Research Article

Impact of Oral Health on Daily Performance among 10-12 Year-Old School Children in Mangalore

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ABSTRACT

Introduction: The importance of assessing the oral health related quality of life in children has been highlighted but very few studies have been conducted on child populations. Primary school children represent the major focus of dental public health research and practice. It is necessary to assess the characteristics and severity of impacts of oral health in primary school children as well as to identify subgroups of children with oral health needs in terms of prevention, treatment and oral health promotion.

Objective: The objective of this study was to assess the impact of oral health on daily performance among 10-12 year-old school children in Mangalore.

Materials and Method: A cross-sectional study was conducted in primary school children of the municipal area of Mangalore, Karnataka, using the Child-Oral Impact on Daily Performance instrument and WHO Oral Health Assessment Proforma (1997) to assess the impacts of oral health on daily performance.

Result: About 55% of children had one or more oral impacts. The overall mean impact score was 3.15 ± 4.4. The extent of impact varied from 1 to 4 performances with impacts. Impacts on eating were the most prevalent (56.8%), followed by cleaning teeth (45.1%). The impacts were mostly very little (35%) and moderate (34%). The more prevalent problems leading to impacts were tooth decay (62.7%), toothache (53%), sensitive tooth (40 .7%), bleeding gums (40.7%) and exfoliating primary teeth (34.8%). Oral conditions that related to appearance also frequently affected children; color of teeth (40.2%), position of tooth (32.1%), calculus (31.5%) and tooth space (20.7%).

Conclusion: The study reveals that impacts of oral health on daily performance of 10-12 year-old school children in Mangalore were prevalent, but not severe. The impacts were mainly related to difficulty in eating and smiling. Toothache, oral ulcers and natural processes contributed largely to the incidence of oral impacts.

Keywords: Oral health; oral impacts; quality of life; school children.

INTRODUCTION

The World Health Organization (WHO), in 1946, introduced a new definition of health and stated that, “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” In the field of dentistry, this new perspective on health suggested that the ultimate goal of dental care should no longer merely be seen as the absence of caries or periodontal disease, but a patient’s physical, psychological and social well-being should be considered as well. The concept of oral health related quality of life captures the aim of this new perspective. As a working definition, Health-Related Quality of Life (HRQoL) may be defined as a person’s assessment of how the following types of factors affect his/her well-being: (1) functional factors; (2) psychological factors (concerning the person’s appearance and self-esteem); (3) social factors (such as interactions with others); and (4) the experience of pain/ discomfort.

When these considerations center around oro-facial concerns, Oral Health-Related Quality of Life (OHRQoL) is assessed.[1]

Children are subject to numerous oral conditions that can impact on their OHRQOL and they are the primary target group of oral health care services in many countries. Primary school children represent the major focus of dental public health research and practice.[2] It is, therefore, necessary to assess the characteristics and severity of oral impacts in primary school children as well as to identify subgroups of children with oral health needs in terms of prevention, treatment and oral health promotion.

The aim of the study was to assess the impact of oral health on daily performance among 10-12 year-old school children in Mangalore

MATERIALS AND METHOD

A cross-sectional study was conducted in primary school children of the municipal area of Mangalore, Karnataka, using the Child-Oral Impact on Daily Performance (Child-OIDP)[3] instrument and WHO Oral Health Assessment Proforma (1997)[4] to assess the impacts of oral health on daily performance.

In order to measure the OHRQoL of children of Kannada-medium schools in Mangalore, the Child-OIDP index subjected to translation and adaptation process into Kannada was used in the main data collection. The validity of the translation was checked by a back-translation method, involving blind re-translation into English by two individuals who were not involved in the study but were erudite in both the languages, Kannada and English. The face and content validity of the translation was verified by experts in the use of questionnaires in both languages. This was also checked after wording modifications, in order to ensure the conceptual and functional equivalences of the questionnaires. A pilot study was carried out on a sample of 60 subjects to validate all questionnaires before using them in the main data collection. Modifications concerning clarification of the content and simplification of the wording was considered necessary after the pilot study. It took 10 minutes for the children to finish answering the questionnaire and 10 -15 minutes to conduct each interview. Scheduling for the main study was planned likewise. For the main data collection, test-retest reliability of data was tested by ten percent random duplication.

