

CHAPTER 1

INTRODUCTION

1.1 Background of the Survey

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

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

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

1.2 Basic Socioeconomic and Demographic Features of Bihar¹

Bihar is the second most populous state, next to Uttar Pradesh, in India. It has an area of 173,877 km² and ranks ninth in terms of area among the states and union territories of India. According to the 1991 Census, the state is divided into 42 districts distributed in three regions: North Bihar Plain, comprising Saran, Siwan, Gopalganj, Pashchim Champaran, Purba Champaran, Sitamarhi, Vaishali, Darbhanga, Madhubani, Samastipur, Muzaffarpur, Purnia, Araria, Kishanganj, Katihar, Saharsa, and Madhepura districts; South Bihar Plain, comprising Patna, Nalanda, Gaya,

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

Jehanabad, Aurangabad, Nawada, Bhojpur, Rohtas, Begusarai, Munger, Khagaria, and Bhagalpur districts; and Jharkhand², comprising Godda, Sahibganj, Dumka, Deoghar, Dhanbad, Giridih, Hazaribag, Palamu, Lohardaga, Gumla, Ranchi, Purbi Singhbhum, and Pashchimi Singhbhum districts.

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

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

According to the Census, the total population of Bihar was 56 million in 1971, 70 million in 1981, and 86 million in 1991, accounting for 10 percent of the total population of India. The decadal growth rate increased from 21 percent for the period 1961–71 to 24 percent for 1971–81 and remained at 24 percent during 1981–91. The 1981–91 intercensal increase in population in Bihar (23.5 percent) was about the same as that for the country as a whole (23.9 percent). The population density, which was 324 persons per km² in 1971, increased to 405 in 1981, and 497 in 1991. The increase in population density by 173 persons per km² during 1971–91 indicates an increasing pressure on land and other resources. The population density is much higher in Bihar than in India as a whole (497 compared with 273 persons per km²).

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

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

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

According to the 1991 Census, the proportions of the total population designated as scheduled castes and scheduled tribes³ are lower in Bihar than in all of India. The scheduled-caste population increased marginally from 14 percent of the total population in 1971 to 15 percent in 1991. The scheduled-tribe population decreased slightly from 9 percent of the total population in 1971 to 8 percent in 1991.

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

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

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

1.3 Questionnaires

NFHS-2 used three types of questionnaires: the Household Questionnaire, the Woman's Questionnaire, and the Village Questionnaire. The overall content and format of the questionnaires were determined through a series of workshops held at IIPS in Mumbai in 1997 and 1998. The workshops were attended by representatives of a wide range of organizations in

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

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

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

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

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

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

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

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

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

Antenatal, delivery, and postpartum care: The questionnaire collects information on whether a woman who had a birth since January 1995 received antenatal and postpartum care, who attended the delivery, and the nature of any complications during pregnancy.

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

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

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

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

In addition, the health investigator on each survey team measured the height and weight of each woman and each of her children born since January 1995. This height and weight information is useful for assessing levels of nutrition prevailing in the population. The health investigators also took blood samples from each woman and each of her children born since January 1995 to assess haemoglobin levels. This information is useful for assessing prevalence rates of anaemia among women and children. Haemoglobin levels were measured in the field at the end of each interview using portable equipment (the HemoCue) that provides test results in less than one minute. Severely anaemic women and children were referred to local medical authorities for treatment.

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

1.4 Survey Design and Sample Implementation

Sample Size and Reporting Domain

The overall target sample size for Bihar was 7,000 completed interviews with eligible women. The NFHS-1 nonresponse rates at the household and individual levels were used to estimate the sample size that would be required to achieve the target number of completed interviews in NFHS-2.

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

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

Region I (North Bihar Plain):

Subregion 1: Saran, Siwan, Gopalganj, Pashchim Champaran, Purba Champaran

Subregion 2: Sitamarhi, Vaishali, Darbhanga, Madhubani, Samastipur,

Muzaffarpur, Saharsa

Subregion 3: Purnia, Araria, Kishanganj, Katihar, Madhepura

Region II (South Bihar Plain):

Subregion 4: Patna, Bhojpur, Rohtas

Subregion 5: Munger, Khagaria, Bhagalpur

Subregion 6: Nalanda, Gaya, Jehanabad, Aurangabad, Nawada, Begusarai

Region III (Jharkhand):

Subregion 7: Godda, Sahibganj, Dumka, Deoghar, Dhanbad, Giridih

Subregion 8: Hazaribag, Palamu, Lohardaga, Gumla, Ranchi, Purbi Singhbhum,

Pashchimi Singhbhum

Sample Design

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

Sample Selection in Rural Areas

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

Table 1.1 Sampling stratification

Sampling stratification procedure in rural areas, Bihar

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

Note: The level of female literacy is used for implicit stratification.

SC: Scheduled caste

ST: Scheduled tribe

NA: Not applicable

NU: Not used for stratification

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

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

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

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

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

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

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

s_i = population size of the i^{th} PSU within the domain,

$\sum s_i$ = total population of the domain.

A mapping and household listing operation carried out in each sample area provided the necessary frame for selecting households at the second stage. The household listing operation involved preparing up-to-date notional and layout sketch maps of each selected PSU, assigning numbers to structures, recording addresses of these structures, identifying residential structures, and listing the names of heads of all the households in residential structures in the selected PSUs. Sample villages larger than 500 households were segmented into three or more segments, and two segments were selected randomly using the PPS method. The household listing in these PSUs was carried out only in the selected segments. The work was carried out by nine teams, each comprising one lister and one mapper, under the supervision of four field supervisors and one field executive. The teams were trained from 16–20 September 1998 in Patna by an official from ORG, who was earlier trained in a workshop conducted by IIPS. The mapping and household listing operation was carried out between September 1998 and January 1999. The households to be interviewed were selected with equal probability from the household list in each area using systematic sampling.

