

NUTRITIONAL STATUS OF THE ADOLESCENT MOTHERS IN A RURAL AREA OF BANGLADESH

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Abstract

Background: Adolescence is a significant period of human growth and maturation. In Bangladesh adolescent population is about 24% and highest prevalence of nutritional deficiencies occur during adolescence. The young mother's nutritional status is very important. This cross-sectional study was carried out to investigate the nutritional status and dietary pattern of adolescent mothers.

Methods: Total 103 adolescent mother's nutritional status was assessed by anthropometric measurements-height, weight, MAC and BMI. Food intake pattern was assessed by food frequency questionnaire and nutrient intake was assessed by 24 hours recall method.

Results: Underweight was 39.8%, normal weight 51.5% and overweight 7.8%. Mean calorie intake was 1838.38 Kcal (81.34% of RDA), daily protein intake was 58.74 gm (124.98% of RDA) and daily fat intake was 58.75 gm (117.75% of RDA). about 57.31% of the total calorie intake (1789.19 Kcal) came from carbohydrate source, 13.13% from protein and 29.55% from fat. A significant percentage of mothers did not take milk (25.5%) or egg (22.5%) once in a week. Pulse was consumed regularly above 6 times a week by 54.9% of the mothers. Fish was consumed 4-6 times by 39.2%, green leafy vegetables above 6 times by 35.3%. There were positive association found between nutritional status and family size, monthly family income and total calorie intake.

Conclusion: nutritional status of the adolescent mothers were not so satisfactory. nutritional status is largely associated with their socio-economic status and family size.

Key words: Nutritional status, adolescent, adolescent mother, rural area.

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Introduction

Adolescence is a significant period of human growth and maturation. Adolescence begins with pubescence, which is the time for a final growth spurt in girls and boys. This physical growth is determined by many factors: genetic, hereditary, nutritional, and behavioral factors like dieting¹.

For young mother during lactation the need for energy and protein increases, as does the need for increased vitamins and minerals.¹The rapid growth, which occurs in

adolescence, places extra demand on nutritional requirements. During this period more than 20% of total growth in stature and up to 50% increases in calcium requirements. Adolescent mothers have also additional requirement of iron up to 15% to compensate for menstrual blood losses¹. Malnutrition adversely affects mental development, physical development, productivity, the span of working years; all of which significantly influence the economic potential of man².

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Women provided a major human resource potential not only quantitatively but also qualitatively. They must be partners and beneficiaries of all development efforts – nutrition, education and income generation³. Their status, behavioral pattern and most important and relevant here the nutritional status are intimately linked with our next generation population and the social and economic development.

Methods:

A cross sectional study was conducted at Dhamtee village in Debidwar upazilla of Comilla district between March and June of 2010. A total of 103 adolescent girls aged between 15-19 years mothers were purposively taken as study population. Questionnaire which contain both pre-coded and open ended questions, weight machine-Bathroom scale and height board made up of wood were the data collection tools. The whole process of data collection was comprised of four sections. The first section dealt with particulars of the study population. The second section dealt with the socio-demographic family status of the respondent. These two sections of data collection were done by the face to face interview of the respondent and the collected information was noted in the questionnaire. The third section dealt with the anthropometric parameters like height, weight and MAC. The fourth section dealt with dietary pattern measured by 24 hours recall method. Data analysis was done by SPSS version 11.5. Chi-square tests were done to analyze the data.

Results:

The mean age was 15.79 years and \pm SD 1.69 years. Majority of the respondents were >16 years age group (63.1%) and 98.1% of the respondents were Muslim. About 99% of the respondents were unmarried. Education of the respondents are at least primary (51.1%) and S.S.C level & above (55.9%). And (94.1%) 1 of the mothers were housewives. Average family size of the respondents was 5.02 with \pm SD 1.24. The families were classified into

three sizes: small families (3-5 members), medium families (6-7 members) and large families (>7 members). Most of the families (58.8%) were medium sized (Table-I). The mean body weight of the respondent was 46.99 Kg with \pm SD 9.27 Kg. The mean height was 153.95 cm with \pm SD 5.7 cm. The mean BMI was 19.78 kg/m² with \pm SD 3.43. The mean MAC was 23.57 cm with \pm SD 2.93 cm (Table-II). About 39.8% of the total respondents were underweight (BMI<18.5). 51.5% were normal weight (BMI 18.52-24.99). 7.8% were overweight (BMI 25-29.99) and very small percentage (1%) showed mild obesity (BMI 30-34.99) (Table III). About 25.5% mother doesn't take milk once in a week. Only 18.6% consumed > 7 times per week. A good number of mothers don't take egg once in a week (22.5%). Only 14.7% consumed > 7 times per week. Majority of the mothers (69.9%) take meat 1-3 times per week. Fish intake is more frequent than meat. 39.2% mothers take fish 4-6 times per week. Pulse is consumed regularly (7 times or more) by 54.9% of the respondents. 35.3% of the respondents take vegetables 7 or more times per week. 39.2% takes fruits 1-3 times per week and 38.2% takes 4-6 times per week (Table 4). The mean intake of total calorie consumption was 1838.38 Kcal. \pm SD 525.93 Kcal. Mean protein intake was 58.74 gm with \pm SD 20.96 gm. Mean fat intake was 58.75 gm with \pm SD 19.36 gm and mean CHO was 256.36 gm \pm SD 83.11 gm (Table 5). Significant relationship is found between family income and total calorie intake. Most of the mothers from the families (income<10,000/= per month) takes below the RDA for total calorie (80%). A good number of girls from the families (income >50,000/= per month) takes calorie according to RDA (60.4%). ($\chi^2=6.29$ at df 3 $P<0.05$) (Table 6). The mother from the large families (3 above) were significantly underweight (81.8%). On the other hand, overweight is more (12.1%) in the small families (1-2 members). ($\chi^2=9.54$ at df 4 $P<0.05$) (Table 7).