The psychometric properties of the Child-OIDP in terms of concurrent validity as well as internal and test-retest reliability were good. For concurrent validity the Kannada Child-OIDP scores were significantly associated with self-perceived oral health status ($p<0.001$), self-perceived dental treatment need ($p<0.001$) and satisfaction with oral health status ($p<0.01$). For internal reliability, all inter-item correlations were positive and the inter-item correlation coefficient varied from 0.2 to 0.45. The Cronbach’s alpha coefficient was 0.59 and the standardized Cronbach’s alpha was 0.6. In terms of test retest reliability, the weighted kappa ranged between 0.7 to 1.0.

The sample size was calculated as 800, based on the study by Gherunpong et al.[3] using the formula for estimation of proportion with 95% confidence interval and precision level of 5%. The randomly selected sample included the criteria to accommodate for not confirming to the eligibility criteria or due to absence on the day of examination.

Approval to conduct the study was obtained from the Subject Committee, Manipal College of Dental Sciences, Mangalore. Permission to conduct the study in the primary schools of Mangalore was given

by the Block Education Officer, Mangalore. A total of 13 Kannada- and English-medium schools were randomly selected from the list of schools obtained from the Block Education Office, Mangalore. The required number of subjects was selected by random sampling method. Random sampling was done to select schools from the municipal area of Mangalore by lottery method. All the eligible students in the selected schools, present on the day of examination were included in the study. Consent forms were distributed to eligible children for them to return after having duly signed by their parent(s). School children included in the study were those of 10-12 years age group having parental consent. Mentally and physically challenged children and those with congenital oral defects were excluded.

Eight hundred and three eligible primary school children from Kannada- and English-medium primary schools were involved in the study. The children were asked to complete the Child-OIDP questionnaire including demographic information such as age, sex, class and name of the school. A face-to-face interview was also conducted by the investigator for oral impacts using the Child-OIDP and the children were clinically examined by the investigator, to asses their oral conditions using the WHO Oral Health Assessment Form, WHO Oral Health Surveys Basic Methods, 1997. The data collection for the study was done between July and August 2007.

Measuring Oral Impacts and Calculating their Severity: The procedure for using the Child-OIDP began with a self administered questionnaire given to the children as a group in their classroom. The students completed the questionnaires in their respective classrooms under the supervision of the investigator and in the absence of the teacher to ensure confidentiality and to reduce response bias. The questionnaire contains a list of all oral problems that children are likely to perceive and also includes an open answer for any unexpected perceived problem. Thereafter, children were individually interviewed, irrespective of their answers at the first step, to assess oral impacts on daily life in relation to 8 daily performances. The eight performances were: a) eating, b) speaking, c) cleaning teeth, d) relaxing, including sleeping, e) smiling, laughing and showing teeth without embarrassment, f) maintaining emotional state, g) study, including going to school and doing homework and h) contact with other people. If children reported an impact on any performance, the frequency of the impact and the severity of its effect on their daily life were scored. Children were also asked to identify oral problems that in their opinion caused the impact. The oral problems were identified from the list complied in the first step of the assessment.

The oral impact score of each performance was obtained by multiplying severity and frequency scores 0, 1, 2 or 3 each, in relation to that performance. Therefore scores could range from 0 to 9 per performance. The overall impacts score was the sum of all eight performances (ranging from 0 to 72) divided by 72 and multiplied by 100. Alternatively, reporting of the severity of oral impacts, from the same data set, was done using the 'intensity' and 'extent' of impacts. The intensity referred to the most severe impacts on any of the eight performances or the highest performance score. It was classified into six levels; none, very little, little, moderate, severe and very severe (Table 1). This was done to differentiate between for example, a child with minor impacts (score of 1)

Table 1: Classification of the intensity of oral impacts on a performance.

