Prevalence of Morbidity among Normal and Malnourished Children of a Slum area of Dhaka City

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Introduction

In Bangladesh under five mortality rate (U5MR) is 188 and it is 13.43 time higher than in USA[1]. Malnutrition is directly or indirectly responsible for 53.2% of total deaths in children under five years of age[2]. Malnutrition means poor physical and mental growth, poor performance at school and at work, and the perpetuation of poverty from one generration to the next[1]. The magnitude of the problem is colossal in Bangladesh because only 45% of the population have access to the existing health services[1]. There are numerous causes of ill health in these children such as anaemia, infectious diseases like diarrhoea and others. Malnutrition and ill health are accompaniment of overcrowded area like slum community[4]. However, the differences, if any, in the prevalence of morbidity among the normal and the malnourished children living in the overcroweded slums of Dhaka have not been docomented. The present study was designed to compare the prevalance of morbidity among the normal and the malnourished children of a slum community of Dhaka City.

Materials and Methods

The study was carriedout between March and May, 1989 in Bashaboo Wohab Colony, a slum with least modern facilities. Wohab Colony was chosen for some definite reasons, such as good internal communication, acquaintance with the local people through a "Free Friday Clinic" homogenity of socio-economic status and a large population living in a relativety small area. The Colony acomodates 622 famalies with a population of 5000. Two hundred and ninety seven households having children between 0 and 5 years of age were selected for the study.

Household demographic and socio-economic characteristics such as age, sex, family size, income, occupation and housing conditions etc. were noted by interviewing the household head or a responsible member of the family. Socio-economic and anthropometric data were collected by two trained volunteers under the supervision of the investigators.

The clinical examination and haemoglobin estimation were done by a clinician. The laboratory test for haemoglobin was done by cyanmethemoglobin method. Less than 11 gms of haemoglobin per dl was considered as anaemic[14].

Malnutrition was diagnosed as loss of weight, thin musculature and protubarent ballies [6,7,11]. After necessary editing and checking the collected data were analysed by a

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computer. The test of significance was evaluated by Z test.

Results

Table 1 presents the demographic and socio-economic characteristics of the study population. Of the total study population (N=297) 60.27% were male and 39.73% were female. Over 16% of the subjects were below 1 year of age. Some 12.46% of the children were 1 year old, 18.18% were 2 years, 20.53% were 3 years, 22.9% were 4 years and 9.09% were 5 years. The mean family size was 6.02±2.38. Over 47% of the households heads were small traders, 23.23% were low paid service holders, 15.49% rickshaw pullers and 13.80% day labourers. The mean percapita monthly income was TK: 391±183. More than 64% of the children were living in kancha damp houses, 20.20% in semipucca and only 15.49% in pucca houses. All the households had pipe water supply but only 59.93% had access to sanitary latrines. The majority (69.70%) of the houeshold heads had no formal education. Merely 12.46% and 11.46% of the houeshold heads had primary and secondary education respectively.

Table 2 shows the distribution of children by their nutritional status (wt./age). It seems that only 18.85% of the children could be classified as normal. All the remaining children (81.15%) were suffering from some degree of malnutrition.

Table 3 shows the overall health status of the children in terms of presence or absence of any kind of disease (morbidity). Significant difference in the prevalence of disease between the normal and the malnourished group is obvious. Ninety five percent of the malnourished children were found to be suffering from some kind of disease as against 26.7% ($P<0.001$) in the normal group. About three quarters of the normal children were free from diseases, whereas in the malnourished group merely 5% were found disease free.

Table 4 shows that prevalence pattern of specific morbidity among normal and malnourished group. Prevalence of all types of morbidity are substantially higher in the malnourished group than the normal one. About 95.02% of the malnourished children presented with anaemia, 40.66% with fever and 31.12% with cough as against 8.77%, 12.50% and 17.86% respectively in the normal group. More than 30% of the malnourished children had diarrhoea whereas in normal group there was only one case of diarrhoea out of 56 children. More than 11% of the children in the malnourished group had dysentry and 6.34% were nightblind. In the normal group there was no case of dysentery or nightblindness.

