

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 also provides estimates at the regional level for five states (Bihar, Jammu and Kashmir, 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 Maharashtra.

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 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 a responsibility for collecting data in one or more states. The Centre for Operations Research and Training (CORT), Vadodara, was selected as the field organization for NFHS-2 in Maharashtra.

1.2 Basic Socioeconomic and Demographic Features of Maharashtra

Situated in the western part of India, the present state of Maharashtra was created on 1 May 1960 out of the territories of former Bombay state, Madhya Pradesh, and Andhra Pradesh. It has a land area of 307,713 km² which is about one-tenth of the total land area of the country. As per the 2001 Census of India, the total population of the state is 96.8 million, which is 9.4 percent of the total population of India. In terms of population size, it is the second largest state in India, next to Uttar Pradesh. The population density of Maharashtra has increased from 257 persons per km² in 1991 to 314 persons per km² in 2001. The state has six divisions—Konkan, Pune, Nasik, Aurangabad, Nagpur, and Amravati—which are further divided into 35 districts. Forty-six percent of the state population is concentrated in two divisions—Konkan and Pune—which form

the most industrialized part of the state including Mumbai. According to the 2001 Census, the population density within the state ranges from 208 persons per km² in Nagpur division to 807 persons per km² in Konkan division (Director of Census Operations, Maharashtra, 2001a).

Maharashtra is one of the most economically developed states in India. The per capita state income at current prices was Rs. 23,398 during 1999–2000. Among the 13 major states, in 1998–99 Maharashtra was second only to Punjab in terms of per capita income. At constant (1980–81) prices, the per capita state income doubled from 1980–81 to 1996–97, from Rs. 2,435 to Rs. 4,853. The average annual growth rate of per capita state income was 3.8 percent during the six years preceding 1999–2000 (Directorate of Economics and Statistics, Government of Maharashtra, 2001; EPW Research Foundation, 1998).

During the year 1999–2000, the share of the primary, secondary, and tertiary sectors in the total state income was 17, 30, and 53 percent, respectively. The corresponding shares in the year 1960–61, when the state was created, were 34, 26, and 40 percent, respectively, which indicates a remarkable decline in dependence of the state economy on the agricultural sector and an increase in the share of the secondary and tertiary sectors. The secondary and tertiary sectors account for a much larger share of state income (83 percent) than the national average (70 percent). The latest available data on factory employment for 1998 indicate that Maharashtra continues to lead the country in average daily factory employment. During the period 1961–99, the annual growth rate in the total number of factories was 3.8 percent. Under the state-sponsored Employment Guarantee Scheme, which has been implemented since 1972, 95 million person-days of work was provided during the year 1999–2000 (Directorate of Economics and Statistics, Government of Maharashtra, 2001). According to estimates of the Planning Commission, more than one-third of the state population (37 percent) is below the poverty line and there is little rural-urban difference in this respect (38 percent in rural areas and 35 percent in urban areas) (Central Statistical Organisation, 1999).

As far as social development is concerned, Maharashtra occupies the second position among the major states, next to Kerala, in terms of two key indicators—literacy and infant mortality. During the period 1961–2001, the literacy rate for males has increased from 49 percent (among the population age five years and above) to 86 percent (among the population age seven years and above). The female literacy rate has increased more than threefold from 20 percent to 68 percent during this period. In 2001, Maharashtra's overall literacy rate was 77 percent, whereas for Kerala it was 91 percent (Director of Census Operations, Maharashtra, 2001a; Office of the Registrar General and Census Commissioner, 2001). In 1999, the infant mortality rate for Maharashtra was 48 deaths per 1,000 live births, whereas for Kerala it was 14 deaths per 1,000 live births (Office of the Registrar General, 2001).

Maharashtra has a rich heritage of contributions from social reformers and leaders like Mahatma Phule, Maharishi Karve, Agarkar, Karmaveer Bhaurao Patil, and Dr. Bhim Rao Ambedkar. Even today, Maharashtra has an excellent network of dedicated social workers and voluntary organizations working in the fields of education, rural development, and empowerment of women.

