CHAPTER 8

MATERNAL AND REPRODUCTIVE HEALTH

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

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

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

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

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

include motivating men to participate in the family welfare programme and educating men about reproductive tract and sexually transmitted infections. The ANM and LHV also assist the medical officer at the PHC where health services, including antenatal and postnatal care, are provided (Ministry of Health and Family Welfare, 1997; 1998b).

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

An important objective of NFHS-2 is to provide information on the use of safe motherhood services provided by the public and private sectors. In addition, the survey included questions on the prevalence and treatment of reproductive health problems. The Woman's Questionnaire included relevant maternal and safe motherhood information for women age 15–49 who have given birth since 1 January 1996. The topics covered include pregnancy complications, utilization and specific components of antenatal and postnatal care, place of and assistance during delivery, delivery characteristics, and postpartum complications. Although NFHS-2 obtained information for the two most recent live births since 1 January 1996, the information presented in this chapter pertains only to the subset of those births that took place during the three years preceding the woman's interview. With regard to reproductive health, all women were asked about their experience of specific symptoms of reproductive health problems, and if problems were reported, whether and where they received treatment.

8.1 Antenatal Problems and Care

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

NFHS-2 collected information from women on specific problems they may have had during their pregnancies and whether they received any antenatal check-ups. Women who did not receive antenatal check-ups were asked why they did not. Women who received antenatal check-ups were asked about the care provider, the timing of the first antenatal check-up, the total number of check-ups, the procedures conducted during the check-ups, and the advice given. In addition, the survey asked women whether they received tetanus toxoid injections and iron and

folic acid tablets or syrup during the pregnancy. Results from each of these questions are discussed in this chapter.

Problems During Pregnancy

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

Table 8.1 Health problems during pregnancy

Among births during the three years preceding the survey, the percentage of mothers experiencing specific health problems during pregnancy by residence, Kerala, 1999

Problem during pregnancy	Urban	Rural	Total
Night blindness	1.2	2.3	2.1
Blurred vision	3.5	2.1	2.4
Convulsions not from fever	0.6	1.7	1.5
Swelling of the legs, body, or face	40.5	34.8	35.9
Excessive fatigue	76.9	69.8	71.2
Anaemia	45.7	45.0	45.1
Vaginal bleeding	6.4	5.9	6.0
Number of births	134	572	707

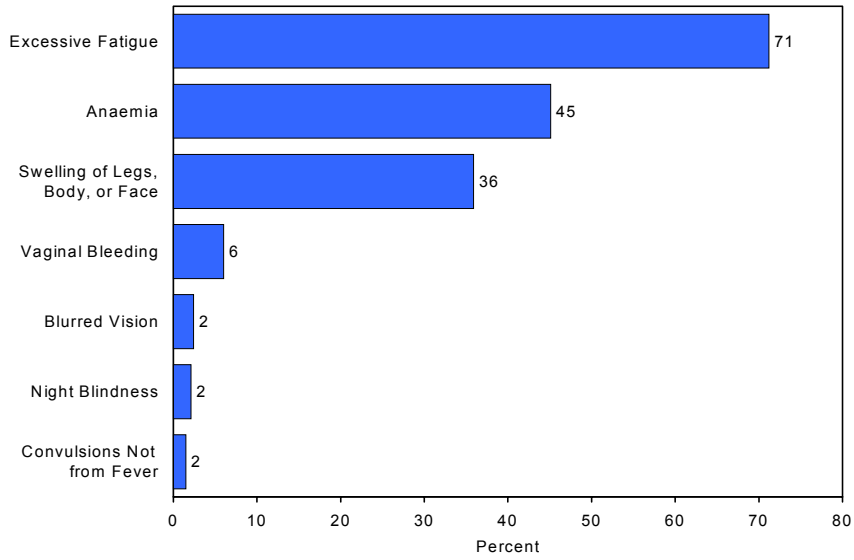
Note: Table includes only the two most recent births during the three years preceding the survey.

As shown in Table 8.1 and Figure 8.1, the problems most commonly reported are excessive fatigue (71 percent), anaemia (45 percent), and swelling of the legs, body, or face (36 percent). Six percent reported vaginal bleeding, 2 percent each reported blurred vision, night blindness, and convulsions not from fever. A higher proportion of urban than rural women reported having excessive fatigue and swelling of the legs, body, or face. For all other pregnancy complications, urban-rural differentials are minimal.

Antenatal Check-Ups

A pregnant woman can have an antenatal check-up by visiting a doctor or another health professional in a medical facility, receiving a home visit from a health worker, or both. NFHS-2 asked women who had a birth during the three years preceding the survey whether any health worker had visited them at home to provide antenatal check-ups. The survey also asked whether

Figure 8.1
Problems During Pregnancy



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

NFHS-2, Kerala, 1999

women had gone for antenatal check-ups outside the home, and if they had, what type of service provider gave them the check-ups.

Table 8.2 shows the percent distribution of births in the three years preceding the survey by the source of antenatal check-ups received during pregnancy. In Kerala, all women who received an antenatal check-up at home also received check-ups outside the home. Consequently, in Table 8.2 all women who received antenatal checkups are categorized as having received antenatal checkups outside the home. If a woman received check-ups from more than one type of health provider, only the provider with the highest qualification is considered. NFHS-2 results show that mothers in Kerala received antenatal check-ups for almost all (99 percent) births during the three years preceding the survey and that almost all the check-ups were provided by doctors. By comparison, at the national level, mothers of only 65 percent of births in the three years before the survey received at least one antenatal check-up and only 49 percent received an antenatal check-up from a doctor. There are virtually no differentials by demographic and socioeconomic characteristics in these proportions. In all subgroups, mothers of at least 96 percent of births received an antenatal check-up from a doctor. At the time of NFHS-1 also, mothers of all but 2 percent of births in Kerala had received antenatal check-ups. Kerala, along with Goa and Tamil Nadu, are the only states in India that have been successful in ensuring that the vast majority of women receive at least one antenatal check-up during pregnancy.

