

Health status of women in India: Evidences from National Family Health Survey-3 (2005-06) and future outlook

Ashok Kumar*
Population Council

M.E.Khan**
Population Council

Abstract

India, in the millennium set goals to minimize women health problems after the ICPD (International Conference on Population and Development, 1994, Cairo). As far as women health is concerned, mainly in the developing countries, including India, the situation is very depressing. Women have disproportionately paid the price of fertility regulation. But have they benefited in terms of better health? This paper, five key factors have been identified in the principal focus of this study: reproductive health, violence against women, nutritional status, unequal treatment of girls and boys, and HIV/AIDS. Analysis shows that the wide variation in cultures, religions, and levels of development among Indian states and union territories, it is not unusual and startling that women's health also varies immensely from state to state. The study suggests that many of the health problems of Indian women are related to or exacerbated by high levels of fertility.

(* Ashok Kumar, Ph.D, *Program Officer* at Population Council, Govt. of Jharkhand, Ranchi, India. Email: akumar@popcouncil.org

** M.E.Khan, Ph.D, *Senior Associate* at Population Council, New Delhi, India. E-Mail: mekhan@popcouncil.org)

Introduction

India is one of the few countries on the planet Earth, where women and men have nearly the same life expectancy at birth. The lack of typical female advantage in life expectancy in India suggests that there are inherent problems with women's health. Indian women have high mortality rates, particularly during childhood and in their reproductive years. The health of Indian women is intrinsically linked to their status in society. Despite many exceptions, studies on women's status have found that the contributions Indian women used to make to families are often overlooked in so many cases, and instead they are taken as economic burdens. There is a strong preference for sons in India, as sons are expected to take care of their parents as they grow old. This son preference, along with high dowry costs for daughters, sometimes results in the mistreatment of daughters. Further, the majority of Indian women have low levels of both education and formal labor force participation. Some studies suggest that they typically have very limited autonomy, firstly living under the control of their fathers, then their husbands, and finally their sons (Chatterjee, 1990; Desai, 1994; Horowitz and Kishwar, 1985; The World Bank, 1996). All of these factors inflict a deleterious impact on the health status of Indian women.

Poor health has repercussions not only for women but also for their infants and other members of family. Women in poor health are more likely to give birth to low weight infants. They also are less likely to be capable to provide food and adequate care to their children. Finally, a woman's health affects the household economic well-being. As a result of poor health, women will be less productive in the labor force.

While women in India face many serious challenges to their health, it is imperative to focus primarily on five key indices: reproductive health, violence against women, nutritional status, unequal treatment of girls and boys, and HIV/AIDS. Because of the wide variation in cultures, religions, and levels of development among Indian states and union territories, it is not unusual and startling that women's health also varies immensely from state to state. To present a more detailed and lucid spectrum, data for the major Indian States will be evidenced, as and when required.

Objectives

The objectives of this study are:

1. To examine the health status of women using indices such as reproductive health, wealth index, and nutritional status.
2. To examine the violence against women in India.
3. To examine the HIV/AIDS pandemic in Indian scenario.

Material and Methods

The present study is based on data from National Family Health Survey –III (2005-06) conducted by the Government of India. In India, NFHS-III data have been collected from 109,041 households in 29 states by interviewing 124,385 eligible women in the age group of 15-49 years. NFHS-III measures the malnutrition status, height and weight of all eligible women age 15-49. The height and weight measurements provide an estimate of the Body Mass Index (BMI), a measure of nutritional status. The BMI is defined as weight in kilograms divided by height in metres squared (kg/m²). A cut-off point of 18.5 is used to define thinness or acute under-nutrition, and a BMI of 25 or above indicates overweight or obesity. NFHS-3 collected data related to domestic violence of women reproductive age those who have experienced with physical violence and sexual violence. And also NFHS-3 collected HIV prevalence data for adult women and men at the national level, for Uttar Pradesh and for five high HIV prevalence states like Andhra Pradesh, Karnataka, Maharashtra, Manipur, and Tamil Nadu.

The paper makes an absorbing quest for the creation of a health status of women in India along with a detailed investigation of the existing problems of reproductive health, violence against women, nutritional status, unequal treatment of girls and boys, and HIV/AIDS. Thus, the scheme of this paper is to examine the extent of the problems and future outlook. Analytical and statistical techniques have been used for interpretation and data representation.

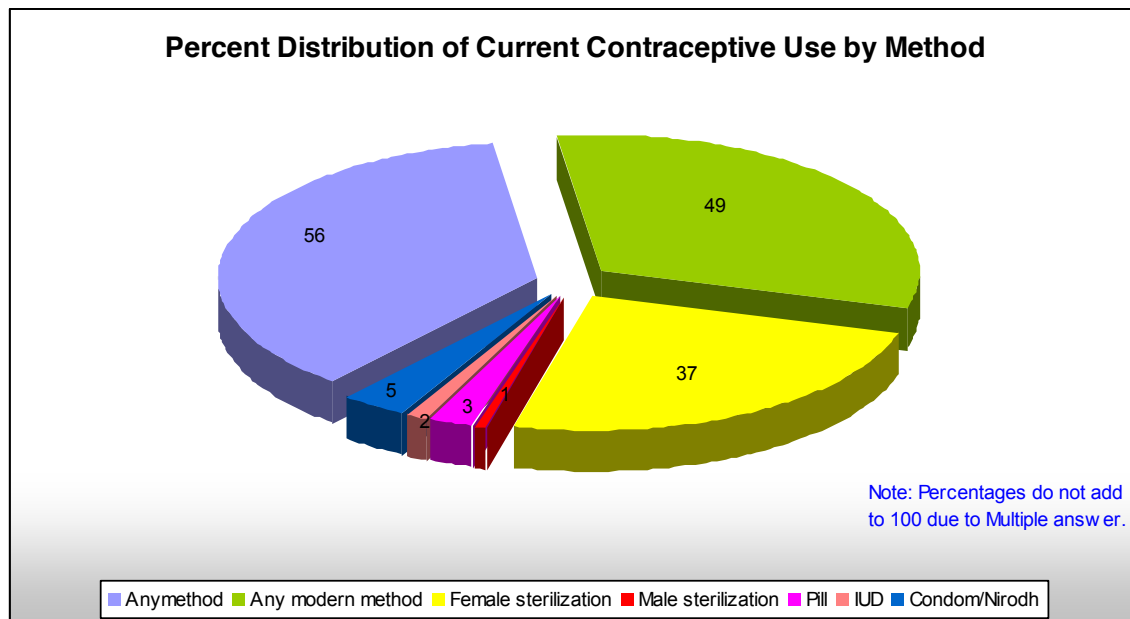
Analysis

Fertility problems intertwined with women's health

Many of the health problems of Indian women are related to or exacerbated by high levels of fertility. Overall, fertility has been declining in India. As estimated, by 2005-06, the total fertility

