaths per 1,000 live births). The previous birth interval has a similar effect on all other indicators of infant and child mortality as shown in Table 6.4. Although the length of the preceding birth interval is likely to affect mortality risks directly, a substantial portion of the association between birth intervals and mortality risks may reflect the effect of factors that are correlated with birth intervals. For example, shorter birth intervals are likely to occur in large families, and large families tend to come from lower socioeconomic groups and are more likely than other families to live in rural areas where medical facilities and other survival-enhancing resources are less readily available. Nevertheless, multivariate analyses of birth-interval effects on child survival commonly find an association between short birth intervals (less than 24 months) and increased mortality even after controlling for other demographic and socioeconomic characteristics (Retherford et al., 1989).

Antenatal, delivery, and postnatal care are usually associated with lower infant mortality. Table 6.4 shows that children of mothers who receive one or two types of care have considerably lower risk of neonatal and postneonatal mortality than do children whose mothers receive no maternity-related medical care. It is not possible to compare the mortality rates for children of mothers who receive all three types of maternity-related care due to the small number of cases in that category.

6.3 Morbidity

There is 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 sampled households. The results were found to be generally plausible and useful. For this reason, 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 do clinical tests for any of the disease conditions.

Table 6.5 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. Diseases carrying a stigma, such as tuberculosis, may be underreported due to intentional concealment by respondents. Underestimation may also occur because the 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 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 Bihar, 2 percent of the population was reported to be suffering from asthma at the time of the survey. The prevalence of asthma is considerably higher in rural areas (2,103 per 100,000 population) than in urban areas (1,430 per 100,000 population). The prevalence is slightly lower among males (1,991 per 100,000) than among females (2,067 per 100,000). Age differences are marked, with the prevalence of asthma increasing from 477 per 100,000 for the 0–14 to 11,149 per 100,000 at age 60 and over.

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. In Bihar, about 1 percent of the population was reported to be suffering from tuberculosis at the time of NFHS-2, up considerably from about 0.6 percent at the time of NFHS-1. The prevalence of tuberculosis is 65 percent higher in rural areas (1,035 per 100,000) than in urban areas (629 per 100,000). The prevalence of tuberculosis increases rapidly with age, ranging from 249 per 100,000 among persons age 0–14 to 1,372 per 100,000 among persons age 15–59 and 2,651 per 100,000 among persons age 60 and above. The prevalence rate is much higher for males (1,170 per 100,000) than for females (799 per 100,000). The overall gender differential in the prevalence of tuberculosis in Bihar stems from a large differential in rural areas. In urban areas, the gender differential is negligible. Probable causes for the much 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 Bihar smoke more than women.

Medically treated tuberculosis is expected to give a more reliable measure of the prevalence of active tuberculosis than a measure based on all reported cases considered in the preceding paragraph. As expected, the prevalence of medically treated tuberculosis in Bihar is considerably lower (833 per 100,000) than the prevalence based on all reported cases (989 per 100,000). The prevalence of medically treated tuberculosis reported in NFHS-2 is much higher than the prevalence of all reported cases in NFHS-1, indicating that the prevalence of tuberculosis may be increasing in Bihar. Differentials in the prevalence of medically treated

Table 6.5 Morbidity

Number of persons per 100,000 usual household residents suffering from asthma, tuberculosis, jaundice, or malaria by age, sex, and residence, Bihar, 1998–99

Age and sex	Number of persons per 100,000 suffering from: Asthma	Tuberculosis[1]	Medically treated tuberculosis	Jaundice during the past 12 months	Malaria during the past 3 months	Number of usual residents
			URBAN			
Age						
< 15	374	184	184	1,395	1,310	1,638
15–59	1,438	819	736	1,714	2,262	2,468
60+	9,028	1,784	1,335	897	935	225
Sex						
Male	1,306	621	577	1,786	1,832	2,252
Female	1,564	638	538	1,296	1,834	2,078
Total	1,430	629	558	1,551	1,833	4,330
			RURAL			
Age						
< 15	489	256	200	1,099	3,608	14,337
15–59	2,243	1,449	1,212	1,881	4,235	17,771
60+	11,362	2,738	2,420	1,199	5,174	2,231
Sex						
Male	2,079	1,240	1,073	1,946	4,106	17,586
Female	2,130	819	653	1,052	3,960	16,753
Total	2,103	1,035	868	1,510	4,034	34,339
			TOTAL			
Age						
< 15	477	249	199	1,129	3,373	15,974
15–59	2,145	1,372	1,154	1,860	3,994	20,239
60+	11,149	2,651	2,321	1,171	4,786	2,456
Sex						
Male	1,991	1,170	1,017	1,928	3,847	19,838
Female	2,067	799	640	1,079	3,725	18,831
Total	2,028	989	833	1,515	3,788	38,669

[1]Includes medically treated tuberculosis

tuberculosis by residence, age, and sex are similar to differentials in the prevalence of all reported cases.

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 Bihar, 1,515 persons per 100,000 population were reported to have suffered from jaundice during the past 12 months. The prevalence of jaundice was similar in rural (1,510 per 100,000) and urban (1,551 per 100,000) areas. Males were much more likely to have suffered from jaundice (1,928 per 100,000) than females (1,079 per 100,000). The prevalence of jaundice was highest

for the age group 15–59 (1,860 per 100,000) followed by the age groups 60 and above (1,171 per 100,000) and 0–14 (1,129 per 100,000). Age and sex differentials in the prevalence of jaundice are similar in the urban and rural areas, except the prevalence in urban areas is higher for persons age 0–14 than for persons age 60 and above.

Malaria

Malaria is characterized by recurrent high fever with shivering. NFHS-2 asked household respondents whether any member of their household had suffered from malaria at any time during the three months preceding the survey. In Bihar, 3,788 persons per 100,000 population were reported to have suffered from malaria during the three months before the survey. Since the prevalence of malaria is known to vary considerably by season, the NFHS-2 estimates should not be interpreted as representative of the level throughout the year. It is also misleading to compare this estimate with the much higher NFHS-1 estimate because months of the year comprising the reference period for the malaria estimates from the two surveys are different.

Rural residents are more than twice as likely to suffer from malaria (4,034 per 100,000) as are urban residents (1,833 per 100,000). The prevalence of malaria increases steadily with age, from 3,373 per 100,000 in the population age 0–14 to 4,786 per 100,000 in the population age 60 and above. The steady increase with age occurs in rural areas but not in urban areas. The prevalence of malaria is slightly higher among males (3,847 per 100,000) than among females (3,725 per 100,000). This is mainly due to higher malaria prevalence among males than females in rural areas. There is no gender differential in malaria prevalence in urban areas.

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. The latest addition to the Programme was vaccination against measles in 1985–86 (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). Vaccinations received by infants and children are usually recorded on a vaccination card that is issued for the child.

NFHS-2 asked mothers in Bihar whether they had a vaccination card for each child born since January 1995. 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 later[3].

Table 6.6 gives the percentages of urban and rural children age 12–23 months who received specific vaccinations at any time before the interview 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, for children whose information is based on the mother's report, the proportion of vaccinations given during the first year of life is assumed to be the same as the proportion of vaccinations given during the first year of life among children with an exact date of vaccination on the card.

In NFHS-2, children who 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'), 11 percent of children age 12–23 months are fully vaccinated, and 17 percent have not received any vaccinations. Coverage for BCG, DPT, and polio (except Polio 0) vaccinations is much higher than the percentage fully vaccinated. Thirty-eight percent of children have received BCG, 24 percent of children have received three doses of DPT, and 41 percent have received three doses of polio vaccine. More than 70 percent have received the first and second doses of polio vaccine (see Figure 6.3). Even though the DPT and polio vaccines are normally given together as part of the routine immunization programme, the polio coverage rates are much higher than the DPT coverage rates, undoubtedly because of the Pulse Polio Campaigns. Not all children who begin with the DPT and polio vaccination series go on to complete them. The difference between the percentages of children receiving the first and third doses is 16 percentage points for DPT and 40 percentage points for polio. Only 17 percent of children age 12–23 months have been vaccinated against measles. The relatively low percentage vaccinated against measles is partly responsible for the fact that the percentage fully vaccinated is not higher than it is.

[3]Because 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 was assumed to really be Polio 1, Polio 1 was assumed to be Polio 2, etc. For comparative purposes, this same adjustment was made to the NFHS-1 vaccination estimates.

Table 6.6 Childhood vaccinations by source of information

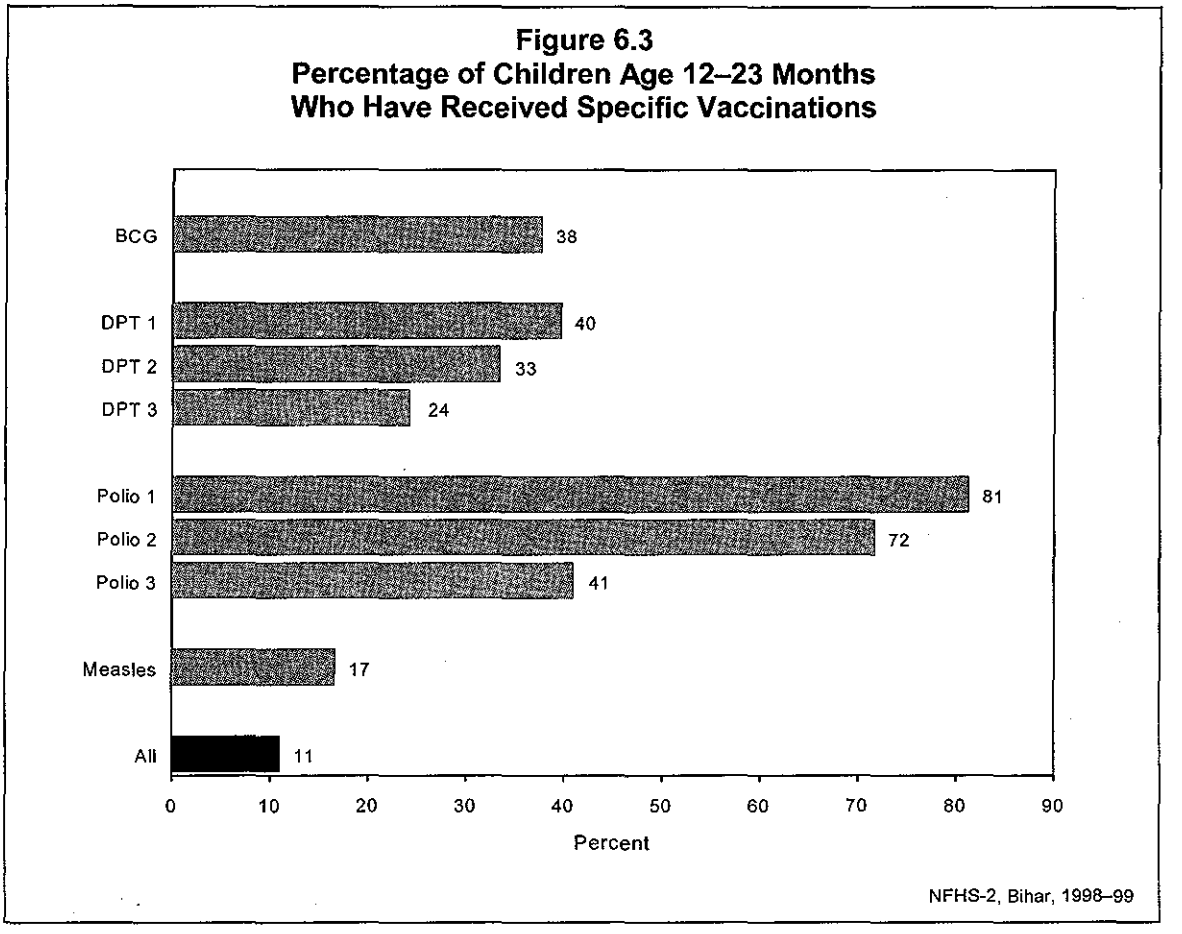
Percentage of children age 12–23 months who received specific vaccinations at any time before the interview and before 12 months of age by source of information on vaccination history and residence, Bihar, 1998–99

	Percentage vaccinated											
			DPT			Polio						Number of children
Source of information	BCG	Polio 0	1	2	3	1	2	3	Measles	All[1]	None	
URBAN												
Vaccinated at any time before the interview												
Vaccination card	*	*	*	*	*	*	*	*	*	*	*	16
Mother's report	54.2	5.1	45.7	32.5	22.6	88.2	83.3	45.6	29.6	9.5	10.1	64
Either source	63.5	8.1	56.8	46.2	37.0	89.3	85.4	54.0	39.8	22.4	8.1	80
Vaccinated by 12 months of age[2]	57.8	8.1	48.5	42.4	33.7	75.3	75.3	48.4	35.9	19.3	14.5	80
RURAL												
Vaccinated at any time before the interview												
Vaccination card	89.1	10.9	96.4	85.5	66.2	97.1	84.7	68.1	38.5	35.0	0.0	137
Mother's report	24.0	1.5	25.9	21.1	14.0	77.1	67.3	33.8	9.3	4.7	21.3	665
Either source	35.1	3.1	38.0	32.1	23.0	80.6	70.3	39.7	14.3	9.9	17.7	802
Vaccinated by 12 months of age[2]	28.9	3.1	31.3	25.1	17.2	65.6	54.7	30.1	9.1	5.9	31.6	802
TOTAL												
Vaccinated at any time before the interview												
Vaccination card	90.2	11.9	96.8	87.0	69.1	96.7	85.6	70.1	42.9	39.1	0.0	154
Mother's report	26.6	1.8	27.6	22.1	14.8	78.1	68.7	34.8	11.1	5.1	20.3	729
Either source	37.7	3.6	39.7	33.4	24.2	81.3	71.7	41.0	16.6	11.0	16.8	882
Vaccinated by 12 months of age[2]	31.4	3.6	32.8	26.6	18.7	66.5	56.6	31.7	11.4	7.0	30.0	882

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.
*Percentage not shown; based on fewer than 25 unweighted cases
[1]BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)
[2] 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 vaccination.

The proportion of children fully immunized has remained at 11 percent since NFHS-1. However, the proportion of children who had received no vaccinations has declined substantially from 54 percent to 17 percent between the two surveys, indicating that many more children have been brought into the programme during recent years. The coverage of BCG and measles has increased marginally, but the coverage of DPT has declined between the two surveys. The coverage of polio, especially the first two doses, has increased dramatically since NFHS-1, undoubtedly due to the Pulse Polio Campaigns initiated in 1995. The comparative data from the two surveys suggest that the child immunization programmes in Bihar are lagging way behind the expectations and the goal of universal immunization coverage for children has yet to take off.

According to the immunization schedule, all primary vaccinations, including measles, should be completed by the time a child is 12 months old. Table 6.6 shows that only 7 percent of all children (or 64 percent of fully vaccinated children) were fully vaccinated by age 12 months. Thirty percent of all children did not receive any vaccination by age 12 months. Coverage of each type of vaccine was much lower within the recommended first year of life. For example,



although the measles vaccine is supposed to be given when a child is nine months old, about one-third (31 percent) of all children who were vaccinated against measles received the vaccine after their first birthday.

The analysis of vaccine-specific data indicates much higher coverage for each type of vaccine in urban areas than in rural areas. Twenty-two percent of children age 12–23 months in urban areas were fully vaccinated at some time before the survey, compared with only 10 percent in rural areas. The proportion fully vaccinated during the first year of life is also higher in urban areas (19 percent) than in rural areas (6 percent). Consistent with this, dropout rates for DPT and polio are lower in urban areas than in rural areas. As expected, vaccination coverage is much higher for children for whom a vaccination card was shown than for other children.

Table 6.7 and Figure 6.4 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 interviewers. Mothers could show vaccination cards for only 17 percent of children age 12–23 months. There has been no change in the percentage of mothers who could show vaccination cards for children age 12–23 since NFHS-1. Vaccination cards were shown for 20 percent of children in urban areas and 17 percent in rural areas.

Table 6.7 Childhood vaccinations by background characteristics

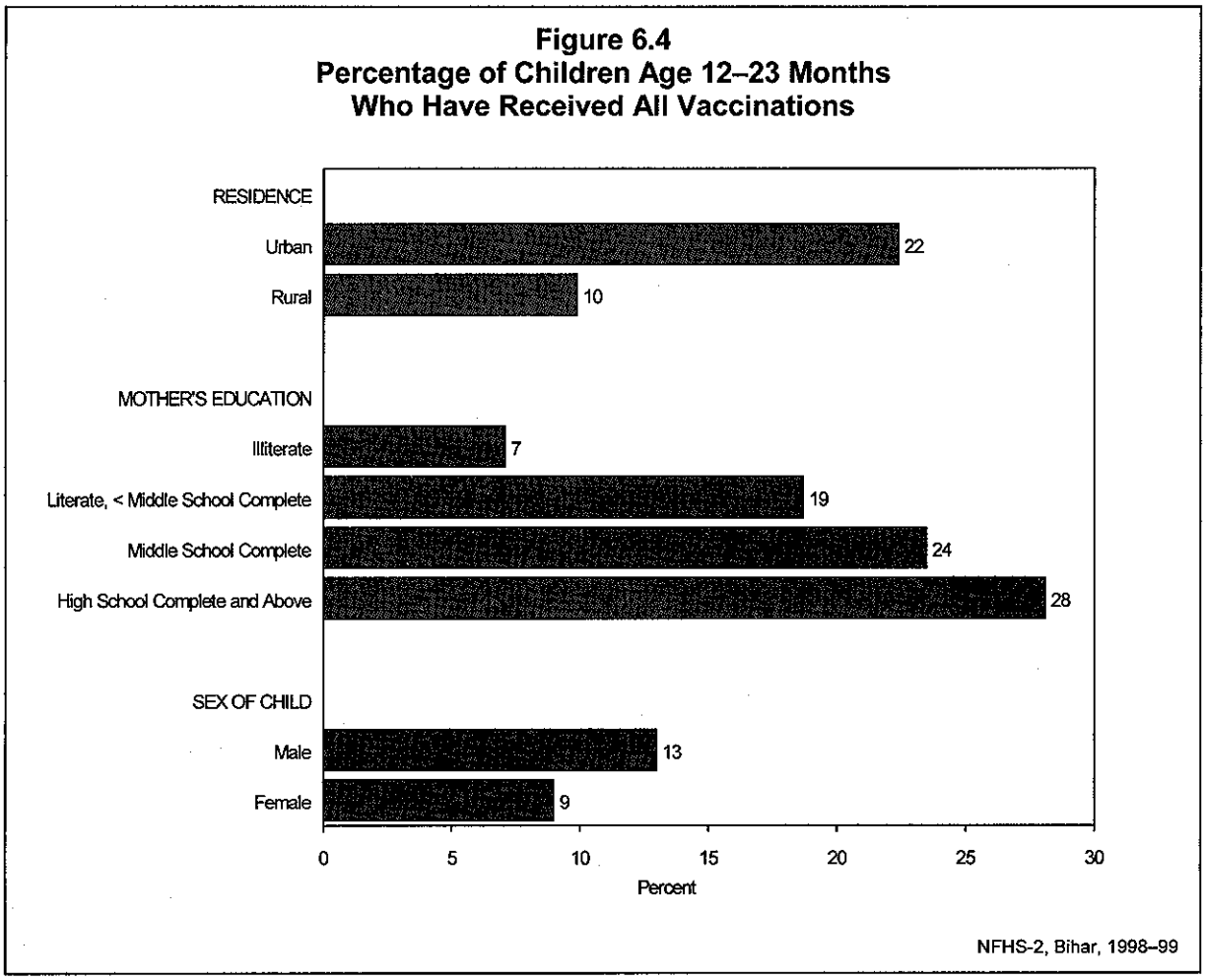
Percentage of children age 12–23 months who received specific vaccinations at any time before the interview (according to the vaccination card or the mother) and percentage with a vaccination card that was shown to the interviewer by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage vaccinated											Percentage showing vaccination card	Number of children
			DPT			Polio							
	BCG	Polio 0	1	2	3	1	2	3	Measles	All[1]	None		
Sex of child													
Male	39.6	4.0	42.8	36.4	25.8	82.5	74.2	39.8	19.5	13.0	14.8	18.4	457
Female	35.7	3.1	36.3	30.0	22.6	80.1	69.0	42.2	13.5	9.0	18.9	16.4	425
Birth order													
1	43.7	4.4	46.9	40.6	31.6	84.0	75.8	48.1	21.5	13.7	15.0	20.8	211
2	41.5	3.5	39.6	35.1	25.4	80.6	71.6	42.6	19.4	14.2	15.8	19.7	223
3	40.7	5.8	40.6	33.0	23.9	79.1	68.6	44.2	19.6	12.8	19.6	15.4	163
4+	28.6	1.8	33.8	26.8	18.0	81.3	70.4	32.6	9.1	5.6	17.3	14.3	284
Residence													
Urban	63.5	8.1	56.8	46.2	37.0	89.3	85.4	54.0	39.8	22.4	8.1	20.3	80
Rural	35.1	3.1	38.0	32.1	23.0	80.6	70.3	39.7	14.3	9.9	17.7	17.1	802
Region													
North Bihar Plain	38.6	2.8	42.2	36.5	28.2	92.0	82.0	47.1	16.6	12.6	7.0	19.5	407
South Bihar Plain	32.4	4.6	33.4	28.1	20.3	73.7	64.4	35.3	15.7	10.4	23.8	14.9	294
Jharkhand	44.4	3.6	44.2	34.9	21.7	69.8	60.1	36.5	18.2	8.8	27.3	16.8	182
Mother's education													
Illiterate	27.7	1.8	30.7	25.1	17.3	79.1	69.0	37.7	10.7	7.1	19.4	13.7	667
Literate, < middle school complete	58.0	6.9	54.3	42.0	29.7	85.3	74.0	39.4	31.2	18.7	13.6	25.5	91
Middle school complete	(67.2)	(0.0)	(70.1)	(61.4)	(50.3)	(85.9)	(77.2)	(58.0)	(26.6)	(23.5)	(11.3)	(26.9)	37
High school complete and above	80.5	15.2	80.3	75.7	60.5	92.6	87.0	60.5	42.2	28.1	2.6	33.1	87
Religion													
Hindu	40.4	3.7	41.3	35.9	26.7	82.2	72.6	42.1	18.3	12.5	16.3	19.1	714
Muslim	25.4	2.6	32.1	21.5	13.5	78.6	67.9	36.3	8.4	4.6	17.6	10.2	160
Caste/tribe													
Scheduled caste	30.7	1.5	32.0	27.3	19.3	76.1	69.0	35.0	13.4	9.5	21.5	14.9	215
Scheduled tribe	36.8	2.2	30.6	26.5	12.3	61.9	59.8	32.4	8.0	4.0	38.1	12.1	53
Other backward class	36.7	3.0	39.9	33.3	24.5	84.6	73.3	44.2	16.0	11.1	13.5	18.1	459
Other	50.9	8.7	52.7	44.2	34.5	85.4	74.4	42.7	25.8	15.3	12.6	20.7	155
Standard of living index													
Low	25.8	1.3	27.6	22.4	15.5	76.3	66.4	34.7	9.7	6.0	22.1	12.1	498
Medium	47.9	4.5	50.8	43.0	31.0	87.0	76.5	48.4	20.4	15.4	11.0	25.0	308
High	76.1	15.4	75.8	67.8	55.5	91.4	86.0	53.7	47.7	27.3	5.8	22.0	74
Total	37.7	3.6	39.7	33.4	24.2	81.3	71.7	41.0	16.6	11.0	16.8	17.4	882

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 3 and 4 children belonging to Christian and 'other' religions, respectively, and 2 children with missing information on the standard of living index, who are not shown separately.

( ) Based on 25–49 unweighted cases

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



Male children (13 percent) are more likely than female children (9 percent) to be fully vaccinated. Male children are also much more likely than female children to have received most of the individual vaccinations. Mothers were more likely to show vaccination cards for male children (18 percent) than for female children (16 percent). The proportions of male and female children with full vaccination coverage were virtually the same at the time of NFHS-1, but the gender differential in the availability of vaccination cards was slightly higher in the earlier survey, at 19 percent for male children and 14 percent for female children. These results indicate that child immunization coverage and discrimination against girls in receiving immunizations have not improved in Bihar in the past six years since NFHS-1.

The relationship between vaccination coverage and birth order is consistently negative for almost all vaccinations. One reason may be that a large majority of first-order births occur to younger women who are more likely than older women to utilize child health services. There is a positive relationship between mother's education and children's vaccination coverage. Only 7 percent of children of illiterate mothers are fully vaccinated, compared with 28 percent of children whose mothers have at least completed high school. Household standard of living also has a strong positive relationship with vaccination coverage. Six percent of children from households with a low standard of living are fully vaccinated, compared with 27 percent of children from households with a high standard of living. Hindu children are about three times as likely to be fully vaccinated as Muslim children. By caste/tribe, immunization coverage is much

Table 6.8 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 to residence and child's current age, Bihar, 1998–99

	Urban		Rural		Total	
Vaccination status	12–23 months	24–35 months	12–23 months	24–35 months	12–23 months	24–35 months
Vaccination card shown to interviewer	20.3	23.7	17.1	11.4	17.4	12.4
Percentage vaccinated by 12 months of age[1]						
BCG	57.8	44.0	28.9	18.7	31.4	21.0
Polio 0	8.1	NC	3.1	2.8	3.6	3.2
DPT						
1	48.5	41.5	31.3	17.5	32.8	19.5
2	42.4	36.8	25.1	15.3	26.6	17.1
3	33.7	27.6	17.2	11.6	18.7	12.9
Polio						
1	75.3	55.3	65.6	40.3	66.5	42.3
2	75.3	50.9	54.7	40.0	56.6	41.5
3	48.4	38.4	30.1	26.2	31.7	27.6
Measles	35.9	44.2	9.1	5.3	11.4	8.1
All vaccinations[2]	19.3	24.4	5.9	3.7	7.0	5.3
No vaccinations	14.5	47.3	31.6	58.2	30.0	56.7
Number of children	80	70	802	810	882	880

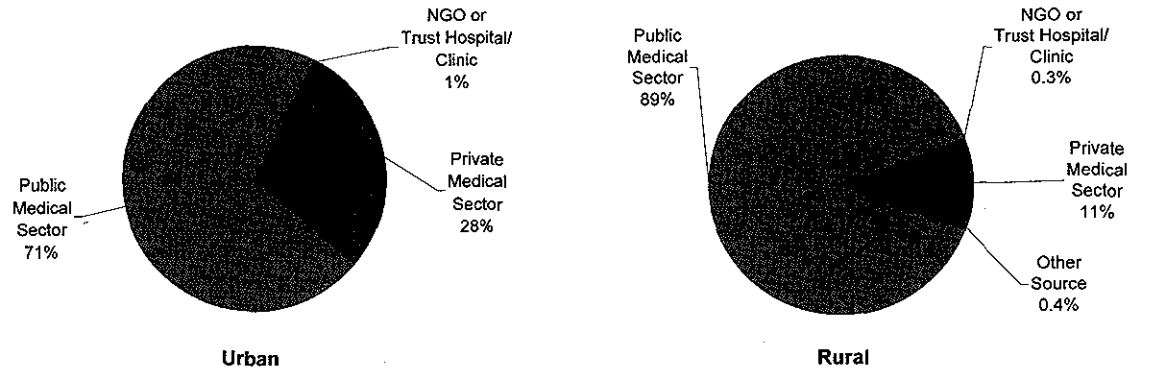
Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.
NC: Not calculated since there was no case with a valid date
[1]Information was obtained either from the vaccination card or from the mother if there was no written record. For children whose information was based on the mother's report, the proportion of vaccinations given by 12 months of age is assumed to be the same as for children with a written record of vaccinations.
[2]BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

lower among scheduled-tribe children than among other children. Children in the Jharkhand region are somewhat less likely to be fully vaccinated than children in other regions.

Table 6.8 shows, for children age 12–35 months, the percentage with a vaccination card that was shown to the interviewer and the percentage who received specific vaccinations during the first year of life by current age of the child and place of residence. The table suggests some improvement in vaccination coverage over time. For children without a vaccination card, the proportion vaccinated during the first year of life is assumed to be the same as for children with a written record of vaccinations. The proportion vaccinated during the first year of life is estimated separately for children in each age group. The row labelled 'No vaccinations' indicates the percentage of children who have not received any vaccination by age 12 months.

The proportion of children whose vaccination status was determined from a vaccination card declines with the age of children. This may reflect an upward trend in the use of vaccination cards as well as an upward trend in overall vaccination coverage. It is also possible that vaccination cards may have been lost or discarded, especially for older children who have received all their vaccinations. The proportion of children fully vaccinated by age 12 months, which is very low to begin with, declines slightly from 7 percent for children age 12–23 months to 5 percent for children age 24–35 months. A small decline in coverage with increasing

Figure 6.5
Source of Childhood Vaccinations by Residence



Note: Percents for rural add to more than 100.0 due to rounding

NFHS-2, Bihar, 1998–99

children's age is also observed for all vaccines in rural areas, but in urban areas coverage for measles is higher in the older age group.

Table 6.9 and Figure 6.5 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. In Bihar, the public sector is the primary provider of childhood vaccinations. Eighty-seven percent of all children who have received any vaccinations received most of them from a public-sector source and only 12 percent received them from a private-sector source. The percentage of children receiving vaccinations from the private sector is considerably lower in rural areas (11 percent) than in urban areas (28 percent), where private-sector services tend to be concentrated. Even in urban areas, however, 71 percent of children received their vaccinations from the public sector. Children of more educated mothers and those belonging to households with a high standard of living are more likely than other children to receive vaccinations from the private sector. Hindu children are slightly more likely to receive vaccinations from the private sector than Muslim children. Children who belong to scheduled castes, scheduled tribes, or other backward classes are much less likely than other children to receive vaccinations from the private sector.

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 6.10 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

Table 6.9 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, Bihar, 1998–99

Background characteristic	Source: Public medical sector	NGO or trust hospital/ clinic	Private medical sector	Other	Total percent	Number of children
Age of child						
< 12 months	85.9	0.3	13.4	0.3	100.0	626
12–23 months	85.8	0.3	13.6	0.4	100.0	734
24–35 months	89.1	0.6	10.0	0.3	100.0	730
Sex of child						
Male	86.0	0.6	13.0	0.4	100.0	1,072
Female	88.0	0.2	11.5	0.3	100.0	1,018
Birth order						
1	83.1	0.6	16.3	0.0	100.0	505
2	83.5	0.7	15.4	0.4	100.0	471
3	87.5	0.0	12.2	0.3	100.0	363
4+	91.5	0.3	7.7	0.5	100.0	752
Residence						
Urban	71.2	1.0	27.7	0.0	100.0	205
Rural	88.7	0.3	10.6	0.4	100.0	1,885
Region						
North Bihar Plain	93.3	0.1	6.5	0.1	100.0	1,089
South Bihar Plain	81.5	0.7	17.9	0.0	100.0	624
Jharkhand	77.7	0.9	19.8	1.6	100.0	377
Mother's education						
Illiterate	92.3	0.4	6.9	0.3	100.0	1,528
Literate, < middle school complete	76.0	0.5	22.7	0.9	100.0	222
Middle school complete	83.6	1.1	15.3	0.0	100.0	99
High school complete and above	64.4	0.0	35.6	0.0	100.0	240
Religion						
Hindu	86.7	0.4	12.5	0.4	100.0	1,712
Muslim	89.9	0.0	10.1	0.0	100.0	358
Caste/tribe						
Scheduled caste	88.9	0.4	10.2	0.4	100.0	452
Scheduled tribe	85.0	1.1	13.9	0.0	100.0	101
Other backward class	88.6	0.5	10.6	0.4	100.0	1,135
Other	80.7	0.0	19.0	0.2	100.0	403
Standard of living index						
Low	92.8	0.5	6.4	0.4	100.0	1,121
Medium	85.3	0.3	14.0	0.4	100.0	768
High	60.5	0.6	38.9	0.0	100.0	197
Total	87.0	0.4	12.3	0.3	100.0	2,090

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 14 and 7 children belonging to Christian and 'other' religions, respectively, and 5 children with missing information on the standard of living index, who are not shown separately.
NGO: Nongovernmental organization

Table 6.10 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, Bihar, 1998–99

Background characteristic	Percentage who received vitamin A: At least one dose	Percentage who received vitamin A: At least one dose within past six months	Number of children
Age of child			
12–23 months	9.2	7.7	882
24–35 months	11.2	6.0	880
Sex of child			
Male	11.1	7.3	895
Female	9.2	6.4	868
Birth order			
1	13.3	9.9	404
2	14.7	8.9	408
3	9.3	6.3	305
4+	5.7	3.9	646
Residence			
Urban	19.4	14.5	150
Rural	9.3	6.1	1,613
Region			
North Bihar Plain	9.5	6.3	830
South Bihar Plain	9.8	5.5	575
Jharkhand	12.3	10.2	357
Mother's education			
Illiterate	6.2	4.4	1,329
Literate, < middle school complete	14.6	9.7	182
Middle school complete	20.7	15.3	72
High school complete and above	31.0	18.2	179
Religion			
Hindu	11.3	7.8	1,418
Muslim	5.1	2.5	324
Caste/tribe			
Scheduled caste	8.6	6.3	408
Scheduled tribe	5.9	5.9	109
Other backward class	10.6	7.0	919
Other	12.2	7.4	326
Standard of living index			
Low	5.2	3.8	982
Medium	14.6	9.3	632
High	24.6	16.4	145
Total	10.2	6.8	1,762

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 11 and 10 children belonging to Christian and 'other' religions, respectively, and 3 children with missing information on the standard of living index, who are not shown separately.

whole, only 10 percent of children age 12–35 months received at least one dose of vitamin A, and only 7 percent received a dose within the past six months. This indicates that a large majority of children in Bihar have not received vitamin A supplementation at all and even fewer children receive vitamin A supplementation regularly.

Table 6.10 shows that children living in urban areas and children living in the Jharkhand region are considerably more likely than other children to receive vitamin A supplementation. Children of more educated mothers and children from households with a high standard of living are also much more likely than other children to receive vitamin A. Muslim children are less likely than Hindu children to receive vitamin A supplementation, and scheduled-tribe children are less likely than other children to receive vitamin A. Children of higher birth orders are much less likely than children of lower birth orders to receive vitamin A supplementation. In general, children from groups that are less likely to have received at least one dose of vitamin A supplementation are also less likely to have received a dose in the past six months.

6.6 Child Morbidity and Treatment

This section discusses the prevalence and treatment of acute respiratory infection (ARI), fever, and diarrhoea. Mothers of children born during the three years preceding the survey were asked if their children suffered from cough, fever, or diarrhoea during the past two weeks, 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 6.11 shows the percentage of children with cough accompanied by fast breathing (symptoms of acute respiratory infection), fever, and diarrhoea during the two weeks preceding the survey and the percentage with acute respiratory infection who received advice or treatment from a health facility or provider, 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 22 percent of children under age three in Bihar suffered from acute respiratory infection (cough accompanied by short, rapid breathing) at some time during the two-week period before the survey. A comparison with NFHS-1 ARI data is not meaningful since the two surveys took place at different times of the year and rates of ARI are affected by the time of the year when the measurements are taken.

Table 6.11 shows that there was little variation in the prevalence of ARI by most of the background characteristics included in the table. The prevalence levels of ARI are similar for boys and girls and for children living in urban and rural areas. ARI prevalence levels are also similar in the three geographic regions in Bihar. Children of mothers who have at least completed high school had a lower prevalence of ARI than other children. The prevalence of ARI was lower among children from high standard of living households (17 percent) than among children from low standard of living households (23 percent). The small variation in the prevalence of ARI by most socioeconomic characteristics indicates that respiratory infections affect children of all strata in Bihar irrespective of their socioeconomic background.