Number and Timing of Antenatal Check-Ups

The number of antenatal check-ups and the timing of the first check-up are important for the health of the mother and the outcome of the pregnancy. The conventional recommendation for normal pregnancies is that once pregnancy is confirmed, antenatal check-ups should be

Table 8.2 Antenatal check-ups

Percent distribution of births during the three years preceding the survey by source of antenatal check-up, according to selected background characteristics, Kerala, 1999

Background characteristic	Antenatal check-up outside the home[1] from: Doctor	Other health professional	No antenatal check-up	Missing	Total percent	Number of births
Mother's age at birth						
< 20	100.0	0.0	0.0	0.0	100.0	71
20–34	98.4	0.4	0.2	1.0	100.0	607
35–49	(96.3)	(0.0)	(3.7)	(0.0)	100.0	29
Birth order						
1	97.9	0.6	0.0	1.4	100.0	282
2–3	99.2	0.2	0.0	0.6	100.0	377
4–5	(96.9)	(0.0)	(3.1)	(0.0)	100.0	35
Residence						
Urban	98.3	1.1	0.0	0.6	100.0	134
Rural	98.5	0.2	0.4	0.9	100.0	572
Mother's education						
Illiterate	(96.4)	(0.0)	(3.6)	(0.0)	100.0	29
Literate, < middle school complete	98.6	0.0	0.7	0.7	100.0	153
Middle school complete	97.3	0.5	0.0	2.2	100.0	144
High school complete and above	99.0	0.5	0.0	0.5	100.0	380
Religion						
Hindu	98.5	0.2	0.0	1.3	100.0	315
Muslim	98.6	0.6	0.7	0.0	100.0	285
Christian	98.0	0.0	0.0	2.0	100.0	106
Caste/tribe						
Scheduled caste	98.1	0.0	0.0	1.9	100.0	57
Other backward class	98.6	0.0	0.4	1.1	100.0	303
Other[2]	98.4	0.8	0.3	0.6	100.0	339
Standard of living index						
Low	95.9	0.0	1.0	3.1	100.0	105
Medium	98.6	0.6	0.3	0.5	100.0	397
High	99.5	0.0	0.0	0.5	100.0	204
Total	98.5	0.4	0.3	0.9	100.0	707

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 13 births of order 6 or more and 7 births to mothers belonging to the scheduled tribes, which are not shown separately.
( ) Based on 25–49 unweighted cases
[1]Includes all births for which the mothers received an antenatal check-up outside the home, even if they also received an antenatal check-up at home from a health worker. If more than one type of antenatal check-up provider was mentioned, only the provider with the highest qualification is shown.
[2]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

scheduled at four-week intervals during the first seven months, then every two weeks until the last month,and weekly thereafter (MacDonald and Pritchard, 1980). Four antenatal check-ups—one each during the third, sixth, eighth, and ninth months of pregnancy—have been recommended as the minimum necessary (Park and Park, 1989). The conventional recommendation is to schedule the first check-up within six weeks of a woman's last menstrual period. Studies on the timing of the initial antenatal check-up, however, show that even when

Table 8.3 Number and timing of antenatal check-ups and stage of pregnancy

Percent distribution of births during the three years preceding the survey by number of antenatal check-ups and by the stage of pregnancy at the time of the first check-up, according to residence, Kerala, 1999

Number and timing of check-ups	Urban	Rural	Total
Number of antenatal check-ups			
0	0.0	0.4	0.3
1	0.0	0.4	0.3
2	0.6	0.2	0.3
3	0.6	4.7	3.9
4+	98.2	93.4	94.3
Don't know/missing	0.6	0.9	0.9
Total percent	100.0	100.0	100.0
Median number of check-ups (for those who received at least one antenatal check-up)	9.0	8.5	8.7
Stage of pregnancy at the time of the first antenatal check-up			
No antenatal check-up	0.0	0.4	0.3
First trimester	92.3	78.5	81.1
Second trimester	6.5	18.1	15.9
Third trimester	0.6	2.1	1.8
Don't know/missing	0.6	0.9	0.9
Total percent	100.0	100.0	100.0
Median months pregnant at first antenatal check-up (for those who received at least one antenatal check-up)	2.0	2.2	2.2
Number of births	134	572	707

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

antenatal care is initiated as late as the third trimester, there is a substantial reduction in perinatal mortality (Ramachandran, 1992).

In India, the Reproductive and Child Health Programme includes the provision of at least three antenatal care visits for pregnant women. Guidelines for the programme require that each pregnancy be registered in the first 12–16 weeks (Ministry of Health and Family Welfare, 1997). Accordingly, the first antenatal check-up should take place no later than the second trimester of pregnancy. NFHS-2 asked women who received antenatal check-ups for births in the three years preceding the survey about the total number of check-ups they received and when in their pregnancies they received their first check-up.

Table 8.3 shows the percent distribution of births in the three years preceding the survey by the number and timing of antenatal check-ups. In Kerala, mothers of 94 percent of births received at least four antenatal check-ups (up from 88 percent in NFHS-1) and another 4 percent had three check-ups. By comparison, mothers of only 44 percent of births in India as a whole, received three or more check-ups. There are almost no urban-rural differentials in Kerala in the proportion of births for which mothers received at least three check-ups, although urban women

are slightly more likely than rural women to receive four or more check-ups. The median number of antenatal check-ups for those who received at least one check-up was 9, and was only slightly higher in urban areas than in rural areas.

Eighty-one percent of births that took place in the three years preceding the survey were to mothers who received their first antenatal check-up in the first trimester of pregnancy (up substantially from 70 percent in NFHS-1), and another 16 percent were to mothers who received their first check-up in the second trimester. By contrast, in India as a whole, mothers of only 33 percent of births received their first antenatal check-up in the first trimester of pregnancy. Check-ups during the first trimester were much more common in urban areas (92 percent) than in rural areas (79 percent). In the state as a whole, the first check-up was received in the third trimester for only 2 percent of births. The median timing of the first antenatal check-up was 2.2 months in rural areas, 2.0 months in urban areas, and 2.2 months in the state as a whole.

Components of Antenatal Check-Ups

The effectiveness of antenatal check-ups in ensuring safe motherhood depends in part on the tests and measurements done and the advice given during the check-ups. NFHS-2 collected information on these important aspects of antenatal care for the first time by asking mothers who received antenatal check-ups whether they received each of several components of antenatal check-ups at least once during any of their check-ups during pregnancy. For births during the three years preceding the survey for which antenatal check-ups were received, Table 8.4 presents the percentage whose mothers received specific components of check-ups by residence. Except

Table 8.4 Components of antenatal check-ups

Among births during the three years preceding the survey for which an antenatal check-up was received, percentage receiving specific components of antenatal check-ups by residence, Kerala, 1999

Components of antenatal check-ups	Urban	Rural	Total
Antenatal measurements/tests			
Weight measured	81.8	78.9	79.5
Height measured	25.6	26.9	26.7
Blood pressure checked	98.8	96.5	96.9
Blood tested	99.4	94.8	95.7
Urine tested	99.4	96.3	96.9
Abdomen examined	98.2	94.2	95.0
Internal examination	66.9	60.4	61.6
X-ray	4.6	3.7	3.9
Sonography or ultrasound	56.7	40.6	43.7
Amniocentesis	4.2	2.4	2.8
Antenatal advice			
Diet	76.9	71.4	72.5
Danger signs of pregnancy	49.1	41.2	42.7
Delivery care	43.3	36.9	38.1
Newborn care	37.9	32.7	33.7
Family planning	30.2	29.9	30.0
Number of births for which the mother received at least one antenatal check-up	133	565	698

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

for X-rays (which are not recommended as a standard component of antenatal care), all of the measurements and tests are part of essential obstetric care or are required for monitoring high-risk pregnancies.

