

CHAPTER 2

SURVEY DESIGN AND IMPLEMENTATION

2.1 Objectives of the NFHS

The primary objective of the NFHS is to provide national-level and state-level data on fertility, nuptiality, family size preferences, knowledge and practice of family planning, the potential demand for contraception, the level of unwanted fertility, utilization of antenatal services, breastfeeding and food supplementation practices, child nutrition and health, immunizations, and infant and child mortality. The NFHS is also designed to explore the demographic and socioeconomic determinants of fertility, family planning, and maternal and child health. This information is intended to assist policymakers, administrators and researchers in assessing and evaluating population and family welfare programmes and strategies. The NFHS used uniform questionnaires and uniform methods of sampling, data collection and analysis with the primary objective of providing a source of demographic and health data for interstate comparisons. The data collected in the NFHS are also comparable with those of the Demographic and Health Surveys (DHS) conducted in many other countries¹.

2.2 Questionnaires

Three types of questionnaires were used in the NFHS: the Household Questionnaire, the Woman's Questionnaire, and the Village Questionnaire (see Appendix F). The overall content and format of the questionnaires were determined in a Questionnaire Design Workshop held in Pune in September, 1991. The workshop was attended by representatives from all the PRCs, the Consulting Organizations, MOHFW, IIPS, other Indian organizations, USAID, and the East-West Center/Macro International. The contents and design of the questionnaires were based broadly on the DHS Model B Questionnaire, which is designed primarily for use in countries with low contraceptive prevalence. Keeping in view the Indian sociocultural milieu and the objectives of the NFHS, additions and modifications were made to the model questionnaire after extensive deliberations at the workshop. In addition to a standard set of questions in all the states of the NFHS, it was decided at the workshop that individual states could recommend a number of state-specific questions which would be formulated after considering the issues of importance in each state. Based on the recommendations of this workshop, the questionnaires were finalized at IIPS, Bombay. The questionnaires are largely precoded, with fixed response categories.

A pretest of the questionnaires was carried out by IIPS with the help of the PRC, Bhopal, in October, 1991. A 10-day training session for the interviewers and supervisors was conducted at the PRC. For the pretesting of the questionnaire, a total of 150 pretest interviews were completed in two villages near Bhopal and a few urban blocks within Bhopal city. After the pretest, appropriate changes were made in the questionnaires, based on the experience of the pretest. Questionnaires used in each state were bilingual, consisting of questions in both the

¹ The Demographic and Health Surveys (DHS) programme is an international project designed to collect comparable survey data across countries on fertility, family planning, and maternal and child health.

state language and English. In each state, the entire content of the questionnaires was translated to the state language and then independently translated back to English. Appropriate changes were made in the translation of questions for which the back-translated version did not compare well with the original English version. The PRCs in these states undertook the responsibility of translating the questionnaires into the state language and pretesting the translated version of the questionnaires.

The Household Questionnaire was used to list all usual residents of each sample household, plus all visitors who slept in the household the night before the interview. Some basic information was collected on the characteristics of each person listed, including age, sex, marital status, education, occupation, and relationship to the head of the household, as well as health status. The main purpose of this section of the Household Questionnaire was to identify women who were eligible to respond to the Woman's Questionnaire (ever-married women age 13-49 years). In addition, the Household Questionnaire collected information on household conditions, such as the source of water, type of toilet facilities, materials used in the construction of the house, source of lighting, cooking fuel, ownership of agricultural land and livestock, ownership of various consumer durable goods, and characteristics of the head of the household such as religion, caste or tribe. The Household Questionnaire also included household birth and death records wherein all the live births and deaths that took place within the last two years in the household were recorded.

The Woman's Questionnaire was used to collect information from eligible women -- that is, all ever-married women, usual residents as well as visitors, age 13-49 years. The Woman's Questionnaire consisted of seven sections:

Section 1. Respondent's Background: Questions on age, marital status, age at marriage, and education of the eligible woman are included. If the respondent is a visitor, information about her own household is also collected.

Section 2. Reproduction: In this section, information is collected about the births that a woman had during her life. The information collected includes the total number of sons and daughters that a woman has given birth to, information about stillbirths and abortions, a complete birth history (including month and year of birth, current age, sex, survival status, and if dead, age at death for each of the live births), and information about current pregnancy and menstruation status.

