

NFHS-2

PN-ACN-249

Punjab

**National Family
Health Survey
India
1998-99**



International Institute for Population Sciences



MEASURE DHS+
ORC MACRO

World Summit for Children Indicators: Punjab, 1998-99

BASIC INDICATORS

Childhood mortality	Infant mortality rate	57 per 1,000
	Under-five mortality rate	72 per 1,000
Childhood malnutrition	Percent stunted (children 0-35 months)	39.2
	Percent wasted (children 0-35 months)	7.1
	Percent underweight (children 0-35 months)	28.7
Clean water supply	Percent of households within 15 minutes of a safe water supply ¹	95.5
Sanitary excreta disposal	Percent of households with flush toilet	36.2
Basic education	Percent of women age 15-49 with completed primary education	66.1
	Percent of men age 15-49 with completed primary education	78.1
	Percent of girls age 6-12 attending school	92.6
	Percent of boys age 6-12 attending school	94.0
	Percent of women age 15-49 who are literate	68.9
Children in especially difficult situations	Percent of children age 0-14 who live in single adult households	2.2

SUPPORTING INDICATORS

Birth spacing	Percent of births within 24 months of a previous birth	35.8
Safe motherhood	Percent of births with medical antenatal care	74.0
	Percent of births with antenatal care in first trimester	42.6
	Percent of births with medical assistance at delivery	62.6
	Percent of births in a medical facility	37.5
	Percent of births at high risk	40.4
Family planning	Contraceptive prevalence rate (any method, currently married women)	66.7
	Percent of currently married women with an unmet need for family planning	7.3
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	5.2
Maternal nutrition	Percent of women with low body mass index (BMI)	16.9
Low birth weight	Percent of births with low birth weight (of those reporting a numeric weight)	23.8
Breastfeeding	Percent of children under 4 months who are exclusively breastfed	36.3
Iodized salt intake	Percent of households that use iodized salt (at least 15 ppm)	75.3
Vaccinations	Percent of children whose mothers received tetanus toxoid vaccinations during pregnancy	92.2
	Percent of children 12-23 months with measles vaccination	76.5
	Percent of children 12-23 months fully vaccinated	72.1
Diarrhoea control	Percent of children with diarrhoea in the preceding 2 weeks who received ORS, sugar-salt-water solution, or gruel	43.5
Acute respiratory infection	Percent of children with acute respiratory infection in the preceding 2 weeks seen by medical personnel	93.8

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

NATIONAL FAMILY HEALTH SURVEY (NFHS-2)

INDIA

1998–99

PUNJAB

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

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

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

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

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

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

We are happy to present the final NFHS-2 state report for Punjab, 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.

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

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Last but not the least, credit goes to the 2,796 ever-married women of Punjab and the household respondents who spent their time and responded to the rather lengthy questionnaires with tremendous patience and without any expectation from NFHS-2.

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Sumati Kulkarni
Kamla Gupta
Parveen Nangia

FACT SHEET, PUNJAB

NATIONAL FAMILY HEALTH SURVEY, 1998-99

Sample Size

Households.....	2,967
Ever-married women age 15-49	2,796

Characteristics of Households

Percent with electricity.....	95.5
Percent within 15 minutes of safe water supply ¹	95.5
Percent with flush toilet	36.2
Percent with no toilet facility	48.6
Percent using govt. health facilities for sickness.....	13.8
Percent using iodized salt (at least 15 ppm).....	75.3

Characteristics of Women²

Percent urban	30.8
Percent illiterate	38.8
Percent completed high school and above.....	29.5
Percent Hindu.....	40.2
Percent Muslim	2.4
Percent Sikh	55.7
Percent regularly exposed to mass media.....	82.0
Percent working in the past 12 months.....	9.4

Status of Women²

Percent involved in decisions about own health.....	78.5
Percent with control over some money	78.3

Marriage

Percent never married among women age 15-19.....	91.9
Median age at marriage among women age 25-49	20.0

Fertility and Fertility Preferences

Total fertility rate (for the past 3 years).....	2.21
Mean number of children ever born to women 40-49	3.77
Median age at first birth among women age 25-49	21.5
Percent of births ³ of order 3 and above	39.7
Mean ideal number of children ⁴	2.3
Percent of women with 2 living children wanting another child.....	10.2

Current Contraceptive Use⁵

Any method.....	66.7
Any modern method.....	53.8
Pill.....	3.1
IUD	6.1
Condom.....	13.8
Female sterilization	29.3
Male sterilization.....	1.6
Any traditional method	12.4
Rhythm/safe period	6.2
Withdrawal.....	6.3
Other traditional or modern method.....	0.4

Unmet Need for Family Planning⁵

Percent with unmet need for family planning	7.3
Percent with unmet need for spacing.....	2.8

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

²Ever-married women age 15-49

³For births in the past 3 years

⁴Excluding women giving non-numeric responses

⁵Among currently married women age 15-49

Quality of Family Planning Services⁶

Percent told about side effects of method	45.1
Percent who received follow-up services.....	69.6

Childhood Mortality

Infant mortality rate ⁷	57.1
Under-five mortality rate ⁷	72.1

Safe Motherhood and Women's Reproductive Health

Percent of births ⁸ within 24 months of previous birth.....	35.8
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Percent of births³ whose mothers received:

Antenatal check-up from a health professional.....	74.0
Antenatal check-up in first trimester.....	42.6
Two or more tetanus toxoid injections.....	89.9
Iron and folic acid tablets or syrup.....	79.6

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

Doctor	35.1
ANM/nurse/midwife/LHV	27.0
Traditional birth attendant.....	37.2

Percent⁵ reporting at least one reproductive health problem

.....	28.3
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Awareness of AIDS

Percent of women ² who have heard of AIDS.....	54.6
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Child Health

Percent of children age 0-3 months exclusively breastfed.....	36.3
Median duration of breastfeeding (months).....	21.2

Percent of children⁹ who received vaccinations:

BCG.....	88.7
DPT (3 doses)	82.0
Polio (3 doses)	83.6
Measles.....	76.5
All vaccinations	72.1

Percent of children¹⁰ with diarrhoea in the past

2 weeks who received oral rehydration salts (ORS)	42.3
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Percent of children¹⁰ with acute respiratory infection in the past 2 weeks taken to a health facility or provider

.....	93.8
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Nutrition

Percent of women with anaemia ¹¹	41.4
Percent of women with moderate/severe anaemia ¹¹	13.0
Percent of children age 6-35 months with anaemia ¹¹	80.0
Percent of children age 6-35 months with moderate/severe anaemia ¹¹	62.6
Percent of children chronically undernourished (stunted) ¹²	39.2
Percent of children acutely undernourished (wasted) ¹²	7.1
Percent of children underweight ¹²	28.7

⁶For current users of modern methods

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

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

⁹Children age 12-23 months

¹⁰Children under 3 years

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

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

SUMMARY OF FINDINGS

The second National Family Health Survey (NFHS-2), conducted in 1998–99, provides information on fertility, mortality, family planning, and important aspects of health, nutrition, and health care. The International Institute for Population Sciences (IIPS) coordinated the survey, which collected information from a nationally representative sample of approximately 90,000 ever-married women age 15–49 from 26 states of India. These states comprise more than 99 percent of India's population.

IIPS also coordinated the first National Family Health Survey (NFHS-1) in 1992–93. Most of the types of information collected in NFHS-2 were also collected in the earlier survey, making it possible to identify trends over the period between the two surveys. 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 Punjab, NFHS-2 field staff collected information from 2,967 households between 26 November 1998 and 2 May 1999 and interviewed 2,796 eligible women, i.e., ever-married women age 15–49, in these households. In addition, the survey collected information on 900 children born to eligible women in the three years preceding the survey. One health investigator on each survey team measured the height and weight of eligible women and their children under age three years and took blood samples to assess the prevalence of anaemia.

Background Characteristics of the Survey Population

More than two-thirds (70 percent) of the population lives in rural areas. The age distribution is typical of populations in which fertility has fallen recently, with increasing proportions of population in the under 15 age groups. The lower proportion of the population under age 5, compared with the population age 5–9, is consistent with a recent decline in fertility. Thirty-one percent of the population is below 15 years of age, and only 8 percent is age 65 or older. The sex ratio of the *de facto* population is 899 females per 1,000 males for Punjab as a whole, and is higher (941) in urban areas than in rural areas (882).

The NFHS-2 estimates of the sex ratios of the *de jure* total population, at 896, and the sex ratio of the *de jure* population age 0–6, at 825, are both somewhat higher than the corresponding sex ratios provided by the 2001 Census provisional estimates, at 874 and 793, respectively, for a period approximately two years after NFHS-2. Notably, however, the sex ratios of the population age 0–6 from both NFHS-2 and the 2001 Census are 8–9 percent lower than the corresponding sex ratios for the total population. The sex ratio at birth from NFHS-2 for the seven-year period preceding the survey is 861, higher than the sex ratio of the population age 0–6 years, suggesting that sex-selective abortion is not the only factor responsible for the low sex ratio of the population age 0–6 in Punjab. In fact, the sex ratio of nonsurviving children who were born during the seven years preceding the survey (1992–98) shows that there are about 1.6 times as many girls as boys among the nonsurviving children. This suggests that excess female mortality is also an important factor contributing to the low under-seven sex ratio in Punjab.

The survey provides information on a variety of demographic and socioeconomic background characteristics of sample households. In the state as a whole, 54 percent of household heads are Sikh, 42 percent are Hindu, and 2 percent each are Muslim and Christian. Hindus live disproportionately in urban areas, where they comprise 61 percent of household heads, whereas Sikhs live disproportionately in rural areas where they comprise 64 percent of household heads. Thirty percent of household heads belong to scheduled castes, 17 percent belong to other backward classes (OBCs), and less than half of one percent belong to the scheduled tribes. More than half of the household heads do not belong to any of these groups.

Questions about housing conditions and access to various amenities indicate some improvements since the time of NFHS-1. Ninety-six percent of households in Punjab have electricity, up from 92 percent in NFHS-1. Forty-nine percent of households do not have any toilet facility, compared with 63 percent in NFHS-1. The use of piped drinking water has increased between the two surveys from 30 percent in NFHS-1 to 37 percent in NFHS-2.

Almost four-fifths (78 percent) of males and nearly two-thirds (65 percent) of females age six and above are literate, an increase of 12–13 percentage points from literacy rates at the time of NFHS-1. Ninety-one percent of children age 6–14 currently attend school, a substantial increase from 81 percent in NFHS-1. The proportion of children attending school has increased for all age groups, particularly for girls, but girls still lag behind boys in school attendance at ages beyond 10 years. At age 6–10, 94 percent of both boys and girls attend school, but by age 15–17, 70 percent of boys attend school, compared with only 62 percent of girls.

Age at marriage in Punjab is relatively high, although marriage is almost universal. The median age at marriage for women age 25–49 is 20 years, much higher than the all-India average of 16 years. The median age at marriage remains virtually constant at 20 years for women in all age groups 25–29 to 45–49, suggesting that the median age at marriage reached this level more than 20 years ago. Only 7 percent of women age 15–19 are already married, much lower than the corresponding national average of 30 percent. Despite this, however, one-fifth of women age 20–49 and more than one-tenth (12 percent) of the younger women age 20–24 in Punjab are married before reaching the legal minimum age of 18 years. On average, women are about four years younger than the men they marry.

Consistent with the relatively high age at marriage in Punjab, the age at first birth for women age 25–49, at 22 years, is also much higher than the national average of 19 years. Further, age at first birth, like age at first marriage, has changed little in the past 20 years.

As part of an increasing emphasis on gender issues in NFHS-2, the survey asked women about their participation in household decisionmaking. In Punjab, virtually all (99 percent) women are involved in decisionmaking on at least one of four selected topics. A much lower proportion of women (79 percent), however, are involved in making decisions about their own health care. Only 9 percent of women do work other than their own housework, but almost all (95 percent) who do work, work for cash. The vast majority (92 percent) of women who earn cash are involved in the decision on how the money that they earn should be used. Forty-six percent of working women report that their earnings constitute at least half of total family earnings, including 12 percent who report that the family is entirely dependent on their earnings.

Fertility and Family Planning

Fertility continues to decline in Punjab. At current fertility levels, women will have an average of 2.2 children each throughout their childbearing years, only slightly more than the goal of 2.1 children per woman required to achieve replacement level fertility. The total fertility rate is down from 2.9 children per woman at the time of NFHS-1, and is currently the sixth lowest in the country. In Punjab, less than one out of every five births in the three years preceding the survey were of order four or higher.

Efforts to encourage the trend toward lower fertility might usefully focus on groups within the population that have higher fertility than average. In Punjab, illiterate women, poor women, Muslim women, and women from the scheduled castes have much higher fertility than other women. Although very early childbearing is not widespread in Punjab, women age 15–19 still account for 9 percent of total fertility. Studies in India and elsewhere have shown that health and mortality risks, both for women themselves and for their children, increase when women give birth at very young ages. Family planning programmes focusing on women in this age group could make a significant impact on maternal and child health and could also reduce 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 8 percent of births during the three years preceding NFHS-2, mothers report that they did not want the pregnancy at all, and for another 7 percent of births, mothers say that they would have preferred to delay the pregnancy. When asked about their preferred family size, 59 percent of women who already have three living children and 38 percent of women who have four or more living children said that they consider the two-child family to be 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. A preference for sons is indicated by women in Punjab. Eighty-six percent of women want at least one son compared with 78 percent who want at least one daughter. Also, almost one-third (29 percent) of women want more sons than daughters, but only a negligible proportion want more daughters than sons.

For many years, the Government of India has been using electronic and other mass media to promote family planning. Exposure to media is relatively high in Punjab where the majority of households own a television and 99 percent of even the rural respondents live in villages that are electrified. Among the different types of media, television has the broadest reach across all categories of women. Overall, 77 percent of ever-married women watch television at least once a week, and about one-third each are regularly exposed to the radio and to newspapers or magazines. Nevertheless, about one-fifth (18 percent) are not regularly exposed to television, radio, or other types of media. Eighty-five percent saw or heard a family planning message in the media during the few months preceding the survey. Television, followed by wall paintings or hoardings, are the primary sources of these messages. Exposure to family planning messages is relatively low among disadvantaged socioeconomic groups, however. Family planning messages

reach only one-third of women from households with a low standard of living and two-thirds of illiterate women.

If women in Punjab are not using family planning, it is not due to lack of knowledge, however. Knowledge of contraception is nearly universal. At least 97 percent of women know about each of the different modern spacing methods, and almost all know about female sterilization. While knowledge of sterilization was virtually universal even at the time of NFHS-1, knowledge of each of the three modern spacing methods—the pill, IUD, and condom—has grown by 9–15 percentage points since NFHS-1. Knowledge of traditional methods, at 78 percent, is also relatively high in Punjab.

Sixty-seven percent of married women are currently using some method of contraception, an increase from 59 percent at the time of NFHS-1, and much higher than the NFHS-2 national level of 48 percent. In all, 29 percent of currently married women are sterilized, a slight decrease from 32 percent at the time of NFHS-1. By contrast, only 2 percent of women report that their husbands are sterilized. Fourteen percent of women report that their husbands use condoms, 6 percent use the IUD, and 3 percent use the pill. Twelve percent of women report that they are currently using traditional methods. Traditional method users are about equally divided between the use of the rhythm method and withdrawal. Contraceptive prevalence is 11 percent higher in urban areas (72 percent) than in rural areas (64 percent), but, notably, a similar proportion of urban and rural women (both 54 percent) are using a modern method. The method-mix used by urban and rural women is very different, however. Female sterilization is by far the most popular method in rural areas, used by more than half of all current contraceptive users. In urban areas, by contrast, condoms are the most popular method used by one-third of contraceptive users, followed by female sterilization and traditional methods (either the rhythm method or withdrawal) which are each used by about one-fourth of contraceptive users. Urban women are twice as likely (35 percent) to use a modern temporary method as rural women (18 percent) and are also about twice as likely to use a traditional method (18 percent) as are rural women (10 percent).

There are only slight variations in contraceptive prevalence among socioeconomic groups. Contraceptive prevalence is considerably less than the average for the state only among Muslim women (50 percent), poor women (58 percent), and women who have completed only middle school (60 percent). Use of modern spacing methods—pills, IUDs, and condoms—is higher (30–39 percent) among women who have completed at least high school, women living in urban areas, and women from households with a high standard of living and lower (10–12 percent) among poor women, illiterate women, and scheduled-caste women.

Contraceptive use rises steadily with age, peaking at 86 percent for women age 35–39 and declining thereafter. Use also increases with the number of living children, to 80–81 percent, among women with three or more children. A strong preference for sons is evident for women at every parity. Women who have one or more sons are consistently more likely to use contraception than are women who have the same number of children but have only daughters. For example, 85 percent of women with two sons and no daughters use some method of contraception compared with 40 percent of women with two daughters and no sons. In addition, the adoption of sterilization increases even more sharply with the number of sons than does any

contraceptive use. For example, among couples with three children, 64 percent with three sons have adopted female or male sterilization, compared with only 26 percent with one son.

In Punjab, only 3 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 5 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 level of unmet need in Punjab is one of the lowest in the country. The unmet need is highest among younger women and women with one or two living children, who have a strong interest in spacing their births. These results underscore the need for strategies that provide spacing as well as terminal contraceptive methods in order to meet the changing needs of women over their lifecycle.

Almost two-thirds (64 percent) of women who use modern contraception obtained their method from a government hospital or other source in the public sector. Only 27 percent obtained their method from the private medical sector and 6 percent obtained their method from a shop. However, sources vary greatly by method. While the public medical sector accounts for almost all female and male sterilizations and is the source for 45 percent of IUD users, its role as a source of condoms and pills is far less significant. The private medical sector and shops are the major source for 80 percent of condom users and 72 percent of pill users. The private medical sector plays a larger role in urban areas (where it is the source of modern methods for 45 percent of users) than in rural areas (where it is the source of modern methods for 19 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 Punjab, only one-third (35 percent) of users of modern contraceptives who were motivated by someone to use their method were told about any other method by that person. Moreover, at the time of adopting the method, only 45 percent of all users were told by a health or family planning worker about possible side effects of the method they adopted. Seventy percent of users of modern contraceptive methods, however, received follow-up services after accepting the method.

From the information provided in NFHS-2, a picture emerges of important progress in Punjab on some aspects of demographic change, but not in others. Fertility in the state is close to replacement level and most women marry after the legal minimum age at marriage, have their first birth in their early 20s, and use contraception especially for limiting their births. However, completed fertility for women age 40–49, at 3–4 children, is still high, the use of spacing methods is limited, and son preference continues to have a very strong influence on women's contraceptive use, especially on their use of terminal methods.

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 57 deaths at age 0–11 months per 1,000 live births, the child mortality rate was 16 deaths at age 1–4 years per 1,000 children reaching age one, and the under-five mortality rate was 72 deaths age 0–4 years per 1,000 live births. These rates are all slightly higher in NFHS-2 than in NFHS-1, but the differences in the rates are not statistically significant, suggesting that infant and child

mortality in Punjab has not changed in the five and a half years between the two surveys. Although the infant mortality rate in Punjab (57) is lower than the all-India infant mortality rate of 68, Punjab continues to lag behind about half of the states in India in terms of this important indicator of development and family welfare. Overall, more than 1 in every 18 children born during the five years before NFHS-2 died within the first year of life, and 1 in every 14 children died before reaching age five.

In Punjab, girls have much higher mortality risks than do boys. In fact, all of the infant and child mortality rates are higher for girls than for boys. Notably, the postneonatal mortality rate is almost twice as high for girls as for boys, and the child mortality rate is four times as high for girls as for boys. These results are in keeping with the very low sex ratio of the population age 0–6 in Punjab. Other groups of children with particularly high infant and child mortality rates are children who live in rural areas, children whose mothers are illiterate, children from scheduled castes, and children from relatively poor households.

Efforts to promote child survival also need to concentrate on very young mothers and mothers whose births are closely spaced. Infant mortality is 27 percent higher among children born to mothers under age 20 than to mothers age 20–29. Infant mortality is more than twice as high among children born less than 24 months after a previous birth as among children born after a gap of 24 months or more. 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 Reproductive and Child Health Programme of the Government of India. One goal is for each pregnant woman to receive at least three antenatal check-ups plus two tetanus toxoid injections and a full course (100 tablets) of iron and folic acid supplementation. In Punjab, mothers of 74 percent of births in the three years preceding NFHS-2 received at least one antenatal check-up (higher than the level of 65 percent for India as a whole), and mothers of 57 percent of births received at least three antenatal check-ups. Mothers received iron and folic acid supplementation during their pregnancies for four-fifths of births and the recommended number of tetanus toxoid vaccinations for 90 percent of births. While the proportion of births for which women received the recommended tetanus toxoid vaccines and iron and folic acid supplementation has risen since NFHS-1, the percentage of women who received an antenatal check-up has declined substantially from its level of 88 percent in NFHS-1. In addition, NFHS-2 shows that although each of the separate elements of antenatal care services is reaching a substantial proportion of women in Punjab, for only 32 percent of births did women receive all of the recommended types of care in a timely fashion. Also, women in disadvantaged socioeconomic groups are much less likely than other women to be covered by each of the three recommended types of antenatal care. All of these results together suggest that much more effort is needed to improve, expand, and sustain the reach of antenatal care programs in Punjab.

The Reproductive and Child Health Programme encourages women to deliver in a medical facility or, if at home, with assistance from a trained health professional and to receive at least three check-ups after delivery. During the three years preceding NFHS-2, only 37 percent

of births in Punjab were delivered in a medical facility, up from 25 percent in NFHS-1. Fifty-six percent were delivered in the woman's own home and 7 percent in her parents' home. Sixty-three percent of all deliveries were assisted by a trained health professional, up from 47 percent in the three years preceding NFHS-1. Almost all of the remaining deliveries were assisted by a *dai* (a traditional birth attendant). Ten percent of births in the home were assisted by a doctor, 30 percent were assisted by other health professionals, and 59 percent were assisted by a *dai*. Postpartum check-ups are rare for noninstitutional births in Punjab. Only 20 percent of births that took place outside a medical facility were followed by a postpartum check-up within two months of delivery. Overall, these results show that professional health services during delivery and in the postpartum period are failing to reach a substantial proportion of women in Punjab.

The Government of India recommends that breastfeeding should begin immediately after childbirth and that infants should be exclusively breastfed for about the first four months of life. Although breastfeeding is nearly universal in Punjab, very few children begin breastfeeding immediately after birth—only 6 percent in the first hour and 20 percent in the first day. Moreover, for 87 percent of births, mothers squeeze the first milk (colostrum) from the breast before breastfeeding begins, thereby depriving the baby of natural immunity against diseases that colostrum provides. Only 36 percent of children under four months of age are exclusively breastfed, as recommended at that age. Almost one-third (29 percent) of even breastfeeding children under age four months received non-powdered milk during the day or night before the interview. The median duration of breastfeeding is 21 months, or slightly less than two years, but the median duration of exclusive breastfeeding is only about one month. At age 6–9 months, children should be receiving solid or mushy food in addition to breast milk. However, only 39 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 these measures, 29 percent of children under age three years are underweight, 39 percent are stunted, and 7 percent are wasted. The trend in nutritional status over time gives a mixed picture. According to two of the three measures, child nutritional status has improved in Punjab since the time of NFHS-1, when 46 percent of young children were underweight and 21 percent were wasted. However, the amount of stunting has remained unchanged between the two surveys, at 38–39 percent. Most of the measures of undernutrition are much higher in rural areas than in urban areas and are particularly high among children from disadvantaged socioeconomic groups. Girls are more likely to be underweight and severely stunted than boys, but boys are more likely to be wasted.

Eighty percent of children age 6–35 months are anaemic, including 57 percent who are moderately anaemic and 6 percent who are severely anaemic. Although there are some

differentials in the prevalence of anaemia among groups, a large majority of children in every subgroup of the population is anaemic.

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 (DPT), 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 Punjab, 72 percent of children age 12–23 months are fully vaccinated, i.e., they have received one dose each of the BCG and measles vaccines and three doses each of the polio and DPT vaccines, another 19 percent have received some but not all of the recommended vaccinations, and 9 percent have not been vaccinated at all. Eighty-nine percent of children age 12–23 months have been vaccinated against tuberculosis, 82 percent have received three doses of DPT vaccine, 84 percent have received three doses of polio vaccine, and 77 percent have received the measles vaccine. Despite the overall high rates of vaccinations in Punjab, children from disadvantaged groups are much less likely to be fully vaccinated. Almost one out of two children of illiterate mothers and children belonging to the scheduled castes are not fully vaccinated. Not only are girls somewhat less likely than boys to be fully vaccinated, but 13 percent of girls compared with only 5 percent of boys have not received any of the required vaccinations.

Immunization coverage has improved substantially in Punjab since NFHS-1, when 18 percent of children had not received any vaccinations at all. The coverage of each vaccination has also improved. A large part of the expansion in the coverage of the three doses of polio is undoubtedly because of the introduction of the Pulse Polio Immunization Campaign in 1995. The coverage of Polio 0 has also risen, from 2 percent in NFHS-1 to 11 percent in NFHS-2. Dropout rates for the series of DPT and polio vaccinations, though less than in NFHS-1, are still a problem. Overall, 7–8 percent of children who receive the first dose of either series do not receive the required third dose in the series. 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. In Punjab, 57 percent of children age 12–35 months have received vitamin A supplementation, but only 30 percent received a dose of vitamin A in the six months preceding the survey.

NFHS-2 collected information on the prevalence and treatment of three health problems that cause considerable mortality in young children—fever, acute respiratory infection (ARI), and diarrhoea. In Punjab, 25 percent of children under age three years were ill with fever during the two weeks preceding the survey, 14 percent were ill with ARI, and 10 percent had diarrhoea. More than 90 percent of the children who became ill with ARI or diarrhoea were taken to a health facility or health provider. Despite progress, knowledge of the appropriate treatment of diarrhoea is still not as widespread in Punjab as it needs to be. Not all mothers (82 percent) of children age less than three years know about oral rehydration salt (ORS) packets and 20 percent of mothers incorrectly believe that when children are sick with diarrhoea, they should be given less to drink than usual. Only 65 percent of children with diarrhoea received some form of oral rehydration therapy (ORT), including 42 percent who received ORS. The percentage of children with diarrhoea who received ORS has increased considerably since NFHS-1, however, when it was 24 percent.

Based on a weight-for-height index (the body mass index), about one-fifth (17 percent) of women in Punjab are undernourished. Nutritional deficiency is particularly serious for 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, 41 percent of women in Punjab have some degree of anaemia, and 13 percent are moderately to severely anaemic. Anaemia is a serious problem among women in every population group, with prevalence rates ranging from 37 to 53 percent. Pregnant and nonpregnant, breastfeeding women are more likely than nonpregnant, non-breastfeeding women to be moderately to severely anaemic.

In Punjab, 75 percent of households use cooking salt that is iodized at the recommended level of 15 parts per million. The proportion of households using adequately iodized cooking salt is, however, much lower in rural households (67 percent), scheduled-caste households (65 percent), and households with a low standard of living (47 percent). These data suggest that iodine deficiency disorders are likely to be a problem in Punjab, especially in disadvantaged households.

Twenty-eight percent of currently married women in Punjab report some type of reproductive health problem, including abnormal vaginal discharge, symptoms of a urinary tract infection, and pain or bleeding associated with intercourse. Among these women, 41 percent have not sought any advice or treatment. These results suggest a need to expand reproductive health services, as well as information programmes that encourage women to discuss their problems with a health-care provider.

In recent years, there has been growing concern about domestic violence, not only because such violence is a violation of human rights, but also because of the close association of violence with the health and welfare of women and families. NFHS-2 found that in Punjab, the majority of ever-married women do not accept that the beating of wives by husbands is justified. Only 22 percent of women accept at least one of six reasons as a justification for a husband beating his wife, compared with 56 percent in India as a whole. Fourteen percent of ever-married women have experienced beatings or physical mistreatment since age 15 and 6 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 especially prevalent among the more disadvantaged women.

The survey collected information from the household informant (generally the household head or other knowledgeable adult) on the prevalence of tuberculosis, asthma, malaria, and jaundice among all household members. Disease prevalence based on reports from household informants must be interpreted with caution, however. The survey found that less than half a percent of the population suffers from tuberculosis, 1 percent suffers from asthma, 1 percent suffered from malaria during the three months preceding the survey, and 1 percent suffered from jaundice during the 12 months preceding the survey. Though the prevalence rates for men and women are very similar, they are all slightly higher for women than men. With the exception of the rate for jaundice, prevalence rates for all the other diseases are higher in rural areas than in urban areas.

A large majority of household respondents in Punjab (86 percent) said that household members usually go to private hospitals or private doctors for treatment when they get sick. Only 14 percent normally use the public medical sector. Even among poor households, only 19 percent normally use the public medical sector when household members become ill. NFHS-2 also asked women about the quality of care received during the most recent visit to a health facility. Most respondents are generally satisfied with the health care they receive. Almost all women received the service they went for on their last visit. On average, women had to wait about 14 minutes before being served. Almost all (99 percent) said that the staff spent enough time with them and 80 percent said that the staff talked to them nicely. Only 64 percent rated the health facility as very clean. Eighty-four percent of those who said they needed privacy during the visit said that the staff respected their need for privacy. Ratings of the quality of services are consistently lower for public-sector facilities than for private-sector facilities. In Punjab, only 2 percent of women report having received at least one home visit from a health or family planning worker in the 12 months preceding the survey.

NFHS-2 also collected information for household members on selected lifestyle behaviors—smoking, alcohol consumption, and chewing of *paan masala* or tobacco—that can have detrimental effects on health. According to household respondents, 14 percent of adult men currently smoke, 28 percent of adult men drink alcohol, and 9 percent of adult men chew *paan masala* or tobacco. Alcohol consumption by adult men is much more common in Punjab than in India as a whole. Indeed, Punjab is second only to Goa among all the Indian states in the proportion of men who consume alcohol. By contrast, smoking and the chewing of *paan masala* or tobacco by adult men is much less common in Punjab than in India as a whole. Only negligible proportions (each less than 1 percent) of adult women in Punjab smoke, drink alcohol, or chew *paan masala* or tobacco.

Although the spread of HIV/AIDS is a major concern in India, only 55 percent of women in Punjab have even heard of AIDS. Awareness of AIDS is particularly low among women from households with a low standard of living, women who are not regularly exposed to any media, women who are illiterate, and scheduled-caste women. Among women who have heard of AIDS, 95 percent learned about the disease from television and 25 percent from the radio, suggesting that government efforts to promote AIDS awareness through the electronic mass media have achieved some success. However, since exposure to television and radio is not universal, AIDS programmes will have to find innovative ways of reaching women who are not exposed to mass media. About one-fourth of women report receiving information about AIDS from posters and hoardings. Among women who have heard of AIDS, almost one-third (32 percent) do not know of any way to avoid infection. NFHS-2 results suggest that health personnel could play a much larger role in promoting AIDS awareness. In Punjab, only 3 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 quality of health and family welfare services. Another important objective is to examine this information in the context of related socioeconomic and cultural factors. The survey is also intended to provide estimates at the regional level for five states (Bihar, Jammu and Kashmir, Madhya Pradesh, Rajasthan, and Uttar Pradesh) and estimates for three metro cities (Chennai, Kolkata, and Mumbai), as well as slum areas in Mumbai. This information will assist policymakers and programme administrators in planning and implementing strategies for improving population, health, and nutrition programmes. Comparative state results from NFHS-2 have already been published (International Institute for Population Sciences and ORC Macro, 2000). The current report provides a more comprehensive picture of the findings for Punjab.

The NFHS-2 national 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 collecting the data in one or more states. The Centre for Research in Rural and Industrial Development (CRRID) in Chandigarh was selected as the field organization for NFHS-2 in Punjab.

1.2 Basic Socioeconomic and Demographic Features of Punjab

Situated in the north-west of India, Punjab shares its border with Pakistan on the west, Jammu and Kashmir on the north, Himachal Pradesh on the north-east, and Haryana and Rajasthan on the south. Punjab has an area of 50,362 square kilometres. According to the 2001 Census of India, the population of Punjab is 24.3 million, two years after NFHS-2. Punjab continues to rank 15th in terms of population size among all the states and union territories in India, even though its share in the total population of India (2.40 percent) has increased marginally in 2001 from its share in 1991 (2.37 percent). According to the 1991 Census, Sikhs are the predominant religious

community in Punjab and account for 63 percent of the state's total population. Moreover, four-fifths of all Sikhs in India reside in Punjab. Hindus are the second largest community in the state (with a share in the population of 35 percent), followed by Muslims and Christians (with a share of 1 percent each) (Directorate of Census Operations, Punjab, 1996).

Punjab is one of the most prosperous states in India. In 1996–97, Punjab had a per capita net state domestic product of Rs. 18,213 at current prices, second only to Goa, and had a per capita net state domestic product at constant (1980–81) prices of Rs. 4,371, third only to Goa and Maharashtra. The corresponding figures for India as a whole are Rs. 10,919 and Rs. 2,814, respectively (EPW Research Foundation 1998). According to the estimates given by the Planning Commission for 1993–94, only 12 percent of the total population in Punjab (12 percent of the rural population and 11 percent of the urban population) were below the poverty line, much less than the 36 percent for India as a whole (Central Statistical Organisation, 1999).

The state has played a major and critical role in the success of the green revolution in India. In Punjab, nearly 84 percent of the total geographical area is under cultivation and Punjab alone accounts for a substantial proportion of the country's wheat and rice production. Several agricultural products including mushrooms, honey, chilies, and tomato paste are exported from Punjab (Ministry of Information and Broadcasting, 2001). Other crops grown in Punjab include maize, gram, sugarcane, and pulses. At the time of the 1991 Census, the agricultural sector provided a livelihood for 55 percent of the working population in the state (Office of the Registrar General and Census Commissioner, 1992).

Although Punjab continues to be predominantly agricultural, the share of the agricultural sector in the state domestic product has declined from 48 percent in 1980–81 to 45 percent in 1996–97. In the same period, the share of the manufacturing sector has doubled from 11 percent to 22 percent (EPW Research Foundation, 1998). About two hundred thousand small-scale units employing about nine hundred thousand persons produce a variety of products from nuts and bolts and electronic items to surgical and leather goods. There are also over six hundred large- and medium-scale units providing employment to over two hundred thousand persons. Information technology and software development companies are recent additions to the industrial base of the state. Major hydroelectric projects including the Bhakra Nangal complex have played a significant role in considerably enhancing the irrigation and power potential of the state.

The total population of the state was 13.6 million in 1971, 16.8 million in 1981, 20.3 million in 1991, and 24.3 million in 2001. The decadal growth rate increased from 21.7 percent in 1961–71 to 23.9 percent in 1971–81 and then decreased to 20.8 percent in 1981–91 and further to 19.8 percent during 1991–2001. The average annual exponential growth rate for the state during 1991–2001 (1.8 percent) is slightly lower than the rate during 1981–91 (1.9 percent), yet the percentage contribution of Punjab to total population growth in the country has increased from 2.1 percent during 1981–91 to 2.2 percent during 1991–2001.

Population density per square kilometre increased from 269 in 1971 to 403 in 1991 and to 482 in 2001. The population density in Punjab is much higher than the density for the country as a whole (324) indicating an increasing pressure on land and other resources. Punjab with 30 percent of its population in urban areas is somewhat more urbanized than India as a whole (26 percent).

According to the 2001 Census of India, the sex ratio in Punjab, at 874 females per 1,000 males, is lower than it was in 1991 (882), and is more unfavourable to females than the sex ratio for the country as a whole (933). The decline in the sex ratio in the last decade is largely due to a drastic decline in the sex ratio of the population age 0–6 from 875 in 1991 to 793 in 2001. The declining sex ratio of the child population is a serious concern for the state.

According to the 1991 Census, the scheduled-caste population comprised 28 percent of the total population in Punjab, compared with 17 percent for India as a whole. There are almost no scheduled tribes¹ in the state (Office of the Registrar General and Census Commissioner, 1995).

The literacy rate in Punjab for the population age seven and above is 70 percent according to the 2001 Census, up from 59 percent in 1991. Seventy-six percent of males and 64 percent of females age 7 and above are literate. By comparison, the literacy rate in India is 65 percent for the country as a whole, 76 percent for males, and 54 percent for females. Between 1991 and 2001, the absolute increase in the literacy rate in Punjab has been greater for females than for males (Office of the Registrar General and Census Commissioner, 2001).

According to the Sample Registration System, the crude death rate declined from 10.4 per 1,000 population in 1971 to 7.7 in 1998. The crude death rate in urban areas (6.3) is lower than the rate in the rural areas (8.2). The infant mortality rate (IMR) in Punjab in the same year is estimated at 54 per 1,000 live births, which is much lower than the rate of 72 for India as a whole. The rural IMR (58) is 45 percent higher than the urban IMR (40). The infant mortality rate declined by almost 50 percent between 1971 and 1998 from 102 to 54 deaths per 1,000 live births (Office of the Registrar General, 2000; 1999b). For the period 1996–2001, life expectancy was projected to be 68.4 years for males and 71.4 years for females (Ministry of Health and Family Welfare, 1999a).

Between 1971 and 1998, fertility declined substantially in the state. The crude birth rate declined from 34.2 per 1,000 population in 1971 to 22.4 in 1998. The urban birth rate in Punjab (18.5) is lower than the corresponding rural rate (23.7). The total fertility rate has also declined from 5.2 children per woman in 1971 to 2.7 children per woman in 1997, a decline of 2.5 children per woman in the period of 26 years. Rural women (TFR=3.0) in Punjab, on average, give birth to about 0.7 more children than urban women (TFR=2.3) (Office of the Registrar General, 2000; 1999b).

The couple protection rate (defined as the percentage of eligible couples effectively protected against pregnancy by various methods of contraception) in Punjab was 69 percent in 1998, up from 24 percent in 1980. In comparison, the couple protection rate for India as a whole was 22 percent in 1980 and 45 percent in 1998 (Ministry of Health and Family Welfare, 1999a).

1.3 Questionnaires

NFHS-2 used three types of questionnaires: the Household Questionnaire, the Woman's Questionnaire, and the Village Questionnaire. The overall content and format of the questionnaires were determined through a series of workshops held at IIPS in Mumbai in 1997

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

and 1998. The workshops were attended by representatives of a wide range of organizations in the population and health fields, as well as experts working on gender issues. The questionnaires in Punjab were bilingual, with questions in both Punjabi and English.

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

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

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

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

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

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

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

Antenatal, delivery, and postpartum care: The questionnaire collects information on whether women received antenatal and postpartum care, who attended the delivery, and the nature of complications during pregnancy for the last two births since January 1995.

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 the sources of their knowledge, as well as their knowledge about ways to avoid getting AIDS.

In addition, the health investigator on each survey team measured the height and weight of each woman and each of her children born since January 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 the problems.

1.4 Survey Design and Sample Implementation

Sample Size and Reporting Domains

The overall target sample size for Punjab was 3,000 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 and for its urban and rural areas separately. The sample is not large enough to provide reliable estimates for individual districts. The required sampling rates for urban and rural areas were determined by allocating the sample proportionally to the population of the two areas taking into account their expected nonresponse rates based on nonresponse rates of urban and rural areas in the state as a whole in NFHS-1.

Sample Design

Within each of the two sampling domains (rural areas and urban areas), a systematic, multi-stage stratified sampling design was used. The rural sample was selected in two stages: the selection of Primary Sampling Units (PSUs), which are villages or groups of villages (in the case of small linked villages), with probability proportional to size (PPS) in the first stage, followed by

selection of households using systematic sampling within each selected PSU in the second stage. In urban areas, a three-stage sampling procedure was followed. In the first stage, wards were selected with PPS. From each selected ward, one census enumeration block (CEB) was selected with PPS in the second stage, followed by the selection of households using systematic sampling within each selected CEB in the third stage.

Sample Selection in Rural Areas

In rural areas, the 1991 Census list of villages served as the sampling frame. The list was stratified by a number of variables. The first level of stratification was geographic, with villages classified into four contiguous regions. The district composition of the four geographic regions is as follows:

Region I:	Gurdaspur, Amritsar, and Ferozpur
Region II:	Jalandhar, Kapurthala, Hoshiarpur, and Rupnagar
Region III:	Ludhiana, Patiala, and Sangrur
Region IV:	Bhatinda and Faridkot

In each region, villages were further stratified by village size and by the percentage of population belonging to the scheduled castes and 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 arranged in this way, villages were selected systematically with probability proportional to the 1991 Census population of the village. Small villages with 5–49 households were linked with one or more adjoining villages to form PSUs with a minimum of 50 households. Villages with fewer than five households were excluded from the sampling frame.

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

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

where n = number of rural women to be interviewed (after adjusting upward to account for nonresponse and other loss), and
 N = projected rural population of eligible women in the state in December 1998.

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

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

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

Table 1.1 Sampling stratification				
Sampling stratification procedure in rural areas, Punjab				
Stratum	Region	Stratification variables		Population ¹
		Village size (number of residential households)	Percent SC/ST population	
1	1	≤ 250	≤ 30	1,119,890
2	1	≤ 250	> 30	827,689
3	1	> 250	≤ 30	1,237,842
4	1	> 250	> 30	1,057,666
5	2	≤ 225	≤ 35	921,343
6	2	≤ 225	> 35	997,276
7	2	> 225	≤ 35	921,365
8	2	> 225	> 35	851,796
9	3	≤ 300	≤ 30	979,056
10	3	≤ 300	> 30	1,096,148
11	3	> 300	≤ 30	954,836
12	3	> 300	> 30	819,123
13	4	≤ 500	NU	1,311,336
14	4	> 500	NU	1,188,440
Total	NA	NA	NA	14,283,806

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
¹The population shown is the 1991 Census population, excluding persons living in villages with fewer than five households.

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 750 households were segmented into three or more segments, and two segments were selected randomly using the PPS method. Household listing in these PSUs was carried out only in the selected segments. The work was carried out by four teams, each comprising one lister and one mapper, under the supervision of one field supervisor and one field executive. The teams were trained from 28–30 September 1998 in Chandigarh by an official from CRRID, Chandigarh, who was earlier trained in a workshop conducted by IIPS. The mapping and household listing operation was carried out between 1 October 1998 and 15 January 1999. The households to be interviewed were selected with equal probability from the household list in each selected enumeration area using systematic sampling.

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

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

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

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

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

where n = number of urban women to be interviewed (after adjusting upward to account for nonresponse and other loss), and
 N = projected urban population of eligible women in the state in December 1998.

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

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

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

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

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

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

A household listing operation carried out in each selected 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 i^{th} domain (i.e, the rural or the urban domain), calculated as the ratio of the overall sampling fraction ($F = n/N$) and the sampling fraction for the i^{th} domain ($f = n_i/N_i$). Note that $n = \sum n_i$ and $N = \sum N_i$.

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 i^{th} domain.

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

Table 1.2. Sample results						
Sample results for households and ever-married women age 15–49 by residence, Punjab, 1998–99						
Results	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
Households selected	1,107	100.0	1,963	100.0	3,070	100.0
Households completed (C)	1,066	96.3	1,901	96.8	2,967	96.6
Households with no household member at home or no competent respondent at home at the time of interview (HP)	5	0.5	11	0.6	16	0.5
Households absent for extended period (HA)	7	0.6	19	1.0	26	0.8
Households postponed (P)	0	0.0	0	0.0	0	0.0
Households refused (R)	17	1.5	12	0.6	29	0.9
Dwelling vacant/address not a dwelling (DV)	11	1.0	19	1.0	30	1.0
Dwellings destroyed (DD)	1	0.1	1	0.1	2	0.1
Dwellings not found (DNF)	0	0.0	0	0.0	0	0.0
Households occupied	1,088	100.0	1,924	100.0	3,012	100.0
Households interviewed	1,066	98.0	1,901	98.8	2,967	98.5
Households not interviewed	22	2.0	23	1.2	45	1.5
Household response rate (HRR) ¹	NA	98.0	NA	98.8	NA	98.5
Eligible women	1,016	100.0	1,857	100.0	2,873	100.0
Women interviewed (EWC)	993	97.7	1,803	97.1	2,796	97.3
Women not at home (EWNH)	17	1.7	26	1.4	43	1.5
Women postponed (EWP)	0	0.0	0	0.0	0	0.0
Women refused (EWR)	3	0.3	11	0.6	14	0.5
Women partly interviewed (EWPC)	1	0.1	2	0.1	3	0.1
Other (EWO)	2	0.2	15	0.8	17	0.6
Eligible women's response rate (EWRR) ²	NA	97.7	NA	97.1	NA	97.3
Overall response rate (ORR) ³	NA	95.8	NA	95.9	NA	95.9

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

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

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

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

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

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

women and children) are based on the percentage of eligible women whose height or weight was measured.

Sample Implementation

A total of 100 PSUs were selected, of which 33 were urban and 67 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 total effect of nonresponse at the two stages. The survey achieved an

overall response rate of 96 percent. There is almost no difference in the response rates in rural areas and urban areas.

Of the 3,070 households selected in Punjab, interviews were completed in 97 percent of the cases. In 1 percent of the cases, the dwelling was vacant or the address was not a dwelling, and in approximately 1 percent of cases each, the household was absent for an extended period, refused to be interviewed, or did not have a competent respondent. The household response rate—the number of households interviewed per 100 occupied households—was 98 percent in urban areas and 99 percent in rural areas.

In the interviewed households, 2,873 women were identified as eligible for the individual interview. Interviews were successfully completed with 97 percent of the eligible women (98 percent in urban areas and 97 percent in rural areas). Non-response at the individual level was primarily due to eligible women not being at home (2 percent) despite repeated household visits. Very few eligible women refused to be interviewed.

1.5 Recruitment, Training, and Fieldwork

Field staff for the main survey were trained in Chandigarh by the officials of CRRID, who were trained earlier in a Training of Trainers Workshop conducted by IIPS. Training in Punjab consisted of classroom training, general lectures, and demonstration and practice interviews, as well as actual field practice and supplementary 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.

Four interviewing teams conducted the main fieldwork, each team consisting of one male field supervisor, one female field editor, four female interviewers, and one male health investigator. The fieldwork was carried out between 26 November 1998 and 2 May 1999. Coordinators and senior staff of CRRID monitored and supervised the data collection operations. IIPS also deputed 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 CRRID office in Chandigarh for data processing, which consisted of office editing, coding, data entry, and machine editing, using the Integrated System for Survey Analysis (ISSA) software. Data entry was done by 10 data entry operators under the supervision of senior staff at CRRID who were trained at a data-processing workshop

in Vadodara. Data entry and editing operations were completed by June 1999. Tabulations for the preliminary report as well as for the present final report were carried out at IIPS in Mumbai. All tables in the report, except for tables in Chapter 1, are weighted according to the weights defined in Section 1.4. Precision of estimates in the tables is indicated by the standard errors shown in Appendix A.

CHAPTER 2

BACKGROUND CHARACTERISTICS OF HOUSEHOLDS

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

2.1 Age-Sex Distribution of the Household Population

The NFHS-2 household population can be tabulated in two ways: *de facto* (the place each person stayed the night before the survey interview) or *de jure* (the place of usual residence). The *de facto* and *de jure* populations in Punjab differ because of temporary population movements. Table 2.1 shows the *de facto* population in the NFHS-2 household sample for Punjab, classified by age, residence, and sex. The total *de facto* sample population is 15,987. The sample is 30 percent urban and 70 percent rural.

The age distribution of the population in Punjab is typical of populations in which fertility has fallen recently, with relatively low proportions of the population in the older age groups and increasing proportions of population in the three youngest age groups (Figure 2.1). The slightly lower proportion of the population under age 5, compared with the population age 5–9, is consistent with a recent decline in fertility. Overall, 31 percent of the population is below 15 years of age, and only 8 percent is age 65 or older. The proportion below age 15 is slightly higher in rural areas (32 percent) than in urban areas (29 percent).

The single-year age distributions by sex in the *de facto* population (see Appendix Table B.1) indicate that there is some misreporting of ages, including considerable preference for ages ending in particular digits, especially 0, 2, 5, and 8. One of the most commonly used measures of digit preference in age reporting is Myers' Index (United Nations, 1955). This index provides an overall summary of preferences for, or avoidance of, each of the 10 digits, from 0 to 9. The index is often used as one indicator of the quality of age reporting on a survey. Values of Myers' Index computed for the age range 10–69 in the household sample population in Punjab are 25.7 for males and 20.9 for females. The lower estimate for females is probably due to the emphasis during interviewer training on obtaining accurate age information for women to correctly determine the eligibility of women for the individual interview. The values of Myers' Index from NFHS-2 are lower than the values from NFHS-1, i.e., 30.5 and 25.4, respectively, for males and females (corrected and revised from the published NFHS-1 estimates). This indicates that age reporting on the Household Questionnaire in Punjab is better in NFHS-2 than in NFHS-1.

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 for 1997. The SRS baseline survey, which is *de jure*, counts all usual residents in a sample area (Office of the Registrar General, 1999a). The NFHS-2 and SRS age distributions are similar for broad age groups, despite some misreporting of age that is evident in the NFHS-2 single-year age data. Also, the proportion of the Punjab population in the age-group 0–6 according to the provisional population totals of the 2001 Census of India (Office of the Registrar General and Census Commissioner,

Table 2.1 Household population by age and sex

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

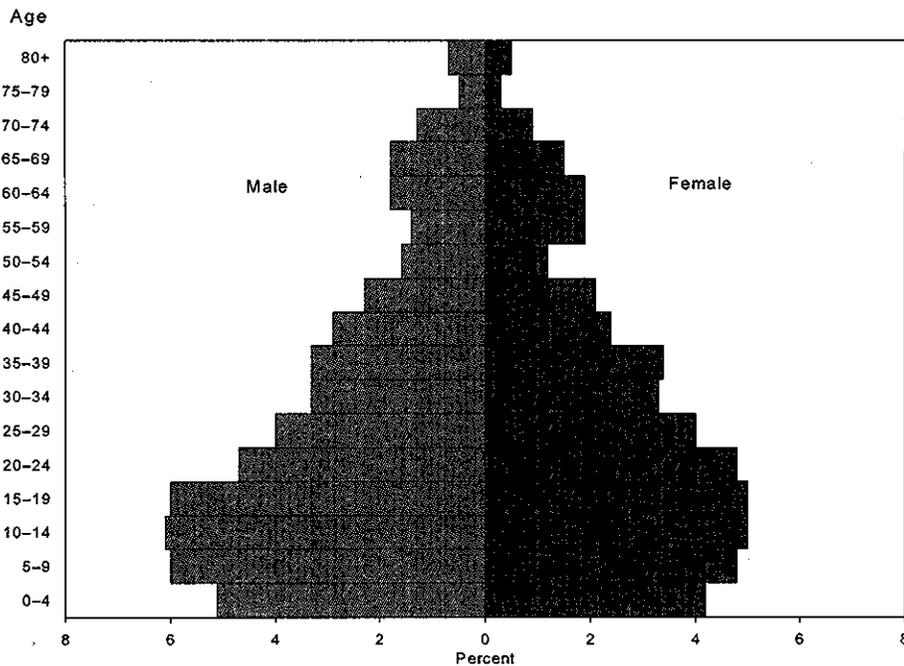
Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
< 1	1.2	1.4	1.3	2.3	2.0	2.1	1.9	1.8	1.9
1-4	6.9	5.6	6.3	8.3	7.8	8.1	7.8	7.2	7.5
5-9	10.3	9.1	9.7	11.8	10.6	11.2	11.3	10.1	10.8
10-14	12.6	11.5	12.0	11.3	10.2	10.8	11.6	10.6	11.1
15-19	10.8	10.9	10.8	11.6	10.3	11.0	11.3	10.5	10.9
20-24	8.6	9.4	9.0	8.9	10.6	9.7	8.8	10.2	9.5
25-29	7.1	8.6	7.8	7.7	8.4	8.0	7.5	8.5	8.0
30-34	7.1	7.7	7.4	5.9	6.6	6.2	6.3	7.0	6.6
35-39	6.8	7.5	7.2	6.0	6.9	6.4	6.2	7.1	6.6
40-44	6.4	6.0	6.2	5.1	4.7	4.9	5.4	5.1	5.3
45-49	5.4	4.8	5.1	3.9	4.4	4.1	4.4	4.5	4.4
50-54	3.5	2.8	3.1	2.9	2.5	2.7	3.1	2.6	2.8
55-59	3.6	4.9	4.2	2.3	3.6	2.9	2.7	4.0	3.3
60-64	2.9	3.5	3.2	3.5	4.4	3.9	3.3	4.1	3.7
65-69	2.9	2.8	2.9	3.7	3.2	3.5	3.5	3.1	3.3
70-74	2.2	2.0	2.1	2.6	1.8	2.3	2.5	1.9	2.2
75-79	0.9	0.6	0.8	0.9	0.6	0.8	0.9	0.6	0.8
80+	0.9	0.8	0.9	1.4	1.3	1.4	1.3	1.1	1.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of persons	2,487	2,339	4,827	5,930	5,231	11,161	8,417	7,571	15,987
Sex ratio ¹	NA	NA	941	NA	NA	882	NA	NA	899

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

NA: Not applicable

¹Females per 1,000 males

**Figure 2.1
Population Pyramid**



NFHS-2, Punjab, 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, Punjab, 1997-99					
Age	SRS (1997)		NFHS-2 (1998-99)		
	Male	Female	Male	Female	Sex ratio ¹
< 5	10.3	9.4	9.7	8.8	813
5-14	23.2	22.2	23.0	20.7	803
15-29	29.1	29.2	27.7	28.9	937
30-49	23.4	24.8	22.2	24.0	967
50-64	8.6	9.0	9.1	10.9	1,070
65+	5.4	5.4	8.2	6.7	730
Total	100.0	100.0	100.0	100.0	896
Median age	U	U	22.8	25.0	NA

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

2001), at 13 percent, is very similar to the proportion of the *de jure* population age 0-6 in NFHS-2, at 14 percent.

Tables 2.1 and 2.2 also present sex ratios (females per 1,000 males) in Punjab from NFHS-2. The sex ratio of the *de facto* population is 899 for Punjab as a whole, and is higher (941) in urban areas than in rural areas (882) (Table 2.1). The sex ratio of the *de jure* population, at 896 (Table 2.2), is almost the same as the sex ratio of the *de facto* population. According to the 2001 Census of India provisional estimates, the *de jure* sex ratio for Punjab is even lower, at 874, approximately two years after NFHS-2.

The NFHS-2 sex ratio in Punjab (896) is much lower than the all-India sex ratio (949). The much lower sex ratio in Punjab could be due to several factors, including male labour immigration from other states, a greater undercount of females than males, excess female mortality, and sex-selective abortions. Excess female mortality and sex-selective abortions may be particularly responsible for the even lower sex ratio of the population age 0-6 years, which is estimated at 825 by NFHS-2 for the *de jure* population (not shown), and at 793 by the 2001 Census provisional estimates (Office of the Registrar General and Census Commissioner, 2001).

NFHS-2 also permits an examination of the relative role of sex-selective abortions and of excess female mortality in the excessively male sex ratio of the population age 0-6 years. The sex ratio at birth from NFHS-2 for the seven-year period preceding the survey is 861, much higher than the sex ratio of the population age 0-6 years, suggesting that sex-selective abortions are not the only factor responsible for the low sex ratio of the 0-6 population (Table B.4, Appendix B). This is also borne out by an examination of the sex ratios of nonsurviving children who were born during the seven years preceding the survey (1992-98). Though not conclusive due to the small number of total deaths for the period, these data show that there are about 1.6 times as many girls as boys among the nonsurviving children. Further, a comparison of the sex ratio at birth for the latter part of the seven-year period preceding the survey (1996-98), at 937, with the sex ratio at birth for the earlier part of the period (1992-95), at 812, shows improvement in the sex ratio at birth over time in Punjab. This suggests that the role of sex-selective abortions in the sex ratio imbalance in Punjab may be changing over time.

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 marital status distribution 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. The proportion never married is higher for males (49 percent) than for females (38 percent), and varies little by urban-rural residence. The proportion divorced, separated, or deserted is small, and widowhood is quite limited until the older ages. Thirty-two percent of women age 50 or older are widowed, but only 13 percent of men in that age group are widowed, partly because remarriage is more common among males than among females.

Also of interest is the proportion of persons who marry young. At age 15–19, the proportions ever married are 1 percent for males and 8 percent for females (less than 1 percent for males and 2 percent for females in urban areas, and 1 percent for males and 10 percent for females in rural areas). Even by age 25–29, the proportion of women married (92 percent) is higher than the proportion of men married (69 percent). By age 30–49, however, almost all women (99 percent) and men (95 percent) have been married. Overall the table shows that women in Punjab marry at younger ages than men, and that both men and women marry at younger ages in rural areas than in urban areas.

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, Punjab, 1998–99								
Age	Marital status							Total percent
	Never married	Currently married	Married, <i>gaura</i> not performed	Widowed	Divorced	Separated	Deserted	
URBAN								
Male								
6–12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13–14	99.2	0.8	0.0	0.0	0.0	0.0	0.0	100.0
15–19	99.7	0.3	0.0	0.0	0.0	0.0	0.0	100.0
20–24	88.6	11.4	0.0	0.0	0.0	0.0	0.0	100.0
25–29	36.1	63.9	0.0	0.0	0.0	0.0	0.0	100.0
30–49	3.0	95.9	0.0	0.8	0.0	0.3	0.0	100.0
50+	2.5	85.1	0.0	12.2	0.0	0.2	0.0	100.0
Total	47.8	49.6	0.0	2.5	0.0	0.1	0.0	100.0
Female								
6–12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13–14	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15–19	97.6	2.4	0.0	0.0	0.0	0.0	0.0	100.0
20–24	55.7	43.9	0.0	0.0	0.4	0.0	0.0	100.0
25–29	10.8	88.8	0.0	0.4	0.0	0.0	0.0	100.0
30–49	1.1	93.7	0.0	4.6	0.1	0.0	0.4	100.0
50+	0.4	64.1	0.0	35.3	0.0	0.0	0.2	100.0
Total	39.5	52.2	0.0	8.1	0.1	0.0	0.2	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, Punjab, 1998-99

Age	Marital status							Total percent
	Never married	Currently married	Married, <i>gauna</i> not performed	Widowed	Divorced	Separated	Deserted	
RURAL								
Male								
6-12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13-14	99.6	0.4	0.0	0.0	0.0	0.0	0.0	100.0
15-19	98.6	1.2	0.2	0.0	0.0	0.0	0.0	100.0
20-24	75.9	23.1	0.6	0.0	0.0	0.0	0.4	100.0
25-29	28.4	70.2	0.2	0.7	0.0	0.2	0.2	100.0
30-49	6.0	91.1	0.1	1.9	0.2	0.4	0.3	100.0
50+	4.4	82.4	0.1	12.6	0.0	0.0	0.4	100.0
Total	49.5	47.0	0.1	3.0	0.0	0.1	0.2	100.0
Female								
6-12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13-14	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15-19	89.3	9.7	0.8	0.0	0.0	0.0	0.2	100.0
20-24	37.7	61.6	0.0	0.4	0.0	0.0	0.4	100.0
25-29	6.1	92.9	0.0	0.7	0.2	0.0	0.0	100.0
30-49	0.4	92.7	0.0	6.2	0.3	0.2	0.4	100.0
50+	0.0	69.5	0.0	30.0	0.0	0.2	0.2	100.0
Total	36.7	55.1	0.1	7.7	0.1	0.1	0.2	100.0
TOTAL								
Male								
6-12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13-14	99.5	0.5	0.0	0.0	0.0	0.0	0.0	100.0
15-19	98.9	1.0	0.1	0.0	0.0	0.0	0.0	100.0
20-24	79.6	19.7	0.4	0.0	0.0	0.0	0.3	100.0
25-29	30.5	68.4	0.2	0.5	0.0	0.2	0.2	100.0
30-49	5.0	92.7	0.1	1.5	0.1	0.4	0.2	100.0
50+	3.9	83.2	0.1	12.5	0.0	0.1	0.3	100.0
Total	49.0	47.8	0.1	2.9	0.0	0.1	0.2	100.0
Female								
6-12	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13-14	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15-19	91.9	7.4	0.5	0.0	0.0	0.0	0.1	100.0
20-24	42.8	56.5	0.0	0.3	0.1	0.0	0.3	100.0
25-29	7.6	91.6	0.0	0.6	0.2	0.0	0.0	100.0
30-49	0.6	93.0	0.0	5.6	0.2	0.1	0.4	100.0
50+	0.1	67.8	0.0	31.7	0.0	0.2	0.2	100.0
Total	37.6	54.2	0.1	7.8	0.1	0.1	0.2	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 household respondents, whereas in NFHS-1 the ages of ever-married women age 13-49 were taken from the Woman's Questionnaire.

Table 2.4 Singulate mean age at marriage			
Singulate mean age at marriage by sex from selected sources, Punjab, 1961–1999			
Source	Singulate mean age at marriage (SMAM)		
	Male	Female	Difference
1961 Census	22.6	17.5	5.1
1971 Census	24.1	20.1	4.0
1981 Census	25.0	21.1	3.9
1991 Census	24.3	21.0	3.3
1993 NFHS-1			
Urban	25.5	21.7	3.8
Rural	24.6	20.9	3.7
Total	24.8	21.1	3.7
1998–99 NFHS-2			
Urban	26.4	23.2	3.2
Rural	25.5	21.6	3.9
Total	25.7	22.1	3.7

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

Table 2.4 shows estimates of the singulate mean age at marriage (SMAM), which can be calculated from age-specific proportions single in a census or household survey. SMAM is calculated from the *de jure* population in NFHS-2 in order to arrive at estimates that are more comparable to those derived from the censuses, which are modified *de jure* counts. According to the SMAM measure, men in Punjab tend to marry women who are nearly four years younger than themselves. The SMAM is 22.1 for females and 25.7 for males. Marriage ages are slightly higher in urban areas (by about one year for men and one and a half years for women) than in rural areas. Notably, the SMAM for women in Punjab (22.1) is much higher than the SMAM for women in India as a whole (19.7).

Census and NFHS-2 data indicate that the age at marriage has been rising for both men and women, but has risen somewhat faster for women than for men. In the five and a half years between NFHS-1 and NFHS-2, however, the age at marriage has increased by one year for both men and women.

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 the number of usual household members, according to residence. The table is based on the *de jure* population because household type and the number of usual household members pertain to the usual-resident population. The table shows that 9 out of 10 household heads are male, regardless of area of residence (rural or urban).

The median age of household heads is 48 years in both urban and rural areas. Two-thirds of household heads are age 30–59 and only 7 percent are less than age 30. Fifty-four percent of household heads are Sikh, 42 percent are Hindu, and 2 percent each are Muslim and Christian.

Table 2.5 Household characteristics			
Percent distribution of households by selected characteristics of household head, household composition, and household size, according to residence, Punjab, 1998-99			
Characteristic	Urban	Rural	Total
Sex of household head			
Male	90.3	90.7	90.6
Female	9.7	9.3	9.4
Age of household head			
< 30	4.9	8.4	7.3
30-44	34.6	33.0	33.5
45-59	34.0	26.4	28.8
60+	26.5	32.2	30.4
Median age	48.1	48.1	48.1
Religion of household head			
Hindu	61.2	33.0	41.9
Muslim	4.4	1.1	2.1
Christian	2.7	1.6	2.0
Sikh	31.5	64.1	53.9
Jain	0.1	0.0	0.0
Missing	0.0	0.1	0.1
Caste/tribe of household head			
Scheduled caste	16.2	35.9	29.8
Scheduled tribe	0.0	0.1	0.1
Other backward class	17.2	16.6	16.8
Other	66.6	47.4	53.4
Household type			
Nuclear household	59.9	55.5	56.9
Non-nuclear household	40.1	44.5	43.1
Number of usual members			
1	2.6	2.5	2.5
2	6.8	6.3	6.4
3	10.5	8.9	9.4
4	22.8	18.5	19.8
5	20.7	20.5	20.6
6	15.8	17.8	17.2
7	9.4	10.3	10.0
8	4.4	5.9	5.4
9+	6.9	9.4	8.6
Mean household size	5.1	5.5	5.4
Total percent	100.0	100.0	100.0
Number of households	930	2,037	2,967
Note: Table is based on the <i>de jure</i> population.			

Sikhs constitute 64 percent of rural households and Hindus constitute 61 percent of urban households. Thirty percent of household heads belong to scheduled castes, 17 percent to other backward classes (OBC¹), and only a negligible proportion (0.1 percent) belong to the scheduled tribes. Scheduled-caste households constitute a much higher proportion of rural households (36 percent) than of urban households (16 percent), whereas OBC households are equally represented among urban and rural households (both 17 percent).

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

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, Punjab, 1998-99										
Age	Educational level ¹							Total percent	Number of persons	Median number of years of schooling
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing			
URBAN										
Male										
6-9	3.0	97.0	0.0	0.0	0.0	0.0	0.0	100.0	206	1.6
10-14	2.2	40.2	48.3	9.2	0.0	0.0	0.0	100.0	312	5.4
15-19	1.3	2.6	8.1	32.5	35.1	20.5	0.0	100.0	269	10.2
20-29	4.2	1.6	7.8	12.5	27.7	46.2	0.0	100.0	391	11.0
30-39	8.1	1.3	11.6	13.4	31.6	34.1	0.0	100.0	346	10.5
40-49	7.4	1.8	8.9	12.5	32.0	37.4	0.0	100.0	294	10.7
50+	20.6	6.9	14.1	11.0	26.5	20.9	0.0	100.0	420	8.9
Total	7.6	16.8	14.7	13.1	23.1	24.6	0.0	100.0	2,238	9.5
Female										
6-9	6.2	93.8	0.0	0.0	0.0	0.0	0.0	100.0	170	1.7
10-14	1.6	31.8	50.3	16.2	0.0	0.0	0.0	100.0	269	6.1
15-19	3.4	1.0	8.6	26.4	39.3	21.2	0.0	100.0	255	10.4
20-29	9.1	2.3	7.6	8.7	24.4	47.9	0.0	100.0	422	11.0
30-39	15.2	2.9	12.5	10.5	28.4	30.6	0.0	100.0	357	10.3
40-49	22.1	3.1	14.5	9.7	24.1	26.5	0.0	100.0	253	10.0
50+	45.2	5.8	17.0	7.1	15.7	9.0	0.2	100.0	406	4.4
Total	16.7	14.0	15.9	11.2	20.1	22.0	0.0	100.0	2,131	8.4
Total										
6-9	4.4	95.6	0.0	0.0	0.0	0.0	0.0	100.0	376	1.6
10-14	2.0	36.3	49.3	12.4	0.0	0.0	0.0	100.0	581	5.7
15-19	2.3	1.8	8.3	29.5	37.2	20.8	0.0	100.0	523	10.3
20-29	6.8	1.9	7.7	10.5	26.0	47.1	0.0	100.0	813	11.0
30-39	11.7	2.1	12.0	11.9	29.9	32.3	0.0	100.0	702	10.4
40-49	14.2	2.4	11.5	11.2	28.4	32.4	0.0	100.0	547	10.4
50+	32.6	6.3	15.5	9.1	21.2	15.1	0.1	100.0	826	5.9
Total	12.0	15.5	15.3	12.2	21.7	23.4	0.0	100.0	4,368	8.8

Fifty-seven percent of all households in Punjab are nuclear family households (consisting of an unmarried adult living alone or a married person or a couple and their unmarried children, if any). Nuclear households are slightly more common in urban areas than in rural areas, but even in rural areas, more than half of all households (56 percent) are nuclear. The average household size is 5.4 persons (5.5 in rural areas and 5.1 in urban areas).

2.4 Educational Level

The level of education of household members may affect reproductive behaviour, contraceptive use, the health of children, and the adoption of proper hygienic practices. Table 2.6 shows the percent distribution of the *de facto* household population by literacy and 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 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, Punjab, 1998-99										
Age	Educational level ¹							Total percent	Number of persons	Median number of years of schooling
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing			
RURAL										
Male										
6-9	11.8	87.9	0.4	0.0	0.0	0.0	0.0	100.0	565	1.4
10-14	8.4	44.1	41.3	6.2	0.0	0.0	0.0	100.0	668	4.9
15-19	14.2	3.0	22.7	29.5	23.4	7.2	0.0	100.0	686	8.8
20-29	23.6	3.1	15.2	16.0	25.7	16.4	0.0	100.0	986	8.8
30-39	29.9	3.5	20.7	16.0	21.8	8.2	0.0	100.0	704	7.4
40-49	36.4	4.0	17.3	13.2	19.3	9.9	0.0	100.0	533	5.8
50+	59.4	6.3	13.1	7.6	9.8	3.7	0.1	100.0	1,031	0.0
Total	28.4	18.4	18.5	12.8	14.9	6.9	0.0	100.0	5,175	5.4
Female										
6-9	13.1	86.6	0.3	0.0	0.0	0.0	0.0	100.0	433	1.5
10-14	12.1	37.4	42.0	8.0	0.4	0.0	0.0	100.0	533	5.0
15-19	19.5	4.0	19.5	24.7	25.6	6.5	0.2	100.0	540	8.5
20-29	33.3	2.6	18.8	11.1	20.9	13.2	0.0	100.0	991	6.4
30-39	50.7	2.9	22.6	9.5	11.0	3.2	0.0	100.0	708	2.1
40-49	60.6	3.8	19.3	7.0	6.3	2.9	0.0	100.0	476	0.0
50+	87.3	2.9	6.3	1.4	1.2	0.8	0.0	100.0	913	0.0
Total	43.6	15.0	18.0	8.7	10.2	4.6	0.0	100.0	4,596	2.6
Total										
6-9	12.4	87.3	0.3	0.0	0.0	0.0	0.0	100.0	998	1.4
10-14	10.1	41.1	41.6	7.0	0.2	0.0	0.0	100.0	1,201	4.9
15-19	16.6	3.4	21.3	27.4	24.4	6.9	0.1	100.0	1,227	8.7
20-29	28.5	2.9	17.0	13.6	23.3	14.8	0.0	100.0	1,977	8.2
30-39	40.3	3.2	21.7	12.8	16.4	5.7	0.0	100.0	1,413	5.5
40-49	47.8	3.9	18.2	10.3	13.2	6.6	0.0	100.0	1,009	4.2
50+	72.5	4.7	9.9	4.7	5.7	2.4	0.1	100.0	1,945	0.0
Total	35.6	16.8	18.2	10.9	12.7	5.8	0.0	100.0	9,771	4.4

In Punjab, 35 percent of females and 22 percent of males age six and above are illiterate. Comparable figures from NFHS-1 are 48 percent of females and 34 percent of males, indicating a substantial increase in literacy in only five and a half years. Illiteracy is much lower in Punjab (28 percent) than in India as a whole (37 percent). The estimates for illiteracy from NFHS-2 for the population age 6 and above, are almost identical to the provisional estimates provided by the 2001 Census, even though the Census estimates are for the population age 7 and above. Provisional estimates from the 2001 Census put illiteracy for the population age 7 and above in Punjab at 36 percent for females and 24 percent for males.

The literacy gap between males and females has narrowed significantly over time. For example, among the population age 50 and above in NFHS-2, almost three-fourths of women are illiterate (74 percent), compared with almost half of men (48 percent). Among children age 10-14, however, 9 percent of females are illiterate compared with 6 percent of males. A rapid increase in educational attainment over time can also be seen by examining the differences in

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, Punjab, 1998–99

Age	Educational level ¹							Total percent	Number of persons	Median number of years of schooling
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing			
TOTAL										
Male										
6–9	9.4	90.3	0.3	0.0	0.0	0.0	0.0	100.0	771	1.4
10–14	6.4	42.9	43.5	7.2	0.0	0.0	0.0	100.0	981	5.0
15–19	10.6	2.9	18.6	30.4	26.7	10.9	0.0	100.0	955	9.3
20–29	18.1	2.7	13.1	15.0	26.2	24.8	0.0	100.0	1,376	10.0
30–39	22.7	2.8	17.7	15.1	25.0	16.7	0.0	100.0	1,050	8.6
40–49	26.1	3.2	14.3	12.9	23.8	19.6	0.0	100.0	827	8.6
50+	48.1	6.5	13.4	8.6	14.6	8.7	0.1	100.0	1,452	2.8
Total	22.1	18.0	17.3	12.9	17.4	12.3	0.0	100.0	7,413	6.4
Female										
6–9	11.2	88.7	0.2	0.0	0.0	0.0	0.0	100.0	603	1.5
10–14	8.6	35.5	44.8	10.8	0.3	0.0	0.0	100.0	802	5.3
15–19	14.3	3.0	16.0	25.3	30.0	11.2	0.1	100.0	795	9.3
20–29	26.1	2.5	15.5	10.4	22.0	23.6	0.0	100.0	1,413	8.6
30–39	38.8	2.9	19.2	9.9	16.8	12.4	0.0	100.0	1,065	5.5
40–49	47.3	3.6	17.7	7.9	12.5	11.1	0.0	100.0	728	4.5
50+	74.4	3.8	9.6	3.2	5.6	3.3	0.1	100.0	1,319	0.0
Total	35.1	14.7	17.3	9.5	13.3	10.1	0.0	100.0	6,727	5.0
Total										
6–9	10.2	89.6	0.2	0.0	0.0	0.0	0.0	100.0	1,374	1.5
10–14	7.4	39.6	44.1	8.8	0.1	0.0	0.0	100.0	1,782	5.2
15–19	12.3	2.9	17.4	28.1	28.2	11.1	0.1	100.0	1,750	9.3
20–29	22.2	2.6	14.3	12.7	24.1	24.2	0.0	100.0	2,789	9.4
30–39	30.8	2.8	18.5	12.5	20.9	14.5	0.0	100.0	2,115	7.4
40–49	36.0	3.4	15.9	10.6	18.5	15.6	0.0	100.0	1,556	5.9
50+	60.6	5.2	11.6	6.0	10.3	6.2	0.1	100.0	2,771	0.0
Total	28.3	16.4	17.3	11.3	15.4	11.2	0.0	100.0	14,139	5.6

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

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

educational levels by age. For example, the proportion of males completing at least high school more than doubles from 23 percent at age 50 and above to 51 percent at age 20–29. For females, the proportion completing at least high school is only 9 percent at age 50 and above, but reaches a level of 46 percent at age 20–29.

A higher percentage of males than of females have completed most levels of schooling, although the sex difference at each level is relatively small. The median number of years of schooling is 6.4 for males, compared with 5.0 for females.

Table 2.7 School attendance
Percentage of the household population age 6–17 years attending school by age, sex, and residence, Punjab, 1998–99

Age	Male			Female			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6–10	97.5	92.7	94.1	97.7	92.7	94.1	97.6	92.7	94.1
11–14	93.7	87.0	89.1	95.5	79.6	84.9	94.5	83.7	87.2
15–17	83.4	64.3	69.7	82.0	51.4	61.6	82.7	58.5	65.9
6–14	95.8	90.3	91.9	96.6	87.0	90.0	96.2	88.8	91.1
6–17	93.0	84.1	86.7	92.7	78.1	82.7	92.8	81.5	84.9

Education levels are much higher in urban areas than in rural areas. The proportion illiterate is more than twice as high for rural females (44 percent) and males (28 percent) as for urban females (17 percent) and males (8 percent).