Intensity of Impacts	Severity Score		Frequency Score	Performance Score
Very severe	Severe (3)	X	Severe (3)	9
Severe	Severe (3) Moderate (2)	X	Moderate (2) Severe (3)	6
Moderate	Moderate (2) Severe (3) Little (1)	X	Moderate (2) Little (1) Severe (3)	4 3
Little	Little(1) Moderate (2)	X	Moderate (2) Little (1)	2
Very little	Little (1)	X	Little (1)	1
No impact	None (0)	x	None (0)	0

on six performances and another child with severe impacts (score of 6) on only one performance. In the former case, the child will be in the 'very little', and in the latter one, in the 'severe' category. The extent referred to the number of performances with impacts (PWI) affecting a child's quality of life over the past three months. It ranged from 0 to 8 PWI. Intensity and extent of impacts represent an alternative method of describing or comparing oral impacts on children. They are more straightforward and could give a simpler and clearer picture of impacts than using a single score.

Clinical Assessment: Training and calibration of the examiner was done prior to the study under the guidance of an experienced public health dentist. The recorder for the main study was also involved in the training and calibration exercise. Ten percent of the final study samples were re-examined to assess the intra examiner reproducibility. Recording of extra-oral findings, temporomandibular joint signs and symptoms, oral mucosal findings, enamel opacities/hypoplasia, dental fluorosis, Community Periodontal Index, Dentition status and treatment index and dentofacial anomalies according to the WHO criteria.[4]

RESULT

Eight hundred and three eligible children completed all the stages of the survey, of which 50.7% were males and 49.3% were females. Mean age of the children was 10.92 ± 0.83 years; 39.1%, 29.8%, and 31.1% who were 10, 11 and 12 years old, respectively. The most frequently reported oral problem was tooth decay (50.7%), followed by toothache (38.9%) and color of teeth (34.4%); the least frequently reported problem was deformity of mouth or face (3.6%).

The prevalence of oral impacts was 55.4%; these children had experienced some kind of oral impact on their daily life during the past three months. The prevalence of oral impacts among males and females were 61.9% and 48.7%, respectively. There was a statistically significant difference ($p<0.001$) between the prevalence of impacts in females and males. Age-wise prevalence of impact among 10-, 11- and 12-year-old children were 57.3%, 49.4% and 58.8%, respectively. The comparison of their prevalence did not reveal statistically significant difference.

Impacts on eating were the most prevalent (56.8%), followed by cleaning teeth (45.1%). Other prevalences of impacts were lower, namely relaxing (11.4%), speaking (10.5%), emotion and smiling (7.2%), and the least prevalent impact was study (1.6%) (Figure 1).

Extent and Severity of Impacts: Among the children with impacts, the intensity of impacts ranged from very little to very severe; the impacts were mostly very little (35%) and moderate (34%). Others showed little impact (13.5%), severe (11.7%) and very severe (5.8%). Alternatively, in describing the intensity of the impact most of the children with impacts on each performance, most children had very little impact (Table 2). Among those who had impact on eating, 37.3% had very little impact, 35.3% had moderate impact, 16.2% had little impact and only 5.6% each had severe or very severe impact. Similarly, among those who had impact on cleaning teeth, most (68.1%) had very