Section 3. Contraception: This section collects information on the knowledge, ever use and current use of various family planning methods, intentions for future use, attitudes about family planning, exposure to family planning messages, and for current users, the duration of use, source of the method, and problems experienced with use.

Section 4. Health of Children: The questions in this section relate to births in the year of the survey as well as to all the births in the previous four calendar years. The objective of this section is to obtain information related to the health of children. The topics include antenatal care, breastfeeding, vaccinations and recent illnesses of young children. The questions are organized into two subsections: Section 4A containing questions on pregnancy and breastfeeding and Section 4B containing questions on immunization and

health of children.

Section 5. Fertility Preferences: This section gathers information on the desire for additional children, ideal family size and sex composition of children, preferred and ideal birth intervals, and husband's attitude about family size.

Section 6. Husband's Background and Woman's Work: Questions related to age, education and work status of the husband as well as questions on the work status of the woman herself are included.

Section 7. Height and Weight: The nutritional status of children was measured using both weight and height/length of children under age 4 in most of the states. The results were recorded in this section of the Woman's Questionnaire. However, due to the nonavailability of measuring instruments during the first phase of data collection, the height/length of children was not measured in the first phase states. In these states, only the weight of children was taken as a measure of their nutritional status. The NFHS is the first national survey that collected demographic, health and anthropometric data simultaneously. The measurement of height and weight was a separate operation that was conducted after the individual interview was completed. All interviewers, editors and supervisors were trained in taking anthropometric measurements. For the measurement of the weight of the children, standard spring balance weighing machines (Salter scales) were used. The height/length of the child was measured using adjustable boards made of acrylic and other synthetic materials with a metal frame providing strength, suitable for measuring either the length or the height of children.

The Village Questionnaire was used to collect information on all villages covered in the NFHS. The Village Questionnaire included information on various amenities available in the villages such as electricity, water, transportation, and educational and health facilities.

In addition to the above standard questions used in all the states of the NFHS, a set of state-specific questions was added in most of the states on issues of importance in those states. Accordingly, a set of questions on knowledge of AIDS was added to the NFHS in Arunachal Pradesh, Assam, Delhi, Goa, Gujarat, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Tamil Nadu, Tripura, and West Bengal. The topics covered by state-specific questions in the other states are: dowry in Bihar, age at marriage in Rajasthan, sex preference for children in Uttar Pradesh, international migration in Kerala, Green Cards in Madhya Pradesh, benefits received from antipoverty programmes in Karnataka, and sex preselection and international migration in Punjab.

2.3 Sample Design

The sample design for the NFHS was discussed during a Sample Design Workshop held in Madurai in October, 1991. The workshop was attended by representatives from the PRCs; the COs; the Office of the Registrar General, India; IIPS and the East-West Center/Macro International. A uniform sample design was adopted in all the NFHS states (see Table B.1 in Appendix B for a summary of the sample characteristics). The sample design adopted in each state is a systematic, stratified sample of households, with two stages in rural areas and three

stages in urban areas. Detailed descriptions of the state sample designs can be found in the state reports.

Sample Size and Allocation

The sample size for each state was specified in terms of a target number of completed interviews with eligible women. The target sample size was set considering the size of the state, the time and resources available for the survey and the need for separate estimates for urban and rural areas of the state. The initial target sample size was 3,000 completed interviews with eligible women for states having a population of 25 million or less in 1991; 4,000 completed interviews for large states with more than 25 million population; 8,000 for Uttar Pradesh, the largest state; and 1,000 each for the six small northeastern states (Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura). In states with a substantial number of backward districts² (Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh), the initial target samples were increased so as to allow separate estimates to be made for groups of backward districts.

The urban and rural samples within states were drawn separately and, to the extent possible, sample allocation was proportional to the size of the urban-rural populations (to facilitate the selection of a self-weighting sample for each state). In states where the urban population was not sufficiently large to provide a sample of at least 1,000 completed interviews with eligible women, the urban areas were appropriately oversampled (except in the six small northeastern states).