rate has gone down to 2.7. However, there are large variations in fertility levels as per state, education, religion, caste and place of residence. Uttar Pradesh, and Bihar, the most populous states in India, has a total fertility rate of over 4 children per woman. On the other hand, Kerala, which has relatively high level of female education and autonomy, has a total fertility rate under 2. High levels of infant mortality combined with strong son preference, motivate women to bear large number of children, in an attempt to have a son or two, who could survive to adulthood. Analysis has shown that numerous pregnancies and closely spaced births erode a mother's nutritional status, which can negatively affect the pregnancy outcome (e.g., premature births, low birth-weight babies) and also increase the health risk for mothers (Jejeebhoy and Rao, 1995). Unwanted pregnancies terminated by unsafe abortions also have inflicted negative impact on women's health. Reducing fertility is an important element in improving the overall health of Indian women. Increasing the use of contraceptives is one way to reduce fertility. While the knowledge of family planning is nearly universal in India, only 49 percent of currently married women aged 15 to 49 use modern contraceptives. Female sterilization is the main form of contraception; over two-thirds of the married women using contraception have been sterilized. The following figure (Figure 1) is self-explanatory in this regard.

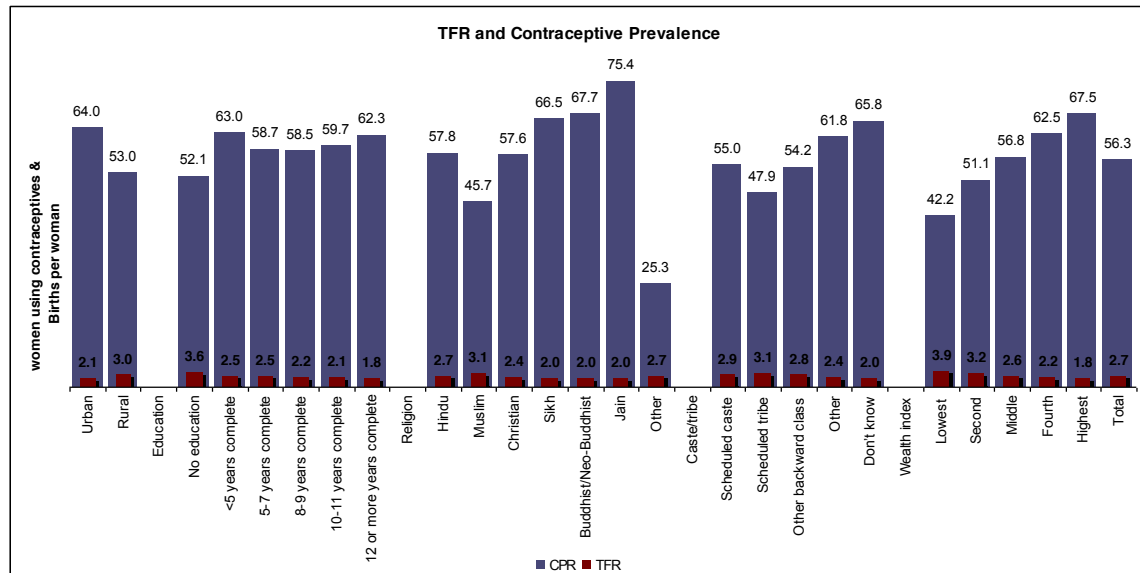
Figure 1: Percentage distribution of currently married women using contraceptives in India, 2005-06.



Place of residence, education and religion are strongly related to both fertility and contraceptive use. More than half of married women with a high school education or above use contraceptives, compared to only one-third of illiterate women. Not surprisingly, the total fertility rates for these

two groups are significantly different: 4 children for illiterate women as compared to 2.2 children for women with a high school education or above. Differentials among the religious groups also are pronounced; e.g., Muslims have the highest total fertility rate and the lowest contraceptive use. Despite a large increase in the number of women using contraceptives and limiting their fertility, there is still unmet need for contraceptives in India. Nearly 20 percent of married women in India either intend to delay next child birth or have no more children. Most of the unmet need among younger women is for delaying births rather than limiting them. This implies that methods other than female sterilization, as strongly promoted by India’s family planning program, needs to be pursued (Figure 2).

Figure 2: Percent Distribution of Fertility and Contraceptive Prevalence by Selected Background Characteristics, India 2005-06

