

Prevalence of Skin Infection and Personal Hygiene Practices amongst Primary School Children: A Community Based Cross-Sectional Study in Kamrup (Rural) District of Assam

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Abstract

Background: In our day to day life, role of school is important for cognitive, creative and social development of children. Education regarding proper sanitation and hygiene practices are necessary for the safe, secure and healthy environment so that children can learn better and face the challenges of future life.

Objectives: (a) To assess the prevalence of skin infection among primary schoolchildren and association with socioeconomic status, (b) to assess the personal hygiene practices of the school children.

Methodology: A community based cross-sectional study was done amongst the primary school children in Boko-Bongaon block of Kamrup district, Assam from August 2012 to July 2013 with the help of a predesigned and pretested proforma, clinical examination.

Statistical Analysis Used: Data analysis was done in Microsoft Excel and by using Chi-square test and proportions.

Results: Out of all skin disorder, majority was found to be scabies with the prevalence of 21.7% among the students, followed by pityriasis 19.6%. Prevalence of pediculosis was found to be 18.5% and the prevalence of tinea infection among the children was 16%. The majority 33.8% belong to Class IV socioeconomic status. This association is highly significant at 5% level of significance. 337 (84.25%) reported of washing their hands before eating and 342 (85.5%) of hand washing after defecation with soap and water. 34.25% of the children were found to wear footwear. 320 (80%) of the school children practiced daily bath; 82.25% had the habit of brushing their teeth daily while only 47.25% children were found to change their clothes daily.

Conclusion: In this study, prevalence of skin infection found to be clubbed in the lower socioeconomic group. Hence, health education among the children as well as their parents and proper awareness regarding various skin-related health problems and to improve the personal hygiene of the children is necessary.

Key words: Personal hygiene, Primary school children, Skin infection

INTRODUCTION

Schools lay the foundation for the future and have a major effect on a host of the issue including health. Providing easy access to health, nutrition and hygiene education and

services to school children is a simple and cost effective tool that can go a long way in the prevention and control of communicable and non-communicable diseases.²

People of rural areas have developed various unhygienic health practices and undesirable health attitudes because of poverty, illiteracy, ignorance, misconception and superstition. Rural school children have suffered various skin infections due to poor hygienic practices.³

In the process of active learning health education is an essential part. It includes personal hygiene, home, and environmental

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sanitation or nutritional hygiene. Personal hygiene education is one of the important aspects. If proper measures are not taken for making the body parts clean, the body is liable to various skin infections and it may hamper the physical well-being of the individual. Due to ignorance or lack of proper education, personal hygiene may not be taken care properly.⁴

This study was done to find out the prevalence of skin infection and their relationship with socioeconomic status as well as to assess the personal hygiene practices amongst the rural primary school children in Kamrup district, Assam.

METHODOLOGY

The study was conducted among the primary school children in the age group of 6-11 years during the period August 2012 to July 2013 in Boko-Bongaon block of Kamrup district, Assam. This study was a community-based cross-sectional study.

Criteria for Inclusion and Exclusion

All children from Class 1 to 5 in the age group of 6-11 years attending school were included in the study.

Children those were absent in the class during the study period and those having age more than 11 years and <6 years were excluded from the study.

For sample size estimation, prevalence of any morbidity at a given point of time was assumed to be 50% to yield the largest value of “*n*” while fixing the level of precision.⁵ prevalence of any morbidity among primary school children for the study is taken to be 50% with a relative error of 10% and after calculation the sample size for the study comes out to be 400 ($n = 400$).

Primary sampling units in this study are the schools. The lists of primary schools are collected from the block office, and 20 schools are selected randomly for the study. From Class 1 to 5, four children was selected randomly from every class by using the class register, and all total 20 children were selected from each school to get the sample size. All the children meeting the inclusion criteria were included only in the study. If the child selected randomly was absent on the day, and then the child next to him was selected for the study according to the school register.

Data collection was done by using a pre-designed pre-tested semi-structured proforma. By using school records, sample selection and estimation of age was done.

