

## Women's Health Status and Child Health

Gulnawaz Usmani<sup>1</sup> & Prof. Nighat Ahmad<sup>2</sup>

### Abstract

*During a period of higher economic growth and reduction in poverty, mortality, especially among women was not reducing. India, experiences a higher number of maternal mortality ratio, compared to developed and some developing countries. During pregnancy nutrition play a crucial role in the health status of women. Malnutrition is something that limits development and the capacity to work. This paper deals with the most important issue of human development: Maternal and Child Health. Maternal Health is of special importance because the influence of maternal health goes beyond maternal mortality to child mortality, child malnutrition. In this paper, we seek to examine (1) the extent of women's malnutrition related to rural-urban location. (2) The effect of women malnutrition on child health (infant mortality). The study is based on secondary data from various sources. If women are malnourished, anemic and suffer from other health problem, then the maternal mortality and infant mortality will be high and this will ultimately affect the health of children. According to the world health organization, malnutrition is the biggest contributor to child mortality and is more common in India and in other developing countries. Maternal malnutrition tends to increase the risk of maternal mortality, high and low BMI and iron deficiency anemia, which increases the risk of death of the mother at delivery, account for at least 20% of maternal mortality (Black et. Al, 2008). These problems, along with the higher incidence of women's malnutrition in India, make the present paper important and relevant.*

**Key Words:** Maternal Health; Women Malnutrition; Maternal Mortality; Infant Mortality; Child Malnutrition.

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<sup>1</sup> Research Scholar, Dept. of Economics, Aligarh Muslim University, Aligarh, India

<sup>2</sup> Professor, Dept. of Economics, Aligarh Muslim University, Aligarh, India

**Introduction:**

Malnutrition is something that limits development and the capacity to learn. During a period of higher growth and reduction in poverty, malnutrition, especially among women has increased. Malnutrition in both ways affects women more than men. 34% of men and 36% of women are undernourished. Only 13% of women and 9% of men are overweight or obese. Malnutrition results from imbalance between the needs of the body's and the intake of nutrients. Eliminating hunger and malnutrition is one of the fundamental challenges facing humanity (Lomborg 2004). Under-nutrition, defined as the failure to consume adequate energy, protein, and micronutrients meet basic requirements for maintenance, growth and development. This paper deals with one of the main issues of human development:

Malnutrition among Women in India. India has not only a large number of malnourished women; it also has the highest proportions of malnourished women in the developing world. Malnutrition plays a key role in the maternal mortality just as in the infant and child deaths. In 1965, a WHO expert committee on nutrition in pregnancy and lactation wrote, "Next to young children, pregnant and lactating women are nutritionally the most vulnerable group, especially in the developing countries, and yet comparatively little is known about their special nutritional needs." (WHO, 1965). Since then little has changed and women malnutrition remains a major problem. Health of women is of special importance as it affects the health and development of an entire family. If women are malnourished, anemic, the incidence of maternal mortality and infant mortality will be high.

**Importance of women's nutrition:**

Nutrition plays a central role in human wellbeing. Nutrition acts upon both sides that is, it acts as an essential element on one side and also a critical input to other aspects of well being. Balanced nutrition intake is equally important for men and women. However, women's nutrition has extra importance due to its critical, but complex association with their well-being and the implication it has for human development. Malnutrition not only harms the body but leaves a stamp on the minds of those who survive it. Under-nutrition would denote a deprivation of the basic aspect of well-being: The lack of freedom to lead a minimally healthy life. The results that women's malnutrition has for human development are very complex. For instance, maternal malnutrition leads to the risk of maternal mortality and iron deficiency anemia, which increase the risk of death of the mother at delivery, account for at least 20 per cent of maternal mortality (Black et al 2008).