The Rural Sample: The Frame, Stratification and Selection

A two-stage stratified sampling design was adopted for the rural areas: selection of villages followed by selection of households. Because the 1991 Census data were not available at the time of sample selection in most states, the 1981 Census list of villages served as the sampling frame in all the states with the exception of Assam, Delhi and Punjab. In these three states the 1991 Census data were used as the sampling frame.

Villages were stratified prior to selection on the basis of a number of variables. The first level of stratification in all the states was geographic, with districts subdivided into regions according to their geophysical characteristics. Within each of these regions, villages were further stratified using some of the following variables: village size, distance from the nearest town, proportion of nonagricultural workers, proportion of the population belonging to scheduled castes/scheduled tribes, and female literacy. However, not all variables were used in every state. Each state was examined individually and two or three variables were selected for stratification, with the aim of creating not more than 12 strata for small states and not more than 15 strata for large states. Female literacy was often used for implicit stratification (i.e., the villages were ordered prior to selection according to the proportion of females who were literate). Primary Sampling Units (PSUs) were selected systematically, with probability proportional to size (PPS). In some cases, adjacent villages with small population sizes were combined into a single PSU for the purpose of sample selection. On average, 30 households

² The Ministry of Health and Family Welfare, Government of India, has defined backward districts as those having a crude birth rate of 39 per 1,000 population or higher, estimated on the basis of data from the 1981 Population Census.

were selected for interviewing in each selected PSU.

In every state, all the households in the selected PSUs were listed about two weeks prior to the survey. This listing provided the necessary frame for selecting households at the second sampling stage. The household listing operation consisted of preparing up-to-date notional and layout sketch maps of each selected PSU, assigning numbers to structures, recording addresses (or locations) of these structures, identifying the residential structures, and listing the names of the heads of all the households in the residential structures in the selected PSU. Each household listing team consisted of a lister and a mapper. The listing operation was supervised by the senior field staff of the concerned CO and the PRC in each state. Special efforts were made not to miss any household in the selected PSU during the listing operation. In PSUs with fewer than 500 households, a complete household listing was done. In PSUs with 500 or more households, segmentation of the PSU was done on the basis of existing wards in the PSU, and two segments were selected using either systematic sampling or PPS sampling³. The household listing in such PSUs was carried out in the selected segments. The households to be interviewed were selected from the household lists using systematic sampling with equal probability. Each team supervisor was provided with the original household listing, layout sketch map and the household sample selected for each PSU. All the selected households were approached during the data collection, and no substitution of a household was allowed under any circumstances.

The Urban Sample: The Frame, Stratification and Selection

A three-stage sample design was adopted for the urban areas in each state: selection of cities/towns, followed by urban blocks, and finally households. Cities and towns were selected using the 1991 population figures while urban blocks were selected using the 1991 list of census enumeration blocks in all the states with the exception of the first phase states. For the first phase states, the list of urban blocks provided by the National Sample Survey Organization (NSSO) served as the sampling frame.

All cities and towns were subdivided into three strata: (1) self-selecting cities (i.e., cities with a population large enough to be selected with certainty), (2) towns that are district headquarters, and (3) other towns. Within each stratum, the cities/towns were arranged according to the same kind of geographic stratification used in the rural areas. In self-selecting cities, the sample was selected according to a two-stage sample design: selection of the required number of urban blocks, followed by selection of households in each of the selected blocks. For district headquarters and other towns, a three-stage sample design was used: selection of towns with PPS, followed by selection of two census blocks per selected town, followed by selection of households from each selected block. As in rural areas, a household listing was carried out in the selected blocks, and an average of 20 households per block was selected systematically.

Sample Weights

At the national level, the overall sample weight for each household or woman is the product of the design weight for each state (after adjustment for nonresponse) and the state weight. The calculation of the design weights at the state level is described in each state report.

³ In some states, an alternative cut-off point of 300 or 600 households was used.

The state weights are defined below.

