Original Article

Oral Health–Related Quality of Life in Children and Adolescents of Indian population

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Background: Kids and teenagers are more prone to oral diseases. Poor oral health has a significant impact on oral well-being–associated quality of life. Thus, we performed an investigation to examine the outcome of oral health status on the quality of life of children and adolescents in Indian population, by using the Oral Health Impact Profile-14 (OHIP-14).

Materials and Methods: A total of 100 children, ranging between 1 and 19 years of age who attended Indian hospitals from November 2016 to October 2019, were included in the study. The DMFT Index (Decayed, Missing, and Filled Teeth) and OHIP-14 were used as data collection tools. Association of the total OHIP-14 score and seven subscales associated with it was evaluated using Spearman’s correlations.

Results: The results showed statistically noteworthy association between the toothbrushing regularity, number of dental appointments, history of oral trauma, smoking, and subdomains of OHIP-14 ($P < 0.05$)

Conclusion: Dental and oral health of an individual has a great impact on their quality of life.

Keywords: Adolescents, children, oral health impact profile, oral well being

Introduction

Nowadays, healthiness linked with quality of life has become a matter of higher significance.[¹] This depends on the acknowledgment that the impacts of a disease or state cannot be completely identified and controlled by using only clinical procedures, as these do not consider the subjective experiences that the participants have regarding their health.[²]

Routine performances are also hindered by oral diseases, which results in lack of continuity in work. While assessing oral health need, it has become imperative to think about the deterioration of bodily, mental, and societal implementation due to pitiable oral well-being.[³]

Poor oral well-being significantly affects the personal satisfaction. Kids who experience the ill effects of dental pain, abscesses, decayed and damaged teeth, and gum disease suffers a lot. This may have negative

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effects on their social and mental prosperity, for example, challenges in eating and playing, moreover such kids are at more danger of hospitalization with expensive treatments. School routine would likewise be affected.

One of the most broadly utilized instruments to survey “oral health impact” is the Oral Health Impact Profile (OHIP), which was given via Slade and Spencer. This is dependent on the representation given by Locker. The OHIP assesses physical, mental, and social spaces that measure the person’s view of effects produced by oral issues within overall well-being.

The oral health–related quality of life (OHRQoL) acts as a sign of the persons’ insight regarding their oral well-being and the effects oral diseases put on their routine activity, social interaction, and mental status.

Thus, we performed a study to explore the impact of oral well-being on the quality of life on children and adolescents of India, by using the OHIP-14.

**Materials and Methods**

This study included 100 children, ranging between 1 and 19 years of age, who attended dental hospitals from November 2016 to October 2019.

On paper, consent was obtained from all the participants and their mother/father/guardians before the start of the study. The examination was conducted in two segments: segment 1 consisted a questionnaire and phase 2 included dental examinations.

**Questionnaire**

Initially, the participants gave information about their age, sex, family pay level, and their parent’s educational history. The participants additionally gave information about their oral health–related approach, such as toothbrushing and routine dental checkup. The dental visit was categorized as first visit and another visit. Those who visited the dentist for first time were categorized as first visit, and those who visited dentist earlier were categorized as another visit. Participants were also categorized on the basis of frequency of brushing as those who cleaned their teeth twice or once a day.

During second segment of the survey, the OHRQoL of participants was assessed using OHIP