

## KNOWLEDGE, ATTITUDE AND FEEDING PRACTICES AMONG THE MOTHERS HAVING UNDER-5 CHILDREN IN A RURAL COMMUNITY OF BANGLADESH

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### To the Editor

Maternal education is significantly related to early childhood morbidity and mortality. In Bangladesh, most mothers do not have a correct knowledge on exclusive breastfeeding and the appropriate time for introduction of weaning foods; and only 3% of them know how to prepare proper weaning foods<sup>1</sup>. Another study conducted in the rural population reported that according to Gomez classification, 96% of children had varying degrees of protein energy malnutrition (PEM) (28.4% mild, 58.2% moderate and 9.2% severe)<sup>2</sup>. Timely weaning, education and promotion of essential vaccination may reduce childhood malnutrition, especially severe PEM. It has also been reported that the prevalence of breastfeeding in Bangladesh is one of the highest in the world where diarrheal diseases are hyper-endemic and issues of breastfeeding in several diarrheal diseases have been well documented<sup>3</sup>. We undertook this study to determine knowledge, attitude and feeding behavior of the mothers in a rural community.

This cross sectional study was conducted in Sreepur Thana. Four villages were purposively selected. All women having children below 5 years were interviewed face to face. Structured questionnaire was used. Each participant was informed about the objectives of the interviewing. After taking her consent the interview session was started. The interviewing included socio-demographic information like housing, sanitation, education, water-supply and family-income. As regards feeding practices, each mother was interviewed for information related to nutrition during pregnancy and lactation. The questionnaire also included information about breast feeding like colostrum, exclusive breastfeeding, weaning and feeding during diarrhea and fever. The collected information were entered into computer using SPSS 11.5 version. The prevalence rates of feeding and weaning practices were expressed in percentages. Chi-sq was used to determine association of feeding practices with education and social class.

A total of 500 families were visited in four villages. Of these families, 409 (81.1%) women were selected. Of the 91 non-participants, 85 women had no children below 5 years and only 6 women refused to participate. The mean age of the participants was 25 years (16-45y). The average family size was 4 (4-11) and the average monthly expenditure was 3751 (500- 15000) taka. About 25% were illiterate and 95% were housewives. Most of the families had access to tube well water for drinking and domestic purposes. Of them, 94% had living rooms with corrugated tin sheet.

The study revealed that 68% of mothers took extra food during pregnancy, 80% took extra food during lactation, 54% mothers gave exclusive breast feeding for 6 months. More than one third (36%) mothers started weaning at 6<sup>th</sup> month and only 62% mothers chose khichuri made of rice and pulse as supplementary food. About two-thirds used to provide balanced diet to their children; 70% used to serve normal diet during fever, 71% during diarrhea and 88% during recovery from illness. The prevalence of taking extra food during

lactation by literate mothers were significantly higher than that of illiterate mothers (84 vs 72%,  $p < .05$ ). The prevalence of taking balanced (added with vegetables and fruits) diet during lactation was also significantly higher among the literate than illiterate mothers (74 vs 37%,  $p < .001$ ). Taking fruits regularly with diet was more frequent among the mothers of literate and richer class than their illiterate and poorer counterparts.

It may be concluded that about one-fourth of the rural mothers were illiterate though the feeding practices for their children during fever and diarrhea were satisfactory (70 – 88%). As regards weaning practices, about 38% were found not giving their babies supplementary food and almost one-third did not know the beneficial effects of fruits and vegetables for their babies. The low income and high illiteracy among rural mothers were found to affect the rearing practices and also nutrition during pregnancy and lactation. More studies are needed to confirm our findings and it is important to initiate programs for educating mothers with special emphasis on energy dense food during pregnancy and lactation and to emphasize the requirements of fruits and vegetables.

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## NUTRITIONAL STATUS, PROTEINURIA AND GLYCOSURIA AMONG PRIMARY SCHOOL CHILDREN IN A RURAL COMMUNITY OF BANGLADESH

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### To the Editor

Nutritional status of primary school children in rural Bangladesh has not been addressed in the past. Nor there was any published report on the prevalence of glycosuria and proteinuria in this group. Detection of proteinuria is an easy method to detect disease like glomerulonephritis in children. Glycosuria indicates several underlying pathological conditions like – diabetes mellitus and tubulo-interstitial disorders. This study was undertaken to determine the nutritional status amongst the primary school children in addition to screening for proteinuria and glycosuria.