Let P_i be the projected population of the i^{th} state⁴. Let P be the projected population for all India. Then the state weight is calculated as follows:

$$w_i = \frac{\frac{P_i}{P}}{\sum_i \left(\frac{P_i}{P}\right)}, i = 1, 2, \dots, 25$$

Let N_{Hi} be the number of households with completed interviews in the i^{th} state. Then $\sum N_{Hi}$ is the total number of households with completed interviews in the NFHS. The normalized state weight for the households is calculated as follows:

$$W_{Hi} = \frac{N'_{Hi}}{N_{Hi}} = \frac{w_i \times \sum_i N_{Hi}}{N_{Hi}}$$

Similarly, the normalized state weight for women is calculated as follows:

$$W_{wi} = \frac{N'_{wi}}{N_{wi}} = \frac{w_i \times \sum_i N_{wi}}{N_{wi}}$$

where N_{wi} is the number of women with completed interviews in the i^{th} state.

2.4 Recruitment, Training and Fieldwork

In order to maintain uniform survey procedures across the states, four manuals dealing with different aspects of the survey were prepared at IIPS. The *Interviewer's Manual* consists of instructions to the interviewers regarding interviewing techniques, field procedures, and instructions on the method of asking each question and recording answers. The *Manual for Field Editors and Supervisors* contains a detailed description of the role of field editors and supervisors in the survey. A list of checks to be made by the field editor in the filled-in questionnaires is also provided in this manual. The *Household Listing Manual* was meant for household listing teams, and contains procedures to be adopted for household listing. The guidelines for the training of the field staff are described in the manual entitled *Training Guidelines*.

The representatives of each of the COs and the PRCs were trained in a series of Training of the Trainers Workshops organized by IIPS at the beginning of each phase of data collection. The purpose of these workshops was to ensure uniformity in data collection procedures in different states. Persons who were trained in each workshop subsequently trained the field staff

⁴ The population was projected to November 1992, the midpoint of the fieldwork dates for all the states except Punjab.

in each state according to the standard procedures discussed in the Training of Trainers Workshops. In these workshops, detailed discussions were held on the objectives of the NFHS, different aspects of the survey, roles of various organizations participating in the survey, details of each of the three questionnaires used in the survey, methods of data collection and field supervision, and guidelines for the training of the field staff.

The fieldwork in each state was carried out by a number of interviewing teams, each team consisting of one field supervisor, one field editor and four interviewers. The number of interviewing teams in each state varied according to the sample size. In each state, interviewers were hired specially for the NFHS, taking into consideration their educational background, experience and other relevant qualifications. All interviewers were females, a stipulation that was necessary to ensure that women who were survey respondents would feel comfortable talking about topics which they may find somewhat sensitive.

Training of the entire field staff lasted for a minimum of 20 days in each state. The training course consisted of instruction in interviewing techniques and field procedures for the survey, a detailed review of each item in the questionnaire, instruction and practice in weighing and measuring children, mock interviews between participants in the classroom and practice interviews in the field. In addition two special lectures were arranged in each state: one on the topic of family planning at the beginning of training on the section on contraception in the Woman's Questionnaire, and one on maternal and child health practices, including immunizations, at the beginning of training on the section on the health of children. In addition to the main training, two days' training was arranged for field editors and supervisors, which focused on the organization of fieldwork as well as methods of detecting errors in field procedures and in the filled-in questionnaires.

Assignment of Primary Sampling Units (PSUs) to the teams and various logistical decisions were made by the staff of each CO, who were designated as coordinators. In most cases, each team was allowed a fixed period of time to complete fieldwork in a PSU before moving to the next PSU. Each interviewer was instructed not to conduct more than three individual interviews a day and was required to make a minimum of three callbacks if no suitable informant was available for the household interview or if the eligible woman identified in the selected household was not present at the time of the household interview.

The main duty of the field editor was to examine the completed questionnaires in the field for completeness, consistency and legibility of the information collected, and to ensure that all necessary corrections were made. Special attention was paid to missing information, skip instructions, filter questions, age information, and completeness of the birth history and the health section. If the problems were major, such as discrepancies between the birth history and the health section, the interviewers were required to revisit the respondent to correct the errors. If a return visit was not possible, the editor tried to establish, with the interviewer's assistance, the correct response. If either of these options was not possible, the editor designated the response as either "missing" or "inconsistent". An additional duty of the field editor was to observe ongoing interviews and verify the accuracy of the method of asking questions, recording answers, and following skip instructions correctly.

