Morbidity Pattern and Personal Hygiene in Children Among Private Primary School in Urban Area: Are the Trends Changing?

Mayavati S. Mhaske, Deepak S. Khismatrao, Fernandez Kevin, Harshal T. Pandve, Ritesh P. Kundap

Department of Community Medicine, Smt. Kashibai Navale Medical College, Pune, Maharashtra, India

ABSTRACT

Introduction: School health is an important intervention as a great deal of research tells us that schools can have a major effect on children's health, by teaching them about health and promoting healthy behaviors. **Aims:** The aim of this study is to determine common health problems and assess personal hygiene status among primary school children. **Settings and Design:** A cross-sectional study was conducted in academic years 2009-2010 and 2010-2011, with three health check-up camps organized in private primary school of Pune city. **Materials and Methods:** A total of 450 students were assessed for health problems and composite score of personal hygiene status was calculated ranging from 0 to 5 by examination of hairs, nails, skin and clothes. Statistical **Analysis Used:** Proportions calculated with application of Chi-square test and Pearson co-efficient applied to observe the relation between two quantitative variables. **Results:** Out of 450 students examined, 56.2% were boys and 43.8% were girls with age ranging from 5 to 10 years. The major morbidities observed were dental caries (65.1%), upper respiratory tract infections (38.2%), ear wax (29.9%) and myopia (10.0%). Mean hygiene score was significantly higher in girls (4.32) than boys (3.95) and poor hygiene observed in older boys. **Conclusion:** Increasing myopia and poor dental hygiene denotes a changing morbidity pattern in private primary school of the urban area. The hygiene status of the girls is significantly better than boys.

Keywords: Health problems, morbidity, personal hygiene, private school, school children

Introduction

A child spends more time at school than anywhere else, except home. Schools are sacred since they provide an environment for acquiring skills and development of intelligence, which can be utilized by students to achieve their goals in life and develop as a good human being. A great deal of research tells us that schools can have a major effect on children's health, by teaching about health and promoting healthy behaviors. Moreover, young children today have bigger dreams than ever before and they are willing to go the extra mile to achieve their dreams. However, we need to keep them healthy so that they can stretch their wings and fly high.[1]

The School health services in India dates back to 1909, when for the first time medical examination of school children was carried out in Baroda city. During 5 year plans, many state government, have provided for school health and school feeding programs. World Health Organization also announced for global school health initiative in 1995.[2] A study carried out by Dongre *et al.* in Wardha Maharashtra, noted most common morbidities among school children as diarrhea, fever, upper respiratory tract infections (URTI) (56.6%) followed by scabies, pediculosis and dental caries (8.3%).[3] Research again indicates that healthy children have higher daily school attendance; learn better; take full advantage of every opportunity to learn and thus achieve higher academic excellence; and tend to maximize social relationships and interactions at school and at home, thus improving their chances of balanced development.

Hence, this study was planned with the following aims and objectives-Aim: To study common health problems and assess the status of personal hygiene in children of a private primary school in the urban area; objectives: (a) To study common

Address for correspondence: Dr. Mayavati S. Mhaske, A-08, Yash Sada Complex, Ambegaon, Pune, Maharashtra, India E-mail: mayanannaware@rediffmail.com

health problems among school children; (b) To assess the status of personal hygiene among school children; and (c) to provide for specific recommendations, if any to improve health and personal hygiene.

Materials and Methods

A cross-sectional study conducted in a primary school in an urban area. Our Department of Community Medicine conducted school health check-up camps in a private (not aided by government) school, after seeking permission from the school authorities. This health check-up camps were conducted, as a part of the fourth semester MBBS teaching curriculum under the Community Medicine Department posting. There were 3 health check-up camps conducted in the academic years 2009-2010 and 2010-2011 and the data of these camps is analyzed in the present study. Out of the total 484 students in all the divisions from 1st to 3rd standard, 34 students were absent on the days of health camps and thus, total 450 students were examined. The tools and equipments used for data collection included pre-designed Performa, weighing machine, measuring tape, Snellen's vision chart, color vision chart, otoscope and regular clinical examination equipments. Those who were found to be suffering from acute illness were given medicines while those having systemic complaints and cannot be managed in the health camp, were referred to higher centers. Status of personal hygiene was assessed by considering the parameters of examination of skin, nails, clothes and hairs. Opportunity was also used to give health education regarding personal and dental hygiene. Data was entered in excel sheet and analysis is carried out by Statistical Package for the Social Sciences version 10.14.