Table 2.7 and Figure 2.2 show school attendance rates for the school-age household population by age, sex, and residence. In Punjab as a whole, 91 percent of children age 6–14 are attending school, up from 81 percent in NFHS-1. The attendance rate drops off sharply to 66 percent at age 15–17. For the age group 6–17, the attendance rate is 87 percent for males, 83 percent for females, and 85 percent for the state as a whole. Attendance rates for both males and females are higher in urban areas than in rural areas. In urban areas, approximately the same

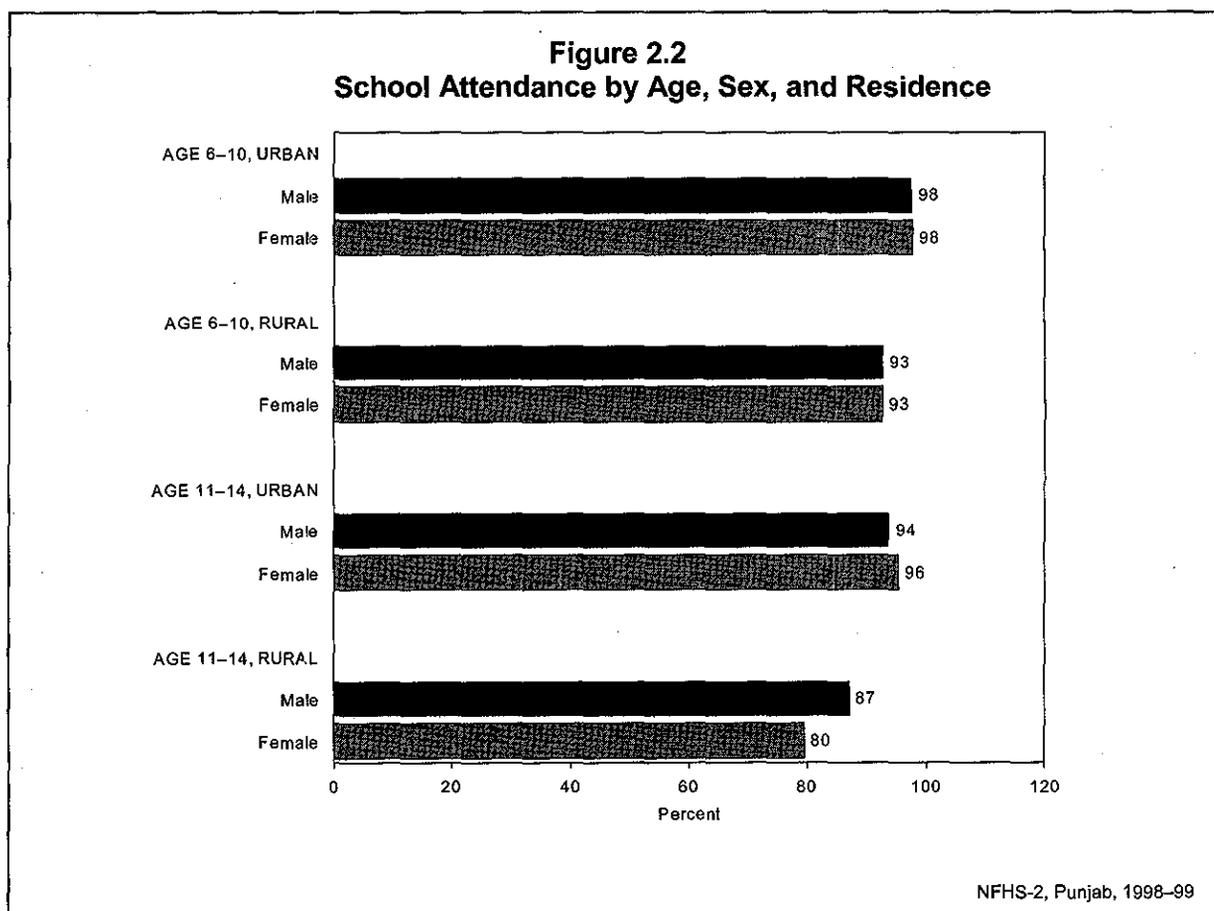


Table 2.8 Reasons for children not attending school

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 who have dropped out of school by the main reason for not currently attending school, according to residence and sex, Punjab, 1998–99

Reason	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Main reason for never attending school¹						
School too far away	*	*	0.0	3.0	0.0	2.7
Education not considered necessary	*	*	3.4	14.7	3.1	13.9
Required for household work	*	*	4.1	20.1	3.8	19.8
Required for work on farm/family business	*	*	2.5	0.7	2.3	0.7
Required for outside work for payment in cash or kind	*	*	7.5	2.2	7.4	2.0
Costs too much	*	*	20.7	18.5	21.2	21.2
No proper school facilities for girls	*	*	0.0	2.2	0.0	2.0
Required for care of siblings	*	*	0.0	2.2	0.0	2.0
Not interested in studies	*	*	44.2	26.8	42.0	25.4
Other	*	*	17.6	9.6	19.0	10.4
Don't know/missing	*	*	0.0	0.0	1.2	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of children	13	15	129	145	142	160
Main reason for not currently attending school²						
School too far away	(0.0)	(0.0)	0.0	6.3	0.0	5.2
Further education not considered necessary	(5.1)	(9.1)	1.7	8.6	2.4	8.7
Required for household work	(5.1)	(12.1)	6.7	26.8	6.4	24.2
Required for work on farm/family business	(5.1)	(0.0)	9.2	0.0	8.3	0.0
Required for outside work for payment in cash or kind	(5.1)	(0.0)	7.6	0.0	7.1	0.0
Costs too much	(7.7)	(18.2)	10.0	11.9	9.5	13.0
No proper school facilities for girls	(0.0)	(0.0)	0.0	0.8	0.0	0.6
Not interested in studies	(71.8)	(54.4)	61.5	38.5	63.7	41.3
Repeated failures	(0.0)	(0.0)	0.0	1.6	0.0	1.3
Got married	(0.0)	(0.0)	0.0	1.5	0.0	1.3
Other	(0.0)	(6.1)	2.5	3.2	2.0	3.7
Don't know/missing	(0.0)	(0.0)	0.9	0.8	0.7	0.6
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of children	34	29	128	136	162	165
() Based on 25-49 unweighted cases *Percentage not shown; based on fewer than 25 unweighted cases ¹ For children who never attended school ² For children who have dropped out of school						

proportions of males and females in each age group are attending school. In rural areas, too, the same proportion of males and females attend school at age 6–10, but at ages 10 and above, males are more likely than females to attend school.

Table 2.8 shows reasons for children never attending school (for those who have never attended school) or not currently attending school (for those who have dropped out of school), as reported by the respondent to the Household Questionnaire. For both boys and girls, the most often cited reasons for never attending school are that the children are not interested in studies and that school costs too much. Among girls, other important reasons for never attending school are that girls are required for household work (20 percent) and that education is not considered to be necessary (14 percent). For boys and girls who used to attend school, but have dropped out,

the main reason for not currently attending school is that the child is not interested in studies (64 percent and 41 percent for males and females, respectively). Among girls who have dropped out of school, one-fourth (24 percent) do not currently attend school because they are needed for household work, and among boys who have dropped out of school, one-fifth (22 percent) do not currently attend school because they are required to work (household work, work on the farm or family business, or work outside the home for payment). A reason given frequently for both girls and boys is that school costs too much. Reasons given relatively frequently only for girls are that further education is not considered necessary (9 percent) and that the school is too far away (5 percent).

2.5 Housing Characteristics

Table 2.9 provides information on housing characteristics by residence. Ninety-six percent of households in Punjab have electricity (up from 92 percent in NFHS-1). Even in rural areas, 94 percent of all households have electricity.

Water sources and sanitation facilities have an important influence on the health of household members, especially children. NFHS-1 and NFHS-2 included questions on sources of drinking water and types of sanitation facilities. NFHS-2 found that 37 percent of households use piped drinking water (up from 30 percent in NFHS-1), and 62 percent drink water from hand pumps. There are large urban-rural differences in sources of drinking water. The proportion of households with piped drinking water is 70 percent in urban areas, but only 22 percent in rural areas. Almost all households have easy access to drinking water, however. Ninety-six percent of households either have a source of drinking water in their residence/yard or take less than 15 minutes to get drinking water, including the time to go to the source, get water, and come back. Only 9 percent of households purify their drinking water by any method (21 percent in urban areas and 3 percent in rural areas). Among households that purify water, the most popular methods include filtering through a water filter and boiling.

Regarding sanitation facilities, 36 percent of households have a flush toilet (using either piped water or water from a bucket for flushing), up from 23 percent in NFHS-1, 15 percent have a pit toilet or latrine, and 49 percent have no facility. Again there are large urban-rural differences: 79 percent of urban households have a flush toilet, whereas 68 percent of rural households have no toilet facility at all.

Several types of fuel are used for cooking in Punjab, with wood as the most common type. In the state as a whole, 47 percent of households rely mainly on wood, 32 percent on liquid petroleum gas, 12 percent on dung cakes, and 7 percent on kerosene. Again there are large urban-rural differences. Seventy-five percent of urban households rely mainly on liquid petroleum gas, whereas 83 percent of rural households rely mainly on wood, dung cakes, or crop residues. Only 12 percent of rural households use liquid petroleum gas.

Regarding type of house construction, 52 percent of households live in *pucca* houses (made with high-quality materials throughout, including the roof, walls, and floor), 44 percent live in semi-*pucca* houses (using partly low-quality and partly high-quality materials), and 4 percent of households live in houses that are *kachha* (made with mud, thatch, or other low-quality materials). Eighty-nine percent of households in urban areas live in *pucca* houses, compared with 35 percent of households in rural areas.

Table 2.9 Housing characteristics			
Percent distribution of households by housing characteristics, according to residence, Punjab, 1998-99			
Housing characteristic	Urban	Rural	Total
Electricity			
Yes	99.7	93.6	95.5
No	0.3	6.4	4.5
Total percent	100.0	100.0	100.0
Source of drinking water			
Piped	69.5	21.7	36.7
Hand pump	30.3	76.8	62.2
Well water	0.2	1.3	1.0
Surface water	0.0	0.1	0.0
Other	0.0	0.2	0.1
Total percent	100.0	100.0	100.0
Time to get drinking water			
Percentage < 15 minutes	99.2	94.2	95.7
Median time (minutes)	0.0	0.0	0.0
Method of drinking water purification¹			
Strains water by cloth	1.0	0.4	0.6
Uses alum	0.1	0.3	0.2
Uses water filter	11.7	0.7	4.2
Boils water	7.3	2.3	3.8
Uses electronic purifier	2.3	0.1	0.7
Uses other method	0.1	0.1	0.1
Does not purify water	79.2	96.6	91.1
Sanitation facility			
Flush toilet	78.9	16.8	36.2
Pit toilet/latrine	14.0	15.6	15.1
No facility	7.1	67.5	48.6
Missing	0.0	0.1	0.0
Total percent	100.0	100.0	100.0
Main type of fuel used for cooking			
Wood	10.2	64.2	47.3
Crop residues	0.1	1.8	1.3
Dung cakes	1.6	16.8	12.0
Coal/coke/lignite/charcoal	0.0	0.6	0.4
Kerosene	12.2	3.9	6.5
Electricity	0.5	0.1	0.2
Liquid petroleum gas	75.4	11.7	31.7
Biogas	0.0	0.5	0.3
Other	0.0	0.4	0.3
Total percent	100.0	100.0	100.0
Type of house			
<i>Kachha</i>	0.0	5.5	3.8
<i>Semi-pucca</i>	10.6	59.2	43.9
<i>Pucca</i>	88.9	35.3	52.1
Missing	0.5	0.0	0.1
Total percent	100.0	100.0	100.0
Persons per room			
< 3	86.2	71.5	76.1
3-4	9.1	17.9	15.2
5-6	3.8	8.5	7.0
7+	0.9	2.0	1.7
Missing	0.0	0.1	0.1
Total percent	100.0	100.0	100.0
Mean number per room	1.7	2.3	2.1
Number of households	930	2,037	2,967

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

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, Punjab, 1998-99			
Asset	Urban	Rural	Total
No agricultural land	85.9	55.2	64.8
Irrigated land only			
< 1 acre	0.3	1.8	1.4
1-5 acres	7.6	26.8	20.8
6+ acres	4.4	12.1	9.7
Nonirrigated land only			
< 1 acre	0.2	0.3	0.3
1-5 acres	0.8	0.9	0.9
6+ acres	0.0	0.2	0.1
Both irrigated and nonirrigated land			
< 1 acre	0.1	0.1	0.1
1-5 acres	0.3	1.2	0.9
6+ acres	0.2	1.5	1.1
Missing	0.2	0.0	0.1
Total percent	100.0	100.0	100.0
Percentage owning a house	96.9	99.5	98.7
Percentage owning livestock	9.5	72.4	52.7
Number of households	930	2,037	2,967

Crowded housing conditions may affect people's health as well as their quality of life. Twenty-four percent of households in Punjab live in houses with three or more persons per room. The mean number of persons per room is 2.1 overall (compared with 2.7 in NFHS-1), 1.7 in urban areas, and 2.3 in rural areas.

Table 2.10 shows a number of measures related to the socioeconomic status of the household (ownership of land, house, and livestock). Overall, 65 percent of households do not own any agricultural land (up from 61 percent in NFHS-1). Fifty-five percent of households in rural areas do not own agricultural land, compared with 86 percent in urban areas. In rural areas, among those who own agricultural land, virtually all have at least some irrigated land. Ninety-nine percent of all households in Punjab own a house. The proportion of households owning livestock is 10 percent in urban areas and 72 percent in rural areas.

The possession of durables goods is another indicator of a household's socioeconomic status, although these goods may also have other benefits. For example, having access to a radio or television may expose household members to different lifestyles, 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 possession of a cot or a bed is nearly universal in Punjab, and the large majority of households have a mattress (95 percent), an electric fan (93 percent), a clock or watch (92 percent), a table (83 percent), a bicycle (80 percent), a chair (78 percent), and a pressure cooker or a sewing machine (71 percent each). Other durable goods often found in households are black and white televisions (49 percent), radios/transistors (45 percent), refrigerators (42 percent), motorcycles or scooters or mopeds (33 percent), colour

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, Punjab, 1998–99			
Asset	Urban	Rural	Total
Durable goods			
Mattress	99.4	92.6	94.7
Pressure cooker	94.7	60.5	71.2
Chair	94.4	71.1	78.4
Cot/bed	99.8	99.5	99.6
Table	95.1	76.7	82.5
Clock/watch	98.7	88.3	91.5
Electric fan	98.8	91.0	93.4
Bicycle	80.1	80.4	80.3
Radio/transistor	60.1	38.6	45.3
Sewing machine	83.3	65.1	70.8
Telephone	38.8	6.1	16.3
Refrigerator	69.7	29.9	42.4
Television (black and white)	44.9	50.4	48.7
Television (colour)	50.5	11.3	23.6
Moped/scooter/motorcycle	53.8	22.7	32.5
Car	12.3	2.3	5.4
Water pump	6.7	27.8	21.1
Bullock cart	0.8	14.9	10.5
Thresher	1.3	6.0	4.5
Tractor	2.7	12.3	9.3
Main type of kitchenware used			
Clay	0.2	0.0	0.1
Aluminium	0.1	0.1	0.1
Cast iron	0.0	0.1	0.0
Brass/copper	0.1	0.2	0.2
Stainless steel	99.6	99.6	99.6
Total percent	100.0	100.0	100.0
Standard of living index			
Low	0.7	9.0	6.4
Medium	21.6	46.8	38.9
High	76.7	44.0	54.2
Missing	1.0	0.2	0.5
Total percent	100.0	100.0	100.0
Number of households	930	2,037	2,967

televisions (24 percent), and water pumps (21 percent). Smaller proportions have telephones (16 percent), bullock carts (11 percent), tractors (9 percent), and threshers or cars (5 percent each). Urban households are much more likely than rural households to own most of these durable goods. However, a higher proportion of households in rural areas than in urban areas own a water pump, a bullock cart, a thresher, or a tractor, all of which are used mainly for cultivation. Virtually all of the households in both urban and rural areas use mainly stainless steel kitchenware.

Table 2.11 shows a summary household measure called the standard of living index (SLI), which is calculated by adding the following scores:

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

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

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

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

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

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

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

Ownership of agricultural land: 4 for 5.0 acres or more, 3 for 2.0–4.9 acres, 2 for less than 2.0 acres or acreage not known, 0 for no agricultural land;

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

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

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

Index scores range from 0–14 for a low SLI to 15–24 for a medium SLI and 25–67 for a high SLI. By this measure, 6 percent of households in Punjab have a low standard of living, 39 percent have a medium standard of living, and 54 percent have a high standard of living. By contrast, 36 percent of all households in the whole of India have a low standard of living, 44 percent have a medium standard of living, and 18 percent have a high standard of living. The proportion with a low standard of living is much lower in urban areas (1 percent) than in rural areas (9 percent), and the proportion with a high standard of living is much higher in urban areas (77 percent) than in rural areas (44 percent).

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 men and women age 15 and above who chew *paan masala* or tobacco, drink alcohol, or smoke. These lifestyle indicators are of considerable interest because the use of *paan masala*, tobacco, and alcohol can all have detrimental effects on health.

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

Nine percent of men age 15 and above are reported to chew *paan masala* or tobacco, compared with virtually no women (0.2 percent). This proportion rises from 2 percent for men

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, Punjab, 1998-99

Background characteristic	Chew <i>paan masala</i> or tobacco	Drink alcohol	Currently smoke	Ever smoked ¹	Number of household members
MALE					
Age					
15-19	1.8	3.4	1.5	1.5	955
20-24	6.5	15.7	7.3	8.0	742
25-29	11.0	32.5	13.0	14.3	633
30-39	13.5	41.9	20.4	22.0	1,044
40-49	13.8	41.3	21.8	25.0	827
50-59	10.3	38.2	19.2	21.7	486
60+	9.2	28.9	15.6	19.6	969
Residence					
Urban	5.2	22.2	15.6	17.5	1,708
Rural	11.1	30.9	13.2	15.1	3,948
Education					
Illiterate	17.5	37.2	21.2	24.3	1,518
Literate, < middle school complete	12.6	32.4	17.4	19.5	1,076
Middle school complete	6.8	23.2	12.1	13.7	883
High school complete and above	3.1	22.1	7.9	9.0	2,179
Standard of living index					
Low	21.5	35.3	29.7	33.1	247
Medium	14.5	30.5	20.4	22.6	2,034
High	5.3	26.4	8.7	10.3	3,354
Total	9.3	28.3	13.9	15.8	5,656
FEMALE					
Age					
15-19	0.0	0.0	0.0	0.0	795
20-24	0.1	0.1	0.1	0.1	756
25-29	0.0	0.1	0.1	0.1	631
30-39	0.2	0.1	0.2	0.2	1,073
40-49	0.4	0.4	0.6	0.6	736
50-59	0.0	0.4	1.0	1.0	506
60+	0.4	0.5	0.6	0.7	818
Residence					
Urban	0.4	0.2	0.5	0.5	1,681
Rural	0.1	0.2	0.3	0.3	3,634
Education					
Illiterate	0.4	0.4	0.6	0.6	2,233
Literate, < middle school complete	0.1	0.2	0.4	0.4	970
Middle school complete	0.0	0.0	0.0	0.0	551
High school complete and above	0.0	0.1	0.1	0.1	1,559
Standard of living index					
Low	0.0	0.5	0.5	0.5	222
Medium	0.5	0.2	0.7	0.7	1,826
High	0.0	0.2	0.2	0.2	3,251
Total	0.2	0.2	0.3	0.4	5,315
Total male and female	4.9	14.7	7.4	8.3	10,971
<p>Note: Total includes 2 females with missing information on education and 21 males and 16 females with missing information on the standard of living index, who are not shown separately.</p> <p>¹Includes household members who currently smoke</p>					

age 15–19 to 7 percent for men age 20–24 and 14 percent for men age 30–49 and then falls to 9 percent for men age 60 and above. Chewing of *paan masala* or tobacco is twice as common for males in rural areas (11 percent) as in urban areas (5 percent), and is inversely related to both education and the standard of living. Notably, more than one in five men in households with a low standard of living chew *paan masala* or tobacco.

Twenty-eight percent of men age 15 and above drink alcohol, which is much higher than the all-India average for men at 17 percent. Indeed, Punjab, along with Goa, has the highest reported alcohol consumption by men of any state outside of the north-eastern states. Only a negligible proportion (0.2 percent) of women in Punjab drink alcohol, however. The proportion of men who drink alcohol increases with age, peaking at 41–42 percent at age 30–49, and then falls to 29 percent among those age 60 and above. The proportion of men who drink alcohol is higher in rural areas (31 percent) than in urban areas (22 percent). Alcohol consumption declines sharply with education and men in households with a low standard of living are more likely to drink alcohol than men in households with a high standard of living. Nonetheless, even among the more educated men and men from households with a high standard of living, about one in four consume alcohol.

Among men age 15 and above, 14 percent currently smoke. This proportion rises from 2 percent for men age 15–19 to 22 percent for men age 40–49, and then falls to 16 percent for men age 60 and above. There is little difference in smoking by urban-rural residence. Smoking is more common among illiterate males than among literate males and is much higher among males with a low standard of living than among males with a high standard of living. Eighty-eight percent of men who ever smoked were still smokers at the time of the survey. The pattern of differentials for ever-smokers closely resembles the pattern for current smokers. Less than 1 percent of women are reported to have ever smoked.

2.7 Availability of Facilities and Services to the Rural Population

The NFHS-2 Village Questionnaire collected information from the *sarpanch*, other village officials, or other knowledgeable persons in the village on facilities and services in the village. One important set of questions was on the distance of the village from various types of health facilities, including Primary Health Centres (PHCs), sub-centres, hospitals, and dispensaries or clinics. Table 2.13 summarizes findings on distance from a health facility. The unit of analysis is ever-married women age 15–49 who reside in rural areas. Eighty-two percent of women live in villages with a dispensary or clinic, 40 percent live in villages with a sub-centre, 9 percent live in villages with a PHC, and 8 percent live in villages with a hospital. In Punjab, however, all villages with a PHC also have a sub-centre and all villages with a sub-centre or a hospital also have a dispensary or clinic. Thus, overall, 82 percent of women have some type of health facility in the village in which they live. Another 17 percent live in a village with a health facility within a distance of 5 kilometres. Thus almost all rural women reside within 5 km of the nearest health facility. Median distances from particular health facilities are 8.1 km from a hospital, 7.7 km from a PHC, and 2.2 km from a sub-centre. Since the majority of women live in a village with a dispensary or clinic, the median distance to a dispensary or clinic is effectively zero.

Table 2.14 shows the proportion of residents of rural areas of Punjab who live in villages that have various facilities and services. Virtually all rural residents live in villages that have a primary school, 63 percent live in villages that have a middle school, 38 percent live in

Table 2.13 Distance from nearest health facility						
Percent distribution of ever-married rural women age 15–49 by distance from the nearest health facility, Punjab, 1998–99						
Distance	Health facility					
	Primary Health Centre	Sub-centre	Either PHC or sub-centre	Hospital ¹	Dispensary/clinic	Any health facility
Within village	8.5	39.8	39.8	8.1	82.4	82.4
< 5 km	25.2	41.3	45.0	23.4	15.8	17.1
5–9 km	31.4	12.3	10.2	28.4	1.8	0.5
10+ km	34.8	6.5	5.0	40.1	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Median distance (in km)	7.7	2.2	2.2	8.1	0.0	0.0

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

villages that have a secondary school, and 19 percent live in villages that have a higher secondary school. Eighty percent of rural residents live in villages that have an *anganwadi*² (a nursery school for children age 3–6), and 17 percent live in villages with an adult education centre. More than three-quarters of rural residents (79 percent) live in villages that have a private doctor and 70 percent live in villages with a visiting doctor. Almost all (99 percent) live in villages that are at least partly electrified. Although only 17 percent live in villages with an STD booth (for long distance telephoning within India), 88 percent live in villages that have at least one household with a private telephone. Only 12 percent of rural residents live in villages that have cable television service (compared with 28 percent nationwide).

About half of rural residents live in villages with a *mahila mandal*, a women's community group, and about half live in villages with a youth club. Cooperative schemes are well developed in Punjab. Sixty-seven percent of rural residents live in villages that have an agricultural cooperative society, 65 percent live in villages that have a credit cooperative society, and 42 percent live in villages that have a milk cooperative society. Other facilities that are available in villages where rural residents live are *kirana* shops (small grocery stores) (97 percent), fair price shops (77 percent), community centres (31 percent), pharmacy/medical shops (24 percent), and *paan* shops (11 percent). Almost two out of five live in villages with a mill or small-scale industry. As reported by the respondents to the Village Questionnaire, the most widely available rural development programmes are the Integrated Rural Development Programme (57 percent), the Indira Awas Yojana (37 percent), the Training Rural Youth for Self-Employment (35 percent), and the Development of Women and Children of Rural areas (30 percent).

²*Anganwadi* workers provide integrated child development services and may also engage in the promotion of family planning.

Table 2.14 Availability of facilities and services

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

Facility/service	Percentage of residents	Facility/service	Percentage of residents
Primary school	99.8	At least one village household has a telephone	88.4
Middle school	63.3	Mill/small-scale industry	37.2
Secondary school	37.8	Credit cooperative society	65.4
Higher secondary school	18.5	Agricultural cooperative society	67.2
<i>Anganwadi</i>	79.8	Fishermen's cooperative society	1.6
Adult education centre	17.2	Milk cooperative society	41.5
Primary Health Centre	8.3	<i>Kirana</i> /general market shop	96.6
Sub-centre	39.9	Weekly market	2.0
Hospital ¹	8.0	Fair price shop	76.7
Dispensary/clinic	82.1	<i>Paan</i> shop	11.0
Private doctor	79.4	Pharmacy/medical shop	24.1
Visiting doctor	70.3	<i>Mahila mandal</i>	49.9
Village health guide	63.0	Youth club	49.8
Traditional birth attendant	81.5	Community centre	31.4
Mobile health unit	13.7	Community television set	1.4
Electricity	98.7	Cable connection	12.3
Bank	29.1	Integrated Rural Development Programme (IRDP)	56.7
Post office	57.2	National Rural Employment Programme (NREP)	5.9
Telegraph office	8.0	Training Rural Youth for Self-Employment (TRYSEM)	35.2
STD (Subscriber Trunk Dialling) phone booth	17.2	Employment Guarantee Scheme (EGS)	9.1
		Development of Women and Children of Rural Areas (DWACRA)	29.5
		Indira Awas Yojana (IAY)	36.7
		Total population	11,170

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

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

CHAPTER 3

BACKGROUND CHARACTERISTICS OF RESPONDENTS

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

This chapter presents a profile of the demographic and socioeconomic characteristics of ever-married women age 15–49 who were identified in the NFHS-2 Household Questionnaire as eligible respondents for the Woman's Questionnaire. In addition, data are presented on the extent to which women in Punjab 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 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 Punjab, the proportion of respondents in five-year age groups increases from 3 percent in the age group 15–19 years to 20 percent in the age groups 25–29 years and 30–34 years, and then falls steadily to 10 percent in the age group 45–49 years. 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 pyramid shape of the population's age distribution. The high fertility age group 20–29 accounts for more than a third of all respondents (36 percent). The age distribution of rural and urban respondents is similar with the notable exception that the age group 15–24 accounts for a much higher proportion of rural respondents (22 percent) than of urban respondents (13 percent). This age pattern is largely a consequence of the lower age at marriage in rural areas.

Ninety-six percent of respondents are currently married, 4 percent are widowed, and 1 percent are separated or deserted. The proportion of respondents living with their husbands is 90 percent, indicating that almost all currently married women were coresident with their husbands at the time of the survey. The distribution of respondents by marital status does not vary much by urban-rural residence, but rural respondents are twice as likely (7 percent) as urban respondents (3 percent) to not be coresident with their husbands. Only 1 percent of ever-married women in Punjab have been married more than once.

Table 3.1 Background characteristics of respondents

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

Background characteristic	Residence			Number of women	
	Urban	Rural	Total	Weighted	Unweighted
Age					
15–19	1.1	3.9	3.0	85	81
20–24	11.4	18.0	16.0	447	439
25–29	20.3	20.3	20.3	567	566
30–34	21.1	19.0	19.6	548	551
35–39	18.4	16.4	17.0	475	478
40–44	15.6	13.2	14.0	390	394
45–49	12.1	9.3	10.1	283	287
Marital status					
Currently married	96.3	95.3	95.6	2,674	2,675
Widowed	3.2	4.0	3.8	106	105
Separated	0.3	0.4	0.4	10	10
Deserted	0.2	0.2	0.2	6	6
Coresidence with husband					
Living with husband	93.4	88.7	90.1	2,520	2,526
Not living with husband	2.9	6.6	5.5	154	149
Not currently married	3.7	4.7	4.4	122	121
Education					
Illiterate	16.8	48.5	38.8	1,084	1,042
Literate, < primary school complete	2.4	3.1	2.9	80	79
Primary school complete	12.5	20.9	18.3	513	502
Middle school complete	10.7	10.4	10.5	294	294
High school complete	26.3	12.6	16.8	471	489
Higher secondary complete and above	31.3	4.4	12.7	355	390
Religion					
Hindu	61.2	30.9	40.2	1,125	1,167
Muslim	4.9	1.2	2.4	66	70
Christian	1.9	1.5	1.7	46	46
Sikh	31.8	66.3	55.7	1,556	1,510
Jain	0.1	0.0	0.0	1	1
Missing	0.0	0.1	0.1	2	2
Caste/tribe					
Scheduled caste	16.5	33.0	27.9	781	759
Scheduled tribe	0.0	0.1	0.1	2	2
Other backward class	17.4	15.6	16.2	453	456
Other	66.1	51.2	55.8	1,560	1,579
Work status					
Working in family farm/business	0.7	0.3	0.4	13	13
Employed by someone else	12.7	5.9	8.0	224	233
Self-employed	1.6	0.7	1.0	27	28
Not worked in past 12 months	85.0	93.1	90.6	2,533	2,522
Husband's education					
Illiterate	6.6	30.3	23.0	643	611
Literate, < primary school complete	2.0	3.8	3.2	90	88
Primary school complete	9.5	18.3	15.6	436	425
Middle school complete	13.0	15.0	14.3	401	399
High school complete	32.2	23.4	26.1	731	741
Higher secondary complete and above	36.6	9.3	17.7	495	532
Total percent	100.0	100.0	100.0	NA	NA
Number of women					
Weighted	862	1,934	2,796	2,796	NA
Unweighted	993	1,803	2,796	NA	2,796

NA: Not applicable

The educational levels of respondents and their husbands have an important influence on demographic and health-seeking behaviour. Thirty-nine percent of ever-married women age 15–49 in Punjab are illiterate, compared with 58 percent of women in India as a whole. The level of illiteracy for ever-married women declined in Punjab from 53 percent at the time of NFHS-1 to 39 percent at the time of NFHS-2. In the five and a half years between the two surveys, illiteracy declined for both rural respondents (from 60 percent to 49 percent) and urban respondents (from 33 percent to 17 percent). Notably, however, there remains a substantial urban-rural difference in literacy levels. Three percent of respondents are literate, but have not completed primary school, 18 percent have completed primary school (but not middle school), and 11 percent have completed middle school (but not high school). Thirty percent of all respondents have completed at least high school, compared with 18 percent in NFHS-1. Fifty-eight percent of urban respondents have attained this level of education, compared with only 17 percent of rural respondents.

Although 39 percent of ever-married women are illiterate, only 23 percent have husbands who are illiterate (down from 36 percent in NFHS-1). The rise in literacy among husbands between NFHS-1 and NFHS-2 is due to sharp declines in illiteracy in both urban areas and rural areas. Nonetheless, in NFHS-2, the proportion of respondents with illiterate husbands is still more than four times as high in rural areas (30 percent) as in urban areas (7 percent). At the other educational extreme, 44 percent of women have husbands who have completed at least high school (up from 33 percent in NFHS-1), and the percentage is more than twice as high in urban areas (69 percent) as in rural areas (33 percent). Rural women, however, are about twice as likely (18 percent) as urban women (10 percent) to have husbands who have only completed primary school.

Forty percent of the respondents in Punjab are Hindu, 56 percent are Sikh, and 2 percent each are Muslim and Christian. The proportion who are Hindu is much higher in urban areas (61 percent) than in rural areas (31 percent), whereas the proportion who are Sikh is much higher in rural areas (66 percent) than in urban areas (32 percent).

Twenty-eight percent of women belong to the scheduled castes and 16 percent belong to other backward classes. More than half of the women (56 percent) do not belong to either of these groups. Scheduled-caste women constitute one-third of rural respondents, but only one-sixth of urban respondents.

In Punjab, only 9 percent of ever-married women report doing any work other than their housework in the 12 months preceding the survey, compared with 39 percent in India as a whole. Ninety-three percent of rural respondents, compared with 85 percent of urban respondents, report doing no work other than housework in the 12 months preceding the survey. Overall, 8 percent of women are employed by someone else and 1 percent are self-employed. Very few women (less than 1 percent), even in rural areas, report working on a family farm or in a family business.

3.2 Educational Level

Table 3.2 presents the percent distribution of ever-married women age 15–49 by the highest level of education attained, according to age, religion, caste/tribe, and husband's education. The educational distribution of women in different age groups illustrates the progress in the spread of education over a period of about three decades. As expected, the level of illiteracy declines with declining age, from 49 percent for women age 45–49 to 33 percent for women age 20–29, but

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, Punjab, 1998–99								
Background characteristic	Respondent's level of education						Total percent	Number of women
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above		
Age								
15–19	46.4	5.1	16.1	18.5	8.6	5.4	100.0	85
20–24	33.4	2.7	17.4	12.9	19.5	14.1	100.0	447
25–29	33.0	2.8	17.1	12.2	19.3	15.6	100.0	567
30–34	38.9	2.9	18.9	9.3	17.1	12.9	100.0	548
35–39	37.1	2.5	20.5	9.4	18.9	11.8	100.0	475
40–44	45.9	3.1	20.4	7.4	11.1	12.1	100.0	390
45–49	49.4	2.8	15.3	9.5	14.1	8.8	100.0	283
Religion								
Hindu	34.7	2.8	18.2	10.7	17.3	16.3	100.0	1,125
Muslim	63.9	9.3	11.9	4.3	8.0	2.6	100.0	66
Sikh	40.2	2.6	18.9	10.8	17.1	10.3	100.0	1,556
Other	(49.8)	(2.4)	(12.9)	(6.0)	(9.7)	(19.2)	100.0	47
Caste/tribe								
Scheduled caste	62.5	3.3	15.5	7.6	8.0	3.1	100.0	781
Other backward class	45.2	4.9	19.8	10.9	13.2	6.0	100.0	453
Other ¹	24.9	2.0	19.3	11.9	22.4	19.5	100.0	1,560
Husband's education								
Illiterate	82.6	3.1	10.9	2.2	1.3	0.0	100.0	643
Literate, < primary school complete	64.0	8.0	20.1	5.7	2.1	0.0	100.0	90
Primary school complete	50.4	3.0	31.3	7.8	6.5	1.0	100.0	436
Middle school complete	32.6	4.0	31.1	19.7	11.9	0.7	100.0	401
High school complete	17.0	2.7	17.7	16.6	35.2	10.9	100.0	731
Higher secondary complete and above	4.3	0.8	6.8	8.2	25.8	54.2	100.0	495
Total	38.8	2.9	18.3	10.5	16.8	12.7	100.0	2,796
Note: Total includes 2 scheduled-tribe women and 2 women with missing information on religion, who are not shown separately.								
() Based on 25–49 unweighted cases								
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class								

rises to 46 percent for women age 15–19 (undoubtedly because illiterate women are more likely than literate women to marry at young ages). Therefore, even though illiteracy is declining, a substantial proportion of even the younger cohorts of ever-married women are illiterate. At the other end of the educational spectrum, the proportion of women who have completed at least high school, although still low, is about 50 percent higher among women age 20–29 (34–35 percent) than among women age 40–49 (23 percent). The level of illiteracy is substantially higher among Muslims (64 percent) than among Sikhs (40 percent) or Hindus (35 percent). The proportion of women who are illiterate is higher among women belonging to the scheduled castes (63 percent), followed by women belonging to other backward classes (45 percent), than among women who do not belong to the scheduled castes, scheduled tribes, or other backward classes (25 percent).

Eighty-three percent of women with illiterate husbands are themselves illiterate. Notably, 17 percent of women whose husbands have completed high school (but not higher secondary

school) and 4 percent of women whose husbands have completed higher secondary school are also illiterate. The table shows that husbands at every level of education, except at the highest, are more likely to have wives with a lower level of education than with an equal or higher level of education. Specifically, the proportion of women who have less education than their husbands is 64 percent for women whose husbands are literate but have not completed primary school, 53 percent for women whose husbands have completed primary school, 68 percent for women whose husbands have completed middle school, and 54 percent for women whose husbands have completed high school. By contrast, more than half (54 percent) of women whose husbands have completed higher secondary school have also completed at least higher secondary school.

3.3 Age at First Marriage

Table 3.3 provides information on age at first marriage for all women. The table shows the percentage of women who first married by specified exact ages, and the median age at first marriage and first cohabitation by current age and residence. The median age at first marriage/cohabitation with husband for a cohort of women is the age by which 50 percent of the cohort marries/cohabits. The median age at first marriage in Punjab for women age 25–49 is 20 years, and is only one year higher for urban women (21 years) than for rural women (20 years). (The median age at first marriage could not be calculated for women age 15–19 and 20–24 because more than half of women in these age groups were not married at the time of the survey). The median age at first marriage is also approximately one year higher in urban areas than in rural areas for women in each age cohort.

Although the median age at first marriage for Punjab as a whole has changed little over the past three decades, it has risen by about 1 year in the rural areas of Punjab from 19 years for women age 40–49 to 20 years for women age 25–39. In addition, the table provides other evidence of a rise in the age at first marriage in Punjab. For example, the proportion married before age 18 falls from 28 percent for women age 45–49 to 12 percent for women age 20–24. Even more remarkable is the fact that the proportion falls from 20 percent for women age 25–29 to 12 percent for women age 20–24, who are on average only five years younger. The recent sharp decline in the proportion of women married by age 18 is more evident in rural than in urban areas, however. In urban areas, the proportion married before age 18 declined almost as sharply between women age 30–34 and 25–29, as between women age 25–29 and 20–24. The practice of very early marriage does not appear to be common in Punjab as is evident from the fact that even in rural areas, in no age group are more than 5 percent of women married before age 15 and marriages before age 13 are even less common.

Despite the evidence that marriage at a very young age is uncommon, it is clear that nearly one-fifth of women age 20–49 in Punjab were married before they reached the legal minimum age at marriage of 18 years, as set by the Child Marriage Restraint Act of 1978. Even among younger women (age 20–24) more than 1 in 10 women are married before reaching the legal minimum age at marriage.

Table 3.3 also provides information on the median age at first cohabitation with husband. This, along with the median age at first marriage, shows the gap between formal marriage and the time when a wife starts living with her husband, which typically takes place after the *gauna* ceremony in some parts of India. The difference between median age at first marriage and median age at first cohabitation is, however, negligible among women in all age groups in

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, Punjab, 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	0.0	0.0	NA	NA	NA	NA	NC	NC
20-24	0.0	0.4	6.4	24.2	NA	NA	NC	NC
25-29	0.4	0.4	10.4	31.2	58.5	78.4	21.1	21.3
30-34	0.5	0.5	15.9	39.1	65.2	86.6	20.6	20.8
35-39	0.5	0.5	17.8	44.2	70.5	88.8	20.4	20.5
40-44	0.6	0.6	17.9	44.9	72.0	90.0	20.3	20.4
45-49	0.8	1.7	18.4	39.0	63.2	91.5	20.7	20.9
20-49	0.4	0.6	13.6	35.9	NA	NA	NC	NC
25-49	0.5	0.7	15.6	39.1	65.5	86.2	20.7	20.8
RURAL								
15-19	0.0	0.4	NA	NA	NA	NA	NC	NC
20-24	0.7	1.6	14.1	34.7	NA	NA	NC	NC
25-29	1.2	2.3	25.1	53.4	75.8	89.2	19.7	19.9
30-34	1.4	4.1	25.2	52.5	78.7	92.7	19.7	19.9
35-39	1.7	4.4	23.6	54.7	79.0	93.9	19.5	19.7
40-44	1.6	4.5	29.0	59.6	85.7	95.6	19.0	19.3
45-49	1.8	1.8	32.8	55.0	79.0	93.9	19.3	19.8
20-49	1.3	2.9	22.9	49.0	NA	NA	NC	NC
25-49	1.5	3.5	26.4	54.7	79.2	92.6	19.5	19.8
TOTAL								
15-19	0.0	0.3	NA	NA	NA	NA	NC	NC
20-24	0.5	1.2	11.6	30.7	NA	NA	NC	NC
25-29	1.0	1.7	20.3	46.3	70.2	85.7	20.2	20.3
30-34	1.1	2.9	22.1	48.0	74.2	90.7	20.1	20.2
35-39	1.3	3.1	21.7	51.2	76.2	92.2	19.9	20.0
40-44	1.3	3.2	25.3	54.6	81.1	93.8	19.6	19.7
45-49	1.4	1.7	27.5	49.2	73.2	93.0	20.0	20.3
20-49	1.0	2.2	19.7	44.4	NA	NA	NC	NC
25-49	1.2	2.5	22.7	49.4	74.6	90.5	20.0	20.1
NA: Not applicable								
NC: Not calculated because less than 50 percent of women in the age group have married or started living with their husband by the start of the five-year age group								
¹ The current age groups include both never-married and ever-married women.								

Punjab. This suggests that *gauna* or similar cultural practices that introduce a lag between marriage and cohabitation are not observed in Punjab.

3.4 Exposure to Mass Media

In a country like India where the majority of women are illiterate or have little formal education, informal channels such as mass media can play an important role in bringing about modernization. In NFHS-2, women were asked questions about whether they read a newspaper or magazine, watch television, or listen to the radio at least once a week, and whether they visit the cinema or theatre at least once a month. Table 3.4 gives information on women's exposure to these forms of mass media by selected background characteristics.

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 at least once a month, or who are not regularly exposed to any of these media by selected background characteristics, Punjab, 1998–99

Background characteristic	Exposure to mass media					Number of women
	Reads a newspaper or magazine at least once a week	Watches television at least once a week	Listens to the radio at least once a week	Visits the cinema/theatre at least once a month	Not regularly exposed to any media	
Age						
15–19	20.8	72.3	34.5	5.6	22.9	85
20–24	30.5	75.5	36.5	6.5	19.4	447
25–29	32.6	76.6	37.2	6.8	18.3	567
30–34	29.6	78.8	33.1	5.4	17.6	548
35–39	35.7	80.3	35.7	4.6	14.6	475
40–44	30.4	75.8	33.9	6.0	20.2	390
45–49	31.6	77.3	36.4	4.1	17.4	283
Residence						
Urban	62.1	94.0	50.3	16.4	3.4	862
Rural	17.7	69.9	28.7	0.9	24.5	1,934
Education						
Illiterate	0.0	57.1	18.1	0.3	37.7	1,084
Literate, < middle school complete	21.9	81.5	35.7	0.9	12.5	593
Middle school complete	42.5	89.0	39.9	1.5	4.7	294
High school complete and above	75.6	96.7	56.1	17.7	1.0	826
Religion						
Hindu	35.2	78.4	37.9	8.6	16.8	1,125
Muslim	16.2	62.6	35.0	2.6	33.4	66
Sikh	29.3	77.3	33.6	3.5	18.0	1,556
Other	(32.7)	(74.9)	(34.8)	(11.3)	(21.0)	47
Caste/tribe						
Scheduled caste	14.2	61.0	25.7	1.3	32.6	781
Other backward class	22.2	75.1	32.4	1.5	20.1	453
Other ¹	42.7	86.2	41.1	9.1	10.0	1,560
Standard of living index						
Low	1.7	11.9	8.5	0.0	83.2	113
Medium	9.1	59.6	20.5	0.3	31.9	989
High	46.6	92.1	46.1	9.1	5.4	1,681
Total	31.4	77.3	35.4	5.7	18.0	2,796

Note: Total includes 2 scheduled-tribe women and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.
 () Based on 25–49 unweighted cases
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

In Punjab, 18 percent of women are not regularly exposed to the television, radio, cinema, or newspapers and magazines. This percentage is even higher among rural women, illiterate women, Muslim women, scheduled-caste women, and women belonging to households with a low or medium standard of living. Thirty-eight percent of illiterate women are not exposed to any of these forms of media, compared with only 1 percent of women who have completed at least high school. The percentage not regularly exposed to any media is 83 percent among women in households with a low standard of living and only 5 percent among women in households with a high standard of living. One-quarter of rural women are not regularly exposed

to any media, compared with only 3 percent of urban women. Muslim women are about twice as likely (33 percent) not to be regularly exposed to any media as Hindu or Sikh women (17–18 percent). One-third of women who belong to the scheduled castes are not regularly exposed to any media, compared with 20 percent of women who belong to other backward classes, and 10 percent of women who do not belong to a scheduled caste, scheduled tribe, or other backward class. Media exposure does not vary consistently by age.

Among the different types of mass media, regular exposure to television is most common. Seventy-seven percent of women are regularly exposed to television at least once a week, up sharply from 57 percent in NFHS-1. Thirty-five percent of women mentioned that they usually listen to the radio at least once a week, down from 42 percent in NFHS-1. Thirty-one percent of women read a newspaper or magazine at least once a week and 6 percent visit the cinema or theatre at least once a month. Although exposure to each of the different types of media varies by background characteristics in ways similar to exposure to any media, it is notable that the majority of women of all backgrounds, with the exception only of women from households with a low standard of living, watch television at least once a week. Therefore, television can be a particularly important means of spreading health and family welfare messages, as well as exposing women to modern views in general. Innovative programmes are necessary to reach those women in Punjab who are not regularly exposed to any form of mass media, however.

3.5 Women's Employment

Labour force participation not only gives women an opportunity to earn income, but also exposes them to the outside world and to authority structures and networks other than kin-based ones (Dixon-Mueller, 1993). In a developing country such as India, however, where women's workforce participation is often motivated by poverty, these benefits are likely to be mediated by the social context of women's work and their total work burden (Bardhan, 1985; Desai and Jain, 1994). In addition, the empowering effects of employment for women are likely to depend on their occupation, the continuity of their workforce participation, and whether they earn income. It is generally expected that women who work at a regular job, who earn money, and who perceive that their contribution is a substantial part of total family earnings are more likely to be empowered than other employed and unemployed women (Youssef, 1982; Sen, 1990; Mahmud and Johnston, 1994). The National Population Policy adopted by the Government of India in 2000 (Ministry of Health and Family Welfare, 2000) explicitly recognizes the importance of women's paid employment in achieving the goal of population stabilization in India and also specifies measures that will encourage paid employment and self-employment of women.

Table 3.5 provides information on these aspects of women's employment for ever-married women age 15–49 according to residence. In Punjab, 9 out of 10 women (91 percent) report that they did not work during the 12 months preceding the survey, aside from doing their own housework. Almost all women who worked at all in Punjab during the 12 months preceding the survey were also currently working at the time of the survey. Current employment of women in NFHS-2, at 9 percent, is almost unchanged from its level in NFHS-1, at 8 percent. The proportion of urban women (15 percent) who are currently employed is twice the proportion of rural women (7 percent) who are currently employed. The majority of working women work throughout the year (71 percent) and are paid entirely in cash (83 percent). Only 2 percent of

Table 3.5 Employment			
Percent distribution of ever-married women age 15–49 by employment characteristics, according to residence, Punjab, 1998–99			
Employment characteristic	Urban	Rural	Total
Employment status			
Currently working	14.7	6.4	9.0
Worked in past 12 months (not currently working)	0.3	0.5	0.4
Not worked in past 12 months	85.0	93.1	90.6
Continuity of employment¹			
Throughout the year	84.5	57.0	70.5
Seasonally/part of the year	15.5	39.1	27.5
Once in a while	0.0	4.0	2.0
Type of earning¹			
Cash only	93.3	72.7	82.9
Cash and kind	5.3	18.5	12.0
Kind only	0.0	5.6	2.9
Not paid	1.4	3.1	2.3
Occupation¹			
Professional	41.7	12.7	27.0
Sales worker	7.4	1.6	4.4
Service worker	4.0	2.5	3.2
Production worker	25.5	28.9	27.2
Agricultural worker	1.3	22.3	12.0
Other worker	20.1	31.3	25.8
Missing	0.0	0.8	0.4
Earnings contribution to total family earnings²			
Almost none	9.5	9.7	9.6
Less than half	45.6	42.8	44.2
About half	26.7	22.1	24.4
More than half	10.1	9.7	9.9
All	8.2	15.8	11.9
Total percent	100.0	100.0	100.0
Number of women	862	1,934	2,796
Number of employed women ¹	129	134	263
Number of women earning cash	128	122	250

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

²For women earning cash

women are not paid at all for the work they do. Employment throughout the year is far more common in urban areas, where 85 percent of working women work throughout the year, than in rural areas, where only 57 percent do so. In rural areas, where a significant proportion of working women are employed in agriculture, more than one-third of working women are engaged in seasonal work. Payment in cash only is more common in urban areas (93 percent) than in rural areas (73 percent). By contrast, a much higher proportion of working women in rural areas (19 percent) than in urban areas (5 percent) are paid in cash and kind. Four out of every 10 (42 percent) urban working women are professionals and one in four (26 percent) is a production worker. Rural women are engaged primarily as production workers (29 percent) and farm workers (22 percent) and only 13 percent of them are in professional occupations.

Though only about one-tenth of ever-married women in Punjab are employed, those who are employed and earn cash contribute substantially to family earnings. In NFHS-2, women who earned cash for their work in the 12 months preceding the survey were asked how much their earnings contribute to the total family earnings. Twelve percent of these women (16 percent in

rural areas and 8 percent in urban areas) say that the family is entirely dependent on their earnings, i.e., their earnings constitute all of family earnings. Another 34 percent report that their earnings constitute half or more (but not all) of the total family earnings. Only 10 percent of working women say that their earnings constitute almost none of the total family earnings.

3.6 Women's Autonomy

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

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

As expected, ever-married women in Punjab are most likely to participate in the decision about what items to cook (Figure 3.1): 83 percent of women make this decision on their own and

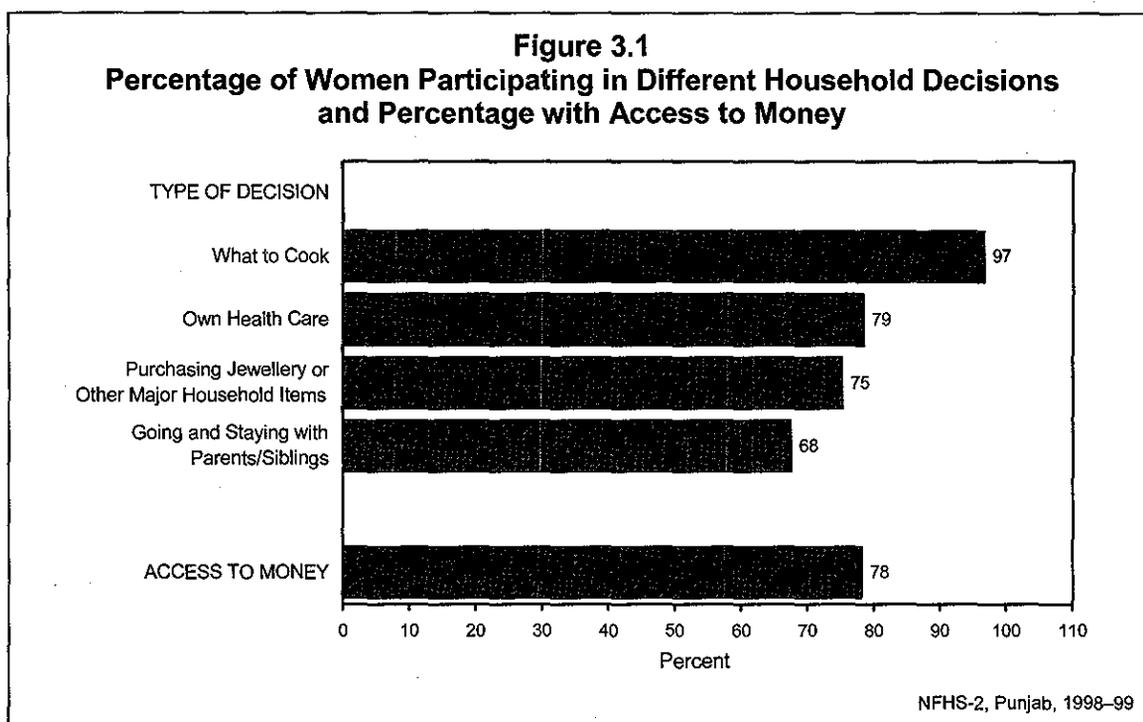


Table 3.6 Household decisionmaking						
Percent distribution of ever-married women by person who makes specific household decisions, according to residence, Punjab, 1998-99						
Household decision	Respondent only	Husband only	Respondent with husband	Others in household only	Respondent with others in household	Total percent
URBAN						
What items to cook	81.1	0.2	1.6	3.3	13.8	100.0
Obtaining health care for herself	44.6	24.9	18.2	1.9	10.4	100.0
Purchasing jewellery or other major household items	5.1	14.8	46.3	5.6	28.2	100.0
Going and staying with her parents or siblings	9.8	27.4	39.1	3.9	19.7	100.0
How the money she earns will be used ¹	50.2	6.8	40.2	0.0	2.8	100.0
RURAL						
What items to cook	83.5	0.4	1.4	2.8	11.8	100.0
Obtaining health care for herself	46.1	15.9	22.1	3.3	12.6	100.0
Purchasing jewellery or other major household items	4.5	20.1	38.7	6.5	30.2	100.0
Going and staying with her parents or siblings	8.2	27.8	34.1	5.0	24.9	100.0
How the money she earns will be used ¹	57.9	9.6	27.3	0.0	5.2	100.0
TOTAL						
What items to cook	82.8	0.4	1.5	3.0	12.4	100.0
Obtaining health care for herself	45.6	18.6	20.9	2.9	11.9	100.0
Purchasing jewellery or other major household items	4.7	18.5	41.0	6.2	29.6	100.0
Going and staying with her parents or siblings	8.7	27.7	35.7	4.7	23.3	100.0
How the money she earns will be used ¹	54.0	8.2	33.9	0.0	3.9	100.0

¹For women earning cash

another 14 percent make this decision jointly with their husband or someone else in the household. Only 3 percent of women are not involved in the decision regarding what to cook. In the other decisions, however, women's involvement is much lower. More than one-fifth of the women are not involved in decisions about going to visit parents or siblings (32 percent), purchasing jewellery or other major household items (25 percent), or their own health care (22 percent). 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 (46 percent). In general, there are no sharp differences by residence in the proportion of women participating in the different types of decisions, but it is notable that urban women (73 percent) are less likely to participate in decisions about their own health care than are rural women (81 percent). About 3-6 percent of women in Punjab report that neither they nor their husbands are involved in each of these decisions, which are taken by others in the household.

Fifty-four percent of women who earn cash report that they alone make the decision on how the money they earn will be used. Another 38 percent report that they make the decision together with their husbands or someone else in their households. The remaining 8 percent report

that the decision is made by their husbands without their participation. The proportion of women who alone make the decision about how the money they earn should be used is higher in rural areas (58 percent) than in urban areas (50 percent).

Women's involvement in decisionmaking, alone or jointly with others in the household, increases with age, suggesting that decisionmaking autonomy also increases with age (Table 3.7). Specifically, among women age 30 and over, 1 percent or less do not participate in any decisionmaking compared with 7 percent of women age 15–19. Participation in each of the four specified decisions also tends to increase with age.

Urban women are more likely to participate in decisions about purchasing jewellery or other major household items (80 percent) than are rural women (73 percent), but less likely to be involved in decisions about seeking their own health care (73 percent) than are rural women (81 percent). Decisionmaking on other matters does not vary by residence. The proportion of women not involved in any decisionmaking does not vary greatly or systematically by education, religion, caste, cash employment, or standard of living. However, participation in the different decisions, especially decisions about purchasing jewellery and other items and going to stay with parents or siblings, does increase with education and standard of living. Muslim women are more likely than Hindu or Sikh women to participate in each of these decisions. Notably, too, although few women in Punjab are employed, women who work for cash are more likely to participate in most of the decisions than women who have not been employed at all in the 12 months preceding the survey.

NFHS-2 also collected information on two other dimensions of women's autonomy, namely, women's freedom of movement and access to money that they can spend as they wish. With regard to freedom of movement, respondents were asked whether they need permission to go to the market or to visit friends or relatives. Women's access to spending money was measured by asking respondents, 'Are you allowed to have some money set aside that you can use as you wish?'

Table 3.7 shows that freedom of movement is limited for the majority of ever-married women in Punjab. About 50 percent say that they do not need permission to go to the market, but only 28 percent say that they do not need permission to visit friends or relatives. Freedom of movement increases substantially with age. For example, only 30 percent of women age 15–19 do not need permission to go to the market, compared with 68 percent of women age 45–49. Women who have completed at least high school have somewhat more freedom of movement than less educated women. Freedom of movement is also slightly higher in urban areas than in rural areas and is somewhat lower for women in households with a low standard of living than for women in households with a medium or high standard of living. However, women who work for cash are much more likely than women in any other subgroup of the population to have freedom of movement: 70 percent of these women do not need permission to go to the market and 53 percent do not need permission to visit friends or relatives. Muslim women are slightly more likely than Hindu or Sikh women to not need permission to visit friends or relatives, but are somewhat more likely than Hindu or Sikh women to need permission to go to the market.

There is also substantial variation in women's access to money by background characteristics. Overall, 78 percent of women say that they are allowed to have some money set

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, Punjab, 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	7.0	90.5	74.4	74.1	62.2	30.0	11.1	63.5	85
20-24	1.8	93.4	77.4	74.7	67.8	36.0	21.5	73.2	447
25-29	1.7	95.5	74.0	73.4	64.8	43.2	22.9	76.6	567
30-34	0.2	98.7	78.6	73.4	66.6	54.2	29.2	78.4	548
35-39	0.9	97.6	79.1	72.7	67.2	53.5	30.7	80.6	475
40-44	0.0	98.5	81.6	79.2	70.3	57.9	32.1	81.5	390
45-49	0.0	97.9	85.0	82.9	73.8	68.4	40.8	86.2	283
Residence									
Urban	1.0	96.5	73.2	79.7	68.6	55.1	35.2	88.7	862
Rural	1.1	96.7	80.9	73.3	67.1	47.9	24.8	73.7	1,934
Education									
Illiterate	0.8	97.6	80.3	71.2	64.7	48.4	25.4	69.4	1,084
Literate, < middle school complete	1.2	96.8	77.5	76.3	66.6	50.7	29.6	79.2	593
Middle school complete	2.0	93.5	80.0	78.2	69.3	44.6	26.5	77.4	294
High school complete and above	0.9	96.5	76.3	78.8	71.5	54.1	30.7	89.9	826
Religion									
Hindu	1.1	96.5	78.0	74.6	65.8	53.0	30.2	80.1	1,125
Muslim	0.0	100.0	84.5	90.7	82.2	39.1	33.1	86.5	66
Sikh	1.1	96.5	78.7	75.0	68.4	48.3	26.5	76.5	1,556
Other	(0.0)	(98.1)	(78.9)	(81.2)	(63.2)	(62.4)	(18.3)	(86.2)	47
Caste/tribe									
Scheduled caste	0.9	96.4	76.9	70.8	62.2	48.7	25.6	71.4	781
Other backward class	0.7	97.8	79.3	75.6	67.9	48.1	25.4	76.5	453
Other ¹	1.2	96.5	79.0	77.4	70.2	51.5	29.9	82.5	1,560
Cash employment									
Working for cash	0.7	96.7	80.8	81.7	76.8	69.8	53.4	85.7	250
Not worked in past 12 months	1.1	96.6	78.2	74.6	66.7	48.1	25.3	77.7	2,533
Standard of living index									
Low	0.0	100.0	77.2	63.5	58.6	44.3	20.7	58.5	113
Medium	1.1	97.3	78.8	69.4	62.4	51.2	28.2	71.6	989
High	1.1	96.1	78.5	79.6	71.4	50.1	28.4	83.5	1,681
Total	1.0	96.7	78.5	75.3	67.6	50.1	28.0	78.3	2,796

Note: Total includes 2 scheduled-tribe women, 14 women who work but do not earn cash, and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.

(¹) Based on 25-49 unweighted cases

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

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, Punjab, 1998-99			
Educational level	Urban	Rural	Total
Education for girls			
No education	0.0	0.1	0.1
Less than primary school	0.0	0.1	0.0
Primary school	0.2	4.0	2.9
Middle school	0.7	4.6	3.4
High school	4.9	18.3	14.2
Higher secondary school	6.2	9.5	8.5
Graduate and above	7.2	4.4	5.3
Professional degree	17.2	10.4	12.5
As much as she desires	54.2	40.7	44.9
Depends	9.3	7.3	7.9
Don't know	0.1	0.5	0.4
Total percent	100.0	100.0	100.0
Education for boys			
Primary school	0.1	1.4	1.0
Middle school	0.1	1.9	1.3
High school	2.8	10.2	7.9
Higher secondary school	4.6	10.1	8.4
Graduate and above	6.7	5.7	6.0
Professional degree	17.0	13.0	14.2
As much as he desires	57.1	47.5	50.5
Depends	11.5	10.1	10.5
Don't know	0.1	0.3	0.2
Total percent	100.0	100.0	100.0

aside that they can spend as they wish. Access to money increases with age: 64 percent of women age 15-19 have access, compared with 86 percent of women age 45-49. The percentage of women with access to money is higher in urban areas (89 percent) than in rural areas (74 percent). Access to money also increases with education (from 69 percent of illiterate women to 90 percent of women who have completed at least high school) and with the standard of living (from 59 percent of women with a low standard of living to 84 percent of women with a high standard of living). Muslim women have greater access to money than Hindu or Sikh women. Scheduled-caste women and women of other backward classes have lower access to some money they can spend as they wish than women who do not belong to a scheduled caste, scheduled tribe, or other backward class. As can be expected, women who earn cash for their work have greater access to money than women who did not work during the 12 months preceding the survey, although access is relatively high for both groups.

3.7 Women's Educational Aspirations for Children

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

As shown in Table 3.8, 51 percent of women believe that a boy should be given as much education as he desires, compared with 45 percent who believe that a girl should be given as much education as she desires. In general, however, there is little difference in the perceived

educational needs by the sex of the child, suggesting that women have similar educational aspirations for boys and girls. For example, 29 percent of women believe that an education above high school (higher secondary school, graduate and above, or professional degree) is appropriate for boys compared with 26 percent who feel that it is appropriate for girls. Notably, only 6 percent of women feel that girls should be given less than a high school education. The corresponding proportion for boys is only 2 percent. Educational aspirations are not only much higher for both boys and girls in Punjab than in India as a whole, but tend also to be more gender egalitarian in Punjab than in India as a whole. For example, the percentage of women who say that a boy should be given education beyond high school or as much as he desires is 79 percent in Punjab, but 71 percent in India as a whole; the corresponding percentage for girls is 71 percent in Punjab, but only 51 percent in India as a whole.

Table 3.8 indicates that women's educational aspirations for both girls and boys are much higher in urban areas than in rural areas. Urban respondents are more likely than rural respondents to say that girls and boys should be given as much education as they desire and urban respondents are also more likely than rural respondents to say that a child should be given more than a high school education. It is notable, however, that even in rural areas, 83 percent of women say that girls should be given at least a high school education or as much education as they desire.

3.8 Domestic Violence: Attitudes and Prevalence

In recent years, there has been increasing concern about violence against women in general, and domestic violence in particular, in both developed and developing countries (United Nations General Assembly, 1991). Not only has domestic violence against women been acknowledged worldwide as a violation of the basic human rights of women, but an increasing amount of research highlights the health burdens, intergenerational effects, and demographic consequences of such violence (Heise et al., 1998; 1994; Jejeebhoy, 1998; Ramasubban and Singh, 1998; Rao and Bloch, 1993). In patriarchal societies such as India, women are not only socialized into being silent about their experience of violence, but traditional norms teach them to accept, tolerate, and even rationalize domestic violence (Jaisingh, 1995; Hegde, 1996; Prasad, 1999). The recent IndiaSAFE multi-site study of family violence in India, conducted at about the same time as NFHS-2, finds violence by husbands to be fairly widespread (International Clinical Epidemiology Network, 2000). Both tolerance of and experience of domestic violence are significant barriers to the empowerment of women, with consequences for women's health, their health-seeking behaviour, their adoption of a small family norm, and the health of their children. In NFHS-2, an attempt was made to assess whether women view wife-beating as justified and to measure the prevalence of violence against women including, but not limited to, violence committed by a woman's husband. Respondents answered the questions on attitudes before they were asked questions on their own experiences of violence. 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, the survey asked whether respondents 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,

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, Punjab, 1998–99

Background characteristic	Percentage who agree with specific reasons							Number of women
	Percentage who agree with at least one reason	Husband suspects wife is unfaithful	Natal family does not give expected money or other items	Wife shows disrespect for in-laws	Wife goes out without telling husband	Wife neglects house or children	Wife does not cook food properly	
Age								
15–19	12.4	8.6	0.0	2.5	5.1	1.2	1.3	85
20–29	23.7	18.4	0.0	4.9	3.5	4.9	1.6	1,014
30–39	24.2	17.4	0.0	5.5	6.5	6.4	2.5	1,024
40–49	16.9	12.3	0.0	2.4	3.8	3.9	1.0	673
Marital duration (in years)								
< 5	21.4	15.4	0.0	4.9	3.7	4.8	1.5	656
5–9	23.2	19.4	0.0	4.2	4.1	4.4	1.9	442
10 or more	22.0	15.9	0.0	4.3	5.3	5.6	2.0	1,576
Not currently married	18.7	14.6	0.0	4.2	4.4	3.3	0.0	122
Residence								
Urban	16.1	10.5	0.0	2.8	4.6	4.3	1.2	862
Rural	24.5	18.9	0.0	5.2	4.7	5.5	2.0	1,934
Education								
Illiterate	26.4	20.0	0.0	5.3	5.9	5.4	2.5	1,084
Literate, < middle school complete	25.4	19.0	0.0	5.1	4.2	5.6	1.9	593
Middle school complete	15.9	12.5	0.0	4.2	4.6	4.8	1.3	294
High school complete and above	15.6	10.8	0.0	3.0	3.5	4.5	0.9	826
Religion								
Hindu	17.9	12.4	0.0	3.8	5.0	4.5	1.8	1,125
Muslim	17.8	10.4	0.0	4.6	9.9	1.6	1.6	66
Sikh	25.1	19.3	0.0	5.0	4.5	5.7	1.8	1,556
Other	(13.9)	(13.9)	(0.0)	(0.0)	(0.0)	(9.2)	(2.3)	47
Caste/tribe								
Scheduled caste	24.5	18.9	0.0	4.9	5.6	5.5	2.8	781
Other backward class	20.2	15.2	0.0	2.5	5.4	4.4	1.2	453
Other ¹	21.1	15.3	0.0	4.8	4.1	5.2	1.5	1,560
Cash employment								
Working for cash	17.7	13.0	0.0	3.2	4.9	3.7	0.8	250
Not worked in past 12 months	22.3	16.6	0.0	4.6	4.7	5.3	1.9	2,533
Standard of living index								
Low	28.2	21.6	0.0	5.5	6.5	7.5	5.7	113
Medium	25.7	19.6	0.0	5.0	5.9	5.2	2.4	989
High	19.3	14.0	0.0	4.1	3.9	5.0	1.2	1,681
Total	21.9	16.3	0.0	4.4	4.7	5.1	1.8	2,796

Note: Total includes 2 scheduled-tribe women, 14 women who work but do not earn cash, and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.
 () Based on 25–49 unweighted cases
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

which range from reasons that involve suspicions about a wife's moral character to those that may be considered more trivial, such as not cooking properly, were chosen to provide variation in the perceived seriousness of behavioural-norm violation. Table 3.9 gives the percentages of ever-married women who agree with various reasons for wife-beating by background characteristics.

Twenty-two percent of women in Punjab accept at least one reason as justification for wife-beating compared with 56 percent of women in India as a whole. Sixteen percent of women agree that wife-beating is justified if there is a suspicion that the wife is unfaithful, but 5 percent or less agree with each of the other reasons. No woman at all agreed that wife-beating is justified if the natal family does not give the expected amount of jewellery or other items, and only 2 percent agreed that wife-beating is justified if the wife does not cook food properly.

Table 3.9 indicates that there are no sharp differences by marital duration in women's attitudes towards wife-beating, but there are notable differences by age and residence. Women in the oldest and youngest age groups are less likely to agree with any reason for wife-beating than women age 20–39, and a higher proportion of rural women (25 percent) than urban women (16 percent) agree with at least one reason justifying wife-beating. Agreement with at least one reason and with most of the different reasons for wife-beating declines with education. One in four women who are illiterate or have not completed middle school agree with at least one reason justifying wife-beating, compared with one in six women who have completed at least middle school.

The proportion of women who agree that wife-beating is justified declines as the standard of living increases from 28 percent for women in households with a low standard of living to 19 percent of women in households with a high standard of living. The expectation that women who work, especially those who work for cash, would be less likely than other women to justify wife-beating is borne out for Punjab, although the difference by employment status is not great. This finding may in part be explained by the fact that a substantial proportion of women who work in Punjab are in professional or production occupations, implying a relatively high educational attainment.

Overall, there is no category of women in which more than 28 percent agree with at least one reason for wife-beating; notably, however, 16–19 percent of even the more educated women, women working for cash, and women from households with a high standard of living agree with at least one reason for wife-beating. These data suggest that while the vast majority of women in Punjab are clearly questioning the norms that give husbands the right to use force to discipline wives when they are perceived to be violating traditional gender norms, a substantial proportion of women have yet to do so.

In order to assess the prevalence of domestic violence, NFHS-2 asked women if they had ever been beaten or mistreated physically since age 15.¹ Women who reported being beaten or physically mistreated were asked who beat or physically mistreated them. Interviewers recorded all the persons mentioned by the respondent. As mentioned earlier, there is a culture of silence surrounding the topic of domestic violence that makes the collection of data on this sensitive

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

Table 3.10 Women's experience with beatings or physical mistreatment					
Percentage of ever-married women who have been beaten or physically mistreated by their husband, in-laws, or other persons since age 15, according to selected background characteristics, Punjab, 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	7.3	5.0	0.0	3.5	85
20-29	13.5	11.2	1.2	4.3	1,014
30-39	15.5	13.4	1.2	4.5	1,024
40-49	12.1	10.6	1.9	4.5	673
Marital duration (in years)					
< 5	9.2	6.9	0.0	4.3	656
5-9	15.6	12.8	2.1	5.5	442
10 or more	14.6	13.0	1.3	4.1	1,576
Not currently married	19.9	17.4	6.5	5.1	122
Residence					
Urban	10.7	8.1	1.4	5.2	862
Rural	15.1	13.3	1.3	4.1	1,934
Education					
Illiterate	17.0	15.8	0.9	4.0	1,084
Literate, < middle school complete	17.3	14.9	2.2	5.2	593
Middle school complete	13.3	11.2	2.6	5.9	294
High school complete and above	7.0	4.3	0.9	3.7	826
Religion					
Hindu	12.4	10.8	1.3	3.6	1,125
Muslim	11.0	11.0	5.3	5.7	66
Sikh	14.6	12.3	1.3	4.7	1,556
Other	(19.4)	(15.6)	(0.0)	(10.1)	47
Caste/tribe					
Scheduled caste	15.9	14.2	1.2	4.3	781
Other backward class	15.6	12.5	2.1	4.3	453
Other ¹	12.1	10.2	1.2	4.5	1,560
Household type					
Nuclear household	15.9	14.3	1.6	3.7	1,262
Non-nuclear household	11.9	9.6	1.1	4.9	1,534
Cash employment					
Working for cash	21.5	18.2	1.9	6.9	250
Not worked in past 12 months	12.8	10.9	1.3	4.1	2,533
Standard of living index					
Low	20.8	19.0	0.9	1.9	113
Medium	18.6	16.9	1.4	4.9	989
High	10.4	8.2	1.4	4.3	1,681
Living children					
No living children	8.6	5.0	1.3	4.4	247
Only daughters	12.3	10.8	0.7	2.9	288
Only sons	14.5	11.2	1.9	5.3	608
Both daughters and sons	14.4	13.1	1.3	4.3	1,653
Total	13.7	11.7	1.3	4.4	2,796

Note: Total includes 2 scheduled-tribe women, 14 women who work but do not earn cash, and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.
 () Based on 25-49 unweighted cases
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

topic particularly difficult. Even women who want to speak about their experience with domestic violence may find it difficult because of feelings of shame or fear. This may be more true if violence occurred recently (for example, in the preceding 12 months) than in the more distant past. In addition, depending on the varied cultural meanings ascribed to different acts, there may be women who do not report their experience of domestic violence because they do not view it as violence or physical mistreatment. For these reasons, NFHS-2 results on the prevalence of domestic violence need to be interpreted with caution.

Table 3.10 presents results on the prevalence of beatings or physical mistreatment since age 15 by women's background characteristics. Prevalence is also shown according to the person(s) who beat or physically mistreated them—their husbands, their in-laws, or other persons. According to the reports of respondents, 14 percent of women in Punjab have experienced violence since age 15, and 12 percent have been beaten or physically mistreated by their husbands. This implies that among women who have been beaten, 85 percent have been beaten by their husbands. One percent have been beaten or physically mistreated by in-laws and 4 percent by other persons.

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 (9 percent) than women who have been married longer (15–16 percent). Notably, however, women who are not currently married are the ones most likely to report having been beaten (20 percent). Urban women (11 percent) are less likely than rural women (15 percent) to experience violence. Illiterate women and literate women who have not completed middle school (17 percent) are more than twice as likely to have experienced violence as women who have completed at least high school (7 percent). The prevalence of domestic violence decreases substantially as the standard of living increases. Specifically, 21 percent of women from households with a low standard of living have experienced violence compared with 10 percent of women from households with a high standard of living. Women working for cash are more likely to experience violence than women who have not worked in the 12 months preceding the survey (22 percent compared with 13 percent). Women from nuclear households are slightly more likely than women from non-nuclear households to experience violence, although the difference is small (16 percent compared with 12 percent). A similar finding was reported by Visaria (1999) for women in rural Gujarat.

It is generally believed that not bearing children and not bearing a son are important reasons for wife-beating in societies which have a strong son preference. However, in Punjab women with no living children (9 percent) are less likely to report beatings than women with children (12–15 percent). This result may be due in part to the fact that childless women tend to be younger women, and younger women have a lower prevalence of domestic violence than do older women. Notably too, there is little variation in the prevalence of domestic violence by whether or not women have a son.

The proportions of women who have been beaten or physically mistreated by their husbands according to various background characteristics are similar to the proportions of all women who have experienced domestic violence. This is not surprising because, as already noted, most women who report beatings are beaten by their husbands. The proportion of women who have been beaten or physically mistreated by their in-laws or by other persons is too small

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, Punjab, 1998-99

Background characteristic	Beaten or physically mistreated in past 12 months				Total percent	Number of women
	Many times	A few times	Once	Not beaten		
Age						
20-29	13.0	21.7	23.0	42.3	100.0	137
30-39	7.4	19.6	19.8	53.2	100.0	159
40-49	6.3	6.3	13.2	74.2	100.0	82
Marital duration (in years)						
< 5	7.3	27.3	24.6	40.8	100.0	60
5-9	11.5	18.3	24.1	46.1	100.0	69
10 or more	9.7	16.2	18.8	55.3	100.0	230
Residence						
Urban	8.5	17.1	14.0	60.5	100.0	92
Rural	9.2	18.0	21.2	51.5	100.0	292
Education						
Illiterate	11.4	19.5	23.4	45.7	100.0	184
Literate, < middle school complete	8.0	13.4	18.5	60.1	100.0	102
Middle school complete	(9.8)	(21.9)	(7.2)	(61.1)	100.0	39
High school complete and above	3.0	17.2	17.0	62.7	100.0	58
Religion						
Hindu	9.5	13.1	18.8	58.6	100.0	140
Sikh	9.4	19.8	20.0	50.9	100.0	227
Caste/tribe						
Scheduled caste	8.2	26.2	20.4	45.3	100.0	124
Other backward class	18.0	11.9	21.1	49.0	100.0	71
Other ¹	6.3	14.4	18.3	61.0	100.0	189
Household type						
Nuclear household	12.1	18.1	14.1	55.7	100.0	201
Non-nuclear household	5.7	17.4	25.4	51.5	100.0	183
Cash employment						
Working for cash	11.0	13.8	16.4	58.8	100.0	54
Not worked in past 12 months	8.8	18.5	19.6	53.0	100.0	325
Standard of living index						
Medium	11.2	20.4	21.5	46.9	100.0	184
High	5.2	14.5	17.1	63.1	100.0	175
Living children						
Only daughters	(8.6)	(21.3)	(27.1)	(43.0)	100.0	36
Only sons	10.8	21.1	13.0	55.1	100.0	88
Both daughters and sons	8.9	16.9	19.4	54.8	100.0	239
Total	9.0	17.8	19.5	53.7	100.0	384

Note: Total includes 6 women age 15-19, 24 women who are not currently married, 7 Muslim women, 9 women belonging to 'other' religions, 5 women who work but do not earn cash, 24 women with a low standard of living index, 21 women with no living children, and 2 women with missing information on the standard of living index, who are not shown separately.

() Based on 25-49 unweighted cases

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

to allow a meaningful discussion of differentials by women's 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 by their in-laws.

NFHS-2 asked women who experienced violence since age 15 how often they were beaten or physically mistreated in the 12 months preceding the survey: many times, a few times, once, or not at all. Table 3.11 shows the frequency of beatings in the past 12 months for women who report beatings or physical mistreatment. Almost half of women who experienced violence (46 percent) were beaten at least once during the 12 months preceding the survey, and more than one in four (27 percent) were beaten more than once in this period. Multiple beatings in the recent past among ever-beaten women are particularly common among younger women, women married less than five years, illiterate women, women who have completed only middle school, women from nuclear households, women with a medium standard of living, and women who have only daughters or only sons.

As mentioned earlier, largely due to the inherent tendency for underreporting of domestic violence, these results need to be interpreted with caution. Nevertheless, the NFHS-2 estimates set a lower bound on the proportion of women experiencing domestic violence in Punjab: *at least* 1 in 7 ever-married women in Punjab has experienced domestic violence since age 15, and *at least* 1 in 16 has experienced domestic violence in the 12 months preceding the survey.