The field supervisor collected information on the village using the Village Questionnaire. In addition, the field supervisor conducted spot-checks to verify the accuracy of information

collected on the eligibility of respondents. During the period of data collection, IIPS assigned one Research Officer to the survey in most states for ensuring the use of correct survey procedures and maintaining the quality of the data. Throughout the survey, the staff from the CO, the PRC, and IIPS maintained close contact with all the teams through direct communication and spot-checking. The objective was to provide support and advice to staff in the field and to enhance data quality and the efficiency of interviewers. This objective was accomplished by communicating data problems and possible solutions to the interviewing teams, reminding interviewers about proper probing techniques, and examining the work of the supervisors. In addition, data from the field were simultaneously entered into microcomputers, and field check tables were produced during the fieldwork to assess the quality of the data and to identify problem areas. These tables were discussed with the interviewing teams and supervisors during the fieldwork so that they could improve their performance if needed.

2.5 Field Problems

Every survey is subject to a variety of field problems that cannot be fully anticipated. Especially a survey like the NFHS, which was conducted in 25 different states of India with the coordination of more than 30 different organizations, can not be free of problems during the data collection. In some states the NFHS data collection went on smoothly without any significant problems. The major problems encountered in the NFHS in other states are highlighted below.

Transportation

All the data collection teams in most of the states were provided with vehicles in the field to visit the selected PSUs. However, teams in certain states, including Uttar Pradesh, Himachal Pradesh, Jammu, Assam, and other Northeastern states, experienced difficulty in reaching PSUs located in hilly regions due to the absence of proper approachable roads. These PSUs were covered by foot or by the use of local means of transportation.

Security of Teams

In many of the states covered during the second phase of data collection, fieldwork had to be suspended for about 15 days during the communal riots in December, 1992. In Uttar Pradesh, some selected PSUs had to be replaced because of the presence of dacoits (bandits) in a village within that PSU. In Madhya Pradesh, the good offices of some local saints popular in dacoit-infested areas in Chambal were utilized to complete the data collection in PSUs situated in this area.

Household Identification

In hilly regions and in Goa, houses are not as densely packed as in other parts of India, but are scattered throughout the village. Consequently good village maps were required to identify the sample households. Perhaps because of inadequate training, maps drawn during household listing in some states were not very satisfactory. Field teams were sometimes forced to abandon the map and take the help of knowledgeable local people to trace the sample households.

Drop-out of Members of Interviewing Teams

The drop-out of *ad hoc* staff recruited for the fieldwork is common to all surveys. In some states the NFHS experienced problems with the drop-out of members of interviewing teams in the middle of fieldwork for various reasons. To maintain the quality of data, field staff who dropped out were usually not replaced at any stage, because new recruits would require extensive training which would be difficult to provide, particularly at the later stages of data collection.

Temporary Absenteeism of Households

In a few states, noncontact with some households and eligible women for individual interviews was high in certain PSUs because of temporary absenteeism. These absent households and eligible women had to be revisited at a later date so as to keep the nonresponse to a minimum.

Unseasonal Rains

Due to unseasonal heavy rains, data collection was interrupted in a few states including Karnataka, Kerala, and the Northeastern states.

Funds

Fieldwork in some states was delayed because of delays in the receipt of funds by the interviewing teams.

2.6 Data Processing

All completed questionnaires for the NFHS were sent for data processing to the office of the concerned CO. This process consisted of office editing, coding, data entry, and machine editing. Although field editors examined the completed questionnaires in the field, the questionnaires were re-edited at the CO by specially trained office editors. The office editors checked all skip sequences, all circled response codes, and information recorded in the filter questions. Special attention was paid to the consistency of responses to age questions and the accurate completion of the birth history. In the second stage of office editing, appropriate codes were assigned for the information on occupation, caste, and cause of death, and commonly mentioned "other" responses were added to the coding scheme. One supervisor and four data entry operators were typically responsible for data entry and computer editing operations. For each state, the data were processed with four microcomputers using the data entry and editing software known as the Integrated System for Survey Analysis (ISSA). The data were entered directly from the precoded questionnaires, starting within one week of the receipt of the first set of completed questionnaires. All data entry and editing operations were completed a few days after the end of fieldwork in each state. Computer-based checks were used to clean the data and remove inconsistencies. Age imputation was also completed at this stage. Age variables such as current age, age at first marriage, age of the woman when she started living with her husband, and the ages of all children were imputed for those cases in which information was missing or incorrect entries were detected.