Definitions for the hygiene status

In boys, favorable hygiene status of hair is defined by observing whether they are trimmed appropriately and are combed nicely while in girls, it was defined by observing whether they are combed and coiffure (carefully arranged in a special style). They were categorized as untrimmed and uncombed if not coiffure appropriately. They are given a score as 0 if untrimmed and uncombed; Scored 1 if trimmed and uncombed and Scored 2 if trimmed and combed.
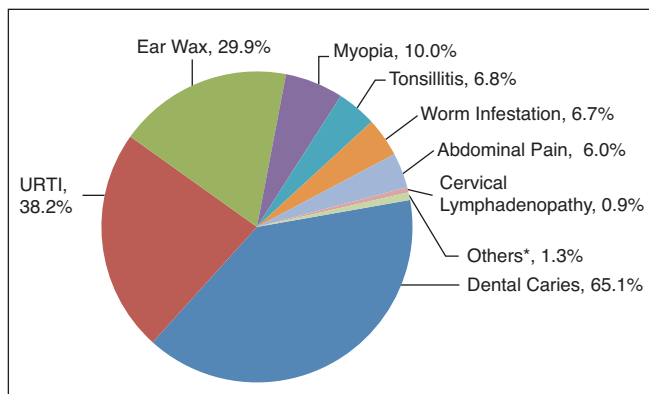
The cleanlines of the skin was assessed by observing whether the student had any mud-spattered or ink stains over their skin especially over upper, lower limbs and neck. If skin is clean then scored as 1 and scored as 0 if unclean. The clothes were assessed by observing whether they are clean, ironed and tugged neatly and if so then scored as 1 and if no then scored as 0. The nails were assessed by observing whether cut and no nail polish over the same and if so then scored as 1 and if no then scored as 0. Thus, the total hygiene score will range from 0 to 5.

Results

The study includes total 450 students, out of which 56.2% were boys and 43.8% were girls. The age of the study population ranged between 5 and 10 years and mean age of the children was 96.09 (standard deviation [SD] of 16.76) and 95.02 (SD of 16.13) months for males and females respectively. There is no statistically significant difference in mean age of boys and girls.

Graph 1 shows that out of the total 450 students, majority of them, 293 (65.1%) were suffering from dental caries, followed by 172 (38.2%) having URTI, 134 (29.9%) having ear wax and 45 (10.0%) having myopia.

Further, gender wise analysis show that pattern of the morbidity is same for boys and girls. The prevalence of major diseases such as dental caries, URTI, ear wax and myopia shows no statistically significant difference among boys and girls. Chi-square test was applied as the test of significance. The age-wise analysis for major morbidities shows that myopia is found to be more common in the lower age group of 5-7 years (21.9%) than in higher age group of 8-10 years (4.8%). This difference is statistically significant with application of Chi-square test.

Graph 2 shows that 437 (97.1%) students had trimmed and combed hairs. It is observed that the skin was clean in 396 (88.0%) students and clothes were tidy in 330 (73.3%) students. The major problem observed in hygiene status was untrimmed nails seen in 201 (44.7%) students.

Table 1 shows that a higher proportion of female students (93.9%) have better skin hygiene then male students (83.4%) and Table 2 shows that a higher proportion of female students

Graph 1: Distribution of major morbidities identified in primary school children
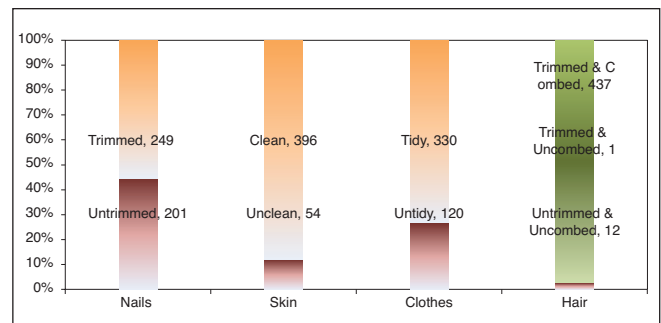
Graph 2: Pattern of personal hygiene among school children

Table 1: Association of gender with hygiene of skin			
Hygiene of the skin	Male (%)	Female (%)	Total (%)
Clean	211 (83.4)	185 (93.9)	396 (88.0)
Unclean	42 (16.6)	12 (6.1)	54 (12.0)
Total	253 (100.0)	197 (100.0)	450 (100.0)

χ^2: 11.58; df: 1; $P<0.001$

Table 2: Association of gender with hygiene of clothes			
Hygiene of the clothes	Male (%)	Female (%)	Total (%)
Tidy	167 (66.0)	163 (82.7)	330 (73.3)
Untidy	86 (34.0)	34 (17.3)	120 (26.7)
Total	253 (100.0)	197 (100.0)	450 (100.0)

χ^2: 11.58; df: 1; $P<0.001$

Table 3: Association of age with hygiene of clothes			
Hygiene of the clothes	5-7 years (%)	8-10 years (%)	Total (%)
Tidy	110 (66.0)	220 (82.7)	330 (73.3)
Untidy	27 (34.0)	93 (17.3)	120 (26.7)
Total	137 (100.0)	313 (100.0)	450 (100.0)

χ^2: 4.87; df: 1; $P<0.05$

(82.7%) have better tidiness of clothes then male students (66.0%). This difference is statistically significant as evident from the above tables with application of Chi-square test. While, no statistically significant difference was noted in relation to hygiene of nails and hairs between the boys and girls.

