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

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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 school 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 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 (URTIs) (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
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 cleanliness of the skin was assessed by observing whether the student had any mud-splattered 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 tucked 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 9.09 (standard deviation [SD] of 1.76) 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...
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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)|

χ²: 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)|

χ²: 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)|

χ²: 487; df: 1; P<0.005

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. 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.

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.

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