Ethical approval was obtained from the Institutional Ethics Committee of Gauhati Medical College and Hospital before commencing the study.

Information regarding various skin disorder as well as personal hygiene practices amongst the school children was obtained by proper interview and clinical examination. To find out demographic characteristics and socioeconomic status of the study group, house to house visit was done.⁶ Socioeconomic status was assessed by using B.G Prasad's socioeconomic status classification for October 2012.

Statistics

Analysis of data was done in Microsoft Office Excel. Analysis of categorical variables was done using Chi-square test. Criteria of significance used in the study were $P < 0.05$.

RESULTS

Out of 400 school children, 24.25% have suffered from various skin disorders. 39.5% female children have suffered skin disorder and 13.8% male school children have suffered skin disorder out of the total 400 children (Table 1).

Out of total 97 skin disorder, the majority was found to be scabies with a prevalence of 21.7% among the students followed by pityriasis 19.6%. The prevalence of pediculosis was found to be 18.5%, and tinea infection among the children was 16% (Table 2).

Out of total 97 skin disorder among the children, majority 33.8% belong to Class IV socioeconomic status, followed by 21% in Class III status. This association is highly significant at 5% level of significance (Table 3).

Out of 400 school children surveyed, 337 (84.25%) reported of washing their hands before eating and 342 (85.5%) of hand washing after defecation with soap and water. Only 34.25% of the children were found to wear footwear. 320 (80%) of the school children practiced daily bath; 82.25% had the habit of brushing their teeth daily while only 47.25% children were found to change their clothes daily. 37% school children had clean and trimmed nails, whereas 70% had clean and combed hair (Table 4).

DISCUSSION

This study was carried out to find the prevalence of skin infection and personal hygiene practice of a representative group of school children in rural areas of Boko-Bongaon block, Kamrup district Assam.

About 24.25% school children have suffered from a various skin disorder. 39.5% female children have suffered skin disorder and 13.8% male school children have suffered disorder out of the total 400 children (Table 1).

Table 1: Skin infection amongst school children according to gender

Gender	Morbidity present (%)	Morbidity absent (%)	Total (%)
Male	33 (13.8)	205 (86.2)	238 (100)
Female	64 (39.5)	98 (60.5)	162 (100)
Total	97 (24.25)	303 (75.75)	400 (100)

$\chi^2=33.116$, $P<0.0001$, significant

Table 2: Pattern of skin disorder amongst the children having skin disorder (n=97)

Skin disorder	N (%)
Scabies	21 (21.7)
Tinea	16 (16.5)
Pityriasis versicolor	19 (19.6)
Pediculosis	18 (18.5)
Acne vulgaris	13 (13.4)
Furuncle/boil	10 (10.3)

Table 3: Association of skin disorder and the socioeconomic status

Socioeconomic status	N (%)		Total (%)
	Children with morbidity	Children without morbidity	
Class I	2 (14.3)	12 (85.7)	14 (100)
Class II	17 (18.7)	74 (81.3)	91 (100)
Class III	27 (21)	101 (79)	128 (100)
Class IV	49 (33.8)	96 (76.2)	145 (100)
Class V	2 (9.1)	20 (90.8)	22 (100)

$\chi^2=12.928$, $df=4$, $P=0.0116$ significant

Table 4: Distribution of school children according to the status of personal hygiene

Habits of the school children	N (%)	
	Yes (n=400)	No (n=400)
Washing hands before eating	337 (84.25)	63 (15.75)
Washing hands after defecation	342 (85.5)	58 (14.5)
Wearing footwear	137 (34.25)	263 (65.75)
Taking daily bath	320 (80)	80 (20)
Brushing teeth daily	329 (82.25)	71 (17.75)
Changing clothes daily	189 (47.25)	211 (52.75)
Clean and trimmed nails	148 (37)	252 (63)
Clean and combed hair	282 (70)	128 (30)

Prevalence of scabies was 21.7% among the students followed by pityriasis 19.6%. Prevalence of pediculosis was found to be 18.5%, and tinea infection among the children was 16% (Table 2).