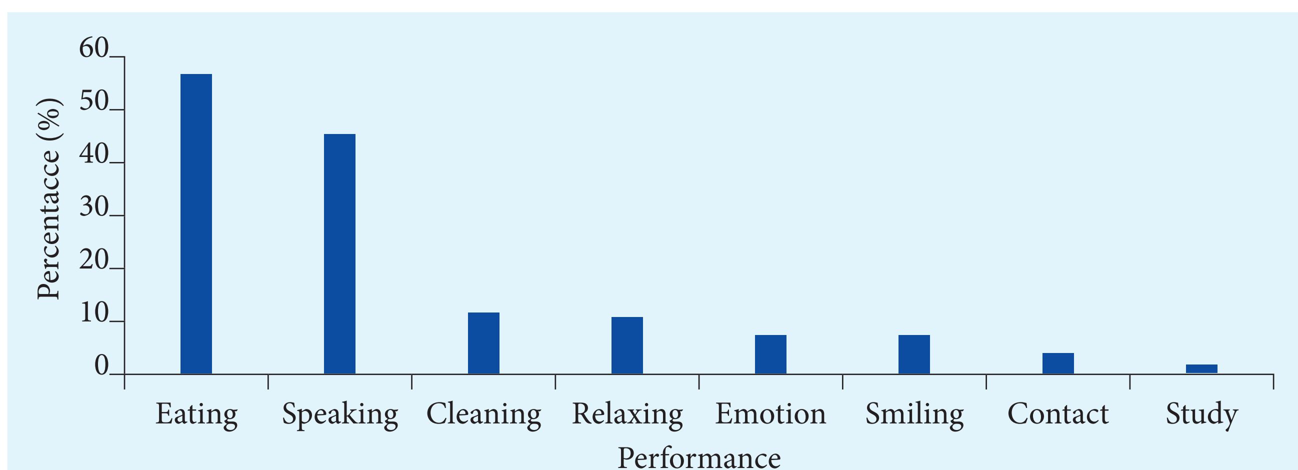

Figure 1: Percentage distribution of subjects based on impact on performance.

Table 2: Distribution based on intensity of impact on performances.

Impact Intensity	Performance							
	Eating	Speaking	Cleaning teeth	Relaxing	Emotion	Smiling	Study	Contact
Very little	37.3	68.1	38.8	39.2	37.5	43.7	42.8	35.3
Little	16.2	6.4	9.0	13.7	31.2	21.9	28.6	17.6
Moderate	35.3	19.1	33.8	27.5	21.9	21.9	14.3	41.2
Severe	5.6	6.4	14.9	11.8	9.4	3.1	0.0	0.0
Very severe	5.6	0.0	3.5	7.8	0.0	9.4	14.3	5.9

little impact and 19.1% had moderate impact, 6.4% each had little or severe impact and none had very severe impact. The extent of impact varied from 1 to 4 performances with impacts (PWI). Most of the children with impacts (63.6%) had 1 PWI, 30.1% had 2 PWI, 5.4% had 3 PWI and 0.9% had 4 PWI. None of the children had PWI more than 4.

The overall impact scores ranged from 0.0 to 37.5 with a mean score of 3.15 and standard deviation of 4.4. The impact scores ranged from 0 to 9 in performances eating, cleaning teeth, relaxing, smiling, study and contact, whereas, the scores ranged from 0 to 6 in performances speaking and emotion. The mean impact scores on each of the 8 performances ranged from 0.02 to 0.81. The mean impact score for eating (0.81) and cleaning teeth (0.7) were the highest while those for contact (0.05) and study (0.02) were the lowest.

Among the children with impacts, the impact scores ranged from 1.39 to 25.0 with a mean score of 5.56 in males and 1.39 to 37.5 with a mean score of 5.85 in females. No statistically significant difference was observed between the overall impact scores between different sexes (P = 0.5). Similarly, the mean impact score for 10-, 11- and 12-year-old children were 5.5, 5.1 and 6.39, respectively. A statistically significant difference was seen in the age-wise comparison of mean impact scores (p = 0.04).

Causes of the Impacts: There were various oral and dental problems that children perceived as the causes of their overall oral impacts. The more prevalent problems leading to impacts were tooth decay (62.7%), toothache (53%), sensitive tooth (40 .7%), bleeding gum (40.7%) and exfoliating primary tooth (34.8%). Oral conditions that related to appearance also frequently affected children; color of teeth (40.2%), position of tooth (32.1%), calculus (31.5%) and tooth space (20.7%). In addition, swollen gums (20%), and erupting permanent teeth (17.8%) were also related to overall impacts.