CHAPTER 4

FERTILITY AND FERTILITY PREFERENCES

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

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

4.1 Age at First Cohabitation

The number of children that a woman will have in her lifetime is strongly influenced by the age at which she marries. In many parts of India, however, formal marriage is not always immediately followed by cohabitation. Rather, the husband and the wife typically begin to cohabit only after the *gauna* ceremony. Even in states where *gauna* is not practised, 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. In Table 4.1, the median age at first cohabitation for a group of women is defined as the age by which half of the entire group began to cohabit, rather than the age by which half of all ever-cohabiting women in the group began to cohabit.

Table 4.1 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, Punjab, 1998–99							
Background characteristic	Current age						
	20–24	25–29	30–34	35–39	40–49	20–49	25–49
Residence							
Urban	NC	21.3	20.8	20.5	20.6	NC	20.8
Rural	NC	19.9	19.9	19.7	19.5	NC	19.8
Education							
Illiterate	19.8	18.4	19.0	18.7	18.9	18.9	18.7
Literate, < middle school complete	NC	20.0	19.9	20.0	19.4	19.9	19.8
Middle school complete	NC	20.6	20.8	(20.3)	20.6	NC	20.6
High school complete and above	NC	22.3	21.8	21.6	22.1	NC	22.0
Religion							
Hindu	NC	20.5	20.0	20.1	19.6	NC	20.1
Muslim	NC	*	*	*	*	NC	18.9
Sikh	NC	20.1	20.3	20.0	20.3	NC	20.2
Other	*	*	*	*	*	NC	(21.3)
Caste/tribe							
Scheduled caste	NC	19.2	19.2	18.8	18.7	19.3	19.0
Other backward class	NC	20.2	20.1	19.5	19.1	NC	19.8
Other ¹	NC	20.8	20.5	20.5	20.5	NC	20.6
Standard of living index							
Low	*	*	(18.2)	*	*	18.2	18.2
Medium	NC	19.1	19.4	18.9	18.6	19.2	18.9
High	NC	21.0	20.6	20.4	20.5	NC	20.7
Total	NC	20.3	20.2	20.0	20.0	NC	20.1

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

The median age at first cohabitation for women age 25–49 in Punjab, at 20.1 years, is almost the same as the median age at first marriage (Table 4.1 and Table 3.3). The median age at first cohabitation has changed little over time, rising only from 20.0 for women age 35–49 to 20.3 for women age 25–29.

Table 4.1 also shows that the median age at first cohabitation is a year higher for urban women than for rural women. Over time, the median age at cohabitation has increased by about a year in urban areas and by about half a year in rural areas. Differentials by education in the median age at first cohabitation are substantial. For women age 25–49, the median age at first cohabitation ranges from 18.7 for illiterate women to 22.0 for women who have at least completed high school. Notably, illiterate women age 25–29 first cohabit almost 4 years before women in the same age group who have completed at least high school. For older age groups this differential is about 3 years. The median age at first cohabitation for women age 25–49 is lower by one year among Muslims (18.7) than among Hindus (20.1) and Sikhs (20.2). By caste, it is lowest, at 19.0, for scheduled-caste women and highest, at 20.6, for women who do not belong to a scheduled caste, a scheduled tribe, or an other backward class. The median age at first cohabitation increases steadily with the standard of living from 18.2 among women from

households with a low standard of living to 20.7 among women from 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 Punjab, 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 woman-years lived by women in the age group during the same three-year time period. The TFR is a summary measure based on the ASFRs that gives the number of children a woman would bear during her reproductive years if she were to experience the ASFRs prevailing at the time of the survey. Mathematically, the TFR is calculated as five times the sum of all the ASFRs for the five-year age groups. The CBR is defined as the annual number of births per 1,000 population.

Based on estimates for the three-year period before NFHS-2, the CBR for Punjab is estimated at 19.1 live births per 1,000 population and the TFR is estimated at 2.21 births per woman, as shown in Table 4.2. NFHS-2 fertility estimates are much lower in urban areas than in rural areas. The CBR for rural areas is 36 percent higher than the CBR for urban areas and the TFR is higher by almost two-thirds of a child in rural areas (2.42) than in urban areas (1.79). While fertility in the urban areas of Punjab is below the replacement level of just over two children per woman, fertility in rural areas is still well above the replacement level.

Table 4.2 and Figure 4.1 show that the TFR is lower in urban areas than in rural areas for all the age groups. Eighty percent of urban total fertility and 75 percent of rural total fertility is concentrated in the prime childbearing ages of 20–29. There is only a small amount of early and late childbearing in Punjab. Fertility at age 15–19 accounts for only 4 percent of total fertility in urban areas and 10 percent of total fertility in rural areas. Fertility at ages 35 and above accounts for only 3 percent of total fertility for the state as a whole.

Based on estimates for the three-year period preceding NFHS-1 and NFHS-2, the CBR declined from 25.0 to 19.1 between the two surveys, a decline of 24 percent in five and a half years. Over the same period, the TFR also declined by the same percentage, from 2.92 to 2.21. The decline in the total fertility rate is the result of a decline in fertility for all the age groups (Figure 4.2). Although fertility also fell at ages 40–44 and 45–49, fertility at these ages was already very low in NFHS-1, so that fertility declines above age 40 had a negligible impact on the changes in the CBR and TFR that occurred 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. The NFHS-2 estimate of the CBR, at 19.1, is substantially lower than the SRS estimate of the CBR, at 23.4. The NFHS-2 estimate of the TFR

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, Punjab

Age	NFHS-1 (1991-93)	NFHS-2 (1996-98)		SRS (1997)			
	Total	Urban	Rural	Total	Urban	Rural	Total
15-19	0.065	0.015	0.050	0.040	0.009	0.019	0.016
20-24	0.238	0.145	0.197	0.178	0.176	0.207	0.200
25-29	0.180	0.143	0.165	0.158	0.165	0.219	0.204
30-34	0.072	0.047	0.053	0.051	0.058	0.091	0.083
35-39	0.021	0.007	0.015	0.012	0.018	0.036	0.031
40-44	0.005	0.000	0.005	0.003	0.007	0.011	0.010
45-49	0.002	(0.000)	0.000	0.000	0.000	0.001	0.001
TFR 15-44	2.91	1.79	2.42	2.21	2.17	2.92	2.72
TFR 15-49	2.92	1.79	2.42	2.21	2.17	2.92	2.73
CBR	25.0	15.4	20.9	19.1	19.0	24.9	23.4

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.

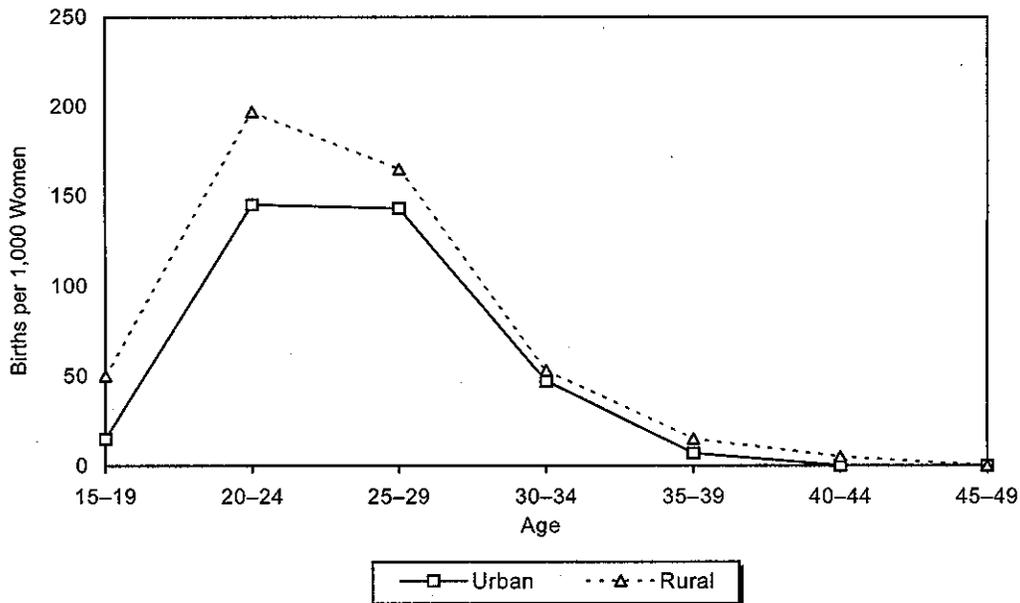
TFR: Total fertility rate

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

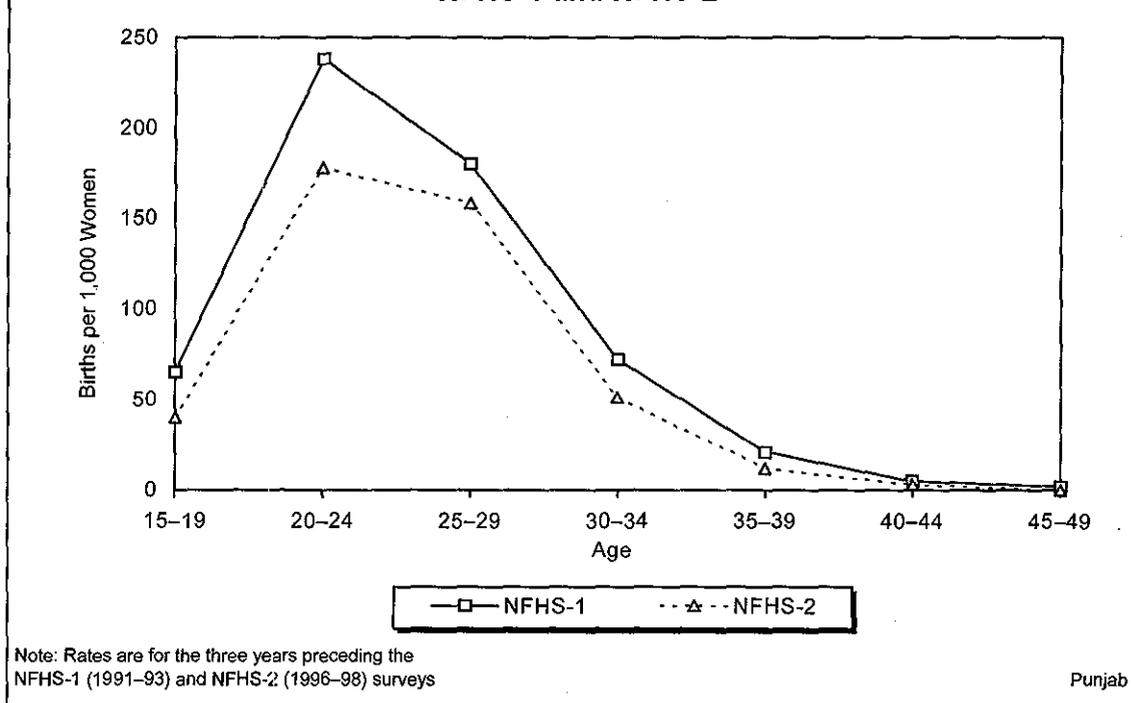
**Figure 4.1
Age-Specific Fertility Rates
by Residence**



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

NFHS-2, Punjab, 1998-99

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



(2.21) is lower than the SRS estimate (2.72) by about half a child per woman. Differences between the NFHS-2 and the SRS estimates are large overall, as well as in both urban areas and rural areas. The differences between the NFHS-2 and SRS fertility estimates may be caused partly by age misreporting in NFHS-2, 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. Nonetheless, analyses conducted by Narasimhan et al. (1997) and Retherford and Mishra (2001) have concluded that NFHS-1, NFHS-2, and SRS estimates are all probably underestimates. However, since the SRS estimates are not subject to displacement, they are likely to be closer to the true level of fertility than either the NFHS-1 or NFHS-2 estimates.

4.3 Fertility Differentials and Trends

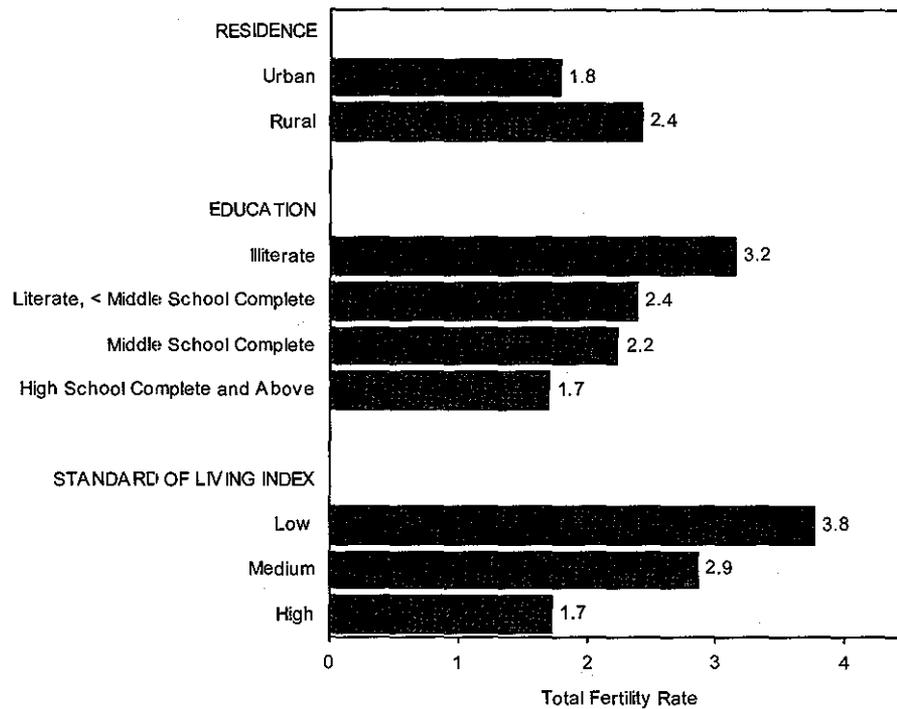
Table 4.3 and Figure 4.3 show how the TFR, the percentage currently pregnant, and the mean number of children ever born to women age 40-49 vary by selected background characteristics. The TFR is 1.45 children higher among illiterate women than among women who have completed at least high school. The TFR also varies by religion, being highest among Muslims (3.31) and lowest among Sikhs (2.05). Fertility is 1.14 children higher among scheduled-caste women and 0.76 children higher among women of other backward classes than among women who do not belong to the scheduled castes, scheduled tribes, or other backward classes. There is also great variation in the TFR by the standard of living. The TFR for women living in households with a low standard of living, at 3.77, is about one child higher than the TFR for women living in households with a medium standard of living, at 2.86, and is about two children higher than the TFR for women living in households with a high standard of living, at only 1.74.

Table 4.3 Fertility by background characteristics			
Total fertility rate for the three years preceding the survey, percentage of all women age 15–49 currently pregnant, and mean number of children ever born to all women age 40–49 by selected background characteristics, Punjab, 1998–99			
Background characteristic	Total fertility rate ¹	Percentage currently pregnant ²	Mean number of children ever born to all women age 40–49 years
Residence			
Urban	1.79	3.5	3.37
Rural	2.42	5.1	3.99
Education			
Illiterate	3.16	5.0	4.34
Literate, < middle school complete	2.40	4.3	3.96
Middle school complete	2.24	4.4	3.14
High school complete and above	1.71	4.3	2.66
Religion			
Hindu	2.29	4.4	3.96
Muslim	3.31	6.9	*
Sikh	2.05	4.5	3.55
Other	(2.50)	7.2	*
Caste/tribe			
Scheduled caste	2.93	6.1	4.46
Other backward class	2.55	5.4	4.10
Other ³	1.79	3.5	3.40
Standard of living index			
Low	3.77	6.3	*
Medium	2.86	5.5	4.43
High	1.74	4.0	3.39
Total	2.21	4.6	3.77
() Based on 125–249 women 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. ³ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class			

Fertility transitions in other countries have shown that fertility differentials typically diverge early in the transition and reconverge (though rarely completely) towards the end of the transition as fertility approaches the replacement level. But in Punjab, as Table 4.3 and Figure 4.3 indicate, despite near replacement-level fertility, there remain large fertility differentials by residence, education, religion, caste and standard of living.

Overall 4.6 percent of women age 15–49 in Punjab report that they are currently pregnant. The pattern of differentials in the percentage of currently pregnant women by background characteristics are similar to the corresponding patterns for the differentials in the TFR. Only in the case of education and religion is the pattern somewhat different. While TFR falls steadily with education, the percentage currently pregnant varies little by education being relatively high only among illiterate women. By religion, Hindu and Sikh women are less likely to be pregnant than Muslim women and women of other religions. Such exceptions may be

Figure 4.3
Total Fertility Rate by Selected Background Characteristics



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

NFHS-2, Punjab, 1998–99

partly due to the fact that the TFR is not affected by the age-structure of the population, whereas the percentage currently pregnant is affected by it.

The last column of Table 4.3 shows the mean number of children ever born to women in Punjab age 40–49 at the time of the survey. The average number of children ever born for these women, who are at the end of their childbearing years, is 3.77 (down from 4.18 at the time of NFHS-1). This average for Punjab is less than the corresponding all-India estimate (4.45) by 0.7 children. Since only women age 40–49 are considered, age variations among the different categories of women do not affect the interpretation of differentials. The substantial decline in fertility in Punjab over time is clearly evident from the difference of 1.6 children between the average number of children born to women who are currently in their forties and the number of children that these women would have in their lifetime if they were subject to the current age-specific fertility rates (the last column and first column of Table 4.3). In almost every case, the pattern of differentials in the mean number of children ever born parallels the pattern of differentials in the TFR. Exceptions can occur because the mean number of children ever born at age 40–49 reflects fertility in the past, whereas the TFR reflects fertility only in the three years preceding the survey.

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

Table 4.4 Fertility trends				
Age-specific fertility rates for five-year periods preceding the survey by residence, Punjab, 1998-99				
Age	Years preceding survey			
	0-4	5-9	10-14	15-19
URBAN				
15-19	0.016	0.045	0.062	0.074
20-24	0.166	0.235	0.280	0.260
25-29	0.139	0.166	0.209	0.245
30-34	0.048	0.052	0.113	[0.131]
35-39	0.015	0.028	[0.050]	U
40-44	0.001	[0.008]	U	U
45-49	[0.000]	U	U	U
RURAL				
15-19	0.059	0.090	0.103	0.089
20-24	0.220	0.303	0.298	0.320
25-29	0.162	0.193	0.223	0.269
30-34	0.053	0.079	0.101	[0.178]
35-39	0.014	0.023	[0.041]	U
40-44	0.005	[0.010]	U	U
45-49	[0.000]	U	U	U
TOTAL				
15-19	0.046	0.076	0.090	0.084
20-24	0.202	0.281	0.292	0.299
25-29	0.154	0.184	0.218	0.261
30-34	0.052	0.070	0.105	[0.162]
35-39	0.014	0.025	[0.044]	U
40-44	0.004	[0.009]	U	U
45-49	[0.000]	U	U	U

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

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

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 3.18 to 2.34 over the five-year period, a decline of 0.84 children. The corresponding decline was 0.71 children in urban areas and 0.90 children in rural areas. In percentage terms, the decline in both rural and urban areas, during the five years before the survey is of the same order (26 percent). It should be noted that these estimated fertility declines

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, Punjab, 1998–99				
Duration since first cohabitation (in years)	Years preceding survey			
	0–4	5–9	10–14	15–19
URBAN				
< 5	0.297	0.356	0.416	0.381
5–9	0.134	0.159	0.188	0.236
10–14	0.034	0.046	0.107	(0.148)
15–19	0.013	0.016	(0.059)	*
20–24	0.010	(0.009)	*	U
25–29	(0.000)	*	U	U
RURAL				
< 5	0.379	0.430	0.414	0.402
5–9	0.183	0.199	0.223	0.291
10–14	0.046	0.075	0.116	0.180
15–19	0.013	0.028	0.054	*
20–24	0.005	0.012	*	U
25–29	0.002	*	U	U
TOTAL				
< 5	0.356	0.407	0.415	0.395
5–9	0.168	0.186	0.211	0.273
10–14	0.042	0.065	0.113	0.171
15–19	0.013	0.024	0.055	*
20–24	0.006	0.011	*	U
25–29	0.002	*	U	U
Note: Duration-specific fertility rates are 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 () Based on 125–249 woman-years of exposure *Rate not shown; based on fewer than 125 woman-years of exposure				

may exaggerate the magnitude of the decline between these two five-year periods because age misreporting can 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 number of years since first cohabitation with the husband. These rates are measures of marital fertility, i.e., fertility within marriage. Table 4.5 shows fertility rates by duration since first cohabitation for ever-married women over the 20-year period preceding the survey.¹ Fertility in Punjab has declined for all durations of cohabitation, but more for longer durations than for shorter durations. Together with the relative stagnation in the age at first cohabitation shown in Table 4.1, these findings suggest that the fertility decline in Punjab is almost entirely the result of fertility limitation within marriage.

¹Because 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.

It is also evident from Table 4.5 that there have been declines in fertility at all durations of cohabitation in both urban and rural areas. Nonetheless, marital fertility is lower in urban areas than in rural areas for most durations and time periods. Although some studies have suggested that women who marry when they are older concentrate their births earlier in their marriage than women who marry when they are younger (Basu 1993; Pandey et al., 1990), the data suggest that this is not the case in Punjab. Although urban women marry on average one year later than rural women, they do not have higher fertility than rural women at shorter durations of marriage.

4.4 Children Ever Born and Living

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

Among women age 15–49 in Punjab, the mean number of children ever born is 1.97 for all women and 2.74 for currently married women. The mean number of children ever born increases steadily with age, reaching a high of 4.1 children each among all women age 45–49 and among currently married women in this age group. The table also shows that early childbearing is not common in Punjab: only 5 percent of all women age 15–19 have had a child.

For women age 45–49, the number of children ever born is of particular interest because these women have virtually completed their childbearing. Among all women as well as currently married women in this age group, the modal number of children is four. Twenty-four percent of all women and 23 percent of currently married women have reached the end of childbearing with four children ever born. About one-fifth of currently married women in this age group have had six or more live births, however. 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 low in Punjab.

Among all women age 15–49, the average number of children who have died is 0.16 per woman. Among currently married women, the average number of children who have died is 0.23 per woman, indicating that 8 percent of children ever born to currently married women have died. The proportion of children ever born who have died is highest, at 12 percent, among currently married women age 15–19, and then declines substantially to 6–7 percent among women age 20–35, before rising gradually to 10 percent among 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. As expected, the proportion of births at each order is larger than the proportion at the next higher order. Thirty-two percent of all births are first-order births, 29 percent are second-order births, and 21 percent are third-order births. Only 19 percent of births

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, Punjab, 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	94.9	4.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	706	0.06	0.05
20-24	61.1	18.7	12.9	6.1	1.2	0.1	0.0	0.0	0.0	0.0	0.0	100.0	864	0.68	0.63
25-29	15.4	13.9	30.4	23.2	12.2	3.5	1.3	0.1	0.0	0.0	0.0	100.0	625	2.19	2.02
30-34	3.3	6.8	29.9	33.2	17.1	5.4	2.9	1.1	0.0	0.0	0.0	100.0	557	2.88	2.68
35-39	2.0	3.7	26.3	30.9	21.5	7.4	6.3	0.9	0.4	0.7	0.0	100.0	479	3.25	2.96
40-44	2.1	4.4	21.1	24.9	24.4	11.5	5.8	3.4	1.1	0.5	0.8	100.0	392	3.56	3.24
45-49	2.0	3.7	12.6	20.8	23.8	17.1	12.0	4.7	1.1	1.2	1.1	100.0	283	4.07	3.64
Total	34.2	9.3	18.3	17.6	11.5	4.7	2.8	1.0	0.2	0.2	0.2	100.0	3,906	1.97	1.81
CURRENTLY MARRIED WOMEN															
15-19	56.7	38.3	3.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	84	0.50	0.44
20-24	24.6	35.9	25.2	11.7	2.3	0.3	0.0	0.0	0.0	0.0	0.0	100.0	441	1.32	1.23
25-29	6.6	15.3	33.6	25.4	13.6	3.9	1.4	0.2	0.0	0.0	0.0	100.0	561	2.42	2.24
30-34	1.8	6.4	31.0	33.3	17.9	5.5	2.9	1.2	0.0	0.0	0.0	100.0	531	2.93	2.74
35-39	1.4	3.2	26.7	31.4	21.9	7.6	5.7	0.9	0.4	0.7	0.0	100.0	451	3.27	3.00
40-44	1.9	3.6	21.1	25.1	24.5	11.8	6.0	3.7	1.2	0.2	0.8	100.0	357	3.60	3.29
45-49	1.7	3.1	14.4	19.7	23.1	18.6	11.7	5.3	0.8	0.4	1.3	100.0	249	4.07	3.65
Total	8.2	12.9	26.1	24.4	15.9	6.5	3.7	1.4	0.3	0.2	0.2	100.0	2,674	2.74	2.51

Table 4.7 Birth order

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

Background characteristic	Birth order				Total percent	Number of births
	1	2	3	4+		
Mother's current age						
15–19	(86.3)	(10.9)	(2.8)	(0.0)	100.0	38
20–29	34.2	31.7	21.1	12.9	100.0	716
30–39	5.7	18.6	26.4	49.4	100.0	143
Residence						
Urban	36.4	31.4	18.0	14.2	100.0	207
Rural	30.3	27.8	22.1	19.8	100.0	695
Mother's education						
Illiterate	24.0	19.9	23.2	33.0	100.0	360
Literate, < middle school complete	27.4	26.7	27.1	18.9	100.0	182
Middle school complete	32.6	36.8	24.8	5.8	100.0	106
High school complete and above	45.4	38.8	12.6	3.1	100.0	255
Religion						
Hindu	32.1	27.6	21.1	19.3	100.0	369
Muslim	(9.6)	(22.9)	(22.8)	(44.8)	100.0	30
Sikh	32.8	29.7	20.9	16.6	100.0	484
Caste/tribe						
Scheduled caste	26.2	24.2	21.4	28.2	100.0	335
Other backward class	31.9	27.3	17.4	23.4	100.0	166
Other ¹	36.3	32.8	22.3	8.5	100.0	401
Mother's work status						
Employed by someone else	(21.8)	(35.8)	(19.4)	(23.0)	100.0	44
Not worked in past 12 months	32.3	28.4	21.1	18.2	100.0	852
Standard of living index						
Low	26.3	9.2	28.6	35.9	100.0	57
Medium	24.5	23.8	23.5	28.1	100.0	400
High	38.8	35.7	17.9	7.6	100.0	441
Total	31.7	28.6	21.2	18.5	100.0	903

Note: Total includes 5 births to mothers age 40–49, 18 births to mothers belonging to other religions, 1 birth to a scheduled-tribe mother, 4 births to mothers who work in a family farm/business, 2 births to mothers who are self-employed, and 1 and 5 births with missing information on religion and the standard of living index, respectively, which are not shown separately.
 () Based on 25–49 unweighted cases
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

are of order four or higher in Punjab, compared with the all-India average of 28 percent, which indicates the relatively low level of fertility in Punjab.

As seen earlier, very early fertility is limited in Punjab. In keeping with this, Table 4.7 shows that the majority of births (86 percent) to mothers age 15–19 are first-order births. Mothers age 20–29 are about equally likely to have a first-order birth (34 percent) as a second-order birth (32 percent), whereas almost half of the births to mothers age 30–39 are of order four or higher. The proportion of births that are of order four or higher is 14 percent in urban areas and 20 percent in rural areas. The proportion of births of order four or higher is relatively large

for births to Muslim mothers (45 percent), mothers from households with a low standard of living (36 percent), illiterate mothers (33 percent), mothers from households with a medium standard of living (28 percent), and scheduled-caste mothers (28 percent). By contrast, more than 90 percent of births to mothers who have completed at least middle school and mothers who belong to households with a high standard of living are of order three or less.

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 the 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 Punjab, 18 percent of births occur within 18 months of a previous birth and 36 percent occur within 24 months. Thirty-two percent of births occur after an interval of three years or more.

The median birth interval in Punjab is 28 months. The median birth interval for women in the prime childbearing ages (20–29), at 25 months, is substantially shorter than the median interval for older women (age 30–39), at 37 months. Despite the sharp increase with mother's age, the median birth interval increases only slightly with the order of the previous birth. One type of selection effect that may affect these results is that mothers of higher-order births may be more fecund, on average, than mothers of lower-order births.

The median birth interval is about one month longer if the previous birth was a boy than if it was a girl. This pattern may result partly from the shorter duration of breastfeeding for girls, which is indicative of son preference (see Table 7.8). The median birth interval is four months shorter if the previous child died than if it survived. 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. As temporary methods of contraception are relatively popular in Punjab (see Table 5.3), the total effect is probably a combination of prematurely terminated breastfeeding and non-use of contraception.

Birth intervals are seven months longer for births to urban women than births to rural women, perhaps because urban women are more likely to use spacing methods of contraception. Mothers who are illiterate or less educated have a median birth interval that is four to six months shorter than that for mothers who have completed at least high school. Mothers living in households with a high standard of living have a median birth interval that is five months longer than the interval for mothers who live in households with a low or medium standard of living. The median birth interval is similar for Hindus and Sikhs and is two months shorter than for Muslims. By caste, the median birth interval for scheduled-caste mothers is five months shorter than the interval for mothers who do not belong to any scheduled caste, scheduled tribe, or other backward class.

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, Punjab, 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									
20–29	4.5	18.3	19.8	33.9	15.7	7.8	100.0	25.4	747
30–39	1.8	6.1	11.9	27.1	19.4	33.7	100.0	37.4	294
Residence									
Urban	1.8	11.5	12.6	28.0	22.1	24.0	100.0	33.5	235
Rural	4.2	15.7	18.8	33.2	15.0	13.1	100.0	26.6	826
Mother's education									
Illiterate	5.0	15.2	16.2	35.5	15.7	12.4	100.0	27.3	489
Literate, < middle school complete	3.5	17.0	17.4	31.5	17.7	12.8	100.0	26.9	231
Middle school complete	2.4	12.4	24.7	28.7	10.9	20.9	100.0	25.9	123
High school complete and above	1.5	12.5	16.1	26.9	20.6	22.5	100.0	31.7	219
Religion									
Hindu	3.4	15.9	16.4	28.3	16.8	19.2	100.0	28.4	423
Muslim	(0.0)	(6.3)	(22.4)	(43.4)	(16.2)	(11.7)	100.0	(29.8)	45
Sikh	3.7	13.9	18.0	33.5	17.2	13.7	100.0	27.8	566
Other	(11.2)	(26.7)	(13.9)	(40.8)	(3.7)	(3.7)	100.0	(23.6)	29
Caste/tribe									
Scheduled caste	5.5	16.8	19.8	32.7	15.6	9.7	100.0	25.6	407
Other backward class	4.0	15.1	16.8	34.2	17.2	12.6	100.0	28.7	205
Other ¹	1.9	12.4	15.7	30.5	17.2	22.3	100.0	30.6	445
Standard of living index									
Low	8.4	21.0	5.7	42.3	15.6	7.1	100.0	26.5	76
Medium	4.6	17.3	19.1	34.4	14.7	9.9	100.0	26.1	514
High	1.8	11.0	17.7	27.6	18.7	23.1	100.0	31.1	467
Order of previous birth									
1	4.6	16.5	18.9	29.5	16.5	13.9	100.0	26.5	465
2	2.6	12.4	20.1	31.3	16.2	17.5	100.0	28.4	323
3	3.6	14.4	12.6	34.2	17.3	17.9	100.0	29.5	160
4+	2.8	14.3	10.8	41.6	17.2	13.3	100.0	30.4	114
Sex of previous birth									
Male	4.5	13.5	15.9	31.1	17.8	17.2	100.0	28.7	482
Female	2.9	15.8	18.7	32.8	15.6	14.2	100.0	27.5	580
Survival of previous birth									
Living	2.9	13.6	18.0	32.2	17.0	16.3	100.0	28.5	959
Dead	10.3	25.6	12.3	30.4	12.7	8.6	100.0	24.4	102
Total	3.6	14.7	17.4	32.0	16.6	15.5	100.0	28.0	1,062

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 4 and 16 births to mothers age 15–19 and age 40–49, respectively, 4 births to scheduled-tribe mothers, and 6 births with missing information on the standard of living index, which are not shown separately.

() Based on 25–49 unweighted cases

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

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, Punjab, 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	22.8	21.9	21.9	22.3	22.8	NC	22.3
Rural	NC	20.8	20.9	21.1	20.9	21.6	NC	21.0
Education								
Illiterate	NC	19.5	20.2	20.2	20.6	20.9	NC	20.2
Literate, < middle school complete	NC	20.8	20.8	21.2	20.6	21.7	NC	20.9
Middle school complete	NC	21.8	22.2	(21.9)	(22.2)	(22.9)	NC	22.1
High school complete and above	NC	23.8	22.9	22.6	23.6	24.6	NC	23.4
Religion								
Hindu	NC	21.9	21.0	21.6	21.0	21.6	NC	21.4
Muslim	NC	*	*	*	*	*	NC	20.8
Sikh	NC	21.2	21.5	21.3	21.6	22.6	NC	21.5
Other	NC	*	*	*	*	*	NC	(22.3)
Caste/tribe								
Scheduled caste	NC	20.2	20.2	20.4	20.2	20.9	NC	20.3
Other backward class	NC	21.1	21.2	20.7	20.9	*	NC	21.0
Other ¹	NC	22.2	21.8	21.9	21.9	22.6	NC	22.0
Standard of living index								
Low	*	*	(20.0)	*	*	*	19.8	19.8
Medium	NC	20.0	20.4	20.5	20.3	21.1	NC	20.4
High	NC	22.5	21.9	21.8	22.1	22.5	NC	22.1
Total	NC	21.5	21.3	21.4	21.3	22.1	NC	21.5

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

4.7 Age at First and Last Birth

The ages at which women start and stop childbearing are important demographic determinants of fertility. A higher median age at first birth and a lower median age at last birth are indicators of lower fertility. Table 4.9 shows the median age at first birth for various age groups by selected background characteristics. In this table, the median age at first birth for any group of women is defined as the age by which half of all women in the group have had a first birth, rather than the age by which half of all mothers in the group have had a first birth. 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 changed little over time, fluctuating only between 21 and 22 years for women in age cohorts

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, Punjab, 1998–99

Current age	Age at last birth								Total percent	Median age at last birth	Number of women
	No birth	< 20	20–24	25–29	30–34	35–39	40–44	45–49			
40–44	1.7	1.0	17.4	43.8	28.1	7.4	0.5	NA	100.0	28.6	390
45–49	1.9	1.4	7.8	40.8	33.7	11.5	2.9	0.0	100.0	29.9	283
40–49	1.8	1.2	13.4	42.5	30.5	9.1	1.5	0.0	100.0	29.2	673

NA: Not applicable

from 25–29 years to 40–49 years. The median age at first birth is about one year higher in urban areas than in rural areas. The median increased by almost one year between women age 30–34 and women age 25–29 in urban areas but, in rural areas, there was no change between these two age cohorts of women. The age at first birth for Muslims is about half a year less than for both Sikhs and Hindus, for whom the median age at first birth is similar. The median age at first birth is almost two years lower for scheduled-caste women and one year lower for women belonging to other backward classes, than for women who do not belong to a scheduled caste, scheduled tribe, or other backward class. Women living in households with a high standard of living have a median age at first birth of 22 years, which is two years higher than the median for women living in households with a low standard of living. The differentials by education are also substantial. Among women age 25–49, the median age at first birth ranges from 20 years for illiterate women to 23 years for women who have at least completed high school.

For older women the age at last childbirth is an indicator of the cessation of childbearing. Table 4.10 presents the distribution of ever-married women in the age group 40–49 by age at last birth, as well as the median age at last birth. Although a few of these women may have another birth later on, the very low fertility rates for women in this age group (Table 4.2) suggest that childbearing is virtually complete by these ages. Fifty-nine percent of women either had no birth or had their last birth by age 30 and 89 percent by age 35. The median age at last birth in Punjab for women age 40–49 is 29.2 years, and is one year lower for women age 40–44 than for women age 45–49. The typical reproductive age span (which is the difference between the median age at last birth and the median age at first birth for women who have ever had a birth) is considerably shorter in Punjab (7.4 years) than in India as a whole (9.9 years), consistent with the lower level of fertility in Punjab (see International Institute for Population Sciences and ORC Macro, 2000: Table 4.15).

4.8 Postpartum Amenorrhoea, Abstinence, Insusceptibility, and Menopause

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

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, Punjab, 1998–99

Months since birth	Percentage of births whose mothers are:			Number of births
	Amenorrhoeic	Abstaining	Insusceptible	
< 2	(95.6)	(90.4)	(97.8)	41
2–3	66.8	35.1	73.9	72
4–5	53.4	13.4	57.1	56
6–7	42.6	7.4	48.1	55
8–9	(26.3)	(0.0)	(26.3)	32
10–11	(19.0)	(5.6)	(19.0)	38
12–13	9.3	5.6	12.9	53
14–15	(2.4)	(0.0)	(2.4)	48
16–17	4.1	4.1	8.2	52
18–19	(0.0)	(2.2)	(2.2)	49
20–21	(2.7)	(0.0)	(2.7)	40
22–23	(0.0)	(0.0)	(0.0)	37
24–25	0.0	0.0	0.0	53
26–27	0.0	1.7	1.7	64
28–29	1.5	0.0	1.5	71
30–31	1.9	0.0	1.9	57
32–33	(0.0)	(0.0)	(0.0)	37
34–35	(2.1)	(0.0)	(2.1)	43
Median ¹	5.4	2.2	6.0	NA
Mean	6.8	3.6	7.4	NA
Prevalence/incidence mean	6.7	3.3	7.3	NA

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

Table 4.11 shows the percentage of births occurring during the three years preceding the survey whose mothers are postpartum amenorrhoeic, abstaining, or insusceptible, by the number of months since birth. These distributions are based on current status information, that is, on the proportions of births occurring within the 36 months before the survey whose mothers were amenorrhoeic, abstaining, 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. Current status information is used for these estimates because it is usually more reliable than information based on women's recall. The data are grouped into 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-six percent of all women who had a birth in the period less than two months before the survey and 67 percent who had a birth 2–3 months before the survey are still amenorrhoeic. The proportion amenorrhoeic gradually decreases as the number of months since the last birth increases. Forty-three percent of all women who had births 6–7 months before the

Table 4.12 Menopause						
Percentage of currently married women age 30–49 years who are in menopause by age and residence, Punjab, 1998–99						
Age	Urban		Rural		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
30–34	0.5	178	1.8	353	1.4	531
35–39	1.6	154	5.8	296	4.4	451
40–41	7.9	56	27.4	109	20.8	165
42–43	25.1	52	17.5	79	20.6	131
44–45	(32.7)	43	36.9	78	35.4	121
46–47	(47.5)	34	55.3	60	52.5	95
48–49	(62.6)	30	63.6	64	63.3	94
30–49	12.8	547	16.4	1,040	15.2	1,588

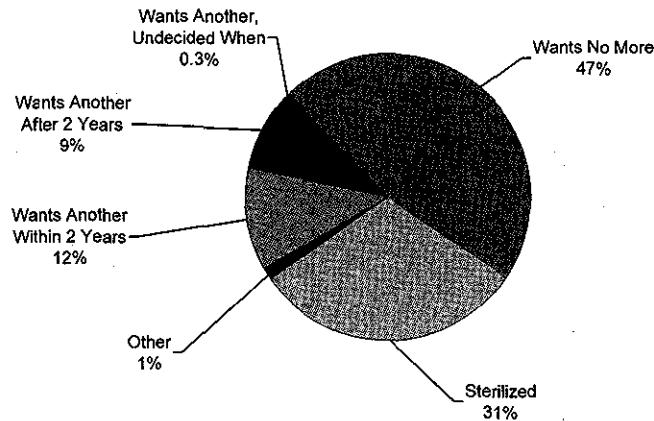
Note: Percentage menopausal is defined as the percentage of currently married women who are not pregnant and not postpartum amenorrhoeic and who reported that their last menstrual period occurred six or more months preceding the survey or that they are menopausal or have had a hysterectomy.
() Based on 25–49 unweighted cases

survey are still amenorrhoeic, but the proportion amenorrhoeic drops off rapidly thereafter. The proportion of mothers abstaining from sexual intercourse within two months after the birth of a child (90 percent) is less than the corresponding proportion amenorrhoeic (96 percent). Only 35 percent of women are abstaining 2–3 months after a birth and 7 percent are still abstaining 6–7 months after a birth. Overall, when amenorrhoea and abstinence are considered together, 9 out of 10 women are susceptible to pregnancy 12–13 months after giving birth.

The median and mean durations of insusceptibility are 6 and 7 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 (5 months) is more than twice as high as the median duration of abstinence (2 months). These results also indicate that, on average, women in Punjab remain insusceptible to conception for seven months after a birth, primarily due to the effect of postpartum amenorrhoea.

Menopause is a primary limiting factor of fertility. It is the culmination of a gradual decline in fecundity with increasing age. After age 30, the risk of pregnancy declines with age as an increasing proportion of women become infecund. In NFHS-2, menopause is defined as the absence of menstruation for six or more months preceding the survey among currently married women. Women who report that they are menopausal or that they have had a hysterectomy are also included in this category. Women who are pregnant or postpartum amenorrhoeic are assumed not to be menopausal. Table 4.12 presents data on menopause for women age 30–49. In Punjab, menopause is not common among women in their thirties, but its incidence increases rapidly after age 40. By age 40–43, 21 percent of women are menopausal. The proportion menopausal rises to 53 percent among women age 46–47 and to 63 percent among women age 48–49. Notably, a higher proportion of rural than urban women are menopausal at all ages between 30 and 49 (except age 42–43), especially at younger ages.

Figure 4.4
Fertility Preferences Among Currently Married Women



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Punjab, 1998-99

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. Overall, 47 percent of currently married women say that they do not want any more children, an additional 31 percent cannot have another child because either the wife or the husband has been sterilized, and 1 percent of women say that they cannot get pregnant (that is, they are 'declared infecund'). About one-fifth of the women (21 percent) say that they would like to have another child (12 percent within two years, 9 percent after waiting at least two years, and less than 1 percent are undecided when they want the next child). Overall, 87 percent of women either want to space their next birth or do not want any more children, including women who are sterilized or whose husbands are sterilized. This proportion is 88 percent in urban areas and 86 percent in rural areas. Less than 1 percent of women say that the decision about having children is up to God.

The desire to have a child within two years drops rapidly with the number of living children, from 86 percent for women without any living children to 5 percent or less for women with two or more living children. Forty-six percent of women with one living child (50 percent

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, Punjab, 1998-99

Desire for children	Number of living children ¹					Total
	0	1	2	3	4+	
URBAN						
Desire for additional child						
Wants another soon ²	91.4	22.9	4.7	1.7	1.2	11.3
Wants another later ³	3.4	50.2	5.3	0.0	0.6	9.8
Wants another, undecided when	0.0	0.7	0.0	0.0	0.0	0.1
Undecided	0.0	0.7	0.3	0.0	0.0	0.2
Up to God	1.8	1.4	0.0	0.0	0.6	0.4
Wants no more	0.0	22.0	78.3	71.4	54.1	59.1
Sterilized	0.0	2.1	11.4	26.9	43.5	18.8
Declared infecund	3.5	0.0	0.0	0.0	0.0	0.2
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	50	126	297	213	144	830
Preferred sex of additional child⁴						
Boy	21.8	47.0	(90.9)	*	*	48.6
Girl	0.0	21.6	(6.0)	*	*	11.8
Doesn't matter	38.2	14.5	(3.1)	*	*	19.2
Up to God	40.1	16.9	(0.0)	*	*	20.3
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	48	72	29	4	2	154
RURAL						
Desire for additional child						
Wants another soon ²	84.0	32.6	5.5	2.0	0.9	12.1
Wants another later ³	9.4	44.3	4.6	1.8	0.7	8.8
Wants another, undecided when	1.0	1.6	0.2	0.0	0.0	0.4
Undecided	0.0	0.4	0.0	0.2	0.2	0.2
Up to God	0.0	0.8	0.2	0.2	0.2	0.3
Wants no more	0.9	16.6	61.9	45.1	37.8	40.9
Sterilized	0.0	1.6	27.1	50.0	59.1	36.3
Declared infecund	4.7	2.0	0.2	0.4	0.9	1.0
Missing	0.0	0.0	0.2	0.2	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	113	264	484	530	454	1,844
Preferred sex of additional child⁴						
Boy	26.3	54.1	(86.8)	*	*	53.6
Girl	3.0	12.6	(6.7)	*	*	7.8
Doesn't matter	32.1	16.6	(6.5)	*	*	18.7
Up to God	38.6	16.7	(0.0)	*	*	19.9
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	106	161	49	18	8	343

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, Punjab, 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	86.3	29.5	5.2	1.9	1.0	11.8
Wants another later ³	7.6	46.2	4.9	1.3	0.7	9.1
Wants another, undecided when	0.7	1.3	0.1	0.0	0.0	0.3
Undecided	0.0	0.5	0.1	0.1	0.2	0.2
Up to God	0.5	1.0	0.1	0.1	0.3	0.3
Wants no more	0.6	18.3	68.1	52.7	41.7	46.6
Sterilized	0.0	1.8	21.1	43.4	55.4	30.9
Declared infecund	4.3	1.4	0.1	0.3	0.7	0.7
Missing	0.0	0.0	0.1	0.1	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	163	390	781	742	598	2,674
Preferred sex of additional child⁴						
Boy	24.9	51.9	88.3	*	*	52.1
Girl	2.1	15.4	6.4	*	*	9.1
Doesn't matter	33.9	16.0	5.2	*	*	18.9
Up to God	39.1	16.8	0.0	*	*	20.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	154	233	78	22	9	496
() 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						

in urban areas and 44 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, not all women who wish to delay the next birth use contraception. These findings suggest that encouraging the use of temporary methods would further lower overall fertility, as well as provide health benefits to mothers and their children through increased birth spacing.

Fifty-two 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 (19 percent) or that it is up to God (20 percent). Irrespective of their number of living children, women are much more likely to express a desire for a son than for a daughter. In addition, the proportion of women expressing a desire specifically for a son increases rapidly with the number of living children. Among women who have no living children, only 2 percent of women express a specific desire for a daughter, although 34 percent say it does not matter whether they have a son or a daughter and 39 percent say that the sex of the child is up to God. Even among this group, however, one in four say they would like their first child to be a boy. The proportion wanting the next child to be a boy rises further to 52 percent among women with one living child and to 88 percent among women with two living children.

Table 4.14 Desire to have no more children by background characteristics

Percentage of currently married women who want no more children by number of living children and selected background characteristics, Punjab, 1998–99

Background characteristic	Number of living children ¹					Total
	0	1	2	3	4+	
Age						
15–24	0.0	12.6	78.7	(81.1)	*	35.4
25–34	(0.0)	14.9	87.8	96.1	94.7	80.2
35–49	*	(78.0)	96.9	98.2	98.5	95.4
Residence						
Urban	0.0	24.1	89.8	98.3	97.6	77.9
Rural	0.9	18.2	89.0	95.1	96.9	77.2
Education						
Illiterate	(2.2)	16.9	83.0	94.2	96.4	81.2
Literate, < middle school complete	(0.0)	23.7	91.1	97.6	98.7	81.7
Middle school complete	*	(13.5)	88.3	96.3	(97.4)	73.8
High school complete and above	0.0	21.9	92.1	97.7	(97.5)	70.8
Religion						
Hindu	0.0	15.7	85.8	96.8	98.9	79.0
Muslim	*	*	*	*	(89.4)	79.1
Sikh	1.0	23.2	91.8	95.5	96.1	76.4
Other	*	*	*	*	*	(73.0)
Caste/tribe						
Scheduled caste	0.0	6.8	79.4	93.9	96.7	75.2
Other backward class	*	18.3	84.6	97.4	95.2	78.6
Other ²	1.1	25.6	92.9	97.0	98.6	78.3
Standard of living index						
Low	*	*	*	*	(100.0)	72.5
Medium	0.0	13.7	81.6	94.0	95.8	77.8
High	1.1	22.7	91.8	97.9	98.2	77.6
Number of living sons³						
0	0.6	9.7	24.4	*	*	11.3
1	NA	33.3	93.8	96.9	97.4	83.6
2	NA	NA	97.9	99.4	98.1	98.6
3+	NA	NA	NA	97.6	99.6	99.0
Number of living daughters³						
0	0.6	33.3	97.9	97.6	*	59.0
1	NA	9.7	93.8	99.4	100.0	85.6
2	NA	NA	24.4	96.9	98.4	87.9
3+	NA	NA	NA	*	95.4	90.6
Total	0.6	20.1	89.3	96.1	97.1	77.4

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

¹Includes current pregnancy, if any

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

³Excludes pregnant women

Table 4.14 provides information about differentials in the desire to limit family size by selected background characteristics. In this table, women who are sterilized (or whose husbands are sterilized) are included among those who say they want no more children. One-fifth of women with one living child do not want any more children. This proportion rises sharply to 89 percent for women with two living children and is 96–97 percent among women with three or more living children. As expected, older women are much more likely than younger women to want no more children. Already by age 25–34, 80 percent of women want no more children. In Punjab, there are only small differentials by residence, religion, caste/tribe status, and standard of living in the desire for more children. Even by education, the percentage of women who want no more children varies only between 81 percent for illiterate women to 71 percent for women who have completed at least high school.

The background characteristic with the strongest effect on women's desire to limit family size, however, is number of living sons. Only 11 percent of women with no living sons want no more children, compared with 99 percent of women with two or more living sons. Differences associated with the number of living daughters are also large, but not nearly as large as differences associated with the number of living sons, indicating a strong preference for sons. Fifty-nine percent of women with no living daughters want no more children, compared with 91 percent of women with three or more living daughters. While it is encouraging to note that 24 percent of women with two daughters and no sons do not want a third child, this proportion is about half the corresponding national average of 47 percent, and is a fraction of the proportion of women who do not want a third child among those with one son and one daughter (94 percent) or two sons only (98 percent).

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 question sometimes had to be repeated to ensure that the meaning was understood. Yet 97 percent of women in Punjab were able to give a numerical response.

Table 4.15 shows that two-thirds of women in Punjab consider the ideal number of children to be two and another one-fifth consider the ideal number to be three. Only 10 percent have an ideal that differs from 2 or 3 children. Among all women who gave a numeric response, the average number of children considered ideal is 2.3, ranging from 2.0 for women who have 0–2 children to 2.8 for women who already have four or more children. The mean ideal number of children has declined since NFHS-1, when it was 2.6, and the proportion of women giving two children as their ideal has increased from 57 percent in NFHS-1 to 66 percent in NFHS-2.

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

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, Punjab, 1998–99						
Ideal number of children	Number of living children ¹					Total
	0	1	2	3	4+	
1	14.1	15.6	4.2	1.7	1.3	5.1
2	71.1	78.3	87.6	59.0	38.4	66.1
3	10.4	4.9	7.1	34.2	35.9	21.0
4	3.2	0.5	0.7	2.4	16.0	4.7
5	0.0	0.0	0.0	0.1	0.6	0.2
6+	0.0	0.0	0.0	0.0	0.3	0.1
Non-numeric response	1.3	0.7	0.4	2.6	7.5	2.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	170	408	805	781	631	2,796
Mean ideal number ²	2.0	1.9	2.0	2.4	2.8	2.3
Number of women giving numeric response	168	405	802	761	584	2,720

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

Punjab. Among women with four or more living children, for example, 76 percent state that fewer than four children would be ideal. Similarly, among women with three living children, 61 percent state that their ideal family size is smaller than three children. It is evident that a large 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. Differentials in the ideal number of children are generally small. Even by age, the mean ideal number increases only from 2.1 children for women age 15–24 to 2.5 children for women age 45–49. The mean ideal number of children is highest, at 2.5–2.6, among women from households with a low or medium standard of living, illiterate women, women with illiterate husbands, scheduled-caste women, Muslim women, and women who are not Hindu, Sikh, or Muslim. The mean ideal number of children is lowest at 2.0 for women who have completed at least high school or have husbands who have completed at least higher secondary.

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 & Foo, 1992; Kulkarni et.al, 1996; Murthi et. al. 1995; Nag, 1991; Parasuraman et. al., 1994). In NFHS-2, women who gave a numerical response to the question on ideal number of children were asked how many of these children they would like to be boys, how many they would like to be girls, and for how many the sex would not matter. Table 4.17 shows women's mean ideal number of sons and daughters, the percentages who want more children of a particular sex, the percentage who want at least one son, and the percentage

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, Punjab, 1998–99

Background characteristic	Current age							Total
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	
Residence								
Urban	*	1.9	2.1	2.2	2.2	2.3	2.3	2.2
Rural	2.1	2.1	2.2	2.3	2.4	2.5	2.7	2.3
Education								
Illiterate	(2.2)	2.3	2.4	2.5	2.6	2.6	2.7	2.5
Literate, < middle school complete	*	2.1	2.2	2.2	2.5	2.5	(2.6)	2.3
Middle school complete	*	2.0	2.0	2.2	(2.2)	(2.3)	(2.3)	2.1
High school complete and above	*	1.9	2.0	2.0	2.0	2.1	2.2	2.0
Religion								
Hindu	*	2.2	2.2	2.3	2.4	2.5	2.6	2.3
Muslim	*	*	*	*	*	*	*	2.5
Sikh	2.1	2.0	2.1	2.2	2.3	2.4	2.4	2.2
Other	*	*	*	*	*	*	*	(2.5)
Caste/tribe								
Scheduled caste	(2.1)	2.3	2.4	2.5	2.7	2.8	2.7	2.5
Other backward class	*	2.2	2.3	2.3	2.5	2.6	(2.7)	2.4
Other ¹	(2.0)	1.9	2.0	2.1	2.2	2.3	2.4	2.1
Work status								
Employed by someone else	*	*	(2.1)	(2.2)	(2.1)	(2.5)	(2.4)	2.3
Self-employed	NC	*	*	*	*	*	*	(2.1)
Not worked in past 12 months	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.3
Standard of living index								
Low	*	*	*	*	*	*	*	2.6
Medium	(2.1)	2.3	2.4	2.5	2.6	2.7	2.8	2.5
High	(1.9)	1.9	2.0	2.1	2.2	2.3	2.4	2.1
Husband's education								
Illiterate	(2.2)	2.4	2.4	2.6	2.6	2.6	2.8	2.5
Literate, < primary school complete	*	*	*	*	*	*	*	2.4
Primary school complete	*	2.1	2.3	2.4	2.5	2.7	(2.7)	2.4
Middle school complete	*	2.1	2.3	2.2	2.3	2.5	*	2.3
High school complete	*	2.0	2.1	2.1	2.2	2.3	2.3	2.1
Higher secondary complete and above	*	1.8	1.9	2.0	2.0	2.1	2.2	2.0
Total	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.3

Note: Means are calculated excluding women who gave non-numeric responses.

NC: Not calculated

() Based on 25–49 unweighted cases

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

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

who want at least one daughter, according to selected background characteristics. The table shows a consistent preference for sons over daughters. Overall, the average ideal family size of 2.3 children consists of 1.2 sons, 0.8 daughters, and 0.3 children of either sex. Twenty-nine percent want more sons than daughters, but less than 1 percent want more daughters than sons. Simultaneously however, the majority of women in Punjab not only want at least one son (86 percent), but the majority also want at least one daughter (78 percent).

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, Punjab, 1998-99

Background characteristic	Mean ideal number of:			Percentage who want more sons than daughters	Percentage who want more daughters than sons	Percentage who want at least one son	Percentage who want at least one daughter	Number of women
	Sons	Daughters	Either sex					
Residence								
Urban	1.0	0.8	0.3	21.9	0.7	82.7	76.7	845
Rural	1.2	0.8	0.3	32.3	0.3	87.8	78.6	1,874
Education								
Illiterate	1.4	0.9	0.2	41.1	0.6	91.7	83.3	1,027
Literate, < middle school complete	1.2	0.8	0.3	33.4	0.2	88.5	79.0	586
Middle school complete	1.0	0.8	0.4	19.9	0.0	83.4	74.1	289
High school complete and above	0.9	0.7	0.4	14.1	0.5	78.6	71.9	817
Religion								
Hindu	1.2	0.9	0.3	28.2	0.7	81.5	81.6	1,095
Muslim	1.3	0.8	0.4	36.7	0.0	83.1	78.1	57
Sikh	1.1	0.8	0.3	29.4	0.3	86.1	75.1	1,518
Other	(1.2)	(0.9)	(0.3)	(26.6)	(0.0)	(84.2)	(84.2)	47
Caste/tribe								
Scheduled caste	1.4	0.9	0.2	41.1	0.4	90.1	83.0	744
Other backward class	1.2	0.9	0.3	28.6	0.4	86.6	80.7	437
Other ¹	1.0	0.8	0.3	23.2	0.4	84.1	74.9	1,536
Work status								
Employed by someone else	1.1	0.8	0.3	28.2	0.9	82.8	76.0	217
Self-employed	(1.0)	(0.7)	(0.4)	(22.6)	(0.0)	(74.9)	(74.9)	26
Not worked in past 12 months	1.2	0.8	0.3	29.0	0.4	86.5	78.2	2,464
Standard of living index								
Low	1.5	0.9	0.1	53.2	1.0	95.1	83.8	104
Medium	1.3	0.9	0.3	37.5	0.2	88.7	82.4	945
High	1.0	0.8	0.3	22.6	0.5	84.1	75.1	1,657
Husband's education								
Illiterate	1.4	0.9	0.2	43.8	0.3	91.7	81.9	605
Literate, < primary school complete	1.3	0.9	0.2	38.8	1.2	90.2	80.6	86
Primary school complete	1.3	0.9	0.2	35.3	0.4	89.7	82.8	426
Middle school complete	1.2	0.8	0.3	28.9	0.0	85.3	75.8	393
High school complete	1.0	0.8	0.3	21.8	0.4	85.2	76.9	717
Higher secondary complete and above	0.9	0.7	0.4	14.5	0.7	77.7	71.8	492
Total	1.2	0.8	0.3	29.1	0.4	86.2	78.0	2,719

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 2 scheduled-tribe women, 13 women working in a family farm/business, and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

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

According to the indicators presented in Table 4.17, son preference is relatively weak in urban areas, among women who have completed at least middle school, and among women whose husbands have at least completed high school. Son preference does not vary much between Hindus and Sikhs, but is slightly stronger among Muslim women. Although, scheduled-caste women show more son preference than women from other castes, they are also more likely than women from other castes to want at least one daughter. Son preference varies little by women's employment status, but women living in households with a high standard of living show less preference for sons than do women living in households with a medium or low standard of living.

It is generally believed that son preference in Punjab is stronger than son preference in most other states of India. However, a comparison of the son preference indicators in Table 4.17 for Punjab with their corresponding values for India as a whole and for other states (see International Institute of Population Sciences and ORC Macro, 2000: Table 4.25) suggests that, although son preference in Punjab is greater than in the southern states, its level is not atypical of the preference for sons in several of the other states of India. Notably, the percentage who want more sons than daughters is lower in Punjab (29.1 percent) than in India (33.2 percent), and the percentage who want at least one son and the percentage who want at least one daughter are both similar in Punjab (86 percent and 78 percent, respectively) to the corresponding percentages for India (85 percent and 80 percent, respectively).

4.12 Fertility Planning

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

Table 4.18 shows the percent distribution of births during the three years preceding the survey and current pregnancies according to fertility planning status. Fourteen percent of all pregnancies that resulted in live births in the three years preceding the survey (including current pregnancies) were unplanned, that is, unwanted at the time the woman became pregnant (7 percent were wanted later and 8 percent were not wanted at all). The proportion of births that were unplanned is higher for women age 25–34 (18–19 percent) than for women age 20–24 (11 percent) and for women below age 20 (7 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 rural areas (15 percent) than in urban areas (12 percent). The proportion unplanned does not vary consistently with education, but is lowest, at 9 percent, for births to women who have completed at least high school. The proportion of unplanned births among Sikhs (12 percent) is slightly lower than the proportion among Hindus (15 percent). By caste, other backward class women are most likely to have unplanned births (21 percent) and women not belonging to any scheduled caste, scheduled tribe, or other backward class are least likely (11 percent) to do so. The proportion unplanned is higher among births to women living in households with a medium

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, Punjab, 1998–99

Background characteristic	Planning status of pregnancy			Total percent	Number of births and current pregnancies
	Wanted then	Wanted later	Not wanted at all		
Mother's age at birth¹					
< 20	92.8	5.4	1.8	100.0	115
20–24	88.8	8.7	2.4	100.0	517
25–29	81.3	4.9	13.7	100.0	329
30–34	81.8	2.2	16.0	100.0	96
Residence					
Urban	88.5	5.6	6.0	100.0	251
Rural	85.1	6.7	8.2	100.0	827
Mother's Education					
Illiterate	83.4	5.4	11.1	100.0	419
Literate, < middle school complete	85.7	7.5	6.9	100.0	214
Middle school complete	81.7	8.1	10.2	100.0	132
High school complete and above	91.1	6.5	2.4	100.0	312
Religion					
Hindu	85.0	5.7	9.3	100.0	438
Muslim	(67.7)	(16.7)	(15.6)	100.0	36
Sikh	87.7	6.3	6.0	100.0	578
Caste/tribe					
Scheduled caste	85.7	5.4	8.9	100.0	399
Other backward class	79.5	8.8	11.7	100.0	201
Other ²	88.7	6.4	4.9	100.0	476
Standard of living index					
Low	89.9	3.4	6.7	100.0	64
Medium	83.1	5.5	11.3	100.0	473
High	87.9	7.7	4.4	100.0	535
Birth order³					
1	92.8	6.4	0.7	100.0	404
2	87.8	10.4	1.8	100.0	292
3	84.8	3.1	12.2	100.0	202
4+	68.4	3.9	27.7	100.0	180
Total	85.9	6.5	7.6	100.0	1,078

Note: Table includes the two most recent births in the three years preceding the survey and current pregnancies. Total includes 17 and 3 births to women age 35–39 and age 40–44, 23 births to women belonging to 'other' religions, 1 birth to a scheduled-tribe woman, and 1 and 5 births to women with missing information on religion and the standard of living index, respectively, which are not shown separately.

() Based on 25–49 unweighted cases

¹ For current pregnancy, estimated maternal age at birth

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

³ Includes current pregnancy, if any

standard of living (17 percent) than among births to women living in households with a low (10 percent) or high (12 percent) standard of living. As expected, births of higher order are more likely to be unplanned. Specifically, the proportion unplanned increases from 7 percent among first-order births to 32 percent among births of order four or higher.

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, Punjab, 1998–99		
Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.32	1.79
Rural	1.67	2.42
Education		
Illiterate	2.12	3.16
Literate, < middle school complete	1.56	2.40
Middle school complete	1.76	2.24
High school complete and above	1.43	1.71
Religion		
Hindu	1.67	2.29
Muslim	1.40	3.31
Sikh	1.42	2.05
Other	(2.04)	(2.50)
Caste/tribe		
Scheduled caste	2.02	2.93
Other backward class	1.61	2.55
Other ¹	1.33	1.79
Standard of living index		
Low	2.28	3.77
Medium	1.87	2.86
High	1.33	1.74
Total	1.55	2.21
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 unweighted cases ¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class		

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 at the time of the survey. Women who did not give a numeric response to the question on ideal number of children are assumed to have wanted all the births they had.

Overall the total wanted fertility rate of 1.55 is lower by 0.66 children (i.e., 30 percent) than the total fertility rate of 2.21. This means that if unwanted births could be eliminated, the TFR would drop to 1.6 children per woman, well below replacement level. In fact, if all unwanted births were eliminated, all categories of women, with the exception of women living in households with a low standard of living and illiterate women, would have below-replacement

fertility. The total fertility rate is higher than the total wanted fertility rate for women in all subgroups of the population, and this difference is half a child or more for most subgroups. Specifically, the total wanted fertility rate is almost two children less than the actual TFR for Muslim women, more than one child less than the actual TFR for women in households with a low standard of living and for illiterate women, and is almost one child less for women in households with a medium standard of living, scheduled-caste women, and women from other backward classes. The wanted fertility rate for Punjab (1.55) is 0.58 children lower than the all-India (2.13) wanted fertility rate, but the difference between the wanted TFR and the actual TFR in Punjab (0.66) is slightly lower than corresponding difference for India as a whole (0.72).

CHAPTER 5

FAMILY PLANNING

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

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

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

5.1 Knowledge of Family Planning Methods

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

Table 5.1 Knowledge of contraceptive methods			
Percentage of currently married women who know any contraceptive method by specific method and residence, Punjab, 1998–99			
Method	Urban	Rural	Total
Any method	100.0	99.9	100.0
Any modern method	100.0	99.9	100.0
Pill	99.6	95.2	96.5
IUD	99.4	95.8	96.9
Condom	99.8	95.9	97.1
Female sterilization	100.0	99.9	99.9
Male sterilization	100.0	98.3	98.8
Any traditional method	90.8	72.7	78.3
Rhythm/safe period	86.1	66.7	72.7
Withdrawal	79.8	55.6	63.1
Other method ¹	1.8	2.3	2.1
Number of women	830	1,844	2,674
¹ Includes both modern and traditional methods that are not listed separately			

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

Table 5.1 shows the extent of knowledge of contraceptive methods among currently married women by specific method and urban-rural residence. Knowledge of contraceptive methods is virtually universal in Punjab, with all currently married women recognizing at least one method of contraception in both urban and rural areas. Knowledge of each of the modern methods listed in Table 5.1 is also almost universal, with at least 99 percent of urban women and 95 percent of rural women with knowledge of each of the different methods. While knowledge of male and female sterilization was nearly universal even at the time of NFHS-1, knowledge of each of the three modern spacing methods—the pill, IUD, and condom—has grown considerably in the period since NFHS-1. At the time of NFHS-1, 84 percent of currently married women knew about pills, 88 percent knew about IUDs, and 82 percent knew about condoms.

In Punjab, knowledge of traditional methods of contraception is also widespread though they are less well known than modern methods. Seventy-eight percent of currently married women report knowledge of a traditional method, up from 64 percent in NFHS-1. The rhythm or safe-period method is known more widely (73 percent) than withdrawal (63 percent). Knowledge of traditional methods is much higher in urban areas (91 percent) than in rural areas (73 percent). Even in rural areas, however, over two-thirds of respondents know the rhythm/safe period method and more than half have knowledge of withdrawal.

5.2 Contraceptive Use

Ever Use of Family Planning Methods

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

Table 5.2 Ever use of contraception

Percentage of currently married women who have ever used any contraceptive method by specific method, according to age and residence, Punjab, 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	*	*	*	*	*	*	*	*	*	*	*	10
20-24	51.3	46.9	6.2	7.9	35.5	0.9	0.0	12.3	9.7	6.2	0.0	98
25-29	79.0	70.6	13.9	17.8	50.2	6.5	0.0	23.9	14.9	12.4	0.0	175
30-34	90.3	77.1	16.0	23.9	40.0	20.0	0.5	33.8	16.1	21.6	0.0	178
35-39	95.5	80.3	12.4	26.5	46.1	28.1	2.8	38.3	18.0	23.6	1.1	154
40-44	92.9	74.3	10.0	17.2	42.3	30.7	1.5	42.1	25.7	22.2	2.8	121
45-49	89.8	65.8	11.1	16.6	31.5	21.4	1.9	48.9	31.4	26.8	0.0	94
Total	83.8	70.3	12.1	19.1	41.8	17.9	1.0	32.6	18.4	18.7	0.6	830
RURAL												
15-19	21.8	11.7	2.9	2.9	7.3	0.0	0.0	14.6	5.9	8.7	0.0	74
20-24	47.7	39.3	9.6	8.1	19.3	8.1	0.0	13.1	7.8	6.3	0.6	343
25-29	75.3	64.0	12.0	13.0	28.1	28.9	0.3	19.7	15.3	6.9	0.6	387
30-34	88.2	79.9	15.2	18.2	26.8	45.3	0.6	19.8	12.7	9.8	0.9	353
35-39	89.5	80.5	13.0	16.7	28.2	45.3	2.5	23.5	14.4	10.9	1.1	296
40-44	89.2	74.6	6.3	12.7	14.1	52.9	4.9	27.3	15.6	15.9	0.9	236
45-49	84.1	73.1	6.8	8.2	13.8	48.3	8.3	23.4	15.8	11.0	2.8	155
Total	75.3	65.1	10.8	12.8	22.4	34.4	1.9	20.2	13.0	9.5	0.9	1,844
TOTAL												
15-19	21.4	11.4	2.6	2.6	7.5	0.0	0.0	13.9	5.2	8.7	0.0	84
20-24	48.5	41.0	8.8	8.1	22.9	6.5	0.0	13.0	8.2	6.2	0.5	441
25-29	76.5	66.0	12.6	14.5	35.0	21.9	0.2	21.0	15.2	8.6	0.4	561
30-34	88.9	79.0	15.5	20.1	31.2	36.8	0.6	24.5	13.9	13.7	0.6	531
35-39	91.6	80.4	12.8	20.0	34.3	39.4	2.6	28.6	15.6	15.2	1.1	451
40-44	90.4	74.5	7.6	14.2	23.7	45.3	3.7	32.4	19.0	18.0	1.6	357
45-49	86.3	70.3	8.4	11.4	20.4	38.2	5.9	33.0	21.6	16.9	1.7	249
Total	77.9	66.7	11.2	14.8	28.4	29.3	1.6	24.1	14.7	12.4	0.8	2,674

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

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

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

Seventy-eight percent of all currently married women in Punjab have ever used a method of contraception, which is a substantial increase from 67 percent at the time of NFHS-1. Two-thirds of women (67 percent) have ever used a modern method and 24 percent have ever used a traditional method. The most commonly used methods are female sterilization (29 percent) and condom (28 percent), followed by the IUD and rhythm or safe-period method (15 percent each), withdrawal (12 percent), and the pill (11 percent). Only 2 percent have accepted male sterilization, down from 3 percent in NFHS-1. With the exception of female sterilization and

male sterilization, ever use of every modern and traditional method of contraception is higher in urban than in rural areas.

Ever use of any method increases with women's age up to age 35–39 (peaking at 92 percent) and declines at older ages. The increase in contraceptive use up to age 35–39 reflects a life-cycle effect, with women increasingly adopting contraception as their fertility goals are met. Declining ever use of modern methods by older women reflects, at least in part, larger family size norms and lower levels of contraceptive prevalence in the past. The age-pattern of ever use is similar for urban and rural areas, although urban women are more likely than rural women to have used contraception at every age for which a comparison can be made.

Current Use of Family Planning Methods

Table 5.3 provides information on current use of family planning methods for currently married women in Punjab by age and urban-rural residence. Current contraceptive prevalence in Punjab is high, with 67 percent of currently married women using some method of contraception (compared with the national average of 48 percent and 59 percent for Punjab in NFHS-1). Among all of the states in India, Punjab is second only to Himachal Pradesh in contraceptive prevalence. Eighty-one percent of current users are using a modern method. In Punjab, as in most of the states of India, sterilization dominates the contraceptive method mix. Twenty-nine percent of currently married women are sterilized and female sterilization accounts for 44 percent of the total current contraceptive prevalence. Less than 2 percent of currently married women report that their husbands are sterilized. Almost one-fourth (23 percent) use the officially-sponsored spacing methods, up from less than one-fifth (17 percent) at the time of NFHS-1. Condoms are the most commonly used (14 percent) modern spacing method, followed by the IUD (6 percent), and the pill (3 percent). Twelve percent of women are currently using a traditional method. Traditional method use is equally divided between the rhythm or safe period method and withdrawal.

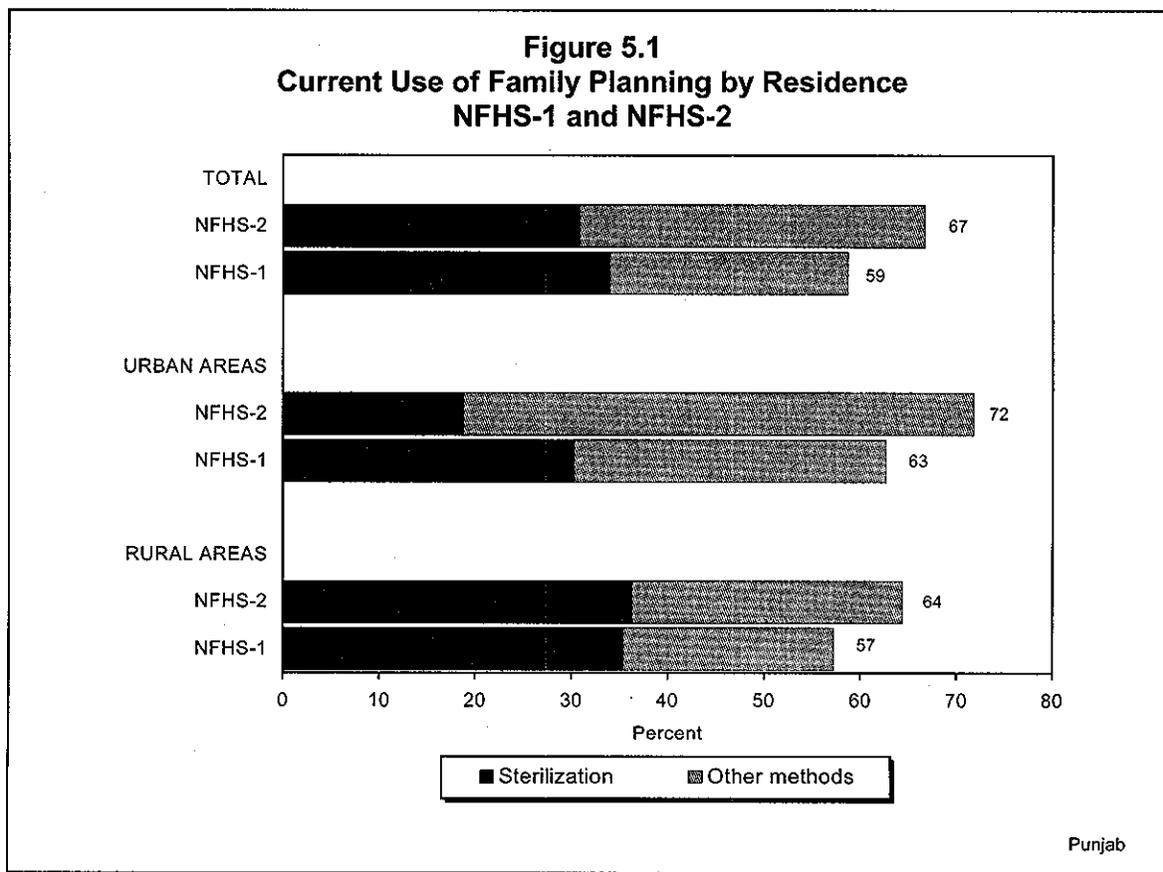
The NFHS-2 estimates for current contraceptive use in Punjab are about the same as those obtained by the Rapid Household Survey (RHS) under the Reproductive and Child Health project, which was carried out at about the same time as NFHS-2 (International Institute for Population Sciences, 2000). For women age 15–44, contraceptive prevalence in Punjab was estimated at 67 percent by NFHS-2 and 65 percent by the RHS survey; modern-method use was estimated at 54 percent by NFHS-2 and 53 percent by RHS; and traditional-method use was estimated at 13 percent by NFHS-2 and 12 percent by RHS.

Overall, current use of contraceptive methods is higher in urban areas (72 percent) than in rural areas (64 percent). More than one-third (35 percent) of urban women are currently using a modern spacing method compared with only 18 percent in rural areas. The urban-rural difference in condom use is particularly large: 23 percent of urban women compared with only 10 percent of rural women use the condom. Current use of female sterilization, however, is about twice as high in rural areas (34 percent) as in urban areas (18 percent). Furthermore, female and male sterilization together account for over half of the contraceptive prevalence in rural areas (56 percent), but for only about one-quarter of the contraceptive prevalence in urban areas (26 percent). Current use of the pill, at 3 percent, does not differ between rural and urban areas.