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

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

On average, 30 households were initially targeted for selection in each selected enumeration area. To avoid extreme variations in workload, minimum and maximum limits were put on the number of households that could be selected from any area, at 15 and 60, respectively. All the selected households were visited during the main survey, and no replacement was allowed if a selected household was absent during data collection. However, if a PSU was

inaccessible, a replacement PSU with similar characteristics was selected by IIPS and provided to the field organization.

Sample Selection in Urban Areas

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

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

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

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

N_i = projected population of eligible women in the i^{th} domain in December 1998.

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

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

where a = number of wards selected from the domain,

s_i = population size of the i^{th} ward within the domain,

$\sum s_i$ = total population of the domain.

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

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

where B_i = population size of the i^{th} block,

$\sum B_i$ = 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 (rural or urban part of one of the three major regions), calculated as the ratio of the overall sampling fraction ($F = n/N$) and the sampling fraction for the 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 women and children) are based on the percentage of eligible women whose height or weight was measured.

Table 1.2 Sample results						
Sample results for households and ever-married women age 15–49 by residence, Bihar, 1998–99						
Result	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
Households selected	747	100.0	5,887	100.0	6,634	100.0
Households completed (C)	701	93.8	5,644	95.9	6,345	95.6
Households with no household member at home or no competent respondent at home at the time of interview (HP)	9	1.2	48	0.8	57	0.9
Households absent for extended period (HA)	29	3.9	167	2.8	196	3.0
Households postponed (P)	1	0.1	2	0.0	3	0.0
Households refused (R)	3	0.4	6	0.1	9	0.1
Dwelling vacant/address not a dwelling (DV)	4	0.5	9	0.2	13	0.2
Dwelling not found (DNF)	0	0.0	11	0.2	11	0.2
Households occupied	714	100.0	5,711	100.0	6,425	100.0
Households interviewed	701	98.2	5,644	98.8	6,345	98.8
Households not interviewed	13	1.8	67	1.2	80	1.2
Household response rate (HRR) ¹	NA	98.2	NA	98.8	NA	98.8
Eligible women	727	100.0	6,574	100.0	7,301	100.0
Women interviewed (EWC)	687	94.5	6,337	96.4	7,024	96.2
Women not at home (EWNH)	26	3.6	165	2.5	191	2.6
Women postponed (EWP)	2	0.3	5	0.1	7	0.1
Women refused (EWR)	7	1.0	26	0.4	33	0.5
Women partly interviewed (EWPC)	2	0.3	15	0.2	17	0.2
Other (EWO)	3	0.4	26	0.4	29	0.4
Eligible women's response rate (EWRR) ²	NA	94.5	NA	96.4	NA	96.2
Overall response rate (ORR) ³	NA	92.8	NA	95.3	NA	95.0

Note: Eligible women are defined as ever-married women age 15–49 who stayed in the household the night before the interview (including both usual residents and visitors). This table is based on the unweighted sample; all other tables are based on the weighted sample unless otherwise specified.

NA: Not applicable

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

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

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

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

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

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

Sample Implementation

A total of 233 PSUs were selected, of which 31 (13 percent) were urban and 202 (87 percent) were rural. Table 1.2 shows response rates for households and individuals and reasons for nonresponse. Nonresponse can occur at the stage of the household interview or at the stage of the woman's interview. The last row of the table shows the overall effect of nonresponse at the two stages. The survey achieved an overall response rate of 95 percent (93 percent in urban areas and 95 percent in rural areas). Table 1.3 shows that the overall response rate is lowest in the South Bihar Plain region (92 percent) and highest in the North Bihar Plain region (97 percent).

Table 1.3 Sample results by region				
Sample results for households and ever-married women age 15–49 by region, Bihar, 1998–99				
Result	Region			Total
	North Bihar Plain	South Bihar Plain	Jhar-khand	
Number of households interviewed	2,787	1,916	1,642	6,345
Number of eligible women interviewed	3,295	2,115	1,614	7,024
Household response rate	99.0	98.4	98.7	98.8
Eligible women's response rate	98.2	93.8	95.4	96.2
Overall response rate	97.2	92.3	94.2	95.0

Note: Eligible women are defined as ever-married women age 15–49 who stayed in the household the night before the interview (including both usual residents and visitors). This table is based on the unweighted sample.

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

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

1.5 Recruitment, Training, and Fieldwork

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

Eight interviewing teams conducted the main fieldwork in Bihar, each team consisting of one field supervisor, one female field editor, four female interviewers, and one health investigator. The fieldwork was carried out between 3 December 1998 and 31 March 1999. Coordinators and senior staff of ORG monitored and supervised the data collection operations. IIPS also appointed one research officer to help with monitoring throughout the training and fieldwork period in order to ensure that correct survey procedures were followed and data quality was maintained. From time to time, project coordinators, senior research officers, and other

faculty members from IIPS, as well as staff members from ORC Macro and the East-West Center, visited the field sites to monitor the data collection operation. Medical health coordinators appointed by IIPS monitored the nutritional component of the survey. Field data were quickly entered into microcomputers, and field-check tables were produced to identify certain types of errors that might have occurred in eliciting information and filling out questionnaires. Information from the field-check tables was fed back to the interviewing teams and their supervisors so that they could improve their performance.

1.6 Data Processing

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