Received: 22nd March 2014 Accepted: 25th June 2014 Conflict of Interest: None

Source of Support: Nil

Original Research

The Comparison of Oral Health Problems with Other Health Problems in Urban School Children of 10-14 Years: A Group Screening

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How to cite the article:

Buddiga V, Gupta B, Aravind K, Reddy MV, Kumar RN, Ashwin D. The comparison of oral health problems with other health problems in urban school children of 10-14 years: A group screening. J Int Oral Health 2014;6(5):77-80.

Abstract:

Background: The overall health, well-being, education, learning abilities, development of children, families, and communities can be affected by oral health. However in the developing nations, the importance of oral health in comparison to general health is minimal. The objective was to evaluate and compare the oral health problems in relation to general health problems of the same children by a group screening method.

Materials and Methods: A total of 592 children in the age group of 10-14 years were selected from class 6 to 10, the focus initially was on general health screening, vision screening, oral health screening, tonsillar, and auditory screening of students. Among these children, 296 individuals were apparently healthy with no undiagnosed health aliments; the remaining children were having some health problems. Statistical analysis was performed using paired *t*-test.

Results: About 50% of children were apparently healthy, 19.9% had oral health problems, which was considerably higher than other health problems. The general health problems were 15.20%.

Conclusion: By conducting such a study, we can know that the awareness and identification of other health problems are in urban school children is higher than the oral health problems. This recommends promoting awareness on the oral health and importance of regular dental check-up in children.

Key Words: Gum diseases, ophthalmologist and opthomometrist, respiratory diseases

Introduction

Oral health is an integral part of the general health. The overall health, well-being, education, learning abilities, development of children, families and communities can be affected by oral health. However in the developing nations the importance of oral health in comparison to general health is minimal. In many countries, a large number of children and parents and caregivers have limited knowledge of the causes and prevention of the most common oral diseases. Similarly, the schoolteacher's oral health knowledge has also not been satisfactory.[1]

There is a considerable population of children in the developing nations is being affected by tooth decay and most of the time their proper treatment is not considered and last priority was given due to limited access to oral health services.[2] It has also become clear that causative and risk factors in oral diseases are often the same as those implicated in the major general diseases.[3] Though there has been considerable improvement in the oral health of children in the last few decades, dental caries (tooth decay) still remains one of the most commonly occurring oral health problems in the children all over the globe.

The lack of availability and affordability of oral health services had led to increase in severity of the disease, but also increased the cost of treatment and care. There is no single country that claims to have caries-free children.[4] It is clear that cultural beliefs and social taboos play a major role in the perception of the causes of dental decay and gum diseases.[4] In India, a very less percentage of mothers have received proper advice on oral care of the children from dentists or health care workers.[5] There are various studies and policies emphasizing on the identification, prevention and treatment on general health aliments of childlike body mass index evaluation, respiratory diseases, cardiac diseases and other systemic evaluation like vision screening, tonsillar screening and hearing screening.[6-10] However, there is minimal literature on the comparison of the dental health status in relation to the general health status of the same children, in order to evaluate and draw a conclusion on the knowledge and attitude of the child, parents and caregivers on dental health in relation to general health. Hence, this study was considered to evaluate and compare the oral health problems in relation to general health problems of the same children by a group screening method i.e., oral health screening and inclusion of other specialties of health care like pediatrics for general health, ophthalmology for vision screening, ear-nose-throat (ENT) for tonsillar and hearing screening.

Materials and Methods

Materials

A total of 592 children in the age group of 10-14 years were selected from class 6 to 10, who are students of Delhi Public School, Nacharam, and Hyderabad. These children were screened by a group of doctors from HEAL trust, Hyderabad. These children and school were selected to focus the study on the urban area and better psychological maturity, socioeconomic status rather than poor.

Methods

Based on administrative, logistic, social and medical reasons, it is envisaged under the program to focus initially on general health screening, vision screening, oral health screening, tonsillar and auditory screening of students.

The children with significant findings and who are in need of investigations were further referred to the higher centers. General health screening of children was done with the help of qualified pediatricians and paramedical staff of HEAL Trust. This screening includes growth and development assessment by evaluation of the height and weight of the child. Growth charts[7] are used to compare his height and weight with those of other children of the same age. Based on the evaluation the child was categorized into overweight or malnourished. Basic general health examination was done for detection of other health aliments such as respiratory, cardiac, skin, etc.

Vision screening of children was done with the help of a qualified ophthalmologist, opthomometrist and paramedical staff of HEAL Trust. The goal of all vision screening is to detect poor vision or risk factors that interfere with vision and normal visual development photo screening is a vision screening technique used to screen for amblyogenic factors such as strabismus, media opacities, and significant refractive errors, in one or both eyes in children.[11,12]

Tonsillar screening was done by clinical examination using a tongue audiometry, in which students are instructed to raise their hand (or point to the appropriate ear) when they hear a tone, is a commonly used procedure. The whole procedure was taken care by ENT specialists.[13] Oral health screening was done by a group of dental specialists, the various aspects of oral health problems dental caries problems were evaluated using oral health evaluation proposed by World Health Organization[14] after the evaluation patients already treated and undergoing treatment were excluded.

The children who are either already diagnosed and treated for the common health problems like dental caries, vision, tonsillar and auditory problems or treatment for the same were considered as healthy, the required information was drawn from the school health records of the children and history.

The present study was aimed at considering the existing problems, hence the health already treated or undergoing treatment was considered to be apparently healthy. Thus, data obtained were tabulated and subjected to statistical analysis using the Student's paired *t*-test. $P < 0.001$ was considered as significant. Results were tabulated using SPSS version 17 software (SPSS Inc. Chicago, USA)

Results

A total of 592 children were examined between 6 and 10th standard of the school. Among which 353 were boys, and 239 were girls. Among these children 296 individuals were apparently healthy with no undiagnosed health aliments; the remaining children were having some health problems. The distribution of these health problems is presented in Table 1. The percentage distribution of these findings is presented in Graph 1.