Table 5.3 Current use of contraception

Percent distribution of currently married women by contraceptive method currently used, according to age and residence, Punjab, 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	Not using any method	Total percent	Number of women
URBAN														
15-19	*	*	*	*	*	*	*	*	*	*	*	*	100.0	10
20-24	42.5	36.4	2.6	6.2	26.7	0.9	0.0	6.1	4.4	1.7	0.0	57.5	100.0	98
25-29	64.5	51.1	4.5	13.3	26.8	6.5	0.0	13.4	8.5	5.0	0.0	35.5	100.0	175
30-34	82.0	63.9	5.8	11.7	26.4	20.0	0.0	18.1	6.8	11.2	0.0	18.0	100.0	178
35-39	91.6	70.7	1.1	11.3	27.5	28.1	2.8	20.9	6.2	14.6	0.0	8.4	100.0	154
40-44	83.5	56.5	2.1	3.6	18.6	30.7	1.5	25.7	11.4	14.2	1.4	16.5	100.0	121
45-49	54.7	33.4	0.9	0.9	8.3	21.4	1.9	21.3	12.9	8.4	0.0	45.3	100.0	94
Total	71.8	54.0	3.1	8.8	23.2	17.9	0.9	17.6	8.1	9.5	0.2	28.2	100.0	830
RURAL														
15-19	17.5	8.7	1.4	2.9	4.3	0.0	0.0	8.7	1.5	7.3	0.0	82.5	100.0	74
20-24	35.6	26.8	4.6	5.0	9.1	8.1	0.0	8.1	4.0	4.1	0.6	64.4	100.0	343
25-29	62.3	52.8	2.5	6.3	14.8	28.9	0.3	9.2	6.4	2.8	0.3	37.7	100.0	387
30-34	78.8	68.4	4.6	7.6	10.3	45.3	0.6	9.8	5.2	4.6	0.6	21.2	100.0	353
35-39	83.4	68.2	4.7	4.4	11.3	45.3	2.5	14.1	7.5	6.5	1.1	16.6	100.0	296
40-44	77.8	64.1	0.0	2.3	4.1	52.9	4.9	13.6	5.5	8.2	0.0	22.2	100.0	236
45-49	66.2	60.7	0.0	1.4	2.8	48.3	8.3	5.5	3.4	2.1	0.0	33.8	100.0	155
Total	64.4	53.8	3.1	4.9	9.5	34.4	1.9	10.1	5.3	4.8	0.5	35.6	100.0	1,844
TOTAL														
15-19	16.5	7.7	1.3	2.6	3.8	0.0	0.0	8.8	1.3	7.5	0.0	83.5	100.0	84
20-24	37.1	28.9	4.2	5.3	13.0	6.5	0.0	7.7	4.1	3.5	0.5	62.9	100.0	441
25-29	63.0	52.3	3.1	8.5	18.5	21.9	0.2	10.5	7.1	3.5	0.2	37.0	100.0	561
30-34	79.9	66.9	5.0	8.9	15.7	36.8	0.4	12.6	5.7	6.8	0.4	20.1	100.0	531
35-39	86.2	69.1	3.5	6.8	16.8	39.4	2.6	16.4	7.1	9.3	0.7	13.8	100.0	451
40-44	79.7	61.5	0.7	2.7	9.0	45.3	3.7	17.7	7.5	10.2	0.5	20.3	100.0	357
45-49	61.9	50.5	0.4	1.2	4.9	38.2	5.9	11.4	7.0	4.4	0.0	38.1	100.0	249
Total	66.7	53.8	3.1	6.1	13.8	29.3	1.6	12.4	6.2	6.3	0.4	33.3	100.0	2,674
*Percentage not shown; based on fewer than 25 unweighted cases														
¹ Includes both modern and traditional methods that are not listed separately														



By age, current contraceptive use increases from 17 percent for women age 15–19 to 86 percent for women age 35–39 and decreases for older women. Condom use is highest among women age 25–29 (19 percent), whereas female sterilization is highest among women age 40–44 (45 percent). Traditional method use increases from 8–9 percent among women age 15–24 to 18 percent among women 40–44 and then declines. The majority of contraceptive users under age 40 use a modern spacing method or a traditional method, whereas the majority of current users age 40 and above use female sterilization. The overall pattern of variation by age in contraceptive use is similar in urban areas (peaking in age group 35–39 at 92 percent) and rural areas (peaking in age group 35–39 at 83 percent). Notably, however, the majority of current users in all age groups in urban areas use a modern spacing method or a traditional method. In rural areas, by contrast, female sterilization accounts for more than half of contraceptive use among women age 30 and above.

The NFHS-2 contraceptive prevalence rate of 67 percent is substantially higher than the NFHS-1 rate of 59 percent (Figure 5.1). The proportion of currently married women using the officially-sponsored spacing methods increased between NFHS-1 and NFHS-2, with the increase in condom use (from 9 to 14 percent) accounting for most of the change. Use of traditional methods has also increased from 7 to 12 percent. During the same period, the use of sterilization (female and male) appears to have declined slightly (from 34 to 31 percent). More significantly, the share of sterilization in total contraceptive prevalence decreased by 12 percent between NFHS-1 and NFHS-2, from 58 percent to 46 percent.

Socioeconomic Differentials in Current Use of Family Planning Methods

Table 5.4 shows differences in current contraceptive use by background characteristics. Contraceptive prevalence in Punjab does not vary much between educational groups, but the contraceptive method mix differs greatly by education. While the use of sterilization falls sharply with education, the use of modern spacing methods and traditional methods increases with education. These differences in method mix are largely due to the predominance of sterilization in the method mix among women in rural areas (who are, on average, less educated) 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. For example, condom use increases with education from 5 percent among illiterate women to 26 percent among women who have completed at least high school. By contrast, 44 percent of illiterate women are sterilized compared to 10 percent of women who have completed at least high school. The increase in contraceptive use since NFHS-1 has been concentrated among women with less education. For example, use among illiterate women has increased from 57 percent to 68 percent, whereas use among women who have completed at least high school has increased from 62 percent to only 67 percent. Although Table 5.4 shows that differences in contraceptive prevalence by education are minimal in Punjab, studies based on NFHS-1 data suggest that education could still be a key factor influencing contraceptive use once the effects of other factors are controlled (Retherford and Ramesh, 1996; Ramesh et al., 1996).

Contraceptive prevalence is higher among Hindus (68 percent) and Sikhs (66 percent) than among Muslims (50 percent). Almost one-fourth of Hindus and Sikhs (23 percent each) use modern spacing methods (the pill, the condom, and the IUD) compared with 15 percent of Muslims. The use of sterilization is also much lower among Muslims (17 percent) than among Hindus or Sikhs (30 percent and 32 percent, respectively). By contrast, traditional methods are more popular among Muslims (18 percent) than among Hindus or Sikhs (15 percent and 11 percent, respectively).

Contraceptive prevalence does not differ much by caste/class group. The type of method used, however, does vary by caste. Female sterilization, for example, is used by 36 percent of scheduled-caste women, compared with 31 percent of women from other backward classes, and 25 percent of women who do not belong to the scheduled castes, scheduled tribes, or other backward classes. The use of any contraception, as well as the use of almost every specific contraceptive method except for female sterilization and the pill, are positively related to the standard of living index. Contraceptive prevalence increases from 58 percent for women from households with a low standard of living index to 68 percent for women from households with a high standard of living index. The use of female sterilization decreases sharply with the standard of living index, however.

Table 5.4 also shows differentials in current use by the number and sex of living children. Contraceptive use increases sharply from only 3 percent for women with no living children to 81 percent for women with four or more living children. The same pattern is evident for female sterilization with no acceptors among women with no children and 53 percent of acceptors among women with four or more children. Notably, among women with two or fewer children, condoms are the most popular method of contraception.

Table 5.4 Current use by background characteristics

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

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
Residence														
Urban	71.8	54.0	3.1	8.8	23.2	17.9	0.9	17.6	8.1	9.5	0.2	28.2	100.0	830
Rural	64.4	53.8	3.1	4.9	9.5	34.4	1.9	10.1	5.3	4.8	0.5	35.6	100.0	1,844
Education														
Illiterate	67.9	57.5	2.1	3.2	5.2	44.3	2.6	9.8	4.5	5.3	0.6	32.1	100.0	1,020
Literate, < middle school complete	68.0	55.5	3.2	5.6	10.9	34.6	1.2	11.9	6.7	5.2	0.5	32.0	100.0	570
Middle school complete	60.2	47.6	3.2	9.1	16.5	17.7	1.1	12.6	6.3	6.3	0.0	39.8	100.0	285
High school complete and above	66.5	50.2	4.2	9.2	25.8	10.3	0.7	16.1	7.9	8.2	0.1	33.5	100.0	799
Religion														
Hindu	68.2	52.8	2.9	4.3	16.0	28.2	1.4	15.0	7.3	7.7	0.4	31.8	100.0	1,079
Muslim	50.2	32.1	0.0	0.0	14.9	17.2	0.0	18.2	14.0	4.2	0.0	49.8	100.0	63
Sikh	66.3	55.4	3.5	7.8	12.1	30.2	1.9	10.5	5.2	5.3	0.4	33.7	100.0	1,486
Other	(67.4)	(60.3)	(0.0)	(3.9)	(15.5)	(40.9)	(0.0)	(7.0)	(2.6)	(4.5)	(0.0)	(32.6)	100.0	44
Caste/tribe														
Scheduled caste	63.4	50.8	2.5	2.6	7.2	36.4	2.1	12.0	6.3	5.6	0.6	36.6	100.0	754
Other backward class	66.4	54.4	4.2	2.8	14.8	31.0	1.6	11.8	5.9	5.9	0.2	33.6	100.0	439
Other ²	68.4	55.2	3.1	8.9	16.8	25.0	1.4	12.9	6.2	6.7	0.3	31.6	100.0	1,478
Standard of living index														
Low	57.6	52.8	5.7	0.0	3.9	42.3	0.8	4.9	2.0	2.9	0.0	42.4	100.0	109
Medium	65.1	53.0	2.4	2.5	8.0	37.6	2.4	11.7	6.5	5.2	0.5	34.9	100.0	935
High	68.2	54.3	3.4	8.7	17.6	23.5	1.2	13.5	6.3	7.1	0.4	31.8	100.0	1,618

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, Punjab, 1998-99

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
Number and sex of living children														
No children	3.3	2.8	0.0	0.0	2.8	0.0	0.0	0.5	0.0	0.5	0.0	96.7	100.0	239
1 child	38.5	27.4	3.5	8.2	13.8	1.1	0.8	11.0	4.9	6.1	0.0	61.5	100.0	361
1 son	40.2	29.6	4.1	11.8	11.8	1.1	0.9	10.6	4.9	5.7	0.0	59.8	100.0	203
No sons	36.2	24.6	2.7	3.6	16.4	1.2	0.7	11.6	5.0	6.6	0.0	63.8	100.0	159
2 children	76.3	59.5	4.0	11.5	22.6	20.2	1.3	16.7	8.2	8.5	0.1	23.7	100.0	767
2 sons	85.3	69.5	2.6	11.7	15.6	37.5	2.0	15.8	9.4	6.4	0.0	14.7	100.0	263
1 son	77.8	60.5	5.5	12.7	28.2	12.9	1.1	17.1	7.4	9.6	0.2	22.2	100.0	423
No sons	39.9	22.7	0.0	4.7	15.8	2.2	0.0	17.2	8.1	9.1	0.0	60.1	100.0	82
3 children	80.2	66.7	3.1	5.0	13.8	43.1	1.7	12.6	6.2	6.4	0.9	19.8	100.0	719
3 sons	91.6	81.1	2.5	2.3	12.6	62.5	1.3	10.5	5.8	4.7	0.0	8.4	100.0	83
2 sons	85.2	73.7	2.8	4.5	10.9	54.1	1.3	9.8	3.7	6.1	1.7	14.8	100.0	371
1 son	73.9	55.9	4.0	7.1	18.9	23.3	2.6	18.1	10.0	8.1	0.0	26.1	100.0	242
4+ children	80.7	67.7	2.9	1.7	6.6	53.4	3.0	12.5	6.9	5.6	0.5	19.3	100.0	587
2+ sons	83.2	73.1	3.0	1.1	4.5	60.9	3.7	9.6	4.6	5.0	0.5	16.8	100.0	444
1 son	75.9	56.3	3.3	4.2	14.7	33.3	0.8	18.9	12.4	6.4	0.8	24.1	100.0	127
Total	66.7	53.8	3.1	6.1	13.8	29.3	1.6	12.4	6.2	6.3	0.4	33.3	100.0	2,674

Note: Total includes 2 scheduled-tribe women, 23 women with 3 living children but no sons, 15 women with 4+ living children but no sons, and 2 and 12 women with missing information on religion and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

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

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

Prevalence rates by sex composition of living children indicate the existence of considerable son preference. For each number of living children, women who have one or more sons are more likely than women with fewer or no sons to use a method of contraception. For example, among women with two children, only 40 percent with no sons are using a method of contraception, compared with 78 percent of women with one son and 85 percent of women with 2 sons. Further, the use of sterilization at each parity declines sharply with the number of daughters. Among the 40 percent of contraceptive users among women with two daughters and no sons, only 6 percent have accepted sterilization, whereas among the 85 percent of contraceptive users among women with no daughters and two sons, 46 percent are sterilization acceptors. Nonetheless, it is encouraging that contraceptive use has increased at each parity and sex composition of children since NFHS-1.

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, Punjab, 1998-99								
Current age	Never used	Number of living children at the time of first use					Total percent	Number of women
		0	1	2	3	4+		
URBAN								
15-19	*	*	*	*	*	*	100.0	10
20-24	49.1	7.9	27.3	10.4	2.6	2.6	100.0	99
25-29	21.0	5.0	38.8	26.3	8.0	1.0	100.0	175
30-34	10.5	1.5	44.1	26.8	12.4	4.8	100.0	181
35-39	6.0	1.1	32.8	30.0	20.2	9.9	100.0	159
40-44	12.2	1.3	25.2	32.3	14.3	14.7	100.0	134
45-49	12.5	3.4	34.1	21.5	12.6	15.9	100.0	104
Total	17.5	3.1	34.5	25.3	12.0	7.5	100.0	862
RURAL								
15-19	78.5	5.7	14.4	1.4	0.0	0.0	100.0	75
20-24	53.0	2.4	26.4	11.4	5.8	0.9	100.0	349
25-29	25.1	2.2	26.3	20.9	16.9	8.6	100.0	392
30-34	12.5	0.6	19.3	27.8	24.5	15.3	100.0	367
35-39	12.1	1.7	17.2	26.1	22.5	20.4	100.0	317
40-44	11.2	0.0	15.1	20.9	20.5	32.3	100.0	256
45-49	17.4	0.0	10.8	12.5	16.2	43.2	100.0	179
Total	25.2	1.5	20.1	19.8	17.0	16.4	100.0	1,934
TOTAL								
15-19	78.8	6.1	13.8	1.2	0.0	0.0	100.0	85
20-24	52.2	3.6	26.6	11.2	5.1	1.3	100.0	447
25-29	23.9	3.0	30.2	22.6	14.2	6.2	100.0	567
30-34	11.8	0.9	27.5	27.5	20.5	11.8	100.0	548
35-39	10.1	1.5	22.4	27.4	21.7	16.8	100.0	475
40-44	11.6	0.5	18.5	24.8	18.3	26.3	100.0	390
45-49	15.6	1.2	19.3	15.8	14.9	33.2	100.0	283
Total	22.8	2.0	24.5	21.5	15.5	13.7	100.0	2,796
*Percentage not shown; based on fewer than 25 unweighted cases								

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 2 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 25 percent (32 percent of ever users) began using when they had one living child. Urban women are more likely than rural women to begin using a contraceptive method at lower parities: 63 percent of urban women and 41 percent of rural women first used a contraceptive method when they had two or fewer children. This pattern of acceptance at low parities means that family planning has a larger demographic impact than it would if contraceptive use were initiated later. An emphasis on sterilization in the contraceptive method mix, especially in rural areas, however, increases the likelihood that women will begin contraceptive use only after achieving their desired family size. Clearly, spacing methods need to be promoted more deliberately if a reduction is sought in the parity at which women first accept contraception.

Problems with Current Method

Women who were using any contraceptive method were asked if they had experienced problems with their current method. Table 5.6 shows the percentage of current contraceptive users who

Table 5.6 Problems with current method								
Percentage of current users of specific contraceptive methods who have had problems in using the method, Punjab, 1998-99								
Problem	Contraceptive method							Total
	Pill	IUD	Condom	Female sterilization	Male sterilization	Rhythm/safe period	Withdrawal	
No problem	95.1	90.7	98.5	81.4	(92.6)	99.4	100.0	90.2
Weight gain	1.0	2.2	0.7	4.9	(2.4)	0.6	0.0	2.7
Weight loss	0.0	0.0	0.0	1.7	(0.0)	0.0	0.0	0.7
Too much bleeding	1.0	3.4	0.2	3.4	(0.0)	0.0	0.0	1.9
Hypertension	0.0	0.0	0.0	0.1	(0.0)	0.0	0.0	0.0
Headache/bodyache/backache	1.2	5.4	0.0	10.7	(4.9)	0.0	0.0	5.4
Nausea/vomiting	0.0	0.0	0.0	0.6	(0.0)	0.0	0.0	0.2
No menstruation	0.0	0.0	0.0	0.1	(0.0)	0.0	0.0	0.0
Weakness/tiredness	1.2	0.6	0.0	3.9	(2.5)	0.0	0.0	1.9
Dizziness	1.3	0.0	0.0	0.0	(0.0)	0.0	0.0	0.1
Fever	0.0	0.5	0.0	0.6	(0.0)	0.0	0.0	0.3
Spotting	0.0	0.0	0.0	0.1	(0.0)	0.0	0.0	0.0
Abdominal pain	0.0	1.9	0.0	3.8	(0.0)	0.0	0.0	1.8
White discharge	0.0	1.7	0.0	2.6	(0.0)	0.0	0.0	1.3
Irregular periods	1.3	0.0	0.0	1.9	(0.0)	0.0	0.0	0.9
Allergy	0.0	0.0	0.5	0.3	(0.0)	0.0	0.0	0.2
Other	0.0	0.5	0.2	0.1	(0.0)	0.0	0.0	0.2
Number of users	83	164	368	782	43	165	167	1,782

Note: Total includes 10 users of other contraceptive methods, who are not shown separately. Percentages may add to more than 100.0 because multiple problems could be recorded.
() Based on 25-49 unweighted cases

report specific problems. Overall, 90 percent of current users report having no problems with their method. This may be an underestimate of the extent of problems, however, because women who have experienced problems with spacing methods may have stopped using contraception altogether, and these women are not represented in the table.

The analysis of method-specific problems reveals that 81 percent of sterilized women report having no problem with their method. The most common problems experienced by sterilized women are headache/bodyache/backache (11 percent), weight gain (5 percent), weakness or tiredness (4 percent), and abdominal pain (4 percent). With regard to spacing methods, 9 percent had problems using the IUD, 5 percent had problems using pills, and 2 percent had problems using condoms. The most frequent complaints of IUD users are headache/bodyache/backache (5 percent), too much bleeding (3 percent), and weight gain, abdominal pain, and white discharge (2 percent each). These results point to a continuing need to strengthen post-operative care for acceptors of female sterilization and counselling and support for all contraceptive acceptors.

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 825 sterilizations reported, 95 percent are female sterilizations. Thirty-eight percent of female sterilizations took place less than 6 years before the survey, another 20 percent took place 6–9 years before the survey, and 42 percent took place 10 or more years before the survey. By contrast, 88 percent of male sterilizations took place 10 or more years before the survey (data not shown). The median age of women at the time they or their husbands were sterilized was 27.1 years, with over one-fourth (28 percent) of sterilized couples undergoing sterilization before the wife was age 25. Nearly three-quarters (72 percent) of sterilizations took place before the wife was age 30, and only 1 percent took place when the wife was in her forties. Among sterilized couples, 67 percent of women said that they had not used any other method of contraception before the sterilization took place (data not shown).

The median age of women at the time of sterilization has not changed in Punjab during the period since 8–9 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 were interviewed. Women in their forties 10 or more years before the survey were age 50–59 at the time of the survey and were not interviewed. Examining NFHS-1 and NFHS-2 data together, however, suggests that women's age at sterilization has declined by more than one year from the mid-1980s (about 8–9 years before NFHS-1) to the mid- to late-1990s.

5.4 Sources of Contraceptive Methods

Family planning methods and services in Punjab 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 are carried out mostly in government hospitals and PHCs, and IUD insertions are usually done in government hospitals, PHCs, and sub-centres. Sterilization camps, organized from time to time,

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 women at the time of sterilization, according to the number of years since sterilization, Punjab, 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			
STERILIZED WOMEN									
< 2	0.0	32.6	39.9	19.6	5.6	2.3	100.0	91	26.6
2-3	0.0	20.8	48.9	19.7	8.4	2.2	100.0	95	27.3
4-5	1.9	21.9	43.4	24.8	5.3	2.7	100.0	112	27.0
6-7	1.3	30.2	37.4	23.5	6.5	1.2	100.0	85	27.0
8-9	1.6	34.9	45.2	14.2	4.2	0.0	100.0	73	26.7
10+	2.9	24.7	46.2	22.9	3.4	U	100.0	326	NC
Total	1.8	26.3	44.3	21.6	4.9	1.1	100.0	782	27.1
WIVES OF STERILIZED MEN									
Total	(2.0)	(21.7)	(45.2)	(24.0)	(5.0)	(2.0)	100.0	43	26.5
STERILIZED WOMEN AND WIVES OF STERILIZED MEN									
< 2	0.0	32.6	39.9	19.6	5.6	2.3	100.0	91	26.6
2-3	0.0	20.8	48.9	19.7	8.4	2.2	100.0	95	27.3
4-5	1.9	22.4	42.6	24.3	6.1	2.6	100.0	114	27.0
6-7	1.3	29.5	37.8	22.9	6.3	2.2	100.0	87	27.2
8-9	1.5	34.5	44.6	15.2	4.1	0.0	100.0	74	26.8
10+	2.8	24.4	46.4	23.1	3.3	U	100.0	364	NC
Total	1.8	26.0	44.4	21.8	4.9	1.1	100.0	825	27.1
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.									

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

To assess the relative importance of various sources of contraceptive methods, NFHS-2 included a question on where current contraceptive users obtained their methods. Table 5.8 and Figure 5.2 show the percent distribution of current users of modern contraceptives by the source from which they obtained their method most recently, according to specific method and residence. The public medical sector, consisting of government/municipal hospitals, government dispensaries, Primary Health Centres, and other governmental health infrastructure, is the source of contraception for almost 64 percent of current users of modern methods, down from 77 percent at the time of NFHS-1. The private medical sector, including private hospitals and clinics, private doctors, private mobile clinics, private paramedics, and pharmacies or drugstores, is the source for 27 percent of current users, up from 11 percent in NFHS-1. Six percent of current users obtain their methods from other sources such as shops. Government or municipal hospitals are the main source (58 percent) for female sterilization, followed by community health centres, rural hospitals, or Primary Health Centres (27 percent), and camps (10 percent). By

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, Punjab, 1998-99

Source	Contraceptive method					All modern methods
	Pill	IUD	Condom	Female sterilization	Male sterilization	
URBAN						
Public medical sector	(16.7)	35.5	5.9	88.2	*	40.3
Government/municipal hospital	(10.1)	22.5	3.6	77.6	*	33.1
Government dispensary	(6.6)	10.7	1.4	0.0	*	2.7
UHC/UHP/UFWC	(0.0)	0.0	0.0	0.0	*	0.0
CHC/rural hospital/PHC	(0.0)	1.2	0.5	3.5	*	1.8
Sub-centre	(0.0)	1.2	0.0	0.0	*	0.2
Camp	(0.0)	0.0	0.4	6.5	*	2.4
Other public medical sector	(0.0)	0.0	0.0	0.6	*	0.2
Private medical sector	(69.8)	64.5	63.0	11.2	*	45.4
Private hospital/clinic	(0.0)	53.7	1.3	10.6	*	12.8
Private doctor	(0.0)	10.7	5.4	0.0	*	4.1
Private paramedic	(0.0)	0.0	0.9	0.0	*	0.4
Pharmacy/drugstore	(69.8)	0.0	55.4	0.0	*	27.9
Other private medical sector	(0.0)	0.0	0.0	0.6	*	0.2
Shop	(6.7)	0.0	23.0	0.0	*	10.3
Don't know ¹	(6.8)	0.0	8.1	0.0	*	3.9
Missing	(0.0)	0.0	0.0	0.6	*	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	26	73	193	148	8	448
RURAL						
Public medical sector	28.1	53.0	14.6	98.0	(100.0)	75.2
Government/municipal hospital	7.5	23.6	2.4	53.0	(60.4)	39.0
Government dispensary	15.0	16.3	10.3	0.0	(0.0)	4.2
UHC/UHP/UFWC	0.0	0.0	0.0	0.5	(0.0)	0.3
CHC/rural hospital/PHC	5.5	11.9	1.8	32.6	(18.3)	23.2
Sub-centre	0.0	1.2	0.0	0.0	(0.0)	0.1
Camp	0.0	0.0	0.0	11.4	(21.3)	8.0
Other public medical sector	0.0	0.0	0.0	0.5	(0.0)	0.3
Private medical sector	62.6	47.0	53.4	1.8	(0.0)	18.5
Private hospital/clinic	1.8	37.5	3.1	1.7	(0.0)	5.2
Private doctor	9.6	9.5	5.5	0.2	(0.0)	2.5
Private paramedic	0.0	0.0	0.6	0.0	(0.0)	0.1
Pharmacy/drugstore	51.2	0.0	43.6	0.0	(0.0)	10.6
Other private medical sector	0.0	0.0	0.6	0.0	(0.0)	0.1
Shop	7.4	0.0	19.6	0.0	(0.0)	3.9
Don't know ¹	1.9	0.0	12.4	0.0	(0.0)	2.3
Missing	0.0	0.0	0.0	0.2	(0.0)	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	57	91	175	634	35	992

Table 5.8. Source of modern contraceptive methods (contd.)

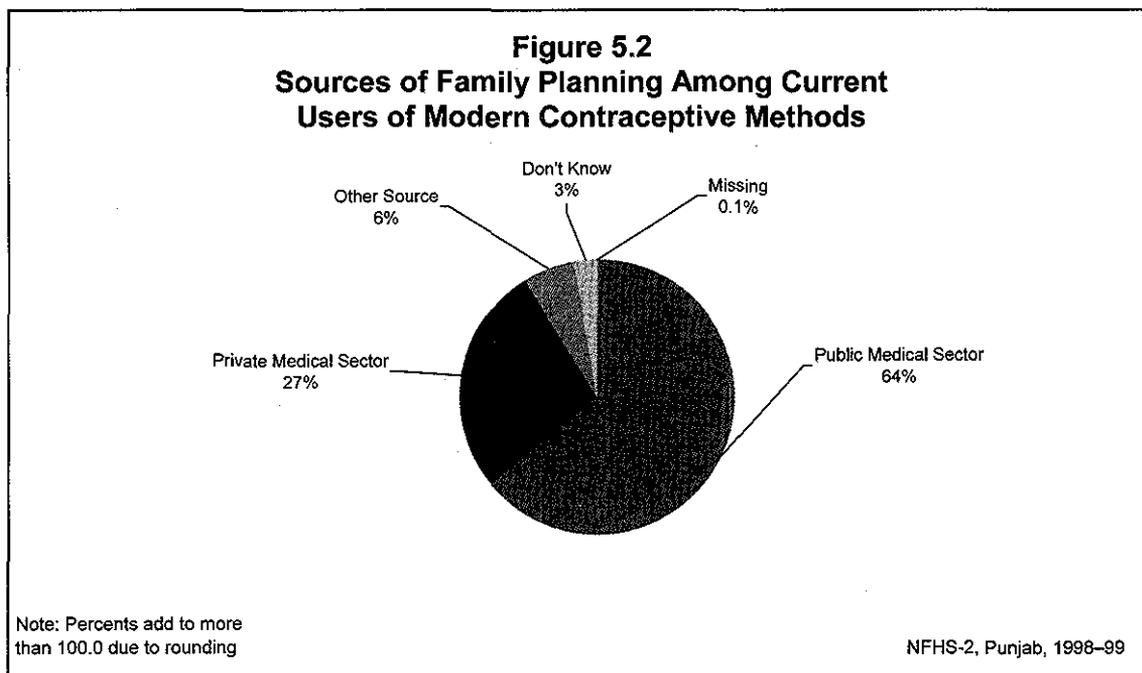
Percent distribution of current users of modern contraceptive methods by most recent source, according to specific method and residence, Punjab, 1998-99

Source	Contraceptive method					All modern methods
	Pill	IUD	Condom	Female sterilization	Male sterilization	
	TOTAL					
Public medical sector	24.5	45.3	10.0	96.1	(100.0)	64.3
Government/municipal hospital	8.4	23.1	3.0	57.6	(65.6)	37.2
Government dispensary	12.3	13.8	5.6	0.0	(0.0)	3.7
UHC/UHP/UFWC	0.0	0.0	0.0	0.4	(0.0)	0.2
CHC/rural hospital/PHC	3.8	7.1	1.1	27.1	(17.0)	16.5
Sub-centre	0.0	1.2	0.0	0.0	(0.0)	0.1
Camp	0.0	0.0	0.2	10.4	(17.4)	6.3
Other public medical sector	0.0	0.0	0.0	0.5	(0.0)	0.3
Private medical sector	64.9	54.7	58.5	3.6	(0.0)	26.9
Private hospital/clinic	1.3	44.7	2.2	3.4	(0.0)	7.6
Private doctor	6.6	10.0	5.5	0.1	(0.0)	3.0
Private paramedic	0.0	0.0	0.8	0.0	(0.0)	0.2
Pharmacy/drugstore	57.0	0.0	49.8	0.0	(0.0)	16.0
Other private medical sector	0.0	0.0	0.3	0.1	(0.0)	0.1
Shop	7.2	0.0	21.4	0.0	(0.0)	5.9
Don't know ¹	3.4	0.0	10.1	0.0	(0.0)	2.8
Missing	0.0	0.0	0.0	0.3	(0.0)	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	83	164	368	782	43	1,439

UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre; CHC: Community health centre; PHC: Primary Health Centre
 () Based on 25-49 unweighted cases
 *Percentage not shown; based on fewer than 25 unweighted cases
¹For the pill and the condom, this category includes women who say their husband, a friend, or other relative obtained the method, but they don't know the original source of supply.

contrast, pharmacies or drugstores (50 percent), followed by shops (21 percent) are the main sources for condoms. The majority of pill, IUD, and condom users obtain their method from the private medical sector (65 percent, 55 percent, and 59 percent, respectively).

Seventy-five percent of rural users obtain their contraceptives from the public medical sector, compared with 40 percent of urban users. Although the public medical sector is the main source for female sterilizations in both urban and rural areas, in urban areas the private sector also plays a role. Eleven percent of female sterilizations are performed in the private medical sector in urban areas, compared with only 2 percent in rural areas. For pills, condoms, and IUDs, the private medical sector is also a more important source in urban areas than in rural areas. In urban areas, about two-thirds of all modern spacing methods are obtained from the private sector. In rural areas, 63 percent of pills, 53 percent of condoms, and 47 percent of IUD insertion services are obtained from the private medical sector.



5.5 Reasons for Discontinuation/Non-Use of Contraception

Currently married, nonpregnant women who were not using a contraceptive method at the time of the survey fall into two categories with respect to their contraceptive experience: those who used contraception in the past and those who never used contraception. NFHS-2 asked women who had discontinued contraceptive use their main reason for stopping use. The survey also asked women who had never used contraception the main reason they were not currently using a method. Table 5.9 shows that 246 nonpregnant women who ever used family planning methods have discontinued use (12 percent of ever users). Because less than half of ever users are sterilized or have sterilized husbands (40 percent), a large percentage of couples have the option of discontinuing use. Among the group that discontinued contraception, the most commonly mentioned reasons for discontinuing are that the couple wanted to have a child (19 percent), the husband was away (16 percent), and the method created health problems (5 percent). Fifty-five percent of the users who discontinued use gave reasons classified as 'other'. The majority of women who gave an 'other' response reported that their reason for discontinuing use was menopause or amenorrhoea (data not shown). Reasons given by women in urban and rural areas follow the same pattern, although rural women cite health and menstrual problems and husband away as reasons more frequently than urban women.

Among women who never used contraception, the most commonly mentioned reason for not currently using a method is the desire for more children (42 percent), followed by the reason that the woman is postpartum amenorrhoeic or breastfeeding (32 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. Six percent of women report that they are not using contraception because their husbands are away, and 5 percent mention a health-related problem (health concerns or worry about side effects). Only 1 percent mention any type of opposition to family planning as the reason for not using contraception. There are only two notable urban-rural differences in reasons given for not currently using contraception by women who have never used contraception: 55 percent of urban women say that they want more children compared with

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, Punjab, 1998–99

Reason	Urban	Rural	Total
REASON FOR STOPPING USE			
Method failed/got pregnant	0.0	1.4	0.9
Created menstrual problem	1.0	3.3	2.5
Created health problem	2.0	6.7	5.1
Inconvenient to use	0.0	0.6	0.4
Wanted to have a child	19.6	19.3	19.4
Wanted to replace dead child	1.0	0.0	0.4
Lack of privacy for use	1.0	0.0	0.4
Husband away	12.2	18.0	16.0
Other	63.1	50.7	55.0
Total percent	100.0	100.0	100.0
Number of women	85	161	246
REASON FOR NOT CURRENTLY USING			
Husband away	1.6	7.0	5.8
Fertility-related reasons	91.8	84.7	86.3
Infrequent sex	0.0	0.3	0.2
Menopausal/had hysterectomy	11.6	12.6	12.4
Subfecund/infecund	0.8	0.3	0.4
Postpartum/breastfeeding	24.1	33.7	31.6
Wants more children	55.3	37.7	41.7
Opposition to use	0.0	0.6	0.5
Opposed to family planning	0.0	0.3	0.2
Husband opposed	0.0	0.3	0.2
Method-related reasons	4.9	5.9	5.7
Health concerns	4.9	4.7	4.8
Worry about side effects	0.0	0.6	0.5
Inconvenient to use	0.0	0.3	0.2
Doesn't like existing methods	0.0	0.3	0.2
Other	1.7	1.5	1.5
Don't know/missing	0.0	0.3	0.2
Total percent	100.0	100.0	100.0
Number of women	105	362	467

38 percent of rural women and 34 percent of rural women say that they are postpartum amenorrhoeic or breastfeeding compared with 24 percent of urban women.

5.6 Future Intentions Regarding Contraceptive Use

Currently married women who were not using any contraceptive method at the time of the survey (including those who were pregnant at the time of the survey) were asked about their intentions to use a method in the future. If they intended to use a method, they were asked about

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, Punjab, 1998-99						
Intention to use in the future	Number of living children ¹					Total
	0	1	2	3	4+	
URBAN:						
Intends to use in next 12 months	1.8	37.3	36.6	(29.9)	(25.8)	27.4
Intends to use later	87.3	47.8	31.8	(10.9)	(2.8)	41.2
Intends to use, unsure when	1.8	1.2	0.0	(0.0)	(0.0)	0.7
Unsure as to intention	1.8	0.0	0.0	(0.0)	(0.0)	0.4
Does not intend to use	7.3	13.7	31.7	(59.2)	(71.4)	30.3
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	48	69	55	32	30	234
RURAL:						
Intends to use in next 12 months	2.0	23.1	30.5	37.5	39.7	26.6
Intends to use later	80.1	64.0	46.6	33.6	14.8	49.7
Intends to use, unsure when	2.0	0.6	2.3	0.0	0.0	1.0
Unsure as to intention	0.0	1.8	0.8	0.0	1.2	0.8
Does not intend to use	15.9	10.6	19.8	28.9	44.4	22.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	107	181	140	134	94	657
TOTAL:						
Intends to use in next 12 months	2.0	27.1	32.2	36.1	36.3	26.8
Intends to use later	82.3	59.5	42.5	29.2	11.8	47.4
Intends to use, unsure when	1.9	0.8	1.6	0.0	0.0	0.9
Unsure as to intention	0.6	1.3	0.6	0.0	0.9	0.7
Does not intend to use	13.3	11.4	23.1	34.8	51.0	24.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	155	251	195	166	125	891
() Based on 25-49 unweighted cases Includes current pregnancy, if any						

their preferred method. This type of information can help managers of family welfare programmes to identify potential groups of contraceptive users and to provide the types of contraception that are likely to be in demand. Table 5.10 gives women's responses to the questions on future use according to residence and number of living children.

Three-quarters 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, 36 percent intend to use a method within the next 12 months. The proportion of women who intend to use contraception any time in the future steadily declines with increasing numbers of children, from 86-87 percent of women with either no living children or one living child to 48 percent of women with four or more living children. About half

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, Punjab, 1998-99	
Reason	Percent
Fertility-related reasons	79.8
Not having sex	4.1
Infrequent sex	0.5
Menopausal/had hysterectomy	67.3
Subfecund/infecund	0.9
Wants as many children as possible	7.0
Opposed to family planning	0.5
Method-related reasons	12.2
Health concerns	11.7
Worry about side effects	0.5
Other	6.9
Don't know/missing	0.5
Total percent	100.0
Number of women	216

of the women (51 percent) 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 82 percent among women with no children to 12 percent among those with four or more children. The proportion expressing an intention to use contraception within the next 12 months increases from 2 percent among those with no children to 36 percent among those with three or more children. The overall proportion of women who intend to use contraception at some time in the future is somewhat higher among rural women (77 percent) than among urban (69 percent) women. Urban women with two living children are also less likely than their rural counterparts to intend to use contraception sometime in the future, although urban and rural women with only one child are about equally likely to do so. The proportion of women intending to use contraception in the next 12 months is almost the same in urban and rural areas overall, but is higher in urban areas than in rural areas among women with one or two living children.

The survey asked currently married women who were not using any method of contraception and who said that they did not intend to use a method at any time in the future why they did not intend to use contraception. This type of information is crucial for understanding the obstacles to further increases in contraceptive use and for designing effective information programmes. Table 5.11 shows that 80 percent of women mention a fertility-related reason for not intending to use contraception in the future, 12 percent mention a method-related reason, and 1 percent mention opposition to use. The reason most frequently given for not intending to use contraception is that the woman is menopausal or she has undergone a hysterectomy (67 percent). Other important fertility-related reasons are the desire to have as many children as

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, Punjab, 1998-99

Preferred method	Timing of intended use		Total
	Next 12 months	Later	
URBAN			
Pill	12.2	12.6	12.3
IUD	16.1	3.6	8.5
Condom	33.7	26.2	28.9
Female sterilization	29.8	38.6	35.3
Rhythm/safe period	2.7	2.7	2.7
Withdrawal	1.4	0.9	1.1
Other	0.0	0.0	0.0
Unsure	4.1	15.3	11.2
Total percent	100.0	100.0	100.0
Number	64	96	162
RURAL			
Pill	9.2	4.9	6.6
IUD	9.7	6.6	7.6
Condom	22.8	12.8	16.2
Female sterilization	48.4	62.6	57.4
Rhythm/safe period	2.5	1.0	1.5
Withdrawal	1.9	0.0	0.7
Other	1.3	0.3	0.7
Unsure	4.2	11.8	9.5
Total percent	100.0	100.0	100.0
Number	175	326	507
TOTAL			
Pill	10.0	6.7	8.0
IUD	11.4	5.9	7.8
Condom	25.7	15.8	19.3
Female sterilization	43.4	57.1	52.0
Rhythm/safe period	2.5	1.4	1.8
Withdrawal	1.8	0.2	0.8
Other	0.9	0.3	0.5
Unsure	4.2	12.6	9.9
Total percent	100.0	100.0	100.0
Number	239	423	670
<p>Note: Total includes a small number of women who are not sure about the timing of intended use, who are not shown separately</p>			

possible (7 percent) and that the couple is having infrequent or no sex (5 percent). Twelve percent of women mention concerns about health or side effects (12 percent).

NFHS-2 asked currently married women who were not using any method of contraception but intended to use a method in the future which method of family planning they would prefer to use. Table 5.12 shows the results according to the timing of intended use. Among women who say that they intend to use contraception, more than half (52 percent) say they would prefer to use female sterilization. The next most popular method is the condom, which is preferred by 19 percent of women. The pill and the IUD are each preferred by 8 percent of women. Only 2 percent would prefer to use a traditional method. Ten percent of women are unsure which method they intend to use. No woman mentioned male sterilization as the preferred method.

There are important differences in the choice of preferred methods by timing of intended use. Women who intend to use contraception within the next 12 months show a greater preference for spacing methods, whereas women who plan to use contraception later are more likely to prefer female sterilization. Specifically, 47 percent of women who intend to use contraception within the next 12 months would prefer to use a modern spacing method, compared with 28 percent of women who intend to use later. By contrast, 57 percent of women who intend to use contraception after at least 12 months would prefer to use female sterilization, compared with 43 percent of women who want to use contraception within 12 months. Results are similar for urban and rural areas with a few exceptions. Among women who intend to use a method, a higher proportion of urban women than rural women would prefer to use a modern spacing method (50 percent and 30 percent, respectively), whereas a higher proportion of rural women (57 percent) than urban women (35 percent) prefer female sterilization. This pattern is evident for women regardless of the timing of their intended use.

Overall, the mix of contraceptive methods that intended future users say they would prefer is similar to the methods currently being used. Female sterilization, however, is a more popular method among future users than current users (52 percent compared with 44 percent). Yet, the fact that almost half (47 percent) of the women intending to use contraception within the next year plan to use a spacing method suggests that there is a significant short-term potential demand for spacing methods not just in urban areas but also in rural areas.

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 media has a substantial effect on contraceptive use (Ramesh et al., 1996). Exposure to mass media has also been found to strengthen women's motivation to prevent unwanted fertility (Kulkarni and Choe, 1998). In order to explore the reach of family planning messages through various mass media, NFHS-2 asked women whether they had heard or seen any message about family planning in the past few months. Table 5.13 shows the proportions of currently married women who report having heard or seen a family planning message in the past few months, according to various background characteristics. Messages disseminated through the mass media over the past few months have reached 85 percent of ever-married women in Punjab. The most common source of exposure to family planning messages is television. Seventy-seven percent of ever-married women report having seen a family planning

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, Punjab, 1998–99

Background characteristic	Source of family planning message						Any source	Number of women
	Radio	Television	Cinema/ film show	News-paper/ magazine	Wall painting/ hoarding	Drama/ folk dance/ street play		
Age								
15–24	37.0	74.8	3.3	25.3	40.9	0.2	83.6	532
25–34	34.6	78.8	4.9	28.9	42.5	0.4	85.7	1,115
35–49	32.9	77.4	3.9	26.2	39.0	0.4	84.6	1,149
Residence								
Urban	47.2	94.4	10.0	57.1	58.7	0.3	98.2	862
Rural	28.7	69.9	1.6	13.8	32.8	0.4	78.9	1,934
Education								
Illiterate	19.7	56.6	0.2	0.4	23.0	0.2	67.5	1,084
Literate, < middle school complete	32.7	82.1	0.7	14.1	42.1	0.7	91.1	593
Middle school complete	38.4	90.3	1.8	31.8	53.2	0.0	97.0	294
High school complete and above	53.4	96.9	12.8	69.9	58.6	0.5	98.8	826
Religion								
Hindu	36.6	79.0	5.0	30.0	42.5	0.4	85.9	1,125
Muslim	40.5	61.3	2.7	20.6	44.8	0.0	77.6	66
Sikh	32.7	77.0	3.7	25.4	39.5	0.4	84.4	1,556
Other	(29.4)	(81.3)	(3.8)	(26.7)	(39.2)	(0.0)	(88.2)	47
Caste/tribe								
Scheduled caste	25.4	60.8	1.1	12.3	31.6	0.3	72.8	781
Other backward class	34.8	76.2	1.2	17.9	37.4	0.2	84.1	453
Other ¹	38.8	86.2	6.6	37.2	46.4	0.4	91.2	1,560
Standard of living index								
Low	9.1	18.4	0.0	1.0	23.3	0.0	34.3	113
Medium	21.6	61.8	0.4	6.3	29.3	0.5	74.0	989
High	43.7	90.6	6.7	41.2	48.7	0.3	94.7	1,681
Use of contraception								
Ever used	34.0	79.1	4.3	28.3	41.3	0.4	85.7	2,159
Never used	35.6	72.0	3.8	23.0	38.9	0.3	82.1	637
Total	34.4	77.4	4.2	27.1	40.8	0.4	84.8	2,796

Note: Total includes 2 scheduled-tribe women and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.

() Based on 25–49 unweighted cases

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

message on television in the past few months. Other important sources of family planning messages are wall paintings or hoardings (41 percent), radio (34 percent), and newspapers or magazines (27 percent). Cinema or film shows were reported as the source of family planning messages by only 4 percent of women. Less than 1 percent were exposed to a message through a drama, folk dance, or street play.

Overall, there is little difference in exposure to family planning messages through the media by age or ever use of contraception. Exposure to family planning messages does vary by residence, with virtually all women in urban areas (98 percent) reporting exposure to a family planning message compared with 79 percent of women in rural areas. Urban women are also much more likely than rural women to have been exposed to a message through almost every form of mass media.

Exposure to family planning messages varies by education, although the difference between literate and illiterate women is far greater than the variation by educational attainment. More than 90 percent of all women who are literate have heard or seen a family planning message from at least one media source in the past few months, compared with 68 percent of women who are illiterate. Exposure to family planning messages through most specific media sources is more closely linked to educational attainment than is exposure in general. For example, among literate women with less than a completed middle school education, 14 percent were exposed to a message in a newspaper or magazine in the past few months, compared with 32 percent of women with a completed middle school education and 70 percent of women with at least a high school education. Even the exposure through television to family planning messages varies from 57 percent among illiterate women to 97 percent among women who have completed at least high school.

Exposure to family planning messages also differs by religion. Eighty-six percent of Hindu women and 84 percent of Sikh women say that they have heard or seen a family planning message through the media, compared with 78 percent of Muslim women. Hindu and Sikh women are more likely than Muslim women to be exposed to family planning messages through television, newspapers or magazines, and cinema and film shows. Muslim women, however, report more exposure through the radio and wall paintings or hoardings, than do women of other religions.

Ninety-one percent of ever-married women not belonging to scheduled castes, scheduled tribes, or other backward classes have seen or heard a family planning message recently, followed by 84 percent of women from other backward classes and 73 percent of women from scheduled castes. This pattern of differential exposure by caste is also observed for almost all specific media sources. Exposure to family planning messages rises dramatically with an increase in the standard of living, from 34 percent among women from households with a low standard of living to 95 percent among women from households with a high standard of living. A similar pattern is observed for each specific media source. All of these differentials are likely to reflect some combination of the greater access to broadcast signals in urban areas, the greater ownership of radios and televisions among higher-income households, 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 husband, friends, neighbours, or other relatives in the past few months. Information on whether women talk about family planning at all, and with whom they discuss it, sheds light on their level of interest in family planning and their familial and other sources of family planning information. Table 5.14 shows

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, Punjab, 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	57.4	3.8	1.7	0.0	9.3	9.3	25.0	0.0	64.1	525
25-34	57.7	4.5	4.1	0.0	5.9	11.5	30.7	0.1	68.0	1,092
35-49	37.6	1.6	3.1	0.6	2.7	5.4	24.9	0.0	46.7	1,057
Residence										
Urban	59.0	2.6	3.8	0.5	6.3	11.9	31.5	0.1	66.5	830
Rural	45.5	3.5	3.0	0.1	4.8	7.2	25.4	0.0	55.3	1,844
Education										
Illiterate	38.7	2.2	2.4	0.4	4.4	4.5	22.7	0.1	47.9	1,020
Literate, < middle school complete	48.5	4.4	3.1	0.3	4.8	8.6	30.3	0.0	59.7	570
Middle school complete	54.5	4.1	4.9	0.0	6.1	12.1	32.2	0.0	63.4	285
High school complete and above	62.8	3.3	3.8	0.1	6.5	12.8	29.1	0.0	70.3	799
Religion										
Hindu	54.0	3.5	2.3	0.4	5.5	8.9	30.0	0.1	63.1	1,079
Muslim	61.8	4.5	3.2	1.3	11.5	11.2	35.1	0.0	70.2	63
Sikh	45.8	3.0	4.0	0.0	4.8	8.3	24.8	0.0	54.8	1,486
Other	(61.9)	(4.0)	(2.6)	(2.0)	(8.6)	(10.9)	(32.9)	(0.0)	(74.8)	44
Caste/tribe										
Scheduled caste	46.2	3.0	2.4	0.5	6.0	5.1	27.5	0.0	55.9	754
Other backward class	50.9	3.2	2.4	0.2	5.1	9.2	28.8	0.0	59.6	439
Other ¹	51.1	3.3	3.8	0.1	5.0	10.3	26.7	0.1	60.1	1,478
Standard of living index										
Low	40.4	0.0	2.0	0.0	3.0	2.9	28.8	0.0	47.4	109
Medium	45.7	3.2	2.5	0.1	4.6	5.1	27.0	0.0	54.9	935
High	52.6	3.5	3.8	0.3	5.8	11.1	27.3	0.1	61.8	1,618
Use of contraception										
Ever used	52.0	2.9	3.7	0.3	4.7	8.9	28.7	0.0	61.0	2,084
Never used	41.5	4.5	1.5	0.1	7.5	7.8	22.2	0.2	50.9	590
Husband's education										
Illiterate	40.9	2.2	2.5	0.2	4.4	4.3	25.2	0.0	49.2	605
Literate, < middle school complete	43.7	3.7	4.1	0.4	3.2	6.7	27.0	0.0	57.0	502
Middle school complete	46.4	4.0	2.7	0.4	5.0	9.4	27.5	0.2	55.5	389
High school complete and above	57.8	3.3	3.4	0.1	6.7	11.5	28.4	0.0	65.5	1,178
Total	49.7	3.2	3.2	0.2	5.3	8.7	27.3	0.0	58.8	2,674

Note: Total includes 2 scheduled-tribe women and 2 and 12 women with missing information on religion and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

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

that 59 percent of currently married women in Punjab discussed family planning with their husband, friends, neighbours, or other relatives in the past few months. Specifically, 50 percent of women discussed family planning with their husbands and 27 percent discussed family planning with friends or neighbours. Discussions with mothers and sisters were reported less often than discussions with mothers-in-law or sisters-in-law.

Women age 15–34 are more likely to have discussed family planning with someone (64–68 percent) than women age 35–49 (47 percent). Urban women are more likely than rural women to have discussed family planning. The proportion of women reporting such discussions rises with women's education, husband's education, and the standard of living index. Muslim women are more likely to have discussed family planning than Hindu or Sikh women. Discussion of family planning does not vary greatly by caste but women who belong to the scheduled castes are less likely to discuss family planning than women of other castes or classes. Women who have ever used contraception are more likely to have discussed family planning (61 percent) than women who have never used contraception (51 percent). A similar pattern of variation by use of contraception is observed with respect to women who reported having discussed family planning with their husbands. Notably, only 52 percent of women who have ever used contraception have discussed contraception with their husbands in the past few months, and this proportion is even lower, at 42 percent, for women who have never used contraception.

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, Punjab has the lowest unmet need for family planning among all the states in India. Only 7 percent of currently married women in Punjab have an unmet need for family planning, compared with 16 percent in India as a whole. 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 67 percent to 74 percent of currently married women. This means that current programmes are meeting 90 percent of the need for family planning (as shown in the last column of the Table 5.15). These results suggest that unmet need has declined by 46 percent since NFHS-1 when unmet need in Punjab was estimated to be 13 percent. The proportion of demand satisfied increased during this period from 82 percent in NFHS-1 to 90 percent in NFHS-2.

Unmet need increases from 6 percent among women age 15–19 to 13 percent among women age 20–24 years and then falls steadily to 4 percent among women age 35–49. For the youngest women (age 15–24) unmet need is largely for spacing rather than for limiting. Two-thirds of the unmet need for women age 25–29 is for limiting. The met and unmet need for contraception among women age 30 years and above is almost exclusively for limiting. Seventy-two percent of the total demand for family planning is being met for married women age 15–19.

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, Punjab, 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	6.3	0.0	6.3	13.9	2.6	16.5	20.2	2.6	22.8	72.4
20-24	9.9	3.0	13.0	14.6	22.5	37.1	24.6	25.5	50.1	74.1
25-29	3.3	6.5	9.8	8.4	54.6	63.0	11.7	61.0	72.8	86.6
30-34	1.3	5.7	7.0	2.4	77.4	79.9	3.7	83.1	86.9	91.9
35-39	0.0	4.1	4.1	0.4	85.7	86.2	0.4	89.8	90.3	95.5
40-44	0.0	3.7	3.7	0.2	79.5	79.7	0.2	83.2	83.5	95.6
45-49	0.0	3.6	3.6	0.0	61.9	61.9	0.0	65.5	65.5	94.5
Residence										
Urban	1.4	3.3	4.6	7.2	64.5	71.8	8.6	67.8	76.4	94.0
Rural	3.4	5.1	8.5	4.3	60.1	64.4	7.7	65.2	72.9	88.3
Education										
Illiterate	1.9	4.1	6.0	3.4	64.5	67.9	5.2	68.7	73.9	91.9
Literate, < middle school complete	3.1	5.0	8.1	3.1	64.9	68.0	6.2	69.9	76.1	89.3
Middle school complete	3.3	5.9	9.2	5.6	54.5	60.2	8.9	60.5	69.4	86.7
High school complete and above	3.5	4.2	7.7	8.9	57.5	66.5	12.5	61.7	74.2	89.6
Religion										
Hindu	2.4	5.0	7.5	5.1	63.0	68.2	7.6	68.1	75.6	90.1
Muslim	7.9	4.5	12.5	2.8	47.5	50.2	10.7	52.0	62.7	80.1
Sikh	2.8	4.3	7.1	5.4	60.9	66.3	8.2	65.2	73.4	90.4
Other	(4.5)	(0.0)	(4.5)	(4.0)	(63.3)	(67.4)	(8.5)	(63.3)	(71.8)	(93.8)
Caste/tribe										
Scheduled caste	2.2	4.1	6.3	4.6	58.8	63.4	6.8	62.9	69.7	91.0
Other backward class	3.7	4.2	7.9	5.3	61.1	66.4	9.0	65.3	74.3	89.4
Other ³	2.8	4.8	7.7	5.5	62.9	68.4	8.3	67.8	76.1	89.9
Standard of living index										
Low	2.0	4.9	6.9	2.9	54.7	57.6	4.9	59.6	64.6	89.3
Medium	2.6	4.6	7.2	4.3	60.9	65.1	6.8	65.4	72.3	90.1
High	3.0	4.4	7.4	5.9	62.3	68.2	8.9	66.7	75.6	90.2
Number of living children										
0	5.2	0.0	5.2	3.3	0.0	3.3	8.5	0.0	8.5	38.6
1	10.6	1.8	12.5	25.4	13.1	38.5	36.0	14.9	50.9	75.5
2	2.2	5.8	8.0	3.9	72.5	76.3	6.1	78.2	84.3	90.5
3	0.7	6.0	6.7	0.7	79.5	80.2	1.4	85.5	86.9	92.3
4	0.3	4.7	5.0	1.2	80.6	81.8	1.4	85.3	86.8	94.2
5	0.0	5.2	5.2	0.6	80.3	80.9	0.6	85.4	86.0	94.0
6+	0.0	2.8	2.8	0.0	74.8	74.8	0.0	77.6	77.6	96.4
Total	2.8	4.5	7.3	5.2	61.5	66.7	8.0	66.0	74.0	90.1

() Based on 25-49 unweighted cases

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

²Met need for *spacing* refers to women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Met need for *limiting* refers to women who are using some method and who want no more children.

Note that *spacing* and *limiting* refer to the reason for using contraception rather than to the particular method used.

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

This proportion rises steadily with the age of women to 95–96 percent for women age 35–39 and above.

The unmet need for family planning is higher in rural areas (9 percent) than in urban areas (5 percent), and the percentage of demand satisfied is moderately higher in urban areas (94 percent) than in rural areas (88 percent). It is notable that unmet need for family planning varies little by education, caste, or standard of living index. Muslim women have more unmet need for family planning (13 percent) than either Hindu women (8 percent) or Sikh women (7 percent). The percentage of total demand satisfied is also lower for Muslim women (80 percent) than for Hindu or Sikh women (90 percent).

Unmet need is higher for women with one, two, or three living children than for women with no living children. Among women with no children or one child, unmet need is almost exclusively for spacing. By contrast, unmet need for limiting is dominant for women with two or more children. Notably, only 39 percent of the total demand for family planning is satisfied for women with no living children, whereas 76 percent or more of the demand is satisfied for women with one or more children. These results show that although Punjab has the lowest unmet need of any state in the country and is meeting 90 percent of the demand for family planning, it is still not adequately satisfying the family planning 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 that was launched in 1996.

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

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

Table 6.1 Age-specific death rates and crude death rates							
Age-specific death rates and crude death rates (CDR) by sex from NFHS-1, NFHS-2, and the SRS, Punjab							
Age	NFHS-1 (1992-93)	NFHS-2 (1997-98)		SRS (1997)			Total
	Total	Male	Female	Male	Female	Total	
< 5	14.9	11.8	20.4	15.6	12.6	17.6	14.9
5-14	1.1	0.6	0.3	0.5	0.3	1.2	0.7
15-49	2.4	4.6	2.7	3.7	3.6	1.9	2.8
50-59	8.1	7.5	8.2	7.9	13.7	11.0	12.5
60+	36.8	37.9	42.5	40.0	49.4	36.6	42.8
CDR	7.1	8.4	8.5	8.4	8.0	6.8	7.4

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

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 that period, the information was collected for only the two most recent births. The information on child health presented in this chapter pertains to children born during the three years preceding the survey.

6.1 Crude Death Rates and Age-Specific Death Rates

Table 6.1 shows crude death rates (CDR) and age-specific death rates by sex for the usual resident (*de jure*) population of Punjab 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 1992-93 for NFHS-1 and 1997-98 for NFHS-2). The denominators for the NFHS-2 death rates are obtained by projecting the number of usual residents at the time of the survey backwards to the midpoint of the time period on the basis of the intercensal population growth rate in the state. The rural intercensal growth rate is applied to all rural age and sex groups and the urban intercensal growth rate is applied to all urban 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 substantial underreporting of deaths. The Sample Registration System (SRS), maintained by the Office of the Registrar General of India, provides a useful comparison. The most recent report on mortality estimates by age for Punjab is for 1997 (Office of the Registrar General, 1999a).

Table 6.1 shows an estimated average annual CDR for Punjab of 8.4 deaths per 1,000 population based on NFHS-2 data (covering roughly 1997-98), compared with 7.4 from the 1997 SRS. Thus, contrary to expectations, the CDR estimated from NFHS-2 is marginally higher than the corresponding SRS estimate. This suggests that the completeness of reporting of deaths in NFHS-2 is about the same, if not better, than in the SRS. NFHS-2 and SRS age-specific death

rates are also similar for most age groups except that the SRS estimate for the age group 50–59 is moderately higher than the NFHS-2 estimate. The NFHS-2 CDR estimate for Punjab (8.4) is lower than the all-India CDR of 9.7, but is higher than the NFHS-1 CDR of 7.1 for Punjab (covering roughly 1992–93). The difference in CDR between NFHS-1 and NFHS-2 is not likely to be statistically significant (see Appendix Table A.2 for NFHS-1 and NFHS-2). The increase in the estimates of CDR between NFHS-1 and NFHS-2 results from increases in age-specific death rates for all age groups, except the age groups 5–14 and 50–59, during the five and a half years between 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). In Punjab, according to both NFHS-2 and the SRS, death rates are higher for females than for males during early childhood (age 0–4). According to the SRS, but not NFHS-2, females also have much higher death rates during childhood (age 5–14). While the SRS and NFHS-2 estimates both show higher death rates for males than for females during the reproductive ages (15–49), the two estimates again give opposing results with regard to sex differences in mortality for ages 50 and above. For these ages, the SRS shows much higher male mortality than female mortality, whereas the NFHS-2 shows higher female than male mortality with the differential being greater for ages 60 and above.

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 mortality¹:

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

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

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

Assessment of Data Quality

The reliability of mortality estimates calculated from retrospective birth histories depends upon the completeness with which deaths of children are reported and the extent to which birth dates and ages at death are accurately reported and recorded. Estimated rates of infant and child mortality are subject to both sampling and nonsampling errors. While sampling errors for various mortality estimates are provided in Appendix A, this section describes the results of various checks for nonsampling errors—in particular, underreporting of deaths in early childhood (which would result in an underestimate of mortality) and misreporting of the date of birth or age at death (which could distort the age pattern of under-five mortality). Both problems are likely to be more pronounced for children born further in the past than for children born recently. Underreporting of infant deaths is usually most serious for deaths that occur very early in infancy. If deaths in the early neonatal period are selectively underreported, there will be an abnormally low ratio of deaths under seven days to all neonatal deaths and an abnormally low ratio of neonatal to infant deaths. Changes in these ratios over time can be examined to test the hypothesis that underreporting of early infant deaths is more common for births that occurred further in the past than for births that occurred more recently. Failure to report deaths will result in mortality figures that are too low, and if underreporting is more severe for children born further in the past than children born recently, any decline in mortality will tend to be understated.

Results from Table B.5 (Appendix B) suggest that early neonatal deaths have not been seriously underreported in the Punjab NFHS-2, since the ratios of deaths under seven days to all neonatal deaths are consistently high (between 64 and 73 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 64 and 65 percent) for the different time periods preceding the survey.

Another problem inherent in most retrospective surveys is heaping of the age at death on certain numbers, 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 year 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 Punjab NFHS-2, there appears to be a preference for reporting age at death at 8, 10, 13, 15, 18, and 22 days (Appendix Table B.5). 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 some heaping of deaths at 6, 8, 9, 11, and 12 months, especially for deaths occurring further back in time. The strong emphasis during the training of interviewers for the NFHS-2 fieldwork on the problem of age heaping at one year or 12 months has only partially succeeded in mitigating the problem: almost no deaths were reported at age 1 year, and there is

less heaping at age 12 months in the recent period than in the periods further back in time.² Nevertheless, even if one-third of the deaths reported at age 12 months actually occurred at less than 12 months of age, the infant mortality rate reported for the entire 15-year period would be underestimated by less than 3 percent and the rate reported for the most recent 5-year period would be underestimated by only 1 percent.

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 who were age 40–49 at that time, since these women were over age 50 at the time of the survey and were not eligible to be interviewed. Since these excluded births to older women were likely to be at a somewhat greater risk of dying than births to younger women, the mortality rates for the period may be slightly underestimated. Estimates for more recent periods are less affected by truncation bias since fewer older women are excluded. The extent of this bias depends on the proportion of births omitted. Table 4.18 (Chapter 4) shows that only 2 percent of the children born in the three years before the survey were born to women age 35 and above. Given the very 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 Punjab declined from 64 deaths per 1,000 live births during 1984–88 (10–14 years before the survey) to 57 deaths per 1,000 live births during 1994–98 (0–4 years before the survey), an average rate of decline of less than one infant death per 1,000 live births per year. A comparison of the infant mortality rate for the period 0–4 years before NFHS-2 (57) with the infant mortality rate 0–4 years before NFHS-1 (54), however, shows a non-statistically significant increase in infant mortality in Punjab over the five and a half years between the two surveys. The infant mortality rate in Punjab (57) is lower than the all-India infant mortality rate (68), but Punjab continues to lag behind about half of the states in India in terms of this important indicator of development, health, and family welfare.

All other measures of infant and child mortality presented in Table 6.2 have also either declined over the three five-year time periods (neonatal mortality) or show a decline overall despite a recent increase (all other measures). The magnitude of decline, at 10–15 percent between the periods 10–14 years and 0–4 years before the survey, is small, however, for most of the mortality rates, and is even smaller for the postneonatal mortality rate (4 percent). Thus,

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

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, Punjab, 1998-99

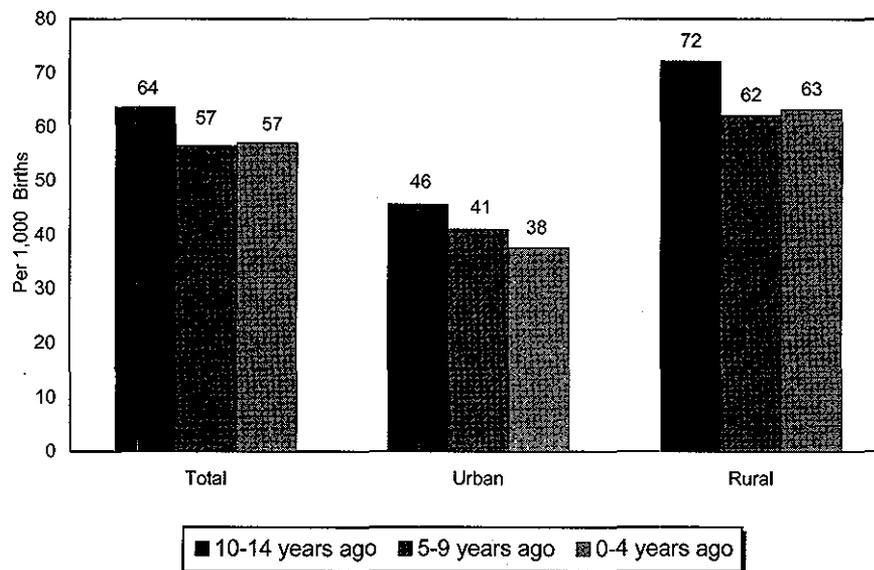
Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality ¹ (PNN)	Infant mortality (₁ q ₀)	Child mortality (₄ q ₁)	Under-five mortality (₅ q ₀)
URBAN					
0-4	(18.6)	(19.1)	(37.7)	(12.4)	(49.7)
5-9	27.7	13.4	41.1	4.6	45.5
10-14	25.1	20.6	45.7	14.1	59.2
RURAL					
0-4	39.3	24.0	63.3	17.2	79.4
5-9	41.1	21.1	62.2	14.7	76.0
10-14	47.0	25.3	72.3	21.0	91.8
TOTAL					
0-4	34.3	22.8	57.1	15.9	72.1
5-9	37.5	19.0	56.5	11.7	67.5
10-14	40.0	23.8	63.7	18.8	81.3

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

¹Computed as the difference between the infant and neonatal mortality rates

**Figure 6.1
Infant Mortality Rates for Five-Year Periods by Residence**



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

NFHS-2, Punjab, 1998-99

overall, these data suggest that there has been very little change in infant and child mortality in Punjab in recent years and more than 1 in every 18 children born during the five years before NFHS-2 died within the first year of life and 1 in every 14 children died before reaching age five. Clearly, child survival programmes in Punjab need to be intensified to achieve further reductions in infant and child mortality.

Rural mortality rates are considerably higher than urban mortality rates. For example, in the five years before the survey, the infant mortality rate is 68 percent higher and the under-five mortality rate is 60 percent higher in rural areas than in urban areas. Mortality rates are all lower in the period 1994–98 than in 1984–88 in both the urban and rural areas of Punjab. While the postneonatal and under-five mortality rates have declined at fairly similar rates in both urban and rural areas, the neonatal and infant mortality rates have both declined more slowly in rural areas than in urban areas and the child mortality rate has declined faster in rural areas than in urban areas. A comparison of the NFHS-2 urban and rural mortality rates with the corresponding rates from NFHS-1 for the periods 0–4 years before the two surveys shows an increase in most rates for the rural areas and a decline in most rates for the urban areas between the two surveys. However, these changes are small in most cases and are unlikely to be statistically significant, suggesting that there has been little or no change in mortality since NFHS-1 in both urban and rural areas of Punjab.

The estimated NFHS-2 infant mortality rate of 57 deaths per 1,000 live births during 1994–98 is slightly higher than the SRS value of 53 deaths per 1,000 live births averaged for the period 1994–98. However, this small difference in the two rates is not statistically significant (the lower and upper confidence limits for the NFHS-2 estimate, shown in Appendix Table A.2, are 45 and 69, respectively). Similarly, the average SRS estimate for the infant mortality rate for rural areas for the same period (57 deaths per 1,000 live births) is also lower than the corresponding NFHS-2 estimate (63 deaths per 1,000 live births), though not significantly so. The NFHS-2 estimate for urban areas (38 deaths per 1,000 live births) is, however, in close agreement with the average SRS estimate for urban areas (39 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 Punjab experience a 64 percent higher probability of dying before their fifth birthday than urban children, only slightly higher than the 60 percent differential in the most recent five-year period shown in Table 6.2. This comparison confirms that the under-five mortality rate has been falling at about the same rate in rural areas and urban areas. The probability of dying in the first month of life is 70 percent higher and that of dying between ages one and five is 96 percent higher in rural areas than in urban areas in the 10-year period before NFHS-2.

The infant mortality rate declines sharply with increasing education of mothers, ranging from a high of 73 deaths per 1,000 live births for illiterate mothers to a low of 35 deaths per 1,000 live births for mothers who have at least completed high school. In the case of most of the other infant and child mortality rates too, children of mothers who are illiterate are at least twice as likely to die as children of mothers who have completed at least high school.

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, Punjab, 1998–99					
Background characteristic	Neonatal mortality (NN)	Postneonatal mortality ¹ (PNN)	Infant mortality (IQ ₀)	Child mortality (4Q ₁)	Under-five mortality (5Q ₀)
Residence					
Urban	23.7	15.9	39.6	8.2	47.5
Rural	40.2	22.5	62.7	16.1	77.8
Mother's education					
Illiterate	44.3	28.7	73.0	19.5	91.0
Literate, < middle school complete	40.3	17.4	57.8	15.5	72.3
Middle school complete	(23.4)	(15.1)	(38.5)	(3.7)	(42.1)
High school complete and above	23.0	11.8	34.8	6.3	40.8
Religion					
Hindu	33.0	24.0	57.0	14.9	71.0
Sikh	36.2	15.3	51.5	12.7	63.6
Caste/tribe					
Scheduled caste	44.9	28.9	73.7	22.5	94.6
Other backward class	34.6	23.0	57.6	15.8	72.5
Other ²	30.2	14.1	44.3	7.4	51.4
Standard of living index					
Medium	41.5	32.5	74.0	15.6	88.4
High	29.1	9.4	38.5	7.9	46.2
Total	36.0	20.8	56.8	13.9	69.9

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

Sikh children consistently have somewhat lower mortality rates than Hindu children after the neonatal stage, with the absolute difference in the rates being least in the case of the child mortality rate. NFHS-1 had also found higher infant and under-five mortality rates for Hindu children compared with Sikh children, but had found the child mortality rate to be higher among Sikhs than Hindus. Children belonging to the scheduled castes and to the other backward classes have higher rates of infant and child mortality than children not belonging to the scheduled castes, scheduled tribes, and other backward classes. As expected, all indicators of infant and child mortality decline substantially with increases in the household standard of living. For example, the infant mortality rate is almost twice as high for children in households with a medium standard of living as for children in households with a high standard of living (74 and 39 deaths per 1,000 live births, respectively).

Demographic Differentials in Infant and Child Mortality

This section examines differentials in early childhood mortality by demographic characteristics of 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.

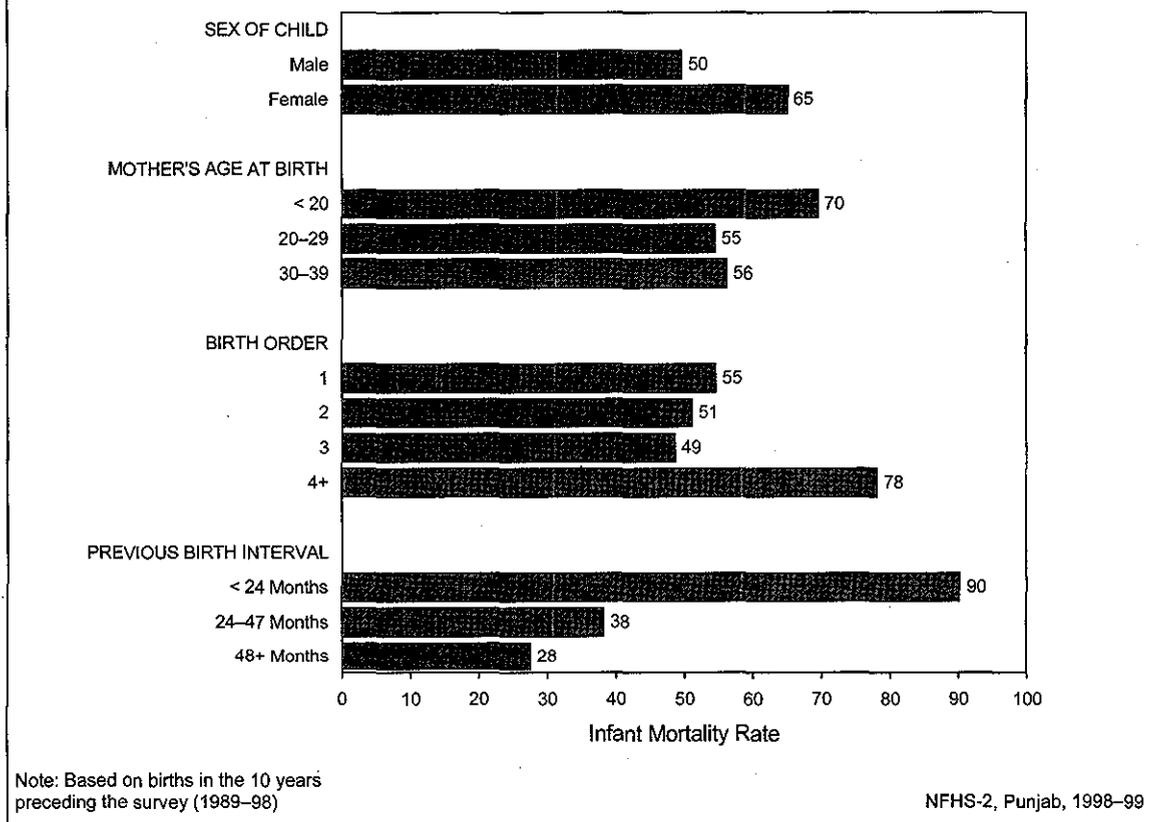
Table 6.4 Infant and child mortality by demographic characteristics					
Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey by selected demographic characteristics, Punjab, 1998-99					
Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality ¹ (PNN)	Infant mortality (₁ q ₀)	Child mortality (₄ q ₁)	Under-five mortality (₅ q ₀)
Sex of child					
Male	34.4	15.3	49.7	5.9	55.4
Female	37.9	27.3	65.2	23.8	87.4
Mother's age at birth					
< 20	(44.5)	(25.1)	(69.6)	(24.1)	(92.1)
20-29	33.6	21.1	54.6	12.1	66.0
30-39	(42.5)	(13.8)	(56.3)	(12.0)	(67.6)
Birth order					
1	41.0	13.7	54.7	11.7	65.7
2	30.1	21.1	51.2	9.0	59.8
3	24.2	24.5	48.7	25.1	72.6
4+	50.1	28.2	78.3	12.9	90.1
Previous birth interval					
< 24 months	52.6	37.7	90.3	22.2	110.5
24-47 months	20.7	17.6	38.3	13.3	51.1
48+ months	(18.3)	(9.3)	(27.6)	(0.0)	(27.6)
Medical care²					
One or two types of care	(27.8)	(23.0)	(50.8)	U	U
All types of care	(28.2)	(24.8)	(53.0)	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.

Table 6.4 shows that the mortality rate below five years of age is considerably higher for girls than for boys. Excess female mortality occurs in every age group. The infant mortality rate during the 10-year period before the survey is 31 percent higher for girls (65 deaths per 1,000 live births) than for boys (50 deaths per 1,000 live births). The much lower male than female infant mortality rate results from considerably higher postneonatal mortality among girls than among boys. The child mortality rate for girls is four times as high as the corresponding rate for boys. As a consequence of the much higher infant and child mortality rates for girls than for boys, the under-five mortality rate for boys is 58 percent higher for girls (87 per 1,000 live births) than for boys (55 per 1,000 live births). The mortality rate showing the lowest sex differential is the neonatal mortality rate, which largely reflects mortality due to congenital conditions. Higher mortality rates for females have been observed in other studies in South Asia and are thought to reflect the relative nutritional and medical neglect of the girl child (Das Gupta, 1987; Basu, 1989).

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 the youngest and oldest mothers experiencing higher mortality rates than children whose mothers are in the prime reproductive ages. Children born to young mothers are more likely to be of low birth weight, which is an important factor contributing to higher neonatal mortality. Similarly,

Figure 6.2
Infant Mortality Rates by Selected Demographic Characteristics



children born to older mothers are at a relatively high risk of experiencing congenital problems. The small number of births to the youngest and oldest mothers makes this comparison in Punjab difficult. Nonetheless, the data suggest that while the youngest mothers do have much higher mortality rates than mothers age 20-29, mothers age 30-39 do not always have higher rates than mothers age 20-29.

Birth order also tends to have a U-shaped relationship to infant deaths, with first births and high-order births having elevated mortality rates. 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. In Table 6.4, birth order shows the expected U-shaped pattern for neonatal, infant, and under-five mortality rates only. The postneonatal mortality rate increases steadily with birth order, even though it declines with mother's age at childbirth. The higher mortality of children at high birth orders may reflect a more intense competition faced by higher birth-order children for the caregiver's time, for medical resources, and for nutritious food. It is also likely that higher birth-order children are disproportionately from lower socioeconomic groups, in which mortality tends to be higher.

The timing of successive births has a powerful effect on the survival chances of children in Punjab. All the mortality rates decrease sharply as the length of the previous birth interval increases, and all the measures are especially high for children born less than 24 months after a previous birth. For example, the infant mortality rate is more than twice as high for children with a previous birth interval of less than 24 months than for children with a previous interval of 24 to

47 months (90 deaths compared with 38 deaths per 1,000 live births) and is three times as high as for children with a previous birth interval of 48 or more months (90 deaths compared with 28 deaths per 1,000 live births). The previous birth interval has a similar effect on all other indicators of infant and child mortality shown in Table 6.4. Although the length of the previous 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 and 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. Due to the relatively small sample size in Punjab, it is not possible to meaningfully compare mortality rates for children by whether their mothers received medical care.