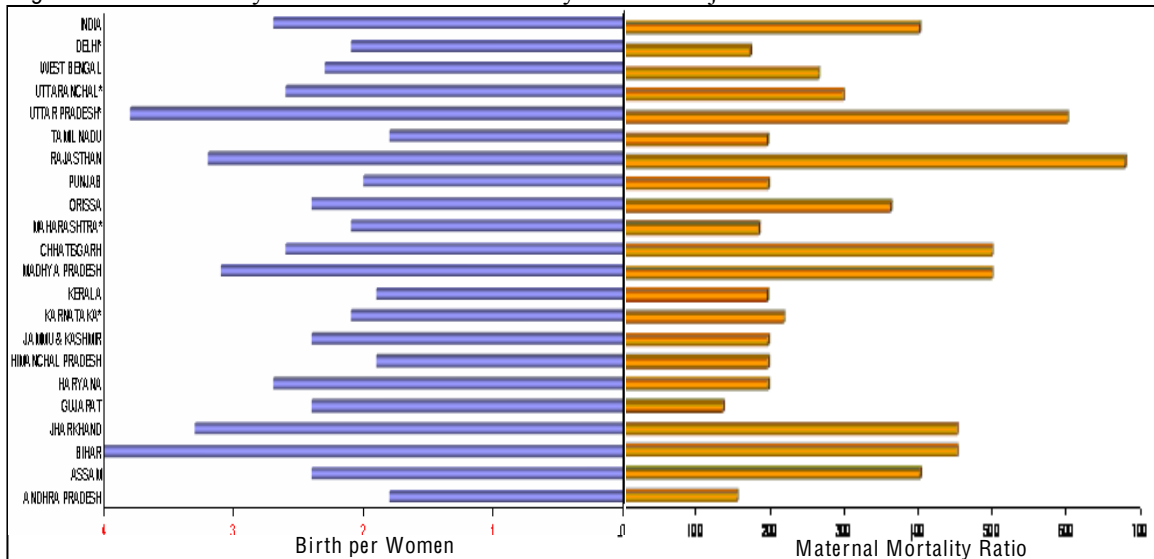


Notably, over 100,000 Indian women die every year due to pregnancy-related factors. The Table 1, depicts that the pregnancy-related health problems most commonly reported are excessive fatigue (48 percent) and swelling of the legs, body, or face (25 percent). Ten percent of mothers had convulsions that were not from fever and nine percent reported night blindness. Only four percent had any vaginal bleeding. The reported prevalence of both kinds of vision problems, convulsions that were not from fever, and excessive fatigue, is higher in rural than in urban areas. In contrast, swelling of the legs, body, or face is more prevalent in urban areas.

Problem during pregnancy	Rural	Urban	Total
Difficulty with vision during daylight	7.2	3.8	6.3
Night blindness	10.8	3.7	8.9
Convulsions not from fever	11.3	7.4	10.3
Swelling of the legs, body, or face	24.1	28	25.1
Excessive fatigue	48.7	45.2	47.8
Vaginal bleeding	4.1	5.2	4.4
Number of women	29,051	10,626	39,677

Maternal mortality and morbidity are two major health concerns that are intertwined with high levels of fertility. India has a high maternal mortality ratio—approximately 400 deaths per 100,000 births in (ICMR, July, 2003). This ratio is 56 times the ratio in the United States. The World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) estimate that India’s maternal mortality ratio is lower than the ratios of Bangladesh and Nepal, but higher than those of Pakistan and Sri Lanka (WHO, 1996). The level of maternal mortality varies greatly from state to state, with Gujarat having the lowest ratio (135) and two states (Rajasthan and Uttar Pradesh) having ratios over 677 & 600 (Figure 3). This differential maternal mortality is most likely determined by the differences in the socio-economic conditions of women and accessibility levels to health care services among different states of the Indian Republic.

Figure 3: Total Fertility Rate and Maternal Mortality Ratio in Major States of India



The high levels of maternal mortality are highly distressing because the majority of these deaths could be prevented if women had availed adequate health care services, in the form of either

proper prenatal care or referral to appropriate health care facilities (Jejeebhoy and Rao, 1995). In fact, the foremost factor contributing to high maternal mortality ratios in India, is the lack of accessibility to health care facilities (The World Bank, 1996).

Another very distressing point is also notable that approximately 58 percent women didn't receive postnatal care. A large proportion of maternal and neonatal deaths happen during the 48 hours after delivery. Table 2 indicates that, 58 percent of all women in India received no postnatal care after delivery. Only 27 percent of women received a health check-up in the first four hours after birth and only 37 percent received a health check-up within the critical first two days after delivery. The likelihood of a birth being followed by a postnatal check-up at all and within two days increases with the educational level of the mother and the household wealth index. There are no marked variations by mother's age, but utilization of postnatal check-ups decreases with increasing birth order. Births to urban mothers are almost twice as likely to be followed by a postnatal check-up (66 percent) as births to rural mothers (34 percent). By religion, births to Muslim women are least likely to be followed by a postnatal check-up.

Births in a private health facility centre are most likely to have a postnatal check-up (85 percent), as well as a check-up in less than four hours (62 percent). Births in the woman's own home or her parents' home are rarely followed by a prompt postnatal check-up. Only 15 percent of women who gave birth at home or in their parents' home received a postnatal check-up; only 6 percent received a check-up within four hours of delivery.

Table 2: Percent distribution of women giving birth and the timing of the first postnatal check-up, according to background characteristics, India, 2005-06

Background characteristic	Less than 4 hours	4-23 hours	1-2 days	3-41 days	No postnatal check-up
Age at birth					
<20	24.7	5.1	5.1	3.7	60.5
20-34	28.6	5.0	5.2	4.1	55.8
35-49	16.0	2.9	4.2	2.0	73.9
Birth order					
1	36.9	7.8	6.5	3.6	43.3
2-3	30.6	4.8	5.5	4.3	53.7
4-5	15.8	2.4	3.3	4.4	73.3
6+	7.1	1.9	2.8	2.6	85.0
Residence					
Urban	45.2	8.1	7.7	2.7	34.3
Rural	20.8	3.7	4.1	4.4	66.1
Education					
No education	13.4	2.4	3.3	3.9	76.4
<5 years complete	23.7	4.5	5.4	5.3	60.2
5-7 years complete	32.8	5.4	5.6	4.4	50.3
8-9 years complete	36.0	7.4	6.9	4.2	44.0
10-11 years complete	48.6	8.5	8.0	3.3	29.7
12 or more years complete	59.2	10.2	8.1	2.9	17.2
Religion					
Hindu	27.7	4.8	5.1	4.1	57.1
Muslim	21.9	5.1	5.0	3.0	64.1
Christian	41.3	6.3	6.5	4.5	39.4
Sikh	50.7	6.7	7.0	2.2	32.0
Other	7.8	2.5	2.1	3.7	83.1
Caste/tribe					
Scheduled caste	23.7	3.9	4.8	3.8	62.9
Scheduled tribe	16.3	2.3	4.4	7.4	68.6
Other backward class	26.4	4.5	4.7	3.7	59.8
Other	34.5	7.0	6.1	3.3	47.4
Don't know	26.3	5.2	5.6	6.9	54.5
Wealth index					
Lowest	9.9	2.0	2.5	4.5	80.7
Second	16.4	2.6	3.8	4.2	72.3
Middle	27.3	4.5	5.0	5.0	57.1
Fourth	37.7	7.3	7.1	3.1	43.2
Highest	55.9	10.1	8.6	2.4	20.7
Place of delivery					
Public sector health facility	53.1	11.1	8.8	1.7	23.5
NGO or trust hospital/clinic	57.6	15.2	8.3	0.8	15.4
Private sector health facility	61.9	10.2	7.8	1.9	15.4
Own home	5.3	0.7	2.7	4.9	86.0
Parents' home	7.1	1.2	3.9	8.3	79.2
Other home	10.6	0.4	0.9	7.0	81.2
Other*	8.1	0.4	0.4	2.6	69.3
Total	27.3	4.9	5.1	3.9	57.6

Note: * Includes missing.