Table-I
Socio-demographic family status of the respondent.

Variables	Frequency	Percentage
Age		
<16 years	38	36.9
≥ 16 years	65	63.1
Mean = 15.79 SD± 1.69		
Religion		
Islam	101	96.1
Hindu	02	1.9
Family size		
3-4	38	37.3
5-6	60	58.8
7 and above	04	3.9
Mean = 5.02 SD± 1.24		
Education		
Primary	15	14.56
Up to class X	30	29.12
SSC	40	38.83
HSC	18	17.47
Socioeconomic status		
High income family	53	51.5
Medium income family	35	34.0
Low income family	15	14.6

Table-II
Anthropometric Indices.

Variables	Mean	Median	± SD	Minimum	Maximum
Height (in cm)	153.95	153.6	5.70	142	170
Weight (in Kg)	46.99	45.00	9.27	29	81
BMI	19.78	19.06	3.43	13	32
MAC	23.57	23.20	2.93	18	34

Table-III
BMI of the Respondent.

BMI	Frequency	Percentage
Under Weight (<18.5)	41	39.8
Normal Weight (18.5-24.99)	53	51.5
Over Weight (25-29.99)	08	7.8
Obesity Grade-1 (30-34.99)	01	1.0

Table-IV
Food intake pattern (Times/ Week).

Item	0		1-3 times		4-6 times		> 6 times	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Milk	26	25.5	47	46.1	10	9.8	19	18.6
Meat	0	1	71	69.9	21	20.6	9	8.8
Fish	6	5.8	24	23.5	40	39.2	32	31.4
Egg	23	22.5	34	33.3	30	29.4	15	14.7
Dal	11	10.8	23	22.5	12	11.8	56	54.9
Green L.veg.	12	11.7	27	26.5	27	26.5	36	35.3
Fruits	1	1	40	39.2	39	38.2	22	21.6

Table-V
Nutrient Intake by the respondents.

	Mean	Median	± SD	Mini-mum	Maxi-mum
Total Calorie (Kcal)	1838.38	1850.00	525.93	661	3278
CHO (gm)	256.36	248.60	83.11	76	458
Protein (gm)	58.74	57.00	20.36	16	128
Fat (gm)	58.75	58.70	19.36	28	129

Table -VI
Relationship of total Calorie intake with monthly family income.

Family income per month	Total Calorie intake <2260Kcal.	Total Calorie intake ≥2260Kcal.	Total
<3,000/-	08 (80%)	02 (20%)	10 (100%)
4,000-6,000/-	21 (95.5%)	01 (4.5%)	22 (100%)
7,000-9,000/-	15 (65.2%)	08 (34.8%)	23 (100%)
>9,000/-	39 (39.6%)	29 (60.4%)	48 (100%)
Total	63 (77.7%)	40 (22.3%)	103 (100%)

$\chi^2=6.29$, df=3, P<0.05

Table-VII
Relation of family size with BMI.

Family size	BMI			Total
	Under wt.	Normal wt.	Over wt.	
3-4 members	11 (33.3%)	18 (54.5%)	04 (12.1%)	33 (100%)
5-6 members	21 (35.6%)	33 (55.9%)	05 (8.5%)	59 (100%)
7 and above	09 (81.8%)	02 (18.2%)	-	11 (100%)
Total	41 (39.8%)	53 (51.5%)	09 (8.7%)	103 (100%)

$\chi^2=9.54$ at df 4 P<0.05

Discussion

Adolescence is one of the most challenging periods in human development. Because of the extent of physical and psychological changes taking place, a number of important issues arise that influence the nutritional well being of the teenagers. Knowledge of developmental process is a prerequisite for understanding the nutritional aspect of life in this period.

The mean height of the study when compare with the result of Nutrition Survey of Rural Bangladesh conducted by Institute of Nutrition & Food Science⁴ (INFS) shows that the height range that the height range of the adolescent mothers were 121-150 cm, where as the height range of the present study is 142-170 cm. Regarding weight, the weight ranges of the girls are 29-81 Kg. Whereas, the weight range of the INFS study is 19.8-40.5 Kg. The finding of weight range of this study is far away from the INFS study. This situation is reflection of increased average income and more awareness about health and nutrition among the population of present study.

The range of mean MAC of INFS study was 15.8-21.9 cm, where as in the present study it is 18-34 cm. The findings are nearer to the mothers of INFS study in its minimum value. "Nature and extent of Malnutrition in Bangladesh" a survey conducted by Bangladesh National Nutrition Survey 1995-96 found that BMI of the adolescent mothers (10-17 years) that 71.4% were normal weight, 25.1% underweight or thinness and 3.4% overweight. In the present study 39.8% was underweight, 51.5% normal weight and 7.8% overweight. These differences indicate the better

nutritional situation of the population of the present study. In the above survey the sample size was large and included both rural and urban population.

A study found that about 40% of the girls does not eat meat, 33% does not take milk and 24% doesn't take egg per week⁵. In the present study about 1%, 26%, 23% doesn't take meat, milk and egg respectively per week. But the meat intake frequency (per week) is good⁵. The present study also revealed relation between family size and monthly family income with nutritional status.

Conclusion:

Nutritional status of adolescents' mothers was not so satisfactory. Family size and socioeconomic status were associated with nutritional status. Parents and community need to be sensitized about the nutritional requirements of adolescent mother, especially mothers need to be informed about the balanced diet of adolescents.

References

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