

ORAL HEALTH STATUS IN PUBLIC SCHOOL CHILDREN

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ABSTRACT

This study was aimed to evaluate the oral health status, oral diseases' prevalence in public school children (which represent a section of the majority of our nation's population) and to transcribe these results for assisting and directing oral health education campaign towards these less privileged public schools of Karachi.

A cross-sectional study was conducted amongst 470 students (279 males & 191 females) between 4-19 years of age in a government school in Karachi. A WHO oral health assessment form was filled with heed for each student by a dentist using CPITN probes and other examination instruments in daylight to assess the oral health status and disease conditions of the students. The data were formulated in frequency distribution as pie-charts using SPSS version 15.

The oral health status was found unsatisfactory and dental decay was observed in n=287 (61%) participants. Periodontal diseases like calculus, bleeding gums and poor oral hygiene were observed in n=256(54%), n=56(8%) and n= 339(72%) respectively represented the major dental disease finding evaluated from the study group.

In view of the results obtained, it can be concluded that the oral health status of children in this school was pitiful with the presence of common dental problems that can be alleviated by directing prompt health promotion policies and campaigns towards such public schools all over Pakistan for spreading education regarding basic oral hygiene method and mechanism.

Key Words: Oral health status, oral diseases, low socioeconomic status, dental decay, periodontal status.

INTRODUCTION

Oral health is an inextricable part of general health. It constitutes a key component of a person's overall health throughout life and is much more than just the concept of having healthy teeth.¹

“The mouth reflects General Health and Well – Being” — Surgeon General Carmona

Rightly so, because health of oral cavity is directly related to health of the entire body. The incidental episodes of dental and oro-facial structural pain, inability to eat, smile and communicate socially due to presence of bad/decayed or missing teeth, restricts an individual's routine activities at school and work place causing ample loss of productive working hours throughout the year.²

Oral (Dental) diseases have been known to be the fourth most high-priced disease to treat³ and the people of Pakistan are immensely burdened by it.⁴ Hence oral health is given low priority and as a consequence large population of Pakistan has untreated oral diseases^{5,6} and special personal and governmental intervention are required to eradicate or deal with them rather than recognizing them as preventable by practicing the oral hygiene protocols in day to day routine.⁷ In many industrialized countries, a significant improvement in oral health among children and adolescents, especially with respect to dental caries has been witnessed in the last 2 decades.^{8,9,10} But the WHO global review of Oral Health ascertained that despite emphasis on greater improvement in oral health of population in several countries, global problems still persist especially in underprivileged populations in both developed and developing countries.^{2,11}

Oral health status assessment is the first step in detection and documentation of comprehensive oral health information¹², which can be effectively used to address certain key dental health issues prevailing among different communities in a society.

A large percentage of Pakistan's population resides in rural areas (villages and towns) and are poor. Due to lack of adequate resources people send their children

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to government schools which do not have a good reputation with respect to spreading quality education at par with the standard of private institutions. The aim of this study is to assess and identify oral health status and oral disease occurrences in children going to public school in urban area like Karachi where better quality of life is easy to achieve comparatively to rural areas.

The mapping of such pervasive areas where dental problems are prevailing, dispersed and the need to address them are high, even in the industrial city like Karachi, will certainly be a guide for us to direct and formulate prompt oral health intervention strategies, prevention policy and health promotion approaches on national platforms towards governmental schools to help eradicate this taboo of dental diseases from our societies just as it had been countered by Susan Denman¹³ and Shenoy RP¹⁴ in their studies.

METHODOLOGY

Study sample and setting: The cross-sectional study was conducted on 470 students, both males =279 and Females =191 in a public school in Karachi, aged between 4-19 years belonging to low socioeconomic class. The participants were selected by convenient sampling. All the students studying in the school from class prep to matriculation were included in the study. The students absent on the day were excluded due to non-availability. Negative consent was taken by the help of the school principal from the children’s parents.

The participants were examined by dentists, for the evaluation of oral diseases with CPITN probes and other basic examination instruments using day light as the primary source of illumination. A WHO, 1999 Oral Health Assessment form that included information on demographic details, Dental caries prevalence and status, periodontal status, oral hygiene status, malocclusion and fluorosis respectively with few modifications was filled for each student. 15 minutes maximum were allotted for the examination of each student. (appendix enclosed). The recorded descriptive data was entered, statistically analyzed and formulated as frequency distribution and percentages into pie-charts using the Statistical Package for Social Sciences (SPSS).¹⁵