It is also important to underline that majority of births in India take place at home. Site of birth and type of assistance during birth have an impact on maternal health and mortality. Births that take place in non-hygienic conditions or births that are not attended by trained medical personnel are more likely to have deleterious impact and implications for both the mother and the child. The analysis leads to the point that more than half of all births (51.3 percent) took place at own home and two-thirds of all births were not attended by trained medical personnel. Less than 40 percent of births in India take place in health care facilities and nine percent of births take place in the

parents' home. Births in health care facilities are to be equally divided between those that take place in a private health care facility and those that take place in public health care institutions, such as government-run district, *tehsil/taluk* town, or municipal hospitals, and primary health centres (PHCs). Two-thirds (68 percent) of deliveries in urban areas and 29 percent of deliveries in rural areas take place in health care facilities (Table 3). According to the Sample Registration System (Office of the Registrar General, 2006a), in 2004, a slightly lower proportion of births in rural areas took place in public health institutions (24 percent) , while a slightly higher proportion of births in urban areas took place in such public health institutions (70 percent).

Table 3: Percentage distribution of live births in the five years preceding the survey by place of delivery, and percentage delivered in a health care facility, according to background characteristics, India, 2005-06

Background characteristic	Percentage delivered in a health facility	Home Delivery			
		Own home	Parents' home	Other home	Other*
Mother's age at birth					
<20	38.0	46.4	14.7	0.6	0.4
20-34	39.8	51.4	8.1	0.4	0.3
35-49	21.7	75.5	2.1	0.5	0.0
Birth order					
1	57.0	31.7	10.4	0.5	0.4
2-3	39.4	49.2	10.7	0.4	0.3
4-5	19.6	72.8	7.0	0.5	0.1
6+	10.9	85.4	2.9	0.6	0.3
Residence					
Urban	67.5	26.6	5.3	0.4	0.2
Rural	28.9	59.8	10.6	0.5	0.3
Antenatal care visits**					
None	9.8	79.6	9.8	0.5	0.2
1-3	28.0	59.8	11.5	0.5	0.2
4+	75.2	18.5	5.8	0.3	0.2
Don't know/missing	46.5	41.4	8.3	0.0	3.7
Mother's education					
No education	18.4	70.4	10.4	0.5	0.3
<5 years complete	36.3	51.2	11.6	0.5	0.3
5-7 years complete	47.9	40.6	10.6	0.4	0.4
8-9 years complete	57.7	32.9	8.7	0.6	0.1
10-11 years complete	72.2	21.9	5.5	0.3	0.1
12 or more years complete	86.4	11.0	2.3	0.2	0.2
Religion					
Hindu	39.1	50.9	9.3	0.4	0.3
Muslim	33.0	56.7	9.6	0.5	0.2
Christian	53.4	42.0	3.8	0.7	0.2
Sikh	58.3	32.3	9.2	0.1	0.1
Buddhist/Neo-Buddhist	58.8	23.4	17.2	0.6	0.1
Jain	93.1	4.1	2.8	0.0	0.0
Other	10.4	79.2	7.8	2.0	0.6
Caste/tribe					
Scheduled caste	32.9	56.8	9.6	0.4	0.3
Scheduled tribe	17.7	70.9	10.5	0.5	0.3
Other backward class	37.7	51.8	9.6	0.5	0.3
Other	51.0	40.5	7.9	0.4	0.2
Don't know	43.4	28.1	26.3	1.1	1.1
Wealth index					
Lowest	12.7	75.8	10.7	0.5	0.2
Second	23.5	63.7	11.7	0.7	0.4
Middle	39.2	48.6	11.4	0.5	0.3
Fourth	57.9	34.3	7.3	0.3	0.2
Highest	83.7	13.7	2.2	0.2	0.2
Total	38.7	51.3	9.2	0.5	0.3

Note: *Includes missing, **Includes only the most recent birth in the five years preceding the survey.

Although, in general, fertility has shown a declining trend in India, but many areas it still finds high levels of fertility. Table 4, demonstrates that there is a wide difference in fertility levels among various states. Total fertility rates range from 1.8 in Goa, Andhra Pradesh, and Tamil Nadu to 4 in Bihar. 18 of the 29 states have TFRs lower than the national TFR of 2.68. This skewed pattern occurs because the mean is strongly affected by the relatively high fertility in a handful number of populous states in the northern half of the country—Bihar (with a TFR of 4), Uttar Pradesh (3.8), Rajasthan (3.2), and Madhya Pradesh (3.1). Jharkhand in the eastern region

and Arunachal Pradesh, Meghalaya, and Nagaland in Northeast region also have high fertility, with TFRs of 3 and above. Fertility is lower in the west and south regions, where all states except Gujarat (with a TFR of 2.4) have replacement level fertility of 2.1 or fewer children per woman. In addition to these states, three states in the north region (Delhi, Himachal Pradesh, and Punjab) and Sikkim in the Northeast region have reached replacement level fertility or lower. 11 states have TFRs between 2.2 to 2.9. In the states with comparative fertility information in both NFHS-2 and NFHS-3, the TFR fell over time in all States except three small northeastern states like Arunachal Pradesh, Assam, and Tripura. The TFR was approximately same in NFHS-1 (1997-98) and NFHS-3 (2005-06) in Manipur and Meghalaya, but the TFR was calculated to be higher in NFHS-3 than in NFHS-1 in Mizoram and Nagaland. In 1993, five states had attained total fertility rates of over four children per woman (India Registrar General (IRG), 1996a). In general, high maternal mortality ratios are related to high fertility rates.