Among all births for which mothers received antenatal check-ups, in 95–97 percent of cases each, mothers had their blood pressure checked, urine tested, blood tested, and abdomen examined. Other common components of antenatal check-ups were weight measurement (80 percent) and internal examinations (62 percent). In addition, mothers of 44 percent of the births had a sonogram or ultrasound (the corresponding all-India estimate is only 18 percent) and mothers of 27 percent of births had their height measured. X-ray examinations (4 percent) and amniocentesis (3 percent) were rarely performed. All of these measurements or tests, except the measuring of height, were performed more often for women living in urban areas than for women living in rural areas. The differences by residence are pronounced only in the case of sonography or ultrasound, which was performed in the case of 57 percent of urban births, but 41 percent of rural births.

Table 8.4 also shows the type of advice received by mothers who had antenatal check-ups for births in the three years preceding the survey. Dietary advice was given to mothers most often (in 73 percent of cases). Mothers were much less likely to receive advice on danger signs of pregnancy (43 percent), delivery care (38 percent), newborn care (34 percent), and family planning (30 percent). A similar proportion of urban and rural mothers received advice on family planning, but the proportions receiving advice on each of the other topics is higher in urban areas than in rural areas.

Tetanus Toxoid Vaccination

In India, an important cause of death in infancy is neonatal tetanus, which is caused by newborn infants becoming infected by tetanus organisms, usually at the umbilical stump. Neonatal tetanus is most common among children who are delivered in unhygienic environments and when unsterilized instruments are used to cut the umbilical cord. Tetanus typically develops during the first or second week of life and is fatal in 70–90 percent of cases (Foster, 1984). If neonatal tetanus infection occurs where expert medical help is not available, as is common in many rural areas in India, death is almost certain. Neonatal tetanus, however, is a preventable disease. Two doses of tetanus toxoid vaccine given one month apart during early pregnancy are nearly 100 percent effective in preventing tetanus among both newborn infants and their mothers. Immunity against tetanus is transferred to the foetus through the placenta when the mother is vaccinated.

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

Table 8.5 Tetanus toxoid vaccination and iron and folic acid tablets or syrup

Percent distribution of births during the three years preceding the survey by the number of tetanus toxoid injections received by the mother, percentage of births for which the mothers were given iron and folic acid (IFA) tablets or syrup during pregnancy, and among those who received iron and folic acid tablets or syrup, percentage who received enough for three months or longer and percentage who consumed all the supply given, according to selected background characteristics, Kerala, 1999

Background characteristic	Number of tetanus toxoid injections					Percentage given iron and folic acid tablets or syrup	Number of births	Percentage who received supply for 3+ months[1]	Percentage who consumed all the supply[1]	Number of births whose mothers received IFA
	None	One	Two or more	Don't know/ missing	Total percent					
Mother's age at birth										
< 20	6.1	1.6	92.3	0.0	100.0	93.8	71	90.2	95.0	67
20–34	5.2	5.7	85.8	3.3	100.0	95.8	607	93.5	91.7	582
35–49	(11.2)	(2.8)	(86.0)	(0.0)	100.0	(85.0)	29	(91.2)	(96.7)	24
Birth order										
1	4.4	2.7	90.1	2.7	100.0	96.0	282	94.9	92.3	270
2–3	4.8	6.8	85.2	3.2	100.0	96.0	377	92.8	92.4	362
4–5	(12.4)	(9.5)	(78.1)	(0.0)	100.0	(91.0)	35	(86.4)	(87.2)	32
Residence										
Urban	3.5	7.0	86.0	3.5	100.0	96.5	134	92.8	90.9	130
Rural	6.1	4.8	86.5	2.7	100.0	94.9	572	93.2	92.6	543
Mother's education										
Illiterate	(13.7)	(2.7)	(83.7)	(0.0)	100.0	(81.6)	29	*	*	24
Literate, < middle school complete	8.3	7.6	81.1	3.0	100.0	93.8	153	95.6	92.6	144
Middle school complete	5.1	6.1	83.5	5.2	100.0	94.9	144	91.5	89.4	137
High school complete and above	4.0	4.0	89.9	2.0	100.0	96.9	380	93.1	93.2	368
Religion										
Hindu	4.2	3.8	88.8	3.2	100.0	95.6	315	94.9	93.3	302
Muslim	7.6	5.9	84.6	1.9	100.0	94.0	285	91.8	91.0	268
Christian	4.1	7.4	84.4	4.0	100.0	97.0	106	91.4	92.4	103
Caste/tribe										
Scheduled caste	3.8	7.2	85.1	3.9	100.0	98.1	57	92.9	94.7	56
Other backward class	4.6	5.5	85.7	4.2	100.0	94.9	303	95.8	89.4	288
Other[2]	5.9	4.7	88.0	1.4	100.0	95.5	339	91.0	94.2	323
Standard of living index										
Low	10.4	3.9	81.6	4.1	100.0	91.9	105	91.0	93.0	97
Medium	4.0	6.0	87.1	2.8	100.0	95.1	397	93.5	90.8	378
High	6.1	4.2	87.6	2.1	100.0	96.9	204	93.5	94.7	198
Total	5.6	5.2	86.4	2.8	100.0	95.2	707	93.1	92.2	673

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes a small number of births of order 6 or more and births to mothers belonging to the scheduled tribes, which are not shown separately.
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases
[1]Among births whose mothers received iron and folic acid tablets or syrup
[2]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

inoculation is recommended every three years. If two doses were received less than three years earlier, a single booster injection is recommended.