6.3 Morbidity

There is only limited experience in collecting morbidity data from population-based demographic sample surveys. NFHS-1 collected data on five major morbidity conditions—partial and complete blindness, tuberculosis, leprosy, physical impairment of the limbs, and malaria—among all persons in the sample households. The results were found to be generally plausible and useful. For these reasons, it was decided to include similar morbidity questions in NFHS-2. In NFHS-2, questions on blindness, leprosy, and physical impairment of the limbs were replaced by questions on asthma and jaundice. The questions on tuberculosis and malaria were retained, and a question on medical treatment of tuberculosis was added to get a better measure of the prevalence of tuberculosis. The household head or other knowledgeable adult in the household reported on morbidity for all household members, and no effort was made to conduct 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. Respondents may underreport diseases carrying a stigma, such as tuberculosis, due to intentional concealment. Underestimation may also occur because the household respondents are unaware that they or other members of the household have the condition. It is also possible that the respondents know that a household member suffers from a given condition but fail to report it because they do not recognize the term used by the enumerator to describe the condition. On the other hand, a factor contributing to a possible overestimation of prevalence without clinical verification is that some other disease can be mistaken by the respondent as one of the listed diseases; for example, chronic bronchitis may be reported as asthma or tuberculosis or common flu as malaria.

Asthma

Asthma is a chronic respiratory disease characterized by sudden attacks of laboured breathing, chest constriction, and coughing. There has been a rapid increase in asthma cases in recent years

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, Punjab, 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	188	62	62	1,375	1,193	1,397
15-59	866	239	179	1,075	776	2,919
60+	5,385	372	372	0	1,291	470
Sex						
Male	1,061	353	282	1,058	815	2,470
Female	1,168	38	38	1,056	1,091	2,317
Total	1,112	200	164	1,057	949	4,786
RURAL						
Age						
< 15	297	29	29	1,078	894	3,586
15-59	976	239	239	892	1,229	6,265
60+	6,338	568	568	809	1,383	1,319
Sex						
Male	1,278	143	143	939	918	5,947
Female	1,520	287	287	945	1,392	5,223
Total	1,391	210	210	942	1,140	11,170
TOTAL						
Age						
< 15	267	38	38	1,161	978	4,983
15-59	941	239	220	950	1,085	9,184
60+	6,088	517	517	596	1,359	1,789
Sex						
Male	1,214	205	184	974	888	8,416
Female	1,412	211	211	979	1,300	7,540
Total	1,308	207	197	976	1,082	15,956

¹Includes medically treated tuberculosis

in many parts of the world. In Punjab, 1.3 percent of the population was reported to be suffering from asthma at the time of NFHS-2. The reported level of asthma (1,308 per 100,000 population) in Punjab is lower than the level reported for India as a whole (2,468 per 100,000 population). The prevalence of asthma is slightly higher in rural areas (1,391 per 100,000 population) than in urban areas (1,112 per 100,000 population) and is also slightly higher among females (1,412 per 100,000) than among males (1,214 per 100,000). Age differences are marked, with the prevalence of asthma increasing from 267 per 100,000 at age 0-14 to 6,088 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. According to NFHS-2, the overall prevalence of tuberculosis in Punjab is 207 per 100,000 population, less than half the national estimate of 544. The prevalence of tuberculosis in Punjab recorded in NFHS-2 is slightly lower than the prevalence recorded in NFHS-1 (240 per 100,000). The prevalence rates in rural and urban areas do not vary significantly. In urban areas, the prevalence rate of tuberculosis is almost 10 times higher for males (353 per 100,000) than for females (38 per 100,000). In rural areas, however, the prevalence rate for males (143 per 100,000) is half the female rate (287 per 100,000). Probable reasons for the higher prevalence of tuberculosis among males than females in urban areas are that men are more likely than women to come in contact with people who suffer from active tuberculosis. One probable cause of the higher prevalence of tuberculosis among females in rural areas may be that they are more likely to cook food on indigenous *chullahs* (with firewood and cowdung cakes, etc., as fuel). Exposure to smoke from biomass fuels has been identified as a significant cause of tuberculosis in India (Mishra et al., 1999). The prevalence of tuberculosis increases rapidly with age. It is substantially higher among persons age 60 and above (517 per 100,000) than among those age 15–59 (239 per 100,000) or age 0–14 (38 per 100,000).

Medically treated tuberculosis is expected to give a more reliable measure of the prevalence of active tuberculosis than the measure based on all reported cases considered in the preceding paragraph. The prevalence of medically treated tuberculosis is only slightly lower (197 per 100,000) than the prevalence based on all reported cases (207 per 100,000). While there is no difference in the prevalence of reported cases of tuberculosis and prevalence of medically treated tuberculosis in rural areas of Punjab, in urban areas, only 82 percent of the reported cases are medically treated cases. The difference between reported and medically treated rates for tuberculosis is evident even in urban areas only for the age group 15–59 and only for males.

Jaundice

Jaundice is characterized by yellowish discoloration 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 Punjab, 976 persons per 100,000 population were reported to have suffered from jaundice during the 12 months preceding the survey, considerably lower than the rate of 1,361 for India as a whole. People living in urban areas are slightly more likely to have suffered from jaundice (1,057 per 100,000) than those living in rural areas (942 per 100,000). There is no sex differential in the prevalence of jaundice. Jaundice is the only condition measured the prevalence of which decreases with age. The prevalence of jaundice is highest for the age group 0–14 (1,161 per 100,000) and lowest for those 60 years and above (596 per 100,000). Indeed, in urban areas, no case of jaundice was reported 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 suffered from malaria at any time during the three months preceding the survey. In Punjab, 1,082 persons per 100,000 population were

reported to have suffered from malaria during the three months preceding the survey, less than a third of the national rate of 3,697 per 100,000 population. 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 higher NFHS-1 estimate because the months of the year comprising the reference period for the malaria estimates from the two surveys are different.

Rural residents are slightly more likely to suffer from malaria (1,140 per 100,000) than urban residents (949 per 100,000). The reported prevalence of malaria is higher for females than for males in both urban and rural areas. The prevalence of malaria increases with age, from 978 per 100,000 in the population age 0–14 to 1,359 per 100,000 in the population age 60 years and over. The steady increase with age occurs in rural areas but not 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. In 1985–86, immunization against measles was added to the programme (Ministry of Health and Family Welfare, 1991).

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

NFHS-2 asked mothers in Punjab 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 later³.

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, the proportion of vaccinations given during the first year of life to children whose information is based on the mother's report is assumed to be the same as the proportion of vaccinations given during the first year of life to children with an exact date of vaccination on the card.

In NFHS-2, children who have received BCG, measles, and three doses each of DPT and polio (excluding Polio 0) are considered to be fully vaccinated. Based on information obtained from a card or reported by the mother ('either source'), 72 percent of children age 12–23 months are fully vaccinated, and 9 percent have received no vaccinations at all. Coverage for each vaccination except Polio 0 is much higher than the percentage fully vaccinated. BCG, the first dose of DPT, and the first and second doses of polio vaccine each have been received by at least 88 percent of children (see Figure 6.3). Eighty-two percent of children have received three doses of DPT and 84 percent have received three doses of the polio vaccine. Although DPT and polio vaccinations are given at the same time as part of the routine immunization programme, the coverage rates are slightly higher for polio than DPT, undoubtedly because of the Pulse Polio campaigns.

In Punjab, most children who begin 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 just 6 percentage points for DPT and 7 percentage points for polio. Seventy-seven percent of children 12–23 months have been vaccinated against measles. The relatively low percentage vaccinated against measles is largely responsible for the fact that the percentage fully vaccinated is less than three-fourths of the children surveyed.

There has been considerable improvement in vaccination coverage in Punjab since the time of NFHS-1, when the proportion of children fully vaccinated was 62 percent and the proportion who had received no vaccinations was 18 percent. The coverage of each specific vaccination has also improved considerably since NFHS-1. Nonetheless, these data indicate that the goal of universal immunization coverage for children has yet to be met.

³Because mothers sometimes report that the first dose was given just after birth even if it was given several weeks later, an adjustment was made to the estimates of the number of polio vaccinations given based on reports of the number of DPT vaccinations. This adjustment is based on the fact that when children receive a DPT vaccination, they are almost always given a polio vaccination at the same time. Thus, if the number of polio vaccinations was reported to be less than the number of DPT vaccinations and the first polio vaccination was reported to be given just after birth, then Polio 0 is assumed to be Polio 1, Polio 1 is assumed to be Polio 2, etc. For comparative purposes, this same adjustment was made to the NFHS-1 vaccination estimates.

Table 6.6 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, Punjab, 1998–99

Source of information	Percentage vaccinated											Number of children
	BCG	Polio 0	DPT			Polio			Measles	All ¹	None	
			1	2	3	1	2	3				
URBAN												
Vaccinated at any time before the interview												
Vaccination card	100.0	5.9	100.0	100.0	100.0	100.0	100.0	100.0	98.0	98.0	0.0	44
Mother's report	(86.1)	(33.4)	(94.4)	(91.5)	(86.1)	(94.4)	(91.5)	(88.8)	(77.7)	(69.5)	(5.6)	31
Either source	94.2	17.3	97.7	96.5	94.2	97.7	96.5	95.4	89.6	86.2	2.3	76
Vaccinated by 12 months of age ²	94.2	17.3	97.7	96.5	92.2	97.7	96.5	93.3	72.6	69.1	2.3	76
RURAL												
Vaccinated at any time before the interview												
Vaccination card	100.0	8.1	100.0	100.0	98.4	100.0	100.0	98.4	82.2	82.2	0.0	67
Mother's report	78.5	9.1	75.7	74.0	64.7	80.4	76.8	67.4	64.7	57.2	17.8	116
Either source	86.4	8.7	84.6	83.5	77.0	87.6	85.3	78.7	71.1	66.3	11.3	183
Vaccinated by 12 months of age ²	86.4	8.7	81.9	80.8	74.4	84.7	82.5	76.1	60.5	56.4	12.7	183
TOTAL												
Vaccinated at any time before the interview												
Vaccination card	100.0	7.2	100.0	100.0	99.0	100.0	100.0	99.0	88.5	88.5	0.0	111
Mother's report	80.2	14.2	79.7	77.7	69.2	83.4	79.9	72.0	67.4	59.8	15.2	148
Either source	88.7	11.2	88.4	87.3	82.0	90.5	88.5	83.6	76.5	72.1	8.7	259
Vaccinated by 12 months of age ²	88.7	11.2	86.7	85.5	79.7	88.7	86.8	81.2	63.7	59.9	9.6	259

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.

() Based on 25–49 unweighted cases

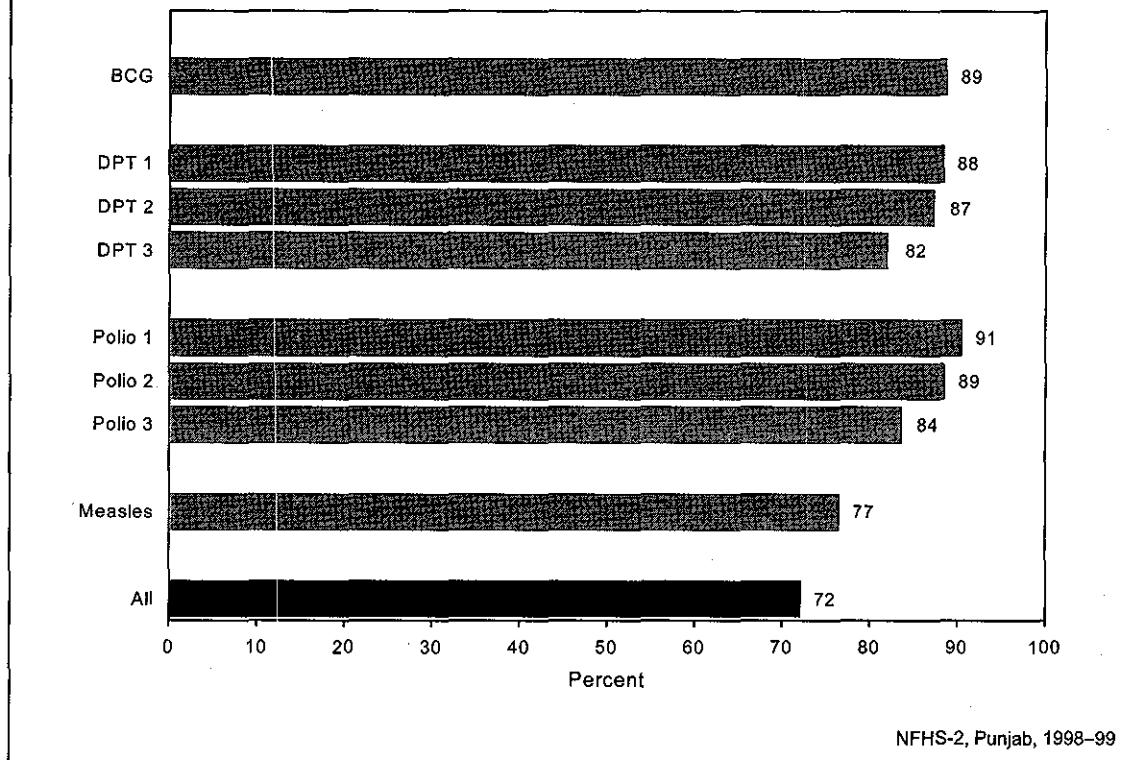
¹BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

²For children whose information was based on the mother's report, the proportion of vaccinations given by 12 months of age is assumed to be the same as for children with a written record of vaccinations.

Government statistics suggest a much higher level of vaccination coverage than NFHS-2 estimates. According to government statistics for Punjab for 1997–98, 92 percent of children age 12–23 months are fully vaccinated and the coverage is 96 percent each for BCG, the third dose of DPT, and the third dose of polio vaccine, and 93 percent for measles (Ministry of Health and Family Welfare, 1999b).

According to the immunization schedule, all primary vaccinations, including measles, should be completed by the time a child is 12 months old. Table 6.6 shows that 60 percent of all children (or 83 percent of fully vaccinated children) were fully vaccinated by age 12 months. All children who received BCG were vaccinated by 12 months of age, and the percentages of children who received the third dose of DPT and the third dose of polio by age 12 months is only slightly lower than the percentages who received these vaccines at any time before the survey. For measles vaccination, however, which is supposed to be given when the child is nine months old, the gap is wider: 17 percent of children who were vaccinated against measles received the vaccination after their first birthday.

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



The analysis of vaccine-specific data indicates higher coverage for each type of vaccine in urban areas than in rural areas. Eighty-six percent of children age 12–23 months in urban areas were fully vaccinated at some time before the survey, compared with 66 percent in rural areas. The proportion fully vaccinated during the first year of life is also higher in urban areas (69 percent) than in rural areas (56 percent). Dropout rates for DPT and polio (the proportion of children receiving the first dose but not the third dose of the vaccine) are lower in urban areas than in rural areas.

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 interviewer. Mothers showed vaccination cards for 43 percent of children age 12–23 months. Vaccination cards were shown for 59 percent of children in urban areas and 37 percent in rural areas. As expected, vaccination coverage is much higher for children for whom a vaccination card was shown than for other children (see Table 6.6).

Boys (75 percent) are somewhat more likely than girls (69 percent) to be fully vaccinated. Boys are also more likely than girls to have received each of the individual vaccinations except Polio 0. Mothers showed vaccination cards for 50 percent of boys and 35 percent of girls. In NFHS-1 also, vaccination coverage was higher for boys than girls and a vaccination card was shown for a higher proportion of boys than girls. The vaccination coverage for girls has improved considerably between NFHS-1 and NFHS-2, helping to reduce the gender differentials in coverage.

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, Punjab, 1998–99													
Background characteristic	Percentage vaccinated											Percentage showing vaccination card	Number of children
	BCG	Polio 0	DPT			Polio			Measles	All ¹	None		
			1	2	3	1	2	3					
Sex of child													
Male	92.1	7.4	93.2	91.9	85.4	94.8	93.4	87.4	79.6	74.5	5.2	49.6	142
Female	84.5	15.9	82.5	81.6	77.9	85.3	82.6	78.9	72.7	69.2	12.9	34.9	116
Birth order													
1	95.4	15.2	92.6	91.4	87.6	95.1	92.7	87.6	84.4	79.7	3.7	48.9	88
2	92.8	11.8	94.0	92.6	85.9	97.0	95.6	88.5	81.3	76.1	3.0	46.2	73
3	89.2	7.9	89.2	89.2	82.8	89.2	89.2	87.1	76.9	70.5	8.7	40.1	51
4+	(69.4)	(6.4)	(71.3)	(69.4)	(64.9)	(73.5)	(69.4)	(64.9)	(53.9)	(53.9)	(26.5)	(29.9)	47
Residence													
Urban	94.2	17.3	97.7	96.5	94.2	97.7	96.5	95.4	89.6	86.2	2.3	58.5	76
Rural	86.4	8.7	84.6	83.5	77.0	87.6	85.3	78.7	71.1	66.3	11.3	36.5	183
Mother's education													
Illiterate	74.5	4.2	73.1	70.1	66.8	77.4	72.2	67.8	59.3	55.2	20.4	29.7	99
Literate, < middle school complete	(95.5)	(16.7)	(97.8)	(97.8)	(88.6)	(97.8)	(97.8)	(93.2)	(80.8)	(76.2)	(2.2)	(30.2)	47
Middle school complete	(100.0)	(12.9)	(96.3)	(96.3)	(83.2)	(100.0)	(100.0)	(83.2)	(72.7)	(65.5)	(0.0)	(49.9)	31
High school complete and above	97.6	15.9	98.6	98.6	96.3	98.6	98.6	97.3	96.2	92.8	1.4	63.7	82
Religion													
Hindu	91.4	9.9	92.9	90.9	85.8	95.0	90.9	86.9	78.9	75.1	5.0	36.7	100
Sikh	87.2	12.5	85.7	85.0	79.9	87.2	86.5	82.0	74.7	69.6	11.3	48.4	144
Caste/tribe													
Scheduled caste	77.1	7.6	80.1	80.1	71.0	81.3	80.1	72.2	61.1	54.6	17.6	30.5	93
Other backward class	(95.9)	(11.2)	(93.7)	(89.4)	(84.9)	(98.2)	(91.6)	(84.9)	(83.0)	(80.9)	(1.8)	(44.1)	48
Other ²	94.8	14.1	92.8	92.0	89.5	94.6	93.9	92.0	85.9	82.3	4.4	52.3	118
Standard of living index													
Medium	81.2	5.4	81.9	79.2	72.6	85.7	81.1	74.5	63.7	57.2	13.3	27.9	112
High	97.8	16.1	97.6	97.6	94.4	98.4	98.4	95.9	91.8	88.8	1.6	59.1	130
Total	88.7	11.2	88.4	87.3	82.0	90.5	88.5	83.6	76.5	72.1	8.7	43.0	259

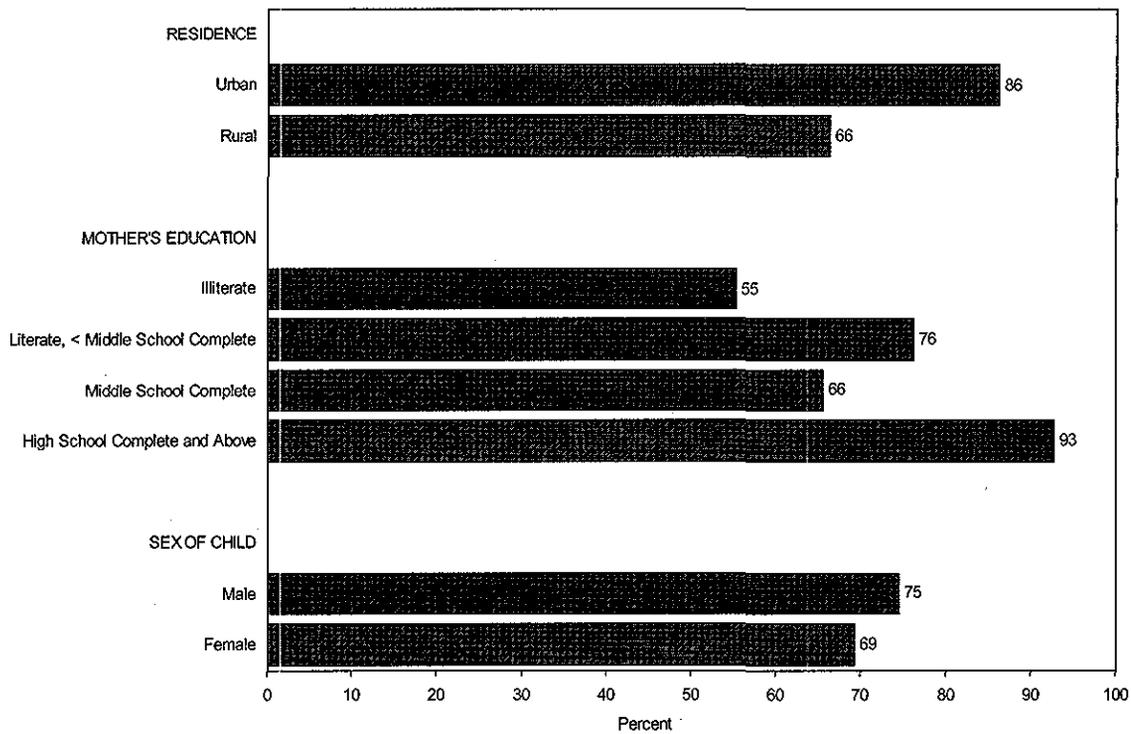
Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 7 Muslim children, 6 children belonging to 'other' religions, 15 children from households with a low standard of living index, and 2 children with missing information on the standard of living index, who are not shown separately.

() Based on 25–49 unweighted cases

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

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

Figure 6.4
Percentage of Children Age 12–23 Months
Who Have Received All Vaccinations



NFHS-2, Punjab, 1998–99

The coverage of most vaccinations declines more or less consistently with birth order. A large majority of first-order births occur to younger women who are more likely than older women to utilize maternal and child health care services. There is, in general, a positive relationship between mother's education and children's vaccination coverage. Only 55 percent of children of illiterate mothers are fully vaccinated compared with 93 percent of children with mothers who have completed at least high school. Hindu children are slightly more likely to be fully vaccinated (75 percent) than Sikh children (70 percent). Children belonging to the scheduled castes or to other backward classes are less likely to be fully vaccinated than children who do not belong to the scheduled castes, scheduled tribes, or other backward classes. Household standard of living has a strong positive relationship with vaccination coverage. Fifty-seven percent of children from households with a medium standard of living are fully vaccinated, compared with 89 percent of children from households with a high standard of living.

Table 6.8 shows the percentage of children age 12–35 months with a vaccination card that was shown to the interviewer and the percentage who received various vaccinations during the first year of life by current age of the child and place of residence. The table shows that there has been considerable improvement in vaccination coverage over a short period of time. 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.

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, Punjab, 1998–99

Vaccination status	Urban		Rural		Total	
	12–23 months	24–35 months	12–23 months	24–35 months	12–23 months	24–35 months
Vaccination card shown to interviewer	58.5	39.1	36.5	32.3	43.0	33.8
Percentage vaccinated by 12 months of age¹						
BCG	94.2	89.9	86.4	80.1	88.7	82.4
Polio 0	17.3	29.2	8.7	8.0	11.2	12.6
DPT						
1	97.7	90.6	81.9	81.9	86.7	83.8
2	96.5	88.1	80.8	79.6	85.5	81.5
3	92.2	86.8	74.4	72.3	79.7	75.5
Polio						
1	97.7	90.6	84.7	83.9	88.7	85.5
2	96.5	89.3	82.5	80.8	86.8	82.8
3	93.3	88.0	76.1	76.3	81.2	79.0
Measles	72.6	66.5	60.5	57.8	63.7	59.7
All vaccinations ²	69.1	66.5	56.4	53.5	59.9	56.9
No vaccinations	2.3	9.4	12.7	16.1	9.6	14.5
Number of children	76	68	183	243	259	312

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.
¹Information was obtained either from the vaccination card or from the mother if there was no written record. For children whose information was based on the mother's report, the proportion of vaccinations given by 12 months of age is assumed to be the same as for children with a written record of vaccinations.
²BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

The proportion of children whose vaccination status was determined from a vaccination card declines substantially 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. On the other hand, 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 increases slightly from 57 percent for children age 24–35 months to 60 percent for children age 12–23 months. This pattern is also observed for most of the vaccines. Improvements in the vaccination coverage of all vaccines, except polio 0 and BCG, are much greater in urban areas than in rural areas.

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. The public sector is the primary provider of childhood vaccinations in Punjab. Eighty-eight percent of all children who have received vaccinations received most of them from a public sector source and only 12 percent received them from 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, Punjab, 1998–99

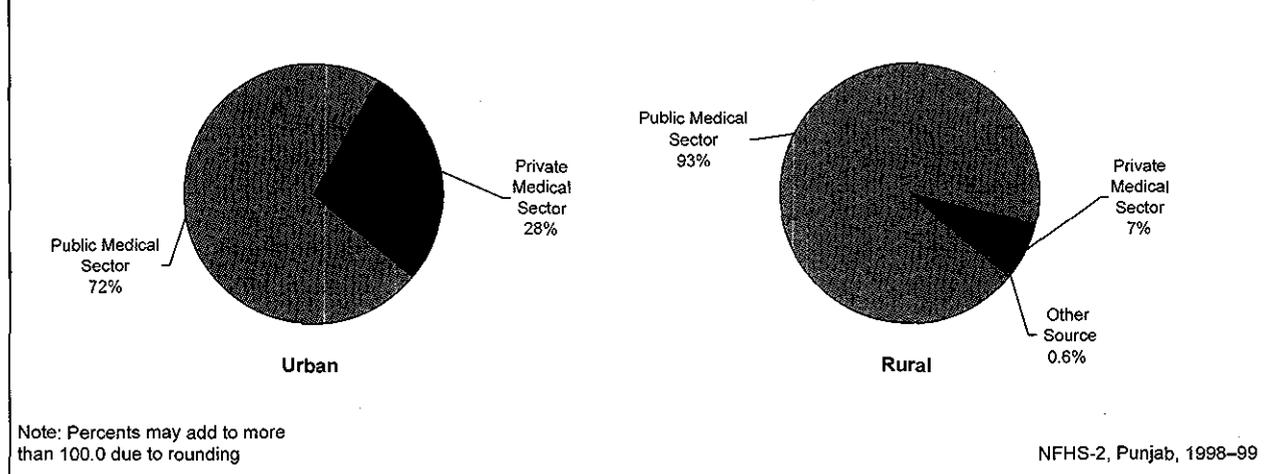
Background characteristic	Source			Total percent	Number of children
	Public medical sector	Private medical sector	Other		
Age of child					
< 12 months	82.9	16.6	0.5	100.0	205
12–23 months	87.8	11.8	0.4	100.0	236
24–35 months	90.7	8.9	0.4	100.0	284
Sex of child					
Male	88.0	11.7	0.3	100.0	385
Female	87.0	12.4	0.6	100.0	340
Birth order					
1	83.6	15.6	0.9	100.0	246
2	88.2	11.8	0.0	100.0	228
3	92.6	7.4	0.0	100.0	149
4+	88.3	10.6	1.1	100.0	102
Residence					
Urban	72.3	27.7	0.0	100.0	183
Rural	92.7	6.7	0.6	100.0	542
Mother's education					
Illiterate	92.0	7.1	0.9	100.0	240
Literate, < middle school complete	94.1	5.9	0.0	100.0	151
Middle school complete	94.8	5.2	0.0	100.0	96
High school complete and above	76.0	23.5	0.4	100.0	239
Religion					
Hindu	86.2	13.8	0.0	100.0	295
Sikh	88.8	10.4	0.8	100.0	396
Caste/tribe					
Scheduled caste	95.2	4.4	0.4	100.0	248
Other backward class	90.9	9.1	0.0	100.0	128
Other ¹	80.8	18.5	0.6	100.0	349
Standard of living index					
Low	(100.0)	(0.0)	(0.0)	100.0	27
Medium	94.9	4.8	0.4	100.0	299
High	81.4	18.1	0.5	100.0	397
Total	87.5	12.0	0.4	100.0	725

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 20 Muslim children, 14 children belonging to 'other' religions, and 3 children with missing information on the standard of living index, who are not shown separately.
 () Based on 25–49 unweighted cases
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

private sector medical source. The percentage of vaccinated children receiving vaccinations from the private medical sector is four times as high in urban areas (28 percent), where private sector services tend to be concentrated, as in rural areas (7 percent). Even in urban areas, however, 72 percent of children received their vaccinations from the public sector.

Children of mothers who have completed at least high school, children who do not belong to a scheduled caste, a scheduled tribe, or an other backward class, and children who

Figure 6.5
Source of Childhood Vaccinations by Residence



belong to households with a high standard of living are more likely than other children to receive vaccinations from the private medical 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, de Pee, Danton-Hill, 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 whole, 57 percent of children age 12-35 months received at least one dose of vitamin A, but only 30 percent received a dose within the past six months. This indicates that only about half of the children in Punjab who have received vitamin A supplementation at all have received the supplementation regularly.

Children living in urban areas, children of literate mothers, first-born children, children who do not belong to a scheduled caste, a scheduled tribe, or an other backward class, and children belonging to households with a high standard of living are considerably more likely to receive vitamin A supplementation than other children. Children from households with a low standard of living and children of birth order four or above are much less likely than any other children to have received any 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.

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, Punjab, 1998–99			
Background characteristic	Percentage who received vitamin A		Number of children
	At least one dose	At least one dose within past six months	
Age of child			
12–23 months	55.7	39.8	259
24–35 months	57.1	22.4	312
Sex of child			
Male	57.8	29.8	294
Female	55.1	30.8	277
Birth order			
1	66.4	37.7	174
2	57.8	32.9	160
3	58.3	28.7	129
4+	36.3	16.2	108
Residence			
Urban	70.4	38.7	144
Rural	51.8	27.4	427
Mother's education			
Illiterate	41.5	23.8	220
Literate, < middle school complete	60.5	31.2	113
Middle school complete	68.1	30.4	72
High school complete and above	68.5	38.1	166
Religion			
Hindu	55.6	28.6	220
Sikh	58.0	31.9	320
Caste/tribe			
Scheduled caste	47.6	24.4	206
Other backward class	53.1	30.9	105
Other ¹	64.9	34.6	260
Standard of living index			
Low	(20.0)	(6.7)	32
Medium	45.7	24.7	257
High	70.4	38.0	279
Total	56.5	30.2	571
<p>Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 18 Muslim children, 13 children belonging to 'other' religions, and 3 children with missing information on the standard of living index, who are not shown separately.</p> <p>() Based on 25–49 unweighted cases</p> <p>¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class</p>			

6.6 Child Morbidity and Treatment

This section discusses the prevalence and treatment of acute respiratory tract infection (ARI), fever, and diarrhoea. Mothers of children less than three years old were asked if their children suffered from cough, fever, or diarrhoea during the two weeks preceding the survey, and if so, the type of treatment given. Accuracy of all these measures is affected by the reliability of the mother's recall of when the disease episode occurred. The two-week recall period is thought to be most suitable for ensuring that there will be an adequate number of cases to analyze and that

recall errors will not be too serious. Table 6.11 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 were taken to a health facility or provider, by selected background characteristics.

Acute Respiratory Infection

Acute respiratory infection (ARI), 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 14 percent of children under age three years in Punjab suffered from acute respiratory infection (cough accompanied by short, rapid breathing) at some time during the two-week period before the survey.

Table 6.11 shows that ARI was somewhat more common among boys than girls, among children living in urban areas than rural areas, and among children at birth order one than at other birth orders. ARI was also more common among children age 6–11 months (22 percent), Muslim children (22 percent), and children whose mothers are literate but have not completed middle school (20 percent). By contrast, children age 1–5 months and children whose mothers have completed at least high school are least likely to have had ARI in the two weeks preceding the survey (both 10 percent). The small range of variation in the prevalence of ARI by most socioeconomic characteristics, however, indicates that respiratory infections affect children of all strata irrespective of their socioeconomic background.

Table 6.11 also shows the percentage of children suffering from ARI symptoms in the two weeks before the survey who were taken to a health facility or provider. Ninety-four percent of children received advice or treatment from a health facility or health provider when ill with ARI, and this percentage is also above 90 percent for most subgroups of children suffering from ARI. The only exceptions are children of illiterate mothers, children belonging to the scheduled castes, and children from households with a medium standard of living. Eighty-five percent or more of even these children, however, were taken to a health facility or provider. Notably, this percentage is somewhat higher for girls than boys.

Fever

Fever is the most common of the three conditions examined in Table 6.11, with 25 percent of children suffering from fever during the two weeks preceding the survey. The prevalence of fever is considerably lower among children age 1–5 months (14 percent) than among older children (23–33 percent). The occurrence of fever does not vary much by most background characteristics. Indeed, fever is less prevalent (17–19 percent) only among children of mothers who have completed at least high school, Muslim children, and children belonging to other backward classes.

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

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, Punjab, 1998–99

Background characteristic	Percentage of children suffering in past two weeks from:				Number of children	Percentage with ARI taken to a health facility or provider	Number of children with ARI
	Cough accompanied by fast breathing (ARI)	Fever	Diarrhoea				
			Any diarrhoea ¹	Diarrhoea with blood			
Age of child							
1–5 months	9.7	13.7	10.8	0.6	152	*	15
6–11 months	22.1	33.3	11.8	0.0	119	(92.0)	26
12–23 months	14.4	29.7	10.4	0.4	259	(91.2)	37
24–35 months	13.8	23.1	8.0	1.0	312	(97.5)	43
Sex of child							
Male	16.2	26.2	10.3	0.5	437	92.4	71
Female	12.5	23.4	9.2	0.7	405	95.7	50
Birth order							
1	16.2	25.4	6.7	0.4	266	(92.5)	43
2	13.4	22.0	12.1	1.2	243	(93.4)	33
3	14.4	27.3	10.8	0.6	174	(95.6)	25
4+	13.1	25.6	10.3	0.0	159	*	21
Residence							
Urban	15.9	21.6	11.0	0.4	197	(100.0)	31
Rural	14.0	25.8	9.4	0.7	645	91.6	90
Mother's education							
Illiterate	14.9	27.3	10.9	0.6	335	(84.8)	50
Literate, < middle school complete	19.6	29.4	10.6	1.2	163	(100.0)	32
Middle school complete	14.5	23.9	10.0	0.0	101	*	15
High school complete and above	10.3	18.8	7.7	0.4	243	(100.0)	25
Religion							
Hindu	15.8	24.6	11.6	0.9	341	96.0	54
Muslim	(21.6)	(17.6)	(14.3)	(0.0)	28	*	6
Sikh	13.5	25.5	8.3	0.5	457	93.0	62
Caste/tribe							
Scheduled caste	12.9	27.9	10.4	0.7	311	(86.7)	40
Other backward class	12.3	16.5	12.7	0.7	154	*	19
Other ²	16.2	25.6	7.8	0.5	375	98.2	61
Standard of living index							
Low	(12.2)	(24.3)	(14.2)	(0.0)	52	*	6
Medium	15.2	28.7	10.9	0.9	372	88.6	57
High	13.9	21.3	8.1	0.5	413	98.1	58
Purification of water							
Boiling	(15.1)	(27.0)	(22.0)	(4.0)	27	*	4
Nothing	14.6	25.2	9.4	0.5	785	93.4	114
Total	14.4	24.9	9.8	0.6	842	93.8	121

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 belonging to other religions and to the scheduled tribes, children living in households using other means 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 unweighted cases

¹Includes diarrhoea with blood

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

proportion of all child deaths, the Government of India has launched the Oral Rehydration Therapy Programme as one of its priority activities for child survival. One major goal of this programme is to increase awareness among mothers and communities about the causes and treatment of diarrhoea. Oral rehydration salt (ORS) packets are made widely available and mothers are taught how to use them. NFHS-2 asked mothers of children less than three years old a series of questions about episodes of diarrhoea suffered by their children in the two weeks before the survey, including questions on feeding practices during diarrhoea, the treatment of diarrhoea, and their knowledge and use of ORS.

Table 6.11 shows that 10 percent of children under age three suffered from diarrhoea in the two-week period before the survey. There are seasonal variations in the prevalence of diarrhoea, however, so the percentages shown in Table 6.11 cannot be assumed to reflect the situation throughout the year.

As in the case of ARI and fever, there is also not much variation in the prevalence of diarrhoea by background characteristics. Notably however, the prevalence of diarrhoea is slightly lower among children age 24–35 months than younger children. Prevalence is also lower among children at birth order one, children whose mothers have completed at least high school, Sikh children, children who do not belong to the scheduled castes, scheduled tribes, or other backward classes, and children from households with a high standard of living. One percent of all children age 1–35 months (6 percent of children who suffered from diarrhoea in the two weeks preceding the survey) had diarrhoea with blood, a symptom of dysentery.

Table 6.12 shows that 82 percent of mothers with births during the three years preceding the survey know about ORS packets, up from 51 percent for mothers who gave birth during the three years before NFHS-1, and significantly higher than the national average of 62 percent. As expected, knowledge of ORS packets is considerably higher among urban mothers than rural mothers, and among educated mothers than illiterate mothers. Mothers belonging to the scheduled castes are less likely than mothers belonging to the other backward classes and those not belonging to the scheduled castes, scheduled tribes, or other backward classes to know about ORS. Knowledge is also lower among the youngest mothers (age 15–19) and oldest mothers (age 35–49) than mothers at other ages. Knowledge of ORS packets is much lower among mothers who are not regularly exposed to any mass media (65 percent) than among mothers who are exposed to any media (87 percent) or mothers in any other population group.

In order to assess mothers' knowledge of children's need for extra fluids during episodes of diarrhoea, all mothers of children born in the past three years were asked: 'When a child has diarrhoea should he/she be given less to drink than usual, about the same amount, or more than usual?' Table 6.12 shows the responses of mothers to this question by selected background characteristics. In Punjab, 47 percent of mothers correctly report that children should be given more to drink than usual during an episode of diarrhoea, but, contrary to the standard recommendation, 20 percent report that children should be given less. This suggests that mothers in Punjab need more education about the proper management of diarrhoea. The proportion reporting correctly that children with diarrhoea should be given more to drink is lower among the youngest (age 15–19) and oldest (age 35–49) mothers, rural mothers, less educated or illiterate mothers, mothers belonging to the scheduled castes or to other backward classes, and Hindu mothers.

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, Punjab, 1998–99

Background characteristic	Percentage who know about ORS packets	Reported quantity to be given to drink				Total percent	Percentage who know two or more signs for medical treatment of diarrhoea ¹	Number of mothers
		Less	Same	More	Don't know/missing			
Age								
15–19	(69.7)	(18.4)	(30.2)	(45.3)	(6.1)	100.0	(33.0)	35
20–24	82.8	16.6	27.4	50.1	6.0	100.0	38.0	288
25–29	84.0	20.9	30.3	45.7	3.2	100.0	42.0	298
30–34	79.6	23.4	28.2	45.2	3.1	100.0	32.8	105
35–49	(72.0)	(23.2)	(30.3)	(43.0)	(3.4)	100.0	(36.9)	31
Residence								
Urban	93.3	24.3	23.8	51.4	0.5	100.0	38.1	182
Rural	78.1	18.1	30.5	45.8	5.6	100.0	38.7	575
Education								
Illiterate	69.6	21.3	31.4	40.2	7.1	100.0	33.7	289
Literate, < middle school complete	83.8	21.7	31.1	43.8	3.5	100.0	42.2	157
Middle school complete	84.7	19.8	28.4	48.1	3.7	100.0	41.0	81
High school complete and above	94.7	15.9	24.3	57.9	1.8	100.0	41.3	230
Religion								
Hindu	80.6	19.3	31.2	44.4	5.0	100.0	40.2	302
Sikh	83.7	19.9	25.9	50.3	3.8	100.0	38.6	417
Caste/tribe								
Scheduled caste	74.3	20.6	30.2	44.3	4.9	100.0	38.2	264
Other backward class	81.6	20.8	31.8	41.3	6.0	100.0	37.2	139
Other ²	87.4	18.4	26.8	51.4	3.4	100.0	39.5	353
Exposure to media								
Exposed to any media	86.6	17.4	31.4	47.8	3.5	100.0	39.0	589
Watches television weekly	86.6	17.6	31.2	47.5	3.7	100.0	38.3	557
Listens to radio weekly	90.4	15.8	32.7	48.4	3.0	100.0	39.9	243
Visits cinema/theatre monthly	(96.9)	(22.3)	(20.2)	(57.5)	(0.0)	100.0	(35.2)	35
Reads newspaper/magazine weekly	94.6	17.8	22.1	58.5	1.6	100.0	43.7	203
Not regularly exposed to any media	65.0	27.2	20.2	45.0	7.6	100.0	37.1	169
Total	81.8	19.6	28.9	47.2	4.4	100.0	38.6	757

Note: Total includes 23 Muslim mothers, 14 mothers belonging to 'other' religions, 1 mother belonging to a scheduled tribe, and 1 mother with missing information on religion, who are not shown separately.

() Based on 25–49 unweighted cases

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

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

To assess whether mothers are aware of one or more signs associated with diarrhoea which suggest the need for medical treatment, mothers were also asked: 'When a child is sick with diarrhoea what signs of illness would tell you that he or she should be taken to a health facility or health worker?' All answers given by the respondent were recorded. The signs warranting medical treatment include repeated watery stools, repeated vomiting, blood in the stools, fever, marked thirst, not eating or drinking well, getting sicker or very sick, and not

getting better. Table 6.12 shows that only about two-fifths of mothers (39 percent) were able to name two or more signs of diarrhoea that indicate that a child with diarrhoea should be given medical treatment. This percentage is particularly low, at 33–34 percent, among illiterate women, women age 15–19, and women age 30–34, but is never higher than 44 percent for any subgroup of the population. This suggests a need for further educating mothers about children’s diarrhoea so that they are better able to recognize the signs of diarrhoea for which a health provider should be consulted.

Among the very small number of children in the sample in Punjab who suffered from diarrhoea during the two weeks preceding NFHS-2, 92 percent were taken to health facility or provider and 42 percent were treated with a solution made from ORS packets, up from 24 percent at the time of NFHS-1 (data not shown). Forty-two percent received increased fluids when sick with diarrhoea, 21 percent were given gruel, and 7 percent were given a homemade sugar-salt-water solution. Overall, about one-third of children who had diarrhoea in the two weeks preceding the survey did not receive any oral rehydration therapy (data not shown).

The use of antibiotics and other antidiarrhoeal drugs is not generally recommended for the treatment of childhood diarrhoea. Yet 78 percent of the children who had diarrhoea in the two weeks before NFHS-2 were treated with pills or syrup, and 29 percent received an injection (data not shown). These figures indicate poor knowledge about the proper treatment of diarrhoea not only among mothers but also among health-care providers. These results 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, and discourages the use of drugs to treat childhood diarrhoea. Eleven percent of children with diarrhoea did not receive any treatment at all.

Table 6.13 Source of ORS packet	
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, Punjab, 1998–99	
Source	Percent
Public medical sector	(36.9)
Government/municipal hospital	(10.7)
Government dispensary	(20.1)
CHC/rural hospital/PHC	(6.1)
Private medical sector	(60.1)
Private hospital/clinic	(29.2)
Private doctor	(25.9)
Pharmacy/drugstore	(5.0)
Shop	(3.0)
Total percent	100.0
Number of children treated with ORS	35
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. CHC: Community health centre; PHC: Primary Health Centre () Based on 25–49 unweighted cases	

Table 6.13 shows the percent distribution of children who were treated with ORS for diarrhoea in the two weeks before NFHS-2 by the source of the ORS packets. Given the small number of cases of children with diarrhoea who were treated with ORS, meaningful comparisons cannot be made. Nonetheless, the table does suggest that the private medical sector is the major source of ORS packets.

6.7 HIV/AIDS

Acquired Immune Deficiency Syndrome (AIDS) is an illness caused by the HIV virus, which weakens the immune system and leads to death through secondary infections such as tuberculosis or pneumonia. The virus is generally transmitted through sexual contact, through 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. The Population Division of the United Nations has estimated that India currently has about 3.5 million adults living with HIV/AIDS, second in number only to South Africa (United Nations, 2001). 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 6.14 shows the percentage of women who have heard about AIDS by background characteristics. Only fifty-five percent of women in Punjab have ever heard of AIDS, higher than the national level of 40 percent. NFHS-1 did not include AIDS-awareness questions for Punjab, so it is not possible to assess the trend in AIDS awareness between NFHS-1 and NFHS-2.

Knowledge of AIDS does not vary much by women's age, but there are substantial differentials for all other background characteristics. Eighty-four percent of urban women in Punjab have heard about AIDS, compared with only 42 percent of rural women. Knowledge of AIDS increases from only 19 percent among illiterate women to 96 percent for women who have completed at least high school. Similarly, knowledge of AIDS increases from 7 percent among women living in households with a low standard of living to 72 percent among women in households with a high standard of living. Muslim women are less likely to have heard about AIDS than other women. Two-thirds of women not belonging to the scheduled castes, scheduled tribes, or other backward classes know about AIDS, compared with about one-third of scheduled-caste women and half of the women from other backward classes. The effect of media exposure on knowledge of AIDS is very powerful. Only 12 percent of women who are not regularly exposed to the radio, television, cinema, theatre, or print media say that they have heard about AIDS, compared with more than 90 percent of women who read a newspaper or magazine at least once a week or go to the cinema or theatre at least once a month.

Table 6.14 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, Punjab, 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	52.0	532	27.2	93.6	2.8	26.8	21.1	1.5	0.3	21.4	0.3	0.6	277
25-34	56.5	1,115	27.8	94.1	5.7	36.4	21.2	3.4	0.6	22.8	0.6	2.1	630
35-49	54.0	1,149	21.6	95.5	2.6	35.4	25.6	3.4	0.9	26.9	0.7	4.5	620
Residence													
Urban	84.1	862	24.8	97.6	6.9	49.7	30.3	3.4	1.1	24.1	1.2	4.2	724
Rural	41.5	1,934	25.5	91.8	1.2	20.3	16.4	2.8	0.3	24.2	0.0	1.6	803
Education													
Illiterate	18.9	1,084	13.5	86.3	0.4	0.4	4.3	2.9	0.0	30.0	0.0	1.4	205
Literate, < middle school complete	53.4	593	24.3	93.3	0.6	12.0	16.4	2.9	0.0	27.8	0.0	1.2	316
Middle school complete	73.0	294	22.4	92.8	1.3	24.0	26.7	2.8	0.0	21.6	0.0	1.3	214
High school complete and above	95.8	826	29.3	97.7	6.9	54.7	29.4	3.3	1.3	21.9	1.1	4.3	791
Religion													
Hindu	58.7	1,125	22.4	95.9	5.1	34.5	24.5	2.2	0.8	24.1	0.7	2.4	660
Muslim	43.1	66	(27.8)	(93.0)	(9.3)	(24.6)	(12.2)	(0.0)	(0.0)	(40.7)	(0.0)	(3.0)	28
Sikh	52.0	1,556	27.4	94.0	2.7	34.5	22.0	3.3	0.6	23.0	0.5	2.8	809
Other	(63.0)	47	(24.0)	(79.3)	(6.0)	(29.8)	(23.9)	(19.3)	(0.0)	(43.1)	(0.0)	(12.0)	30
Caste/tribe													
Scheduled caste	35.0	781	20.3	90.6	2.0	19.8	16.6	3.2	0.0	27.4	0.0	2.3	273
Other backward class	49.6	453	29.0	95.0	1.6	24.5	21.0	3.5	0.5	27.0	0.0	1.7	225
Other ¹	66.0	1,560	25.7	95.5	4.9	40.2	25.1	2.9	0.9	22.7	0.8	3.2	1,029

Contd...

Table 6.14 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, Punjab, 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	7.3	113	*	*	*	*	*	*	*	*	*	*	8
Medium	29.7	989	16.3	86.3	0.7	9.5	10.9	3.3	0.0	27.7	0.0	0.9	294
High	72.3	1,681	27.5	96.9	4.8	40.4	26.1	3.1	0.8	22.9	0.7	3.4	1,216
Exposure to mass media													
Exposed to any media	64.1	2,292	25.7	96.4	4.1	35.4	23.6	3.1	0.7	22.7	0.6	2.9	1,469
Listens to radio weekly	76.1	989	36.5	97.1	4.7	39.3	24.6	2.9	1.0	25.1	0.6	3.9	753
Watches television weekly	65.8	2,162	25.5	97.5	4.2	35.6	23.6	3.1	0.7	22.5	0.6	2.8	1,423
Goes to cinema/theatre monthly	97.7	159	32.0	97.6	18.0	71.5	31.9	2.8	2.8	23.2	0.6	5.6	155
Reads newspaper/magazine weekly	90.7	878	26.8	97.5	7.1	57.2	31.0	3.6	1.3	22.6	0.9	4.5	797
Not regularly exposed to any media	11.5	504	12.4	46.9	0.0	5.5	6.7	3.6	0.0	62.6	0.0	0.0	58
Total	54.6	2,796	25.2	94.6	3.9	34.2	23.0	3.1	0.7	24.2	0.6	2.8	1,527
Note: Total includes a small number of women belonging to the scheduled tribes and women with missing information on religion and the standard of living index, who are not shown separately. () Based on 25–49 unweighted cases *Percentage not shown; based on fewer than 25 unweighted cases †Not belonging to a scheduled caste, a scheduled tribe, or an other backward class													

Source of Knowledge about AIDS

As part of its AIDS prevention programme, the Government of India has been using mass media, especially electronic media, extensively to create awareness among the general public about AIDS and its prevention. NFHS-2 asked women who had heard of AIDS about their sources of AIDS information. Table 6.14 shows the percentage of women who have heard about AIDS from specific sources among women who have heard of AIDS. Television is by far the most important source of information about AIDS among ever-married women in Punjab. Ninety-five percent of women who know about AIDS received information from television. Other important sources of information are newspapers or magazines (34 percent), radio (25 percent), and posters or hoardings (23 percent). One-fourth of women have heard about AIDS from friends or relatives; by contrast, only 3 percent report that they received information about AIDS from a health worker.

Television is the most important source of information about AIDS for women in all the subgroups of population shown in Table 6.14 except women who are not regularly exposed to any media. For these women, friends and relatives are the most important source of AIDS information. For illiterate women too, friends and relatives tend to be an important source of AIDS information, but even among illiterate women, 86 percent received information on AIDS from television.

Knowledge of Ways to Avoid AIDS

Respondents who have heard of AIDS were asked if a person can do anything to avoid becoming infected. Those who reported that something can be done were asked what a person can do to avoid AIDS. Table 6.15 shows the percentage of ever-married women who know of no way to avoid AIDS and the percentages who report that AIDS can be avoided in specific ways, by selected background characteristics.

Among women who have heard about AIDS, 32 percent do not know of any way to avoid infection, compared with 33 percent for India as a whole. Lack of knowledge of ways to avoid becoming infected with AIDS decreases sharply with increasing levels of education and household standard of living, and is particularly high among women not regularly exposed to mass media. Rural women are less likely to know of ways to avoid infection than urban women, as are scheduled-caste women compared with women who do not belong to a scheduled caste, a scheduled tribe, or an other backward class.

Among women who report that something can be done to prevent AIDS, the most commonly mentioned ways of avoiding AIDS are having only one sex partner (40 percent), using condoms (35 percent), and avoiding injections or using clean needles (30 percent). About one-quarter each of respondents also mention abstaining from sex and avoiding blood transfusions. Eleven percent of women mention avoiding sex with commercial sex workers as a way of avoiding AIDS. Four percent mention avoiding IV drug use and 2 percent mention avoiding sex with homosexuals. The percentage reporting most of the specific ways of avoiding AIDS is lower among rural than among urban women and among women not regularly exposed to any mass media than other women. The level of education and the household standard of living are strongly and positively associated with women mentioning most ways of avoiding AIDS. The use of condoms as a way of avoiding AIDS is mentioned most often by women who

Table 6.15 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, Punjab, 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	25.7	32.3	42.3	9.1	1.5	18.4	24.1	4.3	5.6	32.6	277
25-34	24.0	39.5	40.1	11.6	1.1	25.5	29.9	4.3	5.0	28.9	630
35-49	26.3	31.2	39.5	10.3	2.6	23.0	32.5	3.5	5.8	35.0	620
Residence											
Urban	32.3	42.5	45.4	13.5	2.8	29.1	39.9	3.8	5.6	23.9	724
Rural	18.8	27.9	35.7	8.0	0.9	17.9	20.9	4.1	5.3	39.4	803
Education											
Illiterate	13.4	10.9	31.4	8.5	1.0	11.4	13.7	0.5	3.9	52.0	205
Literate, < middle school complete	19.3	23.7	33.5	7.7	0.3	15.8	22.6	1.6	6.6	41.9	316
Middle school complete	19.3	31.2	38.6	11.3	1.5	19.9	22.7	5.9	5.1	34.7	214
High school complete and above	32.3	46.4	45.8	12.2	2.7	30.1	39.0	5.3	5.4	22.2	791
Religion											
Hindu	27.0	35.0	41.5	9.8	1.4	23.0	31.6	3.9	6.0	32.1	660
Muslim	(37.0)	(46.1)	(36.7)	(27.6)	(3.1)	(21.5)	(46.1)	(3.7)	(9.0)	(16.3)	28
Sikh	23.5	34.0	39.1	10.2	2.1	23.5	27.6	4.2	5.1	32.8	809
Other	(20.8)	(42.9)	(49.4)	(25.1)	(3.0)	(21.9)	(39.8)	(0.0)	(0.0)	(26.2)	30
Caste/tribe											
Scheduled caste	18.9	24.4	38.6	11.1	1.5	14.4	22.0	2.6	6.7	40.3	273
Other backward class	24.1	30.3	37.6	8.2	1.2	19.7	27.8	2.6	6.2	33.0	225
Other ¹	27.2	38.5	41.3	11.0	2.0	26.3	32.5	4.7	4.9	29.7	1,029

Contd...

Table 6.15 Knowledge about avoidance of AIDS (contd.)

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

Background characteristic	Percentage who believe AIDS can be avoided by:										Number of women
	Abstaining from sex	Using condoms	Having only one sex partner	Avoiding sex with commercial sex workers	Avoiding sex with homo-sexuals	Avoiding blood transfusions	Avoiding injections/using clean needles	Avoiding IV drug use	Other ways	Knows no way to avoid AIDS	
Standard of living index											
Medium	18.0	21.3	33.3	9.6	0.7	11.7	17.7	2.1	6.4	44.5	294
High	26.8	38.2	42.0	10.9	2.1	26.2	33.2	4.5	5.2	28.9	1,216
Exposure to mass media											
Exposed to any media	25.6	35.5	40.7	10.8	1.9	23.9	30.8	4.1	5.5	31.1	1,469
Listens to radio weekly	31.1	40.8	45.7	13.8	2.8	32.2	38.4	4.1	5.2	22.9	753
Watches television weekly	26.0	36.2	41.3	10.8	1.9	24.2	31.4	4.3	5.6	30.5	1,423
Goes to cinema/theatre monthly	41.1	59.3	39.4	9.0	2.3	40.6	52.7	4.0	6.6	18.3	155
Reads newspaper/magazine weekly	32.8	45.3	45.7	14.0	2.7	30.9	40.6	5.6	5.9	21.3	797
Not regularly exposed to any media	15.9	16.1	28.1	7.1	0.0	4.8	6.7	0.0	3.0	56.1	58
Total	25.2	34.8	40.3	10.6	1.8	23.2	29.9	4.0	5.4	32.1	1,527
Note: Total includes 8 women from households with a low standard of living index and 9 women with missing information on the standard of living index, who are not shown separately.											
() Based on 25-49 unweighted cases											
Not belonging to a scheduled caste, a scheduled tribe, or an other backward class											

go to the cinema or theatre monthly, Muslim women, women who have completed at least high school, women who read a newspaper or magazine weekly, urban women, and women who listen to the radio weekly. Thus knowledge about AIDS and the ways to avoid it is still mainly reaching the more privileged and educated women and women who are exposed to different types of media. Innovative programs need to be developed to educate the more disadvantaged women and women not regularly exposed to the media about the disease, how it is spread, and the ways to avoid it.

CHAPTER 7

NUTRITION AND THE PREVALENCE OF ANAEMIA

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

7.1 Women's Food Consumption

The consumption of a wide variety of nutritious foods is important for 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 present in milk and milk products, as also in egg yolks (Gopalan et al., 1996).

NFHS-2 asked ever-married women age 15–49 how often they consume various types of food (daily, weekly, occasionally, or never). The diet of women in Punjab is rich in vegetables (including green, leafy vegetables), pulses or beans, and milk or curd. Women consume vegetables (other than green, leafy vegetables) most often (Table 7.1). More than 9 out of 10 women eat these vegetables every day. Eighty-two percent of women consume pulses or beans daily, 80 percent consume milk or curd daily, and 74 percent consume green, leafy vegetables daily. The consumption of milk or curd is much higher in Punjab than in all other states with the exception of Haryana: in Punjab, only 9 percent of women do not consume milk at least once a week compared with 45 percent in India as a whole. Fruits are eaten at least once a week by about half of the women, but only 18 percent of women eat fruits daily. Nearly three-fourths of women in Punjab never eat chicken, meat, or fish, and the majority of those who do eat these foods, do so only occasionally. None of the women eat chicken, meat, or fish daily and only 4 percent eat these foods at least once a week. Eggs are consumed slightly more often than chicken, meat, or fish. Eleven percent of women eat eggs at least once a week, but 69 percent of women never eat eggs.

Table 7.2 shows that almost all women in Punjab, irrespective of their background characteristics, consume pulses or beans and vegetables (including green, leafy vegetables) at least once a week. However, there are interesting differentials in the consumption of the other types of foods by selected background characteristics. The youngest women (age 15–24) are somewhat less likely than older women to consume milk or curd and fruits at least once a week. Eggs are consumed more often by women age 25–34 than by younger or older women. Women in urban areas are much more likely than women in rural areas to include every type of food in

Table 7.1 Women's food consumption

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

Type of food	Frequency of consumption				Total percent
	Daily	Weekly	Occasionally	Never	
Milk or curd	80.1	11.0	7.4	1.4	100.0
Pulses or beans	81.7	17.5	0.8	0.0	100.0
Green, leafy vegetables	74.0	25.2	0.9	0.0	100.0
Other vegetables	92.2	7.3	0.5	0.0	100.0
Fruits	17.8	32.9	48.8	0.4	100.0
Eggs	1.8	9.1	20.6	68.5	100.0
Chicken, meat, or fish	0.0	3.6	23.8	72.6	100.0

their diet, particularly fruits, eggs, and chicken, meat, or fish. For example, only 38 percent of rural women consume fruits at least weekly compared with 80 percent of urban women. The consumption of fruits and milk or curd increases with education, but even among illiterate women the large majority consume milk or curd at least weekly and almost one-third consume fruits at least weekly. The consumption of eggs and chicken, meat, or fish is higher among women who have completed at least high school (6 percent) than among women at other levels of education. Muslim women are less likely than Hindu or Sikh women to consume milk or curd, but are much more likely to consume eggs and chicken, meat, or fish. Only 2–3 percent of Sikhs and Hindus eat chicken, meat or fish at least once a week compared with 39 percent of Muslims. The diet of women from the scheduled castes is particularly deficient in fruits and scheduled-caste women are also somewhat less likely than women from other backward classes and women not belonging to the scheduled castes, scheduled tribes, and other backward classes to consume milk or curd; however, scheduled-caste women are as likely as women from these other groups to eat eggs. As expected, poverty has a strong negative effect on the consumption of different types of nutritious foods. Women in households with a low standard of living are much less likely than other women to consume milk or curd, fruits, eggs, and chicken, meat, or fish: only 64 percent of these women consume milk or curd, 13 percent eat fruits, 4 percent eat eggs, and none of them eat chicken, meat, or fish at least once a week.

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 is usually considered to be in the range of 140–150 centimetres (cm). NFHS-2 found a mean height for women in Punjab of 154.5 cm with the maximum being 155.5 cm and the minimum being 151.1 cm. Sikh women are the tallest, on average, among all

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, Punjab, 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	88.7	99.2	99.0	99.8	46.8	9.6	3.3	532
25–34	91.6	99.3	99.0	99.3	51.3	13.0	3.8	1,115
35–49	91.8	99.2	99.4	99.5	52.1	9.4	3.6	1,149
Residence								
Urban	94.8	99.8	99.8	99.7	80.1	22.2	10.0	862
Rural	89.5	99.0	98.8	99.4	37.6	5.8	0.8	1,934
Education								
Illiterate	83.8	98.5	98.6	99.5	30.9	7.8	2.5	1,084
Literate, < middle school complete	92.9	99.7	99.1	99.3	44.4	8.6	2.8	593
Middle school complete	96.3	99.3	99.6	99.6	57.3	7.8	2.4	294
High school complete and above	97.6	99.9	99.6	99.6	79.0	17.5	6.2	826
Religion								
Hindu	89.2	99.3	99.3	99.5	56.5	9.9	2.9	1,125
Muslim	82.8	95.1	95.5	100.0	56.4	46.8	38.6	66
Sikh	92.9	99.4	99.2	99.4	46.4	8.9	2.1	1,556
Other	(88.1)	(97.6)	(97.6)	(100.0)	(49.6)	(48.5)	(22.5)	47
Caste/tribe								
Scheduled caste	83.7	98.8	98.8	99.6	37.9	11.5	3.2	781
Other backward class	89.7	99.1	98.9	99.3	48.9	10.8	5.9	453
Other ¹	95.3	99.5	99.4	99.5	57.7	10.6	3.2	1,560
Standard of living index								
Low	64.1	99.0	97.2	99.1	13.2	3.8	0.0	113
Medium	84.1	98.5	98.8	99.4	32.9	8.4	2.3	989
High	97.1	99.7	99.4	99.5	63.7	12.7	4.6	1,681
Total	91.1	99.2	99.1	99.5	50.7	10.8	3.6	2,796

Note: Total includes 2 scheduled-tribe women and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.
 () Based on 25–49 unweighted cases
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

population subgroups. Only 4 percent of women in Punjab are below 145 cm in height, compared with 13 percent of women in India as a whole. The likelihood of being less than 145 cm is relatively high only for Muslim women (8 percent), and declines slightly with education and the household standard of living. Overall, however, there is little variation in the proportion of women who are 145 cm or less in height by background characteristics.

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 and women who had given birth during the two months preceding the survey. The mean BMI for women in Punjab is 23, compared with a national average of 20. Chronic energy deficiency is usually indicated by a BMI of less than 18.5. Only 17 percent of women in Punjab suffer from chronic energy deficiency compared with

Table 7.3 Nutritional status of women

Among ever-married women, mean height, percentage with height below 145 cm, mean body mass index (BMI), and percentage with BMI below 18.5 kg/m² by selected background characteristics, Punjab, 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	154.6	3.8	84	20.0	29.1	76
20–24	154.1	6.4	428	20.9	25.8	360
25–29	154.3	3.3	554	21.8	22.7	498
30–34	154.8	3.6	532	23.2	14.1	517
35–49	154.6	3.9	1,108	24.4	11.9	1,107
Marital status						
Currently married	154.5	4.3	2,588	23.0	17.1	2,441
Not currently married	155.5	0.7	118	23.7	14.1	118
Residence						
Urban	154.0	5.0	833	24.9	9.2	804
Rural	154.7	3.7	1,873	22.2	20.5	1,755
Education						
Illiterate	154.1	4.6	1,051	21.6	24.6	997
Literate, < middle school complete	154.4	4.6	571	23.2	14.5	540
Middle school complete	154.5	3.9	291	23.2	15.5	269
High school complete and above	155.1	3.1	793	24.7	9.1	752
Religion						
Hindu	153.5	5.3	1,083	23.3	17.2	1,017
Muslim	153.3	7.6	63	23.2	9.8	55
Sikh	155.4	3.2	1,511	22.8	16.9	1,442
Other	(152.8)	(0.0)	47	(23.0)	(17.1)	42
Caste/tribe						
Scheduled caste	153.8	4.9	768	21.4	26.2	718
Other backward class	153.5	4.9	435	22.7	18.1	401
Other ²	155.1	3.5	1,500	23.9	11.9	1,438
Work status						
Employed by someone else	154.7	4.5	218	24.2	14.1	209
Self-employed	(151.1)	(6.6)	26	(26.8)	(14.9)	26
Not worked in past 12 months	154.5	4.0	2,450	22.9	17.1	2,311
Standard of living index						
Low	153.3	5.8	110	19.7	39.4	103
Medium	153.7	4.9	964	21.6	24.3	897
High	155.1	3.6	1,619	24.1	11.1	1,546
Total	154.5	4.1	2,706	23.0	16.9	2,559

Note: Total includes a small number of women belonging to the scheduled tribes, women working in a family farm/business, and women with missing information on religion and the standard of living index, who are not shown separately.

() Based on 25–49 unweighted cases

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

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

36 percent in India as a whole. However, women in Punjab are more likely than women in all other states except Delhi to be overweight (BMI>25) or obese (BMI>30) (International Institute for Population Sciences and ORC Macro, 2000). Thirty percent of women in Punjab are overweight and 9 percent are obese, compared with 11 percent and 2 percent, respectively, in

India as a whole. Chronic energy deficiency and obesity are two ends of the malnutrition scale, and these data suggest that women in Punjab, although less likely than most other women in India to be undernourished are, nonetheless, at an increased risk of malnutrition in the form of obesity.

Chronic energy deficiency varies considerably by women's background characteristics. Rural women (21 percent) are more than twice as likely as urban women (9 percent) to have a BMI of less than 18.5. Nutritional deficiency decreases steadily with the age of women: the youngest women (age 15–19) are almost two and a half times as likely as the oldest women (age 35–49) to have chronic energy deficiency. Nutritional deficiency is much higher than average among illiterate women and scheduled-caste women: about one in four women who are illiterate or belong to the scheduled castes have a BMI of less than 18.5. Muslim women are much less likely than Sikh or Hindu women to suffer from chronic energy deficiency. Women who have worked in the 12 months preceding the survey are less likely to have nutritional problems than women who have not worked, but the differences by employment status are small. Chronic energy deficiency varies strongly with the household standard of living: almost 4 out of 10 women from households with a low standard of living have a low BMI compared with about 1 out of 10 women from households with a high standard of living.

7.3 Anaemia Among Women

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

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

In India, under the Government's Reproductive and Child Health Programme, iron and folic acid tablets are provided to pregnant women in order to prevent anaemia during pregnancy. Because anaemia is such a serious health problem in India, NFHS-2 undertook direct measurement of the haemoglobin levels of all ever-married women age 15–49 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

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

six months old), which is drawn into a cuvette and then inserted into a portable, battery-operated instrument.² In less than one minute, the haemoglobin concentration is indicated on a digital read-out.

Before the anaemia testing was undertaken in a household, the health investigator read a detailed informed consent statement to the respondent, informing her about anaemia, describing the procedure to be followed for the test, and emphasizing the voluntary nature of the test. She was then asked whether or not she would consent to have the test done for herself and her young children, if any. The health investigator then signed the questionnaire at the bottom of the statement to indicate that it had been read to the respondent and recorded her agreement or lack of agreement to the testing. If the test was conducted, at the end of the test the respondent was given a written record of the results for herself and each of her young children. In addition, the health investigator described to her the meaning of the results and advised her if medical treatment was necessary. In cases of severe anaemia, the respondent was read an additional statement asking whether or not she would give her permission for the survey organization to inform a local health official about the problem. For each Primary Sampling Unit, a local health 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 grams per decilitre (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 women who smoke since they require more haemoglobin in their blood³ (Centers for Disease Control and Prevention, 1998).

In Punjab, haemoglobin levels were tested for 93 percent of eligible women (see Table B.3 in Appendix B). Overall, 41 percent of women in Punjab have some degree of anaemia,⁴ lower than the level for India as a whole (52 percent). Twenty-eight percent of women are mildly anaemic, 12 percent are moderately anaemic, and 1 percent are severely anaemic. Although there are some differences in the prevalence of anaemia by background characteristics, at least 37 percent of women in every population group have some degree of anaemia. Anaemia declines with women's age from 53 percent for women age 15–19 to 41–44 for women age 20–34 and 38 percent for women age 35–49. Rural women (43 percent) are only slightly more likely than urban women (39 percent) to be anaemic. Anaemia decreases slightly with education; nonetheless, 38 percent of even the women who have at least completed high school are anaemic. Differences in anaemia by standard of living are pronounced. Fifty-three percent of women from households with a low standard of living are anaemic compared with 38 percent of women from households with a high standard of living. By religion, the prevalence of anaemia is highest for Muslim women (51 percent) and lowest for Sikh women (39 percent). Women from the scheduled castes (48 percent) are more likely to be anaemic than women from the other

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

³An adjustment for altitude was not needed in Punjab, since all the sample PSUs in the state are at an altitude below 1,000 metres.

⁴Anaemia rates that are not adjusted for smoking are the same as the corresponding adjusted rates. This is to be expected since, in Punjab, less than 1 percent (see Table 2.12) of women smoke.

backward classes (42 percent) and women who do not belong to a scheduled caste, scheduled tribe, or other backward class (38 percent).

The prevalence of anaemia is higher for breastfeeding women (51 percent) than for pregnant women and women who are not pregnant and not breastfeeding. Since anaemia is often considered to be particularly problematic for pregnant women, it is noteworthy that pregnant women have levels of anaemia similar to those for women who are not pregnant and not

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, Punjab, 1998–99					
Background characteristic	Percentage of women with any anaemia	Percentage of women with:			Number of women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age					
15–19	53.1	37.2	15.9	0.0	81
20–24	43.9	29.2	14.2	0.5	410
25–29	44.0	30.7	12.4	1.0	537
30–34	41.3	28.2	12.5	0.6	513
35–49	38.3	26.3	11.2	0.7	1,073
Marital status					
Currently married	41.4	28.3	12.4	0.7	2,502
Not currently married	40.7	30.2	9.8	0.7	112
Residence					
Urban	39.0	28.7	9.9	0.4	805
Rural	42.5	28.2	13.4	0.8	1,809
Education					
Illiterate	44.9	29.2	14.6	1.1	1,017
Literate, < middle school complete	40.6	27.5	12.5	0.6	551
Middle school complete	40.4	28.3	12.1	0.0	287
High school complete and above	37.6	28.0	9.1	0.5	759
Religion					
Hindu	43.8	29.8	13.0	1.0	1,038
Muslim	51.2	33.0	16.5	1.7	60
Sikh	39.0	27.2	11.3	0.5	1,469
Other	(49.4)	(31.1)	(18.3)	(0.0)	45
Caste/tribe					
Scheduled caste	47.7	29.1	17.7	1.0	744
Other backward class	42.1	31.3	10.5	0.3	412
Other ¹	37.9	27.3	9.9	0.7	1,456
Work status					
Employed by someone else	42.4	32.6	8.4	1.4	204
Self-employed	(39.7)	(28.9)	(10.8)	(0.0)	26
Not worked in past 12 months	41.3	28.0	12.7	0.6	2,372
Standard of living Index					
Low	53.4	30.6	22.9	0.0	105
Medium	46.5	30.4	14.9	1.2	929
High	37.6	27.3	9.9	0.4	1,567
Pregnancy/breastfeeding status					
Pregnant	37.1	20.1	16.3	0.6	166
Breastfeeding (not pregnant)	51.2	33.3	16.3	1.5	484
Not pregnant/not breastfeeding	39.4	27.9	11.0	0.5	1,964

Contd...

Table 7.4 Anaemia among women (contd.)					
Percentage of ever-married women classified as having iron-deficiency anaemia by degree of anaemia, according to selected background characteristics, Punjab, 1998–99					
Background characteristic	Percentage of women with any anaemia	Percentage of women with:			Number of women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Height					
< 145 cm	48.1	27.7	18.4	2.0	111
≥ 145 cm	41.1	28.4	12.1	0.6	2,502
Body mass index					
< 18.5 kg/m ²	50.1	31.1	17.5	1.5	431
≥ 18.5 kg/m ²	39.7	27.9	11.3	0.5	2,181
Fruit and vegetable consumption²					
Fruits and vegetables	37.8	26.6	10.6	0.5	1,323
Vegetables only	45.2	30.3	14.1	0.8	1,274
Total	41.4	28.4	12.3	0.7	2,614

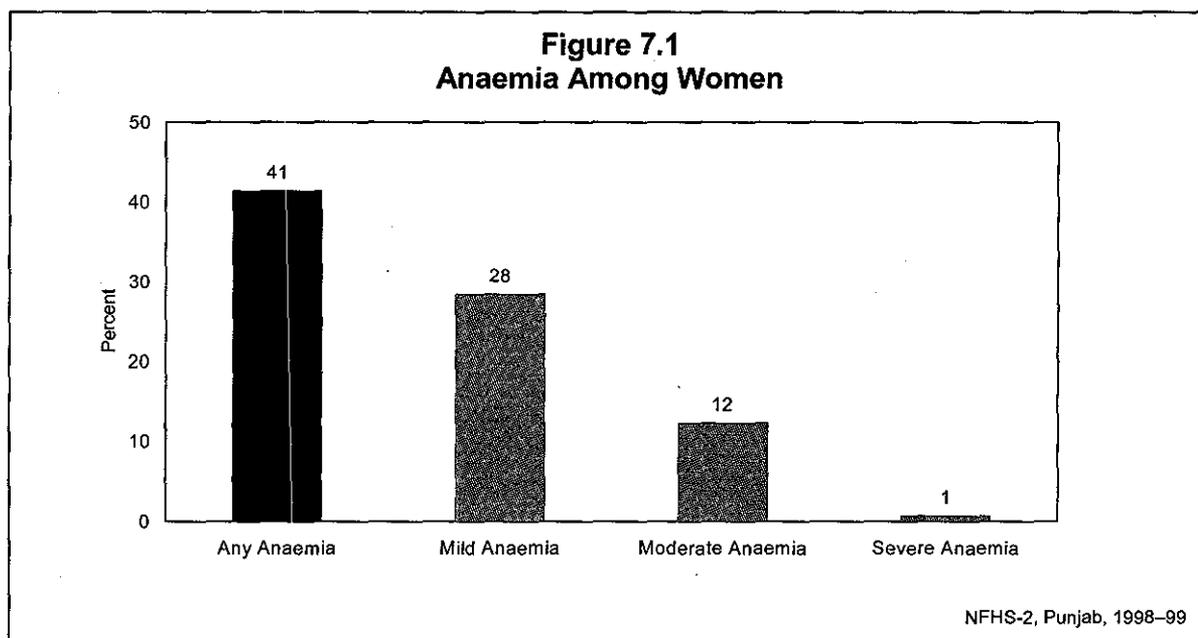
Note: The haemoglobin levels are adjusted for smoking when calculating the degree of anaemia. Total includes 2 scheduled-tribe women, 13 women working in a family farm/business, 2 women who consume fruits and not vegetables, 15 women who consume neither fruit nor vegetables, and 2, 13, 1, and 3 women with missing information on religion, the standard of living index, height, and body mass index, respectively, who are not shown separately.
 () Based on 25–49 unweighted cases
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class
²Based on consumption at least weekly. Vegetables include only green, leafy vegetables.

breastfeeding. The provision of iron and folic acid supplements to pregnant women has undoubtedly reduced the overall prevalence of anaemia in pregnant women (80 percent of pregnant women received IFA tablets or syrup during pregnancy for births in the three years preceding the survey—see Table 8.6). However, the prevalence of moderate anaemia is higher among pregnant women and nonpregnant, breastfeeding women (both 16 percent) than among nonpregnant, non-breastfeeding women (11 percent). These results suggest a continuing need to strengthen the programme of iron and folic acid supplementation for pregnant women and the need to ensure adequate supplementary nutrition for breastfeeding women.

Shorter women and women with a low body mass index have a higher prevalence of 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 Punjab, women who regularly include both fruit and vegetables in their diet are, indeed, less likely to be anaemic than women who regularly consume only vegetables.

7.4 Infant Feeding Practices

Infant feeding practices have significant effects on both mothers and children. Mothers are affected through the influence of breastfeeding on the period of postpartum infertility, and hence on fertility and the length of birth intervals. These effects vary by both the duration and intensity of breastfeeding. Proper infant feeding, starting from the time of birth, is important for the physical and mental development of the child. Breastfeeding improves the nutritional status of young children and reduces morbidity and mortality. Breast milk not only provides important



nutrients but also protects the child against infection. The timing and type of supplementary foods introduced in an infant's diet also have significant effects on the child's nutritional status.

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

WHO has suggested several indicators of breastfeeding practices to guide countries in gathering information for measuring and evaluating infant feeding practices. These indicators include the ever breastfed rate, the exclusive breastfeeding rate, the timely complementary feeding rate, the continued breastfeeding rate, and the bottle feeding rate. The *exclusive breastfeeding rate* is defined as the proportion of infants under age four months who receive only breast milk.⁵ 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.

⁵Note that international recommendations have recently been revised to promote exclusive breastfeeding up to six months of age.