Table 4: Total Fertility rates for NFHS-3 and wanted fertility rates and TFRs for NFHS-2 for the three years preceding the survey by state, India 2005-06

State	NFHS-2	NFHS-3	% Decline fertility NFHS (1992-93-2005-06)	Wanted Fertility rate
North				
Delhi	2.4	2.1	0.3	1.6
Haryana	2.9	2.7	0.2	2.1
Himachal Pradesh	2.1	1.9	0.2	1.5
Jammu & Kashmir	2.7	2.4	0.3	1.6
Punjab	2.2	2.0	0.2	1.5
Rajasthan	3.8	3.2	0.6	2.2
Uttaranchal	2.6	2.6	0.1	1.8
Central				
Chhattisgarh	2.8	2.6	0.2	2.1
Madhya Pradesh	3.4	3.1	0.3	2.1
Uttar Pradesh	4.1	3.8	0.2	2.3
East				
Bihar*	3.7	4.0	-0.3	2.4
Jharkhand*	2.8	3.3	-0.6	2.1
Orissa	2.5	2.4	0.1	1.8
West Bengal	2.3	2.3	0.0	1.7
Northeast				
Arunachal Pradesh*	2.5	3.0	-0.5	2.3
Assam*	2.3	2.4	-0.1	1.8
Manipur	3.0	2.8	0.2	2.3
Meghalaya	4.6	3.8	0.8	3.1
Mizoram	2.9	2.9	0.0	2.7
Nagaland	3.8	3.7	0.0	2.7
Sikkim	2.8	2.0	0.7	1.2
Tripura*	1.9	2.2	-0.4	1.6
West				
Goa	1.8	1.8	0.0	1.5
Gujarat	2.7	2.4	0.3	1.8
Maharashtra	2.5	2.1	0.4	1.7
South				
Andhra Pradesh	2.3	1.8	0.5	1.5
Karnataka	2.1	2.1	0.1	1.6
Kerala	2.0	1.9	0.0	1.8
Tamil Nadu	2.2	1.8	0.4	1.4
India	2.9	2.7	0.2	1.9

Note: * Fertility has increased during NFHS-2 (1992-93) to NFHS-3 (2005-06)

One in five maternal deaths could be easily treated, provided proper attention is given. Anemia, which can be treated relatively simply and inexpensively with iron tablets, is another factor related to maternal health and mortality. Studies have been done to emphasize that between 50 and 90 percent of all pregnant women in India suffer from anemia. Severe anemia accounts for 20 percent of all maternal deaths in India (World Bank, 1996). Severe anemia also increases the chance of dying from a hemorrhage during labor. The Table 5, demonstrates the percentage of women whose age is under reproductive years (15-49), suffering from different types/intensity of anaemia like mild, moderate, and severe as represented by each state.

State	Mild 10.0-11.9 g/dl)*	Moderate (7.0-9.9 g/dl)	Severe (<7.0 g/dl)	Any anaemia (<12.0 g/dl)**
North				
Delhi	35.2	8.8	0.2	44.3
Haryana	37.6	16.7	1.7	56.1
Himachal Pradesh	31.6	10.5	1.2	43.3
Jammu & Kashmir	37.3	13.1	1.6	52.1
Punjab	26.2	10.4	1.4	38.0
Rajasthan	35.2	15.4	2.5	53.1
Uttaranchal	40.4	13.3	1.5	55.2
Central				
Chhattisgarh	39.9	15.7	1.9	57.5
Madhya Pradesh	40.8	14.1	1.0	56.0
Uttar Pradesh	35.1	13.2	1.6	49.9
East				
Bihar	50.5	15.9	1.0	67.4
Jharkhand	49.6	18.6	1.3	69.5
Orissa	44.9	14.9	1.5	61.2
West Bengal	45.8	16.4	1.0	63.2
Northeast				
Arunachal Pradesh	36.6	12.5	1.6	50.6
Assam	44.8	21.2	3.4	69.5
Manipur	30.1	5.1	0.5	35.7
Meghalaya	32.8	12.6	1.8	47.2
Mizoram	29.1	8.8	0.7	38.6
Sikkim	42.1	16.2	1.7	60.0
Tripura	49.0	14.8	1.3	65.1
West				
Goa	29.6	7.8	0.6	38.0
Gujarat	36.2	16.5	2.6	55.3
Maharashtra	32.8	13.9	1.7	48.4
South				
Andhra Pradesh	39.0	20.6	3.3	62.9
Karnataka	34.4	15.1	2.0	51.5
Kerala	25.8	6.5	0.5	32.8
Tamil Nadu	37.4	13.6	2.2	53.2
India***	38.6	15.0	1.8	55.3

Note: * For pregnant women, the value is 10.0-10.9 g/dl. ** For pregnant women, the value is <11.0 g/dl.
 ***Excludes Nagaland.

Analysis of data indicates that the prevalence of anaemia in women varies considerably among the states, but its spread is in every Indian state. This prevalence is very high in all the states situated in the eastern region, especially Jharkhand and Bihar where more than two-thirds of women are anemic. Other states with particularly high levels of anaemia are

Tripura, Assam and Meghalaya. But states having lowest prevalence of anaemia are notably Kerala, Manipur, Goa and Punjab. Even in these states, however, more than one-third of women are anaemic. It is also notable that severe anaemia is most prevalent in Assam (3.4 percent) and Andhra Pradesh (3.3 percent).

Malnutrition as a health hazard

Numerous studies highlight the factual position that malnutrition is another serious health concern that Indian women face (Chatterjee, 1990; Desai, M., 1994; The World Bank, 1996). It threatens their survival as well as that of their children. Presumably, the negative effects of malnutrition among women are further exacerbated or compounded by heavy work demands, by poverty, by childbearing and rearing, and by special nutritional needs of women, eventually culminating into increased susceptibility to illness and consequent higher mortality.

Table 6: Percentage of children under age five years classified as malnourished according to three anthropometric indices of nutritional status: stunting, wasting, and underweight, by sex, India, 2005-06

Sex	Stunting			Wasting				Underweight			
	Percentage below -3 SD	Percentage Below -2 SD ¹	Mean Z-score (SD)	Percentage Below -3 SD	Percentage Below -2SD ¹	Percentage above +2 SD	Mean Z-score (SD)	Percentage Below -3 SD	Percentage Below -2SD ¹	Percentage above +2 SD	Mean Z-score (SD)
Male	23.9	48.1	-1.9	6.8	20.5	1.7	-1.0	15.3	41.9	0.4	-1.8
Female	23.4	48.0	-1.9	6.1	19.1	1.4	-1.0	16.4	43.1	0.3	-1.8

Note: Includes children who are below -3 standard deviations (SD) from the International Reference Population median.

While malnutrition in India is found among all segments of the population, poor nutrition among women germinates in childhood and continues throughout their lifetimes (Chatterjee, 1990; Desai, 1994). Women and girls are typically the last to eat in a family; thus, if there is not enough food they are the ones to suffer most (Horowitz and Kishwar, 1985). In lower caste and economically weaker families, women and their children are the worst sufferers. According to the NFHS-3 (2005-06), Indian children have among the highest proportions of malnourishment in the world (Table 6). 48 percent of all girls and boys under 5 years of age go malnourished, and a similar proportion (48.1 percent) go stunted (i.e., too short for their age). Other studies show that, due to malnutrition, many women never achieve full physical development (The World Bank, 1996). This

incomplete physical development imposes a relatively larger risk for women by increasing the hazards of obstructed deliveries.