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

Table 8.5 shows the distribution of births by the number of tetanus toxoid injections given to mothers, according to selected background characteristics. Tetanus toxoid coverage in Kerala is high, but not yet complete. For births in the three years preceding the survey, 86 percent of mothers received at least two tetanus toxoid injections during pregnancy, and another 5 percent received one injection. The proportion of mothers who received two or more tetanus toxoid injections during their pregnancies has declined since NFHS-1 (when it was 91 percent); however, the proportion that received at least one injection has remained virtually unchanged between NFHS-1 and NFHS-2. In comparison to other states, Kerala (along with Goa) ranks third after Tamil Nadu and Punjab in the coverage for two or more tetanus toxoid vaccinations. The coverage in Kerala remains far above the national average of 67 percent, however.

Tetanus toxoid coverage varies little by background characteristics. Nonetheless, it is notable that mothers who are illiterate, of high parity, older, and from households with a low standard of living are all somewhat more likely than other mothers to have received no tetanus toxoid injections. Despite the fact that births to mothers in these groups constitute only a small proportion of all births, these results suggest that special effort is needed to reach the more socioeconomically disadvantaged and high-parity women.

Iron and Folic Acid Supplementation

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

For each birth during the three years preceding the survey, NFHS-2 collected information on whether the mother received IFA tablets or syrup during pregnancy. IFA syrup was included in the question along with IFA tablets since IFA syrup is sometimes prescribed in the private sector and may even be prescribed in the public sector when and where tablets are not available. Table 8.5 shows that mothers in Kerala received IFA supplements for 95 percent of births, up from 92 percent at the time of NFHS-1. The IFA coverage in Kerala is higher than in all other

states of India and much higher than the national average of 58 percent. As with tetanus toxoid coverage, IFA coverage in Kerala is slightly below average for births to socioeconomically disadvantaged mothers (i.e., illiterate or from households with a low standard of living), older mothers, and mothers of higher-order births, however.

Almost all mothers who received IFA received the recommended three-month supply of tablets or syrup. Among births to women who received IFA during pregnancy, 93 percent received at least a three-month supply and 92 percent consumed all the supplements that were given to them. Differentials by background characteristics in the proportion that received at least a three-month supply and the proportion that consumed all the supply received are all relatively small.

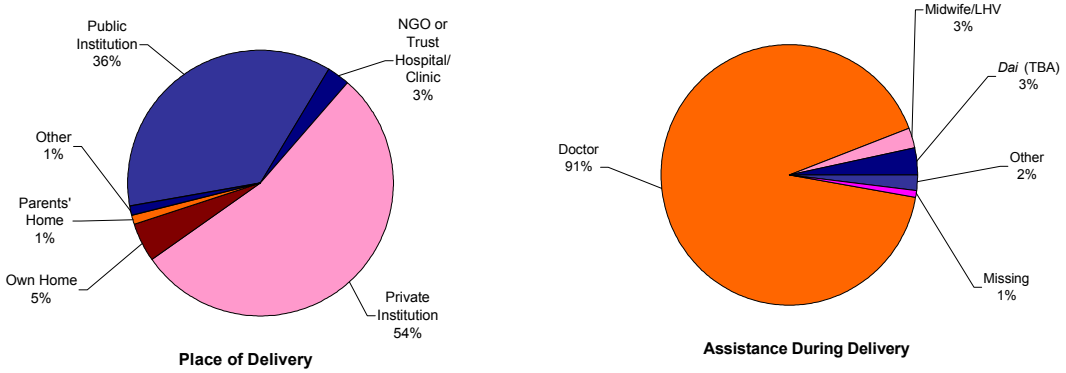
8.2 Delivery Care

Place of Delivery

Another important thrust of the Reproductive and Child Health Programme is to encourage deliveries under proper hygienic conditions under the supervision of trained health professionals. For each birth during the three years preceding the survey, NFHS-2 asked the mother where she gave birth and who assisted during the delivery. Table 8.6 and Figure 8.2 show that 93 percent of births in Kerala took place in health facilities (up slightly from 89 percent in NFHS-1), 5 percent took place in the women's own homes, and 1 percent took place in their parents' homes. Fifty-eight percent of births taking place in institutions took place in private health facilities, 39 percent in public institutions (such as government-operated district, *tehsil*, town, or municipal hospitals and Primary Health Centres), and 3 percent in nongovernmental organization or trust institutions. The NFHS-2 overall estimate of 93 percent of births in health facilities is slightly lower than the estimate of 97 percent from the Rapid Household Survey under the RCH Programme (International Institute for Population Sciences, 2001), as well as the 1997 SRS.

In Kerala, almost all births in urban areas were institutional births, whereas in rural areas, 8 percent of births were noninstitutional births. Noninstitutional births are particularly common

Figure 8.2
Place of Delivery and Assistance During Delivery



NFHS-2, Kerala, 1999

Table 8.6 Place of delivery

Percent distribution of births during the three years preceding the survey by place of delivery, according to selected background characteristics, Kerala, 1999

Background characteristic	Place of delivery						Total percent	Number of births
	Health facility/institution			Home				
	Public	NGO/ trust	Private	Own home	Parents' home	Other[1]		
Mother's age at birth								
< 20	41.0	7.6	40.7	7.6	3.1	0.0	100.0	71
20–34	36.2	2.5	55.0	3.9	1.1	1.2	100.0	607
35–49	(26.6)	(0.0)	(58.4)	(15.0)	(0.0)	(0.0)	100.0	29
Birth order								
1	33.4	5.1	57.4	1.9	0.8	1.4	100.0	282
2–3	40.0	1.7	52.0	4.0	1.5	0.9	100.0	377
4–5	(33.7)	(0.0)	(38.6)	(24.7)	(3.0)	(0.0)	100.0	35
Residence								
Urban	42.1	1.8	55.5	0.0	0.0	0.6	100.0	134
Rural	35.0	3.2	53.3	5.8	1.5	1.1	100.0	572
Mother's education								
Illiterate	(24.6)	(3.8)	(42.1)	(29.4)	(0.0)	(0.0)	100.0	29
Literate, < middle school complete	42.1	2.1	39.5	10.5	4.3	1.4	100.0	153
Middle school complete	41.9	1.3	49.3	4.5	0.8	2.2	100.0	144
High school complete and above	32.8	3.8	62.0	0.6	0.3	0.5	100.0	380
Religion								
Hindu	46.4	2.4	47.2	2.1	0.4	1.6	100.0	315
Muslim	28.9	2.9	56.5	9.1	2.7	0.0	100.0	285
Christian	26.4	4.6	66.0	1.0	0.0	2.0	100.0	106
Caste/tribe								
Scheduled caste	48.9	0.0	43.4	3.8	1.9	1.9	100.0	57
Other backward class	43.7	1.4	47.4	5.0	1.1	1.4	100.0	303
Other[2]	28.0	4.5	61.8	3.8	1.3	0.6	100.0	339
Standard of living index								
Low	52.8	3.1	25.6	9.2	5.2	4.1	100.0	105
Medium	41.3	2.8	49.4	5.5	0.6	0.5	100.0	397
High	18.1	3.1	76.7	1.0	0.5	0.5	100.0	204
Number of antenatal check-ups								
3	(26.5)	(0.0)	(38.8)	(34.6)	(0.0)	(0.0)	100.0	28
4+	37.1	3.1	55.2	3.1	1.3	0.2	100.0	667
Total	36.3	2.9	53.7	4.7	1.2	1.0	100.0	707

