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REVIEW ARTICLE ON MORBIDITY PATTERN AND HYGIENIC PRACTICES IN SCHOOL CHILDREN

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Abstract
Surveys reported that malnutrition, infectious diseases, intestinal parasites,diseases of skin, eye and ear and dental caries are more prevalent in children.Lack of personal hygiene along with poor sanitation causes person-to-person transmission of infection. Infection and malnutrition form a vicious circle and leads to retardation of children's physical development. Repeated attacks of infections compromise children's attendance and performance at school and not uncommonly, can result in death**.**Although studies have been conducted on health problems among school children in India there are still several localities for which epidemiological information is not available.Soap, water, and latrines are essential for proper hygiene practice in schools**.** Early identification of childhood illnesses through regular school health check-ups help prevent complications

Introduction
It is very well known that children with proper hand-washing practices are less likely to report gastrointestinal and respiratory symptoms**(1,2).** Hand-washing with soap can reduce diarrheal morbidity by 44% and respiratory infections by 23%(**3,4).**Surveys reported that malnutrition, infectious diseases, intestinal parasites, diseases of skin, eye and ear and dental caries are more prevalent in children(**6**).The School Health Programme was launched to address the health needs of school going children and adolescents in the 6-18 year age groups in the Government and Government aided schools(**7**).Lack of personal hygiene along with poor sanitation causes person-to-person transmission of infection. Infection and malnutrition form a vicious circle and leads to retardation of children's physical development. Repeated attacks of infections compromise children's attendance and performance at school and not uncommonly, can result in death**(9).**Although studies have been conducted on health problems among school children in India(**11,12,13,14**) there are still several localities for which epidemiological information is not available. Soap, water, and latrines are essential for proper hygiene practice in schools**(18).** Early identification of childhood illnesses through regular school health check-ups help prevent complications**(19).**Many studies have been done in various parts of India to ascertain the health status of school children and to find the pattern of growth and development, including the prevalence of minor illnesses(**22,23).**

Review Of Literature
A cross sectional study **(5**)was done in students of 5^{th} to 9^{th} standards of selected schools. Daily bathing(84%),brushing teeth(63%),washing hands with soaps and water were the most common hygienic practices in the school children. Maximum personal hygiene practices not followed by the students were cutting nails (40.8%); washing hands (37.8%) followed by others. Out of500total students134 girls were there; out of them 51 were aware regarding menstrual hygiene practices. About 49.8%of the students had knowledge regarding common health problems in school children. Cold was the most common health problem they know.

In a study in U.P**.(8),**71(41.52%) children reported more than one morbidity. Dental problem was found in 36.25% children. The higher dental problems in this study may be due to the fact that this study was conducted in rural area where children had low level of awareness about oral hygiene .In this study percentage of anaemia was higher in children of illiterate mother which may be due to their lack of knowledge about iron rich food. 0.58% children were affected by vitamin A deficiency . 33.92 % of children had wax in their ears.4.67 % children had upper respiratory tract infections .90% children had combed hair followed by clean hands in 76.61%.Common unhygienic status observed in the study was uncombed hair (9.90%), dirty uniform (29.24%) and untrimmed dirty nails (34.50%).

In another study(10)among the primary school children in a slum area of Kolkata, India, it has been observed that the female students obtained significantly higher average score than the male students regarding the knowledge of personal hygiene.This study shows that (94.23%) of primary school children washed their hands after visiting toilet and 84.62% washed their hands before eating. Also, 48.08% primary school children combed their hair, 50% brushed their teeth, 76.92% trimmed their nails, 42.31% took daily bath, 55.77% wore shoes and only 12.5% wore clean clothes. This study also shows that there was a wide gap between practice and knowledge regarding most of the indicators of personal hygiene.Lack of proper resources, i.e. soap and water, as well as inadequate sanitation facilities in a slum community with low socio-economic condition may negatively affect personal hygiene practices. Moreover, it has been observed that a good fraction of students have adopted to the right practices regarding some of the indicators, e.g. wearing shoes, without having correct knowledge on it. In this study, almost 75% of the primary school children were suffering from one or more morbidities related to poor personal hygiene. The most common morbidity reported by them was diarrhoea (56.73%), followed by fever with or without cough / cold (54.81%), passage of worms in stool (45.19%), head lice (40.38%), scabies (39.42%), dental caries (9.62%) and multiple boils (7.69%).Statistically significant association was observed between practices of personal hygiene among primary school children and literacy status of their mother ($p< 0.001$). It can be said that maternal education can play a vital role in the practices of hygiene and health among their children.

