Original Article

Anthropometric Profile and Common Health Problems in Selected Rural Primary Schools of Faridpur

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Abstract

Introduction: Primary school (age 6-12 years) children constitutes about 24% of developing world population. anthropometric examination is one of the most important tools to assess health and nutritional condition in childhood based on age, body weight, height and body mass index. **Objective:** To assess the anthropometric profile and common health problems of selected rural primary schools of Faridpur district. **Methods:** A descriptive cross-sectional study was carried out among the purposively selected rural primary school children of Faridpur from July to October 2024 by a retested questionnaire by face-to-face interview. **Result:** Majority of the respondents 127 (68.6%) were between 8 to 11 years old with mean 9.12±1.85 years. Muslim were 90.8% (168) and 50.8% (94) were girl; 133 (71.9%) were from nuclear family and most of them (73, 39.5%) had monthly family income between BDT 20,000 to 30,000. Maximum 71(38.4%) father of respondent had Hons/above level education and 59 (31.9%) were service holder. Mother of 54 (29.2%) children had primary level education and 142 (76.8%) were housewife; 177 (95.7%) vaccinated as per EPI schedule 166(89.7%) received deworming drugs. Nearly three fourth 134 (72.43%) respondents had BMI within normal range, 14 (7.56%) was under nutrition and 37 (20.0%) were obese. Most of the respondents 73 (39.5%) had dental carries, followed by Skin itch 47 (25.4%), Head louse 46 (24.9%) and calf muscle spasm 45 (24.3%). **Conclusion:** Dental caries and skin itch is most common problems among rural primary school children.

Key Words: Anthropometric profile, School Health problem, Primary school.

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Introduction:

The primary school age corresponds approximately to the period from kindergarten to secondary which begins after the period of high mortality risk in the preschool years. Primary school age 6-12 years old children constitute a substantial fraction of the world's population, numbering about 24% of the population of the less developed world and about 15% of that of the industrialized world. Not only are school age children a much larger proportion of the total population, but their numbers are also growing at a substantial rate (l4% per year).[1]

In consequences, by the year 2030 approximately 90% of the world's primary school age children will live in less developed countries.[2] Common health problems at primary rural school levels are malnutrition, infectious disease, intestinal parasite, disease of skin, eye and ear, dental carries. School age is dynamic period of growth and development. During this period physical, mental, social development of child takes place.[3] Poor health & malnutrition may impair both the growth & cognitive development of primary school children. School children are dramatically affected by anaemia[4] with vitamin-A deficiency [5] and parasitic infections[6] with adverse impact on their nutritional status [6,7] as well as on their cognitive development and school performance also.[8]

There is growing evidence of considerable burden of morbidity and mortality due to infectious disease and malnutrition in school children in developing countries.[11] Studies in different countries identified the following in primary school children: respiratory problems, diarrhoeal

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disease, nutritional disorders, anaemia, parasitic infestations, pediculosis, dental caries, refractive errors, skin disease, ear and throat problems, tic disorders, sleeping disorders.[12-14]

Anthropometric examination is an almost mandatory tool in any research to assess health and nutritional condition in childhood. Based on the age, body weight and height a number of indices such as- height, for age, weight for height, body mass index have been suggested. The children are classified using three categories. Underweight (low weight for age), stunting (low height for age) or wasting (low weight for height).[15,16]

Stunting and wasting are widespread among primary school age children in developing countries.[21,22] According to WHO criteria 52% of school going children in underdeveloped countries are considered normal, where 48% of them are malnourished and 10% of them are severely malnourished.[17]

More than 200 million school children are stunted and if no children is taken and at this rate about 1 billion stunted children will be growing up by 2020 with impaired physical and mental development.[18] Bangladesh is also facing high poverty and child undernutrition rates.[19] More than 54% of school age children equivalent to more than 9.5 million children are stunted, 56% are underweight and more than 17% are wasted.[20]

Almost same condition was found when these children start to go to school. Whereas 36% are stunted 33% are under weight and 14% wasted under 05-year children in Bangladesh. In Sylhet division it was also high from national level except wasting which was 50% are stunted, 40% under weight and 12% are wasted.[21]

In developing countries like Bangladesh, due to poor hygiene practices the school age children like rural areas are often experienced increased burden of communicable disease that decrease their ability to attend school regularly and to learn their full potential. A large fraction of the world's illness and death is attributable to communicable diseases.[22]