Table 3 suggests that there is a statistically significant association between age and tidiness of clothes ($P < 0.05$). As the age advances tidiness of clothes decreases, but similar association is not observed for hygiene of nails, skin and hairs.

When mean hygiene score was calculated and compared between male and female students they were found to be 3.95 and 4.32 respectively. This difference is statistically significant (Unpaired *t*-test applied). It is also noted that total hygiene score decreases as the age advances (Pearson correlation value is −0.128, $P < 0.05$).

When controlled for gender, it is observed that in male students the total hygiene score decreases as age advances, which is statistically significant (Pearson correlation value is −0.208, $P < 0.05$) while in females the association is not statistically significant (Pearson correlation value is −0.208, $P > 0.05$)

Discussion

In the present study, the major morbidities observed among the primary school children is Dental caries (65.1%) followed by URTI (38.2%), ear wax (29.9%) and myopia (10.0%). With reference to the hygiene score, 437 (97.1%) students had trimmed and combed hairs. It was observed that the skin was clean in 396 (88.0%) students and clothes were tidy in 330 (73.3%) students. Overall there is a poor hygiene score for nails, which is they are untrimmed in 44.7% of students,

but no statistically significant difference age and gender wise. The hygiene score for skin and clothes is poor in males as compared with females and the difference is statistically significant.

A study from Wardha suggests most common morbidities among children were URTI (56.6%), head lice (42.8%), scabies (38.6%) and dental caries (8.3%). The findings are different from the present study except for the URTI.[4] This difference in the morbidity pattern in Wardha study may be since it was conducted in the tribal area, while the present study is carried out in an urban school. An assumption can be made that the morbidity patterns are completely different in urban and rural primary school children.

A similar study conducted at Calcutta, showed pallor as a most common morbidity among the school children.[5] The present study findings are to some extent coinciding with the study conducted by Harpal Singh in Central India, showing refractive error of 47.91% as major morbidity among school children.[6] The Calcutta study shows similar finding that personal hygiene in relation to skin (77.8%) was better among girls (92.6%) than boys (68.8%).[5]

Mean hygiene score is more in girls (4.32) than boys (3.95); and it is also noted that total hygiene score significantly decreases as the age advances in case of males (Pearson correlation value of −0.208, $P < 0.05$), while it is not the same for females (Pearson correlation value of 0.027, $P > 0.05$) and this may be due to a more careless attitude of the boys in older age group specially toward untidiness of the clothes.

The present study concludes that morbidity pattern among school children has changed over a period of time with new morbidities such as myopia seen in increasing trend while scabies and parasitic infections are in a declining trend especially in urban settings. Therefore, a need has definitely emerged to initiate periodic vision testing and dental examination by formal affiliation with an Ophthalmologist and a dental surgeon. In addition, school teachers should be appropriately trained for screening for vision testing and poor dental hygiene.

The study has a limitation of conducting in a single private school, but nevertheless gives sufficient evidence of changing trend of morbidities as the sample size is adequate. The interpretations of the present study can be strengthened by implementing routine school health checks with systematic data reporting and analysis on a regular basis and this we recommend as a policy change under National School health program.

Acknowledgments

permission granted and co-operation extended by the head mistress of the Shivaji Maratha school Pune. We express our sincere thanks to all the school authorities, teachers and children who have contributed to this study directly and indirectly.

References

1. Kishore J. National Health Programmes of India. 7th ed. New Delhi: Century Publication; 2007. p. 390-1.

2. Park K. Textbook of Preventive and Social Medicine. 19th ed. Jabalpur: Bhanot Publications; 2006. p. 235-7.

3. Dongre AR, Deshmukh PR, Garg BS. The impact of school health education programme on personal hygiene and related morbidities in tribal school children of Wardha district. Indian J Community Med 2006;31:81-2.

4. Dongre AR, Deshmukh PR, Boratne AV, Thaware P, Garg BS. An approach to hygiene education among rural Indian school going children. Online J Health Allied Sci 2007;6:2.

5. Deb S, Dutta S, Dasgupta A, Misra R. Relationship of personal hygiene with nutrition and morbidity profile: A study among primary school children in South Kolkata. Indian J Community Med 2010;35:280-4.

6. Singh H. Pattern of ocular morbidities in school children in central India. Natl J Community Med 2011;2:423-8.