RESULTS

The gender distribution amongst 470 students showed that 279 i.e. 59.4% were males and 191 i.e. 40.6% were females. Presence of dental decay was observed in n = 287 (61%) children whereas n =183 (39%) students were found to have sound teeth with no dental decay. Amongst the 61% children affected with caries, n=205 (43.6%) had 1-4 teeth decayed, n=68 (14.5%) had up to 8 teeth decayed and n=9 (2%) of the children had up to 12 affected teeth. (Fig 1)

Results regarding Periodontal status showed that about n=256 (54%) of the children had calculus and n=36 (8%) were suffering from the complaint of bleeding gums. (Fig 2) Visual examination of plaque was demonstrated

in n=305 (65%) Children with no intervention of any probing aid and n=34 (7%) showed plaque on probing only, however n=131 (28%) children showed good oral hygiene maintenance. (Fig 3)

No clinical evidence of Fluorosis was seen in n=410 (87%) of the children, however n=45 (10%) students had questionable appearance and still n=15 (3%) had very mild fluorosis. (Fig 4) Malocclusion was not found in n=320 (68%) of the children but n=129 (27%) and n=21

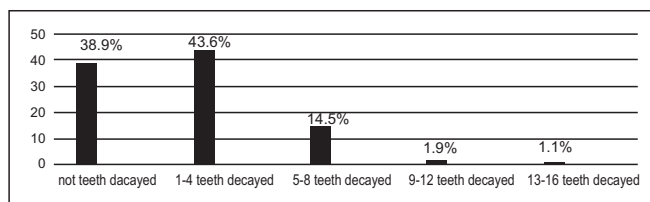


Fig 1: Number of decayed teeth

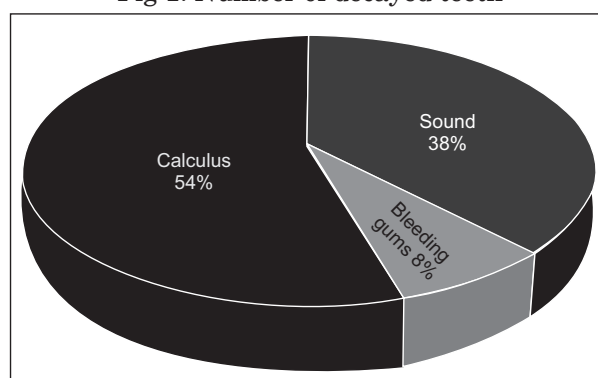


Fig 2: Periodontal disease status

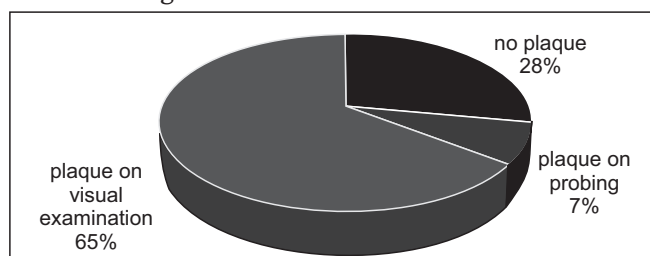


Fig 3: Oral hygiene status

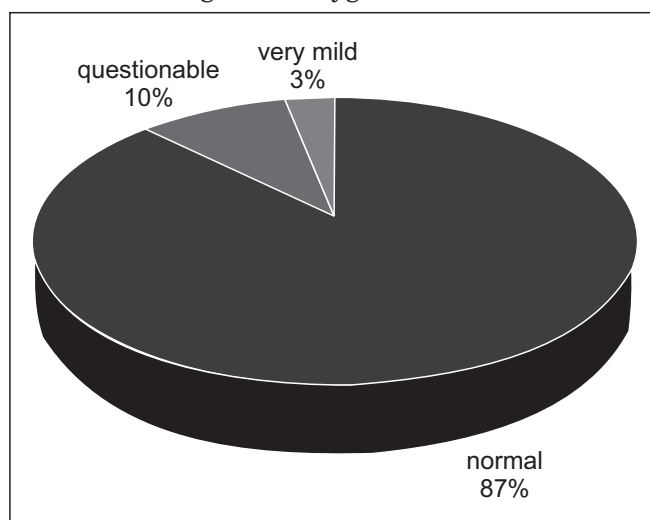


Fig 4: Presence of fluorosis

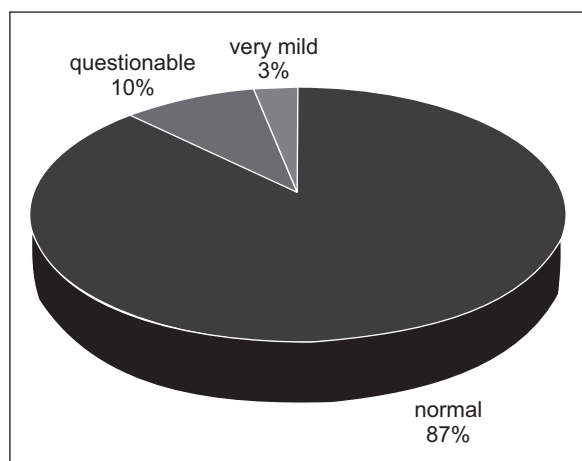


Fig 5: Malocclusion status

(5%) of the students had slight to severe malocclusion respectively. (Fig 5)

