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Studies on the Growth Pattern of Boys Under Ten in a Selected School of Dhaka City

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Abstract

The study was carried out among 180 school boys with an age range from 4 to below 10 years attending a school in Dhaka City with a view to assess the growth pattern. Gomez and waterlow classification were used to classify the nutritional status. Only 1 boy had weight for height less than 70%, while 10.0% were wasted, 10.6% stunted, 1.7% were both wasted & stunted and 77.8% of the boys were normal in all the parameters. The overall nutritional condition of under ten boys were found to be better than the country situation. The boys of the school belong to a privileged class which represent a typical group of population of the country.

Introduction

Bangladesh is one of the most densely populated countries in the world with a population more than 120 millions (B.B.S., 2003). Protein-energy malnutrition (PEM) is a very serious public health problem in developing countries and more than half of the total death of the under five children are related, directly or indirectly to malnutrition (Duffer and Serrano, 1973). In addition, Six hundred children die everyday due to malnutrition in Bangladesh (Ministry of Health and Family welfare, 1998). Every year more than 30,000 children become blind due to VAD and 9 million children have visible sign of VAD.4 Average daily intake of vitamin A is very low and has declined from 870 I.U. in 1962-64 to 703 I.U. in 1981- 82 (INFS, 1983).

Nutrient is an important substance because of its vital role to play in preventing disease. Normal growth and development of infants and young children require care, that adequately meet the basic needs (nutrition, health, knowledge, information, sanitation, protection from severe and repeated illness etc.) (Engle and Riccuiti, 1995). The report of Bangladesh Bureau of statistics shows that prevalence of under weight (W/A below-2SD Score) boys (6-71 months) is 51.1%, wasted (W/H blew - 2SD Score) is 11.8% and stunted (H/A below-2SD Score) is 48.5% (B.B.S., 2003).

Childhood is a period of rapid growth and school aged children passes the active grow-

ing phase of their life. It is well-known that age, height, weight of children are interacted (Nutrition, 2002). The national nutrition survey (1995-96) report slows that 65.2 % of the children aged 6-9 years are malnourished, 5.8 % stunted but not underweight, 12.7 % underweight but not stunted, 46.7 % both stunted & underweight and about 35 % of the children are normal in all the parameters (Jahan and Hossain, 1998).

The purpose of the present study is to assess growth pattern of posh area of Dhaka City. In this study we report on the anthropometric growth pattern of boys under 10 years of age studying in a High School in Dhaka City as a case study.

Materials and Methods

The study was conducted in BCSIR High School during the period of August 2001-October 2002. The school was located at an elite area of Dhaka City. Majority of the school boys were from high socio-economic classes. The school has both primary and secondary classes and rums two shifts, morning shift for the girls, nursery to class III for the boys and day shifts for only boy students. The present study covered the morning shift. The study was purposive and the samples of the study population were all the boys from nursery to class III.

The age of the boys were recorded from the register of the school. Only those boys who were listed in the register and in the age group of 4 to under ten years were included in the study. Anthropometric measurements that is height (ht) and weight (wt) of the students were measured. It was done with school uniform but not with shoes. The growth pattern of under ten year boys in relation to their age, body weight are compared with the National Center for Health Statistics (NCHS, USA) reference standards (std) (National, 1990). The socio-economic information were recorded by interviewing the students by using the structured and pre-coded questionnaire. Pre-testing was done before starting the actual study. Statistical package for social science (SPSS) was used to analyses the data (SPSS, 1999).

Result and Discussion

The growth pattern of the boys according to gomez classification has been shown in Table I (National, 1990). There were only 5 (2.8 %) boys having 2nd degree malnutrition. About 13.9 % boys had 1st degree malnutrition on and 83.3 % boys had normal nutritional status.

Table II shows the cross tabulation against weight for age and weight for height. Only one boy had weight for height below 70 %. One hundred and thirty two boys had both normal weight for age and weight for height.

Table III shows the distribution of the boys according to weight for age and height for age. It shows that 12.2% boys had height for age below 90% of standard.

Table I. Distribution of boys representing degrees of malnutrition according to Gomez classification

Age in years	Weight-for-age median			Total
	Normal (90.0^{+})	1st Degree (75.0-89.9)	2nd Degree (60.0-74.9)	
4 - 6 years	74	7	2	83
	89.2%	8.4%	2.4%	100.0%
7 - 9 years	76	18	3	97
	78.4%	18.6%	3.10%	100.0%
Total	150	25	5	180
	83.3%	13.9%	2.8%	100.0%

Table II. Distribution of boys according to their weight for age and weight for height.

