Nutritional Status of the Women of Reproductive Age with Some of Their Socio-demographic Characteristics of a Slum in Dhaka

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This cross-sectional study was conducted at a purposively selected Mohakhali slum known as Sat-tala Basti of Dhaka city with a view to assess the nutritional status of women of reproductive age living in the slum. A total of 510 slum women were interviewed and their anthropometric measurements were taken. A large number of respondents (41.2%) were in the age group of 15 to 24 years. Majority of the respondents (62.7%) and their husband (67%) were illiterate. About 57% of the respondents were housewives and most of the working women were garment workers (33%). The average monthly household income of the respondents was Tk. 3056.9 (±981.8). The mean weight of the respondents was 42.4 (±5.7) Kg. and the mean height of them was 148.7 (±4.2) cm. The mean BMI of the respondents was 19.2 (±2.4) and about one-third (30.8%) of the respondents were malnourished (BMI <18.5). The nutritional status determined by BMI was not found significantly associated with education and occupation of the respondents ($p>0.05$) but monthly family income showed a positive relationship with BMI of the respondents ($p<0.05$). This study provided a vivid picture of the nutritional status of the slum mothers and could provide help to the concerned authority in their policy making and planning to alleviate the problem.

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Key words: Nutritional status, reproductive, socio-demographic, slum, Dhaka

Introduction

The deprivation to women starts from birth in Bangladesh. The socio-economic, health and nutritional status of women depict gloomy pictures throughout their life[1]. Moreover, like most developing countries, the picture of nutritional status of women is far too serious in the poorer socio-economic groups who live in the rural areas and urban slums of Bangladesh.[2,3] It has been recognized that infants, children and women of the reproductive age constitute the most vulnerable groups from the stand point of nutrition.[4]

Malnutrition is the outcome of many complex biological and social processes. The roots of malnutrition run deep into its social soil and it is a matter of thought that malnutrition has not been changed significantly during the last two decades.[5] One fourth of non-pregnant mothers living in the slums suffer from severe malnutrition. About 70% of women in

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Bangladesh suffer from deficiency anaemia.[6,7,8]

Following the liberation of Bangladesh, when Dhaka became the capital city and the centre of commercial and economic activities there was a rapid migration of rural people into the city which is still continuing. The rural to urban influx has lead to the development of slums in a large number of places within the city and its fringes with over crowding, unhygienic and poor sanitary conditions, along with economic insolvency lead to malnutrition and poor health conditions. Around half of the city's poor people are concentrated in nearly 3000 densely populated and environmentally hazardous slums and the overall urban growth rate is very high.[9,10]

It is very much clear that the health and nutritional status of the city people is quite impossible to improve without improving the health and nutritional status of the slum dwellers, specially, slum mothers. Research on urban slum mothers, specially, on nutrition is very relevant and deserves in depth studies. This could help to explain many of the interrelated variables which come into play in explaining the prevailing situation amongst the urban slum mothers. The purpose of the study was to assess the nutritional status of the women living in slum environment. So the findings of the study might provide a comprehensive picture on nutrition of slum women, which could inform and guide the concerned authorities for undertaking appropriate measures to improve the situation.

Methods

This cross sectional type of descriptive study was carried out in the Mohakhali slum, known as Sat-tala Basti, one of the largest slums in Dhaka city. All the women of reproductive age of the slum constituted the study population. Sample size was 510 and that was selected randomly from a total of 1716 cluster houses situated on the eastern part of Infectious Diseases Hospital, Dhaka. Data were collected according to a duly pre-tested and partially structured questionnaire by face-to-face interview with the help of a key informant. The nutritional status of the women was determined by taking weight in Kg, height in cm and calculating BMI. The data were analyzed by using the computer soft ware programme, SPSS.

