Research Article

Assessment of Oral Health in Quality of Life in 10-12 Year Old Children by Child OIDP Index - A Cross Sectional Study

Maladevi M[1]*, Latha Anandakrishna[2] and Ranadheer R[3]

[1]*Private Practitioner, Tamil Nadu, India*

[2]*Professor and HOD, Department of Pedodontics and Preventive Dentistry, Faculty of Dental Sciences, Ramaiah University of Applied Sciences, Bangalore, India*

[3]*Assistant Professor, Department of Public Health Dentistry, Faculty of Dental Sciences, Ramaiah University of Applied Sciences, Bangalore, India*

*Corresponding Author: Maladevi M, Private Practitioner, Tamil Nadu, India

Abstract

Background: The quality of life (QoL) evaluates from an individual's standpoint on functional, psychological and social factors that disturb an individual's well-being. Oral Health Related Quality of Life (OHRQoL) has become a priority since 1980's, because its application in clinical practice includes identifying and prioritizing the problems from an individual's perspective than on clinician's perspective.

Aim: To assess self-perceived OHRQoL by applying Child-Oral impacts on Daily Performance index (Child-OIDP) in children aged10-12-year in North Bengaluru, Karnataka, India

Methods: The study was conducted amongst 150 children aged 10-12 years. The OHRQoL was assessed using Child-Oral Impact on Daily Performance Index (Child-OIDP). The study was conducted in two phases:

a) Determining self-perceived oral health issues by filling in a list of questions regarding most of the common oral pathological conditions which are present during childhood.

b) Evaluating the effect of those oral illnesses on the QoL of these children through the filling in of the Child-OIDP questionnaire.

Results: 56% of the children suffered impact on their daily activities. The mean Child-OIDP score was 19.21 ± 1.19. Approximately half of the affected children (47%) reported very mild or mild intensity impact. The most prevalent impact was in eating (28.4%), followed by speech (28.8%), brushing (21.2%), school attendance (13.7%), speaking, smiling and general health (11%).

Conclusion: Despite the fact that oral impact was prevalent on the QoL of these children, however these cannot be neglected. Hence dental professionals should be able to appreciate these aspects before and after treatment to improve the over all QoL of their patients.

Keywords: OHRQoL; QoL; Child –OIDP; Dental Caries

Abbreviations

QoL: Quality of Life; OHRQoL: Oral Health Related Quality of Life; Child-OIDP: Child-Oral Impacts on Daily Performance index; CO-HIP: Child Oral Health Impact Profile; ECOHIS: Early Childhood Oral Health Impact Scale.

Introduction

"Health is a state of complete physical, mental, and social well being and not merely the absence of disease and infirmity" - WHO 1948.

Recently there is a paradigm shift from this biomedical concept to a bio psychosocial concept of which Quality of Life forms an integral part. Locker and Allen in 2007 defined OHRQoL as an impact of oral health and illnesses on everyday life of a person, in terms of frequency, severity and duration to affect their perception in life overall [1]. National institute of health carried out a survey in 2008, which shows the most prevalent dental anomalies in 10-12 year old children. That includes dental caries, gingival diseases, fluorosis and malocclusion. The present study is an attempt to evaluate the impact of these oral diseases on quality of life of similar age group children.

OHRQoL assessment allows a shift from the conventional overhaul to a more focussed care. The advantages of this approach to patient care are [2]:
1. Patients themselves assess the progress in their symptoms or QoL
2. Involving patients in their own healthcare
3. Observer bias can be reduced
4. Consideration of patients' views increases public accountability

A number of indices had been developed and tested in community based studies and individual cases with specific disorders. In the present study we assessed the oral health and its impacts on daily performance of 10-12 years children of Bengaluru, India using Child OIDP index.

Material and Method

A descriptive Cross-Sectional study was strategically planned and carried out to analyse the interrelationship between Child-OIDP scores and oral health status amongst children aged 10- to 12-years of North Bengaluru city, Karnataka. After listing out the names of all the private English medium schools, two schools were randomly selected by coin toss method. The study tool chosen was Child-OIDP questionnaire to measure the oral health-related quality of life in the present study. It is derived from the OIDP index used amongst adult population with few modifications pertaining to children's intellectual, cognitive and language development skill. A pilot study was conducted with 20 children in the outpatient Department of Pedodontics and Preventive dentistry, Faculty of Dental sciences, Ramaiah University of Applied Sciences, Bengaluru, Karnataka, to assess and modify the existing version of child OIDP questionnaire to their level of cognition. A convenient sample of 150 children was selected to participate in the current study.