Weight-for-height median	Weight-for-age median				
	Normal (90.0^{+})	Mild (80.0-9.9)	Moderate (70.0-9.9)	Severe (<70.0)	Total
Normal (90.0+)	132	11			143
	92.3%	7.7%			100.0%
1st Degree (75.0-89.9)	18	4	1	1	24
	75.0%	16.7%	4.2%	4.2%	100.0%
2nd Degree (60.0-74.-9)	1	3	1		5
	20.0%	60.0%	20.0%		100.0%
Total	151	18	2	1	172
	87.8%	10.5%	1.2%	0.6%	100.0%

The grouping of the boys against height for age and weight for height has been shown in Table IV Table V describe the nutritional status of the school going boys. It shows that highest i.e. 140 (77.8%) of boys had normal nutritional status. In order of frequency, 18 (10.0%) and 19 (10.6%) were wasted and stunted respectively. In addition, 3 (1.17%) boys were both wasted and stunted. Malnutrition is a significant public health problem in the third world countries. The vulnerable groups- young children, pregnant and lactating mothers, in general women are worst victim of malnutrition. The health and

Table III. Distribution of boys according to their weight for age and height for age

Weight-for-age median	Height-for-age median		Total
Normal (90.0+)	144	6	150
	96.0%	4.0%	100.0%
1st Degree (75.0-89.9)	13	12	25
	52.0%	48.0%	100.0%
2nd Degree (60.0-74.9)	1	4	5
	20.0%	80.0%	100.0%
Total	158	22	180
	87.8%	12.2%	100.0%

Table IV. Distribution of boys according to their weight for age and height for age

Weight-for-age median	Weight-for-height median				Total
	Normal (90.0^{+})	Mild (80.0-89.9)	Moderate (70.0-79.9)	Severe (<70.0)	
Normal (90.0+)	132	15	2	1	150
	88.0%	10.0%	1.3%	0.7%	100.0%
1st Degree (75.0-89.9)	19	3			22
	86.4%	13.6%			100.0%
2nd Degree (60.0-74.-9)	151	18	2	1	172
	87.8%	10.5%	1.2%	0.6%	100.0%
Total					

nutritional status of the children above five years of age are affected by several dependent and independent variables (Martorell and Habicht, 1986). A study by Chowdhury *et. al.* (2002) showed that majority (57.07 %) of the goiter cases were illiterate, 23.73 % were educated up to primary level and 1.87 % were graduate. According to UNICEF report, the situation of infant, children and maternal malnutrition in Bangladesh is among the worst in the world (Unicef, 1990). Another study by Ahmeed *et. al.* (1990) reported the nutritional status of school going children in Bangladesh showed that only 5 children (0.90 %) had 3rd degree malnutrition, 3 children had weight for height less them

Table V. Distribution of boys according to their nutritional status

Nutritional Status	Number of boys	% of the total
Normal (W/H>90& H/A>95)	140	77.8
Wasted (W/H<90& H/A>95)	18	10.0
Stunted (W/H>90& H/A<95)	19	10.6
(Both Wasted & Stunted (W/H<90 & H/A <95	3	1.7
Total	180	100.0

W/H = Weight for height

H/A = Height for age

70 % and only one child had height for age below 80 % of the Harvard standard.

From the above calculation, the total number of under ten boys having normal nutritional status appears to be 151 (87.8 %), mild malnutrition 18 (10.5 %), moderate malnutrition 2 (1.2 %) and severe malnutrition 1(0.6 %). This results differs from the findings of others. Here, as the study samples were derived from a privileged class of higher socio-economic family, nutritional status of the boys was found to be relatively below. This cannot be compared to the national findings about the anthropometric growth pattern of boys under 10 years belonging to the different socio-economic classes of the country. Besides, there may be some mistake in reporting the age of the boys in the school, since this is a common practice to reduce the age of boys during admission in to the school. Moreover, the urban parents are more health conscious than the rural ones. Many other health programms such as vaccination, nutrition education, vitamin capsule distribution, maternal child registration etc. have also been taken through integrated activities of government, non-government organization and other agencies in order to create awareness among the mass population. This might have contributed positively towards the achievement of a better nutritional status among the population.

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