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 13 births of order 6 or more, 7 births to mothers belonging to the scheduled tribes, 6 births to mothers with less than three antenatal check-ups, and 6 births with missing information on the number of antenatal check-ups received by the mother, which are not shown separately.
NGO: Nongovernmental organization
( ) Based on 25–49 unweighted cases
[1]Includes missing
[2]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Table 8.7 Assistance during delivery

Percent distribution of births during the three years preceding the survey by attendant assisting during delivery, according to selected background characteristics, Kerala, 1999

Background characteristic	Attendant assisting during delivery[1]					Total percent	Number of births
	Doctor	ANM/nurse/ midwife/ LHV	*Dai* (TBA)	Other	Missing		
Mother's age at birth							
< 20	86.2	4.6	4.6	4.6	0.0	100.0	71
20–34	92.5	2.4	2.5	1.6	1.0	100.0	607
35–49	(81.2)	(3.8)	(11.2)	(3.8)	(0.0)	100.0	29
Birth order							
1	93.4	2.9	1.5	0.8	1.4	100.0	282
2–3	92.2	2.2	2.9	2.0	0.6	100.0	377
4–5	(75.1)	(6.2)	(12.6)	(6.1)	(0.0)	100.0	35
Residence							
Urban	97.6	1.8	0.0	0.0	0.6	100.0	134
Rural	89.9	2.9	3.8	2.5	0.9	100.0	572
Mother's education							
Illiterate	(66.8)	(7.3)	(22.2)	(3.7)	(0.0)	100.0	29
Literate, < middle school complete	85.1	2.1	5.7	6.4	0.7	100.0	153
Middle school complete	90.6	2.6	3.0	1.5	2.2	100.0	144
High school complete and above	96.1	2.6	0.6	0.3	0.5	100.0	380
Religion							
Hindu	93.3	3.0	1.1	1.4	1.3	100.0	315
Muslim	88.2	2.3	6.1	3.4	0.0	100.0	285
Christian	94.1	2.8	1.0	0.0	2.0	100.0	106
Caste/tribe							
Scheduled caste	88.4	5.8	2.0	1.9	1.9	100.0	57
Other backward class	90.9	2.7	4.7	0.7	1.1	100.0	303
Other[2]	93.4	1.9	1.6	2.6	0.6	100.0	339
Standard of living index							
Low	82.8	1.8	7.2	5.2	3.1	100.0	105
Medium	90.9	3.4	3.6	1.6	0.5	100.0	397
High	96.8	1.6	0.0	1.1	0.5	100.0	204
Number of antenatal check-ups							
3	(61.4)	(11.6)	(15.6)	(11.4)	(0.0)	100.0	28
4+	93.9	2.3	2.5	1.3	0.0	100.0	667
Place of delivery							
Public health facility	96.5	3.5	0.0	0.0	0.0	100.0	257
Private health facility	98.8	1.2	0.0	0.0	0.0	100.0	380
Own home	(3.1)	(15.8)	(48.9)	(32.2)	(0.0)	100.0	33
Total	91.4	2.7	3.1	2.0	0.9	100.0	707

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 13 births of order 6 or more, 7 births to mothers belonging to the scheduled tribes, 6 births to mothers with less than three antenatal check-ups, 6 births with missing information on the number of antenatal check-ups received by the mother, and 21, 9, and 7 births delivered in nongovernmental organization or trust hospitals/clinics, parents' homes, and 'other' places, respectively, which are not shown separately.

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

( ) Based on 25–49 unweighted cases

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

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

(12–35 percent) among the small proportions of women who have had only three antenatal check-ups, illiterate women, women having higher order births, women who were age 35–49 at the time of birth, women who have not completed middle school, women from households with a low standard of living, and Muslim women.

Assistance During Delivery

Table 8.7 and Figure 8.2 provide information on assistance during delivery by selected background characteristics. If more than one type of attendant assisted at delivery, only the most qualified attendant is shown. Ninety-four percent of births in the three years preceding the survey were attended by a health professional, almost all by a doctor. Comparable estimates of assistance during delivery by type of provider at the national level are 42 percent by a health professional, 30 percent by a doctor, and 11 percent by an ANM, nurse, midwife, or LHV. In Kerala, only 3 percent of births were attended by a traditional birth attendant, and 2 percent were attended only by friends, relatives, or other persons. According to the two NFHS surveys, the proportion of deliveries attended by a health professional increased from 90 percent in NFHS-1 to 94 percent in NFHS-2.

As in the case of noninstituional deliveries, the deliveries least likely to be attended by a doctor or other health professional (such as an ANM or a nurse, midwife, or lady health visitor), are deliveries of women who had only three antenatal check-ups, illiterate women, women having births of order four or five, women older than 34 at the time of birth, women who have not completed middle school, women from households with a low standard of living, and Muslim women. In addition, 81 percent of the small proportion of births that took place at home were not attended by a doctor or other health professional. While the number of births in some of these population sub-groups are too small to draw any definitive conclusions, the data on place of delivery and assistance during delivery clearly indicate that more efforts are needed to reach socially disadvantaged groups if all the goals of safe motherhood are to be achieved.

Delivery Characteristics

Table 8.8 shows the percentage of births during the three years preceding the survey that were delivered by caesarian section and the percent distribution of births by birth weight and the mother's estimate of the baby's size at birth. Based on mothers' reports, 29 percent of children born in Kerala in the past three years were delivered by caesarian section. This proportion is not only the highest among all the states in India, but is more than four times the national average of 7 percent. The proportion of caesarian-section deliveries was higher in urban areas (38 percent) than in rural areas (27 percent). Twenty-eight percent of deliveries in public institutions were caesarian sections, compared with 34 percent of deliveries in private institutions (data not shown).