In a study**in Puducherry(15),** 49.5% (60.3 % boys and 41.7% girls) of school children were classified as thin.The status of personal hygiene of the school children was poor. Untrimmed and dirtynails were the most common personal hygiene related problem among school children. About 39.9 % (42.2 % boy and 38.1 % girls) of children's nails were dirty and unclean. It was found that 20.6 % school children wore unclean uniform. A similar trend was noticed for combed hair where only a very small percentage of girls showing uncombed hair in this study. The proportions of children's with unclean and uncombed hair were 8.5 % (13.3 % boys and 4.7 % girls) ($p < 0.001$). Dental hygiene was much better in this study, 17.5 % children's teeth were unclean.Head lice were common and half of the children had head lice infestation in their head (56.6 %).

A study of school children grades 1-6 in **Ethiopia(16),** assessment of the knowledge, attitudes and practices of hygiene was done. Of the students surveyed, 52% were classified as having proper knowledge of hygiene.Only 14.8% of the students washed hands after defecation the day prior to the interview. The percentages of children who reported the importance of and the preference for hand washing before eating were 99.7% and 98.8%, respectively.The most common hygiene practices, in order of rank, were washing feet (97.4%), brushing teeth (89.2%), and changing clothes (84.9%). Bathing and hair washing received the lowest ranks. Approximately 34% of the students reported poor bathing practices and 21% reported poor hair washing practices. The low frequencies of hand washing with soap (36.2%) may be attributed to the lack of soap in school and at home. Another reason that can influence hygiene practice among school children is the low level of parental literacy. In this study, the mother's literacy rate was lower than the father (39.7% and 67.5%, respectively).An illiterate or uneducated mother may be less knowledgeable about teaching her children proper hygiene practices, subsequently leading to increased rates of infection and disease amongst her children(**17)**.

A descriptive study(20) was conducted among children studying in a rural school of Puducherry. With regard to the morbidity pattern studied, about 40.3% of children showed morbidities related to nutrition. Of this anaemia was the predominant morbidity observed among both boys and girls.About one fifth of the children (20.9%) had refractive errors and 30.9% children had dental problems. Of the observed dental morbidities, a quarter of the children had dental caries. 6.2% children had skin disorders of which scabies was observed in 0.2% of children. About 14.5% children had pediculosis and 3.9% had history of worm infestations. 55.3% and 6.8% of children had upper respiratory tract infection and diarrhoea respectively.The lesser prevalence of morbidities among school children in this study could be due to regular screening for health status of children and health education activities addressed in this school, increased literacy rate of the population of Puducherry and availability of better health facilities in Puducherry state.

In a study in **Turkey(21),** 27.7% of the students had an inadequate personal hygiene. The number of students with poor hygiene increased with the decreasing maternal education level and household income level, the frequency of having poor hygiene was higher among male students and in those with a patriarchal family type.

The personal hygiene status was not correlated with parental age, student age group and paternal education level.Of the students, 58.4% reported that they are brushing their teeth at least two times in a day and 94.2% have reported that they are washing their hands after using the toilet, while the frequency of other behaviors was between these two percent values.

A study **in Karnataka(24),**reported that dental caries was the most common morbidity, affecting 31.86% of children.Upper respiratory tract infection was found in 14.3% of children .About 10.41% of children had refractory error . 43.32% of the children were underweight, 53.03% were normal and 3.65% were overweight. Clinical pallor was reported in 15.8% . The lower prevalence seen in this study could be due to the effective implementation of supplementary nutritional program and provision of iron and folicacid supplementation at school, in this part of the country.