This cross sectional study was conducted in the purposively selected four primary schools situated in 4 villages of Sreepur Thana. The

villages were Salkhamair, Mulaid, Ansar Tapirbari and Tangra situated about 80 km off Dhaka City. All students of the primary schools were considered eligible for the investigation. The school teachers were contacted and the purpose of the study and procedural details were explained to them. We started interviewing the students one by one in a room provided by the school authority. The interviewing sessions included information on their socio-demographic characters like name, age, sex, housing, and the use of latrine and drinking water. The teachers helped us in assessing family income either by checking information from admission registry or personal impression. Then each student was examined for height, weight and mid-upper arm circumference (MAC) including signs of vit-A, vit-B, vit-C deficiency. The presence or absence of anemia and goiter as a sign of iron and iodine deficiency respectively were noted. Each student was provided with a test tube and instructions on how to collect his / her urine. Urine samples were examined for the presence of glucose with an enzyme (glucose oxidase) impregnated test-strip. Following the glucose-oxidase test, the urine was tested for the presence of protein in urine using salicylic sulfonic acid.

A total of 460 (M / F = 256 / 204) students of four primary schools in four different villages took part in the investigation. Almost all students had provision of safe drinking water (99.6%) and sanitary latrine (91.3%). More than 90% had tin shed living rooms.

The mean  $\pm$  (SD) age was 8.5 (1.7) years. Their mean (SD) height, weight and MAC were 124.3 (10.2) cm, 21.0 (4.8) kg and 16.9 (1.7) cm, respectively. The estimated body mass index (BMI) was 13.5 (1.6) and body surface area (BSA) was 0.86 (0.13). The comparisons of age, height, weight, MUAC, BMI and BSA between male and female participants did not differ (data not shown). According to Gomez' classification of nutritional status – only 13.8% was graded as "normal" and 7% as "3<sup>rd</sup> degree or severe malnutrition" [table 1]. The partial correlation as expected, the age was significantly ( $p < 0.001$  for all) correlated with height ( $r = 0.79$ ), weight ( $r = 0.73$ ) and MUAC ( $r = 0.55$ ). Similar correlations were also found with BMI and BSA (table not shown).

The prevalence of anemia was found among 18.7% of the children. Regarding oral hygiene, 55% of them had dental caries and 23.7% reported gum-bleeding during brushing of teeth. Skin examination revealed that 2.8% had scabies and 2.4% had fungal infection. Although proteinuria was detected among 2.2% of the participants there was no case of glycosuria. As regards nutritional deficiency, sign(s) of Vitamin A deficiency was found in 11.7% and Vitamin B

**Table 1.** Nutritional status of the school children of age 6-12 years ( $n=456$ ): Gomez' classification

Nutritional status	N (%)
Normal	63 (13.8)
1st degree, mild malnutrition	222 (48.7)
2nd degree, moderate malnutrition	139 (30.5)
3rd degree, severe malnutrition	32 (7.0)

**Table 2.** General clinical features and diseases and signs of micronutrient deficiency.

Clinical features and disease manifestations	N (%)
<b>General</b>	
Jaundice	1 (0.2)
Anemia	86 (18.7)
Edema leg	6 (1.3)
<b>Oral hygiene</b>	
Gum bleeding (gingivitis)	109 (23.7)
Dental carries	253 (55.0)
<b>Skin lesion</b>	
Scabies	13 (2.8)
Fungal infection (ringworm)	11 (2.4)
<b>Proteinuria</b> (salicylic sulfonic acid)	10 (2.2)
<b>Glycosuria</b> (glucose oxidase test strip)	0 (0)
<b>Nutritional deficiency</b>	
Vitamin A (Bitiot's spot, xerophthalmia, toad skin)	54 (11.7)
Vitamin B (cheilosis, angular stomatitis, dyssebacia)	135 (29.3)
Visible goiter (possible iodine deficiency)	6 (1.3)

deficiency in 29.3%. Visible goiter was detected in 1.3% of the participants [table-2].

Although the investigation was conducted on a small sample ( $n = 460$ ) from four purposively selected village-schools, very few reports are seen for this group in Bangladesh. There are several reports on nutrition in Bangladesh and other countries but those are mostly in the under-fives<sup>1,2</sup>. Very few studies address the nutritional status of children and adolescents in the rural community. As there was no other anthropometric study of this age group it was not possible to compare our anthropometric findings to that of the others. According to Gomez' classification, not even one-fifth of the study subjects had a "normal" nutritional status. This finding indicates that more than 80% of the children of age 6 – 12 years suffer from mild to severe malnutrition and about 40% suffer from moderate to severe malnutrition.

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