According to the NFHS-3 survey, mother's education plays a significant role in deciding the level of malnutrition among her children. The following Table 7 demonstrates the percentage of children under the age of five years, classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, as determined by their mothers' education.

Table 7: Percentage of children under age five years classified as malnourished according to three anthropometric indices of nutritional status: stunting, wasting, and underweight, by mother education, India, 2005-06

Mother's education	Stunting			Wasting				Underweight			
	Percentage below -3 SD	Percentage Below -2 SD ¹	Mean Z-score (SD)	Percentage Below -3 SD	Percentage Below -2SD ¹	Percentage above +2 SD	Mean Z-score (SD)	Percentage Below -3 SD	Percentage Below -2SD ¹	Percentage above +2 SD	Mean Z-score (SD)
No education	31.6	57.2	-2.2	8.0	22.7	1.1	-1.2	22.1	52.0	0.2	-2.1
<5 years complete	24.1	50.4	-1.9	6.2	20.8	1.1	-1.1	15.6	45.8	0.2	-1.9
5-7 years complete	20.3	45.6	-1.8	5.5	18.8	1.8	-1.0	12.3	38.5	0.4	-1.7
8-9 years complete	15.6	40.7	-1.6	5.2	17.5	1.9	-0.9	9.4	34.9	0.3	-1.6
10-11 years complete	10.9	33.0	-1.4	3.9	14.3	2.2	-0.8	6.5	26.8	0.9	-1.3
12 or more years complete	7.0	21.9	-1.0	4.0	12.8	2.6	-0.6	4.5	17.9	0.8	-1.0

Note: ¹ Includes children who are below -3 standard deviations (SD) from the International Reference Population median.

Analysis describes that children of illiterate mothers are thrice as likely to be undernourished or stunted as children whose mothers have completed at least high school or above. The differentials are even larger when severely undernourished children are considered. Children of illiterate mothers are three times as likely to be severely undernourished as children of mothers with at least a high school education or above.

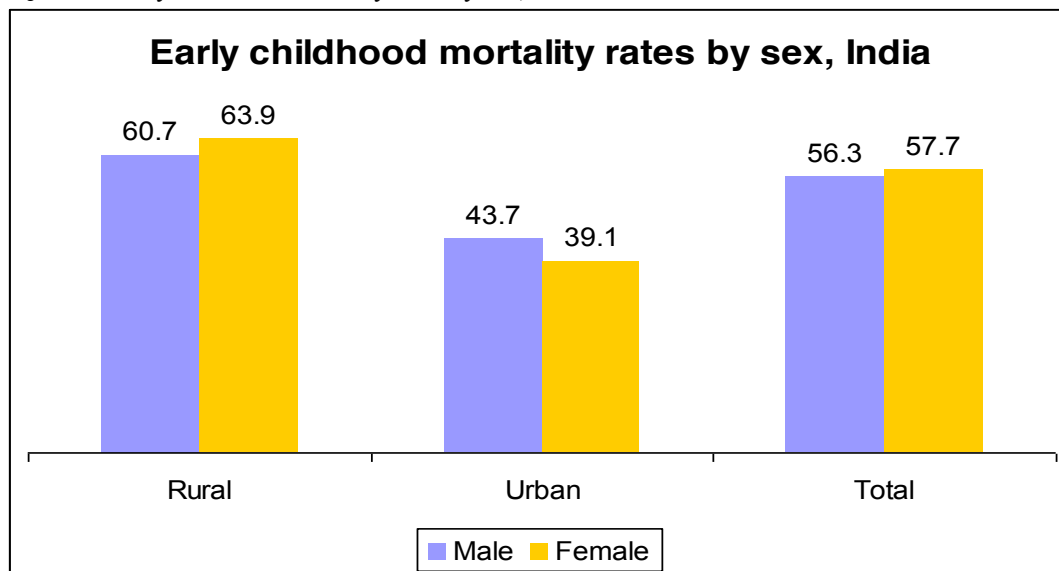
Discriminatory treatment with girl children and underlying health hazards

It is also significant to observe and note that one of the reasons for the poor health of Indian women is the discriminatory treatment girls and women receive as compared to boys and men (Das Gupta, 1994; Desai, 1994). The most chilling evidence of this is the large number of "missing girl children and women", who used to face enormous despair, hunger, poverty, deprivation, sexual harassment and illness. Resultantly, many girls and women have died on account of past and present discrimination. Recent estimates place this number at approximately 35 million (The World Bank, 1996). In other words, there is

a deficit of 35 million girls/women who should be part of the population but are not. This deficit of females is due to higher female than male mortality rates for every age group up to age 30 (IRG, 1996a).

As with other indicators of health status, differential treatment of boys and girls varies by state to state. The infant mortality rate by sex can be used as a proxy for differential treatment. In the vast majority of countries worldwide, males have higher mortality in infancy than do females. Higher female rates are therefore considered likely to be a signal for discrimination against girls. In case of Indian Republic, the following figure 4 shows the early childhood mortality rates by sex, as estimated during 2005-06.

Figure 4: Early childhood mortality rates by sex, India



In the remaining states, equal or higher female rates suggest that girls suffer enormous discrimination, causing many health problems. One of the most extreme manifestations of son preference is sex-selective abortion. The use of medical hi-technology to determine the sex of a fetus is on the rise in India, and over 90 percent of fetuses that are aborted are female (The World Bank, 1996). Notably, more boys are born than girls, with a sex ratio at birth around 105 boys per 100 girls. Data on hospital births from various parts of India, show that sex-selective abortion has increased the sex ratio at birth to 112 boys per 100 girls (Das Gupta, 1994).

Domestic violence and cruelty against women

For the purpose of this paper, it is also important to note that domestic violence against women was recognized as a criminal offence in India in 1983; and this kind of violence also germinates health-related problems. The offence chargeable under section 498-A of the Indian Penal Code (IPC) that relates to domestic violence, is any act of cruelty by a husband (or his family) towards his wife. However, until recently, there was no separate civil law addressing the specific complexities associated with domestic violence, including the embedded nature of violence within family networks, the need for protection and maintenance of abused women, and the fact that punishment and imprisonment for the husband may not be the best remedy in every case. Accordingly, after a decade-long process of consultations and revisions, a comprehensive domestic violence law, known as the Protection of Women from Domestic Violence Act 2005, was enacted in 2006. Key elements of the law include the prohibition of marital rape and the provision of protection and maintenance orders against husbands and partners who are emotionally, physically, or economically abusive.