According to the 1991 Census, 11 percent of Maharashtra's population belonged to scheduled castes and 9 percent belonged to scheduled tribes. From 1961–91, Maharashtra had the distinction of being the most urbanized state in India, but in 2001, Maharashtra (42 percent urban)

lost this position to Tamil Nadu (44 percent urban). During the period 1961–2001, the urban population in the state has increased from 28 percent to 42 percent of the total population. The number of cities with one million or more population in the state increased from four in 1991 to seven in 2001 and the population of Mumbai increased from 9.9 million in 1991 to 11.9 million in 2001 (Director of Census Operations, Maharashtra, 2001b). According to 2001 census of India, 48.9 percent of the population of Mumbai lives in slum areas (Director of Census Operations, Maharashtra, 2001c).

The total population of Maharashtra doubled in the three decades after the creation of the state in 1961, reaching 78.9 million in 1991 and 96.7 million in 2001. Population growth in Maharashtra during the last four decades has contributed 10 percent to the decadal population growth of the country. The average exponential population growth rate in Maharashtra declined from 2.29 percent in 1981–91 to 2.04 percent in 1991–2001. Maharashtra has been a destination for a large influx of migrants from other parts of India. Net migration has contributed 19 percent to its population growth during the last decade. The crude birth rate in Maharashtra declined from 32.2 births per 1,000 population in 1971 to 21.1 in 1999. The crude death rate declined from 12.3 deaths per 1,000 population in 1971 to 7.5 in 1999 and the infant mortality rate declined from 105 deaths per 1,000 live births in 1971 to 48 in 1999 (Office of the Registrar General, 2001; Office of the Registrar General, 1999b). The expectation of life at birth in Maharashtra in 1996–2001 is estimated to be 65.3 years for males and 68.1 years for females (Ministry of Health and Family Welfare, 1999a).

According to the Sample Registration System, the total fertility rate for Maharashtra declined from 4.6 children per woman in 1971 to 2.7 in 1997. Maharashtra was one of the pioneers in the field of family planning. Even before independence, valuable work in this field was done by Prof. R.D. Karve, who started a birth-control clinic as early as 1921, and Shakuntala Paranjape, who continued his work. The government family welfare programme in Maharashtra was launched in 1957 and, as an important step towards a decentralized approach, it was handed over to *Zilla Parishads* as early as in 1967. Maharashtra has achieved many national awards for the excellent performance of its family planning programme. Since its inception in the first 25 years, Maharashtra's family welfare programme performed more than 10 million sterilizations and about half a million IUD insertions (Study Group on Population of Maharashtra, 1992). Maharashtra's couple protection rate increased from 35 percent in 1980 to 51 percent in 1998. Yet, at 2.7 children per woman, the total fertility rate for Maharashtra is well above the replacement level of 2.1 children per woman, which is the goal to be reached by 2004 according to the New Population Policy announced by the Government of Maharashtra in May 2000 (Department of Public Health, Government of Maharashtra, 2000).

1.3 Questionnaires

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

The Household Questionnaire listed all usual residents in each sample household and also 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 before 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 all 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 about reasons for not using contraception and intentions for future use.

Sources of family planning: Questions determine where a user obtained the 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 on the nature of complications during pregnancy for the last two births since January 1996.

Breastfeeding and health: Questions cover feeding practices, the length of breastfeeding, immunization coverage, and recent occurrences of diarrhoea, fever, and cough for young children.

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

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 NFHS-2 sample in Maharashtra was designed to provide estimates for the state as a whole, for urban and rural areas, and for Mumbai. The survey was also designed to provide separate estimates for slum and non-slum areas of Mumbai. The sample is not large enough to provide reliable estimates for individual districts.

A target sample size of 4,000 completed interviews with eligible women was initially divided between urban and rural areas by allocating the sample proportionally to the population of these two areas. 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 sampling rates used in urban and rural areas take rates of nonresponse into account based on urban and rural nonresponse rates from NFHS-1. In order to provide separate estimates for Mumbai and slum and non-slum areas of Mumbai, a higher sampling rate was used in Mumbai than in other urban areas. The target sample size for Mumbai was set to be 2,000 completed interviews with eligible women, effectively raising the overall target sample size for Maharashtra to 5,500 eligible women.