Preliminary reports with selected results were prepared for each state by the end of 1993 and presented to policymakers and programme administrators responsible for improving family welfare programmes. The NFHS report for each state was prepared by IIPS, in collaboration with the concerned PRCs and the East-West Center/Macro International, on the basis of the tabulation plan discussed at a workshop held at Vadodara in December, 1992. Each state-level report contains detailed information pertaining to that state on the survey design and implementation, household and respondent background characteristics, marriage patterns, fertility, family planning, fertility preferences, mortality, maternal and child health, infant feeding and child nutrition, village profile, and detailed findings on the state-specific questions, if any.

The preliminary findings of the NFHS relating to the country as a whole were published in October, 1994. The contents and tabulation plan for the detailed national report were decided in a workshop held at Bombay in September, 1994. Based on this tabulation plan, tables for this national report were prepared at IIPS.

2.7 Presentation of Survey Results

In this report, survey results are reported separately for urban areas, rural areas and total India. A comparison across the 25 states covered in the survey is also presented. For a better understanding of the state differentials, the states are grouped into six regions of the country (north, central, east, northeast, west, and south), but aggregate estimates are not shown for these regions. In the text, reference is sometimes made to "major states". In this report, the major states refer to the 17 states with a 1991 population of more than 5 million⁵. Although both usual residents and visitors were eligible for the individual interviews, the standard tables for women and children are based only on *de facto* women (those who slept in the household the night before the interview) to avoid double counting. All tables in the report are weighted according to the sample design except for Tables 2.1 and 2.2, which summarize the basic characteristics of sample households and eligible women.

2.8 Sample Implementation

Tables 2.1 and 2.2 show the month and year of fieldwork, the number of households and eligible women interviewed and the household and individual response rates. As noted earlier, the data collection for the NFHS was carried out in three phases. The first phase started in Andhra Pradesh in April, 1992 and the third phase was completed in all states except Punjab by June, 1993. The fieldwork in Punjab was completed in September, 1993. Because most of the data collection for the NFHS was done within the span of about one year, adjustments for the different timing of data collection in different states are not necessary for the all-India estimates of demographic and health parameters.

A total of 88,562 households were interviewed, two-thirds of which were rural. The overall household response rate -- the number of households interviewed per 100 occupied households -- is 96 percent. The household response rate is slightly lower in urban areas (94

⁵ The major states are Andhra Pradesh, Assam, Bihar, Delhi, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

Table 2.1 Number of households and women interviewed

Month and year of fieldwork, and number of households and women interviewed, by residence and state (unweighted), India, 1992-93

State	Month and year of fieldwork		Number of households interviewed			Number of women interviewed		
	From	To	Urban	Rural	Total	Urban	Rural	Total
India	4/92	9/93	28822	59740	88562	27534	62243	89777
North								
Delhi	2/93	5/93	3377	300	3677	3189	268	3457
Haryana	1/93	4/93	1033	1702	2735	1002	1844	2846
Himachal Pradesh	6/92	10/92	1036	2083	3119	930	2032	2962
Jammu Region of J & K	5/93	7/93	988	1851	2839	945	1821	2766
Punjab	7/93	9/93	937	2276	3213	836	2159	2995
Rajasthan	12/92	5/93	1103	3911	5014	1019	4192	5211
Central								
Madhya Pradesh	4/92	8/92	1459	4398	5857	1476	4778	6254
Uttar Pradesh	10/92	2/93	2315	7795	10110	2337	9101	11438
East								
Bihar	3/93	6/93	1088	3660	4748	1267	4682	5949
Orissa	3/93	6/93	1296	3306	4602	1143	3114	4257
West Bengal	4/92	7/92	1086	3152	4238	898	3424	4322
Northeast								
Arunachal Pradesh	5/93	6/93	144	817	961	130	752	882
Assam	12/92	3/93	1230	2025	3255	1107	1899	3006
Manipur	3/93	5/93	346	740	1086	307	646	953
Meghalaya	4/93	6/93	202	790	992	221	916	1137
Mizoram	5/93	6/93	561	526	1087	517	528	1045
Nagaland	5/93	6/93	228	832	1060	240	909	1149
Tripura	2/93	4/93	231	908	1139	221	879	1100
West								
Goa	12/92	2/93	1834	1907	3741	1559	1582	3141
Gujarat	2/93	6/93	1360	2515	3875	1344	2488	3832
Maharashtra	11/92	3/93	1754	2309	4063	1699	2407	4106
South								
Andhra Pradesh	4/92	7/92	1096	3112	4208	1116	3160	4276
Karnataka	11/92	2/93	1449	2820	4269	1442	2971	4413
Kerala	10/92	2/93	1220	3167	4387	1218	3114	4332
Tamil Nadu	4/92	7/92	1449	2838	4287	1371	2577	3948

