

# Nutritional Status and Knowledge about Nutrition during Pregnancy among Pregnant and Postpartum Women

F Salim<sup>1</sup>, N Begum<sup>2</sup>

## Abstract

**Objective :** To assess the nutritional status and the level of knowledge about nutrition during pregnancy among pregnant and postpartum women attended community clinics in selected villages.

**Methods :** This descriptive, cross-sectional study was done in three selected villages of Sirajganj, Kishoreganj and Tangail districts during July 2014. Fifty six pregnant and 46 postpartum women were selected from community clinics by purposive sampling technique. Data were collected through face to face interview by a pretested questionnaire. Height and weight were measured to calculate BMI health workers of community clinic.

**Results :** The results of the study revealed significant number (23.5%) of pregnant women were found to be underweight by calculating the BMI. However, knowledge about the consequences of malnutrition in pregnancy, and the amount and types of food to be taken during pregnancy was found unsatisfactory. The level of education and occupation were not significantly associated with nutritional status of the respondents.

**Conclusion :** The study revealed that high percentage of rural mothers was malnourished and the knowledge about nutrition during pregnancy was found unsatisfactory. Therefore, implementation of nutritional programs with specific emphasis on nutritional education in pregnancy during the antenatal visits is considered essential for rural women.

**Keywords :** Pregnant women, Malnutrition, Nutritional status.

## Introduction

Malnutrition is inadequate intake of nourishing food or consumption of a particular type of food that has little or no nutritive value.<sup>1</sup> According to Bangladesh Demographic and Health Survey Report, 2011, the prevalence of malnutrition in Bangladesh is among the highest in the world.<sup>2</sup> Malnutrition is like an iceberg; most people in the developing countries live under the burden of malnutrition. Pregnant women, nursing mothers and children are particularly vulnerable to the incidence of malnutrition. The adverse effects of maternal malnutrition are maternal depletion, low birth weight, anaemia, toxemia of pregnancy, post partum hemorrhage which result in high mortality and morbidity.<sup>3</sup>

During pregnancy diet should contain more protein, iron, iodine, Vitamin-A, folate, and other nutrients. Nutritional demand increases in the second and particularly the third trimester of pregnancy. Under-nutrition, both before and during pregnancy, causes intrauterine growth retardation and is one of the

major reasons for the high LBW (according to WHO report 22%)<sup>1</sup> prevalence in the country. Low birth weight is more common among adolescent mothers. Deficiencies of certain nutrients are associated with maternal complications and death, fetal and newborn death, birth defects, and decreased physical and mental potential of the child.<sup>4</sup>

Women and children suffer from one or more forms of malnutrition including low birth weight, wasting, stunting, underweight, Vitamin-A deficiencies, iodine deficiency disorders and anemia. Malnutrition not only affects individuals but its effects are transmitted from one generation to another as malnourished mothers give birth to infants who struggle to develop and thrive. If these children are girls, they often grow up to become malnourished mothers themselves. Globally, malnutrition is attributed to almost one-half of all child mortality.<sup>5</sup>

Micronutrient deficiencies especially iron and folic acid deficiencies that result in nutritional anemia and neural tube defects in newborns remain a public health problem in Bangladesh. Coverage of pre- and postnatal iron and folic acid supplements is very low only 15% of pregnant women in rural areas take at least 100 tablets during pregnancy. Low compliance rates and low coverage of antenatal services made it difficult to maintain proper nutrition during pregnancy.<sup>6</sup>

Under-nutrition (body mass index less than 18.5 kg/m<sup>2</sup>) in non-pregnant women in the country, declining from 54% in 1996–1997 to 34% in 2004 and 24 % in 2011, is still very high<sup>7,8,2</sup>. About six in ten ever-married women (59 percent) have a normal BMI, 24 percent are undernourished (BMI less than 18.5), and 17 percent are overweight (BMI 25 or higher).<sup>2</sup>

## Materials and methods

This descriptive cross-sectional study was conducted in July, 2014. Data were collected from three selected villages of Sadar upazila of Sirajganj, Bhuapur Upazila of Tangail and Sadar upazila of Kishoreganj districts. Study population were total 102 childbearing mothers of which 56 were pregnant and 46 gave birth within 42 days at the time of data collection; selected purposively from the study area. They were selected from those who registered for the ante natal checkups in Community Clinics. Data were collected by direct

<sup>1</sup> Dr. Farhana Salim  
Assistant Professor  
Dept of Community Medicine  
Shaheed Monsur Ali Medical College

<sup>2</sup> Dr. Nasreen Begum  
Assistant Professor  
Dept of Community Medicine  
Northern International Medical College

Correspondence  
Dr. Farhana Salim  
Assistant Professor  
Dept of Community Medicine  
Shaheed Monsur Ali Medical College

interviewing of the selected women according to the pretested structured questionnaire.