After obtaining ethical clearance from the institutional Ethics committee, data collection was programmed in the month of August 2014. An informed consent was obtained from the parents as well as from the head of the institution before the study was initiated. At the initiation of study the importance and implication of the study were explicated and discussed in detail with the children. The study was conducted in two steps that included questionnaire administration and then clinical examination. The questionnaire tool (Child-OIDP index) used in the present study assessed oral impacts on the 8 daily performances: eating, speaking, brushing, smiling, sleeping, general health, social activity and school activity.

The children who participated in the study were requested to fill the questionnaire with attention and concentration, to obtain an effective outcome. The proforma consisted of questions regarding 3 subgroups.
1. Socio-demographic characteristics.
2. Self-assessed oral health status.
3. Frequency and intensity of these oral illnesses on daily activities using likert scale.

Child-OIDP score was obtained by added scores of 8 frequent items. Child-OIDP score of >1 implied an impact on their daily activities.

Likert scale used was in the range of 0-4 [0 = 'no difficulty', 1 = 'less than once in a month', 2 = 'once or twice in a month', 3 = 'once or twice in a week', 4 = '3–4 times in a week'].

Clinical examination

A single examiner conducted the oral screening under field condition with an recording assistant. The child was seated on a chair with good natural light source [ADA Type III]. Dental caries was examined by applying dmft/DMFT index (WHO 1997 modification).

Results

Out of the entire school children aged 10-12 years, only the children with consent were included in the study and only 150 participants with completed questionnaire was included in the data analysis. The mean age of participants was 11.20 ± 1.1. The mean dmft/DMFT was found to be 2.49. The mean OIDP score was found to be 19.21 ± 1.19.

Table 1 depicts the self-perceived impacts among children. 74% of children had dmft score of >1, of which 56% participant exhibited a minimum of one oral health in the past three months

that affected their daily performance with C-OIDP score >1. Table 2 depicts the predominant impact with first being more difficulty in eating (28.4% of children), followed by impacts on speech (28.8%), brushing (21.2%), school attendance (13.7%), speaking, smiling and general health (11%). Table 2 gives the mean severity and frequency of the impact on daily performances and it was found more to be while eating.

Perceived impact	Percentage (%)
Tooth decay	63
Tooth pain	64
Tooth sensitivity	74
Tooth fracture	50.7
Discoloration	63.7
Malposition	65.8
Difference in tooth number	87.7
Bleeding	83.6
Bad breadth	82.2
Wounds	85.6
Moving teeth	74
New teeth	58.9
Gaps in the jaw	58.2
Change in appearance	84.2
Tooth lost	84.9

Table 1: (n=150) self-perceived oral impacts

Daily performance	Severity	Frequency
Eating	1.48	1.42
Speaking	1.29	1.32
Brushing	1.29	1.25
Sleeping	1.18	1.17
General health	1.18	1.15
Smiling	1.27	1.25
School activities	1.17	1.14
Social activities	1.18	1.24

Table 2: (n=150) mean severity and frequency of impairment in daily performance.

Discussion

The World Health Organisation (WHO) defines Quality ofLife (QoL) as "an individual's perception of their position in life in the context of the cultural and value systems in which they live and in relation to their goals, expectations, standards and concerns" [1]. The QoL had become an important outcome measure for general health however its importance in oral health has gained importance only recently.

Many studies have been conducted amongst adults in developed countries. However the concept to measure the impact on children came up only after Surgeon General's Workshop in 2001, which stated that a child's oral health is important for their overall health and wellbeing [3].

A number of indices had been used in measuring OHRQoL in children. The Child Perception Questionnaire [11-14], The Michigan OHRQoL Scales child's (Version C) and parent/guardian's perspective (Version PG), Child Oral Health Impact Profile (COHIP), Early Childhood Oral Health Impact Scale (ECOHIS) and Child-OIDP index.

Gherunpong, Tsakos and Sheiham introduced Child-OIDP index in 2004. It is used to measure the effect of oral condition on 8 daily events of the children. There are two methods to conduct the survey using this tool 1) by individual interview and 2) self-administration. It was found to have 95% agreement between self-administration and interview based administration in study done by Rosel., et al [5]. Considering the advantages, disadvantages and ease of application, we opted to use Child-OIDP index of self-administering type was preferred as it allows the optimization of time and reduces the interviewer's bias [6].