Table 6.11 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 and percentage with ARI who were taken to a health facility or provider, by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage of children suffering in past two weeks from: Cough accompanied by fast breathing (ARI)	Fever	Diarrhoea: Any diarrhoea[1]	Diarrhoea: Diarrhoea with blood	Number of children	Percentage with ARI taken to a health facility or provider	Number of children with ARI
Age of child							
1–5 months	20.3	23.6	14.0	0.8	532	45.4	108
6–11 months	24.6	30.3	23.7	4.0	398	63.3	98
12–23 months	23.1	36.4	20.8	3.4	882	60.5	204
24–35 months	19.9	30.4	14.1	3.2	880	60.7	175
Sex of child							
Male	21.8	30.4	17.1	2.7	1,370	62.2	299
Female	21.6	31.5	18.3	3.1	1,322	54.1	286
Birth order							
1	21.9	30.5	17.2	2.3	622	59.9	136
2	23.4	32.8	17.3	3.1	598	61.8	140
3	21.8	28.7	18.3	1.9	478	56.9	104
4+	20.6	31.3	18.0	3.7	994	55.4	205
Residence							
Urban	21.5	24.1	15.6	3.5	244	63.3	52
Rural	21.7	31.7	17.9	2.8	2,448	57.7	532
Region							
North Bihar Plain	22.4	35.2	19.0	3.1	1,266	59.3	284
South Bihar Plain	20.8	26.7	13.4	2.5	872	67.9	181
Jharkhand	21.7	28.2	21.5	3.2	554	41.1	120
Mother's education							
Illiterate	22.5	32.3	18.5	3.0	2,049	58.5	461
Literate, < middle school complete	25.4	31.1	16.9	1.9	267	56.1	68
Middle school complete	16.1	19.2	19.7	5.3	115	*	19
High school complete and above	14.2	25.8	11.7	1.9	261	(57.5)	37
Religion							
Hindu	21.1	30.5	17.2	2.8	2,167	57.5	457
Muslim	23.4	33.3	19.4	3.5	493	63.1	115
Caste/tribe							
Scheduled caste	25.7	33.4	20.6	3.0	607	54.2	156
Scheduled tribe	24.9	31.4	19.3	1.8	178	(39.6)	44
Other backward class	19.2	29.1	16.6	3.0	1,413	60.5	272
Other	22.8	33.2	16.7	3.1	495	65.6	113
Standard of living index							
Low	22.9	32.2	18.3	3.0	1,511	52.5	346
Medium	20.9	30.0	17.9	2.9	951	67.3	199
High	17.0	26.0	12.4	2.2	226	(63.6)	38

Contd...

Table 6.11 also shows the percentage of children suffering from ARI symptoms in the two weeks before the survey for whom advice or treatment was sought from a health facility or provider. Fifty-eight percent of children received some advice or treatment from a health facility or health provider when ill with ARI. The percentage receiving advice or treatment is relatively low for children under six months of age, for female children, for rural children, for children in

Table 6.11 Prevalence of acute respiratory infection, fever, and diarrhoea (contd.)

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 and percentage with ARI who were taken to a health facility or provider, by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage of children suffering in past two weeks from: Cough accompanied by fast breathing (ARI)	Fever	Diarrhoea: Any diarrhoea[1]	Diarrhoea: Diarrhoea with blood	Number of children	Percentage with ARI taken to a health facility or provider	Number of children with ARI
Source of drinking water							
Piped water	16.3	26.4	13.4	1.7	187	(75.1)	31
Hand pump	22.6	31.9	18.0	3.1	1,935	58.4	436
Well water	21.4	30.1	18.7	2.8	509	54.1	109
Surface water	(14.6)	(17.0)	(14.9)	(2.3)	42	*	6
Purification of water[2]							
Straining by cloth	24.4	20.2	23.0	5.5	79	*	19
Water filter	(12.7)	(13.0)	(6.2)	(0.0)	33	*	4
Boiling	24.5	24.9	25.3	8.0	80	*	20
Nothing	21.7	31.7	17.6	2.8	2,514	58.1	545
Total	21.7	31.0	17.7	2.9	2,692	58.2	585

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 a small number of children to mothers belonging to Christian and 'other' religions, children in households having 'other' sources of drinking water, children in households using alum or electronic water purifiers or 'other' methods to purify water, and children with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unwieghted cases
[1]Includes diarrhoea with blood
[2]Number of children and number of children with ARI sum to more than the respective totals because multiple methods of purification of water could be recorded.

the Jharkhand region, for scheduled-tribe children, and for children from low standard of living households. Hindu children are somewhat less likely to receive advice or treatment when ill with ARI than Muslim children. The likelihood of receiving advice or treatment for ARI does not vary by mother's level of education.

Fever

Fever was the most common of the three conditions examined, with 31 percent of children suffering from fever during the two weeks before the survey. The prevalence of fever is lower among children under age six months (24 percent) than among older children (30–36 percent). The prevalence of fever is higher among rural children, children in the North Bihar Plain region, children of less educated mothers, and children from lower standard of living households. In general, the prevalence of fever does not vary widely or in any predictable direction with most of the remaining demographic and socioeconomic characteristics. As with acute respiratory infection, fever tends to affect young children irrespective of their demographic and socioeconomic background.

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 born during the past three years a series of questions about episodes of diarrhoea suffered by their children in the two weeks before the survey, including questions on feeding practices during diarrhoea and treatment of diarrhoea, and about their knowledge and use of ORS.

Table 6.11 shows that 18 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 6.11 cannot be assumed to reflect the situation throughout the year.

Among children age 1–35 months, those in the middle age groups (6–23 months old) were more likely to have suffered from diarrhoea than either younger (0–5 months old) or older (24–35 months old) children. The prevalence of diarrhoea was about the same among boys (17 percent) and girls (18 percent). Differentials by birth order, place of residence, mother's education, religion, and caste/tribe membership were small with one exception: Children whose mothers have at least a high school education were less likely to suffer from diarrhoea than were children of mothers in other education categories. Children in the South Bihar Plain region were less likely to suffer from diarrhoea than were children in the other two regions of Bihar. As expected, children in households with a high standard of living were less likely than other children to have suffered from diarrhoea. Also consistent with expectations, diarrhoea was somewhat less common among children living in households that use piped water for drinking (13 percent) than among children in households that use hand pumps (18 percent) or wells (19 percent) for drinking water.

About 16 percent of children who suffered from diarrhoea in Bihar during the two weeks preceding NFHS-2 suffered from diarrhoea with blood, a symptom of dysentery. Children under age six months had a much lower prevalence of diarrhoea with blood (0.8 percent) than did older children (3–4 percent). Children living in urban areas, children of birth order four or higher, and Muslim children all have slightly elevated risks of bloody diarrhoea. Unexpectedly, the prevalence of bloody diarrhoea is noticeably higher among children of mothers who have completed middle school but not any higher level of education and among children living in households that purify water by boiling or straining with a cloth. This may be due to small numbers of cases in these categories.

Table 6.12 shows that 38 percent of mothers with births during the three years preceding the survey know about ORS packets. The knowledge of ORS packets among mothers has not improved much in Bihar since NFHS-1, when 37 percent of mothers with births during the three years preceding the survey had reported knowledge of ORS packets. Knowledge of ORS packets is highest for mothers age 20–24. As expected, knowledge is considerably higher among urban mothers than among rural mothers, and higher among literate mothers than among illiterate mothers. Knowledge is slightly higher in the Jharkhand region than in the other two regions. Knowledge of ORS is about the same among Hindu mothers and Muslim mothers. Knowledge of ORS packets is much lower among mothers who are not regularly exposed to any mass media than among mothers who are regularly exposed to some media. By caste/tribe, knowledge ranges

Table 6.12 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, Bihar, 1998–99

Background characteristic	Percentage who know about ORS packets	Reported quantity to be given to drink					Percentage who know two or more signs for medical treatment of diarrhoea[1]	Number of mothers
		Less	Same	More	Don't know/ missing	Total percent		
Age								
15–19	34.8	38.7	25.0	20.6	15.8	100.0	49.9	338
20–24	42.1	30.8	25.5	30.6	13.2	100.0	50.3	924
25–29	35.1	31.7	25.4	27.1	15.8	100.0	52.5	765
30–34	33.7	31.1	22.8	29.6	16.5	100.0	46.8	385
35–49	37.1	31.2	22.5	24.4	21.8	100.0	40.9	225
Residence								
Urban	63.1	28.7	26.4	36.0	8.8	100.0	54.1	227
Rural	35.1	32.4	24.6	26.9	16.1	100.0	49.2	2,411
Region								
North Bihar Plain	35.5	37.6	23.8	24.1	14.5	100.0	52.9	1,229
South Bihar Plain	37.9	24.9	22.3	32.2	20.6	100.0	46.3	869
Jharkhand	41.4	31.2	30.8	28.3	9.7	100.0	47.2	539
Education								
Illiterate	30.2	34.6	24.7	23.3	17.4	100.0	48.3	2,036
Literate, < middle school complete	50.9	29.7	18.7	40.2	11.5	100.0	50.5	253
Middle school complete	58.1	20.0	33.2	35.5	11.3	100.0	50.8	110
High school complete and above	75.6	19.0	27.7	48.2	5.0	100.0	58.6	239
Religion								
Hindu	37.6	30.9	25.1	28.1	16.0	100.0	50.0	2,126
Muslim	36.7	37.5	22.0	26.2	14.3	100.0	47.5	479
Caste/tribe								
Scheduled caste	30.0	34.3	24.3	23.2	18.3	100.0	46.9	594
Scheduled tribe	25.5	33.5	32.4	19.6	14.5	100.0	50.0	184
Other backward class	38.0	32.6	24.3	28.0	15.1	100.0	50.1	1,386
Other	50.1	27.6	23.6	35.3	13.5	100.0	51.1	474
Exposure to media								
Exposed to any media	60.5	27.8	23.6	38.8	9.8	100.0	51.9	678
Watches television weekly	64.9	25.9	25.6	40.5	8.0	100.0	53.5	379
Listens to radio weekly	61.0	28.2	24.4	37.6	9.8	100.0	53.1	530
Visits cinema/theatre monthly	62.3	27.3	29.2	37.0	6.5	100.0	48.6	107
Reads newspaper/magazine weekly	71.6	15.8	28.4	49.5	6.4	100.0	53.8	218
Not regularly exposed to any media	29.5	33.6	25.1	23.8	17.5	100.0	48.8	1,960
Total	37.5	32.1	24.7	27.6	15.5	100.0	49.6	2,638

Note: Total includes 17 and 15 women belonging to Christian and 'other' religions, respectively, who are not shown separately.
[1]Percentage who know two or more signs of illness that indicate that a child should be taken to a health facility or health worker

from a low of 26 percent among scheduled-tribe mothers to a high of 50 percent among mothers who do not belong to a scheduled caste, scheduled tribe, or other backward class. Mothers belonging to scheduled tribes are less likely to know about ORS than mothers with any other background characteristics.

In order to assess mothers' knowledge of children's need for extra fluids during episodes of diarrhoea, all mothers of children born in the past three years were asked: 'When a child is sick with diarrhoea, should he/she be given less to drink than usual, about the same, or more than usual?' Table 6.12 shows the response of mothers to this question by selected background characteristics. In Bihar, only 28 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, 32 percent report that children should be given less to drink. This suggests that mothers in Bihar need much more education in the proper management of diarrhoea. The proportion reporting correctly that children with diarrhoea should be given more to drink is particularly low among rural mothers, mothers in the North Bihar Plain region, illiterate mothers, mothers belonging to a scheduled tribe or scheduled caste, and mothers not regularly exposed to any mass media. Mothers age 15–19 and 35–49 are also less likely to know that children with diarrhoea should be given extra fluids when ill with diarrhoea than are mothers age 20–34.

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 not drinking well, getting sicker or very sick, and not getting better. Table 6.12 shows that 50 percent of women were able to name two or more signs of diarrhoea that indicate that a child with diarrhoea should be given medical treatment. Knowledge of danger signs of diarrhoea does not vary much by any of the demographic or socioeconomic background characteristics included in Table 6.12. Women age 35–49 have noticeably lower knowledge of two or more signs of diarrhoea requiring medical treatment than women age 15–34. Education level has some positive association with knowledge of two or more danger signs of diarrhoea, but exposure to mass media has virtually no effect. These findings suggest a need for further educating mothers with regard to children's diarrhoea so that they are better able to recognize the signs of diarrhoea for which a health provider should be consulted.

Table 6.13 shows the percentage of children under age three who had diarrhoea during the two weeks preceding NFHS-2 for whom advice or treatment was sought from a health facility or health provider, the percentage who received various types of oral rehydration therapy (ORT), and the percentage who received other types of treatment, by selected background characteristics. Medical advice or treatment was sought for 50 percent of children in Bihar who suffered from diarrhoea during the two weeks preceding the survey. Thirty-nine percent of children with diarrhoea did not receive any treatment at all. Children in the Jharkhand region were much less likely to receive medical advice or treatment when sick with diarrhoea than children in the other two regions. Urban children and scheduled-tribe children were also much less likely to receive medical advice or treatment than other children, but these figures are based on small numbers of cases and should be viewed with caution. The likelihood of seeking medical advice or treatment does not vary much by other demographic or socioeconomic background characteristics.

Table 6.13 Treatment of diarrhoea

Among children under age 3 who had diarrhoea during the two weeks preceding the survey, percentage taken to a health facility or provider, percentage who received various types of oral rehydration therapy (ORT), and percentage who received other treatments by selected background characteristics, Bihar, 1998–99

Background characteristic	Taken to a health facility or provider	Oral rehydration					Other treatment				No treat-ment	Number of children with diarrhoea
		Oral rehydration salt (ORS) packets	Gruel	Homemade sugar-salt-water solution	Increased fluids	ORT not given	Pill or syrup	Injection	Intra-venous (IV/drip/ bottle)	Home remedy/ herbal medicine		
Age of child												
1–11 months	43.5	10.0	7.6	2.4	18.0	73.6	35.2	20.9	8.1	4.9	48.4	169
12–23 months	54.0	18.4	20.8	0.5	27.1	49.9	45.8	21.8	3.4	2.8	32.8	184
24–35 months	54.1	18.3	22.0	4.0	31.2	52.5	47.4	29.3	7.1	5.5	34.5	125
Sex of child												
Male	49.8	16.8	18.1	2.5	22.6	58.8	41.0	20.2	5.5	3.5	39.6	234
Female	50.7	14.1	14.9	1.7	27.3	59.1	43.8	26.5	6.6	4.9	38.0	242
Residence												
Urban	(38.9)	(28.1)	(19.5)	(2.6)	(27.2)	(50.1)	(33.0)	(14.0)	(2.8)	(2.8)	(44.5)	38
Rural	51.3	14.3	16.2	2.0	24.8	59.7	43.3	24.2	6.3	4.3	38.3	439
Region												
North Bihar Plain	56.7	14.0	10.4	2.8	20.3	68.5	54.6	30.8	6.3	3.6	35.0	240
South Bihar Plain	54.2	13.3	23.3	1.8	28.6	51.6	41.4	27.6	8.9	3.5	36.0	117
Jharkhand	33.5	20.4	22.1	0.9	30.8	47.0	18.9	4.4	2.6	6.2	49.2	119
Mother's education												
Illiterate	50.5	13.8	15.3	2.6	24.5	60.9	42.4	23.6	6.8	4.8	38.6	378
Literate, < middle school complete	(50.3)	(21.7)	(13.7)	(0.0)	(27.1)	(51.1)	(40.8)	(28.0)	(2.3)	(2.3)	(38.8)	45
High school complete and above	(47.2)	(20.2)	(26.7)	(0.0)	(36.6)	(43.0)	(46.5)	(23.8)	(6.8)	(0.0)	(39.9)	31
Religion												
Hindu	49.8	16.5	16.5	1.8	22.5	60.0	41.3	22.5	6.4	4.6	39.9	372
Muslim	54.4	12.7	17.8	3.3	33.6	54.5	49.7	29.1	5.3	3.2	30.0	96
Caste/tribe												
Scheduled caste	49.5	12.5	15.1	1.5	19.6	62.3	40.2	20.7	4.0	1.6	41.3	125
Scheduled tribe	(18.7)	(12.9)	(15.3)	(3.2)	(31.6)	(52.7)	(8.7)	(5.7)	(3.0)	(9.4)	(60.1)	34
Other backward class	54.6	16.0	15.7	1.6	24.5	60.1	47.1	25.5	6.6	5.0	37.1	235
Other	52.3	19.3	21.2	3.8	31.8	53.4	46.6	29.1	8.5	3.8	30.8	83
Standard of living index												
Low	47.0	11.1	14.6	2.5	21.0	65.2	40.2	21.6	5.2	3.6	39.7	277
Medium	54.5	21.1	18.2	1.7	31.7	50.0	46.5	26.4	7.3	5.3	36.5	170
High	(54.0)	(24.9)	(25.9)	(0.0)	(25.2)	(49.1)	(42.4)	(24.6)	(7.4)	(3.8)	(39.1)	28
Total	50.3	15.4	16.5	2.1	25.0	59.0	42.4	23.4	6.0	4.2	38.8	477

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 23 children whose mother's education is middle school complete, 3 and 5 children belonging to Christian and 'other' religions, respectively, and 2 children with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases

Fifteen 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 12 percent in NFHS-1, indicating a slight improvement in the use of ORS packets in Bihar for the treatment of childhood diarrhoea.

The proportion of children who did not receive any of the various types of oral rehydration therapy (ORT) when sick with diarrhoea declined from 70 percent in NFHS-1 to 59 percent in NFHS-2, again suggesting improvements in the management of childhood diarrhoea in the state. Only 25 percent received increased fluids when sick with diarrhoea, and only 17 percent received gruel.

The use of antibiotics and other antidiarrhoeal drugs is not generally recommended for the treatment of childhood diarrhoea. Yet, 42 percent of children who had diarrhoea in the two weeks before NFHS-2 were treated with pills or syrup, and 23 percent received an injection. These figures indicate poor knowledge about the proper treatment of diarrhoea not only among mothers but also among health-care providers. They underscore the need for informational programmes for mothers and supplemental training for health-care providers that emphasizes the importance of ORT, increased fluid intake, and continued feeding during bouts of childhood diarrhoea and discouraging the use of drugs.

Children less than one-year old, children living in rural areas, children in the North Bihar Plain region, children of illiterate mothers, Hindu children, children belonging to a scheduled caste or other backward class, and children from low standard of living households are less likely than other children to receive any of the various types of oral rehydration therapy. The use of unnecessary drugs or injections is substantially higher for rural children than for urban children, in the North Bihar Plain and South Bihar Plain regions than in the Jharkhand region, for Muslim children than for Hindu children, and for children whose mothers do not belong to a scheduled caste, scheduled tribe, or other backward class. The use of drugs or injections is lowest among scheduled-tribe children.

Table 6.14 shows the percent distribution of children who were treated with ORS for diarrhoea in the two weeks before NFHS-2 by source of the ORS packets. Only 74 children were treated with ORS packets in the Bihar sample, so the results in this table should be interpreted with caution. For 18 percent of children who were treated with ORS, the packets were obtained from public-sector sources, for 28 percent the packets were obtained from private-sector medical sources, and for the remaining 54 percent the packets were obtained from other sources. Among the public-sector sources, ORS packets were most often obtained from government or municipal hospitals, followed by sub-centres. Among private-sector sources, ORS packets were most often obtained from a private doctor, followed by a private hospital or clinic or a pharmacy or drugstore. The pharmacy or drugstore category, listed under private-sector sources, accounts for 4 percent of all cases. If the pharmacy/drugstore category is added to the shop category, the proportion purchasing ORS packets from shops, pharmacies, or drugstores becomes 42 percent.

Table 6.14 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, Bihar, 1998–99

Source	Percent
Public medical sector	18.2
Government/municipal hospital	10.8
UHC/UHP/UFWC	1.5
Sub-centre	4.4
Other public medical sector	1.5
Private medical sector	28.1
Private hospital/clinic	5.5
Private doctor	14.2
Private paramedic	1.3
Pharmacy/drugstore	4.3
Other private medical sector	2.8
Other source	53.7
Shop	38.1
Husband	15.6
Total percent	100.0
Number of children treated with ORS	74

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

6.7 HIV/AIDS

Acquired Immune Deficiency Syndrome (AIDS) is an illness caused by the Human Immunodeficiency Virus (HIV), 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 the placenta of HIV-infected women to their unborn children, or through contact with contaminated needles (injections) or blood. HIV and AIDS prevalence in India have been on the rise for more than a decade and have reached alarming proportions 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).

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 6.15 shows the percentage of women who have heard about AIDS by background characteristics. Eighty-eight percent of women in Bihar have never heard of AIDS. NFHS-1 did not include AIDS-awareness questions for Bihar so it is not possible to assess any trend in AIDS awareness between NFHS-1 and NFHS-2.

Knowledge of AIDS varies little by women's age. Urban residence, education, and household standard of living have a strong positive association with AIDS knowledge. Forty-two percent of urban women in Bihar have heard about AIDS, compared with only 8 percent of rural women. Knowledge of AIDS increases from only 3 percent among illiterate women to 66 percent among women who have at least completed high school. Similarly, knowledge of AIDS increases from only 3 percent among women in households with a low standard of living to 52 percent among women in households with a high standard of living. Christian women are more likely to know about AIDS (30 percent) than other women (7–12 percent). Knowledge of AIDS is much lower among women belonging to a scheduled tribe, scheduled caste, or other backward class (4–10 percent) than among other women (26 percent). Exposure to mass media increases women's knowledge about AIDS substantially. Sixty-two percent of women who read a newspaper or magazine at least once a week know about AIDS compared with just 2 percent of women who are not regularly exposed to any mass media (newspapers, magazines, radio, television, cinema, or theatre).

Source of Knowledge About AIDS

As part of its AIDS prevention programme, the Government of India has been using mass media extensively, especially the electronic media, 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 6.15 shows the percentage of ever-married women who have heard about AIDS from specific sources by background characteristics. Television is the most important source of information about AIDS among ever-married women in Bihar. Eighty-three percent of women who have heard about AIDS report television as a source of their information about AIDS, followed by radio (55 percent), newspapers/magazines (22 percent), and cinema (14 percent). Only 1 percent of women report that they received information about AIDS from a health worker.

Television is the most important source of information about AIDS in both rural and urban areas, followed by the radio. Urban women are more likely than rural women to have learned about AIDS from television, cinema, or a newspaper or magazine. On the other hand, urban women are less likely than rural women to have learned about AIDS from the radio or from friends or relatives. More-educated women are more likely than less-educated women to have learned about AIDS from the radio, television, newspaper or magazine, cinema, or a poster or hoarding, but are less likely to have learned about AIDS from a friend or relative. Hindu women are more likely than Muslim women to have learned about AIDS from the radio, from a newspaper or magazine, or from a friend or relative, but are less likely to have learned about AIDS from television.

Table 6.15 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, Bihar, 1998–99

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	11.4	2,244	57.5	80.8	12.1	18.7	2.1	0.8	0.0	16.8	0.4	1.7	256
25–34	13.3	2,507	58.2	83.6	17.8	26.5	4.0	1.2	0.3	16.6	1.6	4.2	334
35–49	10.2	2,274	48.9	84.3	9.8	19.5	2.2	1.8	0.9	15.8	0.9	3.5	231
Residence													
Urban	42.0	718	51.1	93.7	17.8	30.1	3.9	0.7	0.4	11.2	0.3	2.4	301
Rural	8.2	6,306	57.8	76.7	11.4	17.4	2.3	1.6	0.4	19.5	1.5	3.7	520
Region													
North Bihar Plain	9.6	3,133	63.5	84.2	11.8	21.6	3.8	1.0	0.3	18.1	0.0	4.8	301
South Bihar Plain	11.8	2,199	52.1	81.1	11.7	16.6	1.7	2.0	0.8	16.5	2.5	2.5	260
Jharkhand	15.4	1,692	49.2	83.3	18.0	28.1	3.0	0.8	0.0	14.4	0.8	2.1	260
Education													
Illiterate	2.9	5,383	47.9	71.1	8.2	1.3	0.6	2.1	0.0	19.5	2.8	3.2	155
Literate, < middle school complete	21.6	779	50.6	80.0	8.5	10.5	1.9	0.6	0.0	15.9	0.0	1.3	168
Middle school complete	40.5	267	53.6	82.8	15.2	22.0	0.0	0.0	0.0	13.2	0.0	1.8	108
High school complete and above	65.6	595	60.9	88.9	17.8	35.4	5.0	1.5	0.8	16.3	1.1	4.4	390
Religion													
Hindu	12.4	5,872	56.1	82.5	13.7	22.2	3.1	1.4	0.3	17.3	1.2	3.1	726
Muslim	6.9	1,038	46.6	86.4	14.7	16.0	0.0	0.0	1.5	8.4	0.0	1.4	72
Christian	30.4	59	*	*	*	*	*	*	*	*	*	*	18
Other	9.5	55	*	*	*	*	*	*	*	*	*	*	5
Caste/tribe													
Scheduled caste	7.0	1,452	41.2	77.7	9.7	11.4	6.2	0.0	0.0	18.5	2.2	3.1	102
Scheduled tribe	4.3	582	*	*	*	*	*	*	*	*	*	*	25
Other backward class	9.5	3,642	53.7	81.1	13.9	19.7	2.4	0.9	0.6	16.4	1.9	3.0	345
Other	25.9	1,348	59.8	87.5	14.8	26.9	2.6	1.5	0.3	15.7	0.0	2.5	349

Contd...

Table 6.15 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, Bihar, 1998–99

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	2.5	3,709	39.7	57.5	4.5	6.5	1.0	1.2	0.0	25.0	2.3	4.4	94
Medium	13.7	2,595	56.5	77.7	14.9	15.9	1.7	1.7	0.3	15.9	1.2	2.6	357
High	51.8	712	58.2	94.3	14.8	32.1	4.5	0.9	0.6	14.9	0.6	3.5	369
Exposure to mass media													
Exposed to any media	36.8	1,915	57.3	88.3	15.1	24.8	3.2	1.0	0.4	13.1	0.8	3.2	705
Listens to radio weekly	36.5	1,428	71.0	87.5	15.3	27.0	2.7	0.9	0.6	12.3	0.8	3.4	521
Watches television weekly	49.2	1,177	53.3	97.1	16.2	24.4	3.4	1.0	0.5	11.8	0.8	3.1	579
Goes to cinema/theatre monthly	52.1	309	63.9	95.7	33.3	29.2	3.1	0.0	0.7	5.6	0.7	3.0	161
Reads newspaper/magazine weekly	62.1	652	60.4	89.9	18.7	35.7	4.3	1.0	0.7	13.2	1.1	3.5	405
Not regularly exposed to any media	2.3	5,109	43.5	50.4	5.5	5.4	0.8	2.7	0.0	36.5	2.8	3.5	116
Total	11.7	7,024	55.4	82.9	13.8	22.1	2.9	1.2	0.4	16.4	1.1	3.2	821

Note: Total includes a small number women with missing information on the standard of living index, who are not shown separately.
*Percentage not shown; based on fewer than 25 unweighted cases

Women in households with a high standard of living are more likely than other women to have learned about AIDS from the mass media, but are less likely to have learned about AIDS from a friend or relative. Not surprisingly, a considerable proportion (37 percent) of women who are not regularly exposed to any media have learned about AIDS from a friend or relative, but even among this group 50 percent have heard about AIDS from television and 44 percent from the radio.

Knowledge of Ways to Avoid AIDS

Respondents who had heard of AIDS were asked if a person could do anything to avoid becoming infected. Those who reported that something could be done were asked what a person could do to avoid AIDS. Table 6.16 shows the percentage of ever-married women who know of no way to avoid AIDS and the percentage who report that AIDS can be avoided in specific ways, by selected background characteristics.

Among women who have heard about AIDS, 50 percent do not know any way to avoid infection. As expected, the percentage who do not know any way to avoid becoming infected with AIDS decreases sharply with increasing levels of education and household standard of living. This percentage is higher among Muslim women (59 percent) than among Hindu women (49 percent). Women belonging to scheduled castes and other backward classes are less likely to know any way to avoid AIDS than other women. The percentage who do not know any way to avoid becoming infected with AIDS is substantially higher among women not regularly exposed to mass media than among other women.

Among women who report that something can be done to prevent AIDS, 'having only one sex partner' (26 percent) and 'using condoms' (24 percent) are the most commonly mentioned ways of avoiding AIDS infection. 'Abstaining from sex', 'avoiding injections/using clean needles', and 'avoiding sex with commercial sex workers' are also mentioned as ways to avoid AIDS by substantial proportions of women (19 percent, 17 percent, and 12 percent, respectively). Only 5 percent mention 'avoiding intravenous drug use' and only 3 percent mention 'avoiding sex with homosexuals' as ways to avoid AIDS. The percentage reporting 'abstaining from sex', 'using condoms', or 'having only one sex partner' are higher among urban women than among rural women. The level of education and the household standard of living are strongly and positively associated with women mentioning each of these ways 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 from households with a high standard of living, and women who go to the cinema or theatre regularly.

Table 6.16 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, Bihar, 1998–99

Background characteristic	Percentage who believe AIDS can be avoided by:									Knows no way to avoid AIDS	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		
Age											
15–24	16.4	18.8	25.4	9.7	2.0	9.3	13.0	4.6	12.0	51.6	256
25–34	20.1	27.0	28.3	13.7	3.6	10.6	20.4	5.4	13.9	48.6	334
35–49	19.4	24.2	22.2	11.3	4.0	9.1	15.6	3.0	9.7	48.7	231
Residence											
Urban	20.8	27.2	28.1	9.3	2.7	8.5	17.4	3.8	11.9	47.0	301
Rural	17.6	21.6	24.3	13.2	3.5	10.5	16.4	4.9	12.2	51.0	520
Region											
North Bihar Plain	19.8	28.7	29.6	16.2	4.2	8.9	18.8	6.0	12.1	45.2	301
South Bihar Plain	20.9	24.8	22.1	14.4	4.1	9.4	12.8	1.9	7.0	55.6	260
Jharkhand	15.6	16.8	24.6	4.1	1.2	11.2	18.4	5.2	17.2	48.6	260
Education											
Illiterate	17.2	9.0	12.8	9.0	5.3	10.9	14.5	4.4	11.1	61.2	155
Literate, < middle school complete	12.0	19.4	13.4	11.5	1.7	7.4	11.5	1.2	6.9	64.1	168
Middle school complete	19.6	14.8	28.4	10.0	3.6	8.7	17.8	6.6	13.1	55.9	108
High school complete and above	22.1	33.8	35.3	13.5	2.9	10.7	19.6	5.3	14.5	36.9	390
Religion											
Hindu	18.4	24.1	26.4	11.6	3.0	10.1	16.3	4.0	12.4	49.4	726
Muslim	15.8	20.1	15.6	15.7	4.4	5.6	18.3	8.4	7.2	58.8	72
Caste/tribe											
Scheduled caste	19.8	18.6	20.4	8.8	2.0	8.5	13.8	1.1	11.3	55.4	102
Other backward class	18.4	22.9	23.0	11.3	2.6	9.3	16.0	6.0	12.1	52.2	345
Other[1]	18.4	26.8	31.4	13.4	3.7	9.8	18.6	4.3	12.3	45.1	349

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Table 6.16 Knowledge about avoidance of AIDS (contd.)

Among ever-married women who have heard about AIDS, the percentage who believe AIDS can be avoided in specific ways by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage who believe AIDS can be avoided by:									Knows no way to avoid AIDS	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		
Standard of living index											
Low	13.1	14.0	13.1	8.8	2.3	5.6	13.8	0.0	5.5	63.9	94
Medium	18.7	19.3	21.6	10.4	4.2	10.1	17.7	4.7	13.1	52.6	357
High	20.4	30.5	33.0	13.9	2.5	10.6	16.7	5.4	12.9	42.7	369
Exposure to mass media											
Exposed to any media	18.6	25.6	27.8	11.9	2.9	10.1	17.6	5.1	12.9	47.1	705
Listens to radio weekly	19.1	26.0	29.1	11.8	2.6	10.4	16.9	4.3	11.6	47.1	521
Watches television weekly	19.4	27.6	28.0	11.9	2.6	10.0	18.4	5.0	13.3	46.3	579
Goes to cinema/theatre monthly	30.4	42.8	37.8	15.8	4.9	12.6	17.7	7.3	15.5	32.7	161
Reads newspaper/magazine weekly	20.0	32.7	33.2	14.8	3.5	11.9	18.9	4.6	13.2	38.8	405
Not regularly exposed to any media	19.8	12.1	12.8	11.1	5.3	8.1	11.4	0.9	7.1	64.3	116
Total	18.8	23.7	25.7	11.8	3.2	9.8	16.8	4.5	12.1	49.6	821

Note: Total includes18 and 5 women belonging to Christian and 'other' religions, respectively, 25 scheduled-tribe women, and 2 women with missing information on the standard of living index, who are not shown separately.
[1]Children not belonging to a scheduled caste, a scheduled tribe, or an other backward class

CHAPTER 7

NUTRITION AND THE PREVALENCE OF ANAEMIA

This chapter focusses 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 greatly expanded 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. The height and weight measurements and anaemia testing were conducted by a specially-trained health investigator attached to each interviewing team.

7.1 Women's Food Consumption

The consumption of a wide variety of nutritious foods is important for women'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). Women in Bihar consume vegetables most often (Table 7.1). More than three-quarters of women consume vegetables on a daily basis. Pulses and beans are also an important part of the everyday diet for about one-half (49 percent) of women. On the other hand, very few women eat fruits; eggs; or chicken, meat, or fish on a daily basis. Fruits, which are often available only seasonally, are eaten daily by only 3 percent of women, weekly by 16 percent of women, and occasionally by 76 percent of women. Less than 2 percent eat eggs daily, and only about 1 percent eat chicken, meat, or fish daily. Nineteen percent never eat eggs and 13 percent never eat chicken, meat, or fish. Only 21 percent consume milk or curd daily. The majority of women in Bihar (53 percent) either never consume milk or curd or consume it only occasionally.

Table 7.2 shows that there are substantial differentials in food consumption patterns by selected background characteristics. Age does not play a major role in women's consumption patterns, except that younger women are slightly more likely than older women to eat eggs, as well as chicken, meat, or fish. Women in urban areas are more likely than women in rural areas to include every type of food in their diet, particularly nutritious foods such as dairy products; fruits; eggs; and chicken, meat or fish. Women in the South Bihar Plain region are considerably more likely to consume milk or curd than women in the North Bihar Plain region or in the Jharkhand region. Use of dairy products is particularly low in the Jharkhand region. Women in the South Bihar Plain region are also somewhat more likely to consume fruits; eggs; and chicken, meat, or fish than women in other regions. Illiterate women have poorer and less varied diets than literate women, and their diets are particularly deficient in dairy products. Consumption of fruits; eggs; and chicken,

Table 7.1 Women's food consumption

Percent distribution of ever-married women by frequency of consumption of specific foods, Bihar, 1998–99

Type of food	Frequency of consumption				Total percent
	Daily	Weekly	Occasionally	Never	
Milk or curd	21.4	25.3	44.5	8.8	100.0
Pulses or beans	49.4	39.3	11.0	0.3	100.0
Green, leafy vegetables	73.3	22.7	4.0	0.0	100.0
Other vegetables	83.9	12.2	3.2	0.7	100.0
Fruits	2.6	15.7	76.2	5.5	100.0
Eggs	1.6	20.5	58.5	19.4	100.0
Chicken, meat, or fish	1.1	20.4	65.3	13.2	100.0

meat, or fish is also positively associated with the level of education. Hindu women consume dairy products more often than Muslim women, and Muslim women consume non-vegetarian food more often than Hindu women. Eighteen percent of Hindu women eat chicken, meat, or fish at least once a week compared with 38 percent of Muslim women. Women from scheduled castes, scheduled tribes, and other backward classes have relatively poor diets compared with the diets of other women. Women from scheduled tribes have a diet particularly deficient in dairy products. As expected, poverty has a strong negative effect on the consumption of nutritious types of food. Women in households with a low standard of living are much less likely than other women to eat fruits and dairy products on a regular basis.