Note: The table is based on the number of households with completed interviews and the number of *de facto* women with completed interviews.

percent) than in rural areas (96 percent). The household response rate ranged between 92 and 98 percent in every state except Arunachal Pradesh, where the household response rate was 88 percent. In all, interviews were completed with 89,777 eligible women who slept in the household the night before the household interview. The individual response rate -- the number of completed interviews per 100 identified eligible women in the household -- was 96 percent in both urban and rural areas. The individual response rate ranged from 91 percent in Arunachal Pradesh to nearly 100 percent in Nagaland. Most of the larger states had an individual response rate of more than 95 percent.

Table 2.2 Household and individual response rates

Household and individual response rates, by residence and state (unweighted), India, 1992-93

State	Household response rate			Individual response rate		
	Urban	Rural	Total	Urban	Rural	Total
India	94.4	96.1	95.6	96.2	96.0	96.1
North						
Delhi	96.7	98.0	96.8	98.1	98.2	98.1
Haryana	94.2	95.4	94.9	94.2	92.5	93.1
Himachal Pradesh	91.7	96.8	95.0	96.6	94.8	95.3
Jammu Region of J & K	96.2	97.0	96.7	93.1	93.2	93.2
Punjab	93.9	96.1	95.4	91.1	93.0	92.5
Rajasthan	94.8	95.1	95.0	97.2	94.3	94.8
Central						
Madhya Pradesh	91.5	94.7	93.9	95.4	95.8	95.7
Uttar Pradesh	95.7	97.8	97.3	97.1	97.5	97.4
East						
Bihar	93.9	96.0	95.5	96.6	98.3	97.9
Orissa	93.6	96.9	95.9	94.6	96.1	95.7
West Bengal	92.6	97.3	96.0	93.2	97.0	96.2
Northeast						
Arunachal Pradesh	88.3	88.2	88.2	97.7	89.7	90.8
Assam	94.1	96.4	95.5	98.0	97.3	97.5
Manipur	97.7	95.4	96.1	95.0	94.9	94.9
Meghalaya	96.7	93.6	94.2	98.7	99.2	99.1
Mizoram	92.6	93.6	93.1	94.5	98.5	96.5
Nagaland	100.0	96.9	97.5	100.0	99.9	99.9
Tripura	96.3	91.0	92.0	97.8	94.5	95.2
West						
Goa	97.5	96.6	97.0	97.9	95.6	96.7
Gujarat	92.5	95.8	94.7	97.5	96.7	97.0
Maharashtra	89.9	96.4	93.5	94.5	94.5	94.5
South						
Andhra Pradesh	93.4	95.6	95.0	97.5	96.0	96.3
Karnataka	94.0	96.5	95.6	94.6	95.5	95.2
Kerala	97.1	97.5	97.4	96.7	96.1	96.3
Tamil Nadu	95.6	96.4	96.1	97.2	97.9	97.7

Note: The household response rate is defined as the number of households interviewed per 100 occupied households. The individual response rate is defined as the number of eligible women interviewed per 100 eligible women identified in the selected households.