Sample Design

There were three sampling domains: rural areas, urban areas excluding Mumbai, and Mumbai. Within each of the sampling domains, a systematic, multi-stage stratified sampling design was

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

Sample Selection in Rural Areas

In rural areas, the 1991 Census list of villages served as the sampling frame. The list was stratified by a number of variables. The first level of stratification was geographic, with districts classified into six contiguous regions. The district composition of the six geographic regions (based on the 29 districts in Maharashtra at the time of the 1991 Census) is as follows:

| | |
|-------------|---|
| Region I: | Thane, Raigad, Ratnagiri, Sindhudurg |
| Region II: | Nasik, Dhule, Jalgaon |
| Region III: | Ahmednagar, Pune, Satara, Sangli, Solapur, Kolhapur |
| Region IV: | Aurangabad, Jalna, Parbhani, Bid, Latur, Osmanabad, Buldhana, Akola, Amaravati |
| Region V: | Yeotmal, Wardha, Nagpur, Nanded |
| Region VI: | Bhandara, Chandrapur, Gadchiroli |

In each region, villages were further stratified by village size and the percentage of the population belonging to scheduled-castes or scheduled-tribes (SC/ST). Table 1.1 provides details of the 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. Sample villages larger than 500 households were segmented into three or more segments, and two segments were selected randomly using the PPS method. 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 Maharashtra (f) was computed as:

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

where n = number of rural women to be interviewed (after adjusting upward to account for non-response and other loss),

N = projected rural population of eligible women in the state in May 1999.

| Table 1.1 Sampling stratification | | | | |
|---|--------|--------------------|--------------------------|-------------------------|
| Sampling stratification procedure in rural areas, Maharashtra | | | | |
| Stratification variables | | | | |
| Stratum | Region | Village population | Percent SC/ST population | Population ¹ |
| 1 | 1 | ≤ 1250 | NU | 2,692,664 |
| 2 | 1 | > 1250 | NU | 2,833,735 |
| 3 | 2 | ≤ 1900 | NU | 3,343,570 |
| 4 | 2 | > 1900 | NU | 3,467,380 |
| 5 | 3 | ≤ 2500 | ≤ 13.5 | 3,885,822 |
| 6 | 3 | ≤ 2500 | > 13.5 | 2,940,302 |
| 7 | 3 | > 2500 | ≤ 13.5 | 3,159,747 |
| 8 | 3 | > 2500 | > 13.5 | 3,925,223 |
| 9 | 4 | ≤ 1600 | ≤ 17.0 | 3,065,171 |
| 10 | 4 | ≤ 1600 | > 17.0 | 3,271,359 |
| 11 | 4 | > 1600 | ≤ 17.0 | 3,301,151 |
| 12 | 4 | > 1600 | > 17.0 | 3,095,849 |
| 13 | 5 | ≤ 1400 | NU | 2,790,660 |
| 14 | 5 | > 1400 | NU | 2,791,694 |
| 15 | 6 | NU | NU | 3,823,819 |
| Total | NA | NA | NA | 48,388,146 |

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

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

where a = number of rural PSUs selected from the state,

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

$\sum s_i$ = total rural population of the state.

A mapping and household listing operation carried out in each sample area provided the necessary frame for selecting households at the second stage. The household listing operation involved preparing up-to-date notional and layout sketch maps of each selected PSU, assigning numbers to structures, recording addresses of these structures, identifying residential structures, and listing the names of heads of all the households in residential structures in the selected PSUs. Household listing in segmented 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 22–26 January 1999 in Pune by an official from CORT, Vadodara, who was earlier trained in a workshop conducted by IIPS. The mapping and household listing operation was carried out between 28 January 1999 and 10 April 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 45, 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.

Sample Selection in Urban Areas

Urban Areas Excluding Mumbai

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.

Mumbai

For Mumbai, a slightly different sampling procedure was used. The 1991 Census list of sections was divided into two components—one consisting of self-selected sections and the other consisting of the remaining sections. The number of PSUs was allocated to each component according to its share of the population. For self-selected sections, the number of PSUs (i.e., CEBs) in each section was allocated according to the share of section's population in the total population of self-selected sections. The allocated number of CEBs were then selected from each self-selected section using the PPS method. For the component consisting of the remaining sections, the list was first arranged by the level of female literacy and a sample of sections was selected systematically with probability proportional to size. Next, two CEBs were selected from each selected section using the PPS method. As in rural areas and in urban areas excluding Mumbai, a household listing operation was carried out in the selected CEBs in both self-selected and non-self-selected sections and, on average, 20 households per block were targeted for selection.