Results

Table I: Percentage distribution of the respondents by socio-demographic characteristics (n=510)

Variables	No.	Percentage	$\bar{X} \pm SD$
Age of the respondents:			
15 - 24 years	210	41.2	28 ± 8.1
25 - 34 years	158	31.0	years
35 - 44 years	142	27.8	
Education of the respondents:			
Illiterate	320	62.7	
Non-formal	99	19.4	
Primary	71	13.9	
Secondary	20	3.9	
Husband's education: (n=482)			
Illiterate	323	67.0	
Non-formal	58	12.0	
Primary	54	11.2	
Secondary	47	9.8	
Occupation of the respondents			
House wife	291	57.1	
Garment worker	168	32.9	
Aya / Bua	27	5.3	
Labourer	11	2.2	
Service holder	10	2.0	
Others	03	0.6	
Monthly family income:			Tk.
Tk. ≤ 3000	63	12.4	3056.96 ±
Tk. 3001 - 6000	390	76.5	981.79
Tk. ≥ 6001	57	11.2	

A total of 510 women of reproductive age were interviewed. The mean age of the respondents was 28 (±8.1) years and a large number of respondents (41.2%) were in the age group of 15 to 24 years. Majority of the respondents (62.7%) had no education, 19.4% had non-formal, 13.9% had primary and only 3.9% had secondary education. Among the respondents 57.1% were housewives, 32.9% were garments workers, 5.3% worked as Aya / Bua and 2% were lower class service holders. About 67% of the respondent's husbands had no education, 12% had non-formal, 11.2% had primary and 9.8% had secondary education. The average monthly household income of the respondents was Tk. 3,056.90 (±981.80). About 12% of the respondents had an income of less than Tk. 3000/- and only 11% families had an income of more than Tk. 6,000/-. Eighty nine percent of the respondents were from nuclear families. (Table I)

The mean weight of the respondents was 42.4 (±5.7) kg. A countable number (33.8%) of the respondents had weight less than 40 kg, 57.2% had weight between 40 to 49 kg and only 9% had weight of 50 kg or more. The mean height of the respondents was 148.7 (±4.2) cm. About 78% of the respondents had height from 145 to 154 cm, 15.5% had height of 144 cm or less and 6.2% had height of 155 cm or more. The mean BMI of the respondents was 19.2 (±2.4). About 30.8% of the respondents had BMI less than 18.5, 66.5% had BMI of 18.5 to 25 and only 2.7% had a BMI of more than 25. (Table II)

Table II: Distribution of the respondents by selected nutrition variables (n=510)

Variables	No.	Percentage	$\overline{X}$ ± SD
Weight of the respondents:			
< 40 kg	173	33.9	
40 - 44 kg	199	39.1	42.4 ± 5.7 kg
45 - 49 kg	93	18.2	
≥ 50 kg	45	8.8	
Height of the respondents:			
< 145 cm	79	15.5	148.7 ± 4.2 cm
145 - 154 cm	399	78.2	
≥ 155 cm	32	6.3	
BMI of the respondents:			
< 18.5	157	30.8	
18.5 - 25.00	339	66.5	19.2 ± 2.4
> 25.00	14	2.7	

Table III: One way ANOVA between BMI and age of the respondents

BMI	Group	Age of the Respondents			Source	DF	Sum of Square	Mean of Squares	F Ratio	p value
		N	$\overline{X}$	SD						
<18.5	1	157	25.6	8.2	Between group	2	1866.1	933.0		
18.5-25	2	339	28.7	7.7					15.1	0.001
>25	3	14	35.6	6.9	Within group	507	31222.9	61.6		
Total	3	510	28.0	8.1						

This table showed one way ANOVA of BMI with the age of the respondents. BMI was categorized into three groups as <18.5, 18.5 to 25.0 and >25.0. Group 1 had a mean age of 25.6 (±8.2) years, group 2 had a mean age of 28.7 (±7.7) years and group 3 had a mean age of 35.6 (±6.8) years. So, mean ages were positively related with BMI groups. BMI of group 2 was significantly different from group 1 and group 3 was also significantly

different from groups 1 & 2 at the level of 0.05 (F=15.1, p=0.001). (Table III)

The table IV showed relationship of BMI with education and occupation of the respondents. For analysis, the level of education was categorised into illiterate and literate and occupation was categorised into housewife and not being a housewife. The level of education was not found significantly associated with BMI of the respondents (χ^2 = 4.4, p>0.05). Similarly occupation of the respondents was not found to be significantly associated with their BMI (χ^2 = 3.0, p>0.05).