A study done by Heise (1999) has shown that violence against women is one of the causal factors related to health problems that are often ignored by authorities once they view such behavior as beyond their jurisdiction. Similarly, many development agencies do not want to work on this problem as they consider it socially and culturally sensitive. In certain societies, violence, such as wife beating, is perceived as “normal” or as a husband’s right. However, as Heise concludes, violence against women is deleterious to economic development because it deprives women of the capability to participate fully in the upliftment of economy by eroding both their emotional and physical strengths. Violence against women can also have negative consequences for the children of the victims. The NFHS-3 data have some projection on the violent crimes committed against women in the Indian Republic.

Table 8: Percentage of ever-married women age 15-49, who have experienced physical or sexual violence committed by their husbands, as shown by State-wise, India, 2005-06			
State	Physical violence	Sexual violence	Physical or Sexual violence
North			
Delhi	16.1	2.1	16.3
Haryana	25.5	7.1	27.3
Himachal Pradesh	5.9	1.8	6.2
Jammu & Kashmir	11.5	3.9	12.6
Punjab	24.4	7.2	25.4
Rajasthan	40.3	20.2	46.3
Uttaranchal	27.3	6.1	27.8
Central			
Chhattisgarh	29.2	6.9	29.9
Madhya Pradesh	44.0	11.0	45.7
Uttar Pradesh	41.2	9.4	42.4
East			
Bihar	55.6	19.1	59.0
Jharkhand	34.7	12.5	36.9
Orissa	33.5	14.7	38.4
West Bengal	32.7	21.5	40.3
Northeast			
Arunachal Pradesh	37.5	9.5	38.8
Assam	36.7	14.8	39.5
Manipur	40.7	14.0	43.8
Meghalaya	12.6	1.6	12.8
Mizoram	22.0	2.0	22.1
Nagaland	14.0	3.0	15.3
Sikkim	14.8	4.8	16.3
Tripura	40.9	19.0	44.1
West			
Goa	16.5	2.8	16.8
Gujarat	25.7	7.5	27.6
Maharashtra	30.6	2.0	30.7
South			
Andhra Pradesh	35.0	4.1	35.2
Karnataka	19.5	4.0	20.0
Kerala	15.3	4.8	16.4
Tamil Nadu	41.9	3.2	41.9
India	35.1	10.0	37.2

The above Table 8 describes that percentage of ever-married women who have experienced with different types of spousal violence in various states of India. The most common form of violence in all states is physical violence, including torture or beating. Sexual violence is very often least reported in most states, due to societal or other reasons. Analysis of available data highlights that in West Bengal, the prevalence of sexual violence (22.0 percent) is much higher; and in Manipur (2.0 percent) it is least prevalent. Surprisingly, sexual violence is most common in Rajasthan, whereas in Bihar the prevalence is twice of the national average.

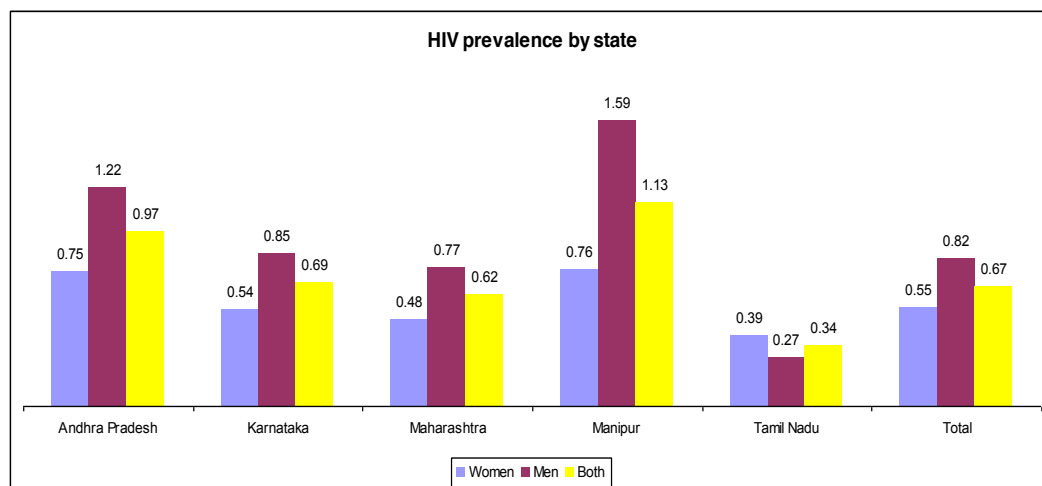
The prevalence of both types of violence or singularly physical or sexual acts range from six percent in Himachal Pradesh and 13 percent in Jammu and Kashmir and Meghalaya, to 46 percent in Madhya Pradesh and Rajasthan and 59 percent in Bihar. Other states with 40 percent or higher prevalence of spousal physical or sexual violence include Tripura, Manipur, Madhya Pradesh, Uttar Pradesh, Tamil Nadu, West Bengal, and Assam.

However, such statistics do not reflect the actual levels of these crimes because many incidents, particularly sexual violence, go unreported.

HIV/AIDS pandemic in India and impending health hazards

As indicated in several studies, over the years, the HIV/AIDS pandemic in India is spreading rapidly by leaps and bounds. This pandemic is very likely to take immense tolls by inflicting severe negative impact on women's health in coming years. The HIV Sentinel Surveillance Report for 2005 (NACO, 2006) estimated that India had 5.2 million adults between the age group 15-49 living with HIV in 2005. More than half (57 percent) of the adults living with HIV was rural and 38 percent were women. The same report estimated the overall adult HIV prevalence in India to be 0.91 percent. HIV prevalence was greater than one percent in 95 districts, including nine districts in low HIV prevalence states. The states with the highest HIV prevalence in the ANC population in 2005 were Andhra Pradesh (2.00 percent), Nagaland (1.63 percent), and Karnataka, Maharashtra, and Manipur (1.25 percent each) (Figure 5).