The domain sampling fraction, i.e., the probability of selecting a woman from an urban domain (Mumbai or other urban areas) in Maharashtra (f) was computed as:

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

where n = number of women to be interviewed from the urban domain (after adjusting upward to account for nonresponse and other loss),

N = projected population of eligible women in the urban domain in May 1999.

The probability of selecting a ward/section from an urban domain (f_1) was computed as:

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

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

Note that the probability of selecting a ward/section (f_1) was set to one for self-selected wards/sections.

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

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

where k = the number of CEBs to be selected from the ward/section,
 B_i = population size of the i^{th} block,
 $\sum B_i$ = total population of the ward/section.

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

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

Sample Weights

In Maharashtra, the sample is weighted at the level of the sampling domain. Sample weights for households and women are based on design weights, 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 response rates for households and eligible women, respectively. Then the household weight (w_{Hi}) is calculated as follows:

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

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

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.

Sample Implementation

A total of 218 PSUs were selected, of which 136 were urban and 82 were rural. Of the urban PSUs, 101 were selected from Mumbai. 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 92 percent. As expected, the overall response rate is slightly lower in urban areas (91 percent) than in rural areas (93 percent). The overall response rate is considerably higher in slum areas of Mumbai than in non-slum areas or in other parts of Maharashtra.

Of the 6,392 households selected in Maharashtra, interviews were completed in 91 percent of the cases, 5 percent of the selected households were absent for an extended period, in 2 percent of the selected households either no member or no competent respondent was at home when the household was visited, 1 percent of households were found to be vacant, and 1 percent refused to be interviewed. The household response rate—the number of households interviewed per 100 occupied households—was 98 percent in both urban and rural areas, as well as in Mumbai. However, in slum areas of Mumbai the household response rate was 100 percent.

In the interviewed households, 5,729 women were identified as eligible for the individual interview. Interviews were successfully completed with 94 percent of eligible women. The response rate for women was slightly lower in urban areas (94 percent) than in rural areas (95

Table 1.2 Sample results

Sample results for households and ever-married women age 15–49 by residence, Maharashtra, 1999