Table IV: Relation of BMI with education and occupation of the respondents

Variables	BMI of the respondents			
	<18.5	18.5 - 25.0	> 25.0	Total
Education				
Illiterate	109	203	08	320
	(34.1)	(63.4)	(2.5)	(62.7)
Literate	48	136	06	190
	(25.2)	(71.6)	(3.2)	(37.3)
Total	157	339	14	510
	(30.8)	(66.5)	(2.7)	(100)
χ^2 = 4.4, df = 2, p >0.05				
Occupation:				
House wife	86	194	11	291
	(29.5)	(66.7)	(3.8)	(57.1)
Not house wife	71	145	03	219
	(32.4)	(66.2)	(1.4)	(42.9)
Total	157	339	14	510
	(30.8)	(66.5)	(2.7)	(100)
χ^2 = 3.0, df = 2, p >0.05				

Table V: One way ANOVA between BMI and monthly family income

BMI	Group	Age of the Respondents			Source	DF	Sum of Square	Mean of Squares	F Ratio	p value
		N	$\overline{X}$	SD						
<18.5	1	157	2985.3	1220	Between group	2	4362512	2181256		
18.5-25	2	339	3110.8	858					2.3	0.1
>25	3	14	3514.3	608	Within group	507	486276649	959125		
Total	3	510	3083.2	981						

N.B.: No two groups are significantly different at the 0.05 level.

Relationship between BMI of the respondents and monthly average family income was also determined by one way ANOVA. BMI groups of 1, 2 and 3 had mean monthly family incomes of Tk. 2985.35 (±1220.59), Tk. 3110.76 (±858.37) and Tk. 3514.28 (±608.72) respectively which showed a positive relationship i.e., mean monthly family income was positively associated with BMI. But the figures showed no two groups were significantly different at the .05 level (F= 2.3, p= 0.1). (Table V)

Discussion

This study provided some important features of the women, specially their socio-economic, demographic and nutritional status, living in a slum in Dhaka. In this study it was found that about two thirds (57%) of the respondents were young and majority of them (63%) were illiterate. The mean age of the respondents was 28 years. About 57% of them were housewives and majority (89%) was from nuclear families. The mean monthly family income of the respondents was Tk. 3056.90. These findings were consistent with some

studies done in different slums in Dhaka[11,12,13]. A study carried out in different slums of Dhaka city showed that two thirds of the respondents were young, 74% of them were illiterate and most of the families were nuclear[11]. The mean age of the respondents was 22.8 years. Another study in the similar situation showed that the mean age of the female respondents was 26.1 years, personal mean monthly income was TK. 680.00 and mean duration of living in the slum was 10 years[12].

In the present study it was found that the weight of about 34% of the respondents was below 40 kg and the height of 15% of them was below 145 cm. The mean weight and height of the respondents were 42.4 kg and 148.7 cm respectively. According to BMI, about 31% of the respondents were suffering from malnutrition (BMI <18.5). More or less similar findings were observed by several studies carried out earlier in slums and rural Bangladesh[1,7,14,15,16]. In some studies it was found that the average weight and height of Bangladeshi women were 42 kg and 154 cm respectively[1,14]. The study showed that 25% of the pregnant slum mothers were suffering from severe malnutrition (BMI <17)[7] and the mean BMI of this study was similar to earlier reports from slums[13] and rural Bangladesh[17].

The association of nutritional status (BMI) with education and occupation of the respondents was looked into and was found insignificant in both the cases, though a significant association was expected. Mother's nutritional status by weight and BMI were significantly (positively) correlated with mothers' years of schooling observed in slum[18] and in rural areas[17] in Bangladesh. In present study positive relationship was found between BMI and monthly family income but unexpectedly it was statistically insignificant. In a similar study, the author observed a significant and positive association of BMI with household economic status[18]. The findings by another study were similar with the corresponding findings of the present study[17].

Conclusion

This study provided some important information on the nutritional status of women in their reproductive age of a slum within Dhaka city. The findings of this cross-sectional study presented a gloomy picture of the slum women which might reflect the picture of the women in Bangladesh as a whole. So, a longitudinal study on a large scale including all the variables related to nutritional status of the women is desirable for gaining further insight.

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