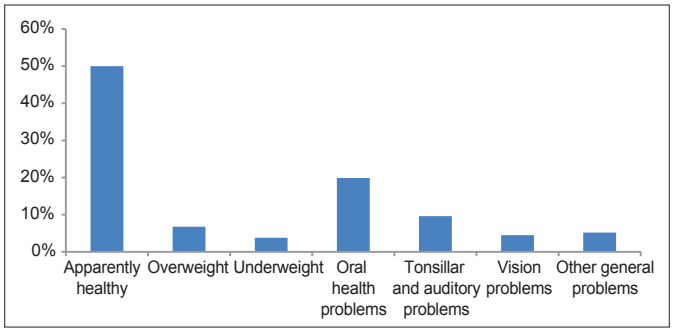
In the present study, 50% of children were apparently healthy, 19.9% had oral health problems, which was considerably high as compared to other health problems. The general health problems were 15.20%, other problems were remaining.

Among the 296 children who were considered apparently healthy were either already diagnosed and treated for the common health problems such as dental caries, vision, tonsillar and auditory problems or undergoing the treatment for the same the distribution of treated health aliments are presented in Table 2.

In the present study, among the 118 children with oral health problems, 47 children had exclusive dental decay 28 children had exclusive orthodontic problems 4 children had exclusive gingival and periodontal problems. Remaining 39 children had a combination of 3 problems.

In the present study, a comparison of oral health problems with general health problems shows statistically insignificance ($P = 1.012$) (Table 3). The occurrence of the general health problems such as obesity and underweight was similar to the oral health problems.

In the present study, the comparison of oral health problems with vision problems shows statistically significance ($P = 0.0024$) i.e., the undiagnosed oral health problems were



Graph 1: The percentage distributions of health problems.

Table 1: The percentage distribution of undiagnosed health problems in children.

Apparently health (%)	Oral health problems (%)	Tonsillar and auditory problems (%)	Vision problems (%)	Other general problems (%)	Over weight (%)	Underweight (%)
50	19.90	9.6	4.50	5.20	6.76	3.80

Table 2: The distribution of already diagnosed health problems in children.

Apparently healthy	Treated/undergoing treatment for general health problems	Treated undergoing treatment for oral health problems	Treated/undergoing treatment tonsillar and auditory problems	Treated/undergoing treatment for vision problems	Children with no health problems
296	73	47	14	68	94

Table 3: Comparison of oral health problems and other health problems.

Oral health problems	Others (%)	*P* value
19.96%	ENT-9.62	0.04
	Vision-4.50	0.0024
	General health-5.20	1.012

P<0.001 significant. ENT: Ear-nose-throat

more common than vision problems. The oral health problems were compared with other general health problems individually paired *t*-test (Table 3).

Comparison of oral health problems with ENT problems shows statistical significance ($P = 0.04$) that is., the undiagnosed oral health problems were more common than tonsillar and auditory problems (Table 3).

Discussion

In the present study, the socio-economic status plays a major role, that is., Children and parents with higher socio-economic status have minimal unidentified and unattended general health problems, vision and tonsillar and auditory problems at a given age group.[15] These findings are in accordance with our present study findings. However, the oral health problems were considerable 19.90% of the total population, which is in accordance with previous studies.[16]

The age group of 10-14 years were considered because of their psychosocial maturity for the better understanding and cooperation during the study period particularly for subjective responses needed during vision and auditory function screening.[8,9] The findings of the present study show the unattended systemic health problems are 15.20%, whereas the oral health problems were 19.90%.

In a comparison of oral health problems with general health problems was not significant thus can be attributes due to increasing incidence of obesity in high socio-economic group of children.[17] In the present study, the general health screening involves a wide range of problems such as respiratory, cardiac, skin etc.. Hence the collective incidence was high, and so the occurrence was similar to the oral health problems.

In a study conducted comparing oral health status and general health of children of 12-year-old and found that there was a significant difference in oral health in children with poor general health which supports the fact that oral and general health are related.

In another study comparing the oral health of obese children, systemic diseases were more compared to healthy children. Moreover, oral health status was significantly better in healthy children than obese children.[18]

In the present study, a comparison of oral health problems with vision problems shows statistically significance and it is also recognized that diagnosed children with vision problems who are undergoing treatment are considerable high. On the basis of these findings, it can be suggested that awareness of the parents, children, and caregivers with regard to ophthalmological health problems is higher as compared to oral health problems, this can be supported by various studies.[19,20]

In a study comparing oral health of blind and deaf children, they concluded that, blind children had more caries prevalence than deaf children in both permanent and primary teeth.[21] This can be contradicted by another study in which comparison was made of oral health between blind and deaf children that was significantly less than the oral health of healthy children.[22]

In the present study, the comparison of oral health problems with tonsillar and auditory problems shows statistically significance ($P = 0.04$) i.e., the undiagnosed oral health problems were more common than tonsillar and auditory problems. These findings can be presumed due to the tonsillar retrogression is seen already by this age.[23] The diagnosed problems are already under treatment or undergoing treatment.

Conclusion

Based on the present study, we can come to the conclusion that, in the urban children, we selected there is socio-economic influence on the overall child health is very high. However in these children, the occurrence of oral health problems is more than other health problems.

By conducting such a study, we can know that there is the relationship of oral health to the general health and also in children with other health conditions. This recommends

promoting awareness on the oral health and importance of regular dental check-up in parents as well as in children.

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