The perceived causes of impacts on each of the 8 performances are shown in Figure 2. Toothache, tooth decay and sensitive teeth were the main perceived causes of impacts on most of the

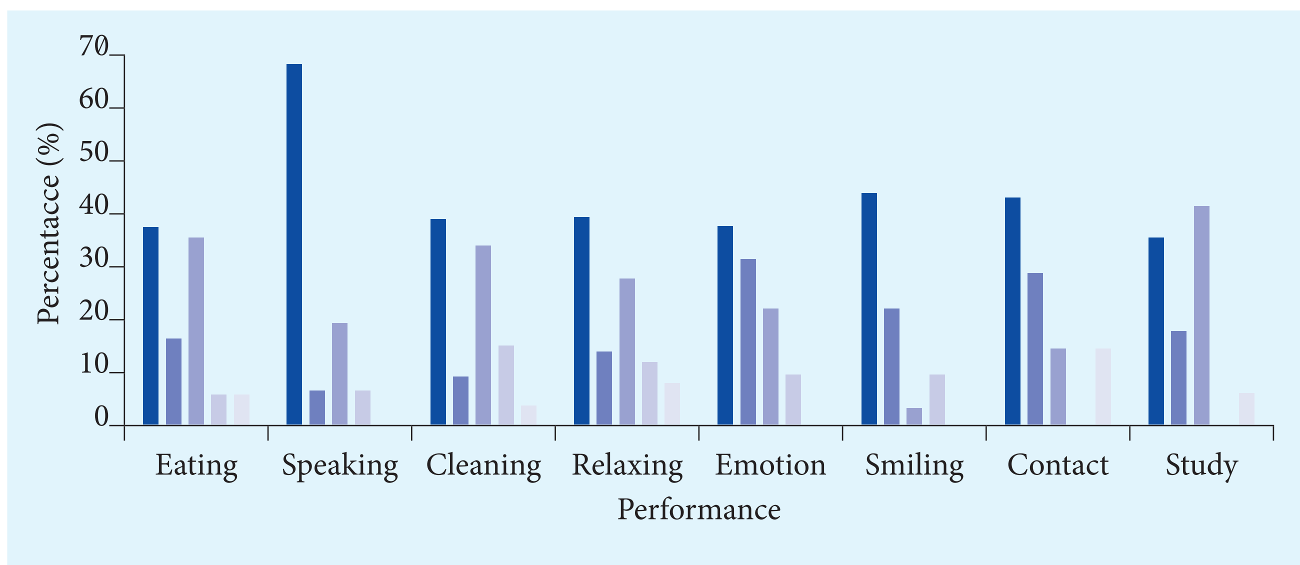

Figure 2: Percentage distribution of subjects based on intensity of impact on performance.

performances. Most of the impacts on eating were caused by toothache (62.8%) and on cleaning teeth by bleeding gum (37.3%). Toothache was also the most perceived cause of impact on relaxing (47.1%) and speaking (25.5%). Sensitive tooth was the most perceived cause of impact on emotion (46.9%) and study (42.9%). Bad breath was the most perceived cause of impact on contact (58.8%). Erupting permanent teeth was perceived to have very less impact only on relaxing (3.9%) and emotion (15.6%), while deformity of mouth or face and missing permanent teeth were perceived to have no impacts on any of the performances.

Clinical Assessment: The study population had a low level of dental caries experience: 67.6% were caries free and DMFT scores ranged from 0 to 8 with a mean of 0.59 (± 1.07). The most caries affected permanent teeth were lower first molars (36 – 18.9%; 46 – 15.6%) and the least affected were the anteriors. The lower anteriors were not affected with caries at all. Likewise, the deciduous teeth of 55.5% of the children were caries free and dmft scores ranged from 0 to 11 with a mean of 1.4 (± 2.02). The lower second deciduous molars were the most caries affected (75% – 22.2%; 85% – 19.4%) followed by the upper and lower first and second deciduous molars.