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

Table 8.8 Characteristics of births

Percentage of births during the three years preceding the survey that were delivered by caesarian section and percent distribution of births by birth weight and by the mother's estimate of the baby's size at birth, according to residence, Kerala, 1999

Characteristic of births	Urban	Rural	Total
Percentage delivered by caesarian section	37.5	27.4	29.3
Birth weight			
< 2.5 kg	14.0	15.3	15.1
2.5 kg or more	83.7	67.6	70.7
Don't know/missing	2.3	7.4	6.4
Not weighed	0.0	9.7	7.8
Total percent	100.0	100.0	100.0
Size at birth			
Large	28.1	21.6	22.8
Average	53.0	51.1	51.5
Small	17.7	23.7	22.6
Very small	0.6	2.6	2.3
Don't know/missing	0.6	0.9	0.9
Total percent	100.0	100.0	100.0
Number of births	134	572	707

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

In Kerala, only 8 percent of babies born in the three years preceding the survey were not weighed at birth. All babies born to mothers in urban areas were weighed and 98 percent of mothers were able to report the birth weight of the child; by contrast, in rural areas 10 percent of babies were not weighed and another 7 percent of mothers were not able to report birth weights. The resulting sample of births for which weights are reported in rural areas (and consequently for all births) is subject to a potentially large selection bias, and the results should be interpreted with caution. Among the children for whom birth weights are reported, 18 percent weighed less than 2.5 kilograms. The proportion weighing less than 2.5 kilograms is slightly lower in urban areas (14 percent) than in rural areas (18 percent).

According to mothers' estimates, 23 percent of births in the three years preceding the survey were large, 52 percent were of average size, 23 percent were small, and 2 percent were very small. The proportion of babies reported as small or very small was 18 percent in urban areas and 26 percent in rural areas.

8.3 Postnatal Care

The health of a mother and her newborn child depends not only on the health care she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery. Postpartum check-ups within two months after delivery are particularly important for births that take place in noninstitutional settings. Recognizing the importance of postpartum check-ups, the Reproductive and Child Health Programme recommends three postpartum visits (Ministry of Health and Family Welfare, 1998b).

Only 43 births in the three years preceding the survey in Kerala were noninstitutional births. Among these few births, 27 percent were followed by a postpartum check-up within two months of delivery and only 8 percent were followed by a check-up within two days of delivery, which is the most crucial period (data not shown). While this small number of births does not allow any definitive conclusions, these data suggest that women who do not deliver in institutions are unlikely to receive postpartum care. Thus it appears that while a large majority of births in Kerala take place in institutions, the few which do not are unlikely to receive medical assistance during or after delivery.

Postpartum Complications

Every woman who had a birth in the three years preceding the survey was asked if she had massive vaginal bleeding or a very high fever—both symptoms of possible postpartum complications—at any time during the two months after delivery. For 11 percent of births, the mother reported very high fever, and for 9 percent of births, the mother reported massive vaginal bleeding following the birth (Table 8.9). These proportions vary little by birth order, but mothers who were less than 20 years old at the time of the birth report both complications much more often than older mothers. Both complications are slightly more common for births to rural mothers than urban mothers, but vary little between births that took place in public medical institutions and those that took place in private medical institutions.

Table 8.9 Symptoms of postpartum complications

Among births during the three years preceding the survey, percentage for which the mother had massive vaginal bleeding or very high fever within two months after the delivery by selected background characteristics, Kerala, 1999

Background characteristic	Massive vaginal bleeding	Very high fever	Number of births
Residence			
Urban	7.3	7.9	130
Rural	9.6	11.6	545
Mother's age at birth			
< 20	14.0	18.8	70
20–34	8.8	10.1	576
35–49	(3.7)	(7.5)	29
Birth order			
1	8.1	11.3	265
2–3	9.6	10.8	362
4–5	(12.3)	(9.2)	35
Place of delivery			
Public health facility	8.1	11.1	242
Private health facility	9.5	11.0	363
Own home	(6.5)	(6.3)	33
Total	9.1	10.9	675

Note: Table includes only the two most recent births during 2–35 months preceding the survey. Total includes 13 births of order 6 or more and 21, 9, and 7 births delivered in nongovernmental organization or trust hospitals/clinics, parents' homes, and 'other' places, respectively, which are not shown separately.
( ) Based on 25–49 unweighted cases

8.4 Reproductive Health Problems

Absence of reproductive tract infections (RTIs) is essential for the reproductive health of both women and men and is critical for their ability to meet their reproductive goals. There are three different types of reproductive tract infections for women: endogenous infections that are caused by the multiplying of organisms normally present in the vagina; iatrogenic infections caused by the introduction of bacteria or other infection-causing micro-organisms through medical procedures such as an IUD insertion; and sexually transmitted infections (STIs). Endogenous infections and several of the iatrogenic and sexually transmitted infections are often easily cured if detected early and given proper treatment. If left untreated, RTIs can cause pregnancy-related complications, congenital infections, infertility, and chronic pain. They are also a risk factor for pelvic inflammatory disease and HIV (Population Council, 1999).

A number of studies (Bang et al., 1989; Bang and Bang, 1991; Pachauri and Gittelsohn, 1994; Jeejeebhoy and Rama Rao, 1992) have shown that many Indian women suffer from RTIs. Several researchers have also shown that women in India often bear the symptoms of RTIs silently without seeking health care. RTIs and their sequellae are an important component of programmes for family planning, child survival, women's health, safe motherhood, and HIV prevention. RTIs have profound implications for the success of each of these initiatives, and conversely, these initiatives provide a critical opportunity for the prevention and control of RTIs (Germain et al., 1992). Studies have demonstrated that RTIs are an important reason for the poor acceptance and low continuation rates of contraceptive methods such as the IUD. Bhatia and Cleland (1995) found a higher incidence of gynaecological symptoms among women who had undergone a tubectomy than among other women. The Government of India recognized the importance of RTIs and STIs in undermining the health and welfare of individuals and couples in a policy statement on the Reproductive and Child Health Programme, which states that couples should be 'able to have sexual relations free of fear of pregnancy and contracting diseases' (Ministry of Health and Family Welfare, 1997:2). The Reproductive and Child Health Programme includes the following interventions: establishment of RTI/STI clinics at district hospitals (where not already available), provision of technicians for laboratory diagnosis of RTIs/STIs, and in selected districts, screening and treatment of RTIs/STIs (Ministry of Health and Family Welfare, 1997).