### **Objectives and data source of the study:**

The study seeks to examine-

- (1) The extent of women's malnutrition related to rural-urban location.
- (2) The effect of women malnutrition on child health (infant mortality)

National level data on women malnutrition in India, have, however, been scarce. Hence we use NFHS survey data, conducted by the Government of India. The National Family Health Survey is based on a large, nationally representative sample and therefore offers a unique opportunity to study the level of women malnutrition. We use some other reports also for the data as HUNGaMA survey reports, Annual health survey, Govt. of India.

### **Extent of women malnutrition:**

A mention must be made that in the present study malnutrition has been measured in terms of body mass index ( $BMI = \text{weight} / \text{height}^2$ ) and anemia. A BMI below 18.5 indicates under nutrition, which is termed as CED (Chronic Energy deficiency) and above 25 and 30 refer to overweight and obesity respectively, which are also indicative of poor nutrition. CED indicates the absence of freedom to lead a minimally healthy life, and hence is structurally different from overweight and obesity. The National Family Health Survey-3 (NFHS-3) reveals that 55.3 per cent of women in the age group of 15-49 years in India are anemic in terms of iron deficiency. 35.6 per cent of women suffer from chronic energy deficiency (CED). This percentage is much higher than the incidence in most sub-Saharan Africa.

**Table 1: Levels of Malnutrition among (15-49 years) Women, 2005-06.**

	All India	Rural	Urban
<b>BMI</b>			
<b>CED</b>	35.6	40.6	25
<b>Overweight or obesity</b>	12.6	7.4	23.5
<b>Anemia</b>			
<b>Any anemia</b>	55.3	57.4	50.9
<b>Moderate or severe</b>	16.8	17.5	15.1
<b>CED and anemia</b>			
<b>Both</b>	21.6	25	14.3
<b>Either</b>	47.5	47.7	47.1
<b>Neither</b>	30.9	27.3	38.6

**Source: NFHS-3, 2005-06**

The extent of women's malnutrition is presented in table 1. While more than one third of women suffer from CED, and around 10 per cent are overweight or obese. Thus about half of the Indian women are malnourished, 36.6 percent by CED or 12.6 per cent of overweight or obese. CED remains as the dominant form of malnutrition in rural India affecting around 40 per cent of women. Overweight or obesity, from which nearly one-fourth of urban women suffer, is slowly emerging as an important nutritional problem in urban India.

Like CED where the gap between rural and urban is significantly large, this gap is relatively lower in case of anemia. More than 50 per cent of women in rural and urban areas are anemic whether moderate, mild or severe. The severe form of anemia, affect more than 15 percent of rural and urban women and the difference is only 2.4 percentage points. Probably the proportion of women who suffer from CED may also be anemic. The 21 per cent women suffer from both CED and anemia together; and only 31 per cent women are free from both. The percentages of women suffer from CED and anemia in rural areas is 10 percentage points larger than the incidence in urban areas of the country.

**Table 2: CED and Anemia across different Age Group and Marital Status**

Age and Marital Status	BMI		Anemia		CED and Anemia		
	CED	Overweight obese	Moderate	Any	Both	Either	Neither
<b>15-19</b>	46.8	2.4	16.6	56	26.9	48.6	24.5
<b>20-29</b>	36.1	8.2	17.6	56	23	47.6	29.2
<b>30-39</b>	31	17.4	16.2	54	19.2	46.6	34.2
<b>40-49</b>	26.4	23.7	16.1	55	17.1	47.2	35.7
<b>Never married</b>	44.9	4.5	14.6	52	24.3	48.3	27.4
<b>Currently married</b>	33	14.9	17.1	56	20.7	47.3	32
<b>Widowed</b>	33.5	14.4	19	59	22.1	48.3	29.6
<b>Divorce</b>	33.9	14.4	21.4	59	23.7	44.9	31.4