DISCUSSION

This study was carried out to assess the oral health status and prevalence of oral diseases in government school children ranging between 4-19 years of age. Oral Health status assessment included the presence of dental decay, periodontal diseases, oral hygiene status, malocclusion and fluorosis. This study reported that dental caries was present in about 61% of children. This finding is higher than the mean caries result (41.4%) found in the study conducted by JR Sukhabogi et al¹⁵ on endemic fluoride belt where continuous exposure of the teeth to fluoridated water may have provided protective effect on study participants, 41.9% results obtained by Shailee et al¹⁶ lower educational level of government school children and Wierzbicka M et al¹⁷ comparatively lower than the study conducted by Petersen PE et al.¹⁸ The 61% caries positive children, were further subdivided in to those who had one tooth decayed, up to 8 or more teeth affected by caries.

Periodontal status was also not satisfactory and the major findings were calculus and some form of mild to moderate gingivitis. The sum of calculus and gingivitis score that is 62% is still less than the result obtained in study by Shailee et al¹⁶, Dhar et al¹⁹, Mukash Kumar et al²⁰ and Peng B et al²¹ and Namrita Harchandani²² which was attributed due to the presence of mixed dentition, varied food habits, shedding of primary teeth, improper and unsupervised oral hygiene practices and malocclusions in these studies.

Oral Hygiene status that included observing plaque displayed that about 65% student had plaque detectable visually and 7% having plaque detectable on probing only. When the results of this study were compared to the similar studies it was noted that these findings are more than the results obtained in the study by Mozaffer Rahim et al²³ and less than those observed by Batwala et al.²⁴ This high incidence of poor oral hygiene practice are linked to the low socioeconomic status where regular replacement of splayed tooth brushes may not be a common practice.

Appreciably Fluorosis was reported in just 13% of the students with 10% being in questionable limits. This is quite pleasing as such low number and level of severity of the condition does not pose a serious risk to the tooth's appearance and strength. These results were different than 31% cases found by S Saravanan et al²⁵, 45.5% cases of YS. Narwaria²⁶, Dahiya et al²⁷ and 31.9% cases reported by Ravi Kiran E, Vijaya K²⁸ which is attributed to the excess high levels of fluoride in underground waters in those areas compared to adequate fluoride levels in our study area.

Regarding presence of malocclusion, 68% of students encouragingly showed no signs of malocclusion but the few cases of slight to moderate and severe finding was most commonly seen during the mixed dentition period where the primary and secondary dentition were both concomitantly present prior to exfoliation of their predecessor. This is much lower than the 95% finding by Divakar Karanth²⁹ where there is a reported trend of malocclusion trait in the Libyan population and Rizwan Nadim et al.³⁰

Hence concluded that results regarding oral health status demonstrated the prevalence of certain common yet alarming dental problems, the persistence of which can have untoward effects on the integrity of the tooth and oral health itself. Oral hygiene status was displeasing with 72% children reporting presence of dental plaque amongst which 62% reported progression to periodontal diseases like gingivitis. These result show a lack, or inadequacy in practice of proper basic oral hygiene maintenance protocols among the school children as plaque is not visible if teeth brushing is regularly practiced. Hence it can be concluded that it is the need of the hour to plan prompt health promotion policies directed specifically toward the public sector schools and institute through screening and pinpointing the high risk areas to raise the standards of dental care by educating about preventive procedures and application of cost effective interventions.

CONCLUSION

Results of our study regarding oral health status concluded that there was presence of certain common yet alarming dental diseases prevailing among the students of this public school in Karachi, the persistence of which can have untoward effects on the integrity of the tooth and oral health itself. Reported cases of dental decay and displeasing oral hygiene status due to presence of dental plaque, and its progression to periodontal diseases like gingivitis suggests an inadequacy in practice of proper basic oral hygiene maintenance protocols among the population. This seems to be linked to the low socioeconomic background to which the majority of our public school children belong to.

RECOMMENDATION

Hence it is recommended that it is the need of the hour to plan prompt health promotion policies directed specifically toward the public sector schools and insti-

tute through screening and pinpointing the high risk areas to raise the standards of dental care by educating about preventive procedures and application of cost effective interventions.

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