Out of total 97 skin disorder among the children, majority 33.8% belong to Class IV socioeconomic status followed by 21% in Class III status. This association is highly significant at 5% level of significance (Table 3).

A study conducted in Wardha amongst tribal school children by Dongre *et al.* found that prevalence of head lice (42.8%), scabies (36.6%), and multiple boils (8.9%) amongst the school children.⁷

In a school survey in Varanasi city by Valia *et al.* 12481 children were examined. More than half (54%) had one or more skin diseases. The commonest ones were pediculosis capitis (35%), pityriasis alba (12%) acne vulgaris (8%), miliaria (4%), and pyoderma (3%).⁸

In a study conducted among primary school children in Eastern Nepal by Shakya *et al.* the prevalence of skin disease was 20%. Common skin diseases were pediculosis (21%) followed by tinea (19.5%), scabies (14%), impetigo (11%) and eczema (10.5%). Pediculosis was significantly higher in girls (29.8%) than in boys (14.4%) while tinea and scabies were high in boys.⁹

In one study conducted in Nagpur by Charuhas *et al.* 236 (32.1%) school children were found to suffer various skin disorder. 155 (21.1%) had pyoderma while scabies and pediculosis capitis was observed in 41 (5.6%) and 26 (3.5%) respectively. Only 14 (1.9%) had fungal infection.¹⁰

In another study among primary school children in Baghdad by Khalifa *et al.* the overall prevalence of skin disorder was 40.9%. No significant association have been found between the prevalence of skin diseases and age ($P = 0.06$), sex ($P = 0.74$), residence ($P = 0.06$). There was significant association between education level of parents with the prevalence of skin diseases ($P = 0.04$).¹¹

Out of 400 school children surveyed, 337 (84.25%) reported of washing their hands before eating and 342 (85.5%) reported of washing their hands after defecation with soap and water. 34.25% of the children were found to wear footwear. 320 (80%) of the school children practiced daily bath; 82.25% had the habit of brushing their teeth daily while only 47.25% children were found to change their clothes daily. 37% school children had clean and trimmed nails whereas 70% had clean and combed hair (Table 4).

In a study in Puducherry by Ganapathy *et al.* amongst rural school children, it was found that untrimmed and dirty nails were more common problems among boys 42.2% as compared to 38.1% in girls. 13.3% of boys were found to have unclean and uncombed hair as compared to 4.7% of girls. Boys (16%) showed a marginal decreased prevalence of unclean teeth as compared to girls (18.6%).¹²

One study conducted in Doiwala Block, Dehradun by Kakkar *et al.* it was found that healthy habits like daily bathing (82.6%), daily teeth brushing (61.1%) and hair

clean/combed (80.2%) were higher among girls as compared to boys daily bathing (72.9%), daily teeth brushing (48.4%), hair clean/combed (74.4%). While trimmed nails were equally (55%) noticed among both the groups.¹³

CONCLUSION

Prevalence of skin disorder among the school children was found to be 24.25%. Out of this prevalence of scabies was 21.7% among the students followed by pityriasis 19.6%. The majority of school children (33.8%) belong to Class IV socioeconomic status, followed by 21% in Class III status, and there is a significant association.

Regarding personal hygiene, majority 337 (84.25%) reported of washing their hands before eating and 342 (85.5%) of hand washing after defecation with soap and water. Only 34.25% of the children were found to wear footwear. 320 (80%) of the school children practiced daily bath; 82.25% had the habit of brushing their teeth daily while only 47.25% children were found to change their clothes daily. 37% school children had clean and trimmed nails whereas 70% had clean and combed hair.

Health education among the school children regarding personal hygiene and oral hygiene should be given. Regarding various morbidities among the school children, proper education and necessary support should be given by the class teachers. While maintaining health status and personal hygiene of the school children, socioeconomic factors are seen to play an essential role so proper approach

in the community to improve the socioeconomic status as well as personal hygiene practice is necessary.

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