**Source: NFHS survey reports, 2005-06**

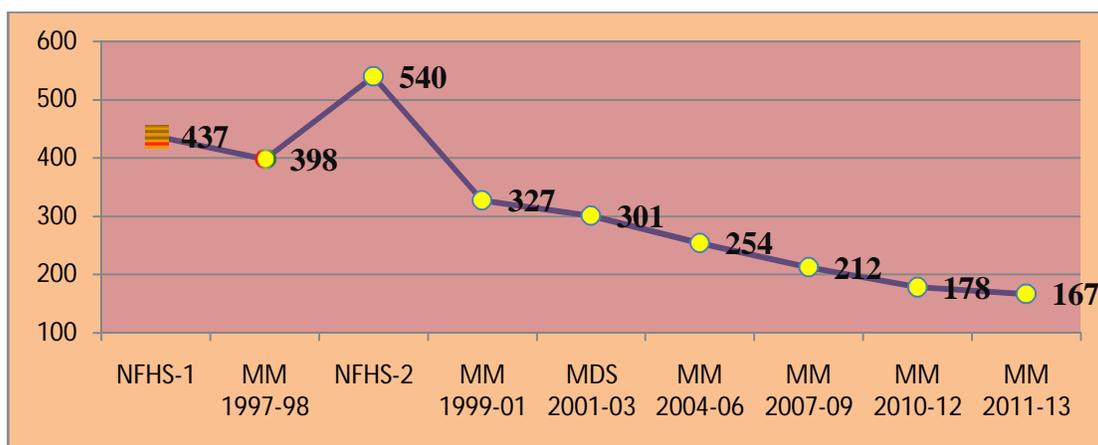
Table 2 shows the nutritional condition of women on the basis of their age and marital status. The anemia and CED (chronic energy deficiency) decrease with the age and reverse holds good for overweight or obesity. Almost 46.8 per cent in the age of 14-49 years suffer from CED. According to a study by S. Gillispie and Lawrence J. Haddad, which is in respect of India and based on the UNICEF report, household food insecurity, inadequate maternal and childcare and poor health and environmental services can be probable causes of this pitiable condition. According 55 per cent of all women are anemic in one form or another. The proportion of younger women is 27 per cent against 17 per cent of older women. The incidence of CED has been higher among never married, which is 10 percentage points higher than the widowed women and also among divorced. The incidence of CED and anemia does not differ significantly more than 20 percent of women, no matter of their marital status; suffer the double nutritional deprivation of CED and anemia.

### **Maternal Mortality**

Women malnutrition, especially during pregnancy leads to maternal deaths. Maternal deaths defined as the death of women from any cause related to pregnancy and its management. During the period of high economic growth and development, In India, maternal mortality is still very high. In 2013 MMR recorded at 167 per 100000 live births.

The trend in the maternal mortality is shown in figure 1. Maternal mortality rate is the number of women who lost their lives because of complications of pregnancy and childbearing per 100,000 live births during a year. Though the country experiences a significant reduction in the maternal mortality ratio, but still the rate is very high. During NFHS-1, maternal mortality ratio is 437 per 1,00,000 live births which gradually declined to 398 in 1997-98. But during the second round of NFHS (1998-99), maternal mortality ratio has shown a sustained increase from 398 in the period 1997-98 to 540 per 100,000 live births in the period 1998-99. Then and now, maternal mortality ratio in India has declined continuously. In the period 2011-13, maternal mortality ratio recorded as 167 per 100,000 live births in India. The figure below shows the trend in maternal mortality ratio in the country between NFHS-1 and maternal mortality report 2011-13. The number of maternal deaths declining continuously, the MMR declined to 167 in 2011-13 from a level of 254 per 100,000 live births in 2004-06. Thus we can say that nutrition among women, especially during pregnancy, is a very crucial element for better health condition and better pregnancy outcome.