62% and 31% of all death in Africa and South Asia, respectively are caused by infectious disease.[23] There has been inadequate research on the health and disease status of primary school children in Bangladesh. In Dhaka city, bronchial asthma prevalence was 11.89%.[24] A study conducted 6-12 years old primary school children in Sherpur showed rate of helminthes was 39.2% and deworming rate was 81.4%.[25]

In Bangladesh, it is found that 5.73% of rural areas primary school children suffering from allergy, 3.08% stomatitis, 2.64% scabies. Although fewer in number there are stil prevalence of vitamin deficiency, fungal infection, various skin disease, 10.13% dental caries most common surgical condition followed by tonsillitis Mishu et al. showed that the number of decayed teeth was inversely and significantly associated with standardized age adjusted weight among rural Bangladesh primary school children.[26]

Methods: A descriptive type of cross-sectional study was conducted for about four months from July to October, 2024 at 94 No Govt. Primary School, Jheeltuly and 28 No Govt. Primary School, Char Kamlapur, Faridpur among purposively selected 185 Primary school children, who were willing to participate. Interviewer administered semi-structured questionnaire and check-list were used for collection of data. Data were collected from the informants of respondents by face-to-face interview after obtaining verbal consent as well as by observation. After completing interview, each questionnaire was checked for completion and consistency. In case of incompetence and inconsistency, necessary correction was made. After cleaning and editing data were analyzed by Statistical Package of social Science (SPSS) version 27.0. Data were presented in tables and figures according to their nature.

Results: A descriptive cross-sectional study was carried out among the selected rural primary school children of Faridpur to explore their anthropometric profile and common school health problems. Data were collected by face-to-face interview and observation through semi-structured questionnaire. After cleaning and editing data are analyzed and presented through tables, graphs and diagram according to their nature.

Among 185, majority of the respondents 127 (68.6%) were between 8 to 11 years old, 36 (19.5%) were between 4-7 years and the rest 22 (11.9%) were between 12-16 years of age. Mean age were 9.12 ± 1.85 years Highest age was 14 years and lowest age was 05 years with a range of 09 years. Both in class one and two there were 29 (15.7%) students followed by 51 (27.6%) were in class three, 36 (19.5%) were in class four and 40 (21.6%) were in class five.

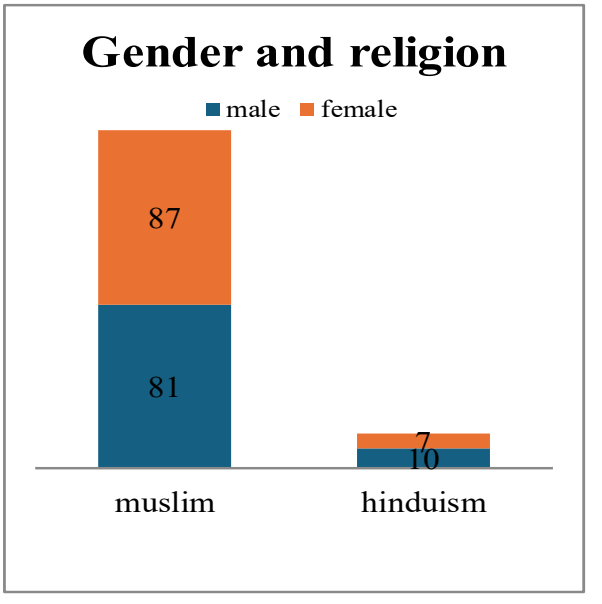

Figure 1: Component bar diagram shows gender and religion (n=185)

An overwhelming majority 168 (90.8%) of the respondents were belong to religion Islam, more than half 94 (50.8%) of the respondents were female and rest of them 91 (49.2%) were male. Nearly three fourth of the respondents 133 (71.9%) were from nuclear family and the rest 52 (28.1%) were from joint family. Majority 73 (39.5%) of the respondents had their family income between BDT 20,000 to 30,000; 71 (38.45), 31 (16.8%) and 7 (3.8%) respondents had their family income between BDT 10,000-20,000, BDT 30,000-40,000 and BDT 40,000-50,000 respectively. Only 3 (1.6%) of them had their monthly income above BDT 50,000. Maximum monthly family income was BDT 90,000 and minimum was BDT 10,000 with a range of BDT 80,000, with a mean of 26,681.08 ± 12,227.06 BDT.