The functional component of the Dental Aesthetic Index was used to assess the dentofacial anomalies in children with all the permanent teeth present. Most of the children had scores below 25 (96.8%). Only four children had scores ranging from 26 to 30 and equal number of children had scores ranging from 31 to 35. None of the children had scores above 36. The mean (± SD) score was 17.02 ± 4.24.

Almost 60% of the children had Community Periodontal Index score of 1 or more (Table 22, Graph 18). The healthy score was present mostly for the tooth 11 (70.7%) and least for tooth 31 (40.7%). Bleeding was observed mostly in relation to teeth 16 and 26 (28.3% and 28%, respectively); Calculus was detected mostly in relation to tooth 31 (42.7%). Enamel opacities or hypoplasia was seen in limited number of subjects. Demarcated opacity was seen in relation to tooth 21 of nine individuals, tooth 14 of seven individuals and tooth 11 of 2 individuals. Diffuse opacity and hypoplasia were observed in very few teeth. None of the individuals showed any signs of fluorosis.

The various measures of oral health status were correlated with impact scores. None of the measures, namely DMFT score, deft score, DAI score and CPI score showed a statistically significant trend in relation to the impact score.

The kappa statistics was used to assess the reproducibility of clinical assessment in 10% of the study population. The kappa scores for all the parameters ranged from 0.82 to 0.9 indicating good reproducibility.

DISCUSSION

The present study was conducted with the objective of determining the prevalence, intensity and extent of impacts of oral health associated with daily performance in 10 -12 year-old school children of Mangalore. The study population constituted of almost equal number of male and female children. The most commonly listed oral problems were tooth decay, toothache and color of teeth. These were in contrast to the oral problems initially listed by Mtaya et al.[5] in the Tanzanian 12-14 year-old school children, who listed oral ulcer, bleeding and swollen gums as the most common oral problems.

The prevalence of oral impacts experienced during the past three months by the study population was 55.4%. This is less compared to studies conducted among similar age groups, using the same index, in Thailand by Gherunpong et al.[6] (89.8%) and France by Tubert-Jeannin et al.[2] (73.2%), but higher compared to that in the UK by Yusuf et al.[7] (40.4%) and Tanzania by Mtaya et al. (2007)[5] (28.6%). A study conducted in Myanmar8 revealed only 15.8% had impact, using the OIDP. Findings of previous OHRQoL studies suggest that oral impacts are very common in children of this age. In Brazilian[8] adolescent populations, the prevalence of impacts was 32% and 62% in Uganda.[9] A study using the CPQ11-14 index with paedodontic patients by Jokovic et al.[10] found that all the children had oral impacts in the past three months. These findings indicate that oral impacts may be higher in children than in adults. For example, compared to studies using the original OIDP index with other older age groups, the prevalence of oral impacts in a Thai adult population was 73.6% and 52.8% for a Thai elderly population.[3] In a UK national survey of elderly people the prevalence of OIDP impacts was 17% for edentate and 14% for dentate participants. [11]

Like most other studies,[2, 3, 5, 7, 12] eating was the most important aspect of OHRQoL of the school children in the present study. Difficulty with eating due to oral problems was the most common impact (56.6%). Toothache was the most common problem cited for contributing to eating difficulties in nearly two thirds of those with impacts on eating. Untreated dental caries might lead to dental pain which in turn results in impacts of affected play and sleep, avoidance of certain types of food and decreased school performance.[5] In this study, toothache, apart from contributing to eating problems, was seen to have an impact on sleep and study as well. The finding that eating was the most common performance affected is similar to all studies using the OIDP in all age groups.[3, 13] They are also similar to a study using the CPQ11-14 with paedodontic patients where impacts on functional limitations were more common than impacts on emotional and social well-being.[10] Another study by Thippeswamy et al.[14] reported that the impact brought about by oral pain affected eating the most (50.9%).