| Result | Mumbai | | | | | | | | | | | |
|--|--------|---------|--------|---------|--------|---------|--------|---------|----------|---------|--------|---------|
| | Urban | | Rural | | Total | | Slum | | Non-slum | | Total | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Households selected | 4,041 | 100.0 | 2,351 | 100.0 | 6,392 | 100.0 | 1,319 | 100.0 | 1,391 | 100.0 | 2,710 | 100.0 |
| Households completed (C) | 3,662 | 90.6 | 2,168 | 92.2 | 5,830 | 91.2 | 1,319 | 100.0 | 1,116 | 80.2 | 2,435 | 89.9 |
| Households with no household member at home or no competent respondent at home at the time of interview (HP) | 60 | 1.5 | 41 | 1.7 | 101 | 1.6 | 0 | 0.0 | 36 | 2.6 | 36 | 1.3 |
| Households absent for extended period (HA) | 226 | 5.6 | 87 | 3.7 | 313 | 4.9 | 0 | 0.0 | 178 | 12.8 | 178 | 6.6 |
| Households postponed (P) | 2 | 0.0 | 2 | 0.1 | 4 | 0.1 | 0 | 0.0 | 2 | 0.1 | 2 | 0.1 |
| Households refused (R) | 33 | 0.8 | 4 | 0.2 | 37 | 0.6 | 0 | 0.0 | 25 | 1.8 | 25 | 0.9 |
| Dwelling vacant/address not a dwelling (DV) | 47 | 1.2 | 38 | 1.6 | 85 | 1.3 | 0 | 0.0 | 28 | 2.0 | 28 | 1.0 |
| Dwelling destroyed (DD) | 3 | 0.1 | 8 | 0.3 | 11 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Dwelling not found (DNF) | 0 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Other (O) | 8 | 0.2 | 2 | 0.1 | 10 | 0.2 | 0 | 0.0 | 6 | 0.4 | 6 | 0.2 |
| Households occupied | 3,757 | 100.0 | 2,216 | 100.0 | 5,973 | 100.0 | 1,319 | 100.0 | 1,179 | 100.0 | 2,498 | 100.0 |
| Households interviewed | 3,662 | 97.5 | 2,168 | 97.8 | 5,830 | 97.6 | 1,319 | 100.0 | 1,116 | 94.7 | 2,435 | 97.5 |
| Households not interviewed | 95 | 2.5 | 48 | 2.2 | 143 | 2.4 | 0 | 0.0 | 63 | 5.3 | 63 | 2.5 |
| Household response rate (HRR) ¹ | NA | 97.5 | NA | 97.8 | NA | 97.6 | NA | 100.0 | NA | 94.7 | NA | 97.5 |
| Eligible women | 3,413 | 100.0 | 2,316 | 100.0 | 5,729 | 100.0 | 1,233 | 100.0 | 913 | 100.0 | 2,146 | 100.0 |
| Women interviewed (EWC) | 3,191 | 93.5 | 2,200 | 95.0 | 5,391 | 94.1 | 1,177 | 95.5 | 833 | 91.2 | 2,010 | 93.7 |
| Women not at home (EWNH) | 135 | 4.0 | 74 | 3.2 | 209 | 3.6 | 33 | 2.7 | 51 | 5.6 | 84 | 3.9 |
| Women postponed (EWP) | 3 | 0.1 | 1 | 0.0 | 4 | 0.1 | 1 | 0.1 | 2 | 0.2 | 3 | 0.1 |
| Women refused (EWR) | 50 | 1.5 | 13 | 0.6 | 63 | 1.1 | 11 | 0.9 | 17 | 1.9 | 28 | 1.3 |
| Women partly interviewed (EWPC) | 11 | 0.3 | 8 | 0.3 | 19 | 0.3 | 1 | 0.1 | 3 | 0.3 | 4 | 0.2 |
| Other (EWO) | 23 | 0.7 | 20 | 0.9 | 43 | 0.8 | 10 | 0.8 | 7 | 0.8 | 17 | 0.8 |
| Eligible women's response rate (EWRR) ² | NA | 93.5 | NA | 95.0 | NA | 94.1 | NA | 95.5 | NA | 91.2 | NA | 93.7 |
| Overall response rate (ORR) ³ | NA | 91.1 | NA | 92.9 | NA | 91.8 | NA | 95.5 | NA | 86.4 | NA | 91.3 |

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:

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

²Using the number of eligible women falling into specific response categories, the eligible women 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:

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

percent), and lower in non-slum areas of Mumbai than in slum areas. Nonresponse at the individual level was primarily due to eligible women not being at home. Very few eligible women refused to be interviewed (1 percent).

The final sample for Maharashtra consisted of 5,830 successfully interviewed households and 5,391 ever-married women age 15–49. In Mumbai, interviews were completed with a total of 2,435 households and 2,010 eligible women, of which 1,319 households and 1,177 eligible women were from slum areas.

1.5 Recruitment, Training, and Fieldwork

Field staff for the main survey were trained in Pune by the officials of CORT, who were trained earlier in a Training of Trainers Workshop conducted by IIPS. Training in Maharashtra consisted of classroom training, general lectures, and demonstration and practice interviews, as well as 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 at IIPS. It included classroom training and extensive field practice in schools, *anganwadis*, and communities. Additional training on lead testing was conducted at IIPS by the U.S. Centers for Disease Control and Prevention, IIPS, and AIIMS.

Seven interviewing teams conducted the main fieldwork, each team consisting of one field supervisor, one female field editor, four female interviewers, and one health investigator. The fieldwork was carried out between 22 March 1999 and 20 June 1999. Coordinators and senior staff of CORT 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 CORT office in Vadodara 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 five data entry operators under the supervision of senior staff at CORT who were trained at a data-processing workshop in Vadodara. Data entry and editing operations were completed by August 1999. Tabulations for the preliminary report as well as for the present final report were carried out at IIPS in Mumbai.