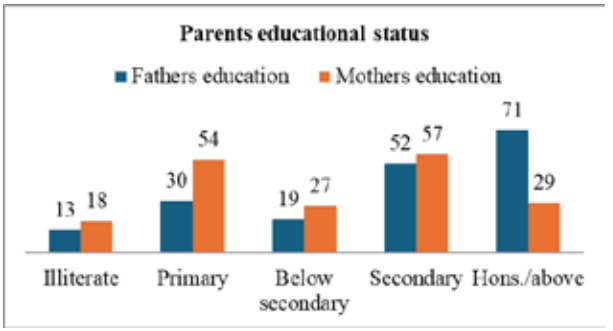

Figure-2: Multiple bar diagram showing fathers and mothers educational status (n=185)

Figure 2 shows that, maximum 71 (38.4%) father had hons/ above education whereas, only 29(15.7%) mothers had hons/ above education. 52 (28.1%), 19 (10.3%), 30 (16.2%) fathers had secondary, below secondary and primary education respectively. On the other hand, 57 (30.8%), 27 (14.6%), 54 (29.2%) of mother had secondary, below secondary and primary education respectively. Only 13 (7.0%) father and 18 (9.7%) mothers were illiterate.

Regarding mothers' occupation of the respondents more than three fourth 142 (76.8%) of them were housewife followed by 21 (11.4%) were service holder, 12 (6.5%) were day labor, 8 (4.3%) were in other occupation like tailor, entrepreneur and only 2 (1.1%) were businessman. Regarding father's occupation of the respondents more than one fourth 59 (31.9%) were service holder followed by 44 (23.8%) were businessman, 29 (15.7%) were day labor and only 15 (8.1%) were rickshaw puller; 38 (20.5%) were in other occupation like construction worker, guard etc. Most of the respondents 177 (95.7%) had BCG mark and received childhood vaccines followed by only 8 (4.3%) had no BCG mark. More than three fourth 166 (89.7%) respondents received deworming drug and 19 (10.3%) not received deworming drugs.

Table-1: Distribution of the respondents according to body mass index (BMI) (n=185).

Age	WHO standard BMI	Present study mean BMI	Within normal rang	Below normal rang	Above normal rang	Total
5	13.1-18.3	18.14 ± 4.40	2	1	2	5
6	13.2-18.7	18.90 ± 3.11	5	0	4	9
7	13.3-19.3	17.01 ± 3.35	15	2	5	22
8	13.4-20.0	18.10 ± 3.60	19	2	10	31
9	13.6-20.9	17.23 ± 4.05	32	3	6	41
10	13.9-21.9	17.94 ± 4.03	29	3	5	37
11	14.2-23.0	18.67 ± 3.53	14	2	2	18
12	14.6-24.1	21.24 ± 3.83	15	0	3	18
13	15.1-25.2	18.01 ± 3.50	2	0	0	2
14	15.6-26.3	20.03 ± 6.20	1	1	0	2
Total			134(72.43%)	14(7.56%)	37(20.0%)	**185**

*Age wise BMI of children with WHO standard.[21]

Table 1 describes that, according to BMI of 185 respondents nearly three fourth 134 (72.43%) was normal, 37 (20.0%) was obese and only 14 (7.56%) had under nutrition.

Table-2: Distribution of the respondents according to their Common school health problems (n=185)

Problems	Frequency	Percentage (%)
Dental carries	73	39.5
Skin itch	47	25.4
Head louse	46	24.9
Calf muscle spasm	45	24.3
Dermatitis	30	16.2
Abdominal pain	23	12.4
Seborrheic dermatitis	20	10.8
Rhinitis	19	10.3
Asthma	16	8.6
Visual impairment	16	8.6
RTI	14	7.6
Otitis externa	12	6.5
Scabies	11	5.9
Tonsilites	9	4.9
Ring worm	7	3.8
Fever	5	2.7
Angular stomatitis	4	2.2
Gingivitis	3	1.6
Enlarged lymphnode	3	1.6
Anaemia	2	1.1
Enlarged thyroid	2	1.1
Jaundice	1	0.5

Discussion:

A descriptive cross-sectional study was carried out at purposively selected Jhiltuly Govt. Primary School and Chor Kamlapur Govt. Primary School, Faridpur district in 2024 with a view to assess the anthropometric profile and common health problems of rural primary school children with a sample size of 185 selected by purposive sampling technique. Majority of the respondents were between 8 to 11 years, with mean age 9.12±1. 85years. Over one-fifth of our population comprises of children aged 5-14 years, that is, the group covering primary and secondary education found by a study by Raghava.[27] Age group was 5,6,7,8,9,10,11,12,13, and 14years.This is not supported by studies of India where age group was 6, 7, 8, 9, and 10 years age groups. [28]

As many as 168(90.8%) children had religion Islam, whereas 17(9.2%) had Hinduism religion, among them more than half 94(50.8%) were female and rest of them 91(49.25%) were male. These are not in line with the findings of study conducted in Tangail, Bangladesh where 45(60%) was boy and 30(40%) was girl among 75 primary school children. [29] This inconsistence is due to regional difference.