Cleaning of teeth was another important aspect of children's OHRQoL. It affected 45% of children. The most prevalent cause was bleeding gum followed by tooth decay. Bleeding gum, moreover, accounted for oral impacts in over 40% of all children with impacts. Children with difficulty in cleaning their teeth because of gum inflammation are unlikely to achieve good levels of oral hygiene because brushing may lead to bleeding, and their gum problems would undoubtedly remain or even get worse. This problem would not be solved by the traditional dental treatment without understanding the affects of oral impacts on behaviour.

The oral impacts, although prevalent in more than half of the study population, were not severe. Very severe and severe overall impact was seen only in 5.8% and 11.7% of the population, respectively; the rest had moderate, little or very little impacts. The highest impact score was only 37.5 from a possible score of 72. Many clinical causes that contributed to the impacts were toothache, sensitive tooth and tooth decay. This is contrary to the study where most of the clinical causes contributing to the impacts were not long lasting, such as, oral ulcers, exfoliating teeth and spaces due to unerupted teeth. Impacts on each of the 8 performances in the present study, also were mostly of moderate, little and very little intensity. Contrary to this study, the study conducted to assess condition-specific impacts (malocclusion) on Peruvian children by Bernabe et al.,[12] showed that the impacts reported were of severe (28.7%) and very severe (26.7%) intensity. In the analysis by performances, smiling and social contact were the most severely impacted daily performances. Thippeswamy et al.[14] reported moderate pain to be most prevalent among 10-12 year-old school children in Davangere. The most common reason for pain was dental caries.

The extent of impact in the present study was comparatively less and varied from 1 to 4 PWI, with almost two third of the population having 1 PWI. Eating and cleaning teeth were the most impacted performances compared to smiling and contact with other people, therefore supporting the finding that these children were more concerned with dental function rather than aesthetics. However, color of teeth, position of teeth and shape or size of the teeth were perceived as causes of impacts secondary to aforementioned primary causes. Among the Thai population,[3] PWI ranged from 1 to 8. In the Peruvian[15] children 76% of children with condition-specific impacts reported 1 PWI, 19.2% reported 2 PWI, 3.2% reported 3 PWI, 0.8% reported 4 PWI and 0.8% reported 5 PWI. The performances affected were mainly related to smiling, laughing and showing teeth without embarrassment. Eating, sleeping and studying were not frequently affected, supporting the finding that children with a perceived malocclusion were more concerned with dental aesthetics than with function.

The functional component of the Dental Aesthetic Index (DAI) revealed that only 4 children had definite malocclusion with treatment elective (DAI scores 26 to 30) and another 4 had severe malocclusion with highly desirable treatment. As the study also involved mixed dentition stage children, the malocclusion they perceived could have been the natural process of tooth spacing or eruption pattern of the permanent teeth. Also, their perceived condition could not be clinically assessed as the index is recommended for children above 12 years. This could be the probable explanation for reasonably high perceived problems like tooth position and shape or size of teeth and low assessed malocclusion.

An interesting finding was that impacts relating to social dimensions, such as study being affected

and contact with people, were the least common and less severe. Schor suggested that children's social performances rely more on their physical and psychological performances than adults. It is apparent that after tooth decay, toothache, sensitive tooth and bleeding gum, a reason for the prevalence of oral impacts in children is natural process of exfoliating primary teeth. On the other hand, this condition was not reported as an important cause of oral impacts in other age groups, as in the study on Thai adults by Adulyanon et al.[16]

It is noteworthy that despite the fact that this was a low caries population, sensitive teeth and toothache were frequently reported causes across the various impacts, particularly so with respect to the more common impact of difficulties with eating. The dental caries experience was reported separately for permanent and deciduous teeth. DMFT ranged from 0 to 8 with mean of 0.59 ± 1.07. This is quite low compared to the mean DMFT assessed by the National Oral Health Survey 2002-2003, which was 1.8 for India[17] and 2.0 for Karnataka,[18] for 12 years of age. In the study by Gerunpong et al.,[3] dental caries prevalence was low; 43.1% were caries free with DMFT scores ranging from 0 to 12 and with a mean score of 1.5 ± 1.8. However, the prevalence of oral impacts experienced was high (89.8%) and the population in the area also had free accessible school dental service. This facility was not present in the present study area.