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 as 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 Bihar of 150 cm. The mean height varies only slightly (between 149 and 152 cm) for women in different population groups, as shown in Table 7.3. Twenty percent of women are under 145 cm in height. Younger women are more likely than older women to be short, as are women in the South Bihar Plain region, illiterate women, women from scheduled castes, women who are employed by someone else, and women living in households with a low standard of living. Short stature is particularly strongly related to poverty. One in every four women living in households with a low standard of living is below 145 cm in height compared with 1 in every 11 women living in households with a high standard of living.

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, Bihar, 1998–99

Background characteristic	Type of food							Number of women
	Milk or curd	Pulses or beans	Green, leafy vegetables	Other vegetables	Fruits	Eggs	Chicken, meat, or fish	
Age								
15–24	46.4	88.9	95.8	96.1	17.9	23.3	22.7	2,244
25–34	46.4	89.1	96.0	95.8	18.3	21.8	20.5	2,507
35–49	47.4	88.1	96.0	96.4	18.6	21.3	21.4	2,274
Residence								
Urban	60.3	96.6	98.5	95.5	41.2	43.1	41.8	718
Rural	45.2	87.8	95.7	96.2	15.7	19.7	19.2	6,306
Region								
North Bihar Plain	43.7	87.3	96.3	99.6	15.3	20.1	21.2	3,133
South Bihar Plain	64.1	93.5	95.1	98.5	23.0	24.5	24.7	2,199
Jharkhand	29.6	85.1	96.5	86.6	17.8	22.7	17.9	1,692
Education								
Illiterate	39.9	86.4	95.4	95.6	12.8	19.7	18.4	5,383
Literate, < middle school complete	59.5	94.8	96.8	97.5	24.9	25.2	26.8	779
Middle school complete	68.0	96.5	98.4	95.2	34.1	28.8	29.1	267
High school complete and above	82.4	98.0	98.9	99.1	52.3	36.6	39.0	595
Religion								
Hindu	48.6	88.9	95.7	95.9	18.1	18.3	18.4	5,872
Muslim	38.4	88.3	97.1	97.9	17.7	42.6	38.1	1,038
Christian	21.3	90.7	100.0	94.3	23.3	30.4	39.4	59
Other	32.5	76.5	100.0	84.0	38.8	29.5	19.6	55
Caste/tribe								
Scheduled caste	37.6	83.9	93.9	95.8	15.0	18.9	19.6	1,452
Scheduled tribe	27.0	80.1	95.5	84.7	14.5	20.2	14.3	582
Other backward class	47.9	90.5	96.4	97.4	16.1	20.9	20.4	3,642
Other	61.7	92.7	97.3	98.0	29.2	29.7	29.6	1,348
Standard of living index								
Low	32.6	83.2	94.9	95.1	10.7	16.8	15.6	3,709
Medium	57.2	93.7	96.5	96.9	20.0	25.1	25.0	2,595
High	82.1	99.0	99.3	98.7	51.3	38.6	39.5	712
Total	46.7	88.7	96.0	96.1	18.3	22.1	21.5	7,024

Note: Total includes 8 women with missing information on the standard of living index, who are not shown separately.

Table 7.3 also shows an index that relates a woman's weight to her height. 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). This index excludes women who were pregnant at the time of the survey or women who had given birth during the two months preceding the survey. The mean BMI for women in Bihar is 19.4. Chronic energy deficiency is usually indicated by a BMI of less than 18.5. About two-fifths (39 percent) of women have a BMI below 18.5, indicating a high prevalence of nutritional deficiency among women in Bihar. Nutritional problems are particularly serious for rural women, women in the Jharkhand region, illiterate women, Muslim women, women employed by someone else or

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/m^2 by selected background characteristics, Bihar, 1998–99

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						
15–19	149.0	22.6	784	19.4	35.2	725
20–24	149.2	21.3	1,347	19.2	39.8	1,149
25–29	149.7	15.8	1,350	19.4	40.0	1,177
30–34	149.5	19.4	1,051	19.5	39.2	973
35–49	149.6	19.7	2,173	19.7	40.1	2,137
Marital status						
Currently married	149.5	19.6	6,360	19.5	39.1	5,819
Not currently married	149.5	18.9	345	19.3	43.3	342
Residence						
Urban	150.2	18.3	686	20.5	31.1	650
Rural	149.4	19.7	6,020	19.3	40.3	5,511
Region						
North Bihar Plain	149.6	17.7	2,992	19.4	38.7	2,733
South Bihar Plain	149.1	22.3	2,097	19.6	38.7	1,912
Jharkhand	149.9	19.2	1,616	19.3	41.1	1,516
Education						
Illiterate	149.0	21.1	5,115	19.2	42.5	4,668
Literate, < middle school complete	150.6	15.6	770	20.0	33.0	727
Middle school complete	150.5	14.6	263	20.0	33.1	242
High school complete and above	151.5	12.5	557	21.1	22.8	523
Religion						
Hindu	149.4	20.1	5,618	19.5	38.7	5,186
Muslim	149.6	16.8	973	19.2	43.3	863
Christian	152.1	8.9	60	19.2	38.1	59
Other	150.3	16.3	55	(19.2)	(37.4)	53
Caste/tribe						
Scheduled caste	148.5	24.9	1,385	18.9	46.7	1,257
Scheduled tribe	149.7	19.3	548	19.2	41.0	514
Other backward class	149.3	19.8	3,488	19.4	38.8	3,207
Other	151.0	13.1	1,285	20.2	32.1	1,184
Work status						
Working in family farm/business	149.6	18.6	605	19.1	41.5	575
Employed by someone else	148.7	23.5	776	18.8	50.4	720
Self-employed	149.0	21.0	376	19.5	39.6	350
Not worked in past 12 months	149.6	18.9	4,948	19.6	37.3	4,516
Standard of living index						
Low	148.7	23.2	3,523	19.0	44.6	3,212
Medium	149.9	17.1	2,499	19.6	37.2	2,302
High	151.8	9.5	676	21.3	21.0	641
Total	149.5	19.5	6,705	19.4	39.3	6,161

Note: Total includes a small number of women with missing information on 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/m^2).

working on a family farm or in a family business, and women from scheduled castes or scheduled tribes. The standard of living is negatively related to chronic energy deficiency. Women from households with a low standard of living are more than two times as likely to have a low BMI as women from households with a high standard of living. Currently married women are somewhat less likely than women who are currently not married to have a low BMI.

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 B_{12}, 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, may become an underlying cause of maternal mortality and perinatal mortality, and results in an increased risk of premature delivery and low birth weight (Seshadri, 1997). Early detection of anaemia can help 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 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 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, emphasizing the voluntary nature of the test, and asking 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

[1]The 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.

[2]Because 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.

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, Bihar, 1998–99

Background characteristic	Percentage of women with any anaemia	Percentage of women with: Mild anaemia	Moderate anaemia	Severe anaemia	Number of women
Age					
15–19	64.2	43.8	18.9	1.5	731
20–24	63.4	40.0	21.7	1.7	1,241
25–29	63.2	42.6	18.8	1.7	1,249
30–34	63.7	43.2	19.3	1.2	981
35–49	63.1	44.5	17.3	1.3	2,021
Marital status					
Currently married	63.6	43.0	19.1	1.5	5,897
Not currently married	60.6	41.6	17.6	1.4	326
Residence					
Urban	59.6	42.6	15.2	1.8	637
Rural	63.9	43.0	19.4	1.4	5,586
Region					
North Bihar Plain	60.2	44.2	15.0	1.1	2,775
South Bihar Plain	60.7	40.2	18.7	1.8	1,948
Jharkhand	72.9	44.3	26.8	1.8	1,499
Education					
Illiterate	66.2	43.2	21.3	1.7	4,736
Literate, < middle school complete	57.7	43.5	13.4	0.8	725
Middle school complete	54.5	41.6	13.0	0.0	250
High school complete and above	50.0	40.3	8.6	1.1	512
Religion					
Hindu	63.1	42.6	19.1	1.3	5,238
Muslim	63.1	44.3	17.0	1.8	873
Christian	76.9	52.4	20.4	4.2	57
Other	86.6	45.2	33.7	7.7	55
Caste/tribe					
Scheduled caste	67.0	43.8	22.0	1.1	1,274
Scheduled tribe	82.1	43.3	35.9	2.9	512
Other backward class	60.9	42.2	17.0	1.6	3,253
Other	58.5	43.9	13.8	0.8	1,185
Work status					
Working in family farm/business	63.5	42.6	19.1	1.8	573
Employed by someone else	71.8	44.1	24.9	2.8	717
Self-employed	70.1	43.0	25.7	1.4	346
Not worked in past 12 months	61.6	42.8	17.5	1.2	4,586

Contd...

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 health investigator to inform a local health official about the problem. For each Primary Sampling Unit, a local health 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. Three levels of severity of anaemia are distinguished: mild anaemia (10.0–10.9 g/dl for pregnant women and 10.0–11.9 g/dl for nonpregnant women), moderate anaemia (7.0–9.9 g/dl), and severe anaemia (less than 7.0 g/dl). Appropriate adjustments in these cutoff points were made for

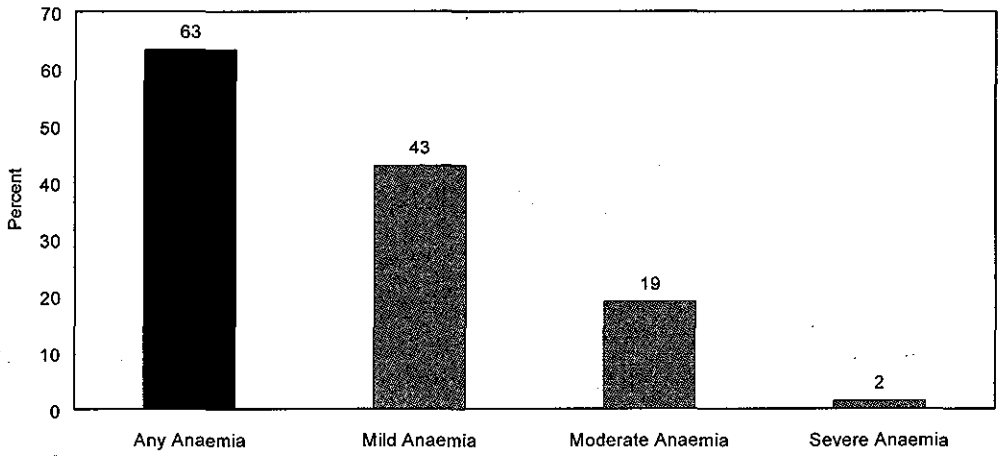
Table 7.4 Anaemia among women (contd.)

Percentage of ever-married women classified as having iron-deficiency anaemia by degree of anaemia, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage of women with any anaemia	Percentage of women with: Mild anaemia	Moderate anaemia	Severe anaemia	Number of women
Standard of living index					
Low	68.9	43.7	23.4	1.8	3,268
Medium	59.5	42.7	15.4	1.3	2,328
High	50.3	40.3	9.4	0.6	620
Pregnancy/breastfeeding status					
Pregnant	49.8	22.1	25.5	2.2	508
Not pregnant (breastfeeding)	67.4	46.8	19.0	1.6	1,907
Not pregnant (non-breastfeeding)	63.2	43.8	18.1	1.3	3,808
Height					
< 145 cm	65.9	41.8	22.1	2.0	1,219
≥ 145 cm	62.8	43.3	18.2	1.3	4,994
Body mass index					
< 18.5 kg/m^2	65.2	42.9	20.5	1.9	2,357
≥ 18.5 kg/m^2	62.3	43.1	18.1	1.2	3,842
Fruit and vegetable consumption[1]					
Fruits and vegetables	59.5	43.2	15.1	1.2	1,137
Vegetables only	63.9	42.8	19.6	1.5	4,864
Neither	74.1	46.7	25.8	1.6	217
Total	63.4	42.9	19.0	1.5	6,223

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 sample PSUs in Bihar are at an altitude below 1,000 metres. Total includes 6 women consuming fruit only and 8, 11, and 24 women with missing information on the standard of living index, height, and body mass index, respectively, who are not shown separately.
[1]Based on consumption at least weekly. Vegetables include only green, leafy vegetables.

Figure 7.1
Anaemia Among Women



NFHS-2, Bihar, 1998–99

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 Bihar, haemoglobin levels were tested for 88 percent of women (see Table B.3 in Appendix B). Overall, 63 percent of women have some degree of anaemia. Forty-three percent of women are mildly anaemic, 19 percent are moderately anaemic, and 2 percent are severely anaemic[3]. There are some differences in the prevalence of anaemia by background characteristics, but anaemia is substantial for women in every population group. The prevalence of anaemia does not vary much by age. It is slightly higher for currently married women (64 percent) than for women who are currently not married (61 percent), and slightly higher for rural women (64 percent) than for urban women (60 percent). Differences by region, education, religion, caste/tribe, work status, and standard of living are more pronounced. The prevalence of anaemia is much higher in the Jharkhand region (73 percent) than in the North Bihar Plain or South Bihar Plain regions (60–61 percent). Anaemia is relatively high for illiterate women, women belonging to religions other than Hindu or Muslim, scheduled-tribe women, and self-employed women and women employed by someone else. Anaemia, especially moderate to severe anaemia, decreases as the standard of living rises.

Pregnant women are more likely to have moderate to severe anaemia (28 percent) than nonpregnant women (19–21 percent). However, pregnant women are considerably less likely than other women to have mild anaemia (probably because a substantial proportion of pregnant women consume iron and folic acid tablets or syrup). Overall, pregnant women are considerably less likely to be anaemic (50 percent) than nonpregnant women (63–67 percent). Shorter women and women with a low body mass index have somewhat higher prevalence of moderate to severe anaemia than other women. The diet of women also plays a role in the likelihood that they have anaemia. Consumption of iron-rich foods can reduce the prevalence or severity of anaemia, and the absorption of iron from the diet can be enhanced (for example, by vitamin C) or inhibited (for example, by tea or coffee) if particular items are consumed around the time that a meal is eaten. In NFHS-2, differentials in anaemia by consumption of fruits and vegetables are large. Women not eating fruits and green, leafy vegetables regularly have considerably elevated levels of moderate to severe anaemia.

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 UNICEF, recommends initiation of breastfeeding immediately after childbirth. The World Health Organization (WHO) and the

[3]Rates that are not adjusted for altitude and smoking are almost the same as the corresponding adjusted rates (with at most a 0.2 difference in any rate). This is to be expected since, in Bihar, the proportion of women who smoke is small (see Table 2.12), and all of the sample PSUs are at an altitude below 1,000 metres.

United Nations Children's Fund (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.(a)). 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. 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. These indicators of breastfeeding and other feeding practices are presented in this section.

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 1995, 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 it 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 the recommended practice. Although breastfeeding is nearly universal in Bihar, very few children are put to the breast immediately after birth. Only 6 percent of children began breastfeeding within one hour of birth, and only 21 percent began breastfeeding within one day. Forty-two percent of mothers squeezed the first milk from the breast before they began breastfeeding. Differentials in the early initiation of breastfeeding and in squeezing the first milk from the breast are also shown in Table 7.5. No more than 13 percent of children in any group were put to the breast within one hour of birth. The percentage of children that started breastfeeding within one day of birth does not vary much by urban-rural residence, mother's education, religion, standard of living, assistance during delivery, or place of delivery. However,

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, Bihar, 1998–99

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	5.3	21.8	41.7	258
Rural	6.3	20.6	42.1	2,689
Region				
North Bihar Plain	5.0	14.1	36.2	1,378
South Bihar Plain	6.3	24.0	38.3	979
Jharkhand	9.0	30.5	62.1	590
Mother's education				
Illiterate	6.3	20.4	43.1	2,262
Literate, < middle school complete	4.7	21.7	42.3	280
Middle school complete	6.2	23.0	45.3	127
High school complete and above	6.7	20.7	32.0	277
Religion				
Hindu	5.6	20.0	41.1	2,378
Muslim	8.4	22.8	45.6	532
Caste/tribe				
Scheduled caste	7.0	22.5	40.9	672
Scheduled tribe	12.6	33.8	60.9	197
Other backward class	4.3	16.8	41.3	1,544
Other	8.5	24.5	38.9	533
Mother's work status				
Working in family farm/business	7.8	18.3	46.0	230
Employed by someone else	7.0	23.8	47.3	290
Self-employed	9.4	33.1	53.0	135
Not worked in past 12 months	5.8	19.8	40.4	2,292
Standard of living index				
Low	6.2	20.7	44.4	1,676
Medium	6.5	20.6	40.9	1,028
High	5.2	20.9	32.1	237
Assistance during delivery				
Health professional[2]	3.8	19.6	38.9	688
Dai (TBA)	7.4	20.9	41.8	1,940
Other	4.8	24.0	57.2	283
Place of delivery				
Public health facility	3.7	20.1	42.5	112
Private health facility	3.2	19.4	37.3	310
Own home	7.4	21.6	42.4	2,076
Parents' home	3.7	18.5	48.3	388
Total	6.2	20.7	42.1	2,947

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 17 and 20 children belonging to Christian and 'other' religions, respectively; 8 and 16 children delivered in nongovernmental organization (NGO) or trust hospitals/clinics and 'other' places of delivery, respectively; and 6, 35, and 36 children with missing information on the standard of living index, assistance during delivery, and place of delivery, respectively, who are not shown separately.
TBA: Traditional birth attendant
[1]Includes children who started breastfeeding within one hour of birth
[2]Includes doctor, auxiliary nurse midwife, nurse, midwife, lady health visitor, and other health professionals

Table 7.6 Breastfeeding status by child's age

Percent distribution of children under age 3 by breastfeeding status, according to child's age in months, Bihar, 1998–99

	Breastfeeding status						
			Breastfeeding and:				
Age in months	Not breastfeeding	Exclusively breastfeeding	Receiving plain water only	Receiving supplements	Don't know if fed supplements	Total percent	Number of living children
< 2	3.0	63.0	21.3	12.7	0.0	100.0	137
2–3	2.3	50.4	28.4	19.0	0.0	100.0	226
4–5	3.0	34.8	38.6	23.7	0.0	100.0	207
6–7	4.3	20.7	35.1	39.9	0.0	100.0	174
8–9	4.8	16.1	31.1	48.0	0.0	100.0	122
10–11	2.1	7.8	17.4	72.6	0.0	100.0	102
12–13	1.1	1.7	13.8	83.4	0.0	100.0	175
14–15	8.2	1.0	8.6	82.2	0.0	100.0	199
16–17	6.5	1.7	6.3	85.4	0.0	100.0	171
18–19	7.0	0.7	12.0	80.3	0.0	100.0	140
20–21	18.3	0.9	7.5	73.4	0.0	100.0	105
22–23	11.0	0.0	14.1	74.9	0.0	100.0	92
24–25	34.8	0.0	1.6	63.6	0.0	100.0	131
26–27	33.6	0.7	3.0	62.7	0.0	100.0	140
28–29	37.2	0.0	0.0	62.8	0.0	100.0	154
30–31	34.6	0.0	1.6	63.8	0.0	100.0	184
32–33	41.6	0.7	0.0	57.6	0.0	100.0	143
34–35	38.5	0.0	4.8	56.0	0.7	100.0	128
< 4 months	2.5	55.2	25.7	16.6	0.0	100.0	364
4–6 months	3.6	32.7	36.3	27.4	0.0	100.0	293
7–9 months	4.3	15.2	34.5	46.0	0.0	100.0	210

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.

some differentials are notable. Children in the Jharkhand region, scheduled-tribe children, and children of self-employed mothers are much more likely than other children to have started breastfeeding within one day of birth, but the majority of children in every group were not breastfed within one day of birth.

The custom of squeezing the first milk from the breast before breastfeeding a child is widely practised in every group, but it is much more common in the Jharkhand region and for scheduled-tribe children. The percentage of children whose mothers squeezed the first milk from the breast is also higher for children of less educated mothers and self-employed mothers. Children who live in households with a high standard of living are less likely than children in other households to have mothers who squeezed the first milk from the breast before breastfeeding. It should be stressed, however, that contrary to recommendations for feeding infants, mothers squeeze the first milk from the breast before breastfeeding for one-third to two-thirds of children in different groups.

Mothers of children born in the three years before 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 puts infants at risk of malnutrition because other liquids and solid foods are nutritionally inferior to breast milk.

Table 7.7 Type of food received by children

Percentage of children under age 3 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, Bihar, 1998–99

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								
< 2	2.3	10.0	1.6	0.0	0.0	0.0	3.8	133
2–3	5.9	13.5	1.8	0.4	0.0	0.9	9.2	221
4–5	7.5	16.5	3.6	1.1	0.0	3.5	8.3	201
6–7	4.8	27.2	13.9	3.6	1.2	12.7	9.3	166
8–9	8.2	27.5	24.2	6.9	1.0	19.9	9.9	117
10–11	9.2	35.4	44.6	18.0	2.1	50.6	10.2	100
12–13	5.4	47.1	48.2	28.5	6.7	64.9	12.5	173
14–15	6.1	45.3	53.8	33.4	5.5	76.9	6.7	183
16–17	3.1	37.4	58.4	38.8	11.5	79.5	6.9	160
18–23	3.9	34.8	51.9	39.5	7.8	75.3	4.1	297
24–29	7.4	43.7	70.4	56.8	8.9	91.3	6.6	275
30–35	3.7	40.0	76.9	57.9	15.0	90.8	5.7	282
< 4 months	4.6	12.2	1.7	0.3	0.0	0.5	7.2	354
4–5 months	7.5	16.5	3.6	1.1	0.0	3.5	8.3	201
6–9 months	6.2	27.3	18.2	5.0	1.1	15.7	9.6	283
NON-BREASTFEEDING CHILDREN								
< 10	(42.3)	(64.7)	(11.2)	(11.4)	(7.5)	(15.0)	(67.7)	29
10–17	(27.0)	(67.6)	(68.1)	(39.8)	(20.8)	(77.5)	(37.1)	32
18–23	(17.9)	(49.1)	(71.7)	(49.4)	(20.7)	(79.3)	(28.4)	39
24–29	6.0	50.5	79.9	72.5	22.8	95.9	11.4	150
30–35	4.7	46.8	81.0	66.9	13.2	96.0	8.9	173
ALL CHILDREN								
< 2	2.9	11.3	1.6	0.0	0.0	0.0	5.1	137
2–3	6.8	14.6	1.8	0.4	0.0	0.8	10.4	226
4–5	8.8	18.5	4.0	1.6	0.5	3.9	10.6	207
6–7	5.8	27.9	14.5	4.7	1.8	14.0	10.7	174
8–9	10.9	30.2	23.1	6.6	0.9	19.0	14.3	122
10–11	10.2	34.7	43.7	18.6	2.0	50.5	11.1	102
12–13	5.9	47.6	48.8	28.2	6.6	65.2	12.9	175
14–15	7.8	48.3	54.6	34.3	7.3	76.8	8.8	199
16–17	4.2	38.6	60.0	38.7	12.1	79.7	8.9	171
18–23	5.5	36.4	54.2	40.6	9.3	75.7	7.0	337
24–29	6.9	46.1	73.7	62.3	13.8	92.9	8.3	425
30–35	4.1	42.6	78.5	61.4	14.3	92.8	6.9	455
< 4 months	5.3	13.4	1.7	0.3	0.0	0.5	8.4	364
4–5 months	8.8	18.5	4.0	1.6	0.5	3.9	10.6	207
6–9 months	7.9	28.9	18.1	5.5	1.4	16.1	12.2	296

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Percents by type of food may sum to more than 100.0 because children may have received more than one type of food.
( ) Based on 25–49 unweighted cases
[1]Includes green, leafy vegetables and fruits

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.

In Bihar, 55 percent of children under four months of age are exclusively breastfed, 26 percent receive breast milk plus water, and 17 percent receive supplements along with breast milk (Table 7.6). The percentage of infants exclusively breastfed drops off after three months to 35 percent at age 4–5 months and 21 percent at age 6–7 months. The proportion of children receiving supplements along with breast milk increases from 24 percent for children age 4–5 months to 85 percent for children age 16–17 months, and declines thereafter as children are weaned from the breast and their food consumption no longer supplements breast milk. However, breastfeeding generally continues for a long period. Ninety-three percent of children age 18–19 months are still being breastfed, as are 62 percent of children age 34–35 months.

Table 7.7 shows in more detail the types of food consumed by children under age three years during the day or night before the interview. Because of the small number of nonbreastfeeding children, some two-month age categories have been combined into broader age groups. Powdered milk is rarely given to young children at any age, but other milk (such as cow's milk or buffalo's milk) is given to young children more often. About one-half of non-breastfeeding children were given these other types of milk the day or night before the interview. About one-quarter to one-half of breastfeeding children age 6–35 months received non-powdered milk in addition to breast milk. Among all children, other liquids, such as juice or tea, are given less often than milk for children under age 9 months and more often for children age 10–35 months. The consumption of green, leafy vegetables generally increases with age, from 5 percent at age 6–7 months to 61 percent at age 30–35 months for all children. The consumption of fruits is generally quite low for all children under three years in Bihar. Less than 2 percent of infants and only 7–14 percent of children age 12–35 months receive fruits on a regular basis.

From about six months of age, the introduction of complementary food is critical to meeting the protein, energy, and micronutrient needs of children. However, in Bihar, the introduction of complementary food is delayed for a substantial proportion of children. Only 13 percent of breastfeeding children age 6–7 months consume solid or mushy foods. This proportion rises to 65 percent at age 12–13 months and more than 90 percent at age 24–35 months. Only 16 percent of breastfeeding children age 6–9 months receive solid or mushy food, as recommended.

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 not common in Bihar, especially for children who are being breastfed. In every age group, less than 13 percent of breastfeeding children drank anything from a bottle with a nipple during the day or night before the interview (Table 7.7). 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. The median length of any breastfeeding is more than three years. 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.

Table 7.8 Median duration of breastfeeding by background characteristics

Median duration of breastfeeding among children under age 3 by sex of child and residence, and mean duration of breastfeeding, Bihar, 1998–99

Background characteristic	Median duration (months)[1]			Number of children
	Any breastfeeding	Exclusive breastfeeding	Exclusive breastfeeding or breastfeeding plus water only	
Sex of child				
Male	≥ 36.0	1.6	7.7	1,519
Female	≥ 36.0	2.2	7.3	1,428
Residence				
Urban	24.0	(0.6)	3.1	258
Rural	≥ 36.0	2.1	8.0	2,689
Median duration	≥ 36.0	1.9	7.5	2,947
Mean duration (months)[1]	28.3	4.3	8.7	2,947
Prevalence/incidence mean	27.8	4.2	9.0	2,947

Note: Table includes only the two most recent births during the three years preceding the survey. The median duration of any breastfeeding is shown as ≥ 36.0 months for groups in which the exact median cannot be calculated because the proportion of breastfeeding children does not drop below 50 percent in any age group for children under 36 months of age.
( ) Based on 25–49 unweighted cases
[1]Based on current status

Supplementation begins relatively early, however. The median length of exclusive breastfeeding is 1.9 months, and the median length of exclusive breastfeeding or breastfeeding with water only is 7.5 months.

The mean durations of any breastfeeding, exclusive breastfeeding, and exclusive breastfeeding or breastfeeding with water only are 28.3 months, 4.3 months, and 8.7 months, respectively. The mean durations differ from the median durations because of extreme values of the duration of breastfeeding for some children. (The mean duration is strongly affected by extreme values, but the median duration is not.)

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). For each measure of breastfeeding, the prevalence-incidence mean is about the same as the mean calculated in the conventional manner.

The median duration of breastfeeding is more than three years for both boys and girls. The median length of breastfeeding is two years in urban areas and more than three years in rural 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 type of scales and measuring boards used for women. Children under two years of age were measured lying down and other 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

Table 7.9 Nutritional status of children by demographic characteristics

Percentage of children under age 3 classified as undernourished on three anthropometric indices of nutritional status, according to selected demographic characteristics, Bihar, 1998–99

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	3.4	16.1	5.5	16.5	3.9	15.7	417
6–11 months	19.4	45.1	20.7	40.2	5.6	19.7	319
12–23 months	31.3	65.6	43.6	66.9	6.3	24.9	680
24–35 months	36.2	71.3	47.2	70.0	5.5	21.0	670
Sex of child							
Male	24.6	52.8	33.6	53.0	5.7	21.4	1,078
Female	26.4	56.1	33.6	54.6	5.2	20.5	1,008
Birth order							
1	21.8	51.6	27.4	52.6	6.7	20.7	471
2–3	22.1	52.0	34.9	52.5	4.4	19.1	833
4–5	29.9	57.9	35.5	55.7	6.3	20.7	485
6+	33.4	59.8	36.9	55.8	5.0	27.3	298
Previous birth interval[2]							
First birth	21.9	51.6	27.2	52.3	6.9	20.8	473
< 24 months	31.9	61.3	42.1	61.2	6.4	22.9	271
24–47 months	26.3	55.4	35.7	55.2	4.1	20.6	910
48+ months	23.5	51.1	31.0	47.4	6.1	20.9	432
Total	25.5	54.4	33.6	53.7	5.5	21.0	2,086

Note: Each index is expressed in standard deviation (SD) units from the median of the International Reference Population.
[1]Includes children who are below –3 SD from the International Reference Population median
[2]First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

not 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 Bihar, NFHS-2 failed to measure height or weight for 11 percent of children under age three (see Table B.3 in Appendix B). 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. More than one-half of children under three years of age are underweight (54 percent), and a similar percentage are stunted (54 percent). The proportion of children who are severely undernourished is also notable—26 percent according to weight-for-age and 34 percent according to height-for-age. Wasting is also quite evident in Bihar, affecting 21 percent of children under three years of age. The proportion of children under three years of age who are underweight decreased from 63 percent in NFHS-1 to 54 percent in NFHS-2 and the proportion severely underweight decreased from 32 percent to 26 percent. There has been relatively little improvement in the proportion stunted or proportion wasted since the time of NFHS-1. The

proportion of children under three years of age who are stunted decreased from 56 percent in NFHS-1 to 54 percent in NFHS-2, and the proportion wasted decreased from 24 percent to 21 percent, respectively.

The proportion of children who are underweight and stunted increases steadily with child's age, whereas wasting increases up to age 12–23 months and then declines slightly at age 24–35 months. Even during the first six months of life, when most babies are breastfed, about 16 percent of children are undernourished according to the three nutritional indices. It is notable that at age 24–35 months, when most children have been weaned from breast milk, about one-half are severely stunted and more than one-third are severely underweight.

Girls and boys are about equally undernourished, but girls are slightly more likely than boys to be underweight and stunted, whereas boys are slightly more likely to be wasted. Undernourishment generally increases with increasing birth order. Young children in families with four or more children are nutritionally the most disadvantaged. First births have lower than average levels of undernutrition on almost every measure, and children born after a short birth interval have higher than average levels on all measures.

Table 7.10 shows the nutritional status of children by selected background characteristics. Undernutrition is substantially higher in rural areas than in urban areas. Even in urban areas, however, 42–47 percent of children are underweight or stunted. Children whose mothers are illiterate are much more likely to be undernourished than children whose mothers have completed at least high school (see Figure 7.2). Muslim children and Hindu children are about equally likely to be undernourished. Children belonging to scheduled castes, scheduled tribes, or other backward classes have relatively high levels of undernutrition according to all three measures. Interestingly, undernutrition is relatively low for children whose mothers have not worked in the past 12 months.

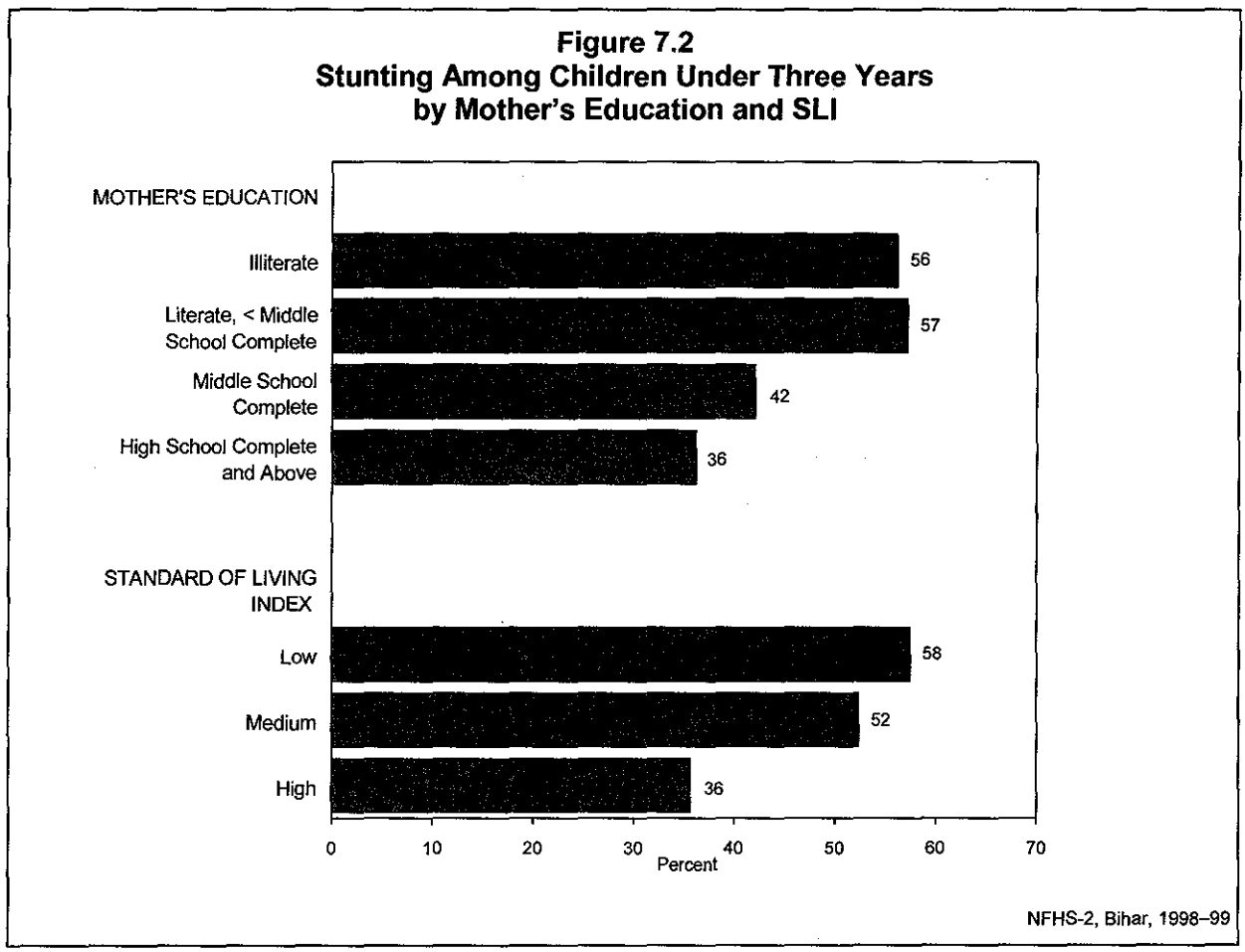
Undernutrition among children is strongly related to maternal nutritional status. Undernutrition is more common for children of mothers whose height is less than 145 centimetres or whose body mass index is below 18.5 than for other children. All of the measures of undernutrition are strongly related to the household's standard of living. Children from households with a low standard of living are 2–5 times as likely to be severely undernourished as children from households with a high standard of living. Even among children from high standard of living households, about one-third (33 percent) are underweight and more than one-third (36 percent) are stunted.