The Child-OIDP index was developed in English and then validated in Thailand and more recently in other languages [7]. It was found to be a reliable and predictable tool among the population of Karnataka [8], India and hence we applied the similar in Bengaluru children. The study results shows that 74% of children had dmft/DMFT score of >1, out of which 56% participant stated a minimum of one oral impact that affects their daily performance in the past three months according to the Child-OIDP index(C-OIDP score of >1) which is high when compared to 44% in the study done by Usha., et al. [8] but less when compared to 89.8% of children in the studies done by Gherunpong., et al [9], This difference could be because of cross cultural variation in perception of the disease and health. The current study found out that eating (28.4%) was the most commonly affected daily activity due to oral health impairment. This is similar to results of the studies done by Usha., et al [8],

Gherunpong., *et al* [9], and Pentapeti., *et al* [10]. The second highest being speech, which differs from studies done by Usha., *et al*. [8] and Pentapeti., *et al*. [10] where brushing was second most commonly affected daily performance. The mean OIDP score is 19.21 ± 1.19 which is comparatively high when compared to the study done by Pentapati., *et al*. [10] on 13-15 year old NCC children in India, (12.13 ± 5.85) and 9.1 in a study done by Usha., *et al*. [8] in 12-15 year old children. The mean severity of impact on daily performances of the present study is 1.26 and frequency of the impact being 1.24 which implies that the impact was very mild/ mild.

Even though the oral health impact was prevalent in these children, the intensity was not severe. Half of this population had Child-OIDP score < 2 or fewer intensity impacts. Furthermore, the contributed clinical causes are transient. That is, preshedding teeth and spaces due to a non-erupted permanent tooth and oral ulcers. Eventhough the impacts are not high, it cannot be neglected. Hence, dental professional should be able to appreciate these aspects before and after treatment to improve the over all QoL. We recommend that the study should be conducted in a large scale in future to make it more generalizable.

Future perspective

- To develop a definite and a more reliable tool to measure QoL amongst Indian children
- To incorporate in clinical practice not just research
- To educate and create awareness on the treatment modalities available to the public

Conclusion

The current study results reveal that oral health have one or the other impact on the daily activities of the children. The mangement of the patient needs more precision from their point of understanding.

Bibliography

1. Kumar S., *et al*. "A systematic review of the impact of parental socio-economic status and home environment characteristics on children's oral health related quality of life". *Health Qual Life Outcomes* 12.1 (2014): 41.

2. Gilchrist F., *et al*. "Assessment of the quality of measures of child oral health-related quality of life". *BMC Oral Health* 14.1 (2014): 40.

3. Inglehart MR., *et al*. "Oral health-related quality of life: an introduction". In: Oral health-related quality of life. Chicago: Quintessence Publishing Co., Inc., (2002): 1-6.

4. Bennadi D and Reddy CVK. "Oral health related quality of life". *Journal of International Society of Preventive and Community Dentistry* 13.3 (2013): 1-6.

5. Rosel E., *et al*. "Assessing the level of agreement between the self-and interview-administered Child-OIDP". *Community Dentistry and Oral Epidemiology* 38.4 (2010): 340-347.

6. Sischo L and Broder HL. "Oral Health-related Quality of Life What, Why, How and Future Implications". *Journal of Dental Research* 90.11 (2011): 1264-1270.

7. Yusuf H., *et al*. "Validation of an English version of the Child-OIDP index, an oral health-related quality of life measure for children". *Health Quality Life Outcomes* 4.1 (2006): 38.

8. Usha GV., *et al*. "Comparative assessment of validity and reliability of the Oral Impacts on Daily Performance (OIDP) frequency scale: a cross-sectional survey among adolescents in Davanagere city, Karnataka, India". *International Journal of Dental Hygiene* 11.1 (2013): 28-34.

9. Gherunpong S., *et al*. "The prevalence and severity of oral impacts on daily performances in Thai primary school children". *Health Qual Life outcomes* 2.1 (2004): 57.

10. Pentapati KC., *et al*. "Oral Health-related quality of life and associated factors in National Cadet Corps of Udupi District, India". *WJD* 4.2 (2013): 81-85.