Another study (25)revealed that more than half of the childrenwere aware on hand washing and water handling accountsfor 58.9% and 52.7%, respectively. The majority, however,80.5% of the respondent was reported not aware to latrineutilization.Among those who have awareness about water handling 71.6% had practiced positive hygiene behaviour andwhile 50.8% of those not aware had reported positive hygiene behaviour.The study indicated that 75.2% of the respondenthad reported they have ever cleaning and covering watercontainer but 42.2% of the study subject reported nevertouch drinking water by dirty hand. Out of those whoboiled their drinking water, 67.8% (N = 242) of the student reported that they boiled their drinking water theday prior to data collection.Of the school children, more than (370) 70% were notwashing their hands after defecation and after eating. Even463 (87.7%) reported they usually wash hands and 450(85.2%) wash their hands the day prior the data collection,513 (97.2%) of the school children reported that they didnot use soap at critical time. Besides, the study reportsthat 412 (78%) of the participants they didn'tpracticethecorrect procedure of hand washing .66.3% of 528 school children in the study delighted thatthey use soap and water to wash their hands while 33.7%needed to habit water only.

Kakkaret(26) studied the morbidity status of the school children & elicit relationship of healthy habitswith morbidity pattern. Results revealed that worm infestation was higher in boys (65.1%) as compared to Girls(57.3%).Dental Caries (53.1%) and dermatitis (16.3%) were more in boys. Healthy habits like daily bathing(82.6%), daily teeth brushing (61.1%), mouth rinsing after meal (53%) and hair clean/combed (80.2%)were more in girls as compared to boys while the habit of trimming the nails was equally (55%) noticedamong both the groups. It was concluded that morbidities found amongst students are basically due tolow awareness & negligent behaviour about personal hygiene which are the key areas of concern and byactive involvement of school teachers and improvement in personal hygiene of school children, the reduction in related morbidities may be achieved.

A similar study was conducted **by Kamath(27)**which aimed at assessing awareness regarding oralhygiene practice amongst children toward oral health in rural population of Mangalore city. Data on oral hygiene practice were collected by means of self-administered questionnaire. This survey revealed that 52% children brush their teeth twice a day and 98.9% children brushed in horizontal direction.Other oral hygiene aids were sparsely used (5.3%). None of the school children had any form of interactive sessions on oral hygiene practice with their respective class teacher. Thus, basic oral hygiene knowledge and practice of the participants was good but advanced knowledge needs to be improved.Systematic community-oriented oral health promotion programs and awareness amongst teachers are needed to improve oral health of school children.

Another study(28) 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.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%.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 .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.
A study reported(29)high prevalence of ocular morbidity among school children.Refractive errors were the most common ocular disorders.9.66% of children examined had some form of ocular morbidity, 5.57% were males and 4.74% were females.Refractive errors (7.57%) constitute the major cause of ocular morbidity followed by squint (1.55%), color blindness (0.18%), vitamin A deficiency (0.36%),traumatic eye disorders(0.5%),congenital disorders (0.2%). Myopia was a more common disability than hypermetropia.Likewise, alternate divergent squint was more common than alternate convergent squint.Traumatic eye injury (0.5%) was caused by injury with a stick (0.3%) or a fall on the ground (0.2%). Congenital ocular defects (0.36%) consisted of congenital cataractand unilateral microcornea with nystagmus in one student each.The ocular morbidity is almost equally distributed between sexes in all categories.

Conclusion

School health programmes should focus on the health of children. Health education activities should be intensified in schools and also in the community.The screening of school children for ocular problems should be done at regular intervals and it should be one of the prime components of the School Health Programme. School teachers should be oriented and trained in identifying common problems among school children so that these children can be referred for prompt treatment.

Mass de –worming should be done.Regular anthropoemetric measurements should be done to keep a watch on the growth and development of the child.The problem of anaemia needs to be corrected with iron prophylaxis and treatment of other chronic infections.

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