Table 7.5 Initiation of breastfeeding

Percentage of children born during the three years preceding the survey who started breastfeeding within one hour and within one day of birth and percentage whose mother squeezed the first milk from her breast before breastfeeding by selected background characteristics, Punjab, 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	6.3	27.8	85.3	207
Rural	6.1	17.0	87.9	693
Mother's education				
Illiterate	6.5	20.1	88.5	358
Literate, < middle school complete	4.6	18.3	88.0	181
Middle school complete	2.8	13.1	85.5	106
High school complete and above	7.9	22.0	85.8	255
Religion				
Hindu	5.6	19.5	85.6	368
Muslim	(10.4)	(34.7)	(89.8)	30
Sikh	5.8	18.7	88.4	482
Caste/tribe				
Scheduled caste	5.4	17.5	89.0	333
Other backward class	7.0	22.8	88.7	166
Other ²	6.4	19.8	85.3	400
Mother's work status				
Employed by someone else	(4.8)	(22.6)	(88.3)	44
Not worked in past 12 months	6.2	19.0	87.5	850
Standard of living index				
Low	1.9	13.5	86.6	56
Medium	6.4	18.7	88.7	398
High	6.5	21.2	86.4	441
Assistance during delivery				
Health professional ³	5.5	20.1	85.0	563
Dai (TBA)	7.2	18.2	91.1	335
Place of delivery				
Public health facility	14.2	38.8	83.8	68
Private health facility	6.8	23.0	83.9	266
Own home	5.4	16.0	88.5	499
Parents' home	0.0	11.4	94.8	64
Total	6.1	19.5	87.3	900

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 18 children belonging to other religions, 1 child belonging to a scheduled tribe, 4 children whose mothers work in a family farm/business, 2 children whose mothers are self employed, 2 children whose mothers were assisted by persons other than a health professional or a TBA during delivery, 2 children delivered in nongovernmental organization or trust hospitals/clinics, and 1 and 5 children with missing information on religion and the standard of living index, respectively, who are not shown separately.

TBA: Traditional birth attendant

() Based on 25-49 unweighted cases

¹Includes children who started breastfeeding within one hour of birth

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

³Includes doctor, auxiliary nurse midwife, nurse, midwife, lady health visitor, and other health professionals

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 Punjab, 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 20 percent began breastfeeding within one day. The vast majority of the women (87 percent) 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.

Less than 15 percent of children in all population groups were put to the breast within one hour of birth and only 11 to 39 percent of children in any group were first breastfed in the first day of their life. The early initiation of breastfeeding is higher in urban areas (28 percent) than in rural areas (17 percent), and also increases with the household standard of living. Only 14 percent of children born to mothers in households with a low standard of living are breastfed within one day of birth, compared with 21 percent of children born to mothers living in households with a high standard of living. The likelihood of being breastfed within one day of birth bears a U-shaped relationship with mothers' education, being higher for children of illiterate mothers and mothers who have completed at least high school, than for less educated literate mothers. Although the number of cases is very small, the data suggest that Muslim children are much more likely than Hindu or Sikh children to be breastfed within one day, as well as within one hour of birth. Early initiation of breastfeeding is also more common among children belonging to other backward classes than other children, especially scheduled-caste children. The circumstances surrounding the delivery of the baby can have an important effect on the early initiation of breastfeeding. Children born in health facilities tend to initiate breastfeeding relatively early, particularly if the birth takes place in a public health facility. The timing of breastfeeding does not vary much by whether a health professional or a *dai* assisted at the delivery, however.

The custom of squeezing the first milk from the breast before breastfeeding a child is practised in every group, and differentials between groups are very small in most cases. In all groups, including institutional births and births assisted by a health professional, the first milk was squeezed out in at least 84 percent of the cases. Thus, contrary to the recommendations for the feeding of infants, the vast majority of mothers in all groups squeeze the first milk from the breast before breastfeeding.

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 at any time during the day or night before the interview are defined as being *exclusively breastfed*. The introduction of supplementary foods before four

Table 7.6 Breastfeeding status by child's age						
Percent distribution of children under age 3 years by breastfeeding status, according to child's age in months, Punjab, 1998-99						
Age in months	Breastfeeding status				Total percent	Number of living children
	Not breastfeeding	Exclusively breastfeeding	Receiving plain water only	Receiving supplements		
< 2	(2.7)	(44.7)	(37.8)	(14.7)	100.0	39
2-3	4.0	31.5	25.7	38.9	100.0	70
4-5	5.4	12.3	17.6	64.7	100.0	52
6-7	7.1	0.0	30.9	62.1	100.0	55
8-9	(10.4)	(3.7)	(7.5)	(78.4)	100.0	29
10-11	(14.0)	(0.0)	(9.3)	(76.7)	100.0	35
12-13	(25.8)	(0.0)	(0.0)	(74.2)	100.0	49
14-15	(21.9)	(0.0)	(0.0)	(78.1)	100.0	42
16-17	(27.8)	(0.0)	(0.0)	(72.2)	100.0	47
18-19	(35.3)	(0.0)	(0.0)	(64.7)	100.0	47
20-21	(45.2)	(0.0)	(0.0)	(54.8)	100.0	36
22-23	(47.2)	(0.0)	(0.0)	(52.8)	100.0	37
24-25	67.5	0.0	0.0	32.5	100.0	52
26-27	62.9	0.0	0.0	37.1	100.0	62
28-29	65.0	0.0	0.0	35.0	100.0	70
30-31	64.4	0.0	0.0	35.6	100.0	52
32-33	(63.7)	(0.0)	(0.0)	(36.3)	100.0	37
34-35	(59.9)	(0.0)	(0.0)	(40.1)	100.0	41
< 4 months	3.5	36.3	30.1	30.1	100.0	109
4-6 months	4.5	7.3	24.9	63.3	100.0	88
7-9 months	(12.0)	(2.2)	(13.3)	(72.5)	100.0	48

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Breastfeeding status refers to the day or night before the interview. Children classified as 'breastfeeding and receiving plain water only' receive no supplements.
() Based on 25-49 unweighted cases

months of age may put infants at risk of malnutrition because other liquids and solid foods are nutritionally inferior to breast milk. 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 Punjab, only 36 percent of children under four months of age are exclusively breastfed, 30 percent receive breast milk plus water, and 30 percent receive supplements along with breast milk (Table 7.6). The percentage of infants exclusively breastfed drops steadily from 45 percent for children under two months of age and 32 percent for children age 2-3 months to 12 percent for children age 4-5 months. Very few children older than 5 months are exclusively breastfed. The proportion of children receiving breast milk and supplements increases from 15 percent for children less than two months of age to 65 percent for children age 4-5 months and 78 percent for children age 14-15 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. Seventy-four percent of children age 12-13 months are still being breastfed, as are 53 percent of children age 22-23 months. Breastfeeding usually stops at about 24-25 months of age for the majority of children in Punjab, but about one-third of children approaching age three are still breastfed.

Table 7.7 Type of food received by children

Percentage of children under age 3 years who received specific types of food in 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, Punjab, 1998-99

Age in months	Type of food received							Number of living children
	Powdered milk	Any other milk	Any other liquid	Green, leafy vegetables	Fruits	Any solid or mushy food ¹	Using bottle with a nipple	
BREASTFEEDING CHILDREN								
< 2	(0.0)	(15.1)	(0.0)	(0.0)	(0.0)	(0.0)	(9.6)	38
2-3	0.0	37.2	6.5	0.0	0.0	1.7	21.3	67
4-5	(4.3)	(55.6)	(18.9)	(0.0)	(4.1)	(8.4)	(31.1)	49
6-7	0.0	60.6	21.3	8.2	22.7	43.2	36.7	51
8-9	(0.0)	(66.9)	(75.2)	(7.5)	(7.4)	(40.1)	(26.7)	26
10-11	(3.5)	(61.8)	(68.6)	(28.5)	(44.7)	(71.3)	(27.7)	30
12-13	(0.0)	(72.0)	(76.1)	(53.7)	(44.5)	(91.9)	(39.5)	36
14-15	(0.0)	(94.1)	(79.9)	(38.2)	(30.4)	(91.2)	(21.9)	33
16-17	(3.2)	(87.8)	(71.1)	(71.1)	(52.2)	(97.4)	(19.4)	34
18-23	0.0	88.0	58.8	58.6	44.9	95.4	13.9	70
24-29	0.0	83.7	64.9	60.9	34.2	95.3	17.7	64
30-35	(0.0)	(89.6)	(77.6)	(69.9)	(33.9)	(97.8)	(13.9)	48
< 4 months	0.0	29.1	4.1	0.0	0.0	1.1	17.0	105
4-5 months	(4.3)	(55.6)	(18.9)	(0.0)	(4.1)	(8.4)	(31.1)	49
6-9 months	0.0	62.7	39.5	7.9	17.6	42.1	33.4	77
NON-BREASTFEEDING CHILDREN								
< 14	(2.8)	(97.2)	(49.9)	(39.9)	(34.9)	(65.7)	(86.4)	31
14-23	0.0	97.1	76.3	54.5	44.8	94.1	50.5	73
24-29	0.0	93.7	64.5	66.5	38.1	97.5	29.5	119
30-35	0.0	90.7	68.6	75.1	41.8	94.8	35.2	81
ALL CHILDREN								
< 2	(0.0)	(17.4)	(0.0)	(0.0)	(0.0)	(0.0)	(12.1)	39
2-3	0.0	39.7	7.5	0.0	0.0	1.6	24.4	70
4-5	4.0	58.1	19.5	1.7	3.9	9.6	34.9	52
6-7	0.0	63.4	25.0	9.2	24.8	43.7	41.2	55
8-9	(0.0)	(70.3)	(74.2)	(6.7)	(6.7)	(39.0)	(30.5)	29
10-11	(3.0)	(67.2)	(61.4)	(33.1)	(41.4)	(75.3)	(37.9)	35
12-13	(1.8)	(77.4)	(73.0)	(55.4)	(48.9)	(92.2)	(48.8)	49
14-15	(0.0)	(95.4)	(77.1)	(44.7)	(26.4)	(90.5)	(31.5)	42
16-17	(2.3)	(89.0)	(70.9)	(59.8)	(45.6)	(93.6)	(30.2)	47
18-23	0.0	92.2	67.5	58.5	49.2	96.4	27.2	121
24-29	0.0	90.2	64.6	64.6	36.7	96.7	25.3	183
30-35	0.0	90.3	71.9	73.2	38.9	95.9	27.2	129
< 4 months	0.0	31.6	4.8	0.0	0.0	1.0	20.0	109
4-5 months	4.0	58.1	19.5	1.7	3.9	9.6	34.9	52
6-9 months	0.0	65.8	42.0	8.3	18.5	42.1	37.5	84

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

() Based on 25-49 unweighted cases

¹Includes green, leafy vegetables and fruits

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 non-breastfeeding children, age categories have been combined into broader age groups. Powdered milk is rarely given to young children at any age, but the consumption of other non-powdered milk (such as cow's milk or buffalo's milk) is quite common in Punjab even among infants. The majority of non-breastfeeding children were given other milk the day and night before the interview. The proportion of breastfeeding children who received other milk in addition to breast milk increases from 15 percent for children age 0-1 month to 37 percent for children age 2-3

months and 61 percent or more for children age 6–7 months and above. The percentage of children being given other milk is much higher in Punjab at every age, than in the country as a whole. For example, in India 15 percent of all children age 0–3 months and 40 percent of all children age 6–9 months received other non-powdered milk in the night or day before the interview, compared with 32 percent and 66 percent of all children in the corresponding age groups in Punjab.

Other liquids, such as juice or tea, are given much less often than other non-powdered milk to children at most ages before they are three years old. Nonetheless, these other liquids too are given more frequently in Punjab to children age 5 months or above than to children in the corresponding age groups in the country as a whole. The consumption of green, leafy vegetables is negligible among children less than six months old, but increases rapidly thereafter with age. Similarly, the consumption of fruits is also negligible among children age 0–5 months, but is more common among older children. Nonetheless, only about two-thirds of children age 18–35 months receive any green, leafy vegetables and only two-fifths receive any fruits.

From about six months of age, the introduction of complementary food is critical for meeting the protein, energy, and micronutrient needs of children. However, in Punjab the introduction of solid or mushy food is delayed for the majority of children. Only 42 percent of breastfeeding children who are age 6–9 months consume solid or mushy food. However, this proportion rises rapidly thereafter to 71 percent for children age 10–11 months and over 90 percent for children age one year or more. Notably, breastfeeding children age 6–9 months are more likely to be receiving other non-powdered milk (63 percent) than solid or mushy food (42 percent).

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 a bottle with a nipple is very common for children who are not being breastfed, but declines sharply with age. Even for children who are being breastfed, the use of bottles with nipples is fairly widespread in Punjab. In every age group from age 2 months to 17 months, about one-fifth or more breastfeeding children were fed from a bottle with a nipple in the day or night before the interview. This proportion is as high as one-third or more in some of these age groups. At older and younger ages, between one-tenth and one-fifth of children were fed from a bottle with a nipple the day or night before the interview.

Table 7.8 shows several statistics that describe the duration of breastfeeding. Estimates of both means and medians are based on the current proportions of children breastfeeding in each age group because information on current status is usually more accurate than information based on mother's recall. The median length of any breastfeeding in Punjab is 21.2 months, four months shorter than the median length of any breastfeeding of 25.4 months in the country as a whole. Supplementation also begins relatively early in Punjab. The median length of exclusive breastfeeding is only 0.7 months (compared with almost two months in India as a whole), and the median length of exclusive breastfeeding or breastfeeding with water only is 2.9 months. The mean durations of any breastfeeding, exclusive breastfeeding, and exclusive breastfeeding or breastfeeding with water only are, at 22.2 months, 2.4 months, and 4.8 months, respectively,

Table 7.8 Median duration of breastfeeding				
Median duration of breastfeeding among children under age 3 years by sex of child and residence, and mean duration of breastfeeding, Punjab, 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	26.4	0.7	2.6	464
Female	18.9	(0.7)	3.2	435
Residence				
Urban	(20.3)	*	1.2	207
Rural	21.5	0.7	3.7	693
Median duration	21.2	(0.7)	2.9	900
Mean duration (months) ¹	22.2	2.4	4.8	900
Prevalence/incidence mean	21.6	1.9	4.4	900

Note: Table includes only the two most recent births during the three years preceding the survey.
 () Based on 25-49 unweighted cases
 *Median not shown; based on fewer than 25 unweighted cases
¹Based on current status

longer than the median durations. The median duration of breastfeeding is about one month longer in rural areas than in urban areas.

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.

In societies with strong son preference, parents may stop breastfeeding a girl at a younger age to increase their chances of having another child earlier (with the hope that the next child will be a boy). This appears to be the case in Punjab where the median duration of breastfeeding is almost 8 months shorter for girls than for boys, even though the duration of exclusive breastfeeding does not vary between boys and girls.

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 older children were measured standing up. Data on weight and height/length were used to calculate the following three summary indices of nutritional status:

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

The nutritional status of children calculated according to these three measures is compared with the nutritional status of an international reference population recommended by the World Health Organization (Dibley et al., 1987a; 1987b). The use of this reference population is based on the empirical finding that well nourished children in all population groups for which data exist follow very similar growth patterns (Martorell and Habicht, 1986). A scientific report from the Nutrition Foundation of India (Agarwal et al., 1991) has concluded that the WHO standard is generally applicable to Indian children.

The three indices of nutritional status are expressed in standard deviation units (z-scores) from the median for the international reference population. Children who are more than two standard deviations below the reference median on any of the indices are considered to be *undernourished*, and children who fall more than three standard deviations below the reference median are considered to be *severely undernourished*.

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

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

The validity of these indices is determined by many factors, including the coverage of the population of children and the accuracy of the anthropometric measurements. The survey was not 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 Punjab, NFHS-2 did not measure 5 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. Twenty-nine percent of the children under age three in Punjab are

Table 7.9 Nutritional status of children by demographic characteristics

Percentage of children under age 3 years classified as undernourished on three anthropometric indices of nutritional status, according to selected demographic characteristics, Punjab, 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	2.3	6.3	6.3	18.7	0.8	6.6	133
6–11 months	5.8	19.0	13.3	31.9	0.0	4.9	110
12–23 months	9.3	34.1	18.6	45.1	0.9	10.0	233
24–35 months	12.5	38.7	22.7	46.8	1.0	5.7	281
Sex of child							
Male	8.1	27.3	15.1	38.7	0.8	8.4	397
Female	9.5	30.3	19.4	39.7	0.8	5.7	361
Birth order							
1	3.5	18.0	8.5	26.4	0.9	5.1	242
2–3	8.6	30.9	19.1	42.1	0.6	6.5	374
4–5	16.9	39.9	25.5	53.3	0.7	12.6	120
Previous birth interval²							
First birth	3.5	18.3	8.5	26.7	0.9	5.0	243
< 24 months	11.0	32.1	24.3	48.8	0.6	10.5	155
24–47 months	11.4	34.8	21.3	42.9	1.1	6.0	269
48+ months	11.4	32.8	15.9	45.1	0.0	10.0	90
Total	8.8	28.7	17.2	39.2	0.8	7.1	757

Note: Each index is expressed in standard deviation units (SD) from the median of the International Reference Population. Total includes 22 children of birth order 6 or higher, who are not shown separately.
¹Includes children who are below -3 SD from the International Reference Population median
²First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

underweight, and 39 percent are stunted. The proportion of severely stunted children is almost twice as high (17 percent) as the proportion of children who are severely underweight (9 percent). Wasting is less common than stunting or underweight: 7 percent of children under three years of age are wasted and 1 percent are severely wasted. Children in Punjab are less likely to suffer from undernutrition than in the country as whole. Overall, 47 percent of Indian children under three years of age are underweight, 46 percent are stunted, and 16 percent are wasted.

The proportion of children under three years of age who are stunted is almost unchanged since NFHS-1, when it was 38 percent, while the proportion severely stunted has increased from 14 percent in NFHS-1 to 17 percent in NFHS-2. The proportion of children underweight or wasted has, however, declined in the same period. At the time of NFHS-1, 46 percent of children were underweight and 21 percent were wasted, compared with 29 percent and 7 percent, respectively, in NFHS-2. These data suggest only partial improvement in the nutritional status of children.

The proportion of children who are underweight or stunted increases with the child's age, rapidly at first through age 12–23 months, and slowly thereafter. Specifically, the proportion of children underweight increases from 6 percent for children at ages below 6 months to 34–39 percent for children at ages 12–35 months; the corresponding increase with age in stunting is from 19 percent to 45–47 percent. It is also of great concern, that even at age 24–35 months,

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, Punjab, 1998–99

Background characteristic	Weight-for-age		Height-for-age		Weight-for-height		Number of children
	Percent-age below -3 SD	Percent-age below -2 SD ¹	Percent-age below -3 SD	Percent-age below -2 SD ¹	Percent-age below -3 SD	Percent-age below -2 SD ¹	
Residence							
Urban	6.1	18.6	11.4	29.4	0.5	7.4	178
Rural	9.6	31.8	19.0	42.2	0.9	7.0	579
Mother's education							
Illiterate	15.3	41.2	25.2	52.3	1.6	11.1	304
Literate, < middle school complete	8.4	29.7	16.7	39.5	0.8	8.2	142
Middle school complete	3.9	30.1	17.5	45.9	0.0	3.8	96
High school complete and above	1.9	9.9	6.1	17.5	0.0	2.2	216
Religion							
Hindu	8.3	28.8	16.2	38.5	0.3	7.2	306
Muslim	(7.2)	(21.4)	(18.3)	(47.9)	(0.0)	(12.9)	27
Sikh	9.5	28.6	17.7	38.7	1.2	6.6	410
Caste/tribe							
Scheduled caste	11.5	38.8	25.4	49.6	1.4	9.9	280
Other backward class	11.4	35.0	17.9	43.1	1.5	6.7	139
Other ²	5.4	17.9	10.1	28.7	0.0	4.9	337
Mother's work status							
Employed by someone else	(14.7)	(46.3)	(25.7)	(40.3)	(0.0)	(8.6)	35
Not worked in past 12 months	8.4	27.6	16.7	39.0	0.8	6.8	717
Mother's height							
< 145 cm	(19.9)	(47.3)	(41.6)	(65.3)	(2.7)	(10.5)	37
≥ 145 cm	8.2	27.8	15.9	37.8	0.7	6.9	720
Mother's body mass index							
< 18.5 kg/m ²	9.7	39.3	20.3	42.0	1.6	10.7	181
≥ 18.5 kg/m ²	8.5	25.5	16.1	38.3	0.5	6.0	574
Standard of living index							
Low	(18.7)	(45.9)	(27.5)	(57.2)	(0.0)	(8.9)	47
Medium	11.1	37.0	23.9	48.9	1.2	8.3	332
High	5.6	19.2	9.9	28.2	0.5	5.9	374
Total	8.8	28.7	17.2	39.2	0.8	7.1	757

Note: Each index is expressed in standard deviation units (SD) from the median of the International Reference Population. Total includes 15 children belonging to other religions, 1 scheduled-tribe child, 4 children whose mothers work in a family farm/business, 1 child whose mother is self employed, and 2 and 4 children with missing information on the mother's body mass index and the standard of living index, respectively, who are not shown separately.

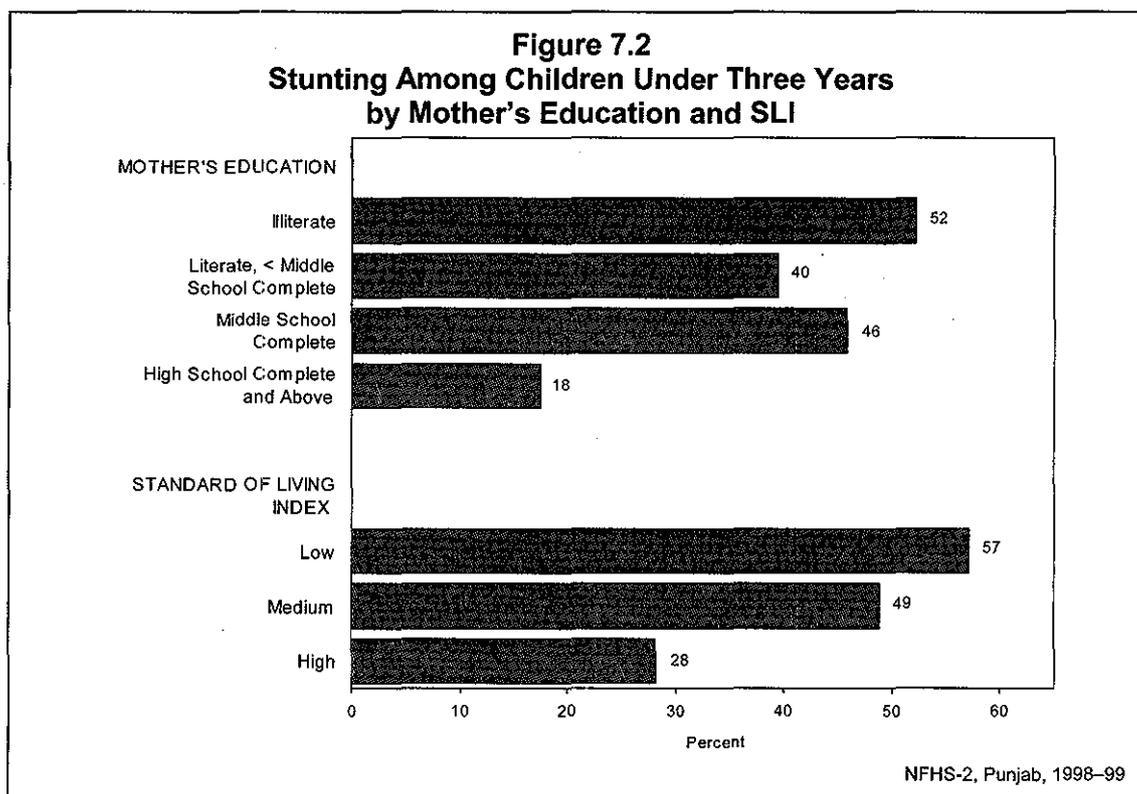
() Based on 25–49 unweighted cases.

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

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

when most children have been weaned from breast milk, 23 percent are severely stunted and 13 percent are severely underweight. Wasting does not vary linearly with age and is highest, at 10 percent, for children age 12–23 months and varies between 5 and 7 percent for children in other age groups.

Overall, girls and boys are about equally undernourished, although girls are slightly more likely than boys to be underweight and severely stunted and boys are slightly more likely than girls to be wasted. Undernutrition increases sharply with increasing birth order. Young children in



families with 4–5 children are nutritionally the most disadvantaged: 40 percent of these children are underweight, 53 percent are stunted and 13 percent are wasted. By contrast, first births tend to have lower than average levels of undernutrition according to all three measures. Among children at birth orders two or higher, the likelihood of being underweight or stunted varies little by previous birth interval, although, the likelihood of severe stunting decreases with increases in the length of the previous birth interval. The likelihood of being wasted is higher both for children born after a short birth interval (less than 24 months) and a very long birth interval (48+ months), than for children born after a birth interval of 24–47 months.

Table 7.10 shows the nutritional status of children by selected background characteristics. Underweight and stunting among children is substantially higher in rural areas than in urban areas but even in urban areas 19 percent of children are underweight and 29 percent are stunted. The extent of wasting does not vary by residence, however. In general, undernutrition among children decreases substantially as mother's education increases. Children whose mothers are illiterate are about three times as likely to be stunted and four or more times as likely to be underweight or wasted as children whose mothers have completed at least high school (see Figure 7.2). Hindu and Sikh children are equally likely to be undernourished. Muslim children, however, are less likely to be underweight but more likely to be stunted or wasted than Hindu or Sikh children. By caste/tribe, children from the scheduled castes have the poorest nutritional status, with 39 percent of children underweight, 50 percent stunted, and 10 percent wasted. Levels of undernutrition among children from other backward classes are also almost as high as for scheduled-caste children.

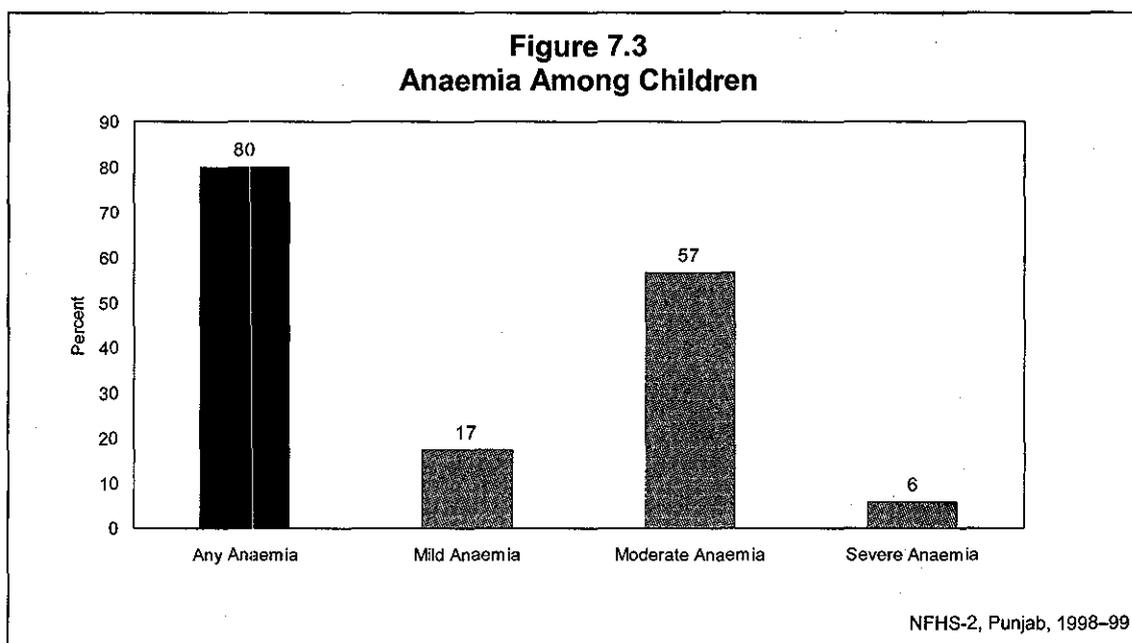
The nutritional status of children is strongly related to maternal nutritional status. For example, undernutrition, according to all three indicators, is more common for children whose mothers have a body mass index below 18.5, than for other children. All of the measures of

Table 7.11 Anaemia among children

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

Background characteristic	Percentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child					
6–11 months	66.2	22.5	40.7	3.0	109
12–23 months	87.3	14.9	67.1	5.3	231
24–35 months	79.3	17.6	54.2	7.5	268
Sex of child					
Male	82.2	15.8	61.5	5.0	314
Female	77.6	19.2	51.6	6.8	294
Birth order					
1	76.7	21.8	50.8	4.1	185
2–3	81.6	16.3	59.6	5.8	309
4–5	77.7	12.2	56.7	8.8	92
Residence					
Urban	77.2	20.2	54.6	2.3	150
Rural	80.9	16.5	57.4	7.0	458
Mother's education					
Illiterate	80.9	15.9	56.3	8.7	243
Literate, < middle school complete	83.3	15.4	63.0	4.9	112
Middle school complete	83.4	15.3	60.4	7.7	77
High school complete and above	75.2	21.7	51.7	1.9	177
Religion					
Hindu	82.9	18.3	58.2	6.4	241
Sikh	77.5	15.9	56.5	5.1	336
Caste/tribe					
Scheduled caste	86.1	16.9	61.8	7.3	232
Other backward class	76.8	16.3	54.4	6.0	105
Other ¹	75.9	18.4	53.0	4.6	270
Mother's work status					
Employed by someone else	(76.2)	(19.6)	(53.0)	(3.6)	31
Not worked in past 12 months	80.5	17.5	57.0	6.0	573
Standard of living index					
Low	(86.1)	(11.6)	(66.0)	(8.5)	37
Medium	80.3	13.4	58.7	8.2	273
High	78.7	21.8	53.5	3.4	295
Mother's anaemia status					
Not anaemic	73.8	19.6	51.4	2.8	305
Mildly anaemic	83.5	16.7	60.7	6.0	188
Moderately anaemic	89.8	13.9	64.9	10.9	106
Total	80.0	17.4	56.7	5.9	608

Note: Total includes 21 children of birth order 6 or higher, 18 Muslim children, 12 children belonging to 'other' religions, 1 scheduled-tribe child, 4 children whose mothers work in a family farm/business, 1 child whose mother is self employed, 10 children whose mothers are severely anaemic, and 3 children with missing information on the standard of living index, who are not shown separately.
 () Based on 25–49 unweighted cases
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class



undernutrition are strongly related to the household's standard of living. While the small proportion of children in households with a low standard of living have an exceptionally high level of undernutrition, it is also notable that in households with a medium standard of living (households that contain about two-fifths of all children under the age of three), 37 percent of children are underweight, 49 percent are stunted, and 8 percent are wasted. These rates, especially the rates for underweight and stunting, are similar to those for the country as a whole. Clearly, despite the greater wealth in the state, children in households that do not have a high standard of living are no better off in Punjab than in the rest of India.

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. In Punjab, 80 percent of children age 6–35 months have some level of anaemia, including 17 percent who are mildly anaemic (10.0–10.9 g/dl), 57 percent who are moderately anaemic (7.0–9.9 g/dl), and 6 percent who are severely anaemic (less than 7.0 g/dl).⁶ Notably, a much larger proportion of children than women are anaemic and the difference is particularly pronounced in the case of moderate to severe anaemia. The prevalence of any anaemia among children in Punjab is higher than the average for India as a whole (74 percent), and Punjab is second only to Haryana in the proportion of children with moderate anaemia. Research is needed to identify the reasons for the high level of anaemia among infants in Punjab.

In every population group in Punjab, except children age 6–11 months, at least 74 percent of children are anaemic, including at least half that are moderately anaemic. As expected there is

⁶The rates for anaemia among children did not have to be adjusted for altitude since all the sample PSUs in Punjab were below 1,000 metres.

a strong relationship between haemoglobin levels of mothers and prevalence of anaemia among children. Sixty-five percent of children whose mothers are moderately anaemic are moderately anaemic themselves and 11 percent are severely anaemic. Nonetheless, even among children whose mothers are not anaemic, 74 percent are anaemic and 54 percent have moderate to severe anaemia. Rates of anemia are also much higher than average, at 86–87 percent, for children age 12–23 months (an age at which children are often being weaned), scheduled-caste children, and children living in households with a low standard of living.

7.7 Iodization of Salt

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

It has been estimated that 200 million people in India are exposed to the risk of iodine deficiency and 70 million suffer from goitre and other IDD's (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 was not iodized. However, the ban on non-iodized salt was lifted in September, 2000.

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

Table 7.12 Iodization of salt							
Percent distribution of households by degree of iodization of salt, according to selected background characteristics, Punjab, 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	6.4	0.7	5.0	87.9	0.0	100.0	124
Small city	2.8	1.7	4.1	91.4	0.0	100.0	252
Town	4.9	2.8	7.9	84.1	0.3	100.0	554
Rural area	22.2	10.3	17.0	50.2	0.3	100.0	2,037
Religion of household head							
Hindu	13.5	7.0	11.7	67.6	0.2	100.0	1,242
Muslim	24.9	4.7	10.6	59.8	0.0	100.0	63
Sikh	18.8	8.4	15.6	56.8	0.3	100.0	1,599
Other	16.2	9.1	7.2	67.5	0.0	100.0	60
Caste/tribe of household head							
Scheduled caste	25.3	9.9	16.3	48.2	0.4	100.0	883
Other backward class	18.9	9.9	16.5	54.5	0.2	100.0	498
Other ¹	11.1	5.9	11.3	71.3	0.2	100.0	1,584
Standard of living index							
Low	36.3	14.6	18.0	28.9	2.3	100.0	189
Medium	24.3	10.7	18.8	46.1	0.2	100.0	1,154
High	9.0	4.8	9.6	76.4	0.1	100.0	1,609
Total	16.7	7.8	13.7	61.6	0.3	100.0	2,967
Note: Total includes 2 households with a household head belonging to a scheduled tribe and 2 and 14 households with missing information on religion and the standard of living index, respectively, which are not shown separately.							
ppm: Parts per million							
¹ Not belonging to a scheduled caste, a scheduled tribe, or an other backward class							

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, three-fourths of households in Punjab use cooking salt that is iodized at the recommended level of 15 ppm or more. Although much higher than the level for the country as a whole (49 percent), this level is low in light of the government regulations on salt iodization that were in effect at the time of the survey. Seventeen percent of households use salt that is not iodized at all and 8 percent use salt that is minimally iodized (less than 15 ppm).

Differentials in salt iodization by household characteristics are pronounced. Well over 90 percent of households in large cities, small cities, and towns use salt with 15 ppm or more of iodine, compared with 67 percent of households in rural areas. Households headed by Hindus (which are predominantly in the urban areas) are more likely than households headed by persons of any of the other religions to have salt that is adequately fortified by iodine, although differences by religion are relatively small. The use of iodized salt is particularly low in households headed by persons from the scheduled castes (65 percent) and is also below average for households headed by persons from other backward classes. The widest differentials are observed by the standard of living index. Eighty-six percent of households with a high standard of living use adequately iodized salt, compared with only 47 percent of households with a low standard of living.

CHAPTER 8

MATERNAL AND REPRODUCTIVE HEALTH

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

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

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

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

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

women with high-risk pregnancies. The ANM is assisted by a male health worker whose duties include motivating men to participate in the family welfare programme and educating men about reproductive tract and sexually transmitted infections. The ANM and LHV also assist the medical officer at the PHC where health services, including antenatal and postnatal care, are provided (Ministry of Health and Family Welfare, 1997; 1998b).

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

An important objective of NFHS-2 is to provide information on the use of safe motherhood services provided by the public and private sectors. In addition, the survey included questions on the prevalence and treatment of reproductive health problems. The Woman's Questionnaire included relevant maternal and safe motherhood information for women age 15–49 who have given birth since 1 January 1995. The topics covered include pregnancy complications, utilization and specific components of antenatal and postnatal care, place of and assistance during delivery, delivery characteristics, and postpartum complications. Although NFHS-2 obtained information for the two most recent live births since 1 January 1995, the information presented in this chapter pertains only to the subset of those births that took place during the three years preceding the woman's interview. With regard to reproductive health, all women were asked about their experience of specific symptoms of reproductive health problems, and if problems were reported, whether and where they received treatment.

8.1 Antenatal Problems and Care

Antenatal care (ANC) refers to pregnancy-related health care provided by a doctor or a health worker in a medical facility or at home. The Safe Motherhood Initiative proclaims that all pregnant women must receive basic, professional antenatal care (Harrison, 1990). Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counselling on preventive care, diet during pregnancy, delivery care, postnatal care, and related issues. The Reproductive and Child Health Programme recommends that as part of antenatal care, women receive two doses of tetanus toxoid vaccine, adequate amounts of iron and folic acid tablets or syrup to prevent and treat anaemia, and at least three antenatal check-ups that include blood pressure checks and other procedures to detect pregnancy complications (Ministry of Health and Family Welfare, 1997; 1998b).

NFHS-2 collected information from women on specific problems they may have had during their pregnancies and whether they received any antenatal check-ups. Women who did not receive antenatal check-ups were asked why they did not. Women who received antenatal check-ups were asked about the care provider, the timing of the first antenatal check-up, the total

Table 8.1 Health problems during pregnancy

Among births during the three years preceding the survey, the percentage of mothers experiencing specific health problems during pregnancy by residence, Punjab, 1998–99

Problem during pregnancy	Urban	Rural	Total
Night blindness	1.3	0.6	0.8
Blurred vision	13.0	10.5	11.1
Convulsions not from fever	2.5	2.2	2.2
Swelling of the legs, body, or face	26.9	17.1	19.4
Excessive fatigue	44.3	34.7	36.9
Anaemia	31.8	21.8	24.1
Vaginal bleeding	1.3	0.8	0.9
Number of births	207	693	900

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

number of check-ups, the procedures conducted during the check-ups, and the advice given. In addition, the survey asked women whether they received tetanus toxoid injections and iron and folic acid tablets or syrup during the pregnancy. Results from each of these questions are discussed in this chapter.

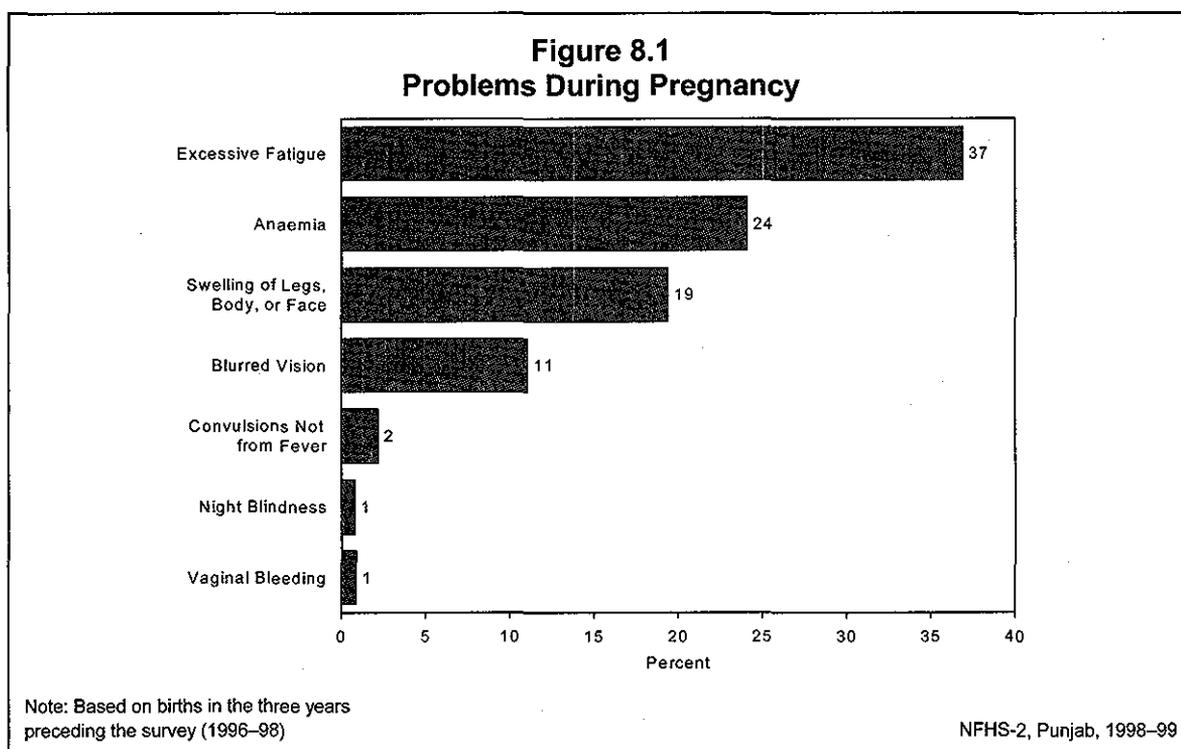
Problems During Pregnancy

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

As shown in Table 8.1 and Figure 8.1, the pregnancy-related problems most commonly reported are excessive fatigue (37 percent) and anaemia (24 percent), followed by swelling of the legs, body, or face (19 percent) and blurred vision (11 percent). Urban women report each of the different pregnancy-related problems more often than do rural women. For example, 44 percent of urban women report excessive fatigue and 32 percent report anaemia, compared with 35 percent and 22 percent, respectively, of rural women.

Antenatal Check-Ups

A pregnant woman can have an antenatal check-up by visiting a doctor or another health professional in a medical facility, receiving a home visit from a health worker, or both. NFHS-2



asked women who had a birth during the three years preceding the survey whether any health worker had visited them at home to provide antenatal check-ups. The survey also asked whether women had gone for antenatal check-ups outside the home, and if they had, what type of service provider gave them the check-ups.

Table 8.2 and Figure 8.2 show the percent distribution of births in the three years preceding the survey by the source of antenatal check-ups received during pregnancy. Women who received antenatal check-ups both at home and outside the home are categorized as having received care outside the home. If a woman received check-ups from more than one type of health provider, only the provider with the highest qualification is considered. NFHS-2 results for Punjab show that mothers received antenatal check-ups for 74 percent of births during the three years preceding the survey, compared with 66 percent for births in India as a whole. For 41 percent of births check-ups were received from doctors and for 32 percent they were received from other health professionals outside the home. Only for 1 percent of births were check-ups received only at home from a health worker. The proportion of births for which the mother did not receive an antenatal check-up was three times as high in rural areas (31 percent) as in urban areas (10 percent). A comparison of NFHS-1 and NFHS-2 data shows that the proportion of births for which mothers received an antenatal check-up has declined sharply (by 16 percent) between the two surveys from its level of 88 percent in NFHS-1. Almost all of this decline has taken place in rural areas.

Antenatal check-ups are far more common among first births (84 percent) than among births at other birth orders (61–72 percent). And yet, younger women (age 20 or less), whose births are likely to be first births, are slightly less likely than older women (age 20–34), to have received an antenatal check-up. This is largely because, given the relatively high age at first birth in Punjab (see Table 4.9), first births to women below age 20 constitute only a small proportion

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, Punjab, 1998-99

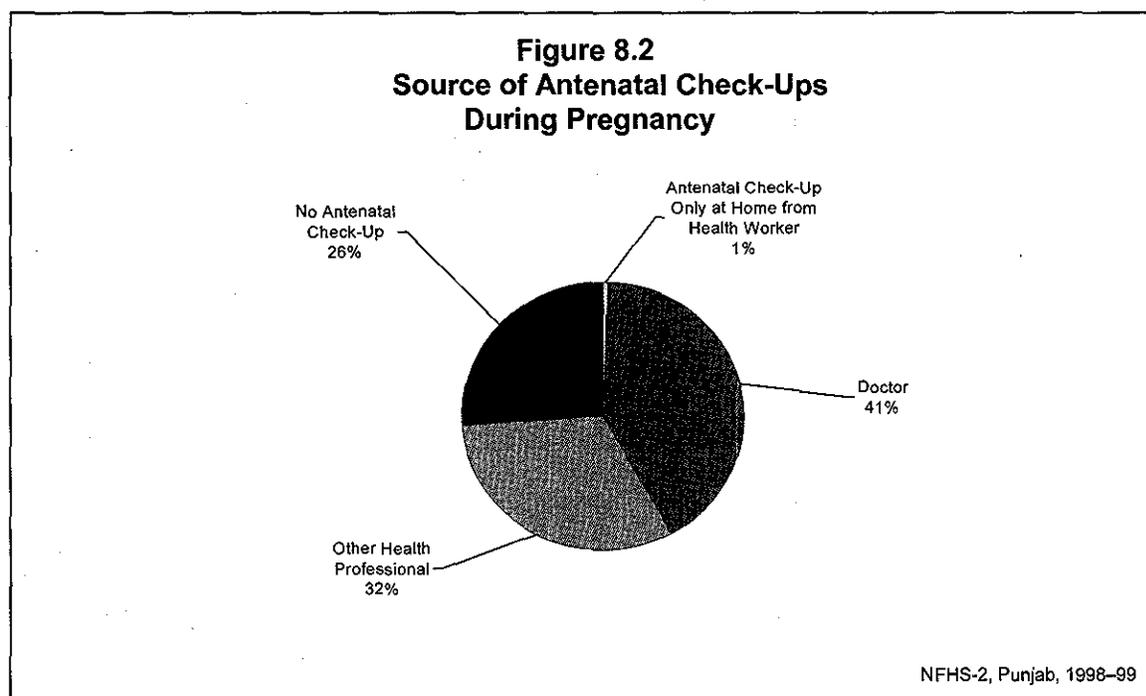
Background characteristic	Antenatal check-up only at home from health worker	Antenatal check-up outside home ¹ from:		No antenatal check-up	Total percent	Number of births
		Doctor	Other health professional			
Mother's age at birth						
< 20	2.1	33.4	35.0	29.5	100.0	100
20-34	0.3	41.9	32.0	25.9	100.0	780
Birth order						
1	0.7	50.2	33.1	16.0	100.0	285
2-3	0.2	40.0	31.7	28.0	100.0	448
4-5	0.8	26.5	35.4	37.3	100.0	134
6+	(3.4)	(41.5)	(16.1)	(38.9)	100.0	32
Residence						
Urban	0.0	63.1	27.2	9.7	100.0	207
Rural	0.8	34.8	33.6	30.8	100.0	693
Mother's education						
Illiterate	1.2	22.9	33.0	42.9	100.0	358
Literate, < middle school complete	0.0	38.8	35.9	25.4	100.0	181
Middle school complete	0.0	43.6	41.8	14.7	100.0	106
High school complete and above	0.4	67.9	24.3	7.4	100.0	255
Religion						
Hindu	0.8	43.0	30.0	26.1	100.0	368
Muslim	(0.0)	(46.5)	(29.2)	(24.3)	100.0	30
Sikh	0.4	40.4	34.5	24.6	100.0	482
Caste/tribe						
Scheduled caste	1.3	28.6	36.3	33.8	100.0	333
Other backward class	0.0	39.6	32.7	27.7	100.0	166
Other ²	0.3	52.6	28.6	18.6	100.0	400
Standard of living index						
Low	3.7	17.5	26.8	52.1	100.0	56
Medium	0.5	26.8	36.9	35.7	100.0	398
High	0.2	57.6	28.0	14.2	100.0	441
Total	0.6	41.3	32.2	26.0	100.0	900

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 20 births to women age 35-49, 18 births to women belonging to other religions, 1 birth to a scheduled-tribe woman, and 1 and 5 births with missing information on religion and the standard of living index, respectively, which are not shown separately.

() Based on 25-49 unweighted cases

¹Includes all births for which the mothers received an antenatal check-up outside the home, even if they also received an antenatal check-up at home from a health worker. If more than one type of antenatal check-up provider was mentioned, only the provider with the highest qualification is shown.

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



of all first births. Mothers who had completed at least high school received antenatal check-ups for a large majority of their births (93 percent), but illiterate mothers received antenatal check-ups for only 57 percent of their births. As expected, more educated women are more likely than less educated women to receive antenatal check-ups from doctors for their births. The utilization of antenatal check-up services does not vary by religion. By caste/tribe, however, the proportion of births for which the mother received antenatal check-ups ranges from 66 percent for scheduled-caste women to 81 percent for women who do not belong to a scheduled caste, a scheduled tribe, or an other backward class. By the standard of living index, the proportion ranges from 48 percent for women living in households with a low standard of living to 86 percent for women living in households with a high standard of living.

In summary, nearly one-fourth of births to women in Punjab during the three years preceding the survey did not receive an antenatal check-up (as compared to one-third of births in the country as a whole in NFHS-2) and this proportion has increased substantially since NFHS-1. Women not receiving antenatal check-ups tend disproportionately to be rural women, women of high parity, women from the scheduled castes, illiterate women, and poorer women. This suggests that improving, expanding, and sustaining the coverage of antenatal programmes requires special efforts to reach high-parity women and women who are socioeconomically disadvantaged.

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 by the main reason for not receiving any check-ups. Among births to mothers who did not have any antenatal check-ups, for 85 percent mothers said a check-up was not necessary, for 8 percent they said a check-up cost too much, for 3 percent they said that a check-up was not customary, for 2 percent they said that their family did

Reason for not receiving an antenatal check-up	
Reason for not receiving an antenatal check-up	Percent
Not necessary	84.9
Not customary	2.8
Costs too much	8.2
No time to go	0.9
Family did not allow	2.3
Lack of knowledge	0.9
Total percent	100.0
Number of births	234

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

not allow them to get a check-up, and for 1 percent each they said that they lacked the knowledge or they did not have the time to get a check-up. These results suggest the need to inform women and families about the benefits and availability of antenatal check-ups to help overcome traditional attitudes and other hurdles that prevent them from seeking antenatal care for their pregnancies. In addition, since some of the reasons reported by mothers deal with problems of accessibility, quality, and cost of services, utilization of antenatal check-ups could also be increased by lowering direct and indirect costs, improving quality, and making services more accessible.

Number and Timing of Antenatal Check-Ups

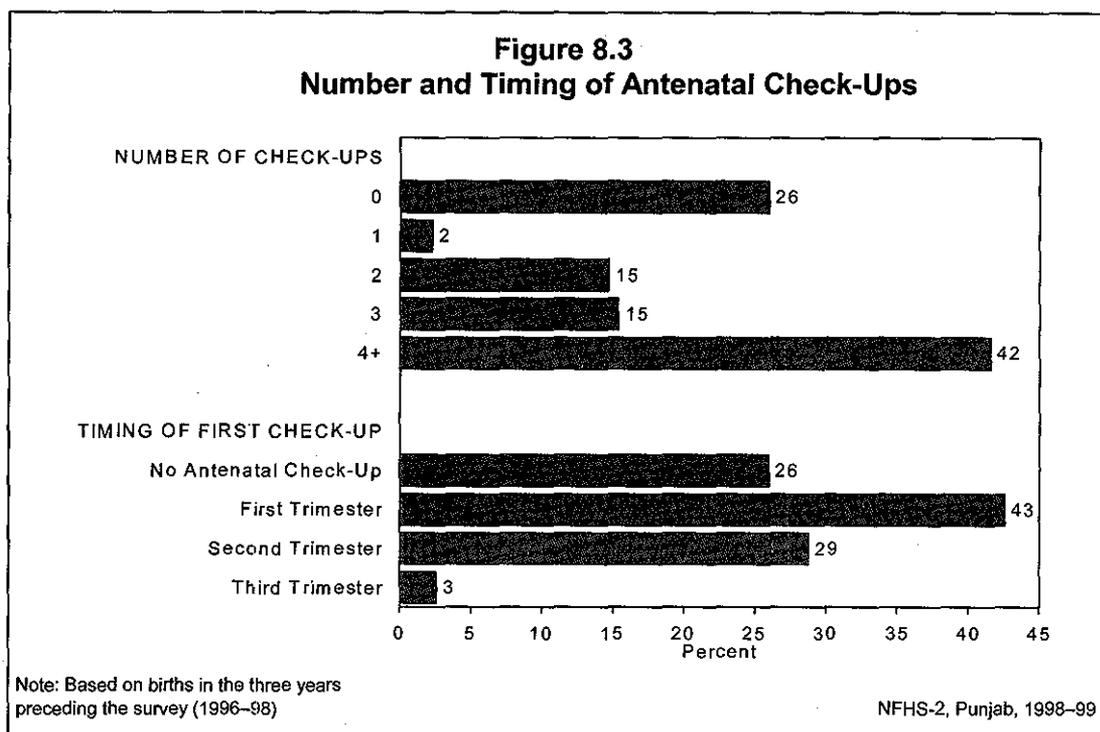
The number of antenatal check-ups and the timing of the first check-up are important for the health of the mother and the outcome of the pregnancy. The conventional recommendation for normal pregnancies is that once pregnancy is confirmed, antenatal check-ups should be scheduled at four-week intervals during the first seven months, then every two weeks until the last month, and weekly thereafter (MacDonald and Pritchard, 1980). Four antenatal check-ups—one each during the third, sixth, eighth, and ninth months of pregnancy—have been recommended as the minimum necessary (Park and Park, 1989). The conventional recommendation is to schedule the first check-up within six weeks of a woman's last menstrual period. Studies on the timing of the initial antenatal check-up, however, show that even when antenatal care is initiated as late as the third trimester, there is a substantial reduction in perinatal mortality (Ramachandran, 1992).

In India, the Reproductive and Child Health Programme includes the provision of at least three antenatal care visits for pregnant women. Guidelines for the programme require that each pregnancy be registered in the first 12–16 weeks (Ministry of Health and Family Welfare, 1997). Accordingly, the first antenatal check-up should take place at the latest during the second trimester of pregnancy. NFHS-2 asked women who received antenatal check-ups for births in the three years preceding the survey about the total number of check-ups they received and when in their pregnancies they received their first check-up.

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, Punjab, 1998–99			
Number and timing of check-ups	Urban	Rural	Total
Number of antenatal check-ups			
0	9.7	30.8	26.0
1	0.8	2.8	2.3
2	6.7	17.0	14.7
3	13.9	15.9	15.4
4+	68.9	33.5	41.6
Total percent	100.0	100.0	100.0
Median number of check-ups (for those who received at least one antenatal check-up)			
	4.8	2.9	3.5
Stage of pregnancy at the time of the first antenatal check-up			
No antenatal check-up	9.7	30.8	26.0
First trimester	67.7	35.1	42.6
Second trimester	20.1	31.4	28.8
Third trimester	2.5	2.6	2.6
Total percent	100.0	100.0	100.0
Median months pregnant at first antenatal check-up (for those who received at least one antenatal check-up)			
	2.7	3.5	3.2
Number of births	207	693	900
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 Punjab in the three years preceding the survey by the number and timing of antenatal check-ups. In Punjab, mothers of 57 percent of births received at least three antenatal check-ups, including 42 percent with at least four check-ups. Although the proportion of births for which mothers received 3 or more antenatal check-ups in Punjab is higher than for India as a whole (44 percent), this proportion has declined in Punjab over the five and a half years since NFHS-1, when it was 62 percent. The median number of check-ups for those who received at least one check-up is 3.5. There are substantial differences by residence in the number of antenatal check-ups. At least three antenatal check-ups were received for 83 percent of births to mothers living in urban areas, but only for 49 percent of births to mothers living in rural areas. Among births to mothers who received at least one antenatal check-up, the median number of check-ups was 4.8 in urban areas and 2.9 in rural areas. 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, could be important factors for the higher proportion of check-ups received by mothers in urban areas than in rural areas.

Forty-three percent of births that took place in the three years preceding the survey were to mothers who received their first antenatal check-up in the first trimester of pregnancy (up



from 26 percent in NFHS-1, and higher than the 33 percent for India as a whole), and another 29 percent were to mothers who received their first check-up in the second trimester. Check-ups during the first trimester were almost twice as common in urban areas (68 percent) as in rural areas (35 percent). In the state as a whole, the first check-up was received in the third trimester for only 3 percent of births. The median timing of the first antenatal check-up was 3.5 months in rural areas, 2.7 months in urban areas, and 3.2 months in the state as a whole.

Components of Antenatal Check-Ups

The effectiveness of antenatal check-ups in ensuring safe motherhood depends in part on the tests and measurements done and the advice given during the check-ups. NFHS-2 collected information on this important aspect of antenatal care for the first time by asking mothers who received antenatal check-ups whether they received each of several specified components of antenatal check-ups at least once during any of their check-ups during pregnancy. 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.

In Punjab, among all births for which mothers received antenatal check-ups, mothers had an abdominal examination in 87 percent of cases, had their blood tested in 85 percent of cases, and had their blood pressure checked in 81 percent of cases. Other common components of antenatal check-ups were weight measurement (79 percent) and urine tests (76 percent). An ultrasound or sonogram was done in the case of 21 percent of births for which a mother had an antenatal check-up. For only 11 percent of births did mothers report having an internal examination as part of any antenatal check-up and for only 9 percent did they report having their

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, Punjab, 1998–99			
Components of antenatal check-ups	Urban	Rural	Total
Antenatal measurements/tests			
Weight measured	89.3	74.5	78.7
Height measured	13.0	6.7	8.5
Blood pressure checked	89.9	77.1	80.7
Blood tested	94.5	81.9	85.4
Urine tested	84.2	72.9	76.1
Abdomen examined	87.4	86.5	86.8
Internal examination	18.2	8.1	10.9
X-ray	8.0	2.0	3.7
Sonography or ultrasound	32.6	16.6	21.1
Amniocentesis	1.9	1.4	1.5
Antenatal advice			
Diet	91.2	79.2	82.6
Danger signs of pregnancy	39.6	28.3	31.5
Delivery care	58.6	42.3	46.8
Newborn care	53.5	36.5	41.2
Family planning	38.1	23.3	27.5
Number of births for which the mother received at least one antenatal check-up	187	479	666
Note: Table includes only the two most recent births during the three years preceding the survey.			

height measured. Amniocentesis is rarely performed (2 percent). X-rays, even though not recommended, were performed in 4 percent of the cases. All of these measurements or tests are more likely to be performed for women living in urban areas than for women living in rural areas. For example, urban women had an ultrasound performed for 33 percent of births and rural women for only 17 percent of births. Similarly too, urban women had an internal examination for 18 percent of births and rural women for only 8 percent of births.

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 83 percent of cases). Mothers were less likely to receive advice on delivery care (47 percent), newborn care (41 percent), and the danger signs of pregnancy (32 percent). Mothers who received an antenatal check-up were much less likely to receive advice on family planning (28 percent) than on any of the other topics. The proportions receiving advice on each of these topics is notably higher 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). If neonatal tetanus infection occurs where expert medical help is not available, as is common in many rural

areas in India, death is almost certain. Neonatal tetanus, however, is a preventable disease. Two doses of tetanus toxoid vaccine given one month apart during early pregnancy are nearly 100 percent effective in preventing tetanus among both newborn infants and their mothers. Immunity against tetanus is transferred to the foetus through the placenta when the mother is vaccinated.

In India, the tetanus toxoid immunization programme for expectant mothers was initiated in 1975–76 and was integrated with the Expanded Programme on Immunization (EPI) in 1978 (Ministry of Health and Family Welfare, 1991). To step up the pace of the immunization programme, the Government of India initiated the Universal Immunization Programme (UIP) in 1985–86. An important objective of the UIP was to vaccinate all pregnant women against tetanus by 1990. In 1992–93, the UIP was integrated into the Child Survival and Safe Motherhood Programme, which in turn has been integrated into the Reproductive and Child Health Programme. According to the National Immunization Schedule, a pregnant woman should receive two doses of tetanus toxoid vaccine, the first when she is 16 weeks pregnant and the second when she is 20 weeks pregnant (Central Bureau of Health Intelligence, 1991). Re-inoculation is recommended every three years. If two doses were received less than three years earlier, a single booster injection is recommended.

For each of the two most recent births during the three years preceding the survey, NFHS-2 asked women whether they were given an injection in the arm to prevent them and their baby from getting tetanus. Women who said they had received a tetanus injection were asked how many times they had received the injection during the pregnancy.

Table 8.6 shows the distribution of births by the number of tetanus toxoid injections given to mothers, according to selected background characteristics. Tetanus toxoid coverage in Punjab is quite high and it has increased substantially in recent years. For births in the three years preceding the survey, mothers of 90 percent received at least two tetanus toxoid injections during pregnancy, and another 2 percent received one injection. The corresponding all-India average is only 67 percent for two or more tetanus toxoid injections. Indeed, Punjab's performance in terms of providing tetanus toxoid to pregnant women ranks second only to the performance of Tamil Nadu in this area. The proportion of mothers who received two or more tetanus toxoid injections during their pregnancies rose in Punjab from 82 percent to 90 percent between NFHS-1 and NFHS-2.

Two or more tetanus toxoid injections to pregnant women are more common in urban areas (96 percent) than in rural areas (88 percent). Coverage does not vary much by age of mother but varies by birth order. At least two tetanus toxoid injections were received by mothers for 96 percent of first births, compared with 81–82 percent of births of order four or higher. Tetanus coverage is strongly related to education, ranging from 79 percent among births to illiterate women to 98 percent among births to women who have completed at least middle school. Tetanus toxoid coverage is similar for Hindus and Sikhs (90 and 91 percent, respectively) but is lower for Muslims (83 percent). Coverage is the same for births to scheduled-caste women and women belonging to the other backward classes (86 percent) but it is higher (95 percent) for births to women who do not belong to the scheduled castes, scheduled tribes, or other backward classes. Tetanus toxoid coverage increases sharply with an increasing standard of living of the household, from 66 percent for births to mothers living in households with a low standard of living to 98 percent for births to mothers living in households with a high standard of living. These results suggest that despite significant progress in the area of tetanus

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, Punjab, 1998–99

Background characteristic	Number of tetanus toxoid injections				Percent- age given iron and folic acid tablets or syrup	Number of births	Percent- age who received supply for 3+ months ¹	Percent- age who consumed all the supply ¹	Number of births whose mothers received IFA
	None	One	Two or more	Total percent					
Mother's age at birth									
< 20	6.2	2.2	91.7	100.0	80.3	100	76.4	89.8	80
20–34	8.0	2.3	89.7	100.0	79.7	780	80.9	92.0	621
Birth order									
1	2.2	1.5	96.3	100.0	86.1	285	84.4	92.2	246
2–3	8.0	3.1	88.9	100.0	80.2	448	80.1	91.8	359
4–5	17.7	0.8	81.5	100.0	68.0	134	72.9	91.0	91
6+	(12.6)	(6.7)	(80.7)	100.0	(61.9)	32	*	*	20
Residence									
Urban	3.8	0.0	96.2	100.0	86.9	207	88.0	89.4	180
Rural	8.9	3.1	88.0	100.0	77.4	693	78.2	92.4	536
Mother's education									
Illiterate	17.7	3.6	78.7	100.0	66.3	358	74.3	92.9	237
Literate, < middle school complete	1.8	2.9	95.3	100.0	85.0	181	75.0	89.6	154
Middle school complete	0.0	2.0	98.0	100.0	87.6	106	80.3	91.0	92
High school complete and above	1.2	0.4	98.3	100.0	91.1	255	91.1	91.9	232
Religion									
Hindu	8.3	1.7	89.9	100.0	79.6	368	82.5	89.6	293
Muslim	(16.9)	(0.0)	(83.1)	100.0	(69.0)	30	*	*	21
Sikh	6.0	3.1	90.9	100.0	81.0	482	79.9	94.0	391
Caste/tribe									
Scheduled caste	10.0	4.1	85.9	100.0	71.5	333	71.9	90.2	238
Other backward class	11.3	2.6	86.1	100.0	79.0	166	81.5	94.2	131
Other ²	4.2	0.8	95.0	100.0	86.7	400	86.3	91.7	347
Standard of living index									
Low	24.9	9.6	65.6	100.0	67.3	56	(71.9)	(97.2)	38
Medium	12.2	3.2	84.6	100.0	72.2	398	72.1	89.4	288
High	1.6	0.7	97.6	100.0	88.1	441	87.9	92.6	388
Total	7.8	2.4	89.9	100.0	79.6	900	80.7	91.6	716

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes a small number of births to women age 35–49, women belonging to other religions, and scheduled-tribe women, and births with missing information on religion and the standard of living index, which are not shown separately.

() Based on 25–49 unweighted cases

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

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

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

toxoid provision to pregnant women, tetanus toxoid coverage for socioeconomically disadvantaged women lags far behind the level for the state as a whole.

Iron and Folic Acid Supplementation

Nutritional deficiencies in women are often exacerbated during pregnancy because of the additional nutrient requirements of foetal growth. Iron deficiency anaemia is the most common micronutrient deficiency in the world. It is a major threat to safe motherhood and to the health and survival of infants because it contributes to low birth weight, lowered resistance to infection, impaired cognitive development, and decreased work capacity. Studies in different parts of India have estimated that the proportion of births with a low birth weight (less than 2,500 grams) ranges from 15 percent in Trivandrum to 46 percent in Baroda (Nutrition Foundation of India, 1993). Overall, about one-third of newborn children in India are of low birth weight, indicating that many pregnant women in India suffer from nutritional deficiencies. Improvement in a woman's nutritional status, coupled with proper health care during pregnancy, can substantially increase her child's birth weight (Ramachandran, 1992). To this end, the provision of iron and folic acid (IFA) tablets to pregnant women to prevent nutritional anaemia forms an integral part of the safe-motherhood services offered as part of the Reproductive and Child Health Programme. The programme recommendation is that pregnant women consume 100 tablets of iron and folic acid during pregnancy.

For each birth during the three years preceding the survey, NFHS-2 collected information on whether the mother received IFA tablets or syrup during pregnancy. IFA syrup was included in the question along with IFA tablets since IFA syrup is sometimes prescribed in the private sector and may even be prescribed in the public sector when and where tablets are not available. Table 8.6 shows that mothers in Punjab received IFA supplements for 80 percent of births. This level is far above the national average of 58 percent. As with tetanus toxoid coverage, IFA coverage for mothers of higher-order births and of disadvantaged women, i.e., illiterate women, scheduled-caste women, and women with a low or medium standard of living, is well below the state average. IFA coverage is also much lower in rural areas (77 percent) than in urban areas (87 percent).

Not all mothers who received IFA received the recommended three-month supply of tablets or syrup. Among births to women who received IFA during pregnancy, 81 percent received at least a three-month supply and 92 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 similar to those for the proportion that received any iron and folic acid supplementation. For example, this proportion is negatively related to birth order, positively related to mother's education level and the standard of living, and is much higher in urban than in rural areas. There are no notable differentials in the proportion that consumed all the supply received.

Thus, the distribution of IFA supplements has a wide coverage in Punjab and most of the women who receive IFA do consume adequate amounts during their pregnancies. Even in this respect, however, more efforts are required to cover high parity, poorer, illiterate, and scheduled-caste women.

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 as compared to the national average of 34 percent in NFHS-2, 37 percent of births in Punjab took place in health facilities (up from 25 percent in NFHS-1), 56 percent took place in the women's own homes, and 7 percent took place in their parents' homes. The majority of births taking place in health facilities took place in private health facilities (79 percent). The NFHS-2 overall estimate of 37 percent of births in health facilities is similar to the estimate of 40 percent from the Rapid Household Survey under the RCH Programme (International Institute for Population Sciences, 2000). Both estimates are much higher than the 1997 SRS estimate of 13 percent, however.

The proportion of births that took place in health facilities is more than one and one-half times as high in urban areas (56 percent) as in rural areas (32 percent). The proportion of institutional deliveries is higher for births to mothers under age 20 (49 percent) than for older mothers (36 percent). Also, the proportion of deliveries in a woman's own home tends to increase and the proportion in the parents' home tends to decrease with birth order. Institutional deliveries are highest for first births (52 percent) and much lower (18–20 percent) for births of order four or higher. Deliveries in private health facilities increase sharply with education although deliveries in public institutions do not vary consistently with mother's education. Births to women from the scheduled castes and other backward classes are less likely to take place in health facilities (22 and 33 percent, respectively) than births to mothers who do not belong to the scheduled castes, scheduled tribes, and other backward classes (53 percent). By religion, the proportion of institutional deliveries among Muslims (19 percent) is much lower than the proportion among Hindus (31 percent) and Sikhs (45 percent). Births to women from households with a high standard of living are twice as likely (54 percent) as births to women in households with a low (27 percent) or a medium (20 percent) standard of living to be delivered in a health institution.

The proportion of institutional births is nearly four times as high among women who received four or more antenatal check-ups (58 percent) as among women who received no antenatal check-ups (15 percent). 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 with a health facility for delivery may be called for regular antenatal 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. Another contributing factor may be the growing awareness of the benefits of professional medical care during both pregnancy and delivery, especially among urban, young, educated women.

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, Punjab, 1998–99

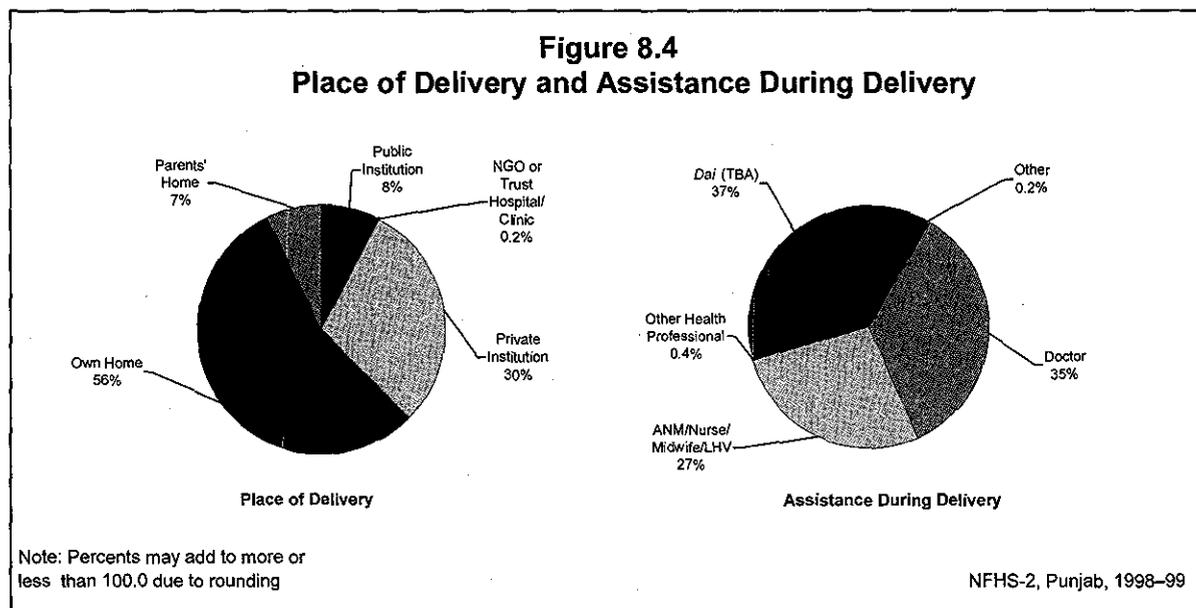
Background characteristic	Place of delivery					Total percent	Number of births
	Health facility/institution			Home			
	Public	NGO/trust	Private	Own home	Parents' home		
Mother's age at birth							
< 20	9.3	1.1	38.5	43.6	7.5	100.0	100
20–34	7.6	0.1	28.4	56.6	7.2	100.0	780
Birth order							
1	10.1	0.0	41.8	40.0	8.1	100.0	285
2–3	6.8	0.5	28.1	57.3	7.4	100.0	448
4–5	5.4	0.0	12.5	78.0	4.0	100.0	134
6+	(6.7)	(0.0)	(13.4)	(73.4)	(6.4)	100.0	32
Residence							
Urban	9.3	0.0	46.8	42.3	1.7	100.0	207
Rural	7.1	0.3	24.5	59.4	8.7	100.0	693
Mother's education							
Illiterate	5.4	0.6	16.1	69.2	8.6	100.0	358
Literate, < middle school complete	10.5	0.0	24.9	54.0	10.6	100.0	181
Middle school complete	4.9	0.0	34.9	55.4	4.9	100.0	106
High school complete and above	9.8	0.0	49.7	37.2	3.3	100.0	255
Religion							
Hindu	7.1	0.0	23.5	63.6	5.7	100.0	368
Muslim	(3.7)	(0.0)	(14.8)	(71.2)	(10.3)	100.0	30
Sikh	8.3	0.4	35.9	47.3	8.0	100.0	482
Caste/tribe							
Scheduled caste	5.7	0.0	16.1	69.8	8.4	100.0	333
Other backward class	10.2	0.0	22.6	61.7	5.5	100.0	166
Other ¹	8.2	0.5	43.9	40.8	6.7	100.0	400
Standard of living index							
Low	7.9	0.0	18.9	59.6	13.6	100.0	56
Medium	6.4	0.5	13.4	70.8	8.8	100.0	398
High	8.7	0.0	45.7	40.8	4.8	100.0	441
Number of antenatal check-ups							
0	2.7	0.9	11.8	75.9	8.7	100.0	234
2	8.8	0.0	19.9	65.7	5.7	100.0	132
3	7.5	0.0	22.7	60.0	9.8	100.0	139
4+	10.3	0.0	47.2	36.5	6.0	100.0	374
Total	7.6	0.2	29.6	55.5	7.1	100.0	900

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 20 births to women age 35–49, 18 births to women belonging to other religions, 1 birth to a scheduled-tribe woman, 21 births to women who had only one antenatal check-up, and 1 and 5 births with missing information on religion and the standard of living index, respectively, which are not shown separately.

NGO: Nongovernmental organization

() Based on 25–49 unweighted cases

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



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. Sixty-three percent of births in the three years preceding the survey were attended by a health professional, including 35 percent by a doctor and 27 percent by an ANM, nurse, midwife, or LHV. Comparable estimates at the national level are 42 percent by a health professional, 30 percent by a doctor, and 11 percent by an ANM, nurse, midwife, or LHV. In Punjab, 37 percent of births were attended by a traditional birth attendant and only a negligible proportion were attended by friends, relatives, or other persons. According to the two NFHS surveys, the proportion of deliveries attended by a health professional increased substantially from 47 percent in NFHS-1 to 62 percent in NFHS-2.

The proportion of births assisted by a doctor varies by the mother's age, from 34 percent for mothers age 20-34 to 41 percent for younger mothers. The differentials are much larger by birth order, ranging from 17 percent for births of order four or higher to 46 percent for first-order births. Births are much more likely to be assisted by a doctor in urban areas (48 percent) than in rural areas (31 percent). The proportion of births delivered by a doctor increases sharply with the mother's level of education and is more than twice as high for births to mothers from households with a high standard of living as births to mothers from households with a medium or low standard of living. While there is almost no difference among Hindus and Muslims (30-32 percent) in this respect, Sikhs are more likely to have deliveries assisted by a doctor (40 percent). Deliveries by doctors vary from 23 percent for births to scheduled-caste mothers to 48 percent for births to mothers who do not belong to a scheduled caste, scheduled tribe, or other backward class. Only 18 percent of births to women who did not have any antenatal check-ups were attended by a doctor; this proportion increases with the number of antenatal check-ups to 52 percent for births to women who had four or more antenatal check-ups. Fifty-seven percent of births to women who did not have any antenatal check-ups were attended by a TBA. Seventy-seven percent of births in private institutions were attended by a doctor, compared with 74

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, Punjab, 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		
Mother's age at birth							
< 20	40.9	30.3	0.0	27.7	1.1	100.0	100
20-34	34.3	26.8	0.5	38.3	0.1	100.0	780
Birth order							
1	45.6	27.6	0.7	26.1	0.0	100.0	285
2-3	35.0	28.2	0.0	36.5	0.2	100.0	448
4-5	17.1	21.4	0.8	60.0	0.7	100.0	134
6+	(16.6)	(29.5)	(3.2)	(50.7)	(0.0)	100.0	32
Residence							
Urban	48.4	29.0	0.4	21.8	0.4	100.0	207
Rural	31.1	26.5	0.5	41.8	0.2	100.0	693
Mother's education							
Illiterate	23.5	25.0	0.8	50.5	0.2	100.0	358
Literate, < middle school complete	29.9	27.4	0.0	42.7	0.0	100.0	181
Middle school complete	39.6	33.3	0.0	26.2	1.0	100.0	106
High school complete and above	53.1	27.1	0.4	19.3	0.0	100.0	255
Religion							
Hindu	30.4	25.8	0.8	42.5	0.5	100.0	368
Muslim	(32.1)	(15.6)	(0.0)	(52.3)	(0.0)	100.0	30
Sikh	39.6	29.1	0.2	31.0	0.0	100.0	482
Caste/tribe							
Scheduled caste	22.6	27.2	0.6	49.3	0.3	100.0	333
Other backward class	29.3	25.4	0.0	44.7	0.6	100.0	166
Other ²	47.9	27.7	0.5	24.0	0.0	100.0	400
Standard of living index							
Low	21.5	20.8	0.0	57.7	0.0	100.0	56
Medium	20.3	26.4	0.5	52.5	0.2	100.0	398
High	50.2	28.4	0.4	20.6	0.2	100.0	441
Number of antenatal check-ups							
0	17.9	23.8	0.9	57.0	0.5	100.0	234
2	25.4	29.3	0.0	45.3	0.0	100.0	132
3	30.5	31.7	0.8	36.4	0.6	100.0	139
4+	51.7	26.2	0.2	21.9	0.0	100.0	374
Place of delivery							
Public health facility	74.4	25.6	0.0	0.0	0.0	100.0	68
Private health facility	77.1	22.5	0.0	0.0	0.3	100.0	266
Own home	9.9	29.4	0.4	60.1	0.2	100.0	499
Parents' home	11.5	30.1	3.2	55.2	0.0	100.0	64
Total	35.1	27.0	0.4	37.2	0.2	100.0	900

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 20 births to women age 35-49, 18 births to women belonging to other religions, 1 birth to a scheduled-tribe woman, 21 births to women who received one antenatal check-up, 2 births delivered in nongovernmental organization or trust hospitals/clinics, and 1 and 5 births with missing information on religion and the standard of living index, respectively, which are not shown separately.

ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant

() Based on 25-49 unweighted cases

¹If the respondent mentioned more than one attendant, only the most qualified attendant is shown.

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

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, Punjab, 1998–99			
Characteristic of births	Urban	Rural	Total
Percentage delivered by caesarian section	10.2	7.6	8.2
Birth weight			
< 2.5 kg	9.3	4.6	5.7
2.5 kg or more	33.7	13.6	18.2
Don't know/missing	9.7	4.3	5.6
Not weighed	47.3	77.4	70.5
Total percent	100.0	100.0	100.0
Size at birth			
Large	9.3	6.9	7.4
Average	72.7	74.2	73.8
Small	16.3	16.8	16.7
Very small	1.3	2.2	2.0
Don't know/missing	0.4	0.0	0.1
Total percent	100.0	100.0	100.0
Number of births	207	693	900
Note: Table includes only the two most recent births during the three years preceding the survey.			

percent of births in public institutions. Among births delivered at home (the respondents' or their parents' homes), more than half (55–60 percent) were attended by a TBA, about one-third (30–33 percent) by health professionals other than doctors, and only about one-tenth (10–12 percent) by a doctor.

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, 8 percent of children born in Punjab in the past three years were delivered by caesarian section, about the same proportion as in the country as a whole (7 percent). The proportion of deliveries by caesarian section was similar in urban areas (10 percent) and in rural areas (8 percent). Caesarian-section deliveries have doubled since NFHS-1, when the proportion of caesarian deliveries among births in the three years preceding the survey was only 4 percent.

Babies with a low birth weight face substantially higher risks of dying than do babies with a birth weight in the normal range. For each birth that took place in the three years preceding the survey, respondents were asked the baby's birth weight. Because babies delivered at home are unlikely to be weighed and because the mother might not remember the birth weight even if the baby was weighed, the survey also asked mothers to estimate the size of each baby at birth (large, average, small, or very small).

In Punjab, 71 percent of babies born in the three years preceding the survey were not weighed at birth. The proportion not weighed is 47 percent in urban areas and 77 percent in rural areas. Even for babies that were weighed, almost one-fifth of the mothers did not remember the weight. Therefore, the resulting sample of births for which 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, almost one-fourth (24 percent) weighed less than 2.5 kilograms. Among the births for which weights are reported, the proportion weighing less than 2.5 kilograms is only slightly lower in urban areas (22 percent) than in rural areas (25 percent).

According to mothers' estimates, 7 percent of births in the three years preceding the survey were large, 74 percent were of average size, 17 percent were small, and 2 percent were very small. The proportion of babies reported as small or very small was similar, at 18–19 percent, 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 births in the three years preceding the survey that were followed by a postpartum check-up within two months of delivery. Only 20 percent of noninstitutional births were followed by a check-up within two months of the delivery. Among births that were followed by a check-up, only 28 percent of check-ups took place within two days of birth and 56 percent took place within one week of birth (data not shown). The proportion of noninstitutional births for which a postpartum check-up was received increases with the age of the mother but decreases with birth order. Mothers of 41 percent of noninstitutional births in urban areas but only 16 percent in rural areas received a postpartum check-up. Postpartum check-ups are also relatively more common for noninstitutional births to Muslim mothers, mothers who have completed at least middle school, and mothers from households with a high standard of living as well as those delivered by a health professional and those for which the mother had three antenatal check-ups.

Mothers who did not deliver in a health facility but who received a postpartum check-up were asked whether they received specific components of postpartum care, including an abdominal examination and advice on family planning, breastfeeding, and baby care. Among these mothers, 86 percent reported an abdominal examination, 58 percent received advice on baby care, 65 percent received advice on breastfeeding, and only 35 percent received family planning advice (data not shown).

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

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 by selected background characteristics, Punjab, 1998–99					
Background characteristic	Percentage with a postpartum check-up	Number of births	Background characteristic	Percentage with a postpartum check-up	Number of births
Mother's age at birth			Caste/tribe		
< 20	(12.5)	51	Scheduled caste	17.3	260
20–34	21.3	498	Other backward class	20.9	111
			Other ¹	24.3	190
Birth order			Standard of living index		
1	26.5	137	Low	(13.0)	41
2–3	19.5	290	Medium	16.6	317
4–5	18.1	110	High	28.2	201
6+	(7.6)	26			
Residence			Number of antenatal check-ups		
Urban	40.9	91	0	6.2	198
Rural	16.4	472	2	22.0	94
			3+	31.4	256
Mother's education			Assistance during delivery		
Illiterate	17.4	279	Doctor/ANM/nurse/midwife/LHV ²	31.6	227
Literate, < middle school complete	13.8	117	Dai (TBA)	12.8	335
Middle school complete	30.3	64			
High school complete and above	29.5	103	Total	20.3	563
Religion					
Hindu	20.3	255			
Muslim	(29.7)	24			
Sikh	20.8	267			

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 14 births to women age 35–49, 15 births to women belonging to other religions, 1 birth to a scheduled-tribe woman, 15 births to women with one antenatal check-up, 1 birth to a woman who was assisted by persons other than a health professional or a TBA during delivery, and 1 and 4 births with missing information on religion and the standard of living index, respectively, which are not shown separately.
ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant
() Based on 25–49 unweighted cases
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class
²Includes other health professionals

complications—at any time during the two months after delivery. For 8 percent of births, the mother reported a very high fever, and for 6 percent of births, the mother reported massive vaginal bleeding following the birth (Table 8.11), which shows that the prevalence of these complications is lower in Punjab than in India as a whole (13 and 11 percent, respectively). The proportion of births for which mothers report massive vaginal bleeding tends to decrease with mother's age and birth order (at least till birth order 5), whereas the proportion for which very high fever was reported tends to increase with mother's age and birth order. The problem of massive vaginal bleeding is reported slightly more often in the case of births that took place in institutions or were assisted by a doctor. It is quite likely that these mothers went to a health facility for delivery or the delivery was assisted by a doctor because they had complications leading to massive vaginal bleeding. Very high fever is slightly more common for home deliveries than for institutional deliveries and deliveries not assisted by a doctor.

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, Punjab, 1998–99			
Background characteristic	Massive vaginal bleeding	Very high fever	Number of births
Residence			
Urban	6.5	6.9	200
Rural	5.7	8.1	659
Mother's age at birth			
< 20	8.7	5.6	97
20–34	5.4	8.1	742
Birth order			
1	6.2	6.3	272
2–3	6.7	8.1	428
4–5	1.7	10.4	127
6+	(10.1)	(6.7)	31
Place of delivery			
Public health facility	7.7	3.2	65
Private health facility	7.8	6.7	254
Own home	4.9	9.0	479
Parents' home	3.6	9.1	59
Assistance during delivery			
Doctor	9.1	5.5	300
ANM/nurse/midwife/LHV	3.9	7.3	235
Dai (TBA)	4.5	10.6	319
Total	5.9	7.8	859
<p>Note: Table includes only the two most recent births during the 2–35 months preceding the survey. Total includes 20 births to women age 35–49, 2 births delivered in nongovernmental organization or trust hospitals/clinics, 3 births to women who were assisted by 'other' health professionals, and 2 births to women who were assisted by persons other than a health professional or a TBA during delivery, which are not shown separately.</p> <p>ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant () Based on 25–49 unweighted cases</p>			

8.4 Reproductive Health Problems

Absence of reproductive tract infections (RTIs) is essential for the reproductive health of both women and men and is critical for their ability to meet their reproductive goals. There are three different types of reproductive tract infections for women: endogenous infections 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 sequelae are an important component of programmes for family planning, child survival, women's health, safe motherhood, and HIV prevention. RTIs have profound implications for the success of each of these initiatives, and conversely, these initiatives provide a critical opportunity for the prevention and control of RTIs (Germain et al., 1992). Studies have demonstrated that RTIs are an important reason for the poor acceptance and low continuation rates of contraceptive methods such as the IUD. Bhatia and Cleland (1995) found a higher incidence of gynaecological symptoms among women who had undergone a tubectomy than among other women. The Government of India recognized the importance of RTIs and STIs in undermining the health and welfare of individuals and couples in a policy statement on the Reproductive and Child Health Programme, which states that couples should be 'able to have sexual relations free of fear of pregnancy and contracting diseases' (Ministry of Health and Family Welfare, 1997:2). The Reproductive and Child Health Programme includes the following interventions: establishment of RTI/STI clinics at district hospitals (where not already available), provision of technicians for laboratory diagnosis of RTIs/STIs, and in selected districts, screening and treatment of RTIs/STIs (Ministry of Health and Family Welfare, 1997).

NFHS-2 collected information from women on some common symptoms of RTIs, namely problems with abnormal vaginal discharge or urinary tract infections in the three months preceding the survey, intercourse-related pain (often), and bleeding after intercourse (ever). Specifically, the prevalence of reproductive health problems among ever-married women is estimated from women's self-reported experience with each of the following problems: vaginal discharge accompanied by itching, by irritation around the vaginal area, by bad odour, by severe lower abdominal pain, by fever, or by any other problem; pain or burning while urinating or frequent or difficult urination; and (among currently married women only) painful intercourse or bleeding after intercourse. Women who experience one or more of these reproductive health problems could either have or be at risk of getting an RTI/STI. However, since information on health problems is based on self reports rather than clinical tests or examinations, the results should be interpreted with caution.

Table 8.12 shows the prevalence of different reproductive health problems among women in Punjab by background characteristics. Twenty-four percent of ever-married women reported at least one type of problem related to vaginal discharge, and 8 percent reported symptoms of a urinary tract infection. Overall, 26 percent of women reported either problems with vaginal discharge or symptoms of a urinary tract infection. Among problems related to vaginal discharge, itching or irritation was mentioned most frequently (17 percent), followed by bad odour and severe lower abdominal pain (13 percent each).

Table 8.12 and Figure 8.5 show that 28 percent of currently married women report one or more reproductive health problems (much lower than the national average of 39 percent). Six percent report experiencing painful intercourse often and 1 percent report ever having had bleeding (not related to menstruation) after intercourse.

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 selected background characteristics, Punjab, 1998-99

Background characteristic	Ever-married women								Currently married women				
	Any abnormal vaginal discharge	Vaginal discharge accompanied by:					Symptoms of a urinary tract infection ²	Any abnormal vaginal discharge or symptoms of a urinary tract infection ²	Number of ever-married women	Painful intercourse (often)	Bleeding after intercourse (ever) ¹	Any reproductive health problem	Number of currently married women
		Itching or irritation	Bad odour	Severe lower abdominal pain ¹	Fever	Other problem							
Age													
15-19	23.6	16.0	11.1	12.8	0.0	0.0	7.3	24.7	85	6.4	1.3	26.3	84
20-24	21.1	14.2	12.2	9.8	0.9	3.8	7.4	24.5	447	7.4	0.7	28.3	441
25-29	29.0	19.4	14.7	15.5	2.4	4.1	8.3	30.6	567	7.5	1.7	33.1	561
30-34	27.9	18.9	16.5	16.4	2.0	4.5	10.8	30.6	548	6.9	0.8	32.9	531
35-39	23.0	16.7	13.3	13.2	0.4	4.4	8.8	25.4	475	5.2	0.9	27.3	451
40-44	18.7	15.6	10.6	8.7	0.5	3.5	8.3	21.9	390	2.0	0.5	22.6	357
45-49	14.7	10.4	6.9	6.4	0.0	3.5	4.9	16.6	283	1.2	0.4	18.4	249
Residence													
Urban	25.1	19.6	13.6	11.4	0.8	5.7	8.9	27.7	862	4.9	0.5	30.1	830
Rural	22.7	15.1	12.7	12.8	1.3	3.1	8.1	25.2	1,934	5.9	1.1	27.5	1,844
Education													
Illiterate	21.3	13.9	12.1	12.9	1.3	2.4	8.3	24.0	1,084	5.6	0.9	26.8	1,020
Literate, < middle school complete	26.6	18.7	13.8	13.3	2.0	5.2	11.4	30.0	593	6.2	1.5	31.7	570
Middle school complete	27.8	21.0	14.8	12.5	0.7	6.5	8.9	30.0	294	6.5	0.8	32.4	285
High school complete and above	22.6	16.6	12.8	11.0	0.5	4.1	6.1	24.1	826	4.8	0.6	26.3	799
Religion													
Hindu	25.7	18.1	15.2	12.3	1.4	4.9	7.3	27.4	1,125	4.7	0.6	29.5	1,079
Muslim	33.8	28.2	23.2	17.5	1.3	6.7	16.9	39.8	66	4.7	0.0	44.8	63
Sikh	21.1	14.4	10.8	12.3	1.0	3.2	8.8	24.0	1,556	6.4	1.2	26.5	1,486
Other	(34.6)	(30.3)	(17.7)	(12.9)	(0.0)	(1.9)	(8.8)	(34.6)	47	(4.4)	(0.0)	(37.1)	44
Caste/tribe													
Scheduled caste	23.8	15.6	14.9	11.9	1.3	3.2	8.4	26.0	781	5.7	0.7	28.6	754
Other backward class	24.5	17.8	13.6	14.4	1.7	4.6	11.8	27.9	453	5.9	0.2	29.9	439
Other ³	23.0	16.6	11.8	12.1	0.9	4.1	7.4	25.4	1,560	5.5	1.3	27.8	1,478

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 selected background characteristics, Punjab, 1998-99

Background characteristic	Ever-married women								Currently married women				
	Any abnormal vaginal discharge	Vaginal discharge accompanied by:					Symptoms of a urinary tract infection ²	Any abnormal vaginal discharge or symptoms of a urinary tract infection ²	Number of ever-married women	Painful intercourse (often)	Bleeding after intercourse (ever) ¹	Any reproductive health problem	Number of currently married women
		Itching or irritation	Bad odour	Severe lower abdominal pain ¹	Fever	Other problem							
Standard of living index													
Low	26.6	19.8	16.9	23.7	1.9	3.8	8.6	28.5	113	8.9	0.0	29.6	109
Medium	23.9	15.6	13.8	11.5	1.2	3.0	9.3	26.5	989	6.1	1.0	29.7	935
High	23.0	16.7	12.2	12.1	1.1	4.5	7.8	25.4	1,681	5.2	1.0	27.4	1,618
Work status													
Employed by someone else	25.3	18.5	14.2	11.9	2.7	6.4	10.4	26.4	224	6.3	0.5	30.0	196
Self-employed	(13.6)	(7.0)	(6.5)	(10.5)	(0.0)	(3.3)	(10.6)	(24.3)	27	*	*	*	20
Not worked in past 12 months	23.5	16.4	13.0	12.4	1.0	3.7	8.2	25.9	2,533	5.5	0.9	28.2	2,448
Number of children ever born													
0	22.7	16.2	13.7	12.4	2.9	2.9	8.0	25.9	226	10.6	1.4	30.8	220
1	20.7	15.0	9.9	10.4	0.8	2.9	8.1	23.1	364	5.5	0.6	25.2	345
2-3	25.2	17.3	14.0	14.0	1.3	4.1	8.1	27.5	1,403	5.2	1.1	29.4	1,352
4-5	21.4	15.2	12.2	10.8	0.8	5.0	8.8	23.6	630	5.0	0.7	25.4	600
6+	23.6	17.2	12.5	9.8	0.0	2.1	9.7	27.7	173	5.0	0.7	33.2	157
All ever-married women	23.5	16.5	12.9	12.4	1.2	3.9	8.4	25.9	2,796	NA	NA	NA	NA
All currently married women	23.9	16.7	13.3	12.7	1.2	3.9	8.5	26.3	2,674	5.6	0.9	28.3	2,674

Note: Total includes a small number of women belonging to scheduled tribes, women working in family farm/business, and women with missing information on religion and the standard of living index, who are not shown separately.

NA: Not applicable

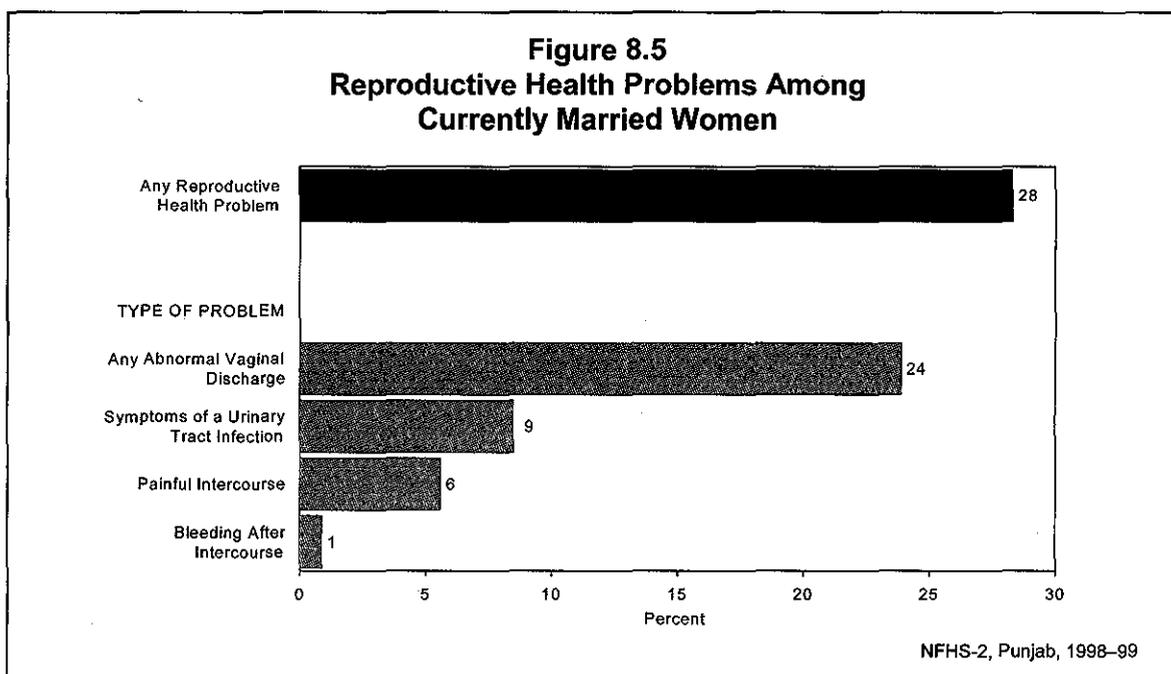
() Based on 25-49 unweighted cases

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

¹Not related to menstruation

²Includes pain or burning while urinating or more frequent or difficult urination

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



Reproductive health problems are more common among currently married women in the middle of the reproductive age span (age 25–34) than among younger or older women. Their prevalence is similar among urban women (30 percent) and rural women (28 percent). Reproductive health problems are more common among literate women who have at most completed middle school, than among illiterate women or women who have education beyond middle school. Almost every type of reproductive health problem except bleeding after intercourse is more common among Muslim women than among Hindu or Sikh women. There are hardly any differentials by caste, household standard of living, and employment status of women. Reproductive health problems are somewhat higher for women with no children (31 percent) and women with 6+ children (33 percent) than for women at other parities.

Among women who report any reproductive health problems, 41 percent have not seen anyone for advice or treatment (Table 8.13). The proportion of women who have not obtained advice or treatment is higher in rural areas (43 percent) than in urban areas (35 percent). Overall, 78 percent of women who obtained advice or treatment were seen by someone in the private medical sector (81 percent in urban areas and 77 percent in rural areas). Among women who sought advice or treatment, 63 percent saw a private doctor and only 14 percent saw a government doctor. Nearly 5 percent have sought treatment from a homeopath, *vaidya*, *hakim*, or traditional birth attendant.

NFHS-2 results in Punjab show that although almost 3 in every 10 currently married women report at least one reproductive health problem that could be symptomatic of a more serious reproductive tract infection, two-fifths of them bear the problems silently without seeking advice or treatment. These findings highlight the need to educate women regarding the symptoms and consequences of reproductive health problems as well as the need to expand counselling and reproductive health services in both rural and urban areas.

Table 8.13 Treatment of reproductive health problems

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

Provider	Urban	Rural	Total
Public medical sector	15.5	18.7	17.6
Government doctor	13.1	5.8	8.2
Public health nurse	0.3	1.2	0.9
ANM/LHV	2.7	11.6	8.6
Male MPW/supervisor	0.0	0.2	0.1
Private medical sector	52.5	43.5	46.5
Private doctor	43.2	34.7	37.5
Private nurse	5.3	6.7	6.2
Compounder/pharmacist	0.3	0.4	0.4
Vaidya/hakim/homeopath	6.4	1.2	2.9
Dai (TBA)	0.3	2.7	1.9
Other private medical sector	0.0	0.2	0.1
Other	0.0	0.2	0.1
None	35.4	43.4	40.8
Number of women	258	519	777

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 health worker; TBA: Traditional birth attendant

CHAPTER 9

QUALITY OF CARE

The historic International Conference on Population and Development in Cairo in 1994 brought about a paradigm shift in population-related policies. The conference helped focus the attention of governments on making programmes more client-oriented with an emphasis on the quality of services and care. In line with the conference recommendations, the Government of India acknowledged the need to abandon the use of targets for monitoring its family welfare programme. It recognized that the top-down target approach does not reflect user needs and preferences and de-emphasizes the quality of care provided (Ministry of Health and Family Welfare, 1998b). Recent research on the different aspects of service delivery, especially at the grass-roots level, including programme coverage, client-provider interactions, and informed choice, also endorses the need to take a different approach to meeting the reproductive and health needs of the Indian population (Koenig and Khan, 1999). This research suggests that inadequate attention to the quality of care has contributed to the inability of the government's family welfare programme to meet its goals.

In 1996, the existing family welfare programme was transformed into the Reproductive and Child Health (RCH) Programme. This new programme integrates all family welfare and women and child health services with the explicit objective of providing beneficiaries with 'need based, client centred, demand driven, high quality integrated RCH services' (Ministry of Health and Family Welfare, 1998b:6). The strategy for the RCH Programme shifts the policy emphasis from achieving demographic targets to meeting the reproductive needs of individual clients (Ministry of Health and Family Welfare, 1996).

NFHS-2 included several questions on the quality of care of health and family welfare services provided in the public sector and the private sector. In this chapter, sources of health care for households are described first. The chapter then examines different aspects of home visits by providers and visits by respondents to health facilities, including frequency of visits, source of care, and quality of care. Finally, information is presented on the quality of care with respect to family planning services.

9.1 Source of Health Care for Households

To examine the role of different health providers in meeting the health-care needs of households, the NFHS-2 Household Questionnaire included the question, 'When members of your household get sick, where do they generally go for treatment?' Table 9.1 shows the main source of health care according to residence and the standard of living index. A large majority of households (86 percent) normally use the private medical sector when a household member gets sick; only 14 percent use the public medical sector. The use of the private sector is much higher in Punjab (86 percent) than for the country as a whole (69 percent). Overall, three types of health providers are generally used as a source of treatment by almost all households: private doctors (47 percent), private hospitals or clinics (38 percent), and government/municipal hospitals (9 percent). The pattern of service utilization is similar for rural and urban households.

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, Punjab, 1998–99

Source	Residence		Standard of living index			Total
	Urban	Rural	Low	Medium	High	
Public medical sector	13.0	14.2	19.0	15.2	12.1	13.8
Government/municipal hospital	10.2	7.9	8.9	8.8	8.6	8.6
Government dispensary	2.5	4.6	9.0	5.1	2.4	3.9
UHC/UHP/UFWC	0.1	0.1	0.0	0.0	0.1	0.1
CHC/rural hospital/PHC	0.1	1.4	0.6	1.1	1.0	1.0
Sub-centre	0.1	0.2	0.6	0.3	0.1	0.2
NGO or trust hospital/clinic	0.3	0.1	0.0	0.1	0.2	0.2
Private medical sector	86.6	85.5	81.0	84.6	87.4	85.9
Private hospital/clinic	38.5	38.0	34.7	33.4	42.0	38.2
Private doctor	47.2	46.9	45.8	50.3	44.9	47.0
Private mobile clinic	0.1	0.1	0.0	0.1	0.1	0.1
Vaidya/hakim/homeopath	0.5	0.1	0.6	0.2	0.1	0.2
Pharmacy/drugstore	0.3	0.1	0.0	0.3	0.1	0.2
Other private medical sector	0.0	0.4	0.0	0.3	0.3	0.3
Home treatment	0.1	0.2	0.0	0.1	0.3	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	930	2,037	189	1,154	1,609	2,967

Note: Total includes 14 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 type of health care services used is influenced only slightly by the standard of living of the household. The private sector is the dominant health care source for households at all standards of living with 81 percent of even households with a low standard of living usually relying on this sector for care when a household member becomes sick. The use of the private medical sector increases to 87 percent for households with a high standard of living, whereas the use of the public medical sector declines from 19 percent for households with a low standard of living to 12 percent of households with a high standard of living. While the use of government or municipal hospitals varies little by standard of living, the use of government dispensaries as a source of care declines sharply from 9 percent for households with a low standard of living to only 2 percent for households with a high standard of living. Among private sources of health care, the use of private hospitals or clinics varies most by standard of living: 42 percent of households with a high standard of living usually use this source of health care compared with 33–35 percent of households with a low or medium 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 supposed to monitor various aspects of the health of women and children, provide information related to health and family planning, counsel and motivate women to adopt appropriate health and family planning practices, and deliver other selected services. These contacts are also important for enhancing the credibility of services and establishing necessary

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 by selected background characteristics, Punjab, 1998–99					
Background characteristic	Percentage with at least one visit	Number of women	Background characteristic	Percentage with at least one visit	Number of women
Age			Standard of living index		
15–24	2.6	532	Low	1.8	113
25–34	1.5	1,115	Medium	1.7	989
35–49	1.3	1,149	High	1.5	1,681
Residence			Number of children ever born		
Urban	0.7	862	0	0.9	226
Rural	2.0	1,934	1	1.5	364
Education			2	2.3	716
Illiterate	1.4	1,084	3	1.5	688
Literate, < middle school complete	1.6	593	4	0.9	448
Middle school complete	2.9	294	5+	1.9	355
High school complete and above	1.4	826	Family planning status		
Religion			Sterilized	1.4	825
Hindu	1.5	1,125	Using method other than sterilization	1.5	957
Muslim	6.0	66	Nonuser	1.9	1,014
Sikh	1.4	1,556	Total	1.6	2,796
Other	(1.9)	47			
Caste/tribe					
Scheduled caste	1.6	781			
Other backward class	2.3	453			
Other ¹	1.4	1,560			

Note: Total includes 2 women belonging to the scheduled tribes and 2 and 13 women with missing information on religion and the standard of living index, respectively, who are not shown separately.
 () Based on 25–49 unweighted cases
¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

rapport with the clients. To assess the frequency and quality of home visits, NFHS-2 asked women ‘During the last 12 months, has a health or family planning worker visited you at home?’ Women who had been visited were then asked how many times a worker had visited them in the preceding 12 months, the topics discussed during these visits, and the timing of the last visit. Additional questions were asked about the last visit, including questions on the type of worker who made the visit, the type of service provided, and the quality of care received.

Only 2 percent of women in Punjab report that they received a home visit from a health or family planning worker during the 12 months preceding the survey (Table 9.2), compared with 13 percent of women in India as a whole. Given the small proportion of women reporting a home visit, the variation in home visits by background characteristics is limited. It is notable, however, that 6 percent of Muslim women report a home visit, compared with 1–2 percent of Hindu and Sikh women. In addition, younger women (age 15–19) and women who have completed only middle school are more likely than most other women to receive a visit by a health worker.

The small number of women who did receive a home visit, received, on average, two visits in the 12 months preceding the survey with the last visit being about three months before the interview (data not shown). The topics discussed during home visits included treatment for a

Table 9.3 Matters discussed during visits to health facilities				
Among ever-married women who had at least one contact with a health or family planning worker during one or more visits to a health facility in the 12 months preceding the survey, the percentage who discussed specific topics with the health or family planning worker, Punjab, 1998–99				
Topic discussed	Pregnant women or women with children under age 3	Other women		Total
		Current contraceptive users	Current nonusers	
Family planning	5.0	2.7	0.2	3.1
Breastfeeding	0.1	0.0	0.0	0.0
Immunization	23.8	0.7	0.9	8.7
Nutrition	1.5	0.0	0.0	0.5
Disease prevention	2.3	5.4	2.5	3.8
Treatment of health problem	70.9	93.8	95.9	86.2
Antenatal care	28.1	0.0	0.4	9.8
Delivery care	8.0	0.1	0.3	2.9
Postpartum care	3.3	0.2	0.0	1.2
Childcare	29.9	11.5	8.6	17.4
Sanitation/cleanliness	0.1	0.0	0.3	0.1
Number of women	785	1,078	397	2,260

Note: Percentages add to more than 100.0 because of multiple responses.

health problem, family planning, disease prevention, delivery and antenatal care, and immunization, among others.

9.3 Matters Discussed During Visits to Health Facilities

Eighty-one percent of ever-married women in NFHS-2 visited a health facility at least once during the 12 months preceding the survey (data not shown). These women were asked about the different topics discussed with the workers during any of these visits. Table 9.3 shows the percentage of women who discussed specific topics during visits to a health facility in the preceding 12 months.

The topic most frequently discussed during visits to health facilities was treatment of a health problem (86 percent). The next most frequently discussed topics were childcare (17 percent), antenatal care (10 percent), and immunizations (9 percent). Only 3 percent of the women said that family planning was discussed during any of their visits to a health facility in the past year. This percentage is the same as the one observed for the country as a whole. Even among currently pregnant women and women with children under age three (many of whom are potentially in need of family planning), only 5 percent discussed family planning. Less than 1 percent of current non-users of contraception mentioned discussing family planning. As expected, pregnant women and women with a child less than three years old were most likely to have discussions about childcare, antenatal care, and delivery care. Although 28 percent of these women discussed antenatal care, only 8 percent discussed delivery care, and only 3 percent discussed postpartum care.

These findings suggest that delivery of health and family planning services in Punjab is not well integrated. Indeed, in the process of providing health and childcare services, health workers 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 many important health-related topics

Table 9.4 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, Punjab, 1998-99									
Quality indicator	Public sector			Private sector/NGO/trust			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Percentage who received the service they went for	99.4	98.7	98.9	99.7	99.9	99.8	99.6	99.6	99.6
Median waiting time (minutes)	19.2	19.3	19.3	9.9	14.3	14.1	14.1	14.6	14.4
Percentage who said the staff spent enough time with them	98.2	95.6	96.3	100.0	98.9	99.3	99.6	98.1	98.6
Percentage who said the staff talked to them:									
Nicely	79.4	69.1	71.8	86.4	79.6	81.9	85.0	76.8	79.5
Somewhat nicely	19.9	29.1	26.7	13.6	20.2	18.0	14.8	22.6	20.1
Not nicely	0.6	1.8	1.5	0.0	0.2	0.1	0.1	0.6	0.5
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	83.6	74.9	77.1	94.9	81.5	86.4	92.6	79.5	84.0
Percentage who rated facility as:									
Very clean	68.0	55.2	58.5	73.9	62.4	66.3	72.7	60.5	64.4
Somewhat clean	31.4	43.3	40.1	25.7	37.4	33.4	26.8	38.9	35.0
Not clean	0.6	1.0	0.9	0.2	0.3	0.2	0.2	0.5	0.4
Missing	0.0	0.5	0.4	0.3	0.0	0.1	0.2	0.1	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	144	405	549	582	1,129	1,711	725	1,534	2,260
Number of women who said they needed privacy	105	298	403	411	708	1,119	516	1,006	1,522
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									

(feeding practices, nutrition, disease prevention, sanitation, and oral rehydration) are rarely discussed during visits to a health facility.

9.4 Quality of Services Received at the Most Recent Visit to a Health Facility

NFHS-2 asked women who visited a health facility in the 12 months preceding the survey a number of questions to ascertain their perception of the quality of care they received during their most recent visit. Specific dimensions covered were whether women received the service they went for, the waiting time before receiving the service (or before finding out that the service was not available), whether the staff at the health facility spent enough time with them, whether the staff talked nicely to them, and whether the staff respected their privacy, if they needed privacy. Women were also asked to assess the cleanliness of the facility.

Almost all respondents said that they received the services for which they visited the facility (Table 9.4). The median waiting time to receive services was 14 minutes (19 minutes at public facilities and 14 minutes at private facilities). For public facilities, there was no difference in the median by urban-rural residence. For private facilities, however, the median waiting time was 14 minutes for rural women and 10 minutes for urban women. Satisfaction with the amount of time the staff spent with the woman was very high (99 percent). There are hardly any differences in this regard between rural and urban women, as well as between facilities in the private sector and the public sector.

Users rated the private health sector as better than the public health 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 72 percent of women who received services in a public-sector facility. Among users of both public sector and private sector health facilities, urban women were more likely to report that the staff talked to them nicely than rural women. Overall, 1 percent of women said that the staff did not talk to them nicely, and this percentage was higher, at 2 percent, only among rural women visiting a public sector health facility.

Among women who said they needed privacy during their visit, 84 percent were satisfied that the staff respected their need for privacy. This percentage was higher for private-sector facilities (86 percent) than for public-sector facilities (77 percent). It was also higher for women living in urban areas (93 percent) than for women living in rural areas (80 percent). Private-sector facilities are also perceived to be cleaner than public-sector facilities. Sixty-six percent of women who visited a private-sector facility said that the facility was very clean, compared with 59 percent of women who visited a public-sector facility. Women living in urban areas were more likely to rate the facility as very clean than women living in rural areas. Overall, less than one percent of respondents report that the facility was not clean. These data indicate that private-sector facilities on average appear to provide better quality services than public-sector facilities and that women living in urban areas receive better quality services than women living in rural areas.

9.5 Family Planning Information and Advice Received

To gain a better understanding of the information provided to women about different contraceptive methods, women were asked to recollect all the specific methods that had ever been discussed during any of the contacts they had ever had with a health or family planning worker. The results are shown in Table 9.5.

Overall, 11 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. This percentage is slightly higher in rural areas (12 percent) than in urban areas (9 percent). Among women who discussed contraception, the most frequently discussed method was female sterilization (55 percent). Among these women, more than one-third reported discussing the condom and two-fifths or more reported discussing oral pills or the IUD. Discussions of traditional methods such as rhythm or withdrawal were limited (6 percent and 3 percent, respectively). Rural women reported discussions of female sterilization more often than urban women and, in fact, female sterilization was the method most often discussed by rural women. By contrast, not only do urban women report discussions of each officially-sponsored spacing method more often than

Table 9.5 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, Punjab, 1998-99			
Method	Urban	Rural	Total
Pill	48.5	36.7	40.3
Condom	59.4	37.3	44.1
IUD	42.0	30.8	34.2
Female sterilization	47.1	57.7	54.5
Male sterilization	6.6	7.2	7.0
Rhythm/safe period	6.1	5.5	5.7
Withdrawal	5.0	2.5	3.3
Other method	0.0	0.4	0.3
No method/no contact	8.8	12.4	11.3
Number of women	862	1,934	2,796

Note: Percentages add to more than 100.0 because more than one method may have been discussed.

rural women, but they also report discussing condoms and pills more often than female sterilization. Notably, in Punjab, about one-third (30-39 percent) of even rural women report discussing each of the different officially-sponsored spacing methods.

9.6 Availability of Pills and Condoms

To explore difficulties faced in the procurement of condoms and pills, NFHS-2 asked current users of these methods if they had been able to get their supply whenever needed. It is remarkable that none of the urban condom users and none of the rural or urban pill users ever had a problem with obtaining a regular supply. Even among rural condom users, only a very small percentage (about 1 percent) reported a problem with obtaining a regular supply (data not shown).

9.7 Person Motivating Users of a Modern Contraceptive Method

To help understand the dynamics of the adoption of contraceptive methods and the roles that different persons play, NFHS-2 asked current users of modern methods who mainly motivated them to use their current method. In Punjab, 38 percent said that a government health worker was the person who mainly motivated them, and only 3 percent said they were motivated by a private-sector health worker (Table 9.6 and Figure 9.1). Forty-four percent reported that the motivator was someone other than a government or private-sector health worker, mainly their husband (data not shown). Fourteen percent of the current users of a modern method said that they were not motivated by anyone; rather they adopted the method on their own.

More than half of all users of female and male sterilization reported that a government health worker was the main motivator. The majority of users of modern spacing methods, however, were not motivated to adopt the method by a government health worker or private-sector health worker. Eighty-five percent of condom users, 71 percent of IUD users, and 53 percent of pill users report that either they were self-motivated or that someone (mainly their husbands, from data not shown) other than a government health worker or private-sector health worker motivated them. Persons other than health sector workers, mainly husbands (data not shown), are also important motivators for the adoption of female sterilization. Notably, the role

Table 9.6 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, Punjab, 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	Other	No one		
URBAN						
Pill	(36.6)	(10.0)	(36.8)	(16.6)	100.0	26
Condom	9.9	3.6	82.0	4.5	100.0	193
IUD	23.8	9.6	34.5	32.1	100.0	73
Female sterilization	47.1	5.9	31.1	15.8	100.0	148
Male sterilization	*	*	*	*	100.0	8
All modern methods	27.4	5.6	53.3	13.6	100.0	448
RURAL						
Pill	37.9	9.5	39.5	13.1	100.0	57
Condom	15.3	0.6	81.0	3.0	100.0	175
IUD	22.2	3.6	45.8	28.4	100.0	91
Female sterilization	54.2	1.5	29.5	14.8	100.0	634
Male sterilization	(51.8)	(0.0)	(6.0)	(42.3)	100.0	35
All modern methods	43.4	2.0	39.8	14.8	100.0	992
TOTAL						
Pill	37.5	9.7	38.7	14.2	100.0	83
Condom	12.5	2.2	81.5	3.8	100.0	368
IUD	22.9	6.3	40.8	30.1	100.0	164
Female sterilization	52.9	2.4	29.8	15.0	100.0	782
Male sterilization	(58.5)	(0.0)	(4.9)	(36.6)	100.0	43
All modern methods	38.4	3.1	44.0	14.4	100.0	1,439
() Based on 25–49 unweighted cases *Percentage not shown; based on fewer than 25 unweighted cases						

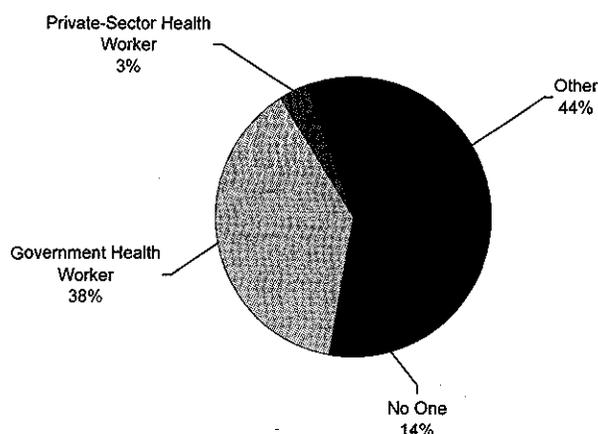
of government workers was more important for motivating users in rural areas than in urban areas, especially for the adoption of condoms and female sterilization.

9.8 Quality of Care of Family Planning Services

NFHS-2 investigated several other aspects of quality of care. Each current user of a modern family planning method was asked whether the person who motivated her to use her current method informed her about alternative methods of family planning; whether she was told by a health or family planning worker about the possible side effects of her current method at the time that she accepted the method; and whether she received any follow-up care after accepting the method either at home or in a health facility. Tables 9.7 and 9.8 present the results of this investigation.

An important indicator 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 alternative methods that they could use. Overall, only 35 percent of users of modern

Figure 9.1
Motivator for Current Users of Modern Contraceptive Methods



Note: Percents add to less than 100.0 due to rounding

NFHS-2, Punjab, 1998-99

Table 9.7 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, Punjab, 1998-99

Sector of motivator	Urban	Rural	Total	Number of users
Public health sector	63.2	29.2	36.8	553
Private health sector	(72.6)	*	(72.7)	45
Other	33.2	29.9	31.1	634
Total	45.3	30.5	35.2	1,232

Note: Table excludes women who said that no one motivated them to use their current method.

() Based on 25-49 unweighted cases

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

contraceptive methods who were motivated by someone were informed about at least one alternative method (Table 9.7). This is more than twice the corresponding percentage for the country as a whole (15 percent). Although not conclusive because of the small number of cases of women motivated by a private sector worker, the data suggest that women motivated by workers in the private sector were about twice as likely as those motivated by workers in the public sector to be told about at least one alternative method. Users in urban areas were more likely than users in rural areas to be told about other methods (45 percent and 31 percent, respectively).

Another important element of informed contraceptive choice is being fully informed about any side effects and any other problems associated with the method. Table 9.8 shows the percentage of current users of modern contraception who were told about side effects or other

Table 9.8 Information on side effects and follow-up for current method

Percentage of current users of modern contraceptive methods who were told about side effects or other problems of the current method by a health or family planning worker at the time of accepting the method and percentage who received follow-up services after accepting the method by current method and residence, Punjab, 1998–99

Information/follow-up	Urban	Rural	Total
Told about side effects			
Sterilization	61.6	54.2	55.6
Other modern method	33.6	28.5	30.9
Any modern method	43.4	45.8	45.1
Received follow-up			
Sterilization	99.4	99.4	99.4
Other modern method	25.6	33.2	29.6
Any modern method	51.4	77.8	69.6

problems by a health or family planning worker at the time they accepted their current method. Women were also asked if they received follow-up services after they had accepted the method.

In Punjab, less than half of users of any modern method (45 percent) were informed about possible side effects or problems associated with their current method at the time of adopting the method. The percentage of users informed about possible side effects or problems associated with their method was higher among users of sterilization (56 percent) than among users of other modern methods (31 percent). Users of both sterilization and of any other modern method were, however, more likely to be given information about problems and side effects if they lived in urban areas than if they lived in rural areas. The situation is much better with respect to follow-up services. Among sterilization users, 99 percent in both rural and urban areas received follow-up services. Only 30 percent of users of other modern methods, however, received follow-up services. These results suggest that while quality of family planning services is better in Punjab than in many other parts of India, much more still remains to be done in Punjab. Family planning services need to ensure that all users of modern methods are provided with the information they need to make an informed choice about contraceptive methods and are provided follow-up services for not only sterilization but also all other methods.

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APPENDIX A

ESTIMATES OF SAMPLING ERRORS

Two types of errors affect the estimates from a sample survey: (1) nonsampling errors and (2) sampling errors. Nonsampling errors are the result of errors committed during data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of NFHS-2 to minimize nonsampling errors, they are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of women selected in NFHS-2 is only one of many samples that could have been selected from the same population, using the same design and expected sample size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. The sampling error is a measure of the variability among all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

The sampling error is usually measured by the *standard error* for a particular statistic (for example, a mean or percentage), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range, calculated as the value of the statistic plus or minus two times the standard error of that statistic, in 95 percent of all possible samples of identical size and design.

If the sample of women had been selected as a simple random sample, it would have been possible, for many statistics, to use straightforward formulas for calculating sampling errors. However, the NFHS-2 sample is the result of a multi-stage stratified sample design, and it is therefore necessary to use more complex formulas. The computer software used to calculate sampling errors for NFHS-2 is ISSA (the Integrated System for Survey Analysis). The linear Taylor series approximation method for variance estimation is used for estimates of means, proportions, and ratios. The JACKKNIFE repeated replication method is used with ISSA for variance estimation for more complex statistics such as fertility and mortality rates.

The ISSA package treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the sample value for variable y , and x represents the number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$\text{var}(r) = \frac{1-f}{x^2} \sum_{h=1}^H \left[\frac{m_h}{m_h-1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - rx_{hi}$$

$$z_h = y_h - rx_h$$

where

- h = the stratum that varies from 1 to H,
- m_h = the total number of PSUs selected in the h^{th} stratum,
- y_{hi} = the sum of the values of variable y in PSU i in the h^{th} stratum,
- x_{hi} = the sum of the number of cases in PSU i in the h^{th} stratum,
- f = the overall sampling fraction, which is so small that the program ignores it.

In addition to the standard error, ISSA computes the relative standard error and the confidence limits and design effect (DEFT) for the estimates. 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 ($R \pm 2SE$) for each variable. In addition, for all variables except the fertility and mortality rates, the table shows the unweighted number of cases (N), the weighted number of cases (WN), the standard error assuming a simple random sample (SER), and the design effect (DEFT).

Table A.1 List of selected variables for sampling errors, Punjab, 1998–99

Variable	Estimate	Base population
Sex ratio	Ratio	<i>De facto</i> household population
Illiterate	Proportion	<i>De facto</i> household population age 6 and above
Have tuberculosis	Rate	1,000 <i>de jure</i> household population
Salt iodized at 15 ppm or more	Proportion	Households
Illiterate	Proportion	Ever-married women age 15–49
High school complete and above	Proportion	Ever-married women age 15–49
Currently married	Proportion	Ever-married women age 15–49
Number of children ever born	Mean	Currently married women age 15–49
Number of living children	Mean	Currently married women age 15–49
Have ever used any method	Proportion	Currently married women age 15–49
Currently using any method	Proportion	Currently married women age 15–49
Currently using any modern method	Proportion	Currently married women age 15–49
Currently using pills	Proportion	Currently married women age 15–49
Currently using IUD	Proportion	Currently married women age 15–49
Currently using condoms	Proportion	Currently married women age 15–49
Currently using female sterilization	Proportion	Currently married women age 15–49
Currently using male sterilization	Proportion	Currently married women age 15–49
Currently using rhythm/safe period	Proportion	Currently married women age 15–49
Using public source for modern method	Proportion	Current users of modern methods
Do not want any more children	Proportion	Currently married women age 15–49
Want to delay birth at least 2 years	Proportion	Currently married women age 15–49
Ideal number of children	Mean	Ever-married women age 15–49
Ideal number of sons	Mean	Ever-married women age 15–49
Ideal number of daughters	Mean	Ever-married women age 15–49
Visited by a 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 the past 3 years
Had diarrhoea in the past 2 weeks	Proportion	Children under 3 years
Treated with ORS packets	Proportion	Children under 3 with diarrhoea in past 2 weeks
Taken to a health facility/provider for diarrhoea	Proportion	Children under 3 with diarrhoea in past 2 weeks
Showing a vaccination card	Proportion	Children age 12–23 months
Received BCG vaccination	Proportion	Children age 12–23 months
Received DPT vaccination (3 doses)	Proportion	Children age 12–23 months
Received polio vaccination (3 doses)	Proportion	Children age 12–23 months
Received measles vaccination	Proportion	Children age 12–23 months
Fully vaccinated	Proportion	Children age 12–23 months
Received vitamin A	Proportion	Children age 12–35 months
Had reproductive health problem	Proportion	Currently married women age 15–49
Not involved in any decisionmaking	Proportion	Ever-married women age 15–49
Ever beaten or physically mistreated since age 15	Proportion	Ever-married women age 15–49
Not worked in past 12 months	Proportion	Ever-married women age 15–49
Anaemic women	Proportion	Ever-married women age 15–49
Anaemic children	Proportion	Children age 6–35 months
Fertility rates	Rate	All women, population
Mortality rates	Rate	Births, population

Table A.2 Sampling errors, Punjab, 1998-99

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Sex ratio (<i>De facto</i> household population)									
Urban	941	19.976	2851	2487	17.855	1.119	0.021	901	980
Rural	882	13.907	5532	5930	12.549	1.108	0.016	854	910
Total	899	11.710	8383	8417	10.257	1.142	0.013	876	923
Illiterate (<i>De facto</i> household population age 6 and above)									
Urban	0.120	0.014	5008	4368	0.006	2.477	0.117	0.092	0.148
Rural	0.356	0.015	9116	9771	0.007	2.313	0.043	0.325	0.386
Total	0.283	0.016	14124	14139	0.005	3.095	0.057	0.250	0.315
Have tuberculosis (1,000 <i>de jure</i> household population)									
Urban	2.005	0.699	5487	4786	0.601	1.163	0.348	0.608	3.402
Rural	2.104	0.436	10422	11170	0.447	0.975	0.207	1.232	2.976
Total	2.074	0.368	15909	15956	0.358	1.026	0.177	1.339	2.810
Salt iodized at 15 ppm or more (Households)									
Large city	0.929	0.039	141	124	0.022	1.810	0.042	0.851	1.000
Small city	0.955	0.033	289	252	0.012	2.670	0.034	0.890	1.000
Town	0.920	0.020	636	554	0.011	1.816	0.021	0.880	0.959
Rural	0.671	0.024	1901	2037	0.011	2.234	0.036	0.623	0.720
Total	0.753	0.021	2967	2967	0.008	2.671	0.028	0.710	0.795
Illiterate (Ever-married women age 15-49)									
Urban	0.168	0.031	993	862	0.012	2.634	0.186	0.106	0.231
Rural	0.485	0.027	1803	1934	0.012	2.296	0.056	0.431	0.539
Total	0.388	0.026	2796	2796	0.009	2.827	0.067	0.336	0.440
High school complete and above (Ever-married women age 15-49)									
Urban	0.576	0.049	993	862	0.016	3.094	0.084	0.479	0.673
Rural	0.170	0.017	1803	1934	0.009	1.902	0.099	0.137	0.204
Total	0.295	0.027	2796	2796	0.009	3.155	0.092	0.241	0.350
Currently married (Ever-married women age 15-49)									
Urban	0.963	0.006	993	862	0.006	1.026	0.006	0.951	0.975
Rural	0.953	0.004	1803	1934	0.005	0.900	0.005	0.944	0.962
Total	0.956	0.004	2796	2796	0.004	0.937	0.004	0.949	0.964
Number of children ever born (Currently married women age 15-49)									
Urban	2.534	0.087	956	830	0.050	1.761	0.034	2.359	2.708
Rural	2.826	0.043	1719	1844	0.041	1.057	0.015	2.741	2.912
Total	2.735	0.043	2675	2674	0.032	1.356	0.016	2.649	2.822
Number of children surviving (Currently married women age 15-49)									
Urban	2.383	0.077	956	830	0.045	1.710	0.032	2.230	2.537
Rural	2.573	0.038	1719	1844	0.036	1.080	0.015	2.496	2.649
Total	2.514	0.037	2675	2674	0.028	1.323	0.015	2.440	2.588
Have ever used any method (Currently married women age 15-49)									
Urban	0.838	0.015	956	830	0.012	1.224	0.017	0.809	0.867
Rural	0.753	0.012	1719	1844	0.010	1.184	0.016	0.728	0.778
Total	0.779	0.010	2675	2674	0.008	1.282	0.013	0.759	0.800

Table A.2 Sampling errors, Punjab, 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
Currently using any method (Currently married women age 15-49)									
Urban	0.718	0.015	956	830	0.015	1.040	0.021	0.687	0.748
Rural	0.644	0.012	1719	1844	0.012	1.081	0.019	0.619	0.669
Total	0.667	0.010	2675	2674	0.009	1.126	0.015	0.646	0.687
Currently using any modern method (Currently married women age 15-49)									
Urban	0.540	0.020	956	830	0.016	1.256	0.038	0.499	0.580
Rural	0.538	0.015	1719	1844	0.012	1.258	0.028	0.507	0.568
Total	0.538	0.012	2675	2674	0.010	1.262	0.023	0.514	0.563
Currently using pills (Currently married women age 15-49)									
Urban	0.031	0.006	956	830	0.006	1.054	0.190	0.019	0.043
Rural	0.031	0.004	1719	1844	0.004	1.073	0.145	0.022	0.040
Total	0.031	0.004	2675	2674	0.003	1.067	0.116	0.024	0.038
Currently using IUD (Currently married women age 15-49)									
Urban	0.088	0.012	956	830	0.009	1.347	0.141	0.063	0.112
Rural	0.049	0.005	1719	1844	0.005	0.964	0.102	0.039	0.059
Total	0.061	0.005	2675	2674	0.005	1.154	0.087	0.051	0.072
Currently using condoms (Currently married women age 15-49)									
Urban	0.232	0.014	956	830	0.014	1.027	0.060	0.204	0.260
Rural	0.095	0.010	1719	1844	0.007	1.367	0.102	0.076	0.114
Total	0.138	0.010	2675	2674	0.007	1.540	0.075	0.117	0.158
Currently using female sterilization (Currently married women age 15-49)									
Urban	0.179	0.019	956	830	0.012	1.568	0.109	0.140	0.218
Rural	0.344	0.016	1719	1844	0.011	1.401	0.047	0.311	0.376
Total	0.293	0.015	2675	2674	0.009	1.709	0.051	0.262	0.323
Currently using male sterilization (Currently married women age 15-49)									
Urban	0.009	0.004	956	830	0.003	1.220	0.405	0.002	0.017
Rural	0.019	0.004	1719	1844	0.003	1.342	0.232	0.010	0.028
Total	0.016	0.003	2675	2674	0.002	1.345	0.204	0.010	0.023
Currently using rhythm/safe period (Currently married women age 15-49)									
Urban	0.081	0.009	956	830	0.009	1.074	0.117	0.062	0.099
Rural	0.053	0.006	1719	1844	0.005	1.016	0.103	0.042	0.064
Total	0.062	0.005	2675	2674	0.005	1.069	0.081	0.052	0.072
Using public source for modern method (Current users of modern methods)									
Urban	0.403	0.033	516	448	0.022	1.530	0.082	0.337	0.469
Rural	0.752	0.017	924	992	0.014	1.169	0.022	0.719	0.785
Total	0.643	0.022	1440	1439	0.013	1.759	0.035	0.599	0.688
Do not want any more children (Currently married women age 15-49)									
Urban	0.591	0.028	956	830	0.016	1.734	0.047	0.536	0.646
Rural	0.409	0.016	1719	1844	0.012	1.358	0.039	0.377	0.442
Total	0.466	0.016	2675	2674	0.010	1.702	0.035	0.433	0.498
Want to delay birth at least two years (Currently married women age 15-49)									
Urban	0.098	0.013	956	830	0.010	1.334	0.131	0.073	0.124
Rural	0.088	0.007	1719	1844	0.007	0.983	0.076	0.075	0.102
Total	0.091	0.006	2675	2674	0.006	1.093	0.067	0.079	0.104

Table A.2 Sampling errors, Punjab, 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
Ideal number of children (Ever-married women age 15-49)									
Urban	2.164	0.038	974	845	0.018	2.061	0.018	2.088	2.240
Rural	2.318	0.025	1748	1876	0.016	1.557	0.011	2.268	2.369
Total	2.270	0.022	2722	2720	0.012	1.777	0.010	2.226	2.315
Ideal number of sons (Ever-married women age 15-49)									
Urban	1.040	0.032	974	845	0.021	1.575	0.031	0.975	1.105
Rural	1.217	0.021	1747	1874	0.016	1.279	0.017	1.175	1.258
Total	1.162	0.020	2721	2719	0.013	1.530	0.017	1.123	1.201
Ideal number of daughters (Ever-married women age 15-49)									
Urban	0.785	0.020	974	845	0.015	1.357	0.025	0.746	0.825
Rural	0.830	0.013	1747	1874	0.012	1.097	0.015	0.805	0.856
Total	0.816	0.011	2721	2719	0.009	1.211	0.013	0.794	0.838
Visited by a health/family planning worker (Ever-married women age 15-49)									
Urban	0.007	0.003	993	862	0.003	1.132	0.429	0.001	0.013
Rural	0.020	0.004	1803	1934	0.003	1.234	0.204	0.012	0.028
Total	0.016	0.003	2796	2796	0.002	1.267	0.188	0.010	0.022
Received no antenatal check-up (Births in past 3 years)									
Urban	0.097	0.027	238	207	0.021	1.289	0.283	0.042	0.152
Rural	0.308	0.032	645	693	0.020	1.569	0.103	0.245	0.372
Total	0.260	0.026	883	900	0.016	1.624	0.101	0.207	0.312
Received iron and folic acid tablets or syrup (Births in past 3 years)									
Urban	0.869	0.024	238	207	0.022	1.117	0.028	0.821	0.918
Rural	0.774	0.021	645	693	0.016	1.266	0.027	0.732	0.816
Total	0.796	0.018	883	900	0.014	1.297	0.022	0.761	0.831
Received medical assistance during delivery (Births in past 3 years)									
Urban	0.778	0.040	238	207	0.030	1.346	0.051	0.698	0.858
Rural	0.580	0.028	645	693	0.021	1.312	0.048	0.525	0.636
Total	0.626	0.025	883	900	0.018	1.395	0.039	0.576	0.675
Received postpartum check-up (Noninstitutional births in past 3 years)									
Urban	0.409	0.071	105	91	0.048	1.468	0.173	0.268	0.551
Rural	0.164	0.022	439	472	0.018	1.232	0.133	0.120	0.207
Total	0.203	0.025	544	563	0.017	1.439	0.122	0.154	0.253
Had diarrhoea in the past 2 weeks (Children under 3 years)									
Urban	0.110	0.024	227	197	0.021	1.165	0.221	0.061	0.158
Rural	0.094	0.016	600	645	0.012	1.331	0.169	0.063	0.126
Total	0.098	0.013	827	842	0.010	1.285	0.136	0.071	0.125
Treated with ORS packets (Children under 3 with diarrhoea in past 2 weeks)									
Urban	0.485	0.133	25	22	0.104	1.280	0.274	0.220	0.751
Rural	0.400	0.057	57	61	0.066	0.867	0.143	0.286	0.514
Total	0.423	0.053	82	82	0.055	0.957	0.125	0.317	0.528
Taken to a health facility/provider for diarrhoea (Children under 3 with diarrhoea in past 2 weeks)									
Urban	0.881	0.063	25	22	0.065	0.969	0.072	0.755	1.000
Rural	0.930	0.032	57	61	0.034	0.941	0.034	0.866	0.994
Total	0.917	0.029	82	82	0.030	0.937	0.031	0.860	0.974

Table A.2 Sampling errors, Punjab, 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
Showing a vaccination card (Children age 12-23 months)									
Urban	0.585	0.067	87	76	0.053	1.264	0.114	0.452	0.719
Rural	0.365	0.046	170	183	0.037	1.223	0.125	0.274	0.457
Total	0.430	0.040	257	259	0.031	1.295	0.093	0.349	0.510
Received BCG vaccination (Children age 12-23 months)									
Urban	0.942	0.025	87	76	0.025	1.021	0.027	0.892	0.993
Rural	0.864	0.027	170	183	0.026	1.011	0.031	0.811	0.917
Total	0.887	0.021	257	259	0.020	1.053	0.023	0.845	0.928
Received DPT vaccination (3 doses) (Children age 12-23 months)									
Urban	0.942	0.026	87	76	0.025	1.054	0.028	0.890	0.995
Rural	0.770	0.041	170	183	0.032	1.276	0.053	0.688	0.852
Total	0.820	0.032	257	259	0.024	1.325	0.039	0.757	0.884
Received polio vaccination (3 doses) (Children age 12-23 months)									
Urban	0.954	0.024	87	76	0.023	1.043	0.025	0.907	1.000
Rural	0.787	0.039	170	183	0.031	1.252	0.050	0.709	0.866
Total	0.836	0.030	257	259	0.023	1.310	0.036	0.776	0.896
Received measles vaccination (Children age 12-23 months)									
Urban	0.896	0.045	87	76	0.033	1.376	0.050	0.806	0.986
Rural	0.711	0.042	170	183	0.035	1.195	0.058	0.628	0.794
Total	0.765	0.034	257	259	0.026	1.278	0.044	0.697	0.832
Fully vaccinated (Children age 12-23 months)									
Urban	0.862	0.050	87	76	0.037	1.348	0.058	0.762	0.962
Rural	0.663	0.046	170	183	0.036	1.255	0.069	0.572	0.754
Total	0.721	0.037	257	259	0.028	1.324	0.051	0.647	0.795
Received vitamin A (Children age 12-35 months)									
Urban	0.704	0.053	166	144	0.036	1.445	0.075	0.598	0.809
Rural	0.518	0.033	397	427	0.026	1.276	0.063	0.452	0.583
Total	0.565	0.029	563	571	0.021	1.355	0.051	0.507	0.623
Had reproductive health problem (Currently married women age 15-49)									
Urban	0.301	0.020	956	830	0.015	1.338	0.066	0.261	0.341
Rural	0.275	0.017	1719	1844	0.011	1.623	0.064	0.240	0.310
Total	0.283	0.014	2675	2674	0.009	1.552	0.048	0.256	0.310
Not involved in any decisionmaking (Ever-married women age 15-49)									
Urban	0.010	0.003	993	862	0.003	1.074	0.338	0.003	0.017
Rural	0.011	0.002	1803	1934	0.002	1.035	0.236	0.006	0.015
Total	0.010	0.002	2796	2796	0.002	1.046	0.193	0.006	0.014
Ever beaten or physically mistreated since age 15 (Ever-married women age 15-49)									
Urban	0.107	0.012	993	862	0.010	1.209	0.111	0.083	0.131
Rural	0.151	0.011	1803	1934	0.008	1.293	0.072	0.129	0.173
Total	0.137	0.009	2796	2796	0.007	1.316	0.062	0.120	0.154
Not worked in past 12 months (Ever-married women age 15-49)									
Urban	0.850	0.023	993	862	0.011	2.059	0.027	0.803	0.896
Rural	0.931	0.006	1803	1934	0.006	1.053	0.007	0.918	0.943
Total	0.906	0.009	2796	2796	0.006	1.632	0.010	0.888	0.924

Table A.2 Sampling errors, Punjab, 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	0.390	0.024	927	805	0.016	1.512	0.062	0.342	0.439
Rural	0.425	0.015	1687	1809	0.012	1.283	0.036	0.394	0.455
Total	0.414	0.013	2614	2614	0.010	1.358	0.032	0.388	0.440
Anaemic children (Children age 6-35 months)									
Urban	0.772	0.039	173	150	0.032	1.208	0.050	0.694	0.849
Rural	0.809	0.021	426	458	0.019	1.087	0.026	0.768	0.851
Total	0.800	0.018	599	608	0.016	1.103	0.023	0.764	0.836

Table A.2 Sampling errors, Punjab, 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	1.785	0.129	0.072	1.527	2.043
Rural	2.425	0.147	0.061	2.131	2.718
Total	2.209	0.124	0.056	1.961	2.458
Age-specific fertility rate (Women age 15-19)					
Urban	0.015	0.010	0.655	0.000	0.034
Rural	0.050	0.009	0.183	0.032	0.069
Total	0.040	0.007	0.181	0.025	0.054
Age-specific fertility rate (Women age 20-24)					
Urban	0.145	0.013	0.086	0.020	0.170
Rural	0.197	0.022	0.113	0.153	0.242
Total	0.178	0.020	0.112	0.138	0.219
Age-specific fertility rate (Women age 25-29)					
Urban	0.143	0.015	0.103	0.114	0.172
Rural	0.165	0.010	0.058	0.146	0.184
Total	0.158	0.008	0.050	0.142	0.174
Age-specific fertility rate (Women age 30-34)					
Urban	0.047	0.008	0.166	0.031	0.063
Rural	0.053	0.008	0.158	0.036	0.070
Total	0.051	0.006	0.119	0.039	0.063
Age-specific fertility rate (Women age 35-39)					
Urban	0.007	0.003	0.466	0.001	0.014
Rural	0.015	0.004	0.288	0.006	0.023
Total	0.012	0.003	0.246	0.006	0.018
Age-specific fertility rate (Women age 40-44)					
Urban	0.000	0.000	NC	0.000	0.000
Rural	0.005	0.003	0.573	0.000	0.010
Total	0.003	0.002	0.574	0.000	0.007

Table A.2 Sampling errors, Punjab, 1998-99 (contd.)					
Variable/ residence	Value (R)	Standard error (SE)	Relative standard error (SE/R)	Confidence limits	
				R-2SE	R+2SE
Neonatal mortality (5-year period preceding survey)					
Urban	18.609	8.171	0.439	2.267	34.951
Rural	39.283	5.542	0.141	28.199	50.366
Total	34.334	4.696	0.137	24.942	43.726
Infant mortality ${}_1q_0$ (5-year period preceding survey)					
Urban	37.741	9.834	0.261	18.073	57.408
Rural	63.258	6.666	0.105	49.927	76.589
Total	57.106	5.674	0.099	45.758	68.455
Child mortality ${}_4q_1$ (5-year period preceding survey)					
Urban	12.418	4.775	0.385	2.868	21.969
Rural	17.190	3.842	0.223	9.506	24.873
Total	15.935	3.080	0.193	9.775	22.096
Under-five mortality ${}_5q_0$ (5-year period preceding survey)					
Urban	49.690	12.000	0.242	25.690	73.691
Rural	79.360	7.834	0.099	63.693	95.027
Total	72.131	6.696	0.093	58.739	85.523
Crude death rate (Based on Household Questionnaire)					
Urban	6.962	0.850	0.122	5.262	8.661
Rural	9.038	0.641	0.071	7.756	10.320
Total	8.415	0.534	0.063	7.348	9.482
Crude birth rate (Based on women's birth history)					
Urban	15.402	1.193	0.077	13.017	17.787
Rural	20.906	1.406	0.067	18.094	23.717
Total	19.070	1.184	0.062	16.702	21.437
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 Punjab, information on age was missing for only 2 persons out of 15,988 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 Punjab.

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 Punjab, missing information on most indicators is minimal. There are no births with information missing on both month and year of birth, and only a very small number of births (less than 1 percent) in the past 15 years have information missing on the month of birth (Table B.3). The age at death for children born in the past 15 years who have died is available in every case. There is also no information missing at all on age at first marriage and level of education for ever-married women age 15–49. Data on height and weight of children are available for 94–95 percent of children age 0–35 months. Some children could not be measured because they were not at home or they were

Table B.1 Household age distribution

Single-year age distribution of *de facto* household population by sex (weighted), Punjab, 1998–99

Age	Male		Female		Age	Male		Female	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
< 1	163	1.9	137	1.8	38	120	1.4	126	1.7
1	136	1.6	109	1.4	39	30	0.4	49	0.6
2	167	2.0	171	2.3	40	279	3.3	207	2.7
3	166	2.0	111	1.5	41	23	0.3	17	0.2
4	191	2.3	151	2.0	42	94	1.1	78	1.0
5	181	2.2	165	2.2	43	41	0.5	40	0.5
6	207	2.5	168	2.2	44	22	0.3	45	0.6
7	169	2.0	140	1.9	45	216	2.6	160	2.1
8	213	2.5	161	2.1	46	37	0.4	43	0.6
9	182	2.2	134	1.8	47	28	0.3	38	0.5
10	222	2.6	169	2.2	48	71	0.8	71	0.9
11	162	1.9	127	1.7	49	17	0.2	29	0.4
12	231	2.7	182	2.4	50	160	1.9	41	0.5
13	170	2.0	162	2.1	51	16	0.2	22	0.3
14	195	2.3	161	2.1	52	43	0.5	63	0.8
15	189	2.2	173	2.3	53	21	0.3	33	0.4
16	187	2.2	171	2.3	54	18	0.2	35	0.5
17	162	1.9	137	1.8	55	103	1.2	132	1.7
18	281	3.3	194	2.6	56	32	0.4	58	0.8
19	137	1.6	121	1.6	57	16	0.2	23	0.3
20	232	2.8	235	3.1	58	66	0.8	70	0.9
21	97	1.2	90	1.2	59	11	0.1	20	0.3
22	197	2.3	166	2.2	60	200	2.4	207	2.7
23	119	1.4	133	1.8	61	11	0.1	15	0.2
24	98	1.2	148	2.0	62	41	0.5	60	0.8
25	204	2.4	198	2.6	63	18	0.2	18	0.2
26	116	1.4	118	1.6	64	11	0.1	12	0.2
27	104	1.2	89	1.2	65	212	2.5	165	2.2
28	148	1.8	181	2.4	66	21	0.3	26	0.3
29	61	0.7	54	0.7	67	20	0.2	13	0.2
30	250	3.0	222	2.9	68	29	0.3	25	0.3
31	48	0.6	34	0.4	69	9	0.1	5	0.1
32	129	1.5	133	1.8	70+	393	4.7	276	3.6
33	56	0.7	72	1.0	Don't know/missing				
34	44	0.5	66	0.9					
35	272	3.2	230	3.0		1	0.0	1	0.0
36	59	0.7	86	1.1					
37	41	0.5	48	0.6	Total	8,417	100.0	7,571	100.0

Note: The *de facto* population includes both usual residents and visitors who stayed in the household the night before the interview.

ill at the time of the survey. In some cases when the child was at home, either the child refused to be measured or the mother refused to allow the child to be measured. Data on haemoglobin levels are available for 93 percent of eligible women and 88 percent of eligible children. Before undertaking haemoglobin measurements, a separate 'informed consent' statement was read to the respondent explaining that participation in the haemoglobin testing was completely voluntary. At this point, some women declined to take part in the anaemia testing and/or to have their children participate.

Another measure of data quality is the completeness and accuracy of information on births. Table B.4 examines the distribution of births by calendar year to identify any unusual

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), Punjab, 1998–99

Age	All women	Ever-married women	Interviewed women		Percent interviewed
			Number	Percent	
10–14	802	0	NA	NA	NA
15–19	795	60	59	2.1	98.2
20–24	773	442	432	15.5	97.9
25–29	641	592	585	20.9	98.8
30–34	527	522	504	18.0	96.5
35–39	539	535	514	18.4	96.2
40–44	388	385	375	13.4	97.4
45–49	341	341	329	11.8	96.5
50–54	194	193	NA	NA	NA
15–49	4,002	2,876	2,798	100.0	97.3

Note: The *de facto* population includes both usual residents and visitors who stayed in the household the night before the interview. For all columns, the age distribution is taken from ages reported in the Household Questionnaire. The total number of interviewed women in this table differs from the total number in earlier tables because this table uses household weights rather than women's weights for the calculations.
NA: Not applicable

Table B.3 Completeness of reporting

Percentage of observations with missing information for selected demographic and health indicators (weighted), Punjab, 1998–99

Indicator	Reference group	Percentage missing information	Number of cases
Birth date	Births in past 15 years		
Month only		0.06	5,031
Month and year		0.00	5,031
Age at death	Deaths to births in past 15 years	0.00	361
Age at first marriage	Ever-married women age 15–49	0.00	2,796
Woman's education	Ever-married women age 15–49	0.00	2,796
Anthropometry	Living children age 0–35 months		
Height		5.30	854
Weight		5.08	854
Height or weight		5.30	854
Woman's haemoglobin level	Ever-married women age 15–49	6.51	2,796
Child's haemoglobin level	Living children age 6–35 months	12.27	693
Diarrhoea in past 2 weeks	Living children age 1–35 months	0.13	842

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), Punjab, 1998–99

Calendar year	Number of births			Percent with complete birth date ¹			Sex ratio at birth ²			Calendar year ratio ³		
	L	D	T	L	D	T	L	D	T	L	D	T
1999	23	1	24	100.0	100.0	100.0	848	0	780	NA	NA	NA
1998	283	14	296	100.0	100.0	100.0	824	1,773	854	NC	NC	NC
1997	259	25	285	100.0	100.0	100.0	978	823	963	NC	NC	NC
1996	314	8	322	100.0	100.0	100.0	953	6,750	990	118.1	34.7	111.3
1995	272	22	294	100.0	100.0	100.0	758	944	770	83.5	123.0	85.5
1994	338	27	366	100.0	100.0	100.0	726	1,699	774	112.8	107.1	112.3
1993	328	29	357	100.0	100.0	100.0	863	1,584	906	96.5	112.8	97.6
1992	342	24	366	100.0	100.0	100.0	764	1,340	793	107.9	82.4	105.7
1991	306	30	335	100.0	100.0	100.0	783	1,220	815	88.8	120.9	91.0
1990	346	25	371	100.0	100.0	100.0	836	1,088	851	112.8	97.6	111.7
1989	308	22	330	100.0	100.0	100.0	696	757	700	90.1	93.5	90.3
1988	338	21	359	100.0	100.0	100.0	763	2,466	815	114.6	81.0	111.9
1993–97	1,512	111	1,623	100.0	100.0	100.0	846	1,349	874	NA	NA	NA
1988–92	1,640	122	1,762	100.0	100.0	100.0	769	1,249	795	NA	NA	NA
1983–87	1,508	140	1,648	100.0	97.7	99.8	820	1,441	861	NA	NA	NA
1978–82	1,270	124	1,395	100.0	100.0	100.0	769	1,128	796	NA	NA	NA
1977 or earlier	830	126	956	100.0	100.0	100.0	944	801	924	NA	NA	NA
All	7,065	639	7,704	100.0	99.5	100.0	818	1,176	843	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)

¹Both year and month of birth given

² $(B_f/B_m) \times 1000$, where B_f and B_m are the numbers of female and male births, respectively

³ $[2B_x/(B_{x-1}+B_{x+1})] \times 100$, where B_x is the number of births in calendar year x

patterns that may indicate that births have been omitted or that the ages of children have been displaced. Overall, all living children listed in the birth history had complete birth dates recorded, as did almost all children who had died. The completeness of data on birth dates for both surviving and nonsurviving children is excellent. 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 the period before 1995 and 1995 and later 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.

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 year or older. Thus, heaping at 12 months can bias the mortality estimates because a certain fraction of these deaths, which are reported to have occurred after infancy may have actually occurred during infancy (that is, at ages 0–11 months). In this case, heaping would bias the infant mortality rate downward and the child mortality rate upward.

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 Punjab, 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 64 for 0–4 years, 73 for 5–9 years, and 67 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 8, 10, 13, 15, and 22 days (Table B.5).

Table B.6 shows the percentage of infant deaths that occurred during the neonatal period. These percentages are also quite high and consistent over time, suggesting that there is no major omission of early deaths in any of the five-year periods preceding the survey.

Examination of the distribution of deaths under age two years during the 15 years before the survey by month of death (Table B.6) indicates that there is substantial heaping of deaths at 6, 8, 9, 11, and 12 months of age. The heaping at 12 months is considerable despite the strong emphasis on this problem during the training of interviewers for the NFHS-2 fieldwork. Nevertheless, even if one-third of the deaths reported at age 12 months actually occurred at less

Table B.5 Reporting of age at death in days				
Distribution of reported deaths under 1 month of age by age at death in days and percentage of neonatal deaths reported to occur at age 0–6 days, for births occurring during five-year periods preceding the survey (weighted), Punjab, 1998–99				
Age at death (days)	Years preceding survey			
	0–4	5–9	10–14	0–14
< 1	11	14	11	36
1	13	21	18	52
2	4	5	4	14
3	4	3	4	11
4	0	1	5	6
5	2	2	3	7
6	0	3	0	3
7	1	3	3	7
8	4	4	3	12
9	0	0	1	1
10	2	3	0	5
11	1	0	1	2
12	1	0	2	3
13	3	0	2	5
14	0	0	0	0
15	1	2	3	6
16	0	0	0	0
17	0	0	1	1
18	1	0	2	3
19	0	0	0	0
20	0	2	0	2
21	1	0	0	1
22	2	3	2	7
23	0	0	0	0
24	0	0	0	0
25	1	0	0	1
26	0	0	0	0
27	0	0	1	1
28	0	0	0	0
29	0	1	1	2
30	0	0	0	0
0–30	53	68	68	188
Percent early neonatal ¹	64.2	72.7	66.9	68.2

¹Deaths during the first 6 days divided by deaths during the first 30 days

than 12 months of age, the infant mortality rate reported for the entire 15-year period would be underestimated by less than 3 percent and the rate reported for the most recent 5-year period would be underestimated by only 1 percent. Therefore, the degree of heaping on 12 months might lead to a slight underestimate of the postneonatal and infant mortality rates, but a somewhat more substantial overestimate of the child mortality rate.