Figure 5: Percentage HIV positive among women and men age 15-49, by five high prevalence states, India, 2005-06



In 2006, UNAIDS estimated that at the end of 2005, there were 3.4-9.4 million people in India living with HIV, with a best estimate of 5.7 million people (UNAIDS 2006). Out of this number, UNAIDS estimated that 5.6 million were adults, of whom 1.6 million were women of age 15 and over. Although UNAIDS has estimated that India has a larger number of persons living with HIV than any other country in the world, their estimate of

HIV prevalence for adults age 15-49 years (0.9 percent, with a range of 0.5-1.5 percent) is much lower than that in many other countries. Africa remains the global epicentre of the AIDS pandemic.

In 2007, NACO undertook an exercise, in consultation with Indian and international experts in HIV estimation, to revise the HIV official estimates based on the NFHS-3 household based estimates of HIV in the population among the age-groups of 15-49 years, estimates of HIV from the expanded Sentinel Surveillance System, and related information about HIV in high-risk groups that do not live in households. The revised HIV estimate of 2.47 million persons in India living with HIV (equivalent to 0.36 percent of the adult population) was released by NACO in July, 2007. This national estimate reflects the availability of improved data rather than a substantial decrease in actual HIV prevalence in India. The new estimate is less than half the official HIV estimate for the previous year, and it pushes India down to third place in the list of countries with the largest number of persons living with HIV.

Over and above, it must be noted that women are relatively more vulnerable to HIV/AIDS pandemic than men on account of a number of societal, economic, cultural, religious and psychological factors and underlying circumstances. Further studies are irrevocably required to identify the underlying implications and sensitivity of this pandemic in different regions of the country, especially the porous border states where women trafficking and illegal migration have surfaced as a very serious challenge from neighboring countries like Nepal and Bangladesh. In such circumstances, sustained efforts must be made for the prevention of the pandemic and medical treatment of women victims without any discrimination.

Conclusions

The health of Indian women is intrinsically linked as one of the indicators to their status in society. While women in India face many serious challenges to their health, five key factors have been identified in the principal focus of this study: reproductive health, violence against women, nutritional status, unequal treatment of girls and boys, and

HIV/AIDS. Because of the wide variation in cultures, religions, and levels of development among Indian states and union territories, it is not unusual and startling that women's health also varies immensely from state to state. The study suggests that many of the health problems of Indian women are related to or exacerbated by high levels of fertility. Reducing fertility is an important element in improving the overall health of Indian women. Increasing the use of contraceptives is one way to reduce fertility. While the knowledge of family planning is nearly universal in India, only 49 percent of currently married women aged 15 to 49 use modern contraceptives.

Malnutrition is another serious health concern that Indian women face. While malnutrition in India is found among all segments of the population, poor nutrition among women germinates in childhood and continues throughout their lives, without full physical development. According to the NFHS-3 survey, mother's education plays a significant role in deciding the level of malnutrition among her children. It threatens their survival as well as that of their children. Presumably, the negative effects of malnutrition among women are further exacerbated or compounded by heavy work demands, poverty, childbearing and rearing, and by their special nutritional needs, eventually culminating into increased susceptibility to illness and consequent higher mortality.

It is also notable that one of the reasons for the poor health of Indian women is the discriminatory treatment that girls and women receive as compared to boys and men in their families. Furthermore, NFHS-3 data indicate that violence against women is one of the causal factors related to health problems. In addition, the HIV/AIDS pandemic in India is spreading rapidly. This pandemic is very likely to take immense tolls by inflicting severe impact on women's health in the foreseeable future.

References

- Agarwal, K.N, D.K. Agarwal, A. Sharma, K. Sharma, K. Prasad, M.C. Kalita, et al. 2006. Prevalence of anaemia in pregnant & lactating women in India. *Indian Journal of Medical Research* 124(2): 173-184.
- Arokiasamy, P. 2002. Gender preference, contraceptive use and fertility in India: Regional and development influences. *International Journal of Population Geography* 8(1): 49-67.
- AIDS Analysis, 1996, "India: 'a rapid and extensive spread of HIV'," Incorporating AIDS and Society, Vol. 2, No. 5, p. 11.
- Chatterjee, Meera, 1990, Indian Women: Their Health and Economic Productivity, World Bank Discussion Papers 109, Washington, DC.
- Das Gupta, Monica, 1994, "Fertility Decline and Gender Differentials in Mortality in India," paper presented at the International Symposium on Issues Related to Sex Preference for Children in the Rapidly Changing Demographic Dynamics of Asia, Seoul.
- Ellsberg, M., L. Heise, R. Pena, S. Agurto, and A. Winkvist. 2001. Researching domestic violence against women: Methodological and ethical considerations. *Studies in Family Planning* 32(1):1-16.
- Jewkes, R. 2002. Intimate partner violence: causes and prevention. *Lancet*: 359 (9315): 1423-1429.
- Johnson, Cate et al., 1996, "Domestic Violence in India," unpublished report to USAID/INDIA.
- Horowitz, Berny and Madhu Kishwar, 1985, "Family Life-The Unequal Deal," in Madhu Kishwar and Ruth Vanita, eds., In Search of Answers: Indian Women's Voices from Manushi, London.
- Heise, Lori L., 1994, Violence against Women: The Hidden Health Burden, World Bank Discussion Papers 255, Washington, DC.
- India Registrar General, 2001, Final Population Totals, Series 1, Paper-2 of 2001, New Delhi.
- International Institute for Population Sciences, National Family Health Survey-3, 2005-06, Mumbai.
- Institute for Research in Medical Statistics & Indian Council of Medical Research "Estimates of Maternal Mortality Ratios in India and It's States-A pilot study, July 2003, New Delhi.
- Jejeebhoy, Shireen J. and Saumya Rama Rao, 1995, "Unsafe Motherhood: A Review of Reproductive Health," in Monica Das Gupta, Lincoln C. Chen and T.N. Krishnan, eds., Women's Health in India: Risk and Vulnerability, Mumbai.
- National AIDS Control Organization (NACO). 2004. *Annual report 2002-04*. New Delhi: NACO, Ministry of Health and Family Welfare, Government of India.
- United Nations Children's Fund (UNICEF), 2005, The Progress of Indian States, New Delhi.
- World Health Organization, 1996, "Revised 1990 Estimates of Maternal Mortality: A New Approach by WHO and UNICEF," WHO/FRH/ MSM/96.11, Geneva.
- World Health Organization (WHO). 1998. *Postpartum care of the mother and newborn: A practical guide*. Geneva: Maternal and Newborn Health/Safe Motherhood Unit, Division of Reproductive Health (Technical Support), WHO.