**Figure 1: Trends in Maternal Mortality Rate in India**



**Source:** NFHS-1, 2; Million Death Study (MDS) report; Maternal Mortality (MM) reports

### **Women's malnutrition and child health (infant mortality):**

Child health is mostly affected by women's malnutrition. Nutrition is a modifiable risk factor that must be addressed as a part of infant mortality efforts. Nutrition is not a new approach to reducing infant mortality. Infant mortality refers to deaths that occur during the first year of life after a live birth and is measured in deaths per 1,000 live births. "Every single cell, organ, and system inside a newborn baby comes mostly from her mother's food intake before or during pregnancy."

Maternal nutrition is a critical determinant of infant health; thus, it is not hard to see that poor maternal nutrition can contribute, directly or indirectly, to infant mortality.” (Michael C. Lu and Jessica S. Lu). Poorly nourished women cannot play her role effectively as a homemaker; neither can she look after the nutritional needs of her children, their health and other needs. Both nursing women, as well as pregnant women need better nutrition than male counterparts, which they can ill afford. The ill-fed infants and children show higher risk of infections of different kinds and other deficiency diseases. Such children turn out to be unhealthy adults, and when they enter into their professional life, cannot get good jobs.

Affects of women's malnutrition on Infants:

- Nutritional excesses such as vitamin A, as well as deficiencies in vitamin K and B, magnesium, copper, and zinc are linked to birth defects.
- Low pregnancy body mass index (BMI) and poor gestational weight gain are associated with greater risk for preterm birth and fetal growth restriction.
- Maternal nutrition may impact inflammation, which in turn could trigger spontaneous preterm birth.
- The institute of medicine includes low maternal pre-pregnancy weight, total pregnancy weight gain less than 22 pounds or poor nutrition, pregnant women with hypertension as factors associated with low birth weight.
- Nutritional deficiencies can cause anemia. Maternal anemia can also contribute to infant mortality.

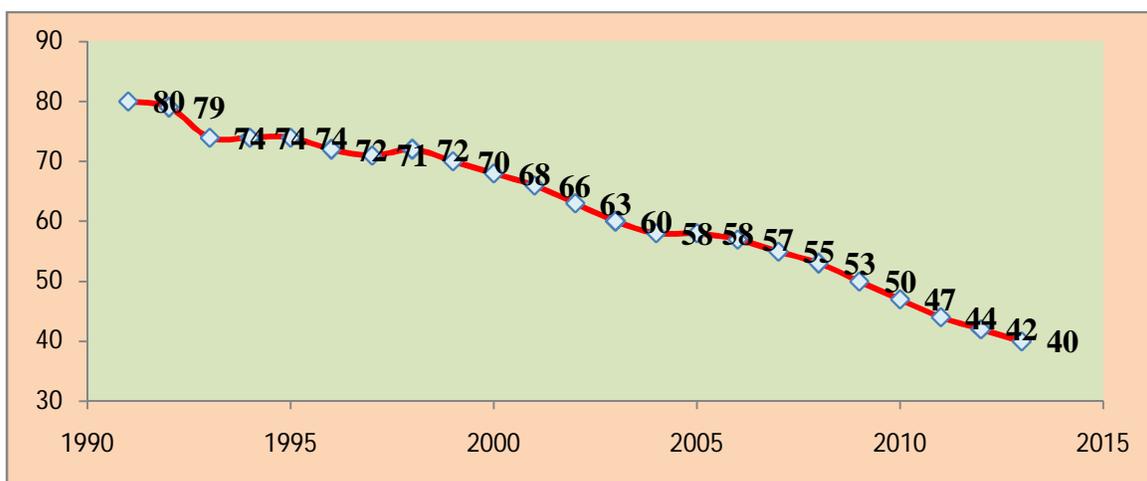
**Table 3: Malnutrition and its Effect on Child Health (Infant Mortality Rate)**