Table B.6 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and percentage of infant deaths reported to occur at age under one month, for births occurring during five-year periods preceding the survey (weighted), Punjab, 1998-99

Age at death (months)	Years preceding survey			
	0-4	5-9	10-14	0-14
< 1	53	68	68	188
1	5	11	6	22
2	9	6	3	19
3	4	2	7	13
4	2	1	5	8
5	1	1	0	2
6	2	1	3	7
7	0	1	3	4
8	2	5	2	9
9	2	4	4	10
10	1	3	0	4
11	1	3	3	7
12	3	9	13	24
13	0	1	0	1
14	1	1	1	3
15	0	1	0	1
16	0	0	0	0
17	1	0	0	1
18	0	1	1	2
19	0	0	0	0
20	1	0	0	1
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
1 year	0	0	1	1
0-11 months	83	106	103	292
Percent neonatal ¹	64.4	63.9	65.4	64.6

¹Deaths 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

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INDIA

IDENTIFICATION																																									
STATE _____	<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																																								
DISTRICT _____																																									
TEHSIL/TALUK _____																																									
CITY/TOWN/VILLAGE _____																																									
URBAN/RURAL (urban=1, rural=2).....																																									
LARGE CITY/SMALL CITY/TOWN/RURAL AREA..... (large city=1, small city=2, town=3, rural area=4)																																									
PSU NUMBER.....																																									
HOUSEHOLD NUMBER.....																																									
NAME OF HOUSEHOLD HEAD _____																																									
ADDRESS OF HOUSEHOLD _____																																									

INTERVIEWER VISITS										
	1	2	3	FINAL VISIT						
DATE				DAY <table border="1"><tr><td></td><td></td></tr></table> MONTH <table border="1"><tr><td></td><td></td></tr></table> YEAR <table border="1"><tr><td>1</td><td>9</td></tr></table>					1	9
1	9									
INTERVIEWER'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr></table>						
RESULT*				RESULT CODE <table border="1"><tr><td></td><td></td></tr></table>						
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td><td></td></tr></table>						
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT THE TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD <table border="1"><tr><td></td><td></td></tr></table> TOTAL ELIGIBLE WOMEN <table border="1"><tr><td></td><td></td></tr></table> LINE NO. OF RESP. TO HOUSEHOLD SCHEDULE <table border="1"><tr><td></td><td></td></tr></table>						

DATE	SUPERVISOR <table border="1"><tr><td></td><td></td></tr></table>			FIELD EDITOR <table border="1"><tr><td></td><td></td></tr></table>			OFFICE EDITOR <table border="1"><tr><td></td><td></td></tr></table>			KEYED BY <table border="1"><tr><td></td><td></td></tr></table>		
NAME												

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HOUSEHOLD SCHEDULE

1	RECORD THE TIME.	HOUR..... MINUTES.....	<table border="1" style="width: 40px; height: 40px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>				

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							
							MARRITAL STATUS	ELIGI-BILITY	EDUCATION					
									IF NEVER ATTENDED SCHOOL	IF EVER ATTENDED SCHOOL		IF NOT IN SCHOOL		
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		(11)	(12)		(13)	(14)

Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.

What is the relationship of (NAME) to the head of the household?*

Does (NAME) usually live here? (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)

CIRCLE LINE NUMBER OF EVER-MARRIED FEMALES AGE 15-49 (EXCLUDE NG AND NM)

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
				1	2	3	4	5	6	7						
01																
02																
03																
04																
05																
06																
07																
08																

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.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

** CODES FOR Q.8

- 00= AGE LESS THAN ONE YEAR
- 95= AGE 95 YEARS OR MORE

PSU NO. _____

HH NO. _____

	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
		YES NO DK									
09	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3
10	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3
11	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3
12	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3
13	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3
14	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3
15	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3
16	<input type="checkbox"/>	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3

28 Just to make sure that I have a complete listing:

- 1) Are there any other persons such as small children or infants that we have not listed? YES ENTER EACH IN TABLE NO
- 2) In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here? YES ENTER EACH IN TABLE NO
- 3) Do you have any guests or temporary visitors staying here, or anyone else who stayed here last night? YES ENTER EACH IN TABLE NO

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
29	When members of your household get sick, where do they generally go for treatment?	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 GOVT. DISPENSARY.....12 UHC/UHF/UFWC.....13 CHC/RURAL HOSPITAL/EHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSPITAL/CLINIC.....21 NGO WORKER.....22 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 PVT. PARAMEDIC.....34 VAIDYA/HAKIM/HOMEOPATH.....35 TRADITIONAL HEALER.....36 PHARMACY/DRUGSTORE.....37 DAI (TBA).....38 OTHER PRIVATE SECTOR HEALTH FACILITY.....39 OTHER SHOP.....41 HOME TREATMENT.....42 OTHER _____ 96 (SPECIFY)	
30	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT.....11 → 32 PUBLIC TAP.....12 GROUND WATER HANDPUMP IN RESIDENCE/ YARD/PLOT.....21 → 32 PUBLIC HANDPUMP.....22 WELL WATER WELL IN RESIDENCE/YARD/PLOT COVERED WELL.....31 OPEN WELL.....32 → 32 PUBLIC WELL COVERED WELL.....33 OPEN WELL.....34 SURFACE WATER SPRING.....41 RIVER/STREAM.....42 POND/LAKE.....43 DAM.....44 RAINWATER.....51 TANKER TRUCK.....61 OTHER _____ 96 (SPECIFY)	
31	How long does it take to go there, get water, and come back in one trip?	MINUTES..... <input type="text"/> <input type="text"/> <input type="text"/>	
32	What do you do to purify drinking water, if anything? RECORD ALL MENTIONED.	STRAIN BY CLOTH.....A ALUM.....B WATER FILTER.....C BOILING.....D ELECTRONIC PURIFIER.....E NOTHING.....F OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
33	What kind of toilet facility does your household have?	FLUSH TOILET OWN FLUSH TOILET.....11 SHARED FLUSH TOILET.....12 PUBLIC FLUSH TOILET.....13 PIT TOILET/LATRINE OWN PIT TOILET/LATRINE.....21 SHARED PIT TOILET/LATRINE.....22 PUBLIC PIT TOILET/LATRINE.....23 NO FACILITY/BUSH/FIELD.....31 OTHER _____ 96 (SPECIFY)	
34	What is the main source of lighting for your household?	ELECTRICITY.....1 KEROSENE.....2 GAS.....3 OIL.....4 OTHER _____ 6 (SPECIFY)	
35	How many rooms are there in your household?	ROOMS..... <input type="text"/> <input type="text"/>	
36	Do you have a separate room which is used as a kitchen?	YES.....1 NO.....2	
37	What type of fuel does your household mainly use for cooking?	WOOD.....01 CROP RESIDUES.....02 DUNG CAKES.....03 COAL/COKE/LIGNITE.....04 CHARCOAL.....05 KEROSENE.....06 ELECTRICITY.....07 LIQUID PETROLEUM GAS.....08 BIO-GAS.....09 OTHER _____ 96 (SPECIFY)	
38	What other types of fuel does your household commonly use for cooking or heating? RECORD ALL MENTIONED.	WOOD.....A CROP RESIDUES.....B DUNG CAKES.....C COAL/COKE/LIGNITE.....D CHARCOAL.....E KEROSENE.....F ELECTRICITY.....G LIQUID PETROLEUM GAS.....H BIO-GAS.....I OTHER _____ X (SPECIFY) NO OTHER TYPE.....Y	
39	What is the religion of the head of the household?	HINDU.....01 MUSLIM.....02 CHRISTIAN.....03 SIKH.....04 BUDDHIST/NEO BUDDHIST.....05 JAIN.....06 JEWISH.....07 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.....	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
45	_____ (SIZE AND UNIT) Out of this land, how much is irrigated?	ACRES..... NONE.....9995	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
46	Does this household own any livestock?	YES.....1 NO.....2	
47	Does the household own any of the following:	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.....6	(SPECIFY)

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
-----	-----------------------	-------------------	------

51	Did any usual resident of this household die since January 1996?	YES.....1 NO.....2 → 63	
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52	How many persons died?	TOTAL DEATHS..... <input style="width: 20px; height: 15px;" type="text"/>	
----	------------------------	---	--

53	54	55	56	57	58	59	60	61	62
What (was/were) the name(s) of the person(s) who died?	Was (NAME) a male or a female?	How old was he/she when he/she died? RECORD DAYS IF LESS THAN ONE MONTH, MONTHS IF LESS THAN TWO YEARS, OR YEARS	In what month and year did (NAME) die?	What did (NAME) die of?	CHECK 54 AND 55: DECEASED WAS FEMALE AGED 15-49 AT THE TIME OF DEATH	Was (NAME) pregnant when she died?	Did (NAME) die during childbirth?	Did (NAME) die within two months after the end of a pregnancy or childbirth?	Was the death of (NAME) due to a complication of the pregnancy or childbirth?

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01 <hr/> (NAME)	MALE.....1 FEMALE...2	DAYS....1 <input style="width: 20px; height: 15px;" type="text"/> MONTHS..2 <input style="width: 20px; height: 15px;" type="text"/> YEARS...3 <input style="width: 20px; height: 15px;" type="text"/>	MONTH.. <input style="width: 20px; height: 15px;" type="text"/> YEAR... <input style="width: 20px; height: 15px;" type="text"/>		YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2 (GO TO 62) <	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2
02 <hr/> (NAME)	MALE.....1 FEMALE...2	DAYS....1 <input style="width: 20px; height: 15px;" type="text"/> MONTHS..2 <input style="width: 20px; height: 15px;" type="text"/> YEARS...3 <input style="width: 20px; height: 15px;" type="text"/>	MONTH.. <input style="width: 20px; height: 15px;" type="text"/> YEAR... <input style="width: 20px; height: 15px;" type="text"/>		YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2 (GO TO 62) <	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2
03 <hr/> (NAME)	MALE.....1 FEMALE...2	DAYS....1 <input style="width: 20px; height: 15px;" type="text"/> MONTHS..2 <input style="width: 20px; height: 15px;" type="text"/> YEARS...3 <input style="width: 20px; height: 15px;" type="text"/>	MONTH.. <input style="width: 20px; height: 15px;" type="text"/> YEAR... <input style="width: 20px; height: 15px;" type="text"/>		YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2 (GO TO 62) <	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2

63	RECORD THE TIME.	HOUR..... <input style="width: 20px; height: 15px;" type="text"/> MINUTES..... <input style="width: 20px; height: 15px;" type="text"/>
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NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
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INDIA

IDENTIFICATION																																														
STATE _____	<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																																													
DISTRICT _____																																														
TEHSIL/TALUK _____																																														
CITY/TOWN/VILLAGE _____																																														
URBAN/RURAL (urban=1, rural=2).....																																														
LARGE CITY/SMALL CITY/TOWN/RURAL AREA..... (large city=1, small city=2, town=3, rural area=4)																																														
PSU NUMBER.....																																														
HOUSEHOLD NUMBER.....																																														
NAME AND LINE NUMBER OF WOMAN _____																																														
ADDRESS OF HOUSEHOLD _____																																														

INTERVIEWER VISITS												
	1	2	3	FINAL VISIT								
DATE				DAY <table border="1"><tr><td></td><td></td></tr></table> MONTH <table border="1"><tr><td></td><td></td></tr></table> YEAR <table border="1"><tr><td>1</td><td>9</td><td></td><td></td></tr></table>					1	9		
1	9											
INTERVIEWER'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr></table>								
RESULT*				RESULT CODE <table border="1"><tr><td></td></tr></table>								
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td></tr></table>								
*RESULT CODES: 1 COMPLETED 3 POSTPONED 5 PARTLY COMPLETED 2 NOT AT HOME 4 REFUSED 6 OTHER (SPECIFY) _____												
NATIVE LANGUAGE OF RESPONDENT**				<table border="1"><tr><td></td><td></td></tr></table>								
** LANGUAGE CODES: 01 Assamese 05 Hindi 09 Manipuri 14 Konkani 02 Bengali 06 Kannada 10 Marathi 15 Sindhi 03 English 07 Kashmiri 11 Nepali 16 Tamil 04 Gujarati 08 Malayalam 12 Oriya 17 Telugu 19 Other (SPECIFY) _____ 13 Punjabi 18 Urdu												

DATE	SUPERVISOR <table border="1"><tr><td></td><td></td></tr></table>			FIELD EDITOR <table border="1"><tr><td></td><td></td></tr></table>			OFFICE EDITOR <table border="1"><tr><td></td><td></td></tr></table>			KEYED BY <table border="1"><tr><td></td><td></td></tr></table>		
NAME												

SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR..... <input type="text"/> <input type="text"/> MINUTES..... <input type="text"/> <input type="text"/>	
<p>Namaste. My name is _____ and I am working with (NAME OF THE ORGANISATION). We are conducting a national survey about the health of women and children. We would very much appreciate your participation in this survey.</p> <p>I would like to ask you about your health (and the health of your children). This information will help the government to plan health services. The amount of time needed will be less than one hour. Participation in this survey is voluntary. If you decide to participate, you may stop answering questions at any time. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.</p> <p>We hope that you will participate in the survey since your views are important. Do you want to ask me anything about the survey at this time?</p> <p>Signature of Interviewer: _____ Date: _____</p> <p>RESPONDENT AGREES FOR INTERVIEW.....1 RESPONDENT DOES NOT AGREE FOR INTERVIEW.....2 → END</p>			
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, a town, or a village?	CITY/TOWN.....1 VILLAGE.....2	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?	YEARS..... <input type="text"/> <input type="text"/> 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..... <input type="text"/> <input type="text"/> DK MONTH.....98 YEAR..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 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..... <input type="text"/> <input type="text"/>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
107	What is your current marital status?	CURRENTLY MARRIED.....1 MARRIED BUT GAUNA NOT PERFORMED..2 SEPARATED.....3 DESERTED.....4 DIVORCED.....5 WIDOWED.....6 NEVER MARRIED.....7	→END →110 →END
108	Are you living with your husband now or is he staying elsewhere?	LIVING WITH HUSBAND.....1 STAYING ELSEWHERE.....2	→110
109	For how long have you and your husband not been living together? IF LESS THAN 1 YEAR, RECORD MONTHS; OTHERWISE RECORD COMPLETED YEARS.	MONTHS.....1 YEARS.....2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
110	Now I would like to ask you some questions about your marriage. Have you been married only once or more than once?	ONCE.....1 MORE THAN ONCE.....2	→114
111	How old were you at the time of your <u>first</u> marriage?	AGE IN COMPLETED YEARS.....	<input type="checkbox"/> <input type="checkbox"/>
112	How old were you when you started living with your <u>first</u> husband?	AGE IN COMPLETED YEARS..... GAUNA HAD NOT TAKEN PLACE..... 96	<input type="checkbox"/> <input type="checkbox"/>
113	How old were you when your <u>first</u> marriage dissolved?	AGE IN COMPLETED YEARS.....	<input type="checkbox"/> <input type="checkbox"/>
114	How old were you at the time of your (current) marriage?	AGE IN COMPLETED YEARS.....	<input type="checkbox"/> <input type="checkbox"/>
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..... <input type="text"/>																																									
118	CHECK 117: GRADE 0-5 <input type="checkbox"/> GRADE 6 AND ABOVE <input type="checkbox"/>		→120																																								
119	Can you read and write?	YES.....1 NO.....2	→121																																								
120	Do you usually read a newspaper or a magazine at least once a week?	YES.....1 NO.....2																																									
121	Do you usually listen to a radio at least once a week?	YES.....1 NO.....2																																									
122	Do you usually watch television at least once a week?	YES.....1 NO.....2																																									
123	Do you usually go to a cinema hall or theatre to see a movie at least once a month?	YES.....1 NO.....2																																									
124	How often do you yourself consume the following items: daily, weekly, occasionally, or never:	<table border="1"> <thead> <tr> <th></th> <th>DAILY</th> <th>WEEKLY</th> <th>OCCASIONALLY</th> <th>NEVER</th> </tr> </thead> <tbody> <tr> <td>Milk or Curd?</td> <td>MILK OR CURD..1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Pulses or beans?</td> <td>PULSES/BEANS..1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Green leafy vegetables?</td> <td>GREEN LEAFY...1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Other vegetables?</td> <td>OTH. VEG.....1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Fruits?</td> <td>FRUITS.....1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Eggs?</td> <td>EGGS.....1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Chicken, meat, or fish?</td> <td>CHICKEN/MEAT/FISH.....1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </tbody> </table>		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	
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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.....	<input type="text"/> <input type="text"/>
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.....	<input type="text"/> <input type="text"/>
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.....	<input type="text"/> <input type="text"/>
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE RECORD '00'.	TOTAL.....	<input type="text"/> <input type="text"/>
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL ___ births during your life. Is that correct? YES <input type="checkbox"/> NO <input type="checkbox"/> PROBE AND CORRECT 201-208 AS NECESSARY		
210	CHECK 208: ONE OR MORE BIRTHS <input type="checkbox"/> NO BIRTHS <input type="checkbox"/>		→225

211

Now I would like to talk to you about all the births in your lifetime, whether currently alive or not, starting with the first one you had.
RECORD NAMES OF ALL THE LIVE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

212	213	214	215	216	217	218	218A	219	220*
What name was given to your (first, next) baby?	Were any of these twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	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.

260

01 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
02 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
03 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
04 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

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 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
06 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
07 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
08 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
09 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
10 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
11 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

212	213	214	215	216	217	218	218A	219	220*
12 (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 v 219	AGE IN YEARS v	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..... <input type="text"/>	
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..... <input type="text"/> NO. OF INDUCED ABORTIONS..... <input type="text"/>	
229	CHECK 107: CURRENTLY MARRIED <input type="checkbox"/> SEPARATED <input type="checkbox"/> DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED <input type="checkbox"/>		→301
230	Are you pregnant now?	YES.....1 NO.....2 UNSURE.....8	→233
231	How many months pregnant are you?	MONTHS..... <input type="text"/>	
232	At the time you became pregnant, did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you want <u>no (more) children at all</u> ?	THEN.....1 LATER.....2 NO MORE.....3	→301
233	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO.....1 <input type="text"/> WEEKS AGO.....2 <input type="text"/> MONTHS AGO.....3 <input type="text"/> YEARS AGO.....4 <input type="text"/> IN MENOPAUSE/HYSTERECTOMY.....993 BEFORE LAST BIRTH.....994 NEVER MESTRATED.....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..... <input type="text"/>	
303	During these visits, what were the different matters talked about? Anything else? RECORD ALL MENTIONED.	FAMILY PLANNING.....A BREASTFEEDING.....B SUPPLEMENTARY FEEDING.....C IMMUNIZATION.....D NUTRITION.....E DISEASE PREVENTION.....F TREATMENT OF HEALTH PROBLEM...G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J CHILD CARE.....K SANITATION/CLEANLINESS.....L ORAL REHYDRATION.....M OTHER _____ X (SPECIFY)	
304	When was the last time a health or family planning worker visited you at home? IF LESS THAN ONE MONTH, RECORD '00' MONTHS.	MONTHS AGO..... <input type="text"/>	
305	Who visited you at that time?	PUBLIC SECTOR WORKER GOVT. DOCTOR.....11 PUBLIC HEALTH NURSE.....12 ANM/LHV.....13 MALE MPW/SUPERVISOR.....14 ANGANWADI WORKER.....15 VILLAGE HEALTH GUIDE.....16 OTHER PUBLIC SECTOR HEALTH WORKER.....17 NGO DOCTOR.....21 NGO WORKER.....22 PRIVATE SECTOR WORKER PRIVATE DOCTOR.....31 PRIVATE NURSE.....32 COMPOUNDER.....33 TRADITIONAL HEALER.....34 DAI (TBA).....35 OTHER PRIVATE SECTOR HEALTH WORKER.....36 OTHER _____ 96 (SPECIFY)	
305A	What type of services did you receive during this visit? Any other service? RECORD ALL MENTIONED.	PILL SUPPLY.....A CONDOM SUPPLY.....B FOLLOW-UP FOR STERILIZATION....C FOLLOW-UP FOR IUD INSERTION....D FAMILY PLANNING ADVICE.....E OTHER FAMILY PLANNING SERVICE..F IMMUNIZATION.....G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J DISEASE PREVENTION.....K MEDICAL TREATMENT FOR SELF....L TREATMENT FOR SICK CHILD.....M TREATMENT FOR OTHER PERSON....N OTHER _____ X (SPECIFY)	
306	Did she/he spend enough time with you?	YES.....1 NO.....2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
307	Did she/he talk to you nicely, somewhat nicely, or not nicely?	NICELY.....1 SOMEWHAT NICELY.....2 NOT NICELY.....3	
308	Have you visited a health facility or camp for any reason for yourself (or your children) in the last 12 months?	YES.....1 NO.....2	→317
309	During these visits in the last 12 months, what were the different matters talked about? Anything else? RECORD ALL MENTIONED.	FAMILY PLANNING.....A BREASTFEEDING.....B SUPPLEMENTARY FEEDING.....C IMMUNIZATION.....D NUTRITION.....E DISEASE PREVENTION.....F TREATMENT OF HEALTH PROBLEM...G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J CHILD CARE.....K SANITATION/CLEANLINESS.....L ORAL REHYDRATION.....M OTHER _____ X (SPECIFY)	
310	What type of health facility did you visit most recently for yourself (or your children)?	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 GOVT. DISPENSARY.....12 UHC/UHP/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	

SECTION 3B. CONTRACEPTION

318. Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.

For each method I mention, please tell me if you have ever heard of the method and whether you have ever used the method at any time in your life?

<p>01 <u>Pill</u> Women can take a pill daily or weekly.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>02 <u>Condom or Nirodh</u> Men can use a rubber sheath during sexual intercourse.</p>	<p>HAS USED1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>03 <u>IUD or Loop</u> Women can have a loop or coil placed inside them by a doctor or a nurse.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>04 <u>Female sterilization</u> Women can have an operation to avoid having any more children.</p>	<p>Have you ever heard of female sterilization? IF YES: Have you ever had an operation to avoid having any more children? HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>05 <u>Male sterilization</u> Men can have an operation to avoid having any more children.</p>	<p>Have you ever heard of male sterilization? IF YES: Has your husband ever had an operation to avoid having any more children? HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>06 <u>Rhythm or safe period method</u> Couples can avoid having sexual intercourse on certain days of the month when the woman is more likely to become pregnant.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>07 <u>Withdrawal</u> Men can be careful and pull out before climax.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
<p>08 Have you ever heard of any other ways or methods that women or men can use to delay or avoid pregnancy? IF YES: Have you ever used this method? 1 _____ (SPECIFY) 2 _____ (SPECIFY)</p>	<p>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</p>

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 | NUMBER OF CHILDREN..... | 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'.

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 | Which method are you using? | PILL.....01 | CONDOM/NIRODH.....02 | IUD/LOOP.....03 →336 | FEMALE STERILIZATION.....04 | MALE STERILIZATION.....05 →339 | RHYTHM/SAFE PERIOD.....06 | WITHDRAWAL.....07 →350 | OTHER.....96 | (SPECIFY)

327A | CIRCLE '04' FOR FEMALE STERILIZATION. | CIRCLE '05' FOR MALE STERILIZATION.

328	<p>For how many months have you been using pills/condoms continuously? IF LESS THAN 1 MONTH, RECORD '00'.</p>	<p>MONTHS..... <input style="width:20px; height:15px;" type="text"/> <input style="width:20px; height:15px;" type="text"/></p> <p>8 YEARS OR LONGER.....96</p>	
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329	<p>Where did you obtain the pills/condoms the last time?</p> <p>IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHP/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>GOVT. PARAMEDIC.....17</p> <p>CAMP.....18</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....19</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>PVT. PARAMEDIC.....34</p> <p>VAIDYA/HAKIM/HOMEOPATH.....35</p> <p>TRADITIONAL HEALER.....36</p> <p>PHARMACY/DRUGSTORE.....37</p> <p>DAI (TBA).....38</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....39</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>HUSBAND.....42</p> <p>FRIEND/OTHER RELATIVE.....43</p> <p>OTHER.....96</p> <p>(SPECIFY)</p>	<p>>331</p> <p>>331</p>
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330	<p>Do you know where this person obtained the pills/condoms the last time?</p> <p>IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHP/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>GOVT. PARAMEDIC.....17</p> <p>CAMP.....18</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....19</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>PVT. PARAMEDIC.....34</p> <p>VAIDYA/HAKIM/HOMEOPATH.....35</p> <p>TRADITIONAL HEALER.....36</p> <p>PHARMACY/DRUGSTORE.....37</p> <p>DAI (TBA).....38</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....39</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>OTHER.....96</p> <p>(SPECIFY)</p> <p>DK.....98</p>	
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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
331	<p>May I see the packet of pills/condoms you are using now?</p> <p>IF PACKET SEEN, RECORD BRAND NAME.</p>	<p>PACKET SEEN.....1</p> <p>BRAND NAME _____ <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p>PACKET NOT SEEN.....2</p>	->333
332	<p>Do you know the brand name of the pills/condoms you are using now?</p>	<p>BRAND NAME _____ <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p>DK.....998</p>	
333	<p>How much does one packet of pills/condoms cost you?</p>	<p>COST Rs:..... <input type="text"/> <input type="text"/> <input type="text"/></p> <p>FREE.....995</p> <p>DK.....998</p>	->335
334	<p>For that cost how many condoms/pill cycles do you get?</p>	<p>NUMBER..... <input type="text"/> <input type="text"/></p>	
335	<p>Have you been able to get the supply of pills/condoms whenever you need them?</p>	<p>YES.....1</p> <p>NO.....2</p>	->344
336	<p>For how many months have you been using the IUD/LOOP continuously?</p> <p>IF LESS THAN 1 MONTH, RECORD '00'.</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>8 YEARS OR LONGER.....96</p>	
337	<p>Who inserted the IUD/LOOP?</p>	<p>GOVERNMENT DOCTOR.....01</p> <p>GOVERNMENT NURSE/PARAMEDIC.....02</p> <p>NGO DOCTOR.....03</p> <p>NGO NURSE/PARAMEDIC.....04</p> <p>PRIVATE DOCTOR.....05</p> <p>PRIVATE NURSE/PARAMEDIC.....06</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p>	
338	<p>Where did you go to get the IUD/LOOP inserted?</p> <p>_____ (NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHP/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>CAMP.....17</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....18</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....34</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
344	Who mainly motivated you to use (CURRENT METHOD)?	GOVT. DOCTOR.....01 PUBLIC HEALTH NURSE.....02 ANM/LHV.....03 MALE MPW/SUPERVISOR.....04 ANGANWADI WORKER.....05 OTHER GOVT. HEALTH WORKER.....06 NGO WORKER.....07 PRIVATE DOCTOR.....08 PRIVATE PARAMEDIC.....09 DAI (TBA).....10 TEACHER.....11 RELIGIOUS LEADER.....12 POLITICAL LEADER.....13 HUSBAND.....14 MOTHER/MOTHER-IN-LAW.....15 OTHER RELATIVE/FRIEND.....16 NO ONE/SELF.....17 OTHER _____ 96 (SPECIFY)	->347
345	Did he/she tell you about any other methods that you might use?	YES.....1 NO.....2	->347
346	Which other methods were you told about? RECORD ALL MENTIONED.	PILL.....A CONDOM/NIRODH.....B IUD/LOOP.....C FEMALE STERILIZATION.....D MALE STERILIZATION.....E RHYTHM/SAFE PERIOD.....F WITHDRAWAL.....G OTHER _____ X (SPECIFY)	
347	At the time when you accepted the (CURRENT METHOD) did any health or family planning worker tell you about side effects or other problems you might have using the (CURRENT METHOD)?	YES.....1 NO.....2	
348	Were you told what to do in case you experienced problems with the method?	YES.....1 NO.....2	
349	Did you receive any follow-up, either at home or in a health facility, after you accepted the (CURRENT METHOD)? PROBE FOR TYPE OF VISIT.	AT HOME ONLY.....1 IN A FACILITY ONLY.....2 BOTH.....3 NEITHER.....4	->351
350	For how long have you been using this method continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... <input type="text"/> <input type="text"/> 8 YEARS OR LONGER.....96	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
351	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 <input type="checkbox"/> SEPARATED DESERTED DIVORCED WIDOWED <input type="checkbox"/>		→364
356A	CHECK 230: NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/>		→358
357	What is the main reason you are not using a method of contraception to delay or avoid pregnancy?	HUSBAND AWAY.....11 FERTILITY-RELATED REASONS NOT HAVING SEX.....21 INFREQUENT SEX.....22 MENOPAUSAL/HAD HYSTERECTOMY...23 SUBPECUND/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?	<p>FERTILITY-RELATED REASONS</p> <p>NOT HAVING SEX.....11</p> <p>INFREQUENT SEX.....12</p> <p>MENOPAUSAL/HAD HYSTERECTOMY..13</p> <p>SUBFECUND/INFECUND.....14</p> <p>WANTS AS MANY CHILDREN AS POSSIBLE.....15</p> <p>OPPOSITION TO USE</p> <p>OPPOSED TO FAMILY PLANNING...21</p> <p>HUSBAND OPPOSED.....22</p> <p>OTHER PEOPLE OPPOSED.....23</p> <p>AGAINST RELIGION.....24</p> <p>LACK OF KNOWLEDGE</p> <p>KNOWS NO METHOD.....31</p> <p>KNOWS NO SOURCE.....32</p> <p>METHOD-RELATED REASONS</p> <p>HEALTH CONCERNS.....41</p> <p>WORRY ABOUT SIDE EFFECTS....42</p> <p>HARD TO GET METHOD.....43</p> <p>COSTS TOO MUCH.....44</p> <p>INCONVENIENT.....45</p> <p>AFRAID OF STERILIZATION.....46</p> <p>DON'T LIKE EXISTING METHODS..47</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p> <p>DK.....98</p>																					
362	In the last few months, have you discussed the practice of family planning with your husband, friends, neighbours, or relatives?	<p>YES.....1</p> <p>NO.....2</p>	→364																				
363	<p>With whom?</p> <p>Anyone else?</p> <p>RECORD ALL MENTIONED.</p>	<p>HUSBAND.....A</p> <p>MOTHER.....B</p> <p>SISTER(S).....C</p> <p>DAUGHTER.....D</p> <p>MOTHER-IN-LAW.....E</p> <p>SISTER-IN-LAW.....F</p> <p>FRIEND/NEIGHBOUR.....G</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>																					
364	<p>In the last few months, have you heard or seen any message about family planning:</p> <p>on radio?</p> <p>on television?</p> <p>in a cinema or film show?</p> <p>in a newspaper or magazine?</p> <p>on a wall painting or hoarding?</p> <p>in a drama, folk dance, or street play?</p>	<table border="1"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>RADIO.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>TELEVISION.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>CINEMA/FILM SHOW.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>NEWSPAPER/MAGAZINE.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>WALL PAINTING/HOARDING... 1</td> <td>2</td> </tr> <tr> <td>DRAMA/FOLK DANCE/STREET PLAY.....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	RADIO.....	1	2	TELEVISION.....	1	2	CINEMA/FILM SHOW.....	1	2	NEWSPAPER/MAGAZINE.....	1	2	WALL PAINTING/HOARDING... 1	2	DRAMA/FOLK DANCE/STREET PLAY.....	1	2	
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SECTION 4A. ANTENATAL, NATAL, AND POSTNATAL CARE

401	CHECK 224 ONE OR MORE BIRTHS SINCE JAN. 1995 <input type="checkbox"/>	NO BIRTHS SINCE JAN. 1995 <input type="checkbox"/> → (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 FROM Q. 212 AND Q. 216	LAST BIRTH <input type="text"/> <input type="text"/> NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v v	NEXT-TO-LAST BIRTH <input type="text"/> <input type="text"/> NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v v
403	At the time you became pregnant with (NAME), did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you want <u>no (more)</u> children <u>at all</u> ?	THEN.....1 (SKIP TO 405) < <input type="text"/> } LATER.....2 NO MORE.....3 (SKIP TO 405) < <input type="text"/> }	THEN.....1 (SKIP TO 405) < <input type="text"/> } LATER.....2 NO MORE.....3 (SKIP TO 405) < <input type="text"/> }
404	How much longer would you like to have waited?	MONTHS.....1 <input type="text"/> <input type="text"/> YEARS.....2 <input type="text"/> <input type="text"/> DK.....998	MONTHS.....1 <input type="text"/> <input type="text"/> YEARS.....2 <input type="text"/> <input type="text"/> DK.....998
405	When you were pregnant with (NAME), did you go for an antenatal check-up?	YES.....1 NO.....2 (SKIP TO 407) < <input type="text"/> }	YES.....1 NO.....2 (SKIP TO 407) < <input type="text"/> }
406	Whom did you see? Anyone else? RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFFSNL...C TRADITIONAL BIRTH ATTENDANT (DAI).....D OTHER _____ X (SPECIFY)	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFFSNL...C TRADITIONAL BIRTH ATTENDANT (DAI).....D OTHER _____ X (SPECIFY)
407	When you were pregnant with (NAME), did any health worker visit you at home for an antenatal check-up?	YES.....1 NO.....2	YES.....1 NO.....2
408	CHECK 405 AND 407:	YES IN EITHER <input type="checkbox"/> NO IN BOTH <input type="checkbox"/> v (SKIP TO 413)	YES IN EITHER <input type="checkbox"/> NO IN BOTH <input type="checkbox"/> v (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..... <input type="text"/> <input type="text"/>	MONTHS..... <input type="text"/> <input type="text"/>																																																																		
410	How many times did you receive antenatal check-ups during this pregnancy?	NO. OF TIMES..... <input type="text"/> <input type="text"/>	NO. OF TIMES..... <input type="text"/> <input type="text"/>																																																																		
411	Did you have the following performed at least once during any of your antenatal check-ups for this pregnancy:	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>Weight measured?</td> <td>WEIGHT..... 1</td> <td>2</td> </tr> <tr> <td>Height measured?</td> <td>HEIGHT..... 1</td> <td>2</td> </tr> <tr> <td>Blood pressure checked?</td> <td>BLOOD PRESSURE... 1</td> <td>2</td> </tr> <tr> <td>Blood test?</td> <td>BLOOD TEST..... 1</td> <td>2</td> </tr> <tr> <td>Urine test?</td> <td>URINE TEST..... 1</td> <td>2</td> </tr> <tr> <td>Abdomen examined?</td> <td>ABDOMEN EXAMINED.. 1</td> <td>2</td> </tr> <tr> <td>Internal exam?</td> <td>INTERNAL EXAM.... 1</td> <td>2</td> </tr> <tr> <td>X-ray?</td> <td>X-RAY..... 1</td> <td>2</td> </tr> <tr> <td>Sonogram or ultrasound?</td> <td>SONOGRAM/ULTRAS... 1</td> <td>2</td> </tr> <tr> <td>Amniocentesis?</td> <td>AMNIOCENTESIS.... 1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	Weight measured?	WEIGHT..... 1	2	Height measured?	HEIGHT..... 1	2	Blood pressure checked?	BLOOD PRESSURE... 1	2	Blood test?	BLOOD TEST..... 1	2	Urine test?	URINE TEST..... 1	2	Abdomen examined?	ABDOMEN EXAMINED.. 1	2	Internal exam?	INTERNAL EXAM.... 1	2	X-ray?	X-RAY..... 1	2	Sonogram or ultrasound?	SONOGRAM/ULTRAS... 1	2	Amniocentesis?	AMNIOCENTESIS.... 1	2	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>Weight measured?</td> <td>WEIGHT..... 1</td> <td>2</td> </tr> <tr> <td>Height measured?</td> <td>HEIGHT..... 1</td> <td>2</td> </tr> <tr> <td>Blood pressure checked?</td> <td>BLOOD PRESSURE... 1</td> <td>2</td> </tr> <tr> <td>Blood test?</td> <td>BLOOD TEST..... 1</td> <td>2</td> </tr> <tr> <td>Urine test?</td> <td>URINE TEST..... 1</td> <td>2</td> </tr> <tr> <td>Abdomen examined?</td> <td>ABDOMEN EXAMINED.. 1</td> <td>2</td> </tr> <tr> <td>Internal exam?</td> <td>INTERNAL EXAM.... 1</td> <td>2</td> </tr> <tr> <td>X-ray?</td> <td>X-RAY..... 1</td> <td>2</td> </tr> <tr> <td>Sonogram or ultrasound?</td> <td>SONOGRAM/ULTRAS... 1</td> <td>2</td> </tr> <tr> <td>Amniocentesis?</td> <td>AMNIOCENTESIS.... 1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	Weight measured?	WEIGHT..... 1	2	Height measured?	HEIGHT..... 1	2	Blood pressure checked?	BLOOD PRESSURE... 1	2	Blood test?	BLOOD TEST..... 1	2	Urine test?	URINE TEST..... 1	2	Abdomen examined?	ABDOMEN EXAMINED.. 1	2	Internal exam?	INTERNAL EXAM.... 1	2	X-ray?	X-RAY..... 1	2	Sonogram or ultrasound?	SONOGRAM/ULTRAS... 1	2	Amniocentesis?	AMNIOCENTESIS.... 1	2
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412	Did you receive advice on any of the following during at least one of your antenatal check-ups for this pregnancy:	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>Diet?</td> <td>DIET..... 1</td> <td>2</td> </tr> <tr> <td>Danger signs of pregnancy?</td> <td>DANGER SIGNS..... 1</td> <td>2</td> </tr> <tr> <td>Delivery care?</td> <td>DELIVERY CARE..... 1</td> <td>2</td> </tr> <tr> <td>Newborn care?</td> <td>NEWBORN CARE..... 1</td> <td>2</td> </tr> <tr> <td>Family planning?</td> <td>FAMILY PLANNING... 1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	Diet?	DIET..... 1	2	Danger signs of pregnancy?	DANGER SIGNS..... 1	2	Delivery care?	DELIVERY CARE..... 1	2	Newborn care?	NEWBORN CARE..... 1	2	Family planning?	FAMILY PLANNING... 1	2	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>Diet?</td> <td>DIET..... 1</td> <td>2</td> </tr> <tr> <td>Danger signs of pregnancy?</td> <td>DANGER SIGNS..... 1</td> <td>2</td> </tr> <tr> <td>Delivery care?</td> <td>DELIVERY CARE..... 1</td> <td>2</td> </tr> <tr> <td>Newborn care?</td> <td>NEWBORN CARE..... 1</td> <td>2</td> </tr> <tr> <td>Family planning?</td> <td>FAMILY PLANNING... 1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	Diet?	DIET..... 1	2	Danger signs of pregnancy?	DANGER SIGNS..... 1	2	Delivery care?	DELIVERY CARE..... 1	2	Newborn care?	NEWBORN CARE..... 1	2	Family planning?	FAMILY PLANNING... 1	2																														
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	NAME	LAST BIRTH	NAME	NEXT-TO-LAST BIRTH
414				
	When you were pregnant with (NAME), did you experience any of the following problems at any time:			
		YES NO		YES NO
	Night blindness? (USE LOCAL TERM)	NIGHT BLINDNESS.... 1 2	NIGHT BLINDNESS.... 1 2	
	Blurred vision?	BLURRED VISION.... 1 2	BLURRED VISION.... 1 2	
	Convulsions not from fever?	CONVULSIONS..... 1 2	CONVULSIONS..... 1 2	
	Swelling of the legs, body, or face?	SWELLING..... 1 2	SWELLING..... 1 2	
	Excessive fatigue?	EXCESSIVE FATIGUE.. 1 2	EXCESSIVE FATIGUE.. 1 2	
	Anaemia?	ANAEMIA..... 1 2	ANAEMIA..... 1 2	
	Any vaginal bleeding?	VAGINAL BLEEDING... 1 2	VAGINAL BLEEDING... 1 2	
415				
	When you were pregnant with (NAME), were you given any iron folic tablets or syrup?			
		YES.....1	YES.....1	
		NO.....2 (SKIP TO 418) <-----	NO.....2 (SKIP TO 418) <-----	
416				
	Did you receive enough iron folic tablets or syrup to last about three months or longer?			
		YES.....1	YES.....1	
		NO.....2	NO.....2	
		DK.....8	DK.....8	
417				
	Did you consume all the iron folic tablets or syrup you were given ?			
		YES.....1	YES.....1	
		NO.....2	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	YES.....1	
		NO.....2 (SKIP TO 420) <-----	NO.....2 (SKIP TO 420) <-----	
		DK.....8	DK.....8	
419				
	During this pregnancy, how many times did you get this injection?			
		TIMES..... <input type="checkbox"/>	TIMES..... <input type="checkbox"/>	
		DK.....8	DK.....8	

		LAST BIRTH	NEXT-TO-LAST BIRTH
		NAME _____	NAME _____
420	Where did you give birth to (NAME)?	HOME YOUR HOME.....11 PARENTS' HOME.....12 OTHER HOME.....13 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP...21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC...24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY....26 NGO/TRUST HOSP./CLINIC..31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY....42 OTHER _____ 96 (SPECIFY) (SKIP TO 422)<	HOME YOUR HOME.....11 PARENTS' HOME.....12 OTHER HOME.....13 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP...21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC...24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY....26 NGO/TRUST HOSP./CLINIC..31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY....42 OTHER _____ 96 (SPECIFY) (SKIP TO 422)<
421	What is the main reason you did not go to a health facility for delivery?	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 POOR QUALITY SERVICE...05 NO TIME TO GO.....06 FAMILY DID NOT ALLOW...07 BETTER CARE AT HOME...08 LACK OF KNOWLEDGE.....09 OTHER _____ 96 (SPECIFY)	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 POOR QUALITY SERVICE...05 NO TIME TO GO.....06 FAMILY DID NOT ALLOW...07 BETTER CARE AT HOME...08 LACK OF KNOWLEDGE.....09 OTHER _____ 96 (SPECIFY)
422	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS WHO ASSISTED.	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFESSNL..C OTHER PERSON DAI (TBA).....D FRIEND/RELATIVE.....E OTHER _____ X (SPECIFY) NO ONE.....Y	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFESSNL..C OTHER PERSON DAI (TBA).....D FRIEND/RELATIVE.....E OTHER _____ X (SPECIFY) NO ONE.....Y
423	CHECK 422:	ANY <input type="checkbox"/> NO <input type="checkbox"/> CODE v CODE A, B, (SKIP TO A, B, OR C 425) OR C	ANY <input type="checkbox"/> NO <input type="checkbox"/> CODE v CODE A, B, (SKIP TO A, B, OR C 425) OR C
424	What is the main reason you did not take the help of a health professional?	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 PROFES. NOT AVAI'BLE...05 NO CONFIDENCE IN AVAILABLE PROFESSIONAL.06 NO TIME TO GET HELP...07 FAMILY DID NOT ALLOW...08 OTHER _____ 96 (SPECIFY) (SKIP TO 426)<	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 PROFES. NOT AVAI'BLE...05 NO CONFIDENCE IN AVAILABLE PROFESSIONAL.06 NO TIME TO GET HELP...07 FAMILY DID NOT ALLOW...08 OTHER _____ 96 (SPECIFY) (SKIP TO 426)<

	NAME	LAST BIRTH	NAME	NEXT-TO-LAST BIRTH
425		YES.....1 NO.....2		YES.....1 NO.....2
	Was (NAME) delivered by caesarian section?			
426		LARGE.....1 AVERAGE.....2 SMALL.....3 VERY SMALL.....4		LARGE.....1 AVERAGE.....2 SMALL.....3 VERY SMALL.....4
	When (NAME) was born, was he/she: large, average, small, or very small?			
427		YES.....1 NO.....2 (SKIP TO 429) < _____		YES.....1 NO.....2 (SKIP TO 429) < _____
	Was (NAME) weighed at birth?			
428		GRAMS..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DK.....9998		GRAMS..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DK.....9998
	How much did (NAME) weigh?			
429		YES.....1 NO.....2 (SKIP TO 433) < _____		YES.....1 NO.....2 (SKIP TO 433) < _____
	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?			
430		DAYS.....1 <input type="text"/> <input type="text"/> WEEKS.....2 <input type="text"/> <input type="text"/>		DAYS.....1 <input type="text"/> <input type="text"/> WEEKS.....2 <input type="text"/> <input type="text"/>
	How soon after the birth of (NAME) did you first get a check-up?			
431		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)
	Where did you get the check-up?			

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
432	<p>Did any of the following happen when you had the check-up:</p> <p>Was your abdomen examined?</p> <p>Did you receive advice on family planning?</p> <p>Did you receive advice on breastfeeding?</p> <p>Did you receive advice on baby care?</p>	<p>YES NO</p> <p>ABDOMEN EXAMINED... 1 2</p> <p>FAMILY PLANNING.... 1 2</p> <p>BREASTFEEDING..... 1 2</p> <p>BABY CARE..... 1 2</p>	<p>YES NO</p> <p>ABDOMEN EXAMINED... 1 2</p> <p>FAMILY PLANNING.... 1 2</p> <p>BREASTFEEDING..... 1 2</p> <p>BABY CARE..... 1 2</p>
433	<p>At any time during the two months after the delivery of (NAME), did you have any of the following:</p> <p>Massive vaginal bleeding?</p> <p>Very high fever?</p>	<p>YES NO</p> <p>VAGINAL BLEEDING... 1 2</p> <p>VERY HIGH FEVER... 1 2</p>	<p>YES NO</p> <p>VAGINAL BLEEDING... 1 2</p> <p>VERY HIGH FEVER... 1 2</p>
434	<p>Has your period returned since the birth of (NAME)?</p>	<p>YES1 (SKIP TO 436) <-----</p> <p>NO.....2 (SKIP TO 437) <-----</p>	
435	<p>Did your period return between the birth of (NAME) and your next pregnancy?</p>		<p>YES1</p> <p>NO.....2 (SKIP TO 439) <-----</p>
436	<p>For how many months after the birth of (NAME) did you not have a period?</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>DK.....98</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>DK.....98</p>
437	<p>CHECK 230: RESPONDENT PREGNANT?</p>	<p>NOT PREGNANT <input type="checkbox"/> OR Q230 NOT ASKED <input type="checkbox"/></p> <p>PREGNANT OR UNSURE <input type="checkbox"/> V (SKIP TO 439)</p>	
438	<p>Have you resumed sexual relations since the birth of (NAME)?</p>	<p>YES.....1</p> <p>NO.....2 (SKIP TO 440) <-----</p>	

		LAST BIRTH		NEXT-TO-LAST BIRTH	
		NAME		NAME	
448	CHECK 216: CHILD ALIVE?	ALIVE <input type="checkbox"/>	DEAD <input type="checkbox"/>	ALIVE <input type="checkbox"/>	DEAD <input type="checkbox"/>
		(SKIP TO 452)		(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..... <input type="checkbox"/>		PLAIN WATER..... <input type="checkbox"/>	
	Powdered milk?	POWDERED MILK..... <input type="checkbox"/>		POWDERED MILK..... <input type="checkbox"/>	
	Any other milk (other than breast milk)?	OTHER MILK..... <input type="checkbox"/>		OTHER MILK..... <input type="checkbox"/>	
	Any other liquid?	OTHER LIQUID..... <input type="checkbox"/>		OTHER LIQUID..... <input type="checkbox"/>	
	Green, leafy vegetables?	GREEN/LEAFY VEG..... <input type="checkbox"/>		GREEN/LEAFY VEG..... <input type="checkbox"/>	
	Fruits?	FRUITS..... <input type="checkbox"/>		FRUITS..... <input type="checkbox"/>	
	Any other solid or mushy food?	SOLID/MUSHY FOOD..... <input type="checkbox"/>		SOLID/MUSHY FOOD..... <input type="checkbox"/>	
452	—————>	GO BACK TO 403 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 453		GO TO 453	

SECTION 4B. IMMUNIZATION AND HEALTH

453 ENTER THE LINE NUMBER AND NAME OF LAST TWO BIRTHS SINCE JANUARY 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.)

LINE NUMBER FROM Q. 212	LAST BIRTH	NEXT-TO-LAST BIRTH
FROM Q. 212 AND Q. 216	NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (GO TO NEXT COLUMN, OR IF NO MORE BIRTHS, GO TO 481)	NAME _____ ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (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, SEEN.....1 (SKIP TO 456) < _____
YES, NOT SEEN.....2 (SKIP TO 458) < _____	YES, NOT SEEN.....2 (SKIP TO 458) < _____
NO CARD.....3	NO CARD.....3

455 Did you ever have a vaccination card for (NAME)?

YES.....1 (SKIP TO 458) < _____	YES.....1 (SKIP TO 458) < _____
NO.....2	NO.....2

456 (1) COPY VACCINATION DATES FOR EACH VACCINE FROM THE CARD.
(2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED.

	DAY	MO	YEAR		DAY	MO	YEAR
BCG	BCG				BCG		
POLIO 0	P0				P0		
DPT 1	D1				D1		
DPT 2	D2				D2		
DPT 3	D3				D3		
POLIO 1	P1				P1		
POLIO 2	P2				P2		
POLIO 3	P3				P3		
MEASLES	MEA				MEA		

457 Has (NAME) received any vaccinations that are not recorded on this card?
RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, DPT 1-3, POLIO 0-3 AND/OR MEASLES VACCINE(S).

YES.....1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 456) (SKIP TO 460) < _____	YES.....1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 456) (SKIP TO 460) < _____
NO.....2	NO.....2
DK.....8 (SKIP TO 460) < _____	DK.....8 (SKIP TO 460) < _____

		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 VALDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....35 OTHER PRIVATE SECTOR HEALTH FACILITY.....36 OTHER _____ 96 (SPECIFY)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC....16 CAMP.....17 PULSE POLIO LOCATION...18 OTHER PUBLIC SECTOR HEALTH FACILITY.....19 NGO/TRUST HOSP./CLINIC...21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC....33 VALDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....35 OTHER PRIVATE SECTOR HEALTH FACILITY.....36 OTHER _____ 96 (SPECIFY)
462	Was a dose of vitamin A liquid or capsule ever given to (NAME) to protect him/her from night blindness (USE LOCAL TERM)?	YES.....1 NO.....2 (SKIP TO 464) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 464) <-----> DK.....8
463	How many months ago did (NAME) receive the last dose of Vitamin A?	MONTHS AGO..... <input type="text"/> <input type="text"/>	MONTHS AGO..... <input type="text"/> <input type="text"/>
464	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
465	Has (NAME) been ill with a cough at any time in the last 2 weeks?	YES.....1 NO.....2 (SKIP TO 469) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 469) <-----> DK.....8
466	When (NAME) was ill with a cough, did he/she breathe faster than usual with short, rapid breaths?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
467	Did you seek advice or treatment for the cough?	YES.....1 NO.....2 (SKIP TO 469) <----->	YES.....1 NO.....2 (SKIP TO 469) <----->

		LAST BIRTH	NEXT-TO-LAST BIRTH
		NAME _____	NAME _____
458	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases?	YES.....1 NO.....2 (SKIP TO 462) <----- DK.....8	YES.....1 NO.....2 (SKIP TO 462) <----- DK.....8
459	Please tell me if (NAME) has received any of the following vaccinations:		
459A	A BCG vaccination against tuberculosis, that is, an injection in the left shoulder that caused a scar?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
459B	A DPT vaccination against diphtheria, whooping cough, and tetanus given as an injection?	YES.....1 NO.....2 (SKIP TO 459D) <----- DK.....8	YES.....1 NO.....2 (SKIP TO 459D) <----- DK.....8
459C	How many times?	NUMBER OF TIMES..... <input type="checkbox"/>	NUMBER OF TIMES..... <input type="checkbox"/>
459D	Polio vaccine, that is, drops in the mouth?	YES.....1 NO.....2 (SKIP TO 459G) <----- DK.....8	YES.....1 NO.....2 (SKIP TO 459G) <----- DK.....8
459E	How many times?	NUMBER OF TIMES..... <input type="checkbox"/>	NUMBER OF TIMES..... <input type="checkbox"/>
459F	When was the first polio vaccine given -- just after birth or later?	JUST AFTER BIRTH.....1 LATER.....2	JUST AFTER BIRTH.....1 LATER.....2
459G	An injection against measles?	YES.....1 NO.....2 DK.....8 (SKIP TO 461) <-----	YES.....1 NO.....2 DK.....8 (SKIP TO 461) <-----
460	CHECK 456: ANY VACCINATIONS RECEIVED?	YES <input type="checkbox"/> NO <input type="checkbox"/> ↓ (SKIP TO 462)	YES <input type="checkbox"/> NO <input type="checkbox"/> ↓ (SKIP TO 462)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
468	<p>Where did you seek advice or treatment?</p> <p>Anywhere else?</p> <p>RECORD ALL MENTIONED.</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UFWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC...J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X (SPECIFY)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UFWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC...J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X (SPECIFY)</p>
469	<p>Has (NAME) had diarrhoea in the last two weeks?</p>	<p>YES.....1</p> <p>NO.....2 (SKIP TO 480)←</p> <p>DK.....8</p>	<p>YES.....1</p> <p>NO.....2 (SKIP TO 480)←</p> <p>DK.....8</p>
470	<p>Was there any blood in the stools?</p>	<p>YES.....1</p> <p>NO.....2</p>	<p>YES.....1</p> <p>NO.....2</p>
471	<p>(Including breast milk) Was he/she given the same amount to drink as before the diarrhoea, or more, or less?</p>	<p>SAME.....1</p> <p>MORE.....2</p> <p>LESS.....3</p> <p>DK.....8</p>	<p>SAME.....1</p> <p>MORE.....2</p> <p>LESS.....3</p> <p>DK.....8</p>
472	<p>Was he/she given the same amount of food as before the diarrhoea, or more, or less?</p>	<p>SAME.....1</p> <p>MORE.....2</p> <p>LESS.....3</p> <p>STOPPED COMPLETELY.....4</p> <p>DK.....8</p>	<p>SAME.....1</p> <p>MORE.....2</p> <p>LESS.....3</p> <p>STOPPED COMPLETELY.....4</p> <p>DK.....8</p>
473	<p>Did you seek advice or treatment for the diarrhoea?</p>	<p>YES.....1</p> <p>NO.....2 (SKIP TO 475)←</p>	<p>YES.....1</p> <p>NO.....2 (SKIP TO 475)←</p>

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
474	<p>Where did you seek advice or treatment?</p> <p>Anywhere else?</p> <p>RECORD ALL MENTIONED.</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UPWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC....J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UPWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC....J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>
475	<p>When (NAME) had diarrhoea, was he/she given any of the following to drink:</p> <p>A fluid made from a special packet called [LOCAL NAME]?</p> <p>Gruel made from rice [OR OTHER LOCAL GRAIN, TUBER, OR PLANTAIN]?</p>	<p>YES NO DK</p> <p>FLUID FROM ORS PACKET..... 1 2 8</p> <p>GRUEL..... 1 2 8</p>	<p>YES NO DK</p> <p>FLUID FROM ORS PACKET..... 1 2 8</p> <p>GRUEL..... 1 2 8</p>
476	<p>CHECK 475:</p> <p>FLUID FROM ORS PACKET GIVEN?</p>	<p>YES <input type="checkbox"/> NO OR DK <input type="checkbox"/></p> <p>↓</p> <p>(SKIP TO 478)</p>	<p>YES <input type="checkbox"/> NO OR DK <input type="checkbox"/></p> <p>↓</p> <p>(SKIP TO 478)</p>

	LAST BIRTH NAME	NEXT-TO-LAST BIRTH NAME
477	<p>Where did you obtain the ORS packet?</p> <p>PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18</p> <p>NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 PVT. PARAMEDIC.....35 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....36 DAI (TBA).....37 OTHER PRIVATE SECTOR HEALTH FACILITY.....38</p> <p>OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE..43</p> <p>OTHER _____ 96 (SPECIFY)</p>	<p>PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18</p> <p>NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 PVT. PARAMEDIC.....35 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....36 DAI (TBA).....37 OTHER PRIVATE SECTOR HEALTH FACILITY.....38</p> <p>OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE..43</p> <p>OTHER _____ 96 (SPECIFY)</p>
478	<p>Was anything (else) given to treat the diarrhoea?</p> <p>YES.....1 NO.....2 (SKIP TO 480) <----- DK.....8</p>	<p>YES.....1 NO.....2 (SKIP TO 480) <----- DK.....8</p>
479 ^b	<p>What was given to treat the diarrhoea?</p> <p>Anything else?</p> <p>RECORD ALL MENTIONED.</p> <p>PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E</p> <p>OTHER _____ X (SPECIFY)</p>	<p>PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E</p> <p>OTHER _____ X (SPECIFY)</p>
480	<p>GO BACK TO 454 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481</p>	<p>GO TO 481</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
481	CHECK 475 ALL COLUMNS: ORS FLUID FROM PACKET <input type="checkbox"/> _____ GIVEN TO ANY CHILD ORS FLUID FROM PACKET NOT GIVEN TO ANY CHILD OR 475 NOT ASKED <input type="checkbox"/>		483
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	

SECTION 5A. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	<p>CHECK 107:</p> <p>CURRENTLY MARRIED <input type="checkbox"/> SEPARATED <input type="checkbox"/></p> <p>DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/></p> <p>WIDOWED <input type="checkbox"/></p>		507
502	<p>CHECK 327/327A:</p> <p>NEITHER STERILIZED <input type="checkbox"/> HE OR SHE STERILIZED <input type="checkbox"/></p>		507
503	<p>CHECK 230:</p> <p>NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/></p> <p>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?</p> <p>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?</p>	<p>HAVE A (ANOTHER) CHILD.....1</p> <p>NO MORE/NONE.....2 →506</p> <p>SAYS SHE CAN'T GET PREGNANT.....3 →507</p> <p>UP TO GOD.....4 →506</p> <p>UNDECIDED/DK.....8</p>	
504	<p>Would you prefer your next child to be a boy or a girl or doesn't it matter?</p>	<p>BOY.....1</p> <p>GIRL.....2</p> <p>DOESN'T MATTER.....3</p> <p>UP TO GOD.....4</p>	
505	<p>CHECK 230:</p> <p>NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/></p> <p>How long would you like to wait from now before the birth of (a/another) child?</p> <p>How long would you like to wait after the birth of the child you are expecting before the birth of another child?</p>	<p>MONTHS.....1</p> <p>YEARS.....2</p> <p>SOON/NOW.....993</p> <p>SAYS SHE CAN'T GET PREGNANT...994 →507</p> <p>OTHER.....996</p> <p>(SPECIFY)</p> <p>DK.....998</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
486	<p>Now I would like to ask you about some health symptoms you yourself may have.</p> <p>During the past three months, have you had any of the following problems with your vaginal discharge:</p> <p>Any itching or irritation in vaginal area with the discharge?</p> <p>A bad odour along with the discharge?</p> <p>Severe lower abdominal pain with the discharge, not related with menstruation?</p> <p>A fever along with the discharge?</p> <p>Any other problem with the discharge?</p>	<p>YES NO</p> <p>ITCHING/IRRITATION... 1 2</p> <p>BAD ODOUR..... 1 2</p> <p>ABDOMINAL PAIN..... 1 2</p> <p>FEVER..... 1 2</p> <p>OTHER PROBLEM..... 1 2</p>	
487	<p>During the past three months have you had a problem with pain or burning while urinating, or have you had more frequent or difficult urination?</p>	<p>YES.....1</p> <p>NO.....2</p>	
488	<p>CHECK 107:</p> <p>CURRENTLY MARRIED <input type="checkbox"/> SEPARATED <input type="checkbox"/></p> <p>DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/></p> <p>WIDOWED <input type="checkbox"/></p>		→491
489	<p>Another problem some women have is feeling pain in their abdomen or vagina during intercourse. Do you often experience this kind of pain?</p>	<p>YES.....1</p> <p>NO.....2</p>	
490	<p>Do you ever see blood after having sex, at times when you are not menstruating?</p>	<p>YES.....1</p> <p>NO.....2</p>	
491	<p>CHECK 486, 487, 489 and 490: YES TO ANY <input type="checkbox"/> OTHER <input type="checkbox"/></p>		→501
492	<p>Have you seen anyone for advice or treatment to help you with (this problem/these problems)?</p> <p>IF YES, ASK:</p> <p>Whom did you see?</p> <p>Anyone else?</p> <p>RECORD ALL PERSONS SEEN.</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT. DOCTOR.....A</p> <p>PUBLIC HEALTH NURSE.....B</p> <p>ANM/LHV.....C</p> <p>MALE MPW/SUPERVISOR.....D</p> <p>ANGANWADI WORKER.....E</p> <p>VILLAGE HEALTH GUIDE.....F</p> <p>OTHER PUBLIC SECTOR HEALTH WORKER.....G</p> <p>NGO WORKER.....H</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE DOCTOR.....I</p> <p>PRIVATE NURSE.....J</p> <p>COMPOUNDER/PHARMACIST.....K</p> <p>VAID/HAKIM/HOMEOPATH.....L</p> <p>DAI (TBA).....M</p> <p>TRADITIONAL HEALER.....N</p> <p>OTHER PRIVATE SECTOR HEALTH WORKER.....O</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> <p>NO, NOBODY SEEN.....Y</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
506	<p>CHECK 230:</p> <p>NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/></p> <p>v v</p> <p>Do you think your husband would like to have (a/another) child or do you think he would prefer not have any (more) children?</p> <p>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?</p>	<p>HAVE A (ANOTHER) CHILD.....1 NO MORE/NONE.....2 UP TO GOD.....3 UNDECIDED.....4 DK.....8</p>	
507	<p>CHECK 216:</p> <p>HAS LIVING CHILD(REN) <input type="checkbox"/> NO LIVING CHILDREN <input type="checkbox"/></p> <p>v v</p> <p>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?</p> <p>If you could choose exactly the number of children to have in your whole life, how many would that be?</p> <p>RECORD SINGLE NUMBER OR OTHER ANSWER.</p>	<p>NUMBER..... <input type="text"/> <input type="text"/></p> <p>OTHER ANSWER _____ 96 ->509 (SPECIFY)</p>	
508	<p>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?</p>	<p>BOYS GIRLS EITHER</p> <p>NUMBER... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p>OTHER _____ 999996 (SPECIFY)</p>	
509	<p>In your opinion, how much education should be given to <u>girls</u> these days?</p>	<p>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</p>	
510	<p>In your opinion, how much education should be given to <u>boys</u> these days?</p>	<p>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</p>	

SECTION 5B. STATUS OF WOMAN

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																			
511	<p>Who makes the following decisions in your household:</p> <p>What items to cook?</p> <p>Obtaining health care for yourself?</p> <p>Purchasing jewellery or other major household items?</p> <p>Your going and staying with parents or siblings?</p>	<p>1 = RESPONDENT 2 = HUSBAND 3 = JOINTLY WITH HUSBAND 4 = OTHERS IN HOUSEHOLD 5 = JOINTLY WITH OTHERS IN HOUSEHOLD</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </table>	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5																
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1	2	3	4	5																																		
1	2	3	4	5																																		
1	2	3	4	5																																		
512	<p>Do you need permission to:</p> <p>go to the market?</p> <p>visit relatives or friends?</p>	<table border="1"> <tr> <td></td> <td></td> <td></td> <td>NOT ALLOWED TO GO</td> </tr> <tr> <td></td> <td>YES</td> <td>NO</td> <td></td> </tr> <tr> <td>GO TO THE MARKET....</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>VISIT RELATIVES/ FRIENDS.....</td> <td>1</td> <td>2</td> <td>3</td> </tr> </table>				NOT ALLOWED TO GO		YES	NO		GO TO THE MARKET....	1	2	3	VISIT RELATIVES/ FRIENDS.....	1	2	3																				
			NOT ALLOWED TO GO																																			
	YES	NO																																				
GO TO THE MARKET....	1	2	3																																			
VISIT RELATIVES/ FRIENDS.....	1	2	3																																			
513	<p>Are you allowed to have some money set aside that you can use as you wish?</p>	<p>YES.....1</p> <p>NO.....2</p>																																				
514	<p>Sometimes a wife can do things that bother her husband. Please tell me if you think that a husband is justified in beating his wife in each of the following situations:</p> <p>If he suspects her of being unfaithful?</p> <p>If her natal family does not give expected money, jewellery, or other items?</p> <p>If she shows disrespect for in-laws?</p> <p>If she goes out without telling him?</p> <p>If she neglects the house or children?</p> <p>If she doesn't cook food properly?</p>	<table border="1"> <tr> <td></td> <td></td> <td>YES</td> <td>NO</td> <td>DK</td> </tr> <tr> <td>UNFAITHFUL.....</td> <td>1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>MONEY/JEWELLERY/ OTHER ITEMS.....</td> <td>1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>DISRESPECT.....</td> <td>1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>GOING WITHOUT TELLING.</td> <td>1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>NEGLECT.....</td> <td>1</td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>NOT COOK PROPERLY.....</td> <td>1</td> <td>2</td> <td>8</td> <td></td> </tr> </table>			YES	NO	DK	UNFAITHFUL.....	1	2	8		MONEY/JEWELLERY/ OTHER ITEMS.....	1	2	8		DISRESPECT.....	1	2	8		GOING WITHOUT TELLING.	1	2	8		NEGLECT.....	1	2	8		NOT COOK PROPERLY.....	1	2	8		
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NOT COOK PROPERLY.....	1	2	8																																			
515	<p>Since you completed 15 years of age, have you been beaten or mistreated physically by any person?</p>	<p>YES.....1</p> <p>NO.....2</p>	→601																																			

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
516	<p>Who has beaten you or mistreated you physically?</p> <p>Anyone else?</p> <p>RECORD ALL PERSONS MENTIONED.</p>	<p>MOTHER.....A</p> <p>FATHER.....B</p> <p>STEP MOTHER...C</p> <p>STEP FATHER...D</p> <p>SON.....E</p> <p>DAUGHTER.....F</p> <p>BROTHER/SISTER.....G</p> <p>BOYFRIEND.....H</p> <p>HUSBAND.....I</p> <p>EX-HUSBAND...J</p> <p>SON-IN-LAW...K</p> <p>DAUGHTER-IN-LAW.....L</p> <p>MOTHER-IN-LAW.....M</p> <p>FATHER-IN-LAW.....N</p> <p>BROTHER-IN-LAW.....O</p> <p>SISTER-IN-LAW.....P</p> <p>OTHER RELATIVE.....Q</p> <p>FRIEND/ACQUAINTANCE.....R</p> <p>TEACHER.....S</p> <p>EMPLOYER.....T</p> <p>STRANGER.....U</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>	
517	<p>How often have you been beaten or mistreated physically in the last 12 months: once, a few times, many times, or not at all?</p>	<p>ONCE.....1</p> <p>A FEW TIMES.....2</p> <p>MANY TIMES.....3</p> <p>NOT BEATEN.....4</p>	

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	

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/BOARDINGS.....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	<table border="1"> <tr> <td>HOUR.....</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>MINUTES.....</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table>	HOUR.....	<input type="text"/>	<input type="text"/>	MINUTES.....	<input type="text"/>	<input type="text"/>													
HOUR.....	<input type="text"/>	<input type="text"/>																			
MINUTES.....	<input type="text"/>	<input type="text"/>																			
706	PRESENCE OF OTHERS DURING MOST OF THE INTERVIEW TIME.	<table border="1"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>CHILDREN UNDER 10.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>HUSBAND.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>MOTHER-IN-LAW.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER MALES.....1</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER FEMALES.....1</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	CHILDREN UNDER 10.....1	1	2	HUSBAND.....1	1	2	MOTHER-IN-LAW.....1	1	2	OTHER MALES.....1	1	2	OTHER FEMALES.....1	1	2	
	YES	NO																			
CHILDREN UNDER 10.....1	1	2																			
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MOTHER-IN-LAW.....1	1	2																			
OTHER MALES.....1	1	2																			
OTHER FEMALES.....1	1	2																			

HEALTH INVESTIGATOR VISITS								
	1	2	3	FINAL VISIT				
DATE				DAY <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				
				MONTH <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				
				YEAR <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>9</td></tr><tr><td></td><td></td></tr></table>	1	9		
1	9							
INVESTIGATOR'S NAME				NAME CODE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				
RESULT*				RESULT CODE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table>				
*RESULT CODES: 1 COMPLETED 3 POSTPONED 5 PARTLY COMPLETED 2 NOT AT HOME 4 REFUSED 6 OTHER (SPECIFY) _____								

SECTION 8: HEIGHT AND WEIGHT

INTERVIEWER: IN 801 (COLUMNS 2-3) RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 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)

	<input type="checkbox"/> 1 RESPONDENT	<input type="checkbox"/> 2 YOUNGEST LIVING CHILD	<input type="checkbox"/> 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 : _____

902

RESPONDENT'S HAEMOGLOBIN LEVEL (G/DL)

--	--	--

911	<p>CHECK COLUMN (5) OF HOUSEHOLD SCHEDULE:</p> <p>RESPONDENT IS USUAL RESIDENT <input type="checkbox"/></p> <p>RESPONDENT IS VISITOR <input type="checkbox"/> → END</p> <p style="text-align: center;">↓</p>
912	<p>We detected a low level of haemoglobin in your (your child's) blood. This indicates you (your child) have developed severe anaemia, which is a serious health problem. We would like to inform the doctor at _____ about your (your child's) condition. This will assist you to obtain appropriate treatment of your (your child's) condition.</p> <p>Do you agree that the information about the level of haemoglobin in your (your child's) blood may be given to the doctor.</p> <p>AFTER EXPLAINING THE ABOVE, I HAVE FOUND THAT _____ AGREED FOR (NAME OF RESPONDENT)</p> <p>REFERRAL FOR HERSELF [AND FOR HER CHILD(REN) NAMED _____ (NAME OF CHILD(REN))</p> <p>Signature of Interviewer: _____ Date : _____</p> <p>RESPONDENT AGREES FOR REFERRAL FOR HERSELF AND/OR HER CHILD(REN).....1</p> <p>RESPONDENT DOES NOT AGREE FOR REFERRAL.....2 → END</p> <p style="text-align: center;">↓</p>
913	<p>RECORD NAMES OF WOMAN AND CHILD(REN) WITH HAEMOGLOBIN LEVEL LESS THAN 7 G/DL ON REFERRAL FORM.</p>

INTERVIEWER'S OBSERVATIONS
(To be filled in after completing interview)

Comments About Respondent:

Comments on Specific Questions:

Any Other Comments:

SUPERVISOR'S OBSERVATIONS/COMMENTS

Name of Supervisor: _____ Date: _____

EDITOR'S OBSERVATIONS/COMMENTS

Name of Editor: _____ Date: _____

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES, MUMBAI

RESULTS OF HAEMOGLOBIN MEASUREMENT IN THE BLOOD:

Date: _____

Haemoglobin level in the blood (G/DL)	Woman NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> . <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> You have	Child NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> . <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> Your child has	Child NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> . <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> Your child has	
WHO CLASSIFICATION OF ANAEMIA	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA	HB LEVEL ABOVE 11 G/DL HB (10-10.9 G/DL) HB (7-9.9 G/DL) HB (LESS THAN 7 G/DL)	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA

In case of severe anaemia (Hb less than 7 G/DL), we recommend that you immediately contact your doctor.

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
VILLAGE QUESTIONNAIRE

CONFIDENTIAL
For Research
Purpose only

INDIA

IDENTIFICATION																										
STATE _____	<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																									
DISTRICT _____																										
TEHSIL/TALUK _____																										
VILLAGE _____																										
PSU NUMBER.....																										
TOTAL POPULATION OF THE VILLAGE ACCORDING TO THE 1991 CENSUS.....	<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																									

INTERVIEWER'S NAME _____	<table border="1"> <tr><td></td><td></td></tr> </table>		
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	<table border="1"> <tr><td></td><td></td></tr> </table>			<table border="1"> <tr><td></td><td></td></tr> </table>			<table border="1"> <tr><td></td><td></td></tr> </table>			<table border="1"> <tr><td></td><td></td></tr> </table>		
NAME	_____	_____	_____	_____								

VILLAGE SCHEDULE

NO.	QUESTIONS	CODING CATEGORIES						
1	Current population of the village:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
2	Area of the village (in Hectares):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
3	Total number of households in the village:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
4	Total arable land in the village (in Hectares):	IRRIGATED LAND..... <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> NON-IRRIGATED LAND..... <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
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 _____ <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> 2 _____ <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> 3 _____ <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
7	Distance to the nearest town (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
8	Distance to the District Headquarters (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
9	Distance to the nearest railway station (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
10	Distance to available transport service to other place (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
11	Distance of the village from all-weather road in connection to other place (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
12	Village Electrification:	NOT ELECTRIFIED..... 1 ELECTRIFIED, BUT IRREGULAR SUPPLY..... 2 ELECTRIFIED AND REGULAR SUPPLY..... 3						

NO.	QUESTIONS	CODING CATEGORIES
13	<p>Educational Facilities:</p> <p>Primary School</p> <p>Middle School</p> <p>Secondary School</p> <p>Higher Secondary School</p> <p>College</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>PRIMARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>MIDDLE SCHOOL..... <input type="text"/> <input type="text"/></p> <p>SECONDARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>HIGHER SECONDARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>COLLEGE..... <input type="text"/> <input type="text"/></p>
14	<p>Health Facilities:</p> <p>Sub-Centre</p> <p>Primary Health Centre</p> <p>Community Health Centre/Rural Hospital</p> <p>Government Dispensary</p> <p>Government Hospital</p> <p>Private Clinic</p> <p>Private Hospital</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>SUB-CENTRE..... <input type="text"/> <input type="text"/></p> <p>PRIMARY HEALTH CENTRE..... <input type="text"/> <input type="text"/></p> <p>COMMUNITY HEALTH CENTRE/RURAL HOSPITAL..... <input type="text"/> <input type="text"/></p> <p>GOVERNMENT DISPENSARY..... <input type="text"/> <input type="text"/></p> <p>GOVERNMENT HOSPITAL..... <input type="text"/> <input type="text"/></p> <p>PRIVATE CLINIC..... <input type="text"/> <input type="text"/></p> <p>PRIVATE HOSPITAL..... <input type="text"/> <input type="text"/></p>
15	<p>Other facilities:</p> <p>Post Office</p> <p>Telegraph Office</p> <p>STD Booth</p> <p>Bank</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>POST OFFICE..... <input type="text"/> <input type="text"/></p> <p>TELEGRAPH OFFICE..... <input type="text"/> <input type="text"/></p> <p>STD BOOTH..... <input type="text"/> <input type="text"/></p> <p>BANK..... <input type="text"/> <input type="text"/></p>

NO.	QUESTIONS	CODING CATEGORIES	
16	Availability of health provider in the village: Private doctor Visiting doctor Village health guide (VHG) Traditional birth attendant (dai) Mobile health unit/visit		YES NO PRIVATE DOCTOR..... 1 2 VISITING DOCTOR..... 1 2 VHG..... 1 2 TBA (DAI)..... 1 2 MOBILE HEALTH UNIT..... 1 2
17	Other facilities: Mills/small scale industries (M/SSI) Credit cooperative society (CCS) Agricultural cooperative society (ACS) Fishermen's cooperative society (FCS) Milk cooperative society (MCS) Kirana/General Market Shop (K/GMS) Weekly market Fair price shop Paan shop Pharmacy/Medical shop Mahila Mandal Youth club Anganwadi centre Community centre Adult education centre Community television set Cable connection	AVAILABLE IN THE VILLAGE YES NO M/SSI..... 1 2 CCS..... 1 2 ACS..... 1 2 FCS..... 1 2 MCS..... 1 2 K/GMS..... 1 2 WEEKLY MARKET..... 1 2 FAIR PRICE SHOP..... 1 2 PAAN SHOP..... 1 2 PHARMACY/MEDICAL SHOP.... 1 2 MAHILA MANDAL..... 1 2 YOUTH CLUB..... 1 2 ANGANWADI CENTRE..... 1 2 COMMUNITY CENTRE..... 1 2 ADULT EDUCATION CENTRE... 1 2 COMMUNITY TV SET..... 1 2 CABLE CONNECTION..... 1 2	
18	Total number of television sets in the village:	<input type="text"/> <input type="text"/>	
19	Total number of households having telephone connection:	<input type="text"/> <input type="text"/>	
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. _____ <input type="checkbox"/> <input type="checkbox"/> 2. _____ <input type="checkbox"/> <input type="checkbox"/>
22	Number of health or family welfare camps in the last one year?	<input type="checkbox"/> <input type="checkbox"/>
23	Any beneficiaries in the village from the following programmes:	BENEFICIARIES
	Integrated Rural Development Programme (IRDP)	IRDP..... <input type="checkbox"/> <input type="checkbox"/>
	National Rural Employment Programme (NREP)	NREP..... <input type="checkbox"/> <input type="checkbox"/>
	Training Rural Youth for Self Employment (TRYSEM)	TRYSEM..... <input type="checkbox"/> <input type="checkbox"/>
	Employment Guarantee Scheme (EGS)	EGS..... <input type="checkbox"/> <input type="checkbox"/>
	Development of Women and Children of Rural Areas (DWARCA)	DWARCA..... <input type="checkbox"/> <input type="checkbox"/>
	Indira Awas Yojana (IAY)	IAY..... <input type="checkbox"/> <input type="checkbox"/>
	Sanjay Gandhi Niradhar Yojana (SGNY)	SGNY..... <input type="checkbox"/> <input type="checkbox"/>
24	Community level IEC activities for health and family welfare during the last one year:	YES NO
	Film show	FILM SHOW..... 1 2
	Exhibition	EXHIBITION..... 1 2
	Drama/song/dance performance	DRAMA/SONG/DANCE PERFORM. 1 2
	Puppet show	PUPPET SHOW..... 1 2
	Group meeting	GROUP MEETING..... 1 2
25	Persons providing information for the village schedule:	SARPANCH..... A PATWARI..... B GRAM SEVAK..... C SCHOOL TEACHER..... D HEALTH PERSONNEL..... E
	RECORD ALL THE SOURCES.	OTHERS _____ X (SPECIFY)