Following Measurements of the respondents were recorded

**Height :** Height in centimeters was marked in the wall of community clinic with the help of a measuring tape. After removing the footwear women were asked to stand against the wall with heels together and head straight. Height was recorded to the nearest 1 cm.

**Weight :** Weight was recorded by a bath room scale. It was calibrated regularly. BMI, a simple index to classify underweight, overweight and obesity, was measured from height and weight.

**Data processing and analysis :** The data were analyzed by preparing master sheet. Tables of descriptive statistics were prepared to present and analyze the major findings as per the study objectives by using statistical soft ware SPSS version 16

**Results**

The socio-demographic information regarding age group, education, occupation and monthly income were as follows:

**Table-I : Distribution of the socio-demographic characteristics; N = 102**

Age group	No of respondents	Percent
20-25 years	72	70.6
26-30 years	22	21.6
30+ years	8	7.8
Mean = 23.32; (SD = ± 4.887)		
Educational qualification		
Illiterate	9	8.8
Primary	43	42.2
Secondary	46	45.1
Higher secondary	4	3.9
Occupation of respondents		
House wife	98	96.1
Farmer	1	1.0
Day laborer	1	1.0
Service	2	2.0
Monthly income		
Taka 4,000	17	16.7
Taka 4,001-6,000	45	44.1
Taka 6,001-8,000	30	29.4
Taka 8,001-10,000	5	4.9
Taka 10,000+	5	4.9

Mean = 6,164.71; (SD = ± 2,498.14)

**Table- II : Distribution of the respondents by weight and height**

Weight	No of respondents	Percent	Height	No of respondents	Percent
40 kg	20	19.6	140 cm	11	10.8
41-45 kg	30	29.4	140-150 cm	33	32.4
46-50 kg	22	21.6	150-160 cm	35	34.3
51-55 kg	14	13.7	>160 cm	23	22.5
>55 kg	16	15.7	-	-	-
Total	102	100.0			

40 kg and the height of 10.8% of them was below 140 cm. The mean weight and height of the respondents were 47.6 kg and 157.7 cm respectively

**Table-III : BMI of the respondents**

The study showed that among 102 respondents 24(23.5%) were underweight, 62(60.8%) were within normal range and 16 (15.7%) were overweight (Table-III).

BMI	No of respondents	Percent
Under weight (<18.5)	24	23.5
Normal (18.5-34.5)	62	60.8
Over weight (>24.5)	16	15.7
Total	102	100.0

Among 102 respondents, 79(77.5%) took iron and folic acid during pregnancy; 22.5% did not take.(Table-IV).

**Table-IV : Respondents by intake of iron & folic acid during pregnancy**

Iron and F Acid	No of respondents	Percent
Yes	79	77.5
No	23	22.5
Total	102	100.0

Association between education and occupation of the respondents with nutrition status during pregnancy was found not significant (Table-V).

**Table-V : Relationships between education and occupation of the respondents with nutritional status during pregnancy**

Maternal factors	Malnourished	Normal	Total N=102	Significance test
Education				
Illiterate or Primary education	12(23.1)	40(76.9)	52	p=0.93
Higher education	12(24.0)	38(76.0)	50	
Occupation				
Housewife	23(23.5)	75(76.5)	98	p=0.94
Others	1(25.0)	3(75.0)	4	
Total	24(23.5)	78(76.5)	102	

Among all respondents, 28 (27.4%) knew that malnutrition during pregnancy may cause low birth weight, 38 (37.2%) knew that it may cause generalized weakness (vertigo, tiredness, etc.); and 17 (16.6%) told that it may cause repeated infection of the mother. 25 (24.5%) mentioned malnutrition during pregnancy can cause abortion or birth of baby before due date (Table-VI).

**Table-VI : Distribution of the respondents by knowledge on effects of malnutrition during pregnancy**

Variables	No of respondents	Percent
Low birth weight	28	27.4
Generalized weakness	38	37.2
Repeated illness(lowered immunity)	17	16.6
Abortion or premature delivery	25	24.5
Multiple responses		

Regarding knowledge about which variety of food can give more nutrition during pregnancy, 24 (11.8%) mentioned about rice, 64(31.5%) about milk/egg/Meat/Fish and 70 (34.3%) about vegetables. 46(22.4%) respondents had no knowledge about the type of foods. (Table-VII).