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, Bihar, 1998–99

Background 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]	
Residence							
Urban	12.1	47.4	24.2	42.2	3.8	17.1	199
Rural	26.9	55.1	34.6	55.0	5.6	21.4	1,886
Region							
North Bihar Plain	22.7	52.0	33.0	52.3	5.2	18.3	1,022
South Bihar Plain	29.0	58.3	37.6	59.3	6.5	22.4	629
Jharkhand	26.8	54.3	29.4	49.0	4.6	25.4	435
Mother's education							
Illiterate	28.1	57.4	35.7	56.2	5.9	22.4	1,559
Literate, < middle school complete	22.4	55.6	32.7	57.2	2.9	17.8	228
Middle school complete	17.3	43.1	24.0	42.1	8.7	18.3	96
High school complete and above	12.5	35.3	23.4	36.2	3.2	15.5	203
Religion							
Hindu	24.8	54.2	34.0	54.0	5.2	20.7	1,687
Muslim	27.6	55.0	32.2	53.0	6.4	22.1	370
Caste/tribe							
Scheduled caste	28.3	58.5	36.2	57.6	5.5	23.1	463
Scheduled tribe	36.1	59.7	36.4	56.4	7.7	33.5	124
Other backward class	25.5	55.8	34.9	54.7	5.3	19.7	1,125
Other	18.5	43.1	25.6	45.1	5.0	18.3	374
Mother's work status							
Working in family farm/business	33.8	61.9	46.2	64.9	5.0	22.9	162
Employed by someone else	39.2	59.7	38.5	59.1	8.7	28.7	191
Self-employed	28.7	60.8	39.7	62.0	6.8	25.8	89
Not worked in past 12 months	22.9	52.7	31.5	51.6	5.0	19.7	1,644
Mother's height							
< 145 cm	32.7	64.3	39.4	57.8	7.2	25.5	366
≥ 145 cm	24.0	52.2	32.5	52.9	5.1	20.1	1,716
Mother's body mass index							
< 18.5 kg/m^2	31.3	62.2	37.1	58.4	5.4	23.6	803
≥ 18.5 kg/m^2	21.9	49.3	31.5	50.9	5.5	19.4	1,277
Standard of living index							
Low	30.4	59.5	37.4	57.5	6.4	23.4	1,137
Medium	21.9	52.1	31.4	52.4	5.0	19.8	766
High	9.9	32.7	19.4	35.7	1.2	11.1	179
Total	25.5	54.4	33.6	53.7	5.5	21.0	2,086

Note: Each index is expressed in standard deviation (SD) units from the median of the International Reference Population. Total includes 13 and 15 children belonging to Christian and 'other' religions, respectively, and 3, 6, and 4 children with missing information on mother's height, mother's body mass index, and the standard of living index, respectively, who are not shown separately.
[1]Includes children who are below –3 SD from the International Reference Population median



7.6 Anaemia Among Children

Anaemia is a serious concern for young children because it can result in impaired cognitive performance, behavioural 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).

Table 7.11 and Figure 7.3 show anaemia levels for children age 6–35 months. Overall, four-fifths (81 percent) of these children have some level of anaemia, including 27 percent who are mildly anaemic (10.0–10.9 g/dl), 50 percent who are moderately anaemic (7.0–9.9 g/dl), and 4 percent who are severely anaemic (less than 7.0 g/dl)[4]. Notably, a much higher proportion of children than women are anaemic.

Several groups of children have particularly high levels of moderate to severe anaemia. These include scheduled-tribe children and children of mothers who are employed by someone else. The prevalence of moderate to severe anaemia is also relatively high among children age

[4]Because all sample PSUs in Bihar are at an altitude below 1,000 metres, no adjustment for altitude was made when estimating anaemia levels among children.

Table 7.11 Anaemia among children

Percentage of children age 6–35 months classified as having iron-deficiency anaemia by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage of children with any anaemia	Percentage of children with: Mild anaemia	Moderate anaemia	Severe anaemia	Number of children
Age of child					
6–11 months	83.6	30.3	49.0	4.2	303
12–23 months	83.4	26.9	52.4	4.1	678
24–35 months	78.1	25.3	48.6	4.1	676
Sex of child					
Male	80.5	25.6	51.0	3.9	852
Female	82.1	28.3	49.5	4.3	805
Birth order					
1	80.2	26.0	51.6	2.6	383
2–3	81.6	28.5	48.7	4.4	647
4–5	81.5	26.8	49.7	5.0	385
6+	81.6	24.0	53.0	4.6	242
Residence					
Urban	80.7	27.5	48.4	4.8	167
Rural	81.3	26.8	50.5	4.0	1,490
Region					
North Bihar Plain	81.2	28.9	47.9	4.4	777
South Bihar Plain	80.6	24.4	52.5	3.7	512
Jharkhand	82.4	26.2	52.2	4.0	368
Mother's education					
Illiterate	82.5	26.1	52.0	4.4	1,238
Literate, < middle school complete	79.4	21.0	52.4	6.0	184
Middle school complete	79.3	30.3	46.4	2.6	74
High school complete and above	75.0	37.9	36.4	0.7	162
Religion					
Hindu	81.0	27.1	49.7	4.1	1,373
Muslim	81.5	25.2	52.0	4.3	261
Caste/tribe					
Scheduled caste	83.5	25.1	53.6	4.7	368
Scheduled tribe	93.5	24.1	63.0	6.4	114
Other backward class	80.2	28.1	48.3	3.7	894
Other	76.8	26.4	46.8	3.6	281
Mother's work status					
Working in family farm/business	83.2	30.0	51.7	1.5	148
Employed by someone else	85.5	18.6	62.1	4.7	150
Self-employed	84.9	19.9	56.1	8.9	77
Not worked in last 12 months	80.3	27.9	48.3	4.1	1,281

Contd...

12–23 months, male children, rural children, Muslim children, scheduled-caste children, children of self-employed mothers, and children from poor families. The prevalence of moderate to severe anaemia among children whose mothers have completed at least a high school education is lower than among children whose mothers are illiterate or have less than a high school education. As expected, there is a strong positive relationship between the anaemia status of mothers and prevalence of moderate to severe anaemia among children. The prevalence of mild anaemia among children age 6–35 months varies little by most background characteristics.

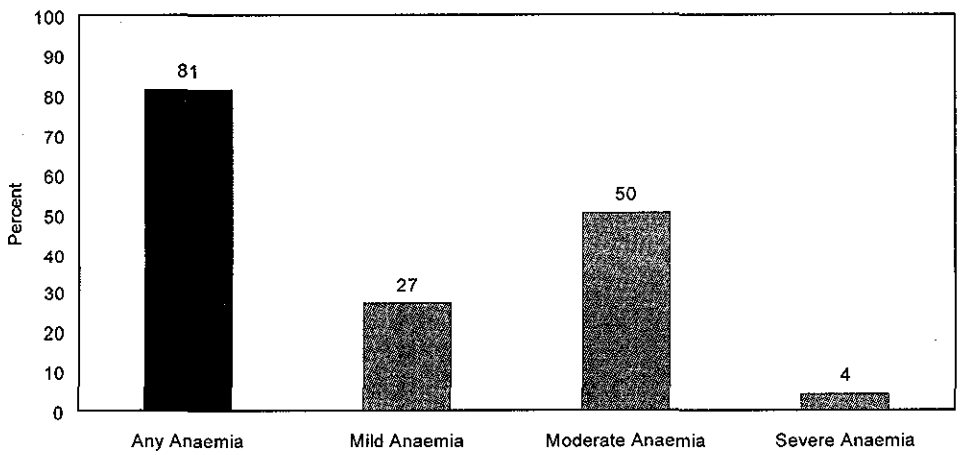
Table 7.11 Anaemia among children (contd.)

Percentage of children age 6–35 months classified as having iron-deficiency anaemia by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage of children with any anaemia	Percentage of children with: Mild anaemia	Moderate anaemia	Severe anaemia	Number of children
Standard of living index					
Low	83.3	25.0	53.6	4.7	891
Medium	79.5	28.6	47.2	3.7	621
High	76.4	32.0	42.2	2.3	142
Mother's anaemia status					
Not anaemic	78.4	29.6	45.2	3.6	595
Mildly anaemic	79.9	25.6	51.7	2.6	711
Moderately anaemic	88.0	26.5	54.3	7.1	327
Total	81.3	26.9	50.3	4.1	1,657

Note: Haemoglobin levels are not adjusted for altitude when calculating the degree of anaemia among children because all of the sample PSUs in Bihar are at an altitude below 1,000 metres. Total includes 12 and 11 children belonging to Christian and 'other' religions, respectively, 21 children whose mothers are severely anaemic, and 3 children each with missing information on the standard of living index and mother's anaemia status, who are not shown separately.

Figure 7.3
Anaemia Among Children



NFHS-2, Bihar, 1998–99

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. It 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 Bihar and the rest of India, is an ideal vehicle for measuring the degree of salt iodization in the country. 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 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 reasonable 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 about one-half of households (47 percent) use cooking salt that is iodized at the recommended level of 15 ppm or more. About one-quarter of households (23 percent) use salt that is not iodized at all and about one-third (30 percent) use salt that is inadequately iodized (less than 15 ppm). Differentials in salt iodization by background characteristics are pronounced. More than three-fourths of households in urban areas use salt with 15 ppm or more of iodine compared with only 43 percent of households in rural areas. Hindu households and Muslim households are less likely to use iodized salt than Christian or 'other' households. The use of iodized salt is relatively low in households headed by persons from scheduled castes, scheduled tribes, or other backward classes. The widest differentials are observed for the standard of living index. Eighty-one percent of households with a high standard of living use adequately iodized salt compared with only 38 percent of households with a low standard of living.

Table 7.12 Iodization of salt

Percent distribution of households by degree of iodization of salt, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Not iodized	7 ppm	15 ppm	30 ppm	Missing	Total percent	Number of households
Type of place of residence							
Large city	1.3	21.3	12.0	65.3	0.0	100.0	77
Small city	8.9	7.5	25.1	58.5	0.0	100.0	163
Town	10.4	14.0	22.8	52.8	0.0	100.0	480
Rural area	24.7	32.3	27.1	15.9	0.0	100.0	5,625
Religion of household head							
Hindu	23.7	30.1	25.9	20.2	0.0	100.0	5,276
Muslim	20.1	31.7	30.5	17.8	0.0	100.0	938
Christian	8.8	17.8	23.7	49.7	0.0	100.0	70
Other	12.1	27.7	22.4	37.9	0.0	100.0	61
Caste/tribe of household head							
Scheduled caste	26.1	33.6	25.2	15.1	0.0	100.0	1,320
Scheduled tribe	22.2	31.2	25.1	21.5	0.0	100.0	631
Other backward class	24.0	30.7	27.2	18.1	0.0	100.0	3,169
Other	17.0	24.5	27.0	31.4	0.1	100.0	1,225
Standard of living index							
Low	27.1	35.1	26.0	11.8	0.0	100.0	3,641
Medium	19.7	26.5	29.7	24.1	0.0	100.0	2,151
High	7.8	11.3	18.0	62.9	0.0	100.0	545
Total	22.9	30.1	26.6	20.4	0.0	100.0	6,345

Note: Total includes 8 households with missing information on the standard of living index, which are not shown separately.
ppm: Parts per million

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, the important elements of the programme include:

- Provision of antenatal care, including at least three antenatal care visits, iron prophylaxis for pregnant and lactating mothers, 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 government 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 the 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

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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).

An important objective of NFHS-2 is to provide information on the use of safe-motherhood services. In addition, the survey includes questions on the prevalence and treatment of reproductive health problems. The Woman's Questionnaire includes relevant questions on safe motherhood for women age 15–49 who have given birth since 1 January 1995. The topics covered include pregnancy complications, antenatal and postnatal care, place of and assistance during delivery, delivery characteristics, and postpartum complications. Although the survey obtained information for the two most recent live births since 1 January 1995, the information presented in this chapter pertains only to the subset of those births that took place during the three years preceding the survey. 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. 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 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.

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, Bihar, 1998–99

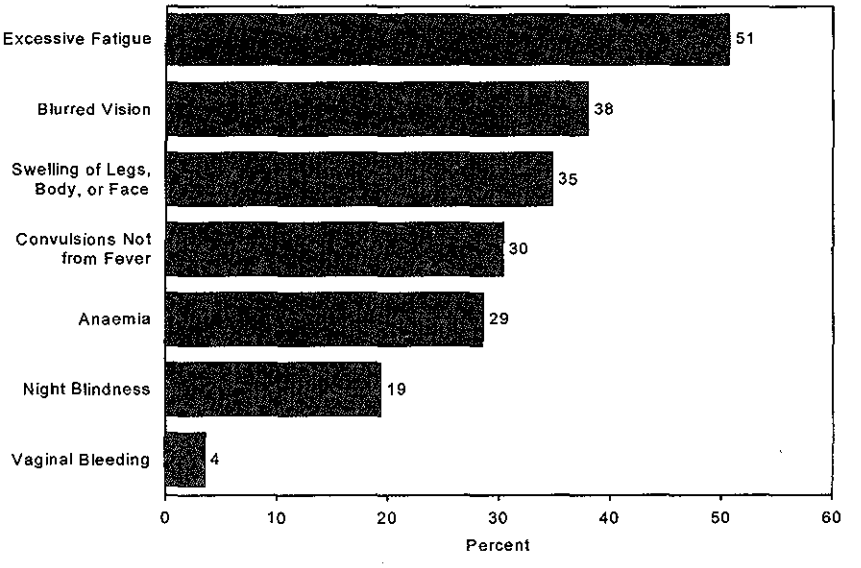
Problem during pregnancy	Urban	Rural	Total
Night blindness	11.7	20.2	19.4
Blurred vision	37.2	38.1	38.0
Convulsions not from fever	29.7	30.5	30.4
Swelling of the legs, body, or face	32.8	35.0	34.8
Excessive fatigue	52.8	50.5	50.7
Anaemia	32.2	28.3	28.6
Vaginal bleeding	2.0	3.7	3.6
Number of births	258	2,689	2,947

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

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 and should be interpreted with care.

As shown in Table 8.1 and Figure 8.1, problems during pregnancy are common in Bihar. The problem reported most often is excessive fatigue (51 percent), followed by blurred vision (38 percent), swelling of the legs, body, or face (35 percent), convulsions not from fever (30 percent), and anaemia (29 percent). Nineteen percent of women reported night blindness and 4 percent reported any vaginal bleeding during pregnancy. The reported prevalence of night blindness is much higher in rural (20 percent) than in urban areas (12 percent).

Figure 8.1
Problems During Pregnancy



Note: Based on births in the three years preceding the survey (1996–98)

NFHS-2, Bihar, 1998–99

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 women received check-ups from more than one type of health provider, only the provider with the highest qualification is considered.

NFHS-2 results for Bihar show that 63 percent of mothers did not receive any antenatal check-up for their births during the three years preceding the survey. There has been no change in this percentage since NFHS-1. Mothers received antenatal check-ups from doctors for 25 percent of births and from other health professionals (such as ANMs, nurses, midwives, or LHVs) for 5 percent of births. Mothers received antenatal check-ups exclusively at home from a health worker for 6 percent of births.

Older women and women having higher-order births are much less likely to have received antenatal check-ups (especially from doctors) for their births. As expected, antenatal check-ups from doctors are much more common in urban areas (55 percent) than in rural areas (22 percent). The percentage receiving antenatal check-ups is highest (43 percent) in the Jharkhand region, followed by 38 percent in the South Bihar Plain region and 34 percent in the North Bihar Plain region.

In Bihar, 71 percent of illiterate women did not receive any antenatal check-ups for their births in the three years preceding the survey. The proportion of births whose mothers received antenatal check-ups from a doctor increases steadily with education, from 18 percent for illiterate mothers to 65 percent for mothers who have completed at least a high school education. The prevalence of antenatal check-ups only at home from a health worker does not show a clear relationship with education. The utilization of antenatal check-up services is slightly higher among Hindu women than among Muslim women. By caste/tribe, the likelihood of having received antenatal check-ups overall and from a doctor is lowest for births to scheduled-caste mothers and highest for births to mothers who do not belong to scheduled castes, scheduled tribes, or other backward classes. The likelihood of having received antenatal check-ups from a doctor increases with the standard of living of the household, from only 16 percent for births to mothers with a low standard of living to 63 percent for births to mothers with a high standard of living.

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, Bihar, 1998–99

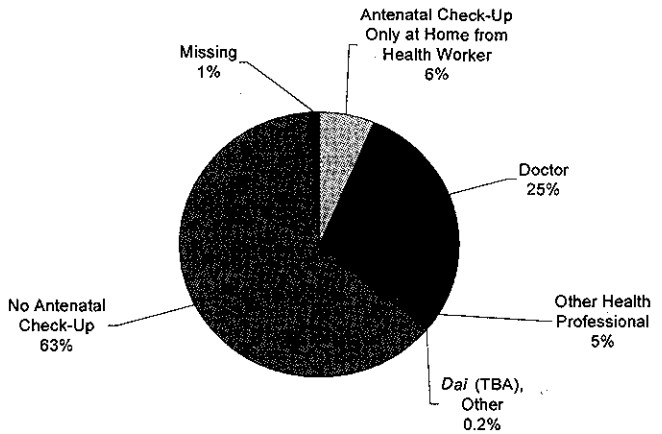
Background characteristic	Antenatal check-up only at home from health worker	Antenatal check-up outside home[1] from: Doctor	Other health professional	Traditional birth attendant, other[2]	No antenatal check-up	Missing	Total percent	Number of births
Mother's age at birth								
< 20	9.9	25.8	5.0	0.5	57.6	1.3	100.0	653
20–34	5.6	25.7	4.5	0.2	63.0	1.0	100.0	2,125
35–49	1.1	16.8	2.9	0.0	76.0	3.1	100.0	168
Birth order								
1	8.4	33.2	6.0	0.3	50.6	1.6	100.0	684
2–3	5.9	27.9	4.9	0.4	59.9	1.1	100.0	1,165
4–5	6.9	18.2	2.5	0.2	71.3	1.0	100.0	667
6+	3.5	16.0	4.1	0.0	75.2	1.2	100.0	430
Residence								
Urban	6.6	54.8	6.3	0.0	30.6	1.7	100.0	258
Rural	6.3	22.4	4.3	0.3	65.6	1.1	100.0	2,689
Region								
North Bihar Plain	9.3	21.1	3.9	0.1	65.6	0.1	100.0	1,378
South Bihar Plain	4.2	26.4	4.5	0.4	61.6	2.9	100.0	979
Jharkhand	3.0	32.7	6.0	0.4	56.9	1.1	100.0	590
Mother's education								
Illiterate	6.3	17.5	3.8	0.2	70.9	1.3	100.0	2,262
Literate, < middle school complete	7.7	36.8	6.9	0.7	47.1	0.8	100.0	280
Middle school complete	7.9	49.1	2.4	0.0	38.9	1.7	100.0	127
High school complete and above	4.6	65.2	8.4	0.0	21.0	0.8	100.0	277
Religion								
Hindu	6.6	25.8	4.6	0.3	61.5	1.2	100.0	2,378
Muslim	5.1	22.0	3.6	0.0	68.4	0.8	100.0	532
Caste/tribe								
Scheduled caste	6.7	17.1	3.8	0.0	70.7	1.7	100.0	672
Scheduled tribe	3.8	19.4	5.5	0.5	69.7	1.1	100.0	197
Other backward class	7.2	24.3	4.3	0.4	62.5	1.3	100.0	1,544
Other	4.3	40.1	5.4	0.0	49.8	0.4	100.0	533
Standard of living index								
Low	5.3	15.5	3.8	0.2	73.6	1.5	100.0	1,676
Medium	7.3	32.5	4.9	0.3	54.4	0.7	100.0	1,028
High	8.6	62.6	7.7	0.0	20.2	0.9	100.0	237
Total	6.3	25.2	4.5	0.2	62.5	1.2	100.0	2,947

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 17 and 20 births to mothers belonging to Christian and 'other' religions, respectively, and 6 births with missing information on the standard of living index, which are not shown separately.

[1]Includes 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.

[2]Includes *hakim* and 'Don't know'

Figure 8.2
Source of Antenatal Check-Ups During Pregnancy



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Bihar, 1998–99

In summary, less than 4 out of 10 women in Bihar received any antenatal check-ups for their births in the three years preceding the survey. Women who did not receive an antenatal check-up are disproportionately older women, women of higher parity, women living in rural areas, illiterate women, women from scheduled castes and tribes, and women living in households with a low standard of living. This suggests that improving the coverage of antenatal programmes in Bihar requires special efforts to reach older higher-parity women, women who are socioeconomically disadvantaged, and women living in rural areas.

Reasons for Not Receiving Antenatal Check-Ups

Table 8.3 shows the percent distribution of births in the three years preceding the survey whose mothers did not receive any antenatal check-ups in a health facility or at home by the main reason for not receiving check-ups. For births to mothers who did not receive any antenatal check-ups, two-thirds of mothers did not consider having a check-up to be necessary (65 percent) or customary (3 percent). For 20 percent of births, the financial cost was reported as the main reason for not receiving any antenatal check-ups and for 3 percent of births, lack of knowledge about antenatal care was the main reason. For 5 percent of births, mothers did not have any antenatal check-ups because the family did not allow them to. Cost as a reason for non-utilization of antenatal care services is reported more frequently by mothers in rural areas (21 percent) than in urban areas (15 percent). Contrary to expectation, 'family did not allow' and 'lack of knowledge' are more frequently reported reasons for non-utilization of antenatal care services in urban areas than in rural areas. These results suggest the need to inform mothers about the availability and benefits of antenatal check-ups to help overcome traditional attitudes and other hurdles that prevent mothers from seeking antenatal care for their pregnancies. Utilization of antenatal care services could also be increased by lowering the cost and making the services more accessible.

Table 8.3 Reason for not receiving an antenatal check-up

Percent distribution of births during the three years preceding the survey to mothers who did not receive an antenatal check-up by the main reason for not receiving an antenatal check-up, according to residence, Bihar, 1998–99

Reason for not receiving an antenatal check-up	Urban	Rural	Total
Not necessary	63.6	64.5	64.5
Not customary	2.7	3.4	3.4
Costs too much	14.6	20.6	20.4
Too far/no transport	0.0	2.0	1.9
Poor quality service	0.0	0.2	0.2
No time to go	2.7	0.6	0.7
Family did not allow	8.1	4.9	5.1
Lack of knowledge	8.3	2.9	3.1
No health worker visited	0.0	0.2	0.2
Other	0.0	0.6	0.6
Total percent	100.0	100.0	100.0
Number of births	79	1,764	1,843

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

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 month 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 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 check-ups for pregnant women. Guidelines of 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 pregnancies 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.

Table 8.4 Number and timing of antenatal check-ups and stage of pregnancy

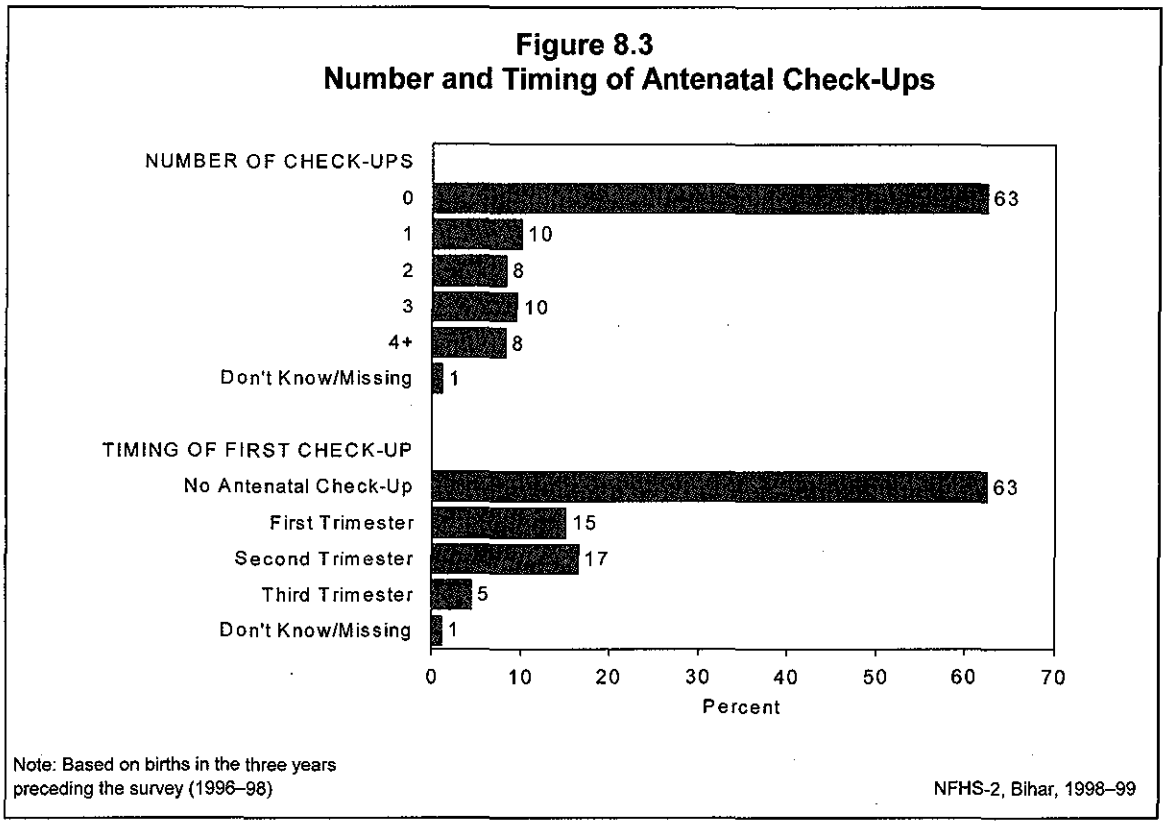
Percent distribution of births during the three years preceding the survey by number of antenatal check-ups and by the stage of pregnancy at the time of the first check-up, according to residence, Bihar, 1998–99

Number and timing of check-ups	Urban	Rural	Total
Number of antenatal check-ups			
0	30.6	65.6	62.5
1	8.2	10.2	10.1
2	9.6	8.2	8.4
3	17.1	8.8	9.5
4+	32.5	6.0	8.3
Don't know/missing	2.1	1.1	1.2
Total percent	100.0	100.0	100.0
Median number of check-ups (for those who received at least one antenatal check-up)	2.9	1.8	2.0
Stage of pregnancy at the time of first antenatal check-up			
No antenatal check-up	30.6	65.6	62.5
First trimester	38.2	12.9	15.1
Second trimester	23.7	15.9	16.6
Third trimester	5.8	4.4	4.5
Don't know/missing	1.7	1.1	1.2
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)	3.2	4.4	4.2
Number of births	258	2,689	2,947

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

Table 8.4 and Figure 8.3 show the percent distribution of births in the three years preceding the survey by number and timing of antenatal check-ups. In Bihar, mothers of only 18 percent of births received at least three antenatal check-ups and only 8 percent received four or more check-ups. For those who received antenatal check-ups, the median number of check-ups was 2.0. There are substantial differences in the number of antenatal check-ups by residence. At least three antenatal check-ups were received for 50 percent of births to mothers living in urban areas, compared with only 15 percent of births to mothers living in rural areas. The median number of check-ups is also higher in urban areas (2.9) than in rural areas (1.8). The shorter distances to antenatal-care services and the comparative ease of travelling in urban areas, as well as the higher educational attainment of mothers in urban areas, could be important factors for the larger number of check-ups received by mothers in urban areas.

In Bihar, mothers of only 15 percent of the births that took place in the three years preceding the survey received their first antenatal check-up in the first trimester of pregnancy, and another 17 percent received their first check-up in the second trimester (Table 8.4 and Figure 8.3). Check-ups during the first trimester were much more common in urban areas (38 percent)



than in rural areas (13 percent). The first check-up was rarely received as late as the third trimester. The median timing of the first antenatal check-up is 4.2 months for Bihar as a whole, and it is considerably later in rural areas (4.4 months) than in urban areas (3.2 months).

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. For births during the three years preceding the survey for which antenatal check-ups were received, Table 8.5 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, 65 percent of mothers had an abdominal examination. Other relatively common components of antenatal check-ups were blood pressure check (47 percent), urine test (45 percent), and blood test (44 percent). Mothers of about one-third of births received an internal examination (37 percent) or had their weight measured (31 percent), and only 11 percent had their height measured during any antenatal check-up. X-rays, sonogram or ultrasound, and amniocentesis were rarely performed. All of these measurements or tests were performed more often in the case of births to mothers in urban areas than in rural areas. The differences by residence are most pronounced for weight measurement (49 percent in urban areas compared with 28 percent in rural areas) and for sonography or ultrasound (17 percent in urban areas compared with 4 percent in rural areas).

Table 8.5 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, Bihar, 1998–99

Components of antenatal check-ups	Urban	Rural	Total
Antenatal measurements/tests			
Weight measured	48.6	28.0	31.3
Height measured	12.1	10.2	10.5
Blood pressure checked	64.7	43.8	47.2
Blood tested	59.0	41.3	44.2
Urine tested	56.8	42.5	44.9
Abdomen examined	76.2	62.8	65.0
Internal examination	39.6	36.6	37.1
X-ray	4.8	4.8	4.8
Sonography or ultrasound	16.8	3.6	5.7
Amniocentesis	3.0	0.5	0.9
Antenatal advice			
Diet	79.8	68.8	70.6
Danger signs of pregnancy	50.2	33.8	36.5
Delivery care	54.7	44.6	46.2
Newborn care	46.6	33.7	35.8
Family planning	24.1	16.5	17.7
Number of births for which the mother received at least one antenatal check-up	175	894	1,069

Table 8.5 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 (in 71 percent of cases). Mothers were less likely to receive advice on delivery care (46 percent), on danger signs of pregnancy (37 percent), and on newborn care (36 percent). Only 18 percent of mothers received advice on family planning. The proportions receiving advice on different topics are greater in urban areas than in 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). Where expert medical help is not available, as is common in many rural areas in Bihar, death due to neonatal tetanus 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 both among 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 injection, 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 birth during the three years preceding the survey, NFHS-2 asked mothers 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 pregnancy. Table 8.6 shows the distribution of births by the number of tetanus toxoid injections given to mothers, according to selected background characteristics. Tetanus toxoid coverage in Bihar is far from complete. For births in the three years preceding the survey, 36 percent of the mothers did not receive any tetanus toxoid injections during pregnancy, and another 5 percent received only one injection. The proportion of mothers who received two or more tetanus toxoid injections during their pregnancies rose from 31 percent to 58 percent between NFHS-1 and NFHS-2.

Tetanus toxoid injections are more common in urban areas than in rural areas. Coverage varies inversely by age of mother and by birth order. Tetanus toxoid coverage (two or more injections) is higher for births to women under age 35 (58–60 percent) than for the small number of births to older mothers (46 percent). At least two tetanus toxoid injections were received by mothers for 67 percent of first births, compared with 52 percent of fourth and fifth births and only 42 percent of sixth or higher-order births. By region, coverage is lower in the Jharkhand region (51 percent) than in the South Bihar Plain region (56 percent) and in the North Bihar Plain region (62 percent). Hindu and Muslim mothers have about the same level of tetanus toxoid coverage. Coverage is substantially lower for births to scheduled-tribe mothers (36 percent) than for scheduled-caste (50 percent), other backward class (59 percent), and 'other' caste/tribe/class (72 percent) mothers. For 52 percent of their births, scheduled-tribe mothers did not receive any tetanus toxoid vaccine and for another 10 percent they received only one injection. Tetanus toxoid coverage increases with an increase in the level of mother's education and in the standard of living of the household. Only 51 percent of illiterate mothers received at least two tetanus toxoid injections for their births, compared with 90 percent for births to mothers with high school complete or more education. By living standard, the coverage increases from 48 percent for births in low standard of living households to 83 percent for births in high standard of living households. These results suggest that despite generally improving coverage of tetanus toxoid vaccinations, the coverage is still quite low in Bihar, particularly for socioeconomically disadvantaged women.

Table 8.6 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, Bihar, 1998–99

Background characteristic	Number of tetanus toxoid injections					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	Total percent					
Mother's age at birth										
< 20	32.7	5.2	60.3	1.8	100.0	26.9	653	83.3	87.2	176
20–34	36.0	4.7	57.9	1.4	100.0	24.0	2,125	81.3	83.4	510
35–49	41.8	7.5	46.3	4.3	100.0	14.7	168	(88.5)	(92.3)	25
Birth order										
1	27.8	3.8	66.5	1.9	100.0	31.3	684	84.8	89.0	214
2–3	31.9	5.2	61.7	1.3	100.0	27.5	1,165	82.9	83.9	320
4–5	40.8	5.0	52.3	1.9	100.0	17.0	667	75.2	83.4	114
6+	49.7	6.5	42.1	1.7	100.0	14.4	430	80.4	75.5	62
Residence										
Urban	17.8	2.1	78.0	2.1	100.0	46.1	258	88.3	89.1	119
Rural	37.3	5.3	55.9	1.6	100.0	22.0	2,689	80.8	83.7	591
Region										
North Bihar Plain	33.5	4.1	62.1	0.3	100.0	21.9	1,378	84.5	85.7	301
South Bihar Plain	35.0	5.2	56.1	3.7	100.0	22.0	979	75.4	85.0	216
Jharkhand	41.2	7.0	50.6	1.2	100.0	32.7	590	85.7	82.5	193
Mother's education										
Illiterate	41.9	5.8	50.6	1.7	100.0	16.5	2,262	76.8	80.2	374
Literate, < middle school complete	21.2	3.6	73.6	1.5	100.0	35.8	280	86.6	90.7	100
Middle school complete	15.3	0.9	82.2	1.7	100.0	48.3	127	90.5	86.6	62
High school complete and above	7.5	2.3	89.5	0.8	100.0	62.7	277	87.6	90.0	174
Religion										
Hindu	35.4	5.0	57.9	1.7	100.0	25.0	2,378	81.9	85.2	595
Muslim	36.2	5.1	57.5	1.2	100.0	19.1	532	80.2	80.2	101
Caste/tribe										
Scheduled caste	41.7	5.4	50.3	2.6	100.0	18.0	672	76.4	78.1	121
Scheduled tribe	52.3	10.2	36.4	1.1	100.0	21.3	197	(69.3)	(81.9)	42
Other backward class	35.0	4.4	59.1	1.5	100.0	22.8	1,544	81.6	85.6	352
Other	23.1	4.5	71.6	0.8	100.0	36.5	533	89.0	87.5	195
Standard of living index										
Low	44.5	6.0	47.6	1.9	100.0	15.5	1,676	76.0	78.4	259
Medium	26.3	3.7	68.8	1.2	100.0	29.4	1,028	83.7	87.1	302
High	13.0	3.5	82.6	0.9	100.0	62.4	237	89.1	90.3	148
Total	35.6	5.0	57.8	1.6	100.0	24.1	2,947	82.0	84.6	710

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes a small number of births to mothers belonging to Christian and 'other' religions, and births with missing information on the standard of living index, which are not shown separately.