A great number of respondents father 59 (31.9%) were service holder, while 44 (23.8%) were businessman, 29 (15.7%) were day labor, 15 (8.1%) rickshaw puller. This is inconsistent with the findings of Hakim *et al.* where (n=43) 73.3%, (n=12) 16% and (n=20) 26.67% kids' fathers were government services holders, businessmen and private services holders respectively. Regarding mothers' occupation more than three fourth 142 (76.8%) were housewives, 21(11.4%) were service holder, 12 (6.5%) were day labour. This is consistent with the study finding of Hakim *et al*. where most of the kid's moms were housewife (n=60) 80%, (n=10) 13.33% were private services holders and very few were government services holders (n=5) 6.67%. [29]

As regards father's educational status maximum 71 (38.4%) father had hons/ above education whereas, only 29 (15.7%) mothers had hons/ above level education. 52 (28.1%), 19 (10.3%), 30 (16.2%) fathers had secondary, below secondary and primary education respectively. On the other hand, 57 (30.8%), 27 (14.6%), 54 (29.2%) of mother had secondary, below secondary and primary education respectively. Only 13 (7.0%) father and 18 (9.7%) mothers were illiterate. These are lower than the study conducted by Bhuiya *et al.* where regarding educational qualification of father Primary 7 (4.5%), Secondary 14 (9.1%), Higher secondary 17 (11.0%), Graduate 46 (29.9%), Masters 70 (45.5%). On the other hand, regarding educational qualification of mother Primary 6 (3.9%), Secondary 30 (19.5%), Higher secondary 31(20.1%), Graduate 38 (24.7%) and Masters 49 (31.8%).[30]

This is due to rural urban differentiation. In current study mean monthly family income of the respondents was BDT 26681.08±122270.06 and majority73(39.5%) had income between BDT 20,000 to 30,000 which is lower from a study conducted in Dhaka city where the mean monthly family income was Tk. 41785.71 with standard deviation ±Tk. 23936.45 and majority (41.6%) family had monthly income between Tk. 20001-40000. This difference is due to rural urban differentiation.[30]

In this study, nearly three fourth of the respondents 133(71.9%) were from nuclear family and the rest 52(28.1%) were from joint family. The percentage of nuclear family is higher and joint family is lower from a study conducted at Khulna district, Bangladesh (63.3%) belonged to a small family with 2 to 4 members and 117 (36.7%) had large (≥5) family .[31]

As many as 177(95.7%) completed immunization and 166(89.7%) received deworming drug. This is in line with the study of Farooq *et al.* where about 96.48% children completed immunization and 76.65% children were having regular deworming.[32]

Nearly three fourth 134(72.43%) primary school children had BMI with in normal range, 14(7.56%) had below normal that is under nutrition and 37(20.0%) had above normal range that is obese. This was inconsistence with the findings of a study conducted in Indonesia where the nutritional status of students based on the body mass index

18(72%) students have nutritional status belonging to the thin category, 7(28%) students had normal nutritional status and 0 students with fat nutritional status. These might be attribute due to geographical difference.[33]

Most of the respondents 73(39.5%) had dental carries, followed by Skin itch 47(25.4%), Head lous 46 (24.9%), calf muscle spasm 45 (24.3%), dermatitis 30 (16.2%), abdominal pain 23 (12.4%), seborrheic dermatitis 20 (10.8%), rhinitis 19 (10.3%), asthma and visual impairment 16 (8.6%), RTI 14 (7.6%), otitis externa 12 (6.5%) and scabies 11 (5.9%), angular stomatitis 4 (2.2%). Very few respondents 2 (1.6%) had anaemia and enlarged thyroid enlargement. This is higher than a study conducted by Farooq *et al.* in Chadpur where only 2.26% respondents had dental carries, followed by Skin itch 3.96%, calf muscle spasm 2.20%, dermatitis 0.88%, abdominal pain 4.41%, seborrheic dermatitis 0.44%, rhinitis 8.37%, asthma 11.89% and visual impairment 0.44%, RTI 3.96%, otitis externa 0.44% and scabies 2.64%, angular stomatitis 2.20%. Very few respondents 0.44% had anaemia, ring worm and lymph nodes enlargement.[32]

Conclusion:

It can be concluded from the study findings that dental caries is the most common surgical problem and skin itch is most common medical problems among rural primary school children. Health education about personal hygiene and oral hygiene should provide among the school children. School health programme should enhance.

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