Dental caries affected the lower first molars followed by the upper first molars the most in the permanent dentition; lower second molars followed by the upper second molars were the most affected by dental caries in the deciduous dentition, thus exhibiting the normal pattern of susceptibility of individual teeth to dental caries.

The finding that bleeding gums were the third most frequently perceived cause of impact could be explained by the clinical finding based on the Community Periodontal Index. The index reveals that almost 60% of the children had CPI score of at least one.

The impact scores showed no significant trend with respect to measures of oral health status. As such, there were no indexed studies published till the time of this report, to compare the results of the correlation between oral health status and oral impacts among children. Both DMFT and deft scores were not significantly related to the impact scores. A possible explanation for this is that this was a low caries prevalent study population and moreover, the children were at the last stages of mixed dentition period. The impact was based on a three month recall period during which permanent teeth must have replaced their probably problematic primary predecessors. In terms of no significant correlation between DAI and impact scores, it is already obvious that the impact perceived by the study population was mainly due to functional causes rather than aesthetic causes. The impact scores observed in the study population was minimal; it ranged from 0 to 37.5 when the total possible was 72. The low impact scores obtained could also be the possible explanation for the insignificant correlation between the impact and the oral health measures, including CPI.

The specific age group under investigation, particularly in relation to their stage of development, may have influenced the prevalence of oral impacts. Developmental changes unavoidably affect HRQoL between childhood and adolescence. Maturity and an increase in age generate a more sophisticated understanding and perceptions about health and illness. Therefore, perceptions about health and quality of life of children change as they mature. The Child-OIDP addressed the main possible problems that might arise when employing adult measures with children. They included the adjustment of the 8 items of daily performances, simplification of rating scales, decrease of the time frame and rearrangement and clarification of the complex questions that were beyond the capability of children under 12 years. In addition, another advantage of the Child-OIDP lies in its conceptual framework where oral health consequences are divided into three levels; the first level represents oral problems (such as tooth decay), the second or intermediate level represents symptoms (such as pain) and the third or "ultimate level" represents difficulty in daily performances. The index measures impact at the ultimate level only, which could reduce double scoring, by not measuring twice the same impacts experienced at different levels.[2] In addition, this approach could reduce the uncertainty of children's perception and interpretation and therefore make the index more applicable for children, a possible explanation for the low frequency of self-perceived

impacts reported by Soe et al.[8] among the Myanmar adolescents.

Measurement of oral disease and conditions provides little insight into the consequences of oral diseases and deformity in children's lives. Thus in many respects traditional measures of oral health represent a limited unidimensional aspect of child oral health. This is not to say that clinical parameters are not important, they are essential to measure oral health; the problem arises when clinical indicators are equated with oral health treatment need.[19] Measuring impacts on daily functioning is more objective and reliable than measuring reported health problems or symptoms which are more influenced by individuals' perception and interpretation.[3] Thus, HRQoL measures for children that involve subjective reported problems or symptoms such as pain are frequently problematic, because children's interpretation and perception about health differ from adults. Therefore, to reduce the problem with children's interpretation about their health or symptoms, the technique of assessing HRQoL based on activities of daily living is appropriate.[3]

In conclusion, the impacts of oral health on daily performance of 10-12 year-old school children in Mangalore were prevalent, but not severe. The impacts were mainly related to difficulty in eating and smiling. Toothache, oral ulcers and natural processes contributed largely to the incidence of oral impacts.

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