( ) Based on 25–49 unweighted cases

[1]Among births whose mothers received iron and folic acid tablets or syrup

Iron and Folic Acid Supplementation

Nutritional deficiencies in women, such as iron deficiency, 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 MCH activities of the Family Welfare Programme (Ministry of Health and Family Welfare, 1991), and now 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. Table 8.6 shows that only about one in four mothers in Bihar received IFA supplements for their births in the three years preceding the survey. As in the case of tetanus toxoid coverage, IFA coverage is well below average for mothers age 35 years and above and for fourth and higher order births. Urban women are more than twice as likely to receive IFA tablets or syrup as rural women. IFA coverage is considerably higher in the Jharkhand region (33 percent) than in the North and South Bihar Plain regions (both 22 percent). Hindu mothers are more likely than Muslim mothers to have received IFA supplements for their births. Mothers not belonging to a scheduled caste, scheduled tribe, or other backward class are more likely to have received IFA tablets or syrup than those belonging to any of these caste, tribe, or class categories. IFA coverage has a strong positive correlation with mother's education and household living standard. Only 17 percent of illiterate mothers received IFA tablets or syrup compared with 63 percent of mothers with high school or more education. By living standard, IFA coverage ranges from just 16 percent for births to mothers in low standard of living households to 62 percent in high standard of living households. For the state as a whole, IFA coverage increased slightly from 21 percent in NFHS-1 to 24 percent in NFHS-2.

Not all mothers who received IFA received the recommended three-month supply of 100 tablets (or the equivalent in terms of syrup). Among mothers who received IFA during pregnancy, 82 percent received at least a three-month supply and 85 percent consumed all the supplements that were given to them. Differentials by background characteristics in the proportion that received at least a three-month supply are minimal. Consumption of the supply received is negatively related to birth order and positively related to mother's education level and the standard of living. Consumption of the supply received is relatively low for Muslim and scheduled-caste mothers.

In summary, few pregnant women in Bihar receive IFA, and still fewer receive the recommended three-month supply and consume all the supply they receive. This suggests that the

Reproductive and Child Health Programme needs to do a better job of distributing IFA tablets and syrup and of informing pregnant women about the advantages of IFA, trying to understand why women resist consuming IFA, and overcoming this resistance.

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 8.7 and Figure 8.4 show that a large majority of births in Bihar take place at home. Only about 15 percent of births in the past three years took place in health facilities, 70 percent took place in women's own homes, and 13 percent took place in parents' homes. Eleven percent of births took place in private or NGO/trust health facilities and 4 percent took place in public health facilities (such as government-operated hospitals and Primary Health Centres). Institutional deliveries are much more prevalent in urban areas (40 percent) than in rural areas (12 percent). The 1997 SRS also estimated that 15 percent of births in Bihar take place in institutions. The NFHS-2 estimate of institutional deliveries for rural areas is also similar to the 1997 SRS estimate for rural areas (12 percent in NFHS-2 compared with 14 percent in the SRS), but the NFHS-2 estimate for urban areas is higher than the SRS estimate for urban areas (40 percent in NFHS-2 compared with 32 percent in the SRS) (Office of the Registrar General, 1999a). Institutional deliveries in Bihar have risen only slightly from 12 percent at the time of NFHS-1 to 15 percent at the time of NFHS-2.

The proportion of births occurring in health facilities is lower for mothers age 35 years and older (6 percent) than for mothers age less than 35 years (15 percent). The proportion of births that were delivered in a health facility decreases as birth order rises, from birth order one (25 percent) to birth order four or more (6–8 percent). Hindu mothers are much more likely to give birth in a health facility (16 percent) than are Muslim mothers (9 percent). Only 5 percent of births to scheduled-tribe mothers are institutional deliveries, compared with 29 percent of births to mothers who do not belong to scheduled castes, scheduled tribes, or other backward classes. Institutional deliveries, particularly in private facilities, increase sharply with mother's education and with household standard of living. Institutional deliveries are more prevalent in the South Bihar Plain region (22 percent) than in the Jharkhand region (14 percent) and in the North Bihar Plain region (10 percent).

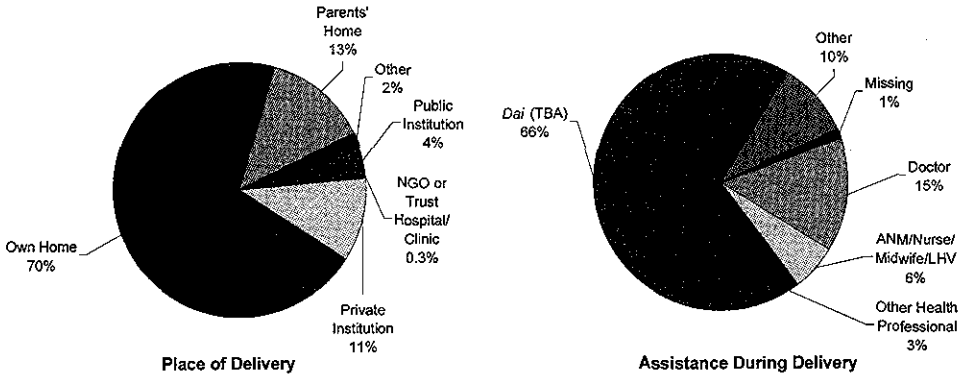
Table 8.7 Place of delivery

Percent distribution of births during the three years preceding the survey by place of delivery, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Place of delivery: Health facility/institution: Public	Health facility/institution: NGO/trust	Health facility/institution: Private	Home: Own home	Home: Parents' home	Other[1]	Total percent	Number of births
Mother's age at birth								
< 20	4.0	0.0	11.2	61.5	21.1	2.2	100.0	653
20–34	3.9	0.3	10.9	71.9	11.5	1.5	100.0	2,125
35–49	2.4	0.6	2.9	86.8	3.7	3.7	100.0	168
Birth order								
1	6.1	0.3	18.6	52.8	19.9	2.3	100.0	684
2–3	3.9	0.3	11.0	68.2	14.8	1.8	100.0	1,165
4–5	3.0	0.2	5.1	81.7	8.6	1.4	100.0	667
6+	1.2	0.4	4.7	87.0	5.2	1.4	100.0	430
Residence								
Urban	11.9	0.9	27.3	47.3	10.2	2.5	100.0	258
Rural	3.0	0.2	8.9	72.7	13.5	1.7	100.0	2,689
Region								
North Bihar Plain	3.1	0.1	6.7	74.9	14.3	0.8	100.0	1,378
South Bihar Plain	4.4	0.3	16.8	59.7	15.4	3.4	100.0	979
Jharkhand	4.5	0.6	8.9	77.8	6.8	1.4	100.0	590
Mother's education								
Illiterate	2.3	0.2	5.2	77.5	13.0	1.7	100.0	2,262
Literate, < middle school complete	6.1	0.0	21.3	55.2	16.3	1.2	100.0	280
Middle school complete	9.4	0.9	20.9	54.6	11.1	3.2	100.0	127
High school complete and above	11.0	0.7	38.0	35.8	12.3	2.2	100.0	277
Religion								
Hindu	4.4	0.3	11.3	69.3	12.9	1.9	100.0	2,378
Muslim	1.5	0.0	7.1	75.0	15.2	1.2	100.0	532
Caste/tribe								
Scheduled caste	2.5	0.1	5.5	75.2	14.6	2.2	100.0	672
Scheduled tribe	0.5	1.1	3.7	87.8	4.7	2.2	100.0	197
Other backward class	3.7	0.1	9.9	70.6	13.9	1.9	100.0	1,544
Other	7.1	0.6	21.3	57.7	12.5	0.8	100.0	533
Standard of living index								
Low	2.0	0.1	4.1	78.5	13.2	2.0	100.0	1,676
Medium	5.4	0.2	13.8	66.0	13.4	1.2	100.0	1,028
High	9.8	1.7	41.7	33.1	11.6	2.1	100.0	237
Number of antenatal check-ups								
0	1.6	0.1	3.6	80.8	13.5	0.4	100.0	1,843
1	5.2	0.0	9.1	73.0	11.8	1.0	100.0	297
2	6.2	0.0	20.1	58.8	14.1	0.8	100.0	246
3	8.3	1.1	18.7	53.3	17.3	1.4	100.0	279
4+	11.9	1.7	46.7	30.8	9.0	0.0	100.0	245
Don't know/missing	(0.0)	(0.0)	(0.0)	(3.0)	(0.0)	(97.0)	100.0	36
Total	3.8	0.3	10.5	70.4	13.2	1.8	100.0	2,947

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 17 and 20 births to mothers belonging to Christian and 'other' religions, respectively, and 6 births with missing information on the standard of living index, which are not shown separately.
NGO: Nongovernmental organization
( ) Based on 25–49 unweighted cases
[1]Includes missing

Figure 8.4
Place of Delivery and Assistance During Delivery



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Bihar, 1998–99

Institutional deliveries are much more common for births to mothers who had four or more antenatal check-ups (60 percent) than for those who had only two or fewer antenatal check-ups (26 percent or less). Institutional deliveries are least prevalent (5 percent) for births to mothers who did not receive any antenatal check-ups. Several different factors are likely to contribute to the positive relationship between antenatal check-ups and delivery in a health facility. Women who receive antenatal check-ups are more likely than other women to deliver in a health facility because their antenatal care providers advised them to do so. Conversely, women who register themselves with a health facility for delivery may be called for regular check-ups by the facility. Another important factor may be pregnancy complications, because women with complications are more likely than other women to have antenatal check-ups and also to deliver in a health facility. Yet another contributing factor may be the growing awareness of the benefits of professional medical care during both pregnancy and delivery, especially among urban, young, and educated women.

With regard to deliveries at home, the proportion of deliveries in a woman's own home increases and the proportion at parents' home decreases with age and birth order. Mother's education and standard of living are both negatively associated with deliveries at home.

Assistance During Delivery

Table 8.8 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.

Table 8.8 Assistance during delivery

Percent distribution of births during the three years preceding the survey by attendant assisting during delivery, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Attendant assisting during delivery[1]						Total percent	Number of births
	Doctor	ANM/nurse/ midwife/LHV	Other health professional	*Dai* (TBA)	Other	Missing		
Mother's age at birth								
< 20	16.1	6.1	4.1	64.0	8.4	1.3	100.0	653
20–34	14.7	5.8	2.7	65.9	9.9	1.0	100.0	2,125
35–49	6.5	3.0	3.5	72.0	11.3	3.7	100.0	168
Birth order								
1	25.4	7.4	4.1	54.0	7.5	1.6	100.0	684
2–3	14.7	6.0	2.7	66.5	9.0	1.1	100.0	1,165
4–5	8.6	3.8	3.1	71.9	11.5	1.1	100.0	667
6+	6.2	5.2	2.5	73.5	11.6	1.0	100.0	430
Residence								
Urban	32.9	14.3	4.7	43.2	3.2	1.7	100.0	258
Rural	12.8	4.9	2.9	68.0	10.2	1.1	100.0	2,689
Region								
North Bihar Plain	10.6	4.7	5.4	70.7	8.5	0.1	100.0	1,378
South Bihar Plain	21.8	7.4	1.4	59.9	6.6	2.8	100.0	979
Jharkhand	11.7	5.3	0.5	64.2	17.1	1.1	100.0	590
Mother's education								
Illiterate	8.4	3.7	3.3	72.3	10.9	1.3	100.0	2,262
Literate, < middle school complete	23.2	9.9	3.8	53.9	8.4	0.8	100.0	280
Middle school complete	27.8	18.3	2.4	49.0	0.8	1.7	100.0	127
High school complete and above	49.4	12.2	1.0	32.5	4.0	0.8	100.0	277
Religion								
Hindu	16.0	5.9	3.0	64.7	9.1	1.3	100.0	2,378
Muslim	8.0	4.8	3.7	71.8	11.1	0.6	100.0	532
Caste/tribe								
Scheduled caste	9.0	3.8	4.9	67.7	12.9	1.7	100.0	672
Scheduled tribe	4.3	2.2	0.0	68.9	23.6	1.1	100.0	197
Other backward class	14.6	5.7	2.7	68.7	7.0	1.2	100.0	1,544
Other	25.3	9.6	3.0	53.9	7.8	0.4	100.0	533

Contd.

Less than one in four births in the last three years were attended by a health professional, including 15 percent by a doctor, 6 percent by an ANM, nurse, midwife, or LHV, and 3 percent by other health professionals. About two-thirds of births (66 percent) were attended by a traditional birth attendant (TBA), and 10 percent were attended by friends, relatives, and other persons. The NFHS-2 estimates for assistance during delivery by a health professional and by a traditional birth attendant are similar to the corresponding SRS estimates for Bihar. According to the 1997 SRS, 19 percent of deliveries were attended by a health professional and 64 percent by a TBA. The proportion of deliveries attended by friends, relatives, or others is much higher in NFHS-2 (10 percent) than in the SRS (2 percent). The proportion of deliveries attended by a health professional increased slightly from 19 percent in NFHS-1 to 23 percent in NFHS-2.

Table 8.8 Assistance during delivery (contd.)

Percent distribution of births during the three years preceding the survey by attendant assisting during delivery, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Attendant assisting during delivery[1]						Total percent	Number of births
	Doctor	ANM/nurse/ midwife/LHV	Other health professional	*Dai* (TBA)	Other	Missing		
Standard of living index								
Low	6.6	3.1	3.6	73.3	11.9	1.4	100.0	1,676
Medium	19.7	7.0	2.5	62.4	7.7	0.7	100.0	1,028
High	48.4	19.3	1.7	27.9	1.8	0.9	100.0	237
Number of antenatal check-ups								
0	6.1	3.0	3.5	75.9	11.5	0.1	100.0	1,843
1	13.4	6.6	3.6	67.5	8.9	0.0	100.0	297
2	25.7	8.2	1.6	58.6	5.9	0.0	100.0	246
3	27.2	12.5	4.6	48.3	7.4	0.0	100.0	279
4+	56.4	15.5	0.0	24.8	3.4	0.0	100.0	245
Don't know/missing	(0.0)	(0.0)	(0.0)	(3.0)	(3.0)	(94.0)	100.0	36
Place of delivery								
Public health facility	68.7	28.5	2.0	0.9	0.0	0.0	100.0	112
Private health facility	81.4	17.3	0.6	0.7	0.0	0.0	100.0	310
Own home	3.0	2.7	3.2	80.1	11.0	0.0	100.0	2,076
Parents' home	6.7	5.2	5.4	69.8	12.8	0.0	100.0	388
Other[2]	5.4	11.2	0.0	6.0	9.9	67.4	100.0	52
Total	14.5	5.7	3.1	65.8	9.6	1.2	100.0	2,947

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 17 and 20 births to women belonging to Christian and 'other' religions, respectively, 8 births delivered in nongovernmental organization (NGO) or trust hospital/clinic, and 6 births with missing information on the standard of living index, which are not shown separately.
ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant
( ) Based on 25–49 unweighted cases
[1]If the respondent mentioned more than one attendant, only the most qualified attendant is shown.
[2]Includes missing

Eighty-one percent of deliveries in private institutions were attended by a doctor, compared with 69 percent of deliveries in public institutions. Eighty percent of deliveries at respondents' own homes and 70 percent at parents' homes were attended by a traditional birth attendant (TBA). Only 9 percent of deliveries at respondents' own homes and 17 percent at parents' homes were attended by a health professional. The percentage of births attended by a doctor decreases steadily by age of the mother and by birth order. Deliveries are much more likely to be attended by a doctor in urban areas (33 percent) than in rural areas (13 percent). The proportion of births attended by doctors is almost twice as high for births to mothers living in the South Bihar Plain region (22 percent) as in the Jharkhand or the North Bihar Plain regions (11–12 percent).

Mother's education and household living standard have large positive effects on the likelihood that a birth is attended by a doctor. Forty-nine percent of births to mothers with at least a high school education were attended by a doctor compared with only 8 percent of births to illiterate mothers. The difference is equally large for births to mothers who live in high standard of living households (48 percent), compared with births to mothers in low standard of living households (7 percent). Among religious groups, Hindu women are twice as likely (16 percent) as Muslim women (8 percent) to have a delivery attended by a doctor. Births to women who do

Table 8.9 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, Bihar, 1998–99

Characteristic of births	Urban	Rural	Total
Percentage delivered by caesarian section	9.3	2.4	3.0
Birth weight			
< 2.5 kg	8.0	0.9	1.5
2.5 kg or more	20.3	3.9	5.3
Don't know/missing	6.2	3.3	3.5
Not weighed	65.6	91.9	89.6
Total percent	100.0	100.0	100.0
Size at birth			
Large	9.1	12.8	12.5
Average	69.6	66.8	67.1
Small	14.1	15.9	15.8
Very small	5.5	3.3	3.5
Don't know/missing	1.7	1.2	1.2
Total percent	100.0	100.0	100.0
Number of births	258	2,689	2,947

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

not belong to a scheduled caste, scheduled tribe, or other backward class are more likely to be attended by a doctor than are other births. Only 4 percent of births to scheduled-tribe women were attended by a doctor, compared with 25 percent of births to women not belonging to scheduled castes, scheduled tribes, or other backward classes. There is a strong positive association between number of antenatal check-ups and delivery assistance by a doctor. Only 6 percent of births to women who did not have any antenatal check-ups were attended by a doctor, compared with 56 percent of births to women who had four or more antenatal check-ups.

Delivery Characteristics

Table 8.9 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, 3 percent of children born in Bihar in the past three years were delivered by caesarian section. The proportion of caesarian section deliveries was much higher in urban areas (9 percent) than in rural areas (2 percent).

Low birth weight babies face higher risks of dying than do babies of normal birth weight. For each birth that took place in the three years preceding the survey, respondents were asked the baby's birth weight. Since babies delivered at home are unlikely to be weighed, the survey asked mothers about the size of each baby at birth (large, average, small, or very small).

In Bihar, 9 out of 10 babies born in the three years preceding the survey were not weighed at birth. The proportion not weighed is 66 percent in urban areas and 92 percent in rural areas.

Even for babies that were weighed, some mothers did not remember the weight. Therefore, the resulting sample of births whose weights are reported is subject to a potentially large selection bias, and the results should be interpreted with caution. Among children for whom birth weights are reported, 22 percent weighed less than 2.5 kilograms. The proportion weighing less than 2.5 kilograms is higher in urban areas (28 percent) than in rural areas (19 percent).

According to mothers' estimates, 67 percent of births in the three years preceding the survey were of average size, 13 percent were large, 16 percent were small, and 4 percent were very small. The proportion of babies reported as small or very small was about the same in urban and rural areas.

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).

Table 8.10 gives the percentage of noninstitutional deliveries in the three years preceding the survey that were followed by a postpartum check-up within two months of delivery. Among births that were followed by a postpartum check-up, the table also shows the percentage with a check-up within two days of delivery (which is the most crucial period), the percentage with a check-up within one week of delivery, and the percentage whose mothers received specific recommended components of care during the check-up.

Only 1 out of 10 noninstitutional births was followed by a check-up within two months of the delivery. Among births that were followed by a postpartum check-up, few check-ups took place shortly after birth—only 14 percent within two days and 31 percent within one week. Mothers in the Jharkhand region (14 percent) are somewhat more likely to have received a postpartum check-up than mothers in the South Bihar Plain (11 percent) and North Bihar Plain (8 percent) regions. The likelihood of a postpartum check-up generally increases with mother's education and standard of living of the household. Births to mothers who received three or more antenatal check-ups were much more likely to be followed by a postpartum check-up (22 percent) than were births to mothers who received one or no antenatal check-up (less than 10 percent). Births delivered with the assistance of a health professional were more likely to be followed by a postpartum check-up (18 percent) than were births delivered with the assistance of a TBA (9 percent) or other person (13 percent). These results clearly indicate that women are more likely to have a postpartum check-up if they have had continuous interaction with health providers through their pregnancy and delivery, even if they did not give birth in a health facility. There are no major differences in the percentage of women with postpartum check-ups by mother's age, birth order, residence, religion, or caste/tribe/class.

Table 8.10 Postpartum check-ups

Percentage of noninstitutional births during the three years preceding the survey for which a postpartum check-up was received within two months of birth and, among those receiving a postpartum check-up, percentage seen within two days and one week of birth and percentage receiving specific components of check-ups by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage with a postpartum check-up within two months of birth	Number of births	Among those with postpartum check-up: Percentage seen within two days of birth	Percentage seen within one week of birth	Components of postpartum check-up (%): Abdominal examination	Family planning advice	Breast-feeding advice	Baby care advice	Number of births followed by a postpartum check-up
Mother's age at birth									
< 20	10.0	545	11.5	28.2	23.6	10.9	40.6	58.6	55
20–34	10.2	1,783	14.0	32.0	19.3	11.6	30.0	39.4	182
35–49	7.9	152	*	*	*	*	*	*	12
Birth order									
1	9.8	502	(14.5)	(28.8)	(30.5)	(12.0)	(47.0)	(60.7)	49
2–3	10.4	976	11.2	30.8	21.8	14.0	31.9	47.5	101
4–5	9.9	604	11.7	27.0	13.5	6.7	25.5	33.2	60
6+	9.7	397	(24.1)	(42.2)	(10.1)	(10.6)	(21.0)	(23.5)	39
Residence									
Urban	10.0	150	*	*	*	*	*	*	15
Rural	10.1	2,330	13.4	30.4	19.6	10.7	30.9	43.8	234
Region									
North Bihar Plain	7.9	1,239	9.7	29.1	23.3	11.7	29.2	51.6	98
South Bihar Plain	10.9	739	6.5	18.1	15.4	6.4	28.5	26.8	81
Jharkhand	14.0	501	28.6	49.5	19.6	16.3	38.7	49.3	70
Mother's education									
Illiterate	9.1	2,056	14.2	31.4	18.7	10.2	30.2	41.0	187
Literate, < middle school complete	14.6	201	(10.7)	(31.1)	(24.1)	(10.6)	(27.9)	(48.4)	29
Middle school complete	15.5	86	*	*	*	*	*	*	13
High school complete and above	14.4	137	*	*	*	*	*	*	20
Religion									
Hindu	10.4	1,968	14.0	30.0	20.0	11.7	31.0	41.0	205
Muslim	8.4	482	(12.6)	(35.1)	(17.4)	(7.6)	(34.9)	(51.0)	41
Caste/tribe									
Scheduled caste	9.2	606	20.2	38.4	11.2	12.6	31.4	41.6	56
Scheduled tribe	8.7	184	*	*	*	*	*	*	16
Other backward class	10.1	1,313	8.5	26.5	19.2	12.8	27.1	40.4	133
Other	12.0	376	(17.8)	(30.9)	(24.5)	(2.2)	(40.3)	(46.2)	45

Contd...

Table 8.10 Postpartum check-ups (contd.)

Percentage of noninstitutional births during the three years preceding the survey for which a postpartum check-up was received within two months of birth and, among those receiving a postpartum check-up, percentage seen within two days and one week of birth and percentage receiving specific components of check-ups by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage with a postpartum check-up within two months of birth	Number of births	Among those with postpartum check-up: Percentage seen within two days of birth	Percentage seen within one week of birth	Components of postpartum check-up (%): Abdominal examination	Family planning advice	Breast-feeding advice	Baby care advice	Number of births followed by a postpartum check-up
Standard of living index									
Low	8.5	1,545	12.5	35.7	16.2	10.2	25.9	39.0	131
Medium	12.6	821	14.1	26.4	23.2	11.5	38.7	48.2	103
High	13.7	109	*	*	*	*	*	*	15
Number of antenatal check-ups									
0	7.7	1,744	15.1	28.1	14.6	9.8	25.3	41.1	135
1	9.9	254	(12.1)	(36.4)	(11.8)	(0.0)	(23.8)	(39.3)	25
2	12.6	182	*	*	*	*	*	*	23
3+	21.9	298	16.1	36.5	26.4	13.6	37.9	44.0	65
Assistance during delivery									
Doctor/nurse/midwife/	18.0	261	(18.9)	(33.6)	(19.7)	(12.6)	(28.4)	(37.8)	47
LHV[1]	8.6	1,937	10.5	29.9	22.7	13.4	36.2	42.7	167
Dai (TBA)	12.6	282	(23.9)	(34.8)	(5.6)	(0.0)	(14.5)	(50.8)	35
Other	10.0	2,480	14.0	31.3	19.7	11.3	31.7	43.0	249
Total									

Note: Table includes only the two most recent births during the 2–35 months preceding the survey. Total includes a small number of births to mothers belonging to Christian and 'other' religions, and births with missing information on the standard of living index and number of antenatal check-ups, which are not shown separately.
LHV: Lady health visitor; TBA: Traditional birth attendant
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases
[1]Includes other health professionals

Mothers who did not deliver in a health facility but who received a postpartum check-up were asked whether they had received specific components of postpartum care, including an abdominal examination and advice on family planning, breastfeeding, and baby care. For 20 percent of births, mothers who received a postpartum check-up said that their abdomen was examined during the check-up, and 11 percent said that they received family planning advice. Advice on breastfeeding and baby care was much more common (given in 32–43 percent of cases). For women having postpartum check-ups after noninstitutional births, mothers under age 20 years were more likely than older mothers to receive each of the components, except family planning advice. The likelihood of receiving various components of a postpartum check-up generally declined for higher order births. Except for baby care advice, mothers of births assisted by a TBA were more likely to receive each check-up component than were mothers of births assisted by a health professional or any other person. Mothers belonging to low standard of living households were less likely to receive each component of a postpartum check-up than were mothers belonging to medium standard of living households. Due to the small number of births

in some categories, it is not possible to draw conclusions about the effects of other background characteristics.

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. Table 8.11 shows that for 15 percent of births, mothers reported massive vaginal bleeding, and for 17 percent of births, mothers reported a very high fever in the two-month postpartum period. Both complications were more common among rural than urban mothers. Massive vaginal bleeding was slightly more common among younger mothers, but very high fever was more common among older mothers. Mothers of births delivered in public health facilities and at parents' homes were more likely to have had massive vaginal bleeding as well as very high fever than were mothers of births delivered elsewhere. Mothers of births assisted by a doctor were less likely to have had very high fever than were mothers of births assisted by some other health professional or a traditional birth attendant.

8.4 Reproductive Health Problems

Absence of reproductive tract infections (RTIs) is essential for the reproductive health of both women and men and is also 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 Gittlesohn, 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 sequellae 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 highlighted 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: RTI/STI clinics at district hospitals (where not

Table 8.11 Symptoms of postpartum complications

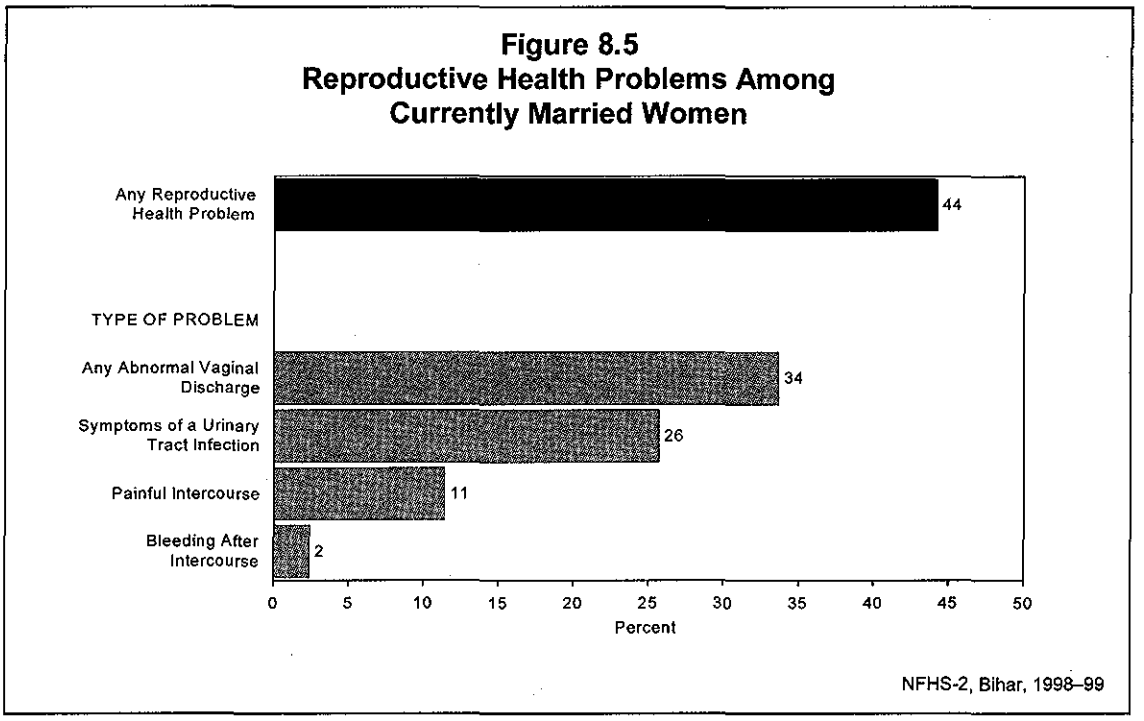
Among births during the three years preceding the survey, percentage for which the mother had massive vaginal bleeding or very high fever within two months after the delivery by selected background characteristics, Bihar, 1998–99

Background characteristic	Massive vaginal bleeding	Very high fever	Number of births
Residence			
Urban	11.8	11.6	247
Rural	14.7	17.1	2,554
Region			
North Bihar Plain	14.7	17.7	1,311
South Bihar Plain	13.5	15.3	929
Jharkhand	15.4	15.9	561
Mother's age at birth			
< 20	15.5	15.8	625
20–34	14.2	16.6	2,015
35–49	13.6	19.5	162
Birth order			
1	16.0	14.2	650
2–3	13.1	16.4	1,096
4–5	15.9	18.5	638
6+	13.5	17.8	417
Place of delivery			
Public health facility	21.8	20.0	108
Private health facility	13.5	10.4	295
Own home	13.9	16.8	1,972
Parents' home	17.8	21.6	367
Other[1]	3.9	2.1	52
Assistance during delivery			
Doctor	15.4	13.3	410
ANM/nurse/midwife/LHV	16.8	16.4	159
Other health professional	18.1	21.4	87
Dai (TBA)	15.1	17.4	1,842
Other[1]	7.4	14.6	304
Total	14.5	16.6	2,801

Note: Table includes only the two most recent births during the 2–35 months preceding the survey. Total includes 7 births delivered in nongovernmental organization (NGO) or trust hospitals/clinics, which are not shown separately.
ANM: Auxillary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant
( ) Based on 25–49 unweighted cases
[1]Includes missing

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, urinary tract infections, and intercourse-related pain and bleeding. Specifically, the prevalence of reproductive health problems among ever-married women is estimated from women's self-reported experience in the three months preceding the survey 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) painful intercourse and 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 8.12 shows the prevalence of different reproductive health problems among women in Bihar during the three months preceding the survey by background characteristics. Thirty-four percent of ever-married women reported at least one type of problem related to vaginal discharge, and 26 percent reported symptoms of a urinary tract infection. Overall, 42 percent of women reported either problems with vaginal discharge or symptoms of a urinary tract infection. Among problems related to vaginal discharge, severe lower abdominal pain was mentioned most frequently (23 percent), followed by itching or irritation (19 percent). The prevalence of problems related to vaginal discharge and symptoms of urinary tract infections is about the same among currently married and ever-married women.

Table 8.12 and Figure 8.5 show that 44 percent of currently married women report that they have one or more reproductive health problems. Eleven percent report painful intercourse and 2 percent report bleeding after intercourse. Reproductive health problems are somewhat more common among currently married women in the age range 25–39 than among women age 15–24 or 40–49. The prevalence of reproductive health problems is higher in rural areas (45 percent) than in urban areas (37 percent). The prevalence does not vary much by geographic region. Among education groups, the prevalence of reproductive health problems is highest for illiterate women (45 percent) and lowest for women who have completed high school or higher education (36 percent). Muslim women (50 percent) are more likely to have reproductive health problems than Hindu women (43 percent) or Christian women (30 percent). There is not much variation in the prevalence of reproductive health problems by caste, tribe, or class.

Table 8.12 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 background characteristics, Bihar, 1998–99

Background characteristic	Ever-married women									Currently married women			
		Vaginal discharge accompanied by:											
	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain[1]	Fever	Other problem	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	Number of currently married women
Age													
15–19	24.4	13.0	10.2	15.4	6.5	6.4	19.7	32.0	825	13.9	2.8	36.9	802
20–24	33.0	19.5	16.8	22.4	10.2	7.7	25.4	41.0	1,419	14.7	3.5	43.8	1,379
25–29	37.1	21.8	18.2	24.7	10.0	11.9	27.1	45.6	1,419	11.7	1.9	47.5	1,373
30–34	39.1	22.8	18.4	28.3	12.6	12.3	28.3	47.5	1,088	12.3	2.0	48.9	1,027
35–39	38.2	20.8	17.9	25.6	12.2	14.2	28.0	46.6	921	11.7	2.8	48.5	859
40–44	30.8	19.0	14.1	20.8	9.4	8.4	27.5	40.4	759	7.1	1.9	41.9	698
45–49	24.5	12.5	9.1	17.0	6.7	9.0	19.7	34.5	593	1.9	1.2	35.0	522
Residence													
Urban	27.7	15.7	11.1	18.9	9.2	10.4	16.9	34.2	718	11.6	1.7	37.1	677
Rural	34.2	19.6	16.3	23.2	10.1	10.1	26.6	42.9	6,306	11.4	2.5	45.1	5,984
Region													
North Bihar Plain	32.2	18.5	15.5	22.5	10.3	10.9	26.4	40.8	3,133	10.4	1.8	42.5	2,974
South Bihar Plain	37.5	21.2	18.4	25.1	9.8	10.1	23.8	44.1	2,199	11.9	3.1	46.4	2,074
Jharkhand	30.6	18.0	12.8	20.0	9.5	8.8	26.4	41.6	1,692	12.8	2.6	44.7	1,613
Education													
Illiterate	33.8	19.3	16.2	23.0	10.7	9.9	26.7	43.0	5,383	11.5	2.4	45.2	5,083
Literate, < middle school complete	35.0	21.8	16.0	23.4	9.0	12.0	25.8	42.6	779	10.9	2.0	44.9	748
Middle school complete	33.4	20.5	13.1	23.4	9.1	13.2	20.3	39.1	267	12.4	2.8	41.1	256
High school complete and above	28.9	14.6	12.4	19.5	5.4	8.8	17.2	33.7	595	11.1	2.6	36.3	573
Religion													
Hindu	32.9	18.9	15.6	22.4	9.6	9.7	24.6	41.1	5,872	11.3	2.3	43.4	5,574
Muslim	36.9	21.3	17.5	25.1	12.4	12.0	31.2	47.3	1,038	12.4	3.0	49.5	982
Christian	25.1	10.7	5.5	14.4	1.8	10.5	8.8	26.9	59	3.8	0.0	29.8	57
Other	38.7	29.2	13.8	19.5	11.5	18.9	39.2	52.5	55	(13.6)	(2.3)	(55.4)	48

Contd...