States	Women Mal.(CED)		IMR	
	NFHS2	NFHS3	1998	2005
Andhra Pradesh	37.4	30.8	66	57
Assam	27.1	36.5	76	68
Bihar	39.1	43.2	67	61
Gujarat	37	32.3	64	54
Karnataka	38.8	31.4	58	50
Kerala	18.7	12.5	16	14
Madhya Pradesh	35.2	40.2	98	76
Maharashtra	39.7	32.6	49	36
Orissa	48	40.4	98	75
Punjab	16.9	13.5	54	44
Rajasthan	36.1	33.3	83	68
Tamil Nadu	29	23.5	53	37
Uttar Pradesh	36.5	34.1	85	73
West Bengal	43.7	37.6	53	38
<b>India</b>	<b>36.2</b>	<b>33</b>	<b>72</b>	<b>58</b>

Source: NFHS-2, NFHS-3 survey reports.

India has the distinction of having a high prevalence of lower birth weight. The nationwide data on birth weight is not available because the majority of births occur at home and these infants are not weighted. Birth weight is influenced by the nutritional and health status of the mother. The cause of low-birth weight and infant mortality are complex and interdependent, but the health of women and her nutritional intake are thought to be among the most important. Malnutrition among women is one of the major causes of infant mortality, low-weight babies, and poor growth of new born. Low birth babies who survive are likely to suffer growth retardation and illness throughout their childhood, adolescence and into adulthood. Maternal under-nutrition contributes to fetal growth restriction, which increase the risk of neonatal deaths. Sub-Optimum breastfeeding results in an increased risk for mortality in the first two years of life.

**Figure 2: Infant Mortality rate in India, 1990-2013**



**Source:** Sample Registration System, office of the Registrar General of India, 1991-2013

Figure 2 shows the infant mortality rate (IMR) in India. IMR declining continuously, in 1990 IMR is 80 per 1000 live births which reduced to 40 in 2013. After reform IMR decreased almost 50 percent. This can prove that the nutrition level among women has been improved over the period. It was observed that after the launch of National Rural Health Mission in 2005, the number of infant deaths gradually declined, because under the mission government has started many healthcare programs related to nutrition for both pregnant women and child. In 2005 IMR is 58 which fall to 47 in 2010 and in 2013 it is only 40 per 1000 live births. Yet the percentage of infant deaths is still very high, but the condition of infant and mother's health has been improved very much over the years.

Table 4 shows the correlation matrix between women and child health (Infant Mortality). Women malnutrition and infant mortality have a strong correlation of 0.71 percent. It was observed that there is a positive relationship between women malnutrition and infant mortality. Thus we can say that if malnutrition among women increased, infant mortality will also be increased in the same manner. Women malnutrition has a very strong influence on child health or survival. A malnourished mother gives a malnourished baby who either dies before reaching his first birthday or grows as a malnourished adult with low standard health.

**Table 4: Correlation matrix of Women Malnutrition and Infant Mortality rate**

	<i>Women Malnutrition</i>	<i>IMR</i>
<b>Women Malnutrition</b>	1	
<b>IMR</b>	<b>0.71</b>	1

**Source:** Computed from table 3

**Conclusion:**

The paper concludes that the level of nutrition among women is improving, but still it is very low. Women malnutrition has a significant effect on child health. Study has limitation of data availability on women's malnutrition, but we predict on the basis of infant mortality rate because both have a positive relationship. Due to the income effect (Permanent Income Hypothesis) we can say that if someone attends a particular living standard he will never cuts his consumption on current changes in his income pattern. The nutrition level among women has been improved because the infant mortality rate declining continuously with a constant growth rate over the period. Instead, we find an increase in malnutrition, in the form of anemia. The health problems, namely anemia and CED, though prevalent in both rural and urban areas, but it is a serious concern in the former.

**Suggestion:**

To make women healthy, it is of utmost importance that health awareness must be created across all age sections of the female populations. Some specific measures should be undertaken to tackle the twin problems of anemia and CED. Some more nutritional programmes with the existing one are designed to improve the nutritional status of women.

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