NFHS-2 collected information from women on some common symptoms of RTIs, namely problems with abnormal vaginal discharge or urinary tract infections in the three months preceding the survey, intercourse-related pain (often), and bleeding after intercourse (ever). Specifically, the prevalence of reproductive health problems among ever-married women is estimated from women's self-reported experience with each of the following problems: vaginal discharge accompanied by itching, by irritation around the vaginal area, by bad odour, by severe lower abdominal pain, by fever, or by any other problem; pain or burning while urinating or frequent or difficult urination; and (among currently married women only) painful intercourse or bleeding after intercourse. Women who experience one or more of these reproductive health problems could either have or be at risk of getting an RTI/STI. However, since information on health problems is based on self reports rather than clinical tests or examinations, the results should be interpreted with caution.

Table 8.10 shows the prevalence of different reproductive health problems among women in Kerala by background characteristics. Twenty-six percent of ever-married women

Table 8.10 Symptoms of reproductive health problems

Percentage of ever-married women reporting abnormal vaginal discharge or symptoms of a urinary tract infection during the three months preceding the survey and percentage of currently married women reporting painful intercourse or bleeding after intercourse by selected background characteristics, Kerala, 1999

	Ever-married women									Currently married women			
		Vaginal discharge accompanied by:											
Background characteristic	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain[1]	Fever	Other problem	Symptoms of a urinary tract infection[2]	Any abnormal vaginal discharge or symptoms of a urinary tract infection[2]	Number of ever-married women	Painful intercourse (often)	Bleeding after intercourse (ever)[1]	Any reproductive health problem	Number of currently married women
Age													
15–19	17.1	10.0	4.2	7.3	1.3	1.3	15.0	26.3	89	22.2	7.0	39.0	89
20–24	23.1	11.1	3.1	15.6	3.7	3.3	19.2	34.4	370	20.2	5.2	42.7	363
25–29	25.9	14.1	3.0	16.6	4.6	3.0	20.1	35.2	553	18.2	3.2	44.6	533
30–34	30.4	15.2	4.8	21.1	4.2	3.7	18.5	37.8	527	16.6	3.8	44.9	511
35–39	30.0	14.9	6.2	21.8	6.5	2.4	20.0	37.9	520	15.4	4.4	42.2	473
40–44	25.1	13.7	3.4	16.9	5.2	2.0	21.1	35.9	445	16.3	2.9	42.1	399
45–49	22.1	12.1	2.2	15.2	4.1	2.1	18.3	31.5	381	11.7	1.7	36.1	309
Residence													
Urban	21.7	10.4	3.4	13.3	3.8	2.0	17.5	30.5	667	14.8	3.6	37.4	628
Rural	27.6	14.6	4.1	19.2	4.9	3.0	20.0	36.9	2,217	17.4	3.7	44.0	2,048
Education													
Illiterate	31.3	14.9	5.9	23.8	8.7	3.1	24.6	41.4	362	15.5	4.9	47.8	299
Literate, < middle school complete	30.1	15.7	4.8	21.7	6.9	3.9	20.8	39.2	871	18.4	4.2	45.4	781
Middle school complete	24.2	12.4	4.0	17.1	3.7	1.5	18.9	33.7	493	16.0	3.5	40.6	468
High school complete and above	22.5	12.1	2.7	13.4	2.2	2.2	17.0	31.4	1,158	16.3	3.2	39.7	1,127
Religion													
Hindu	26.2	12.9	3.9	17.2	3.6	2.5	18.7	35.4	1,478	14.9	3.5	42.0	1,367
Muslim	27.5	15.5	4.2	19.6	7.1	3.1	21.7	37.5	941	18.5	5.1	44.8	864
Christian	23.7	12.3	3.5	16.2	3.3	2.9	17.3	31.1	462	19.3	1.4	39.3	443
Caste/tribe													
Scheduled caste	32.1	14.5	4.4	21.9	4.1	2.8	20.4	42.7	252	19.8	5.0	51.4	232
Scheduled tribe	(34.5)	(10.4)	(3.3)	(31.2)	(10.2)	(0.0)	(19.8)	(37.1)	32	(15.5)	(0.0)	(46.4)	28
Other backward class	25.9	12.2	3.4	18.7	5.6	3.1	20.7	36.3	1,244	18.5	5.6	44.5	1,144
Other	25.2	14.8	4.3	15.9	3.8	2.5	18.1	33.2	1,356	14.7	1.9	38.9	1,271

Contd…

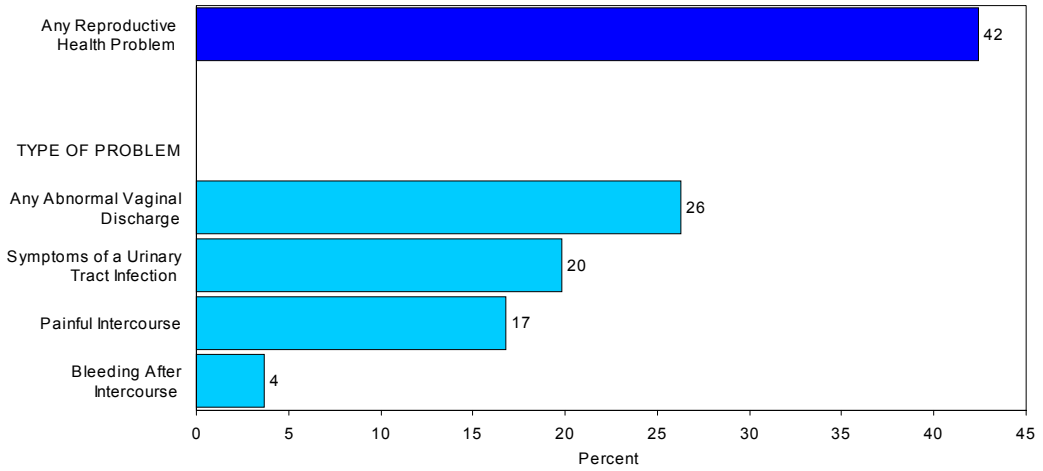
Table 8.10 Symptoms of reproductive health problems (contd.)