Table 8.12 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 background characteristics, Bihar, 1998–99

	Ever-married women									Currently married women			
		Vaginal discharge accompanied by:											
Background characteristic	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain[1]	Fever	Other problem	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	Number of currently married women
Caste/tribe													
Scheduled caste	33.9	19.6	15.5	23.6	9.6	11.6	25.3	43.1	1,452	12.0	2.2	45.2	1,383
Scheduled tribe	32.6	20.4	15.3	21.7	10.2	8.3	30.8	44.2	582	13.6	3.7	45.5	546
Other backward class	33.2	18.8	16.1	22.1	9.3	9.7	24.4	41.0	3,642	11.0	2.2	43.4	3,454
Other	34.4	19.6	15.3	24.0	11.9	10.7	26.8	42.7	1,348	10.9	2.7	44.9	1,277
Standard of living index													
Low	34.5	19.3	16.9	23.4	10.3	9.9	26.9	43.8	3,709	11.9	2.7	45.9	3,480
Medium	33.7	20.2	15.3	23.1	10.7	10.4	25.6	41.7	2,595	11.7	2.2	44.1	2,491
High	27.5	15.1	11.5	18.2	5.4	10.5	19.0	34.0	712	8.2	1.8	36.3	682
Work status													
Working in family farm/business	32.5	19.4	12.5	22.5	10.5	11.4	25.5	41.8	639	12.4	1.4	42.7	590
Employed by someone else	39.2	23.6	21.8	28.6	13.3	14.1	30.3	47.8	814	14.7	3.3	50.1	753
Self-employed	36.2	21.9	17.1	26.6	14.6	13.0	25.3	44.9	404	12.1	1.2	45.6	345
Not worked in past 12 months	32.5	18.3	15.1	21.6	9.0	9.1	24.9	40.9	5,168	10.7	2.5	43.5	4,973
Number of children													
Ever born													
0	31.1	17.5	14.9	21.6	9.8	7.9	24.9	39.3	897	19.4	4.9	45.0	846
1	30.6	17.1	16.7	19.0	8.6	8.2	23.1	37.7	921	11.9	1.7	39.5	874
2–3	34.5	19.9	16.2	24.2	9.7	9.9	26.0	42.2	2,194	10.7	2.5	44.3	2,082
4–5	35.8	20.5	16.5	23.9	11.4	11.5	27.1	45.5	1,789	10.3	1.8	46.9	1,692
6+	32.2	19.0	13.7	22.1	9.5	11.7	25.0	41.7	1,223	8.2	1.7	43.3	1,167
All ever-married women	33.5	19.2	15.7	22.7	10.0	10.1	25.6	42.0	7,024	NA	NA	NA	NA
All currently married women	33.7	19.3	15.8	22.8	10.1	10.2	25.7	42.2	6,661	11.4	2.4	44.2	6,661

Note: Total includes a small number of women with missing information on the standard of living index, who are not shown separately.
NA: Not applicable
( ) Based on 25-49 unweighted cases
[1]Not related to menstruation
[2]Includes pain or burning while urinating or more frequent or difficult urination

Table 8.13 Treatment of reproductive health problems

Among women with a reproductive health problem, percentage who sought advice or treatment from specific providers by residence, Bihar, 1998–99

Provider	Urban	Rural	Total
Public medical sector	6.2	4.8	4.9
Government doctor	6.2	3.9	4.1
Public health nurse	0.8	1.9	1.8
ANM/LHV	0.0	0.5	0.5
Male MPW/supervisor	0.0	0.1	0.1
Anganwadi worker	0.0	0.1	0.1
Village health guide	0.0	0.2	0.2
Other public medical sector	0.0	0.3	0.2
Private medical sector	36.7	25.1	26.1
Private doctor	29.0	19.3	20.1
Private nurse	2.7	2.9	2.9
Compounder/pharmacist	0.4	0.3	0.3
Vaidya/hakim/homeopath	6.8	3.1	3.4
Dai (TBA)	2.1	1.5	1.5
Traditional healer	0.4	1.9	1.8
Other private medical sector	0.8	0.8	0.8
Other	1.2	2.2	2.1
None	59.1	70.4	69.4
Number of women	261	2,826	3,087

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 add to more than 100.0 because women could report treatment from multiple providers.
ANM: Auxiliary nurse midwife; LHV: Lady health visitor; MPW: Multipurpose worker
TBA: Traditional birth attendant

Women in households with a medium or low standard of living (44–46 percent) are more likely to have reproductive health problems than women in households with a high standard of living (36 percent). Women who are employed by others are somewhat more likely to report reproductive health problems than other woman (50 percent compared with 43–46 percent). The prevalence of reproductive health problems does not vary much by number of children ever born.

Among women who report any reproductive health problem, 69 percent have not seen anyone for advice or treatment (Table 8.13). The proportion of women who have not obtained any advice or treatment is higher in rural areas (70 percent) than in urban areas (59 percent). Among women who have obtained advice or treatment, 66 percent saw a private doctor (71 percent in urban areas and 65 percent in rural areas). Only one-sixth (16 percent) of women who have obtained advice or treatment were seen by someone in the public medical sector.

NFHS-2 results show that although a large proportion of ever-married women in Bihar (44 percent) report at least one reproductive health problem that could be symptomatic of a serious reproductive tract infection, the majority of them bear their problems silently without seeking advice or treatment. Moreover, women who seek advice or treatment for reproductive health problems do not usually go to government health professionals. These findings highlight

the need to educate women regarding the symptoms and consequences of reproductive health problems and the urgent need to expand counselling and reproductive health services in both rural and urban areas, particularly in the public sector.

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 meet 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 as well as 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, source, and quality. Finally, information is presented on the quality of care for 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 use of services from various types of health providers. A large majority of households (89 percent) normally use the private medical sector when a household member gets sick. Only 9 percent normally use public-sector medical services. In the private health sector, private doctors are the most popular source of health care for households, whereas in the public medical sector households normally go to hospitals. The pattern of service utilization is similar for rural and urban households. But, contrary to expectation, the use of the private medical sector is higher in rural areas than in urban areas; 90 percent of rural households use private medical sector sources as against 81 percent of urban households. Less than 2 percent of households in Bihar normally use a *vaidya/hakim/* homeopath or a traditional healer, and less than 1 percent use a CHC/rural hospital/PHC. Among

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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, Bihar, 1998–99

Source	Residence		Standard of living index			Total
	Urban	Rural	Low	Medium	High	
Public medical sector	16.6	8.2	8.4	9.1	14.1	9.1
Government/municipal hospital	9.3	5.6	6.1	5.4	8.3	6.0
Government dispensary	2.6	0.4	0.4	0.6	2.1	0.6
UHC/UHP/UFWC	0.1	0.1	0.0	0.1	0.2	0.1
CHC/rural hospital/PHC	0.1	0.6	0.6	0.4	1.0	0.6
Sub-centre	0.1	0.8	0.7	0.8	0.0	0.7
Government paramedic	0.0	0.3	0.3	0.3	0.0	0.3
Other public medical sector	4.2	0.4	0.2	1.4	2.5	0.8
NGO or trust	1.2	0.7	0.7	0.3	2.3	0.7
Hospital/clinic	1.2	0.3	0.2	0.2	2.3	0.4
NGO worker	0.0	0.4	0.5	0.1	0.0	0.3
Private medical sector	81.1	89.7	89.4	89.3	81.7	88.7
Private hospital/clinic	20.6	17.5	17.3	18.5	19.0	17.8
Private doctor	55.4	66.9	66.1	66.7	57.8	65.6
Private mobile clinic	0.0	0.4	0.5	0.1	0.2	0.3
Private paramedic	0.4	0.8	0.8	0.8	0.2	0.7
Vaidya/hakim/homeopath	1.3	1.3	1.7	0.6	0.9	1.3
Traditional healer	0.3	0.7	0.8	0.5	0.7	0.7
Pharmacy/drugstore	0.7	0.3	0.4	0.3	0.2	0.3
Other private medical sector	2.3	1.8	1.8	1.8	2.8	1.9
Other source	1.1	1.5	1.5	1.2	1.8	1.4
Shop	0.6	0.4	0.4	0.3	0.9	0.4
Home treatment	0.6	0.8	0.8	0.9	0.5	0.8
Missing	0.0	0.3	0.3	0.1	0.4	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	720	5,625	3,641	2,151	545	6,345

Note: Total includes 8 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

the small proportion of households who normally use a public medical sector source of health care when household members get sick, the majority prefer to use a government or a municipal hospital. Less than 1 percent of households use an NGO or a trust as their main source of health care.

The pattern of use of health-care services is similar for households with low and medium standards of living. The pattern of utilization for these two categories of households is similar to what is observed in the case of rural households. On the other hand, the service utilization pattern of households with a high standard of living is similar to that of the urban households. For example, 82 percent of households with a high standard of living use the private medical sector, compared with 89 percent of households with either a medium or low standard of living.

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 required to monitor various aspects of 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 2 percent of women in Bihar, 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).

The reporting of home visits by a health or family planning worker is low for women of all ages. Rural women are somewhat more likely to report a home visit than urban women. By region, women in the Jharkhand region are more likely to report receiving a home visit (4 percent) than those in the North Bihar Plain region (2 percent) or in the South Bihar Plain region (1 percent). Home visits are more common among scheduled-tribe women (7 percent) than among other caste/tribe/class groups (2–3 percent). By religion, Christian women and women belonging to 'other' religions are considerably more likely to receive home visits than women belonging to the Hindu or Muslim religion. However, religion differentials should be viewed with caution as the percentages for Christians and 'other' religions are based on small numbers of cases. The variations in home visits by level of education of women, standard of living of the household, number of children ever born, and family planning status are small and do not reveal any specific pattern.

Women who reported a visit by a health or family planning worker during the 12 months preceding the survey were asked the frequency of home visits during the past 12 months and the number of months since the last visit. These women, on average, received only one home visit over the year with the median duration of 2.5 months since the last visit (Table 9.2). The average number of home visits and the duration since the last visit do not vary substantially according to any of the background characteristics measured. In other words, although some groups are more likely to be visited by a health or family planning worker than others, among women who were visited the frequency of visits does not vary widely.

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 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 and whether the worker was from to the private or public sector.

Most of the recent home visits were provided by public-sector health or family planning workers; private-sector health workers provided only 16 percent of the most recent home visits. Eighty-six percent of women who were visited at home reported that they received services related to health and 22 percent reported that they received services related to family planning.

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 selected background characteristics, Bihar, 1998–99

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	2.7	2,244	1.0	2.1	60
25–34	2.0	2,507	(1.2)	(2.8)	50
35–49	2.5	2,274	1.5	2.7	58
Residence					
Urban	1.8	718	*	*	13
Rural	2.5	6,306	1.2	2.5	155
Region					
North Bihar Plain	2.0	3,133	1.4	2.3	64
South Bihar Plain	1.3	2,199	(0.9)	(2.5)	29
Jharkhand	4.4	1,692	1.3	2.8	74
Education					
Illiterate	2.3	5,383	1.3	2.4	122
Literate, < middle school complete	2.4	779	*	*	18
Middle school complete	4.3	267	*	*	12
High school complete and above	2.6	595	*	*	16
Religion					
Hindu	2.4	5,872	1.3	2.4	139
Muslim	1.4	1,038	*	*	14
Christian	10.9	59	*	*	6
Other	13.5	55	*	*	7
Caste/tribe					
Scheduled caste	2.8	1,452	(0.9)	(2.5)	40
Scheduled tribe	7.0	582	(1.5)	(2.5)	41
Other backward class	1.5	3,642	1.5	2.4	55
Other	2.4	1,348	(0.9)	(2.7)	32
Standard of living index					
Low	2.5	3,709	1.3	2.2	92
Medium	1.9	2,595	(1.2)	(3.3)	50
High	3.6	712	(1.3)	(2.4)	26
Number of children ever born					
0	1.8	897	*	*	16
1	2.0	921	*	*	19
2	2.4	1,081	(1.0)	(2.4)	26
3	2.5	1,114	(1.3)	(2.1)	28
4	3.1	1,035	(1.2)	(2.8)	32
5+	2.4	1,977	(1.4)	(2.6)	47
Family planning status					
Sterilized	2.2	1,342	(1.5)	(2.9)	29
Using method other than sterilization	4.1	291	*	*	12
Nonuser	2.4	5,391	1.1	2.4	127
Total	2.4	7,024	1.3	2.5	168

Note: Total includes a small number of women with missing information on 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
[1]For women who received at least one visit

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 health worker and type of services received during the visit, Bihar, 1998–99

	Types of health worker and type of services received								
	Public-sector worker			Private-sector/NGO/trust worker			Total		
Quality indicator	Family planning	Health	Family planning or health	Family planning	Health	Family planning or health	Family planning	Health	Family planning or health
Percentage who said worker spent enough time with them	(82.4)	88.8	87.3	*	*	*	(84.1)	87.6	86.6
Percentage who said worker talked to them:									
Nicely	(78.6)	67.9	68.9	*	*	*	(80.6)	68.2	69.2
Somewhat nicely	(17.9)	26.3	25.4	*	*	*	(16.2)	27.1	26.1
Not nicely	(3.5)	5.8	5.6	*	*	*	(3.2)	4.7	4.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women visited at home	30	106	127	3	24	25	33	130	152

Note: Cases where the source of service was neither the public sector nor the private sector/NGO/trust, and cases where neither family planning nor health services were received are excluded from the table. The number of women receiving family planning and health services add to more than the number receiving any visits because some visits were for both family planning and health.
NGO: Nongovernmental organization
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases

Irrespective of the type of service received, the majority of women (82 percent or more) who were visited by a public-sector health or family planning worker were satisfied that the worker had spent enough time with them. In general, women had only a few complaints about the way the worker talked to them. About two-thirds (69 percent) of the women who received family planning or health services reported that the worker talked to them nicely; less than 5 percent said that the worker did not talk to them nicely. Women who received family planning services gave workers a slightly better assessment than did women who received health services.

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 all home visits or visits to a health facility during the past 12 months.

The major focus of home visits was immunizations, treatment of health problems, and childcare. In addition, 21 percent of women mentioned that family planning was discussed during home visits and 6 percent each reported having discussions about antenatal care and delivery care. It seems that family planning is often not discussed during a home visit. Discussions about family planning are more common for current contraceptive users and for women who are either pregnant or have children under age three years than for current nonusers. Women who were pregnant or women with children under age three were also much more likely

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, Bihar, 1998–99

Topic discussed	Pregnant women or women with children under age 3	Other women: Current contraceptive users	Other women: Current nonusers	Total
During home visit				
Family planning	23.6	(23.9)	14.3	20.8
Breastfeeding	3.6	(0.0)	0.0	1.9
Immunization	46.5	(29.0)	26.1	37.1
Disease prevention	3.4	(13.5)	3.9	5.4
Treatment of health problem	14.5	(20.1)	42.3	24.1
Antenatal care	11.0	(3.5)	0.0	6.3
Delivery care	11.4	(0.0)	1.9	6.4
Postpartum care	5.0	(0.0)	0.0	2.6
Childcare	25.7	(13.7)	23.9	23.0
Sanitation/cleanliness	0.0	(3.1)	0.0	0.6
Oral rehydration	0.0	(0.0)	1.8	0.6
Other	0.0	(0.0)	6.0	1.9
Number of women	86	30	52	168
During visit to health facility				
Family planning	2.3	4.0	3.1	2.8
Breastfeeding	0.4	0.2	0.2	0.3
Supplementary feeding	0.2	0.6	0.0	0.2
Immunization	36.2	7.8	12.0	24.9
Nutrition	0.9	0.2	0.3	0.6
Disease prevention	0.4	0.7	0.6	0.5
Treatment of health problem	23.4	60.4	61.9	39.9
Antenatal care	8.0	0.7	0.8	4.8
Delivery care	8.0	0.4	1.1	4.9
Postpartum care	2.0	0.2	0.4	1.3
Childcare	47.3	36.5	29.0	40.7
Sanitation/cleanliness	0.5	0.0	0.3	0.4
Oral rehydration	0.1	0.0	0.2	0.1
Number of women	1,435	452	656	2,543

Note: Percentages add to more than 100.0 because of multiple responses.
( ) Based on 25–49 unweighted cases

than other women to have talked about immunizations and antenatal and delivery care, but less likely to have discussed treatment of health problems. The topic discussed most often during home visits by health or family planning workers with current nonusers was treatment of health problems, which was mentioned by 42 percent of women.

Visits to health facilities are largely for reasons related to childcare (41 percent), treatment of health problems (40 percent), or immunization (25 percent). Only 3 percent of the women say that they discussed family planning during the visits. Even among currently pregnant women or women with children under age three, only 2 percent report having discussed family planning during a visit to health facility. Forty-seven percent of these women discussed childcare, 36 percent discussed immunization, and 23 percent discussed treatment of a health problem. These data on topic discussed during home visits and visits to health facilities suggest that delivery of health and family planning services in Bihar is not well integrated. Indeed, health facilities and workers in the process of providing health and childcare services are missing the

opportunity to discuss family planning with even the women who may be most in need of such services. It is also evident that advice and information on safe motherhood practices to pregnant women and mothers with young children is often not provided, and many important health-related topics (feeding practices, nutrition, disease prevention, sanitation, and oral rehydration) are rarely discussed during either home visits or visits to health facilities.

9.5 Quality of Services Received at the Most Recent Visit to a Health Facility

NFHS-2 asked women who had 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 their opinion regarding the cleanliness of the facility.

Almost all respondents (99.5 percent) said that they received the services for which they had visited the facility (Table 9.5). The median waiting time to receive services was 29 minutes, which was about 50 percent longer at private facilities (29 minutes) than at public facilities (19 minutes). For those visiting public or private facilities, the median waiting time did not differ by urban-rural residence. Satisfaction with the amount of time the staff spent with the woman was generally high (91 percent), but was considerably lower in the public sector (77 percent) than in the private sector (96 percent).

The private sector was also rated higher than the public sector on all of the other indicators of quality. Eighty-two percent of women who received services in a private-sector facility said that the staff talked to them nicely, compared with 39 percent of women who received services in a public-sector facility. Consistent with this, only 1 percent of women who visited a private-sector facility said that the staff did not talk to them nicely, compared with 5 percent for women who visited a public-sector facility. The greatest dissatisfaction was expressed by urban women who visited public-sector facilities (8 percent).

Among women who wanted privacy during their visit, 77 percent were satisfied that the staff respected their need for privacy. The percentage was much higher for private-sector facilities (84 percent) than for public-sector facilities (55 percent). It was also higher for women living in urban areas (83 percent) than for women living in rural areas (76 percent).

Private-sector facilities are also perceived to be much more clean than public-sector facilities, and this is true for both urban and rural areas. Overall, 81 percent of women who visited a private-sector facility said that the facility was very clean compared with only 28 percent of women who visited a public-sector facility.

9.6 Family Planning Information and Advice Received

To gain a better understanding of the information provided to women about different contraceptive methods, all eligible 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, 88 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

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, Bihar, 1998–99

	Public sector			Private sector/NGO/trust			Total		
Quality indicator	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Percentage who received the service they went for	96.4	99.3	98.9	100.0	99.7	99.8	99.0	99.6	99.5
Median waiting time (minutes)	19.0	19.2	19.1	29.1	29.4	29.3	19.7	29.1	29.1
Percentage who said the staff spent enough time with them	80.4	76.5	77.0	96.4	95.5	95.6	91.9	90.4	90.6
Percentage who said the staff talked to them:									
Nicely	49.5	36.8	38.6	86.1	81.8	82.3	75.7	69.7	70.5
Somewhat nicely	42.7	58.7	56.5	12.6	17.2	16.6	21.2	28.3	27.4
Not nicely	7.8	4.5	4.9	1.3	1.0	1.0	3.2	1.9	2.1
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]	64.3	53.2	54.6	89.3	82.8	83.6	83.1	75.8	76.7
Percentage who rated facility as:									
Very clean	47.5	25.4	28.4	78.6	80.8	80.5	69.8	65.9	66.4
Somewhat clean	51.3	68.9	66.5	20.9	18.3	18.7	29.6	31.9	31.6
Not clean	1.2	5.7	5.1	0.4	0.9	0.8	0.7	2.2	2.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	94	590	685	237	1,613	1,850	331	2,204	2,535
Number of women who said they needed privacy	63	415	479	193	1,331	1,524	257	1,746	2,003

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
[1]Among women who said they needed privacy

9.6). Among those who discussed contraception, by far the most frequently discussed method was sterilization, particularly female sterilization. Less than 4 percent of women mentioned ever discussing pills. Discussions about condoms, IUDs, or traditional methods such as rhythm or withdrawal were also rare. The patterns for urban and rural areas are similar, although every method was slightly more likely to be discussed in urban areas than in rural areas.

9.7 Availability of Pills and Condoms

NFHS-2 asked current users of condoms and pills if they ever had a problem in getting their supply. The results are presented in Table 9.7. Nine percent of condom users report ever having a problem in getting their supply of condoms, and only 2 percent of pill users report ever having a problem in getting their supply of pills.

Table 9.6 Family planning discussions with a health or family planning worker

Percentage of ever-married women who reported ever discussing specific contraceptive methods with health or family planning workers by residence, Bihar, 1998–99

Method	Urban	Rural	Total
Pill	6.2	3.2	3.5
Condom	2.8	1.6	1.7
IUD	3.1	1.3	1.5
Female sterilization	13.0	9.9	10.2
Male sterilization	2.7	2.4	2.4
Rhythm/safe period	1.3	0.3	0.4
Withdrawal	0.8	0.1	0.2
Other method	0.2	0.2	0.2
No method/no contact	82.6	88.2	87.6
Number of women	718	6,306	7,024

Note: Percentages add to more than 100.0 because more than one method may have been discussed.

Table 9.7 Availability of regular supply of condoms/pills

Percentage of current condom or pill users who ever had a problem getting a supply of condoms/pills, Bihar, 1998–99

Method	Percentage who had a problem getting supply	Number of users
Condom	(8.7)	47
Pill	1.5	66

( ) Based on 25–49 unweighted cases

9.8 Person Motivating Users of a Modern Contraceptive Method

To help understand the dynamics of adoption of contraceptive methods and the roles that health care providers and others play, NFHS-2 asked current users of modern methods who had motivated them to use their current method. A majority (53 percent) of the current users of a modern method in Bihar said that their motivator was someone other than a government, private, or NGO worker (Table 9.8 and Figure 9.1). Another sizeable proportion (39 percent) said that they were not motivated by anyone, but rather they adopted the method on their own. Only 6 percent of the users said that a government worker was the one who mainly motivated them. Condom users are least likely to be self-motivated and IUD users are most likely to be self-motivated. Even in the case of female sterilization, which is the most popular method, 41 percent said that it was their own decision to use the method, and no one else had motivated them. Among women whose husbands had accepted sterilization, 37 percent stated that no one had motivated their husband to get sterilized. The role of different motivators does not differ much between urban and rural users.

Table 9.8 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 current method and residence, Bihar, 1998–99

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	NGO worker	Other	No one		
URBAN							
Pill	*	*	*	*	*	100.0	19
Condom	*	*	*	*	*	100.0	20
IUD	*	*	*	*	*	100.0	8
Female sterilization	4.0	1.7	0.0	50.1	44.2	100.0	180
Male sterilization	*	*	*	*	*	100.0	11
All modern methods	4.3	2.2	0.0	56.4	37.1	100.0	239
RURAL							
Pill	(6.4)	(6.4)	(0.0)	(60.0)	(27.1)	100.0	47
Condom	(0.0)	(4.2)	(0.0)	(88.7)	(7.2)	100.0	26
IUD	(0.0)	(0.0)	(3.9)	(37.9)	(58.2)	100.0	27
Female sterilization	6.0	2.1	0.1	51.4	40.5	100.0	1,097
Male sterilization	18.2	3.9	0.0	44.6	33.2	100.0	53
All modern methods	6.3	2.3	0.2	51.9	39.4	100.0	1,250
TOTAL							
Pill	9.3	7.9	0.0	63.6	19.2	100.0	66
Condom	(0.0)	(2.4)	(0.0)	(91.3)	(6.3)	100.0	47
IUD	(0.0)	(0.0)	(3.0)	(46.8)	(50.3)	100.0	35
Female sterilization	5.7	2.0	0.1	51.2	41.0	100.0	1,277
Male sterilization	15.0	3.2	0.0	45.0	36.8	100.0	65
All modern methods	5.9	2.3	0.1	52.6	39.0	100.0	1,490

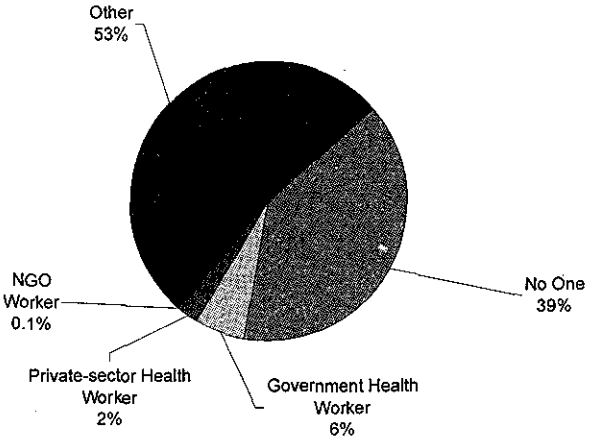
NGO: Nongovernmental organization
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases

9.9 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 the method at the time that she accepted the method; and whether she received any follow-up care either at home or in a health facility after she accepted the method. Tables 9.9 and 9.10 present the results of this investigation.

An important indication of the quality of family planning services is whether women are informed about a variety of 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 alternate methods that they could use. Only 15 percent of users of modern contraceptive methods who were motivated by someone were informed about at least one alternative method (Table 9.9). Twenty-one percent of users who were motivated by a public-

Figure 9.1
Motivator for Current Users of Modern Contraceptive Methods



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Bihar, 1998–99

Table 9.9 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, Bihar, 1998–99

Sector of motivator	Urban	Rural	Total	Number of users
Public health sector	(29.1)	19.5	20.6	89
Private health sector	*	(13.7)	(14.7)	34
Other	22.7	12.9	14.6	784
Total	23.1	13.6	15.2	909

Note: Table excludes women who said that no one motivated them to use their current method. Total includes 2 users of modern contraceptive methods who were motivated by a worker from a nongovernmental organization (NGO), who are not shown separately.
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases

sector health worker received such information, compared with 15 percent of users who were motivated by a private-sector worker or someone else. Users in urban areas were more likely than users in rural areas to be told about alternative methods.

Another important element of informed contraceptive choice is being fully informed about any side effects associated with the method. Table 9.10 shows the percentage of current users of modern contraception who were told about side effects 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 had accepted the method.

Table 9.10 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 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 the method by current method and residence, Bihar, 1998–99

Information/follow-up	Urban	Rural	Total
Told about side effects			
Sterilization	19.7	15.1	15.8
Other modern method	(17.6)	15.3	16.0
Any modern method	19.2	15.1	15.8
Received follow-up			
Sterilization	84.3	77.4	78.3
Other modern method	(64.0)	66.3	65.5
Any modern method	80.2	76.5	77.1

( ) Based on 25–49 unweighted cases

In Bihar, only 16 percent of users of any modern method were informed about possible side effects of their current method at the time of adopting the method. This percentage is only slightly higher in urban areas (19 percent) than in rural areas (15 percent). It is clear that both public and private health and family planning workers in Bihar 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. Among sterilization users, 77 percent in rural areas and 84 percent in urban areas received follow-up services. Even so, this implies that one in five users of sterilization had no follow-up. About two-thirds (66 percent) of users of other modern methods received follow-up services.

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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:

$$\mathrm{var}(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - rx_{hi}$$

$$z_h = y_h - rx_h$$

where

h represents the stratum that varies from 1 to H,
m_h is the total number of PSUs selected in the hth stratum,
y_{hi} is the sum of the values of variable y in PSU i in the hth stratum,
x_{hi} is the sum of number of cases in PSU i in the hth stratum,
f is 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, except for 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±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, Bihar, 1998–99

Variable	Estimate	Base population
Sex ratio	Ratio	*De facto* household population
Illiterate	Proportion	*De facto* household population age 6 and above
Have tuberculosis	Rate	1,000 *de jure* 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 past 3 years
Received iron and folic acid tablets or syrup	Proportion	Births in past 3 years
Received medical assistance during delivery	Proportion	Births in past 3 years
Received postpartum check-up	Proportion	Noninstitutional births in past 3 years
Had diarrhoea in past 2 weeks	Proportion	Children under age 3 years
Treated with ORS packets	Proportion	Children under age 3 with diarrhoea in past 2 weeks
Taken to a health facility/provider for diarrhoea	Proportion	Children under age 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, Bihar, 1998–99

Variable/ residence	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Sex ratio (*De facto* household population)									
Urban	932	28.009	2,146	2,201	24.394	1.148	0.030	876	988
Rural	955	8.305	17,181	17,112	8.392	0.990	0.009	939	972
Total	953	8.060	19,327	19,314	7.937	1.016	0.008	937	969
Illiterate (*De facto* household population age 6 and above)									
Urban	0.261	0.025	3,615	3,707	0.012	2.040	0.097	0.210	0.311
Rural	0.540	0.010	27,941	27,827	0.005	2.064	0.019	0.520	0.560
Total	0.507	0.011	31,556	31,534	0.005	2.326	0.022	0.485	0.529
Have tuberculosis (1,000 *de jure* household population)									
Urban	6.290	1.504	4,223	4,330	1.443	1.043	0.239	3.282	9.299
Rural	10.347	0.763	34,478	34,339	0.627	1.216	0.074	8.821	11.874
Total	9.893	0.703	38,701	38,669	0.581	1.211	0.071	8.487	11.299
Salt iodized at 15 ppm or more (Households)									
Large city	0.773	0.121	75	77	0.049	2.483	0.156	0.532	1.000
Small city	0.837	0.054	159	163	0.029	1.838	0.065	0.729	0.945
Town	0.756	0.034	467	480	0.020	1.729	0.045	0.687	0.825
Rural	0.430	0.015	5,644	5,625	0.007	2.317	0.036	0.399	0.460
Total	0.469	0.016	6,345	6,345	0.006	2.478	0.033	0.438	0.500
Illiterate (Ever-married women age 15–49)									
Urban	0.462	0.037	687	718	0.019	1.959	0.081	0.388	0.537
Rural	0.801	0.011	6,337	6,306	0.005	2.153	0.013	0.779	0.823
Total	0.766	0.012	7,024	7,024	0.005	2.372	0.016	0.742	0.790
High school complete and above (Ever-married women age 15–49)									
Urban	0.278	0.035	687	718	0.017	2.023	0.124	0.209	0.347
Rural	0.063	0.007	6,337	6,306	0.003	2.179	0.106	0.049	0.076
Total	0.085	0.008	7,024	7,024	0.003	2.376	0.093	0.069	0.100
Currently married (Ever-married women age 15–49)									
Urban	0.942	0.007	687	718	0.009	0.828	0.008	0.928	0.957
Rural	0.949	0.004	6,337	6,306	0.003	1.361	0.004	0.941	0.956
Total	0.948	0.003	7,024	7,024	0.003	1.318	0.004	0.941	0.955
Number of children ever born (Currently married women age 15–49)									
Urban	3.303	0.090	647	677	0.089	1.009	0.027	3.122	3.483
Rural	3.284	0.036	6,015	5,984	0.031	1.180	0.011	3.212	3.357
Total	3.286	0.034	6,662	6,661	0.029	1.163	0.010	3.218	3.353
Number of living children (Currently married women age 15–49)									
Urban	3.046	0.080	647	677	0.081	0.991	0.026	2.885	3.207
Rural	2.850	0.029	6,015	5,984	0.026	1.121	0.010	2.791	2.909
Total	2.870	0.028	6,662	6,661	0.025	1.116	0.010	2.814	2.925
Have ever used any method (Currently married women age 15–49)									
Urban	0.448	0.030	647	677	0.020	1.551	0.068	0.387	0.509
Rural	0.257	0.010	6,015	5,984	0.006	1.813	0.040	0.236	0.277
Total	0.276	0.010	6,662	6,661	0.005	1.878	0.037	0.256	0.297

Table A.2 Sampling errors, Bihar, 1998–99 (Contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Currently using any method (Currently married women age 15–49)									
Urban	0.389	0.028	647	677	0.019	1.455	0.072	0.333	0.445
Rural	0.229	0.010	6,015	5,984	0.005	1.763	0.042	0.210	0.248
Total	0.245	0.010	6,662	6,661	0.005	1.804	0.039	0.226	0.264
Currently using any modern method (Currently married women age 15–49)									
Urban	0.354	0.025	647	677	0.019	1.356	0.072	0.303	0.405
Rural	0.209	0.009	6,015	5,984	0.005	1.732	0.043	0.191	0.227
Total	0.224	0.009	6,662	6,661	0.005	1.756	0.040	0.206	0.242
Currently using pills (Currently married women age 15–49)									
Urban	0.029	0.006	647	677	0.007	0.940	0.215	0.016	0.041
Rural	0.008	0.001	6,015	5,984	0.001	1.026	0.149	0.005	0.010
Total	0.010	0.001	6,662	6,661	0.001	1.052	0.129	0.007	0.012
Currently using IUD (Currently married women age 15–49)									
Urban	0.012	0.004	647	677	0.004	0.961	0.341	0.004	0.020
Rural	0.004	0.001	6,015	5,984	0.001	1.292	0.248	0.002	0.007
Total	0.005	0.001	6,662	6,661	0.001	1.233	0.207	0.003	0.007
Currently using condoms (Currently married women age 15–49)									
Urban	0.030	0.009	647	677	0.007	1.284	0.288	0.013	0.047
Rural	0.004	0.001	6,015	5,984	0.001	1.132	0.219	0.002	0.006
Total	0.007	0.001	6,662	6,661	0.001	1.265	0.185	0.004	0.010
Currently using female sterilization (Currently married women age 15–49)									
Urban	0.266	0.020	647	677	0.017	1.175	0.077	0.225	0.307
Rural	0.183	0.008	6,015	5,984	0.005	1.679	0.046	0.167	0.200
Total	0.192	0.008	6,662	6,661	0.005	1.650	0.041	0.176	0.208
Currently using male sterilization (Currently married women age 15–49)									
Urban	0.017	0.007	647	677	0.005	1.325	0.400	0.003	0.030
Rural	0.009	0.001	6,015	5,984	0.001	1.099	0.149	0.006	0.012
Total	0.010	0.001	6,662	6,661	0.001	1.147	0.142	0.007	0.012
Currently using rhythm/safe period (Currently married women age 15–49)									
Urban	0.015	0.004	647	677	0.005	0.913	0.290	0.006	0.024
Rural	0.008	0.001	6,015	5,984	0.001	1.165	0.167	0.005	0.011
Total	0.009	0.001	6,662	6,661	0.001	1.131	0.148	0.006	0.011
Using public source for modern method (Current users of modern methods)									
Urban	0.560	0.030	229	239	0.033	0.898	0.053	0.501	0.619
Rural	0.809	0.013	1,260	1,250	0.011	1.172	0.016	0.783	0.835
Total	0.769	0.013	1,489	1,490	0.011	1.229	0.017	0.742	0.796
Do not want any more children (Currently married women age 15–49)									
Urban	0.311	0.026	647	677	0.018	1.428	0.084	0.259	0.363
Rural	0.301	0.007	6,015	5,984	0.006	1.242	0.024	0.287	0.316
Total	0.302	0.007	6,662	6,661	0.006	1.260	0.023	0.288	0.316
Want to delay birth at least 2 years (Currently married women age 15–49)									
Urban	0.159	0.015	647	677	0.014	1.048	0.095	0.129	0.189
Rural	0.158	0.006	6,015	5,984	0.005	1.173	0.035	0.147	0.169
Total	0.158	0.005	6,662	6,661	0.004	1.158	0.033	0.148	0.169