**Table-VII : Distribution of the respondents by knowledge on type of nutritious food during pregnancy**

Type of nutritious food	No of respondents	Percent
Rice	24	11.8
Milk/egg	64	31.5
Vegetables	70	34.3
Don't know	46	22.4
Total	204	100.0
Multiple responses		

Regarding knowledge on effects of nutritious foods during pregnancy, 28(27.5%) respondents reported that baby's weight will be normal, 4(3.9%) said baby's weight will be low, 68(66.7%) mentioned baby will be overweight. 2(2%) respondents had no knowledge regarding this. (Table-VIII)

**Table-VIII : Knowledge on effects of nutritious foods taken during pregnancy by the respondents**

Effects of nutritious food	No of respondents	Percent
Baby's weight will be normal	28	27.5
Baby's weight will be low	4	3.9
Baby will be overweight	68	66.7
Do not know	2	2.0
Total	102	100.0

## Discussion

This cross-sectional study was conducted with a view of assessing the nutritional status and the level of knowledge about nutrition during pregnancy among pregnant and postpartum women attended in the community clinics in selected villages.

Regarding socio-demographic data, 45% of the respondents had secondary education, most of them (about 96%) were housewives and monthly income of most respondents (about 44%) were between Tk.4,000-6,000. The socio-economic findings were more or less similar to the study by Hossain et al<sup>9</sup>.

In the present study 23.5% of the respondents were suffering from malnutrition (BMI <18.5). In some studies it was found that the average weight and height of Bangladeshi women were 42 kg and 154 cm respectively<sup>10,11</sup>. In a survey of 26, 424 pregnant women it was found that 35-38% had BMI less than 18.5, weighted 48-49 kg and over 50% were suffering from severe iron deficiency anemia<sup>10</sup>. The level of education was not found significantly associated with BMI of the respondents ( $p > 0.05$ ). Similarly, occupation of the respondents was not found to be significantly associated with their BMI ( $p > 0.05$ ), though a significant association was expected in both the cases.

Regarding knowledge about the effects of malnutrition on pregnancy 27.4% knew that malnutrition associated with low birth weight baby and 37.2% had idea that pregnancy causes general weakness, 16.6% knew that lower mother's immunity. Some 24.5% had the perception that malnutrition during pregnancy is one of the main reasons for abortion. In a study conducted in rural Nigeria, the majority of the participants strongly agree that maternal malnutrition may cause low birth weight<sup>12</sup>.

Most of the pregnant women (about 34.3%) reported vegetables as the most nutritious food during pregnancy rather than protein rich foods like milk, egg, fish or meat. Regarding effects of nutritious food on the unborn child, about 66.7% informed that the baby would be overweight if more nutritious foods are taken during pregnancy. This was supported by Landman's article<sup>13</sup>. These may also reflect lack of nutritional education.

**Conclusion :** This study provided an important information is that high percentage of mothers was malnourished and the knowledge about nutrition during pregnancy was found unsatisfactory. A longitudinal study on a large scale including all the variables related to nutritional status of the women is required to obtain further information to find out the real situation of nutritional status during pregnancy.

## References

1. World Health Organisation: Report on child and maternal nutrition [http://www.who.org/bangladesh/Child\\_and\\_Maternal\\_Nutrition](http://www.who.org/bangladesh/Child_and_Maternal_Nutrition)
2. Bangladesh Demographic and Health Survey 2011, NIPORT, January 2013; 185, 189
3. Park K, Park's Text Book of Preventive and Social Medicine, M/s Banarsidas Bhanot, Jabalpur: 21<sup>st</sup> edition 2011, (10) 483
4. UNICEF report on child and maternal nutrition. [www.coregroup.org/storage/.../Maternal\\_Nutrition\\_Dietary\\_Guide\\_AED.pdf](http://www.coregroup.org/storage/.../Maternal_Nutrition_Dietary_Guide_AED.pdf);
5. [http://www.unicef.org/bangladesh/Child\\_and\\_Maternal\\_Nutrition](http://www.unicef.org/bangladesh/Child_and_Maternal_Nutrition)
6. Nutrition Surveillance Programme; Helen Keller International/ IPHN 2006
7. Bangladesh Demographic and Health Survey, 2000.
8. Bangladesh Demographic and Health Survey 2004.
9. Hossain et al. Nutritional Status of Pregnant Women in Selected Rural and Urban Area of Bangladesh; Journal of Nutrition Food Science, 2013, 3:4
10. Nessa N. and Mahmuda MA. Situation of women in Bangladesh: their health and nutritional status and support to breast feeding (abs.). Nutrition Society of Bangladesh. 7th Bangladesh National Conference (Special publication) March 1997:89.
11. Talukder MQK. Maternal nutrition versus foetal infant health. Bangladesh Paediatrics. 1983; 7 (3&4): 68-70.
12. Jacinta A. Opara, Helen E. Adebola, Nkasiobi S. Oguzor and Sodiénye A. Abere. Malnutrition During Pregnancy among Child Bearing Mothers in Mbitolu of South-Eastern Nigeria.
13. Landman JP. Food fads in pregnancy. Postgrad Doct-Middle East 1991;14:48-52