Percentage of ever-married women reporting abnormal vaginal discharge or symptoms of a urinary tract infection during the three months preceding the survey and percentage of currently married women reporting painful intercourse or bleeding after intercourse by selected background characteristics, Kerala, 1999

	Ever-married women									Currently married women			
		Vaginal discharge accompanied by:											
Background characteristic	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain[1]	Fever	Other problem	Symptoms of a urinary tract infection[2]	Any abnormal vaginal discharge or symptoms of a urinary tract infection[2]	Number of ever-married women	Painful intercourse (often)	Bleeding after intercourse (ever)[1]	Any reproductive health problem	Number of currently married women
Standard of living index													
Low	30.4	13.2	5.7	23.0	5.4	4.8	22.2	40.4	448	19.0	5.7	47.8	384
Medium	28.6	15.0	4.5	19.9	5.8	2.7	20.6	37.7	1,590	19.1	4.2	45.3	1,477
High	19.5	11.2	1.9	11.2	2.2	1.8	15.8	28.4	846	11.5	1.9	34.7	814
Work status													
Working in family farm/ business	22.4	14.4	3.2	10.7	0.0	0.0	17.9	29.7	69	19.0	1.6	40.7	66
Employed by someone else	28.1	13.1	5.8	20.7	5.1	2.7	19.9	37.1	489	18.9	3.1	45.4	412
Self-employed	23.6	12.0	2.8	17.7	5.6	2.6	17.0	32.9	163	18.0	5.0	45.1	149
Not worked in past 12 months	26.1	13.8	3.6	17.4	4.7	2.8	19.6	35.4	2,163	16.2	3.8	41.7	2,048
Number of children ever born													
0	22.6	14.7	2.9	12.2	4.6	2.9	20.4	32.8	290	25.9	6.1	45.1	262
1	24.1	12.6	3.9	13.7	3.4	3.1	16.3	31.9	520	14.5	3.3	40.8	463
2–3	26.9	13.5	4.4	19.0	4.3	2.7	19.3	35.8	1,650	15.8	3.4	42.0	1,556
4–5	29.0	14.4	2.5	23.3	7.7	2.5	23.4	40.2	329	16.4	2.1	43.6	308
6+	26.5	15.2	3.4	19.3	8.1	2.3	23.0	39.5	96	21.2	9.0	46.9	86
All ever-married women	26.2	13.6	3.9	17.8	4.7	2.7	19.4	35.4	2,884	NA	NA	NA	NA
All currently married women	26.3	13.9	3.8	17.8	4.6	2.8	19.8	35.7	2,675	16.8	3.7	42.4	2,675

Note: Total includes a small number of women belonging to other religions, who are not shown separately.
NA: Not applicable
( ) Based on 25–49 unweighted cases
[1]Not related to menstruation
[2]Includes pain or burning while urinating or more frequent or difficult urination

Figure 8.3
Reproductive Health Problems Among Currently Married Women



NFHS-2, Kerala, 1999

reported at least one type of problem related to vaginal discharge, and 19 percent reported symptoms of a urinary tract infection. Overall, 35 percent of women reported either problems with vaginal discharge or symptoms of a urinary tract infection. Among problems related to vaginal discharge, severe abdominal pain was mentioned most frequently (18 percent), followed by itching or irritation (14 percent). Fever, bad odour, and any other problems were each mentioned by 3–5 percent of women.

Table 8.10 and Figure 8.3 show that 42 percent of currently married women report one or more reproductive health problems (slightly higher than the national average of 39 percent). Seventeen percent report painful intercourse and 4 percent report bleeding after intercourse.

Reproductive health problems are slightly more common among women in the middle of the reproductive age span than at the two ends (age 15–19 and age 45–49). They are more common among urban women (44 percent) than among rural women (37 percent). The prevalence of reproductive health problems declines steadily with education, from 48 percent among illiterate women to 40 percent among women who have completed at least high school. Reported reproductive health problems vary only slightly by religion, with Muslim women slightly more likely than women of other religions to report any abnormal vaginal discharge, symptoms of a urinary tract infection, and bleeding after intercourse. By caste/tribe, the prevalence of reproductive health problems ranges from a high of 51 percent among women from the scheduled castes to 39 percent among women who do not belong to the scheduled castes, scheduled tribes, or other backward classes. Reproductive health problems among women decline with the household standard of living. Specifically, 48 percent of women from households with a low standard of living report any reproductive health problem compared with35 percent of women from households with a high standard of living. The prevalence of these problems is somewhat higher for women who are self-employed or employed by a person outside the family than for other women. Among women who have ever had a birth, the

Table 8.11 Treatment of reproductive health problems

Among women with a reproductive health problem, percentage who sought advice or treatment from specific providers by residence, Kerala, 1999

Provider	Urban	Rural	Total
Public medical sector	15.0	13.3	13.6
Government doctor	15.0	13.1	13.5
ANM/LHV	0.0	0.1	0.1
Private medical sector	31.0	31.8	31.6
Private doctor	27.8	28.4	28.3
Private nurse	0.0	0.2	0.2
Compounder/pharmacist	0.0	0.1	0.1
Vaid/hakim/homeopath	2.9	3.4	3.3
Traditional healer	0.6	0.1	0.2
Other private medical sector	0.0	0.1	0.1
Other	1.6	1.8	1.8
None	53.8	55.5	55.1
Number of women	247	954	1,201

Note: Table includes currently married women who report abnormal vaginal discharge, symptoms of a urinary tract infection, painful intercourse, or bleeding after intercourse and women who are ever married but not currently married who report abnormal vaginal discharge or symptoms of a urinary tract infection. Percentages add to more than 100.0 because women could report treatment from multiple providers.
ANM: Auxiliary nurse midwife; LHV: Lady health visitor

prevalence of reproductive health problems tends to rise with the number of births; however, women with no births also have a relatively high prevalence of reproductive health problems. Despite these differentials, however, at least one out of three currently married women report one or more reproductive health problems in every population subgroup.

Among women who report any reproductive health problems, more than half have not seen anyone for advice or treatment (Table 8.11). The proportion of women who have not obtained advice or treatment is similar in rural and urban areas. Overall, 70 percent of women who obtained advice or treatment were seen by someone in the private medical sector (67 percent in urban areas and 71 percent in rural areas). Among women who sought advice or treatment, 63 percent saw a private doctor and only 30 percent saw a government doctor.

NFHS–2 results in Kerala show that although more than two in every five currently married women report at least one reproductive health problem that could be symptomatic of a more serious reproductive tract infection, more than half of them bear the problems silently without seeking advice or treatment. These findings highlight the urgent need to educate women regarding the symptoms and consequences of reproductive health problems and to expand counselling and reproductive health services in both rural and urban areas.