Table A.2 Sampling errors, Bihar, 1998–99 (Contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Ideal number of children (Ever-married women age 15–49)									
Urban	2.802	0.074	662	693	0.041	1.799	0.026	2.655	2.949
Rural	3.312	0.028	5,883	5,856	0.015	1.892	0.008	3.256	3.367
Total	3.258	0.028	6,545	6,549	0.014	1.983	0.008	3.202	3.313
Ideal number of sons (Ever-married women age 15–49)									
Urban	1.541	0.057	662	693	0.033	1.730	0.037	1.428	1.655
Rural	1.925	0.021	5,878	5,851	0.011	1.935	0.011	1.883	1.966
Total	1.884	0.021	6,540	6,544	0.010	2.014	0.011	1.842	1.926
Ideal number of daughters (Ever-married women age 15–49)									
Urban	1.107	0.034	662	693	0.022	1.516	0.031	1.040	1.175
Rural	1.294	0.012	5,878	5,851	0.008	1.480	0.009	1.270	1.319
Total	1.274	0.012	6,540	6,544	0.008	1.541	0.009	1.250	1.299
Visited by health/family planning worker (Ever-married women age 15–49)									
Urban	0.018	0.005	687	718	0.005	1.072	0.304	0.007	0.029
Rural	0.025	0.003	6,337	6,306	0.002	1.553	0.123	0.019	0.031
Total	0.024	0.003	7,024	7,024	0.002	1.520	0.116	0.018	0.029
Received no antenatal check-up (Births in past 3 years)									
Urban	0.306	0.048	245	258	0.032	1.493	0.157	0.209	0.402
Rural	0.656	0.018	2,703	2,689	0.010	1.829	0.027	0.620	0.692
Total	0.625	0.018	2,948	2,947	0.010	1.847	0.028	0.590	0.661
Received iron and folic acid tablets or syrup (Births in past 3 years)									
Urban	0.461	0.049	245	258	0.032	1.527	0.106	0.364	0.558
Rural	0.220	0.012	2,703	2,689	0.008	1.461	0.053	0.197	0.243
Total	0.241	0.012	2,948	2,947	0.008	1.540	0.050	0.217	0.265
Received medical assistance during delivery (Births in past 3 years)									
Urban	0.519	0.053	245	258	0.035	1.535	0.103	0.412	0.625
Rural	0.206	0.015	2,703	2,689	0.008	1.791	0.072	0.177	0.236
Total	0.234	0.015	2,948	2,947	0.008	1.788	0.064	0.204	0.264
Received postpartum check-up (Noninstitutional births in past 3 years)									
Urban	0.100	0.022	143	150	0.025	0.893	0.225	0.055	0.145
Rural	0.101	0.007	2,347	2,330	0.006	1.191	0.074	0.086	0.115
Total	0.100	0.007	2,490	2,480	0.006	1.173	0.070	0.086	0.115
Had diarrhoea in past 2 weeks (Children under age 3 years)									
Urban	0.156	0.024	232	244	0.024	1.014	0.155	0.108	0.205
Rural	0.179	0.009	2,463	2,448	0.008	1.162	0.050	0.161	0.197
Total	0.177	0.008	2,695	2,692	0.007	1.147	0.048	0.160	0.194
Treated with ORS packets (Children under age 3 with diarrhoea in past 2 weeks)									
Urban	0.281	0.084	36	38	0.075	1.126	0.299	0.113	0.449
Rural	0.143	0.017	440	439	0.017	1.014	0.119	0.109	0.177
Total	0.154	0.017	476	477	0.017	1.022	0.111	0.120	0.188
Taken to a health facility/provider for diarrhoea (Children under age 3 with diarrhoea in past 2 weeks)									
Urban	0.389	0.060	36	38	0.081	0.744	0.155	0.269	0.510
Rural	0.513	0.025	440	439	0.024	1.038	0.049	0.462	0.563
Total	0.503	0.024	476	477	0.023	1.018	0.047	0.455	0.550

Table A.2 Sampling errors, Bihar, 1998–99 (Contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Showing a vaccination card (Children age 12–23 months)									
Urban	0.203	0.052	76	80	0.046	1.123	0.255	0.100	0.306
Rural	0.171	0.014	806	802	0.013	1.043	0.081	0.143	0.199
Total	0.174	0.013	882	882	0.013	1.047	0.077	0.147	0.201
Received BCG vaccination (Children age 12–23 months)									
Urban	0.635	0.074	76	80	0.055	1.347	0.117	0.487	0.783
Rural	0.351	0.020	806	802	0.017	1.178	0.057	0.312	0.391
Total	0.377	0.020	882	882	0.016	1.220	0.053	0.337	0.417
Received DPT vaccination (3 doses) (Children age 12–23 months)									
Urban	0.370	0.063	76	80	0.055	1.134	0.169	0.245	0.495
Rural	0.230	0.017	806	802	0.015	1.122	0.073	0.196	0.263
Total	0.242	0.016	882	882	0.014	1.136	0.068	0.209	0.275
Received polio vaccination (3 doses) (Children age 12–23 months)									
Urban	0.540	0.052	76	80	0.057	0.914	0.096	0.436	0.645
Rural	0.397	0.021	806	802	0.017	1.193	0.052	0.356	0.438
Total	0.410	0.020	882	882	0.017	1.183	0.048	0.371	0.449
Received measles vaccination (Children age 12–23 months)									
Urban	0.398	0.063	76	80	0.056	1.127	0.159	0.272	0.524
Rural	0.143	0.014	806	802	0.012	1.148	0.100	0.115	0.172
Total	0.166	0.015	882	882	0.013	1.182	0.090	0.136	0.196
Fully vaccinated (Children age 12–23 months)									
Urban	0.224	0.038	76	80	0.048	0.796	0.169	0.148	0.300
Rural	0.099	0.012	806	802	0.011	1.094	0.116	0.076	0.122
Total	0.110	0.011	882	882	0.011	1.078	0.103	0.088	0.133
Received Vitamin A (Children age 12–35 months)									
Urban	0.194	0.040	142	150	0.035	1.130	0.204	0.115	0.273
Rural	0.093	0.009	1,622	1,613	0.007	1.241	0.097	0.075	0.111
Total	0.102	0.009	1,764	1,762	0.007	1.238	0.089	0.083	0.120
Had reproductive health problem (Currently married women age 15–49)									
Urban	0.371	0.025	647	677	0.019	1.319	0.068	0.321	0.421
Rural	0.451	0.010	6,015	5,984	0.006	1.634	0.023	0.430	0.472
Total	0.442	0.010	6,662	6,661	0.006	1.624	0.022	0.423	0.462
Not involved in any decisionmaking (Ever-married women age 15–49)									
Urban	0.104	0.018	687	718	0.012	1.577	0.177	0.067	0.141
Rural	0.139	0.009	6,337	6,306	0.004	2.042	0.064	0.121	0.156
Total	0.135	0.008	7,024	7,024	0.004	2.008	0.061	0.119	0.151
Ever beaten or physically mistreated since age 15 (Ever-married women age 15–49)									
Urban	0.189	0.024	687	718	0.015	1.593	0.126	0.142	0.237
Rural	0.275	0.008	6,337	6,306	0.006	1.506	0.031	0.258	0.292
Total	0.266	0.008	7,024	7,024	0.005	1.534	0.030	0.250	0.282
Not worked in past 12 months (Ever-married women age 15–49)									
Urban	0.869	0.015	687	718	0.013	1.130	0.017	0.840	0.899
Rural	0.720	0.011	6,337	6,306	0.006	2.034	0.016	0.698	0.743
Total	0.736	0.011	7,024	7,024	0.005	2.044	0.015	0.714	0.757

Table A.2 Sampling errors, Bihar, 1998–99 (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
Anaemic women (Ever-married women age 15–49)									
Urban	0.596	0.029	571	637	0.021	1.418	0.049	0.538	0.654
Rural	0.639	0.012	5,652	5,586	0.006	1.809	0.018	0.615	0.662
Total	0.634	0.011	6,223	6,223	0.006	1.771	0.017	0.613	0.656
Anaemic children (Children age 6–35 months)									
Urban	0.807	0.037	149	167	0.032	1.153	0.046	0.732	0.882
Rural	0.813	0.013	1,511	1,490	0.010	1.333	0.016	0.786	0.840
Total	0.813	0.013	1,660	1,657	0.010	1.309	0.015	0.787	0.838

Table A.2 Sampling errors, Bihar, 1998–99 (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	2.748	0.167	0.061	2.414	3.081
Rural	3.588	0.080	0.022	3.427	3.749
Total	3.489	0.074	0.021	3.341	3.636
Age-specific fertility rate (Women age 15–19)					
Urban	0.072	0.009	0.125	0.054	0.090
Rural	0.119	0.005	0.044	0.108	0.129
Total	0.113	0.005	0.042	0.103	0.123
Age-specific fertility rate (Women age 20–24)					
Urban	0.200	0.019	0.094	0.162	0.238
Rural	0.226	0.006	0.029	0.213	0.239
Total	0.223	0.006	0.027	0.211	0.235
Age-specific fertility rate (Women age 25–29)					
Urban	0.160	0.020	0.123	0.120	0.199
Rural	0.182	0.006	0.034	0.170	0.195
Total	0.180	0.006	0.033	0.168	0.192
Age-specific fertility rate (Women age 30–34)					
Urban	0.088	0.020	0.222	0.049	0.127
Rural	0.115	0.007	0.058	0.102	0.129
Total	0.112	0.006	0.057	0.099	0.124
Age-specific fertility rate (Women age 35–39)					
Urban	0.030	0.010	0.322	0.011	0.050
Rural	0.053	0.005	0.095	0.043	0.063
Total	0.050	0.005	0.091	0.041	0.059
Age-specific fertility rate (Women age 40–44)					
Urban	0.000	0.000	NC	0.000	0.000
Rural	0.020	0.004	0.173	0.013	0.027
Total	0.018	0.003	0.175	0.011	0.024
Age-specific fertility rate (Women age 45–49)					
Urban	0.000	0.000	NC	0.000	0.000
Rural	0.003	0.002	0.577	0.000	0.006
Total	0.002	0.001	0.576	0.000	0.005

Table A.2 Sampling errors, Bihar, 1998–99 (Contd.)

Variable/ residence	Value (R)	Standard error (SE)	Relative standard error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Neonatal mortality rate (5-year period preceding survey)					
Urban	32.751	10.480	0.320	11.791	53.711
Rural	47.810	3.703	0.077	40.404	55.216
Total	46.476	3.495	0.075	39.487	53.465
Infant mortality rate $_1q_0$ (5-year period preceding survey)					
Urban	53.300	10.956	0.206	31.388	75.212
Rural	74.810	4.579	0.061	65.652	83.969
Total	72.924	4.293	0.059	64.338	81.511
Child mortality rate $_4q_1$ (5-year period preceding survey)					
Urban	15.803	8.037	0.509	0.000	31.877
Rural	36.493	2.759	0.076	30.974	42.012
Total	34.686	2.628	0.076	29.429	39.942
Under-five mortality rate $_5q_0$ (5-year period preceding survey)					
Urban	68.261	13.476	0.197	41.308	95.213
Rural	108.573	5.515	0.051	97.543	119.603
Total	105.081	5.207	0.050	94.666	115.495
Crude death rate (Based on Household Questionnaire)					
Urban	8.317	1.056	0.127	6.206	10.429
Rural	11.641	0.560	0.048	10.521	12.761
Total	11.269	0.527	0.047	10.215	12.323
Crude birth rate (Based on women's birth history)					
Urban	22.329	1.314	0.059	19.701	24.957
Rural	28.813	0.585	0.020	27.644	29.982
Total	28.106	0.542	0.019	27.023	29.190

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 Bihar, information on age was missing for only 6 persons out of 37,713 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 Bihar.

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 Bihar, the extent of missing information is very low for age at death, age at first marriage, woman's education, and prevalence of diarrhoea in the two weeks preceding the survey (Table B.3). Missing information is higher for the month of birth of children born in the past 15 years. It is important to note, however, that the year of birth is reported almost in every case in which the month is missing. Data on height and weight of children and woman's haemoglobin level are available for more than 88 percent of the members of the respective reference groups. Missing information is highest (24 percent) for children's haemoglobin level. The response rates are

Table B.1 Household age distribution

Single-year age distribution of *de facto* household population by sex (weighted), Bihar, 1998–99

	Male		Female			Male		Female	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
< 1	514	2.7	465	2.5	38	256	1.3	234	1.3
1	477	2.5	459	2.5	39	128	0.7	159	0.9
2	465	2.4	478	2.6	40	289	1.5	191	1.0
3	516	2.7	467	2.5	41	128	0.7	121	0.7
4	567	2.9	538	2.9	42	254	1.3	232	1.3
5	651	3.4	582	3.2	43	68	0.4	84	0.5
6	711	3.7	640	3.5	44	100	0.5	124	0.7
7	477	2.5	496	2.7	45	260	1.3	175	1.0
8	723	3.7	662	3.6	46	153	0.8	149	0.8
9	469	2.4	426	2.3	47	66	0.3	109	0.6
10	659	3.4	605	3.3	48	223	1.2	150	0.8
11	379	2.0	364	2.0	49	99	0.5	48	0.3
12	684	3.5	635	3.4	50	221	1.1	64	0.3
13	351	1.8	377	2.0	51	120	0.6	67	0.4
14	465	2.4	447	2.4	52	162	0.8	150	0.8
15	383	2.0	328	1.8	53	62	0.3	87	0.5
16	447	2.3	437	2.4	54	64	0.3	99	0.5
17	239	1.2	281	1.5	55	149	0.8	148	0.8
18	508	2.6	471	2.6	56	123	0.6	156	0.8
19	249	1.3	320	1.7	57	40	0.2	63	0.3
20	353	1.8	370	2.0	58	129	0.7	135	0.7
21	225	1.2	297	1.6	59	60	0.3	62	0.3
22	410	2.1	426	2.3	60	248	1.3	136	0.7
23	219	1.1	234	1.3	61	63	0.3	77	0.4
24	291	1.5	339	1.8	62	139	0.7	129	0.7
25	353	1.8	352	1.9	63	40	0.2	41	0.2
26	350	1.8	388	2.1	64	49	0.3	46	0.2
27	158	0.8	172	0.9	65	164	0.9	103	0.6
28	339	1.8	404	2.2	66	58	0.3	54	0.3
29	163	0.8	257	1.4	67	22	0.1	36	0.2
30	387	2.0	314	1.7	68	80	0.4	75	0.4
31	145	0.8	201	1.1	69	25	0.1	31	0.2
32	377	2.0	340	1.8	70+	493	2.6	295	1.6
33	114	0.6	134	0.7	Don't				
34	164	0.8	184	1.0	know/				
35	399	2.1	295	1.6	missing	2	0.0	4	0.0
36	313	1.6	278	1.5					
37	83	0.4	107	0.6	Total	19,314	100.0	18,399	100.0

Note: The *de facto* population includes all usual residents and visitors who stayed in the household the night before the interview.

acceptable for the height and weight and child haemoglobin level since in any survey many children cannot be measured because they are not at home or they are ill at the time of the survey. In some cases when the child was at home, either the child refused to be measured or the mother refused to allow the child to be measured because of cultural beliefs. 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.

Table B.2 Age distribution of eligible and interviewed women

Age distribution of the *de facto* household population of women age 10–54 and of interviewed women age 15–49, and percentage of eligible women who were interviewed (weighted), Bihar, 1998–99

Age	All women	Ever-married women	Interviewed women		Percent interviewed
			Number	Percent	
10-14	2,427	14	NA	NA	NA
15-19	1,836	685	660	9.4	96.3
20-24	1,666	1,446	1,385	19.8	95.8
25-29	1,573	1,536	1,481	21.1	96.4
30-34	1,173	1,168	1,130	16.1	96.8
35-39	1,074	1,072	1,033	14.7	96.4
40-44	751	751	719	10.3	95.7
45-49	631	630	599	8.6	95.1
50-54	466	466	NA	NA	NA
15–49	8,704	7,288	7,008	100.0	96.1

Note: The *de facto* population includes all 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), Bihar, 1998–99

Indicator	Reference group	Percentage missing information	Number of cases
Birth date	Births in past 15 years		
Month only		1.20	16,022
Month and year		0.04	16,022
Age at death	Deaths to births in past 15 years	0.46	1,786
Age at first marriage	Ever-married women age 15–49	0.69	7,024
Woman's education	Ever-married women age 15–49	0.00	7,024
Anthropometry	Living children age 0–35 months		
Height		10.22	2,732
Weight		10.25	2,732
Height or weight		10.52	2,732
Woman's haemoglobin level	Ever-married women age 15–49	11.65	7,024
Child's haemoglobin level	Living children age 6–35 months	23.59	2,161
Diarrhoea in past 2 weeks	Living children age 1–35 months	0.35	2,692

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, 99 percent of living children listed in the birth history had complete birth dates recorded, as did 97 percent of children who had died. The completeness of data on birth dates for both surviving and nonsurviving children is excellent, particularly 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 1995, 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. However, the sharp drop in the annual number of births between 1992–94 and 1995–98 (particularly for nonsurviving 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 Bihar, because the 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 77 for 0–4 years, 78 for 5–9 years, and 71 for 10–14 years preceding the survey. Although there was no severe underreporting of early neonatal deaths in NFHS-2, there was some misreporting of age at death due to a preference for reporting the age at death at 6, 8, 12, 15, and 20 days (Table B.5).

Table B.6 shows the percentage of infant deaths that occurred during the neonatal period. These percentages are also consistently high for the different time periods preceding the survey, suggesting that there is no major omission of early deaths. One problem that is inherent in most retrospective surveys is heaping of the age at death on certain digits, e.g., 6, 12, and 18 months. Misreporting of age at death will bias estimates of the age pattern of mortality if the net result of misreporting is the transference of deaths between age segments for which the rates are calculated. For example, an overestimate of child mortality relative to infant mortality may result if children dying during the first year of life are reported as having died at age one or older. Thus, heaping at 12 months can bias the mortality estimates because a certain fraction of these deaths 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.

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), Bihar, 1998–99

	Number of births			Percent with complete birth date[1]			Sex ratio at birth[2]			Calendar year ratio[3]		
Calendar year	L	D	T	L	D	T	L	D	T	L	D	T
1999	118	5	123	100.0	100.0	100.0	826	0	767	NA	NA	NA
1998	982	65	1,047	99.9	100.0	99.9	930	974	933	NC	NC	NC
1997	859	60	918	99.6	100.0	99.6	934	809	926	NC	NC	NC
1996	884	100	984	99.4	100.0	99.5	1,007	692	970	103.1	157.0	106.8
1995	856	68	923	99.4	100.0	99.4	916	835	910	84.8	52.6	81.1
1994	1,135	157	1,292	99.1	96.6	98.8	930	1,202	960	115.4	157.4	119.2
1993	1,111	132	1,244	99.2	94.5	98.7	950	940	949	95.1	82.2	93.6
1992	1,202	165	1,367	98.8	96.1	98.5	890	1,012	904	120.1	122.1	120.3
1991	890	138	1,027	98.5	97.7	98.4	963	1,038	973	73.1	83.2	74.4
1990	1,231	166	1,397	98.4	96.9	98.2	921	1,091	940	143.0	123.3	140.4
1989	832	131	963	98.7	97.6	98.6	912	1,420	968	72.6	87.0	74.3
1988	1,062	136	1,198	98.8	100.0	98.9	897	1,109	919	137.2	117.7	134.7
1993–97	4,844	518	5,362	99.3	97.6	99.1	947	925	944	NA	NA	NA
1988–92	5,217	735	5,952	98.6	97.6	98.5	915	1,117	937	NA	NA	NA
1983–87	3,750	574	4,323	98.7	97.4	98.5	977	1,124	996	NA	NA	NA
1978–82	2,739	466	3,204	98.7	96.0	98.3	849	1,005	870	NA	NA	NA
1977 or earlier	2,418	612	3,029	98.5	97.0	98.2	814	887	828	NA	NA	NA
All	20,066	2,974	23,040	98.9	97.2	98.7	912	1,008	924	NA	NA	NA

NA: Not applicable
NC: Not calculated because full-year data were not collected for 1998 and 1999 (the survey began during 1998)
[1] Both year and month of birth given
[2] $(B_f/B_m)x1000$, where B_f and B_m are the numbers of female and male births, respectively
[3] $[2B_x/(B_{x-1}+B_{x+1})]x100$, where B_x is the number of births in calendar year x

Table B.5 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 early neonatal deaths for births during five-year periods preceding the survey (weighted), Bihar, 1998–99

	Years preceding survey			
Age at death (days)	0–4	5–9	10–14	0–14
< 1	45	59	42	147
1	54	73	65	192
2	20	29	16	65
3	16	36	11	63
4	11	17	10	38
5	12	14	9	35
6	22	21	13	57
7	9	10	5	24
8	7	10	14	31
9	8	8	3	19
10	4	11	4	19
11	3	3	2	8
12	2	5	10	17
13	0	2	1	3
14	0	0	1	1
15	4	5	11	20
16	0	0	1	1
17	1	0	0	1
18	1	2	4	7
19	0	0	0	0
20	5	6	2	13
21	1	2	2	5
22	0	2	3	5
23	0	0	0	0
24	1	2	0	3
25	1	0	2	3
26	1	0	0	1
27	0	0	0	0
28	1	0	0	1
29	0	0	0	0
30	5	0	3	8
0–30	236	317	235	787
Percent early neonatal[1]	77.0	78.4	71.0	75.8

[1]Deaths during the first 6 days divided by deaths during the first 30 days

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 there is some heaping of deaths at 6, 12, and 18 months of age. Digit preference appears not to be serious enough to alter substantially the mortality rates calculated here. Because the extent of heaping on 12 months is minor, probably due to the strong emphasis on this potential problem during training of the interviewers, adjustment of the infant and child mortality rates is unnecessary.

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 neonatal deaths for births during five-year periods preceding the survey (weighted), Bihar, 1998–99

	Years preceding survey			
Age at death (months)	0–4	5–9	10–14	0–14
< 1	236	317	235	787
1	22	22	16	61
2	19	24	19	62
3	16	21	14	51
4	8	15	7	30
5	7	5	5	17
6	15	23	14	53
7	8	13	6	27
8	6	9	9	24
9	2	5	17	24
10	7	7	5	19
11	4	11	9	24
12	10	8	13	31
13	6	12	8	26
14	1	12	11	24
15	3	5	5	13
16	2	3	4	8
17	1	2	4	7
18	4	17	16	36
19	0	2	2	4
20	0	0	1	1
21	1	3	0	4
22	1	1	3	5
23	2	0	1	3
1 year	7	13	7	27
Missing	3	1	0	4
0–11	350	472	356	1,178
Percent neonatal[1]	67.3	67.1	66.0	66.8

[1]Deaths during the first month divided by deaths during the first year

APPENDIX C

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APPENDIX D

SURVEY INSTRUMENTS

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
HOUSEHOLD QUESTIONNAIRE

INDIA

CONFIDENTIAL
For Research
Purposes Only

IDENTIFICATION

STATE _____

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 MONTH YEAR 1 9
INTERVIEWER'S NAME				NAME CODE
RESULT*				RESULT CODE
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS

*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

TOTAL ELIGIBLE WOMEN

LINE NO. OF RESP. TO HOUSEHOLD SCHEDULE

	SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
DATE				
NAME				

PREVIOUS PAGE BLANK

HOUSEHOLD SCHEDULE

1	RECORD THE TIME.	HOUR..... [ ][ ] MINUTES..... [ ][ ]

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					
							MARITAL STATUS	ELIGIBILITY			IF NEVER ATTENDED SCHOOL	IF EVER ATTENDED SCHOOL	IF AGE LESS THAN 18 YEARS	IF NOT IN SCHOOL
								CIRCLE LINE NUMBER OF EVER-MARRIED FEMALES AGE 15-49 (EXCLUDE NG AND NM)						
(2)	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household. (3)	What is the relationship of (NAME) to the head of the household?* (4)	Does (NAME) usually live here? (5)	Did (NAME) stay here last night? (6)	Is (NAME) male or female? (7)	How old is (NAME)? ** (8)	What is the current marital status of (NAME)?*** (9)	(10)	Can (NAME) read and write? (11)	Has (NAME) ever been to school? (12)	What is the main reason (NAME) never went to school? **** (13)	What is the highest grade (NAME) has completed? ***** (14)	Is (NAME) still in school? (15)	What is the main reason (NAME) is not going to school?****** (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
01		[ ][ ]	1 2	1 2	1 2	[ ][ ]	1 2 3 4 5 6 7	01	1 2	1 2	[ ][ ]	[ ][ ]	1 2	[ ][ ]
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 ☐☐

* 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:									
		IF WORKING	Asthma?		Tuberculosis?		IF SUFFERS FROM TUBERCULOSIS																	
	What kind of work does (NAME) do most of the time? (17)	Does (NAME) earn cash for this work? (18)	RECORD FOR EACH PERSON (19)		RECORD FOR EACH PERSON (20)		Has (NAME) received medical treatment for tuberculosis? (21)		Did anyone listed suffer from malaria at any time during the last three months? RECORD FOR EACH PERSON (22)		Did anyone listed suffer from jaundice at any time during the last twelve 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)		Has any (other) person listed ever smoked regularly? RECORD FOR CURRENT NONSMOKERS ONLY (27)		
		YES	NO	YES	NO	YES	NO	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	1	2	3
02		1	2	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	1	2	3
04		1	2	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	1	2	3
06		1	2	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	1	2	3
08		1	2	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	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	DK
09		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
10		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
11		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
12		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
13		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
14		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
15		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
16		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..... [ ][ ][ ]	
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..... [ ][ ]	
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 ZOROASTRIAN/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..... [ ][ ][ ] . [ ]	
45	_____ (SIZE AND UNIT) Out of this land, how much is irrigated?	ACRES..... [ ][ ][ ] . [ ] NONE.....9995	
46	Does this household own any livestock?	YES.....1 NO.....2	
47	Does the household own any of the following:	YES NO	
	A mattress?	MATTRESS.....1 2	
	A pressure cooker?	PRESSURE COOKER.....1 2	
	A chair?	CHAIR.....1 2	
	A cot or bed?	COT/BED.....1 2	
	A table?	TABLE.....1 2	
	A clock or watch?	CLOCK/WATCH.....1 2	
	An electric fan?	ELECTRIC FAN.....1 2	
	A bicycle?	BICYCLE.....1 2	
	A radio or transistor?	RADIO/TRANSISTOR.....1 2	
	A sewing machine?	SEWING MACHINE.....1 2	
	A telephone?	TELEPHONE.....1 2	
	A refrigerator?	REFRIGERATOR.....1 2	
	A black and white television?	TELEVISION(B&W).....1 2	
	A colour television?	TELEVISION(COLOUR).....1 2	
	A moped, scooter, or motorcycle?	MOPED/SCOOTER/MOTORCYCLE...1 2	
	A car?	CAR.....1 2	
	A water pump?	WATER PUMP.....1 2	
	A bullock cart?	BULLOCK CART.....1 2	
	A thresher?	THRESHER.....1 2	
	A tractor?	TRACTOR.....1 2	
48	What is the main type of kitchenware this household uses?	CLAY.....1 ALUMINIUM.....2 CAST IRON.....3 BRASS/COPPER.....4 STAINLESS STEEL.....5 OTHER_____ (SPECIFY) 6	

49	TYPE OF HOUSE. ROOF _____ WALLS_____ RECORD OBSERVATION. FLOOR_____	PUCCA.....1 SEMI-PUCCA.....2 KACHHA.....3	
50A	TYPE OF SALT USED FOR COOKING:	REFINED SALT.....1 COARSE SALT.....2	
50B	TEST COOKING SALT FOR IODINE:	0 PPM (NO IODINE).....1 7 PPM.....2 15 PPM.....3 30 PPM.....4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
51	Did any usual resident of this household die since January 1996?	YES.....1 NO.....2	>63
52	How many persons died?	TOTAL DEATHS..... ☐	

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?
01 (NAME)	MALE.....1 FEMALE...2	DAYS....1 MONTHS..2 YEARS...3	MONTH.. YEAR...		YES.....1 NO.....2 (GO TO NEXT DEATH)	YES.....1 (GO TO 62) NO.....2	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 MONTHS..2 YEARS...3	MONTH.. YEAR...		YES.....1 NO.....2 (GO TO NEXT DEATH)	YES.....1 (GO TO 62) NO.....2	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 MONTHS..2 YEARS...3	MONTH.. YEAR...		YES.....1 NO.....2 (GO TO NEXT DEATH)	YES.....1 (GO TO 62) NO.....2	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..... ☐ MINUTES..... ☐

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
WOMAN'S QUESTIONNAIRE

INDIA

CONFIDENTIAL
For Research
Purposes Only

IDENTIFICATION

STATE _____

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 MONTH YEAR 1 9
INTERVIEWER'S NAME				NAME CODE
RESULT*				RESULT CODE
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS

*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

	SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
DATE				
NAME				

SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR..... [ ][ ] MINUTES..... [ ][ ]	

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.

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.

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?

Signature of Interviewer:_____ Date:_____

RESPONDENT AGREES FOR INTERVIEW.....1

RESPONDENT DOES NOT AGREE FOR INTERVIEW.....2 ——> END

V

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	
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	
106	How old were you at your last birthday? COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS..... [ ][ ]	

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 [ ][ ]	
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 first marriage?	AGE IN COMPLETED YEARS..... [ ][ ]	
112	How old were you when you started living with your first husband?	AGE IN COMPLETED YEARS..... [ ][ ] GAUNA HAD NOT TAKEN PLACE..... 96	
113	How old were you when your first marriage dissolved?	AGE IN COMPLETED YEARS..... [ ][ ]	
114	How old were you at the time of your (current) marriage?	AGE IN COMPLETED YEARS..... [ ][ ]	
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 [ ] v GRADE 6 AND ABOVE [ ]		>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:

		DAILY	WEEKLY	OCCASIONALLY	NEVER
Milk or Curd?	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..... [ ][ ]	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES.....1 NO.....2	 >206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE..... [ ][ ] DAUGHTERS ELSEWHERE..... [ ][ ]	
206	Have you ever given birth to a boy or a girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed any sign of life but only survived a few hours or days?	YES.....1 NO.....2	 >208
207	In all, how many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD..... [ ][ ] GIRLS DEAD..... [ ][ ]	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE RECORD '00'.	TOTAL..... [ ][ ]	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL ____ births during your life. Is that correct? YES [ ] v NO [ ] > PROBE AND CORRECT 201-208 AS NECESSARY		
210	CHECK 208: ONE OR MORE BIRTHS [ ] v NO BIRTHS [ ]		>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.
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 → 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 1995.
IF NONE, RECORD '0'. ☐ >229

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
225	Have you ever had a stillbirth?	YES.....1 NO.....2	>227
226	How many stillbirths have you had?	NUMBER OF STILLBIRTHS..... [ ]	
227	Have you ever had an abortion? PROBE FOR SPONTANEOUS AND INDUCED ABORTIONS.	YES.....1 NO.....2	>229
228	How many abortions have you had? PROBE FOR NUMBER OF SPONTANEOUS AND INDUCED ABORTIONS. IF NONE, RECORD '0'.	NO. OF SPON. ABORTIONS..... [ ] NO. OF INDUCED ABORTIONS..... [ ]	
229	CHECK 107: CURRENTLY MARRIED [ ] v SEPARATED DESERTED DIVORCED WIDOWED [ ]		>301
230	Are you pregnant now?	YES.....1 NO.....2 UNSURE.....8	>233
231	How many months pregnant are you?	MONTHS..... [ ][ ]	
232	At the time you became pregnant, did you want to become pregnant then, did you want to wait until later, or did you want no (more) children at all?	THEN.....1 LATER.....2 NO MORE.....3	>301
233	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO.....1 [ ][ ] WEEKS AGO.....2 [ ][ ] MONTHS AGO.....3 [ ][ ] YEARS AGO.....4 [ ][ ] IN MENOPAUSE/HYSTERECTOMY.....993 BEFORE LAST BIRTH.....994 NEVER MESTRUATED.....995	

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..... [ ][ ]	
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..... [ ][ ]	
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 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/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. 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	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
312	CHECK 311A: RECEIVED SERVICE ☐ v How long did you have to wait before being served? DID NOT RECEIVE SERVICE ☐ v How long did you have to wait before you learned that the service you went for would not be available?	MINUTES.....1 ☐☐ HOURS.....2 ☐☐ NO WAIT AT ALL.....995 OTHER_____996 (SPECIFY)	
313	During this visit did the staff spend enough time with you?	YES.....1 NO.....2	
314	Did the staff talk to you nicely, somewhat nicely, or not nicely?	NICELY.....1 SOMEWHAT NICELY.....2 NOT NICELY.....3	
315	Did the staff respect your need for privacy?	YES.....1 NO.....2 SAYS PRIVACY NOT NEEDED.....3	
316	Would you say the health facility was very clean, somewhat clean, or not clean?	VERY CLEAN.....1 SOMEWHAT CLEAN.....2 NOT CLEAN.....3	
317	Now I would like to ask about all the contacts you have had with health or family planning workers at home or anywhere else in the last 12 months or ever before. During any of these contacts, which methods of delaying or avoiding pregnancy were discussed, if any? PROBE: Any other methods discussed? 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) NONE/NEVER DISCUSSED.....Y	

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?