Table 1 : *Socio-demographic characteristics of the study population*

Variable	No.	%
Total No. of children	297	100
Male	179	60.27
Female	118	39.73
Age of the study children : below 1 year	50	16.84
1 year	137	12.46
2 year	54	18.18
3 year	61	20.53
4 year	68	22.90
5 year	27	9.09
Education of house hold head		
No education	207	69.70
Primary	37	12.46
Secondary	35	11.78
Above	18	6.06
Profession of house hold head		
Small trade	141	47.48
Low paid service holder	69	23.23
Rickshaw puller	46	15.49
Day labourer	41	13.80
Housing: Kancha house	191	64.31
Semi pucca house	60	20.20
Pucca house	46	15.49
Piped water use	100	100
Sanitary latrine use	178	59.93
	$\bar{X}$	± SD
Family size	6.02	2.38
Per head monthly income (TK.)	391	183

Table 2. *Distribution of children by their nutritional status according to Gomes classification (weight for age)*

Age	Sex	Normal > 90%	Malnutrition ≤ 89.9%	Total
Below 1 year	Male	13(4.38)	19(6.4)	32(10.78)
	Female	3(1.01)	15.(5.05)	18(6.06)
	Total	16(5.39)	34(10.45)	50(16.84)
1 year	Male	3(1.01)	22(7.41)	25(8.42)
	Female	1(0.34)	11(33.7)	12(44.05)
	Total	4(1.35)	33(11.13)	37(12.46)
2 years	Male	5(1.68)	25(8.42)	30(10.10)
	Female	1(0.34)	23.(87.74)	24(88.08)
	Total	6.(2.02)	48(16.16)	54(18.18)
3 years	Male	8(2.69)	27(9.09)	35(11.78)
	Female	2(0.67)	24(0.08)	26(8.75)
	Total	10(3.37)	51(17.17)	61(20.54)
4 years	Male	13(4.38)	30(10.10)	43(14.48)
	Female	4(1.35)	21(87.07)	25(88.42)
	Total	17(5.73)	51(17.17)	68(22.90)
5 years	Male	0(0)	14(4.71)	14(4.71)
	Female	3(1.01)	10(3.37)	13(4.38)
	Total	3(1.01)	24(8.08)	27(9.09)
1-5 years	Male	42(14.14)	137(46.13)	179(60.27)
	Female	14(4.71)	104(35.02)	118(39.73)
	Total	56(18.85)	241(81.15)	297(100.0)

Table 3. *Overall health status of the children by their nutritional status.*

Nutritional Status	Diseased	Not diseased
Normal (n = 56)	26.7% (15)	73.21% (41)
Malnourished (n = 241)	95.02% (229)	4.98% (12)
Significance Z test	S(P<0.001)	S(P<0.001)

*S = Sinificance at 0.001 percent level
Figure in parentheses are numbers

Table 4. Comparative distribution of the prevalence of specific morbidity among normal and malnourished children (N=297)

Morbidity	Normal (N=56)		Malnourished (N=241)		Estimated proportion
	No.	%(x)	No	%(Y)	Y : X
Anaemia	5	8.77	229	95.02	11.10 : 1
Fever	7	12.50	98	40.66	3.25 : 1
Cough	10	17.87	75	31.12	1.80 : 1
Diarrhoea	1	1.79	73	30.29	16.92 : 1
Dysentry	0	0	27	11.20	-- --
Scabies	1	1.79	19	7.88	4.40''' : 1
Night blindness	0	0	16	6.34	-- --
Asthma	2	3.57	15	6.22	1.74 : 1
Abdominal pain	2	3.57	12	4.98	1.39 : 1
Measles	1	1.79	10	4.15	2.32 : 1
Dental carries	1	1.79	7	2.90	1.62 : 1
Otities	1	1.79	6	2.49	1.39 : 1
Jaundice	0	0	3	1.24	-- --
Dump	0	0	1	0.41	-- --

* Total percentages are not mutually exclusive

Discussion

Overall health and nutritional status of young children is a reflection of socio-economic and environmental condition of households. Illiteracy and ignorance play a vital role as indiscriminate source of child ill health. About 70% of the children studied were from illterate families. Most of the children belonged to low income households with average monthly income below 391.00 Taka. People in the lower socio-economic groups do not usually get any treatment and ultimately fall prey to ill health. Similar observation were made by Agarwal[8] and others[9,10,11]. Houseing conditions in the slum are extremely poor and 64.31% of the children were living in damp houses where infections persist and spread quickly[10]. Compared to rural Bangladesh the nutrition situation is better in the urban slum. Although data are not representative with rural Bangladesh yet it shows that the nutrition situation in an under previledged slum area is alarming. The prevalence of malnutrition was as high as 81.15%.

The study revealed that prevalences of all type of morbidity were substantially higher in the malnourished than in the normal group. Diarrhoeal disease prevalence was 16.92 times higher in the malnourished group. Prevalences of anaemia and cough were 11.17 and 32.25 times higher. Similar observation was also made by Monzoor[4]. Prevalence of dysentry & nightblindness among malnourished group were 11.20% and 6.34% respectively whereas in normal group there were none.

Summary

A Total of 297 households having children aged between 0-5 years were studied to find out the prevalence of morbidity among normal and malnourished children in an urban slum of Dhaka city. Prevalence of morbidity among the malnourished chiidren was found to be higher than the normal children living in the same conditions.

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