01	Pill Women can take a pill daily or weekly.	HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3
02	Condom or Nirodh Men can use a rubber sheath during sexual intercourse.	HAS USED .....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3
03	IUD or Loop Women can have a loop or coil placed inside them by a doctor or a nurse.	HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3
04	Female sterilization Women can have an operation to avoid having any more children.	Have you ever heard of female sterilization? IF YES: Have you ever had an operation to avoid having any more children? HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3
05	Male sterilization Men can have an operation to avoid having any more children.	Have you ever heard of male sterilization? IF YES: Has your husband ever had an operation to avoid having any more children? HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3
06	Rhythm or safe period method Couples can avoid having sexual intercourse on certain days of the month when the woman is more likely to become pregnant.	HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3
07	Withdrawal Men can be careful and pull out before climax.	HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3
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? 1 _____ (SPECIFY) 2 _____ (SPECIFY)	HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3 HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
319	CHECK 318: NOT A SINGLE CODE '1' (NEVER USED) ☐	AT LEAST ONE CODE '1' (EVER USED) ☐	---> 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..... ☐☐	
323	CHECK 107: CURRENTLY MARRIED ☐	SEPARATED DESERTED DIVORCED WIDOWED ☐	---->364
324	CHECK 230: NOT PREGNANT OR UNSURE ☐	PREGNANT ☐	---->358
325	CHECK 318: NEITHER STERILIZED ☐	HE OR SHE STERILIZED ☐	---->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 327A	Which method are you using? CIRCLE '04' FOR FEMALE STERILIZATION. CIRCLE '05' FOR MALE STERILIZATION.	PILL.....01 CONDOM/NIRODH.....02 IUD/LOOP.....03 FEMALE STERILIZATION.....04 MALE STERILIZATION.....05 RHYTHM/SAFE PERIOD.....06 WITHDRAWAL.....07 OTHER_____96 (SPECIFY)	---->336 ---->339 ---->350

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
328	For how many months have you been using pills/condoms continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... [ ][ ] 8 YEARS OR LONGER.....96	
329	Where did you obtain the pills/condoms the last time? IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE. _____ (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 GOVT. PARAMEDIC.....17 CAMP.....18 OTHER PUBLIC SECTOR HEALTH FACILITY.....19 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 SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE.....43 OTHER _____ (SPECIFY) 96	->331 ->331
330	Do you know where this person obtained the pills/condoms the last time? IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE. _____ (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 GOVT. PARAMEDIC.....17 CAMP.....18 OTHER PUBLIC SECTOR HEALTH FACILITY.....19 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 SOURCE SHOP.....41 OTHER _____ (SPECIFY) 96 DK.....98	

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/UHP/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 _____ (SPECIFY) 96	
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 _____ (SPECIFY) X 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..... [ ][ ] 8 YEARS OR LONGER.....96	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
351	Have you had any problems related to the use of (CURRENT METHOD)?	YES.....1 NO.....2	->362
352	What problems have you had related to the use of (CURRENT METHOD)? PROBE: Any other problems? RECORD ALL MENTIONED.	WEIGHT GAIN.....A WEIGHT LOSS.....B TOO MUCH BLEEDING.....C HYPERTENSION.....D HEADACHE/BODYACHE/BACKACHE.....E NAUSEA/VOMITING.....F NO MENSTRUATION.....G WEAKNESS/TIREDNESS.....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)	
353	When you first started having these problems, did you talk to anyone about these problems?	YES.....1 NO.....2	->362
354	Who did you talk to about these problems? Any other person? RECORD ALL PERSONS TALKED TO.	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)	->362
355	What is the main reason you stopped using family planning?	METHOD FAILED/GOT PREGNANT.....01 LACK OF SEXUAL SATISFACTION.....02 CREATED MENSTRUAL PROBLEM.....03 CREATED HEALTH PROBLEM.....04 INCONVENIENT TO USE.....05 HARD TO GET METHOD.....06 PUT ON WEIGHT.....07 DID NOT LIKE THE METHOD.....08 WANTED TO HAVE A CHILD.....09 WANTED TO REPLACE DEAD CHILD....10 LACK OF PRIVACY FOR USE.....11 HUSBAND AWAY.....12 COST TOO MUCH.....13 OTHER_____96 (SPECIFY)	->358

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
356	CHECK 107: CURRENTLY MARRIED ☐ v	SEPARATED DESERTED DIVORCED WIDOWED ☐	>364
356A	CHECK 230: NOT PREGNANT OR UNSURE ☐ v	PREGNANT ☐	>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 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	>362
358	Do you think you will use a method to delay or avoid pregnancy within the next 12 months?	YES.....1 NO.....2 DK.....8	>360
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 RHYTHM/SAFE PERIOD.....06 WITHDRAWAL.....07 OTHER_____96 (SPECIFY) DK/UNSURE.....98	>362

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
361	What is the main reason that you think you will not use a family planning method at any time in the future?	FERTILITY-RELATED REASONS NOT HAVING SEX.....11 INFREQUENT SEX.....12 MENOPAUSAL/HAD HYSTERECTOMY..13 SUBFECUND/INFECUND.....14 WANTS AS MANY CHILDREN AS POSSIBLE.....15 OPPOSITION TO USE OPPOSED TO FAMILY PLANNING...21 HUSBAND OPPOSED.....22 OTHER PEOPLE OPPOSED.....23 AGAINST RELIGION.....24 LACK OF KNOWLEDGE KNOWS NO METHOD.....31 KNOWS NO SOURCE.....32 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 OTHER_____96 (SPECIFY) DK.....98	
362	In the last few months, have you discussed the practice of family planning with your husband, friends, neighbours, or relatives?	YES.....1 NO.....2	>364
363	With whom? Anyone else? RECORD ALL MENTIONED.	HUSBAND.....A MOTHER.....B SISTER(S).....C DAUGHTER.....D MOTHER-IN-LAW.....E SISTER-IN-LAW.....F FRIEND/NEIGHBOUR.....G OTHER_____X (SPECIFY)	
364	In the last few months, have you heard or seen any message about family planning:	YES NO	
	on radio?	RADIO..... 1 2	
	on television?	TELEVISION..... 1 2	
	in a cinema or film show?	CINEMA/FILM SHOW..... 1 2	
	in a newspaper or magazine?	NEWSPAPER/MAGAZINE..... 1 2	
	on a wall painting or hoarding?	WALL PAINTING/HOARDING... 1 2	
	in a drama, folk dance, or street play?	DRAMA/FOLK DANCE/STREET PLAY..... 1 2	

SECTION 4A. ANTENATAL, NATAL, AND POSTNATAL CARE

401	CHECK 224 ONE OR MORE BIRTHS SINCE JAN. 1995 ☐	NO BIRTHS SINCE JAN. 1995 ☐ → (SKIP TO 486)	
402	ENTER THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF LAST TWO BIRTHS SINCE JANUARY 1995 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 1995. (We will talk about one child at a time.)		
	LINE NUMBER FROM Q. 212	LAST BIRTH ☐☐	NEXT-TO-LAST BIRTH ☐☐
	FROM Q. 212 AND Q. 216	NAME _____ ALIVE ☐ DEAD ☐	NAME _____ ALIVE ☐ DEAD ☐
403	At the time you became pregnant with (NAME), did you want to become pregnant then, did you want to wait until later, or did you want no (more) children at all?	THEN.....1 (SKIP TO 405) LATER.....2 NO MORE.....3 (SKIP TO 405)	THEN.....1 (SKIP TO 405) LATER.....2 NO MORE.....3 (SKIP TO 405)
404	How much longer would you like to have waited?	MONTHS.....1 ☐☐ YEARS.....2 ☐☐ DK.....998	MONTHS.....1 ☐☐ YEARS.....2 ☐☐ DK.....998
405	When you were pregnant with (NAME), did you go for an antenatal check-up?	YES.....1 NO.....2 (SKIP TO 407)	YES.....1 NO.....2 (SKIP TO 407)
406	Whom did you see? Anyone else? 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 ☐ NO IN BOTH ☐ (SKIP TO 413)	YES IN EITHER ☐ NO IN BOTH ☐ (SKIP TO 413)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
409	How many months pregnant were you when you first received an antenatal check-up?	MONTHS..... [ ][ ]	MONTHS..... [ ][ ]
410	How many times did you receive antenatal check-ups during this pregnancy?	NO. OF TIMES..... [ ][ ]	NO. OF TIMES..... [ ][ ]
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 (SKIP TO 414)	FAMILY PLANNING.... 1 2 (SKIP TO 414)
413	What is the main reason you did not receive an antenatal check-up?	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 LACK OF KNOWLEDGE.....08 NO HEALTH WORKER VISITED.....09 OTHER_____ (SPECIFY) 96	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 LACK OF KNOWLEDGE.....08 NO HEALTH WORKER VISITED.....09 OTHER_____ (SPECIFY) 96

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
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..... [ ] DK.....8	TIMES..... [ ] DK.....8

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH 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 CODE A, B, OR C ☐ (SKIP TO 425) NO CODE A, B, OR C ☐	ANY CODE A, B, OR C ☐ (SKIP TO 425) NO CODE A, B, 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 PROFESIONAL.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 PROFESIONAL.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)<-	YES.....1 NO.....2 (SKIP TO 429)<-
428	How much did (NAME) weigh?	GRAMS..... [ ][ ][ ][ ] DK.....9998	GRAMS..... [ ][ ][ ][ ] 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)<-	YES.....1 NO.....2 (SKIP TO 433)<-
430	How soon after the birth of (NAME) did you first get a check-up?	DAYS.....1 [ ][ ] WEEKS.....2 [0][ ]	DAYS.....1 [ ][ ] WEEKS.....2 [0][ ]
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	Did any of the following happen when you had the check-up:	YES NO	YES NO
	Was your abdomen examined?	ABDOMEN EXAMINED... 1 2	ABDOMEN EXAMINED... 1 2
	Did you receive advice on family planning?	FAMILY PLANNING.... 1 2	FAMILY PLANNING.... 1 2
	Did you receive advice on breastfeeding?	BREASTFEEDING..... 1 2	BREASTFEEDING..... 1 2
	Did you receive advice on baby care?	BABY CARE..... 1 2	BABY CARE..... 1 2
433	At any time during the two months after the delivery of (NAME), did you have any of the following:	YES NO	YES NO
	Massive vaginal bleeding?	VAGINAL BLEEDING... 1 2	VAGINAL BLEEDING... 1 2
	Very high fever?	VERY HIGH FEVER.... 1 2	VERY HIGH FEVER.... 1 2
434	Has your period returned since the birth of (NAME)?	YES .....1 (SKIP TO 436) NO.....2 (SKIP TO 437)	
435	Did your period return between the birth of (NAME) and your next pregnancy?		YES .....1 NO.....2 (SKIP TO 439)
436	For how many months after the birth of (NAME) did you not have a period?	MONTHS..... [ ][ ] DK.....98	MONTHS..... [ ][ ] DK.....98
437	CHECK 230: RESPONDENT PREGNANT?	NOT PREGNANT OR Q230 NOT ASKED PREGNANT OR UNSURE (SKIP TO 439)	
438	Have you resumed sexual relations since the birth of (NAME)?	YES.....1 NO.....2 (SKIP TO 440)	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
439	For how many months after the birth of (NAME) did you not have sexual relations?	MONTHS..... [ ][ ] DK.....98	MONTHS..... [ ][ ] DK.....98
440	Did you ever breastfeed (NAME)?	YES.....1 (SKIP TO 442) NO.....2	YES.....1 (SKIP TO 442) NO.....2
441	Why did you not breastfeed (NAME)?	MOTHER ILL/WEAK.....01 CHILD ILL/WEAK.....02 CHILD DIED.....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.....05 MOTHER WORKING.....06 CHILD REFUSED.....07 OTHER_____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)
442	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY.....000 HOURS.....1 [ ][ ] DAYS.....2 [ ][ ]	IMMEDIATELY.....000 HOURS.....1 [ ][ ] DAYS.....2 [ ][ ]
443	Did you squeeze out the milk from the breast before you first put (NAME) to the breast?	YES.....1 NO.....2	YES.....1 NO.....2
444	CHECK 216: CHILD ALIVE?	ALIVE [ ] DEAD [ ] (SKIP TO 446)	ALIVE [ ] DEAD [ ] (SKIP TO 446)
445	Are you still breastfeeding (NAME)?	YES.....1 (SKIP TO 449) NO.....2	YES.....1 (SKIP TO 449) NO.....2
446	For how many months did you breastfeed (NAME)?	MONTHS..... [ ][ ] UNTIL DIED.....96 (SKIP TO 452)	MONTHS..... [ ][ ] UNTIL DIED.....96 (SKIP TO 452)
447	Why did you stop breastfeeding (NAME)?	MOTHER ILL/WEAK.....01 CHILD ILL/WEAK.....02 CHILD DIED.....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.....05 MOTHER WORKING.....06 CHILD REFUSED.....07 WEANING AGE.....08 BECAME PREGNANT.....09 STARTED USING CONTRACEPTION.....10 OTHER_____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)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
448	CHECK 216: CHILD ALIVE?	ALIVE ☐ DEAD ☐ (SKIP TO 452)	ALIVE ☐ DEAD ☐ (SKIP TO 452)
449	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 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..... ☐	PLAIN WATER..... ☐
	Powdered milk?	POWDERED MILK..... ☐	POWDERED MILK..... ☐
	Any other milk (other than breast milk)?	OTHER MILK..... ☐	OTHER MILK..... ☐
	Any other liquid?	OTHER LIQUID..... ☐	OTHER LIQUID..... ☐
	Green, leafy vegetables?	GREEN/LEAFY VEG..... ☐	GREEN/LEAFY VEG..... ☐
	Fruits?	FRUITS..... ☐	FRUITS..... ☐
	Any other solid or mushy food?	SOLID/MUSHY FOOD..... ☐	SOLID/MUSHY FOOD..... ☐
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 1995 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.)

	LAST BIRTH	NEXT-TO-LAST BIRTH
LINE NUMBER FROM Q. 212	[ ][ ]	[ ][ ]
FROM Q. 212 AND Q. 216	NAME _____ ALIVE [ ] DEAD [ ] (GO TO NEXT COLUMN, OR IF NO MORE BIRTHS, GO TO 481)	NAME _____ ALIVE [ ] DEAD [ ] (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) YES, NOT SEEN.....2 (SKIP TO 458) NO CARD.....3	YES, SEEN.....1 (SKIP TO 456) YES, NOT SEEN.....2 (SKIP TO 458) NO CARD.....3
455 Did you ever have a vaccination card for (NAME)?	YES.....1 (SKIP TO 458) NO.....2	YES.....1 (SKIP TO 458) 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) (SKIP TO 460) NO.....2 DK.....8 (SKIP TO 460)	YES.....1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 456) (SKIP TO 460) NO.....2 DK.....8 (SKIP TO 460)

		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..... ☐	NUMBER OF TIMES..... ☐
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..... ☐	NUMBER OF TIMES..... ☐
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 ☐ NO ☐ (SKIP TO 462)	YES ☐ NO ☐ (SKIP TO 462)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
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 _____ (SPECIFY) 96	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 _____ (SPECIFY) 96
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..... [ ][ ]	MONTHS AGO..... [ ][ ]
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 NAME _____	NEXT-TO-LAST BIRTH NAME _____
468	Where did you seek advice or treatment? Anywhere else? RECORD ALL MENTIONED.	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)
469	Has (NAME) had diarrhoea in the last two weeks?	YES.....1 NO.....2 (SKIP TO 480) DK.....8	YES.....1 NO.....2 (SKIP TO 480) DK.....8
470	Was there any blood in the stools?	YES.....1 NO.....2	YES.....1 NO.....2
471	(Including breast milk) Was he/she given the same amount to drink as before the diarrhoea, or more, or less?	SAME.....1 MORE.....2 LESS.....3 DK.....8	SAME.....1 MORE.....2 LESS.....3 DK.....8
472	Was he/she given the same amount of food as before the diarrhoea, or more, or less?	SAME.....1 MORE.....2 LESS.....3 STOPPED COMPLETELY.....4 DK.....8	SAME.....1 MORE.....2 LESS.....3 STOPPED COMPLETELY.....4 DK.....8
473	Did you seek advice or treatment for the diarrhoea?	YES.....1 NO.....2 (SKIP TO 475)	YES.....1 NO.....2 (SKIP TO 475)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
474	Where did you seek advice or treatment? Anywhere else? RECORD ALL MENTIONED.	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)
475	When (NAME) had diarrhoea, was he/she given any of the following to drink:	YES NO DK	YES NO DK
	A fluid made from a special packet called [LOCAL NAME]?	FLUID FROM ORS PACKET..... 1 2 8	FLUID FROM ORS PACKET..... 1 2 8
	Gruel made from rice [OR OTHER LOCAL GRAIN, TUBER, OR PLANTAIN]?	GRUEL..... 1 2 8	GRUEL..... 1 2 8
476	CHECK 475: FLUID FROM ORS PACKET GIVEN?	YES ☐ NO OR DK ☐ (SKIP TO 478)	YES ☐ NO OR DK ☐ (SKIP TO 478)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
477	Where did you obtain the ORS packet?	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 NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22 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 OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE...43 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 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22 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 OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE...43 OTHER _____ 96 (SPECIFY)
478	Was anything (else) given to treat the diarrhoea?	YES.....1 NO.....2 (SKIP TO 480) DK.....8	YES.....1 NO.....2 (SKIP TO 480) DK.....8
479	What was given to treat the diarrhoea? Anything else? RECORD ALL MENTIONED.	PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E OTHER _____ X (SPECIFY)	PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E OTHER _____ X (SPECIFY)
480	→	GO BACK TO 454 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481	GO TO 481

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
481	CHECK 475 ALL COLUMNS: ORS FLUID FROM PACKET GIVEN TO ANY CHILD [ ] ——>483 ORS FLUID FROM PACKET NOT GIVEN TO ANY CHILD OR 475 NOT ASKED [ ] v		
482	Have you ever heard of a special product called [LOCAL TERM FOR ORS] you can get for the treatment of diarrhoea? IF SHE NEVER HEARD OF ORS, SHOW GOVERNMENT AND COMMERCIAL ORS PACKETS AND ASK: Have you ever seen a packet like one of these before?	YES, WITHOUT SHOWING PACKETS....1 YES, AFTER SHOWING PACKETS.....2 NO.....3	
483	When a child has diarrhoea, should he/she be given less to drink than usual, about the same amount, or more than usual?	LESS TO DRINK.....1 ABOUT SAME AMOUNT TO DRINK.....2 MORE TO DRINK.....3 DK.....8	
484	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? Any other signs? RECORD ALL MENTIONED.	REPEATED WATERY STOOLS.....A ANY WATERY STOOLS.....B REPEATED VOMITING.....C ANY VOMITING.....D BLOOD IN STOOLS.....E FEVER.....F MARKED THIRST.....G NOT EATING/NOT DRINKING WELL.....H GETTING SICKER/VERY SICK.....I NOT GETTING BETTER.....J OTHER_____X (SPECIFY) DK.....Z	
485	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? Any other signs? RECORD ALL MENTIONED.	RAPID BREATHING.....A DIFFICULT BREATHING.....B NOISY BREATHING.....C FEVER.....D UNABLE TO DRINK.....E NOT EATING/NOT DRINKING WELL.....F GETTING SICKER/VERY SICK.....G NOT GETTING BETTER.....H OTHER_____X (SPECIFY) DK.....Z	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES			SKIP
486	Now I would like to ask you about some health symptoms you yourself may have..				
	During the past three months, have you had any of the following problems with your vaginal discharge:		YES	NO	
	Any itching or irritation in vaginal area with the discharge?	ITCHING/IRRITATION...	1	2	
	A bad odour along with the discharge?	BAD ODOUR.....	1	2	
	Severe lower abdominal pain with the discharge, not related with menstruation?	ABDOMINAL PAIN.....	1	2	
	A fever along with the discharge?	FEVER.....	1	2	
	Any other problem with the discharge?	OTHER PROBLEM.....	1	2	
487	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?	YES.....1 NO.....2			
488	CHECK 107: CURRENTLY MARRIED ☐ SEPARATED DESERTED DIVORCED WIDOWED ☐				>491
489	Another problem some women have is feeling pain in their abdomen or vagina during intercourse. Do you often experience this kind of pain?	YES.....1 NO.....2			
490	Do you ever see blood after having sex, at times when you are not menstruating?	YES.....1 NO.....2			
491	CHECK 486, 487, 489 and 490: YES TO ANY ☐ OTHER ☐				>501
492	Have you seen anyone for advice or treatment to help you with (this problem/these problems)? IF YES, ASK: Whom did you see? Anyone else? RECORD ALL PERSONS SEEN.	PUBLIC MEDICAL SECTOR GOVT. DOCTOR.....A PUBLIC HEALTH NURSE.....B ANM/LHV.....C MALE MPW/SUPERVISOR.....D ANGANWADI WORKER.....E VILLAGE HEALTH GUIDE.....F OTHER PUBLIC SECTOR HEALTH WORKER.....G NGO WORKER.....H PRIVATE MEDICAL SECTOR PRIVATE DOCTOR.....I PRIVATE NURSE.....J COMPOUNDER/PHARMACIST.....K VAID/HAKIM/HOMEOPATH.....L DAI (TBA).....M TRADITIONAL HEALER.....N OTHER PRIVATE SECTOR HEALTH WORKER.....O OTHER _____ X (SPECIFY) NO, NOBODY SEEN.....Y			

SECTION 5A. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	CHECK 107: CURRENTLY MARRIED [ ] ↓ SEPARATED DESERTED DIVORCED WIDOWED [ ]		>507
502	CHECK 327/327A: NEITHER STERILIZED [ ] ↓ HE OR SHE STERILIZED [ ]		>507
503	CHECK 230: NOT PREGNANT OR UNSURE [ ] ↓ PREGNANT [ ] ↓ Now I have some questions about the future. Would you like to have (a/another) child or would you prefer not to have any (more) children? Now I have some questions about the future. After the child you are expecting, would you like to have another child or would you prefer not to have any more children?	HAVE A (ANOTHER) CHILD.....1 NO MORE/NONE.....2 SAYS SHE CAN'T GET PREGNANT.....3 UP TO GOD.....4 UNDECIDED/DK.....8	 >506 >507 >506
504	Would you prefer your next child to be a boy or a girl or doesn't it matter?	BOY.....1 GIRL.....2 DOESN'T MATTER.....3 UP TO GOD.....4	
505	CHECK 230: NOT PREGNANT OR UNSURE [ ] ↓ PREGNANT [ ] ↓ How long would you like to wait from now before the birth of (a/another) child? How long would you like to wait after the birth of the child you are expecting before the birth of another child?	MONTHS.....1 [ ][ ] YEARS.....2 [ ][ ] SOON/NOW.....993 SAYS SHE CAN'T GET PREGNANT...994 OTHER_____996 (SPECIFY) DK.....998	 >507

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
506	CHECK 230: NOT PREGNANT OR UNSURE ☐ → v PREGNANT ☐ → v Do you think your husband would like to have (a/another) child or do you think he would prefer not have any (more) children? After the child you are expecting, do you think your husband would like to have another child or do you think he would prefer not have any more children?	HAVE A (ANOTHER) CHILD.....1 NO MORE/NONE.....2 UP TO GOD.....3 UNDECIDED.....4 DK.....8	
507	CHECK 216: HAS LIVING CHILD(REN) ☐ → v NO LIVING CHILDREN ☐ → v 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? If you could choose exactly the number of children to have in your whole life, how many would that be? RECORD SINGLE NUMBER OR OTHER ANSWER.	NUMBER..... ☐☐ OTHER ANSWER_____ (SPECIFY) 96	→509
508	How many of these children would you like to be boys, how many would you like to be girls, and for how many would the sex not matter?	BOYS GIRLS EITHER NUMBER... ☐☐ ☐☐ ☐☐ OTHER_____ (SPECIFY) 999996	
509	In your opinion, how much education should be given to girls these days?	NO EDUCATION.....01 LESS THAN PRIMARY.....02 PRIMARY.....03 MIDDLE.....04 HIGH SCHOOL.....05 HIGHER SECONDARY.....06 GRADUATE AND ABOVE.....07 PROFESSIONAL DEGREE.....08 AS MUCH AS SHE DESIRES.....09 DEPENDS.....10 DK.....98	
510	In your opinion, how much education should be given to boys these days?	NO EDUCATION.....01 LESS THAN PRIMARY.....02 PRIMARY.....03 MIDDLE.....04 HIGH SCHOOL.....05 HIGHER SECONDARY.....06 GRADUATE AND ABOVE.....07 PROFESSIONAL DEGREE.....08 AS MUCH AS HE DESIRES.....09 DEPENDS.....10 DK.....98	

SECTION 5B. STATUS OF WOMAN

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
511	Who makes the following decisions in your household:	1 = RESPONDENT 2 = HUSBAND 3 = JOINTLY WITH HUSBAND 4 = OTHERS IN HOUSEHOLD 5 = JOINTLY WITH OTHERS IN HOUSEHOLD	
	What items to cook?	1 2 3 4 5	
	Obtaining health care for yourself?	1 2 3 4 5	
	Purchasing jewellery or other major household items?	1 2 3 4 5	
	Your going and staying with parents or siblings?	1 2 3 4 5	
512	Do you need permission to:	YES NO NOT ALLOWED TO GO	
	go to the market?	GO TO THE MARKET....1 2 3	
	visit relatives or friends?	VISIT RELATIVES/ FRIENDS.....1 2 3	
513	Are you allowed to have some money set aside that you can use as you wish?	YES.....1 NO.....2	
514	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:	YES NO DK	
	If he suspects her of being unfaithful?	UNFAITHFUL.....1 2 8	
	If her natal family does not give expected money, jewellery, or other items?	MONEY/JEWELLERY/ OTHER ITEMS.....1 2 8	
	If she shows disrespect for in-laws?	DISRESPECT.....1 2 8	
	If she goes out without telling him?	GOING WITHOUT TELLING.1 2 8	
	If she neglects the house or children?	NEGLECT.....1 2 8	
	If she doesn't cook food properly?	NOT COOK PROPERLY.....1 2 8	
515	Since you completed 15 years of age, have you been beaten or mistreated physically by any person?	YES.....1 NO.....2——>601	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
516	Who has beaten you or mistreated you physically? Anyone else? RECORD ALL PERSONS MENTIONED.	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	How often have you been beaten or mistreated physically in the last 12 months: once, a few times, many times, or not at all?	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 [ ] v SEPARATED DESERTED DIVORCED WIDOWED [ ]		>603
602	How old was your husband on his last birthday?	AGE IN COMPLETED YEARS..... [ ][ ]	
603	Did your (last) husband ever attend school?	YES.....1 NO.....2	>606
604	What is the highest grade he completed?	GRADE..... [ ][ ]	
605	CHECK 604: GRADE 0-5 [ ] v GRADE 6 AND ABOVE [ ]		>607
606	(Can/Could) he read and write?	YES.....1 NO.....2	
607	What kind of work (does/did) your (last) husband mainly do?	_____ [ ][ ] _____ _____	
608	CHECK 607: WORKS (WORKED) ON FARM [ ] v DOES (DID) NOT WORK ON FARM [ ]		>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?	_____ [ ][ ] _____ _____	
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. 1995 AND LIVING AT HOME? YES ☐ NO ☐		>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/HOARDINGS.....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.....[ ][ ] MINUTES.....[ ][ ]	
706	PRESENCE OF OTHERS DURING MOST OF THE INTERVIEW TIME.	YES NO CHILDREN UNDER 10.....1 2 HUSBAND.....1 2 MOTHER-IN-LAW.....1 2 OTHER MALES.....1 2 OTHER FEMALES.....1 2	

HEALTH INVESTIGATOR VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY [ ][ ] MONTH [ ][ ] YEAR [1][9][ ][ ]
INVESTIGATOR'S NAME	_____	_____	_____	NAME CODE [ ][ ]
RESULT*	_____	_____	_____	RESULT CODE [ ]
NEXT VISIT: DATE TIME	_____ _____	_____ _____		TOTAL NUMBER OF VISITS [ ]

*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 1995 AND STILL ALIVE.
IN 802 AND 803 RECORD THE NAME OF THE RESPONDENT AND ALL HER LIVING CHILDREN BORN SINCE JANUARY 1995, 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 1995, CHECK BOX ☐ AND USE ADDITIONAL QUESTIONNAIRE)

	1 RESPONDENT	2 YOUNGEST LIVING CHILD	3 NEXT-TO-YOUNGEST LIVING CHILD
801 LINE NO. FROM Q.212			
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..... MONTH..... YEAR.	DAY..... MONTH..... YEAR.
804 HEIGHT (in centimetres)	.	.	.
805 WAS HEIGHT/LENGTH OF CHILD MEASURED LYING DOWN OR STANDING UP?		LYING.....1 STANDING.....2	LYING.....1 STANDING.....2
806 WEIGHT (in kilograms)	.	0 .	0 .
807 DATE WEIGHED AND MEASURED	DAY..... MONTH..... YEAR.	DAY..... MONTH..... YEAR.	DAY..... MONTH..... YEAR.
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: _____ NAME OF ASSISTANT: _____

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 :_____

v

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 1995 ☐	NO LIVING CHILDREN BORN SINCE JANUARY 1995 ☐ >910

IN 905 RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1995 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 1995, CHECK BOX ☐ AND USE ADDITIONAL QUESTIONNAIRE)

		YOUNGEST LIVING CHILD	NEXT-TO-YOUNGEST LIVING CHILD
905	LINE NUMBER FROM Q. 212	☐☐	☐☐
906	NAME FROM Q.212	NAME_____	NAME_____
907	HAEMOGLOBIN LEVEL IN THE BLOOD (G/DL)	☐☐.☐	☐☐.☐
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 _____	☐☐
910	CHECK 902 AND 907:		
	NO VALUES BELOW 7 G/DL	☐ > GIVE MOTHER RESULT OF HAEMOGLOBIN MEASUREMENT AND END THE INTERVIEW	
	ANY VALUE BELOW 7 G/DL FOR MOTHER AND/OR CHILD(REN)	☐ > GIVE MOTHER RESULT OF HAEMOGLOBIN MEASUREMENT AND CONTINUE WITH 911.	

911 CHECK COLUMN (5) OF HOUSEHOLD SCHEDULE:

RESPONDENT IS USUAL RESIDENT [ ] → V

RESPONDENT IS VISITOR [ ] →END

912

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.

Do you agree that the information about the level of haemoglobin in your (your child's) blood may be given to the doctor.

AFTER EXPLAINING THE ABOVE, I HAVE FOUND THAT _____ AGREED FOR
(NAME OF RESPONDENT)

REFERRAL FOR HERSELF [AND FOR HER CHILD(REN) NAMED_____
_____] (NAME OF CHILD(REN))

Signature of Interviewer:_____ Date :_____

RESPONDENT AGREES FOR REFERRAL FOR HERSELF AND/OR HER CHILD(REN)....1 → V

RESPONDENT DOES NOT AGREE FOR REFERRAL.....2 —> END

913 RECORD NAMES OF WOMAN AND CHILD(REN) WITH HAEMOGLOBIN LEVEL LESS THAN 7 G/DL ON REFERRAL FORM.

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_____ ☐☐.☐ You have	**Child** NAME_____ ☐☐.☐ Your child has	**Child** NAME_____ ☐☐.☐ Your child has
WHO CLASSIFICATION OF ANAEMIA			
NORMAL LEVEL HB LEVEL ABOVE 11 G/DL	NORMAL LEVEL	NORMAL LEVEL	NORMAL LEVEL
MILD ANAEMIA HB (10-10.9 G/DL)	MILD ANAEMIA	MILD ANAEMIA	MILD ANAEMIA
MODERATE ANAEMIA HB (7-9.9 G/DL)	MODERATE ANAEMIA	MODERATE ANAEMIA	MODERATE ANAEMIA
SEVERE ANAEMIA HB (LESS THAN 7 G/DL)	SEVERE ANAEMIA	SEVERE 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

INDIA

CONFIDENTIAL
For Research
Purpose only

IDENTIFICATION

STATE _____

DISTRICT _____

TEHSIL/TALUK _____

VILLAGE _____

PSU NUMBER.....

TOTAL POPULATION OF THE VILLAGE
ACCORDING TO THE 1991 CENSUS.....

INTERVIEWER'S NAME _____

DATE OF INTERVIEW _____ DATE.....

MONTH.....

YEAR.....

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				
NAME				

VILLAGE SCHEDULE

NO.	QUESTIONS	CODING CATEGORIES
1	Current population of the village:	☐☐☐☐☐
2	Area of the village (in Hectares):	☐☐☐
3	Total number of households in the village:	☐☐☐☐
4	Total arable land in the village (in Hectares):	IRRIGATED LAND..... ☐☐☐ NON-IRRIGATED LAND..... ☐☐☐
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:	1 _____ ☐☐ 2 _____ ☐☐ 3 _____ ☐☐
7	Distance to the nearest town (in kilometres):	☐☐
8	Distance to the District Headquarters (in kilometres):	☐☐
9	Distance to the nearest railway station (in kilometres):	☐☐
10	Distance to available transport service to other place (in kilometres):	☐☐
11	Distance of the village from all-weather road in connection to other place (in kilometres):	☐☐
12	Village Electrification:	NOT ELECTRIFIED..... 1 ELECTRIFIED, BUT IRREGULAR SUPPLY..... 2 ELECTRIFIED AND REGULAR SUPPLY..... 3

NO.	QUESTIONS	CODING CATEGORIES
13	Educational Facilities:	DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):
	Primary School	PRIMARY SCHOOL..... [ ][ ]
	Middle School	MIDDLE SCHOOL..... [ ][ ]
	Secondary School	SECONDARY SCHOOL..... [ ][ ]
	Higher Secondary School	HIGHER SECONDARY SCHOOL..... [ ][ ]
	College	COLLEGE..... [ ][ ]
	IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95	
14	Health Facilities:	DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):
	Sub-Centre	SUB-CENTRE..... [ ][ ]
	Primary Health Centre	PRIMARY HEALTH CENTRE..... [ ][ ]
	Community Health Centre/Rural Hospital	COMMUNITY HEALTH CENTRE/RURAL HOSPITAL..... [ ][ ]
	Government Dispensary	GOVERNMENT DISPENSARY..... [ ][ ]
	Government Hospital	GOVERNMENT HOSPITAL..... [ ][ ]
	Private Clinic	PRIVATE CLINIC..... [ ][ ]
	Private Hospital	PRIVATE HOSPITAL..... [ ][ ]
	IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95	
15	Other facilities:	DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):
	Post Office	POST OFFICE..... [ ][ ]
	Telegraph Office	TELEGRAPH OFFICE..... [ ][ ]
	STD Booth	STD BOOTH..... [ ][ ]
	Bank	BANK..... [ ][ ]
	IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95	

NO.	QUESTIONS	CODING CATEGORIES	YES	NO
16	Availability of health provider in the village:			
	Private doctor	PRIVATE DOCTOR.....	1	2
	Visiting doctor	VISITING DOCTOR.....	1	2
	Village health guide (VHG)	VHG.....	1	2
	Traditional birth attendant (dai)	TBA (DAI).....	1	2
	Mobile health unit/visit	MOBILE HEALTH UNIT.....	1	2
17	Other facilities:	AVAILABLE IN THE VILLAGE		
			YES	NO
	Mills/small scale industries (M/SSI)	M/SSI.....	1	2
	Credit cooperative society (CCS)	CCS.....	1	2
	Agricultural cooperative society (ACS)	ACS.....	1	2
	Fishermen's cooperative society (FCS)	FCS.....	1	2
	Milk cooperative society (MCS)	MCS.....	1	2
	Kirana/General Market Shop (K/GMS)	K/GMS.....	1	2
	Weekly market	WEEKLY MARKET.....	1	2
	Fair price shop	FAIR PRICE SHOP.....	1	2
	Paan shop	PAAN SHOP.....	1	2
	Pharmacy/Medical shop	PHARMACY/MEDICAL SHOP....	1	2
	Mahila Mandal	MAHILA MANDAL.....	1	2
	Youth club	YOUTH CLUB.....	1	2
	Anganwadi centre	ANGANWADI CENTRE.....	1	2
	Community centre	COMMUNITY CENTRE.....	1	2
	Adult education centre	ADULT EDUCATION CENTRE...	1	2
	Community television set	COMMUNITY TV SET.....	1	2
	Cable connection	CABLE CONNECTION.....	1	2
18	Total number of television sets in the village:			
19	Total number of households having telephone connection:			
20	The type of drainage facility in the village:	UNDERGROUND DRAINAGE.....1 OPEN DRAINAGE.....2 NO.....3		

NO.	QUESTIONS	CODING CATEGORIES
21	Any epidemic in the village during the last one year:	1. _____ [ ][ ] 2. _____ [ ][ ]
22	Number of health or family welfare camps in the last one year?	[ ][ ]
23	Any beneficiaries in the village from the following programmes:	BENEFICIARIES
	Integrated Rural Development Programme (IRDP)	IRDP..... [ ][ ]
	National Rural Employment Programme (NREP)	NREP..... [ ][ ]
	Training Rural Youth for Self Employment (TRYSEM)	TRYSEM..... [ ][ ]
	Employment Guarantee Scheme (EGS)	EGS..... [ ][ ]
	Development of Women and Children of Rural Areas (DWARCA)	DWACRA..... [ ][ ]
	Indira Awas Yojana (IAY)	IAY..... [ ][ ]
	Sanjay Gandhi Niradhar Yojana (SGNY)	SGNY..... [ ][ ]
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: RECORD ALL THE SOURCES.	SARPANCH.....A PATWARI.....B GRAM SEVAK.....C SCHOOL TEACHER.....D HEALTH PERSONNEL.....E OTHERS_____X (SPECIFY)

VILLAGE HEAD SCHEDULE
(SARPANCH/PRADHAN/MUKHIYA)

1. Age : [ ][ ]

2. Sex : Male....1
Female..2

3. Religion : Hindu...1
Muslim..2
Other...6

4. Caste : SC....1
ST....2
OBC...3
Other.6

5. Education : [ ][ ]

6. No. of Children : [ ][ ]

NO.	QUESTIONS	SKIP
7	In your opinion what are the two most important problems in this village? 1. _____ _____ 2. _____	
8	What are the two most important health problems in this village? 1. _____ _____ 2. _____	
9	What are the two most important health problems faced by women and children in this village? 1. _____ _____ 2. _____	
10	Do you feel that it is necessary to encourage couples in this village to have a small number of children? YES..... 1 NO ..... 2 ——>12	
11	If you are asked to prepare a plan to achieve this objective, what are the two most important actions you would suggest? 1. _____ _____ 2. _____	
12	If you are asked to prepare a health plan for this village, what are the two most important actions you would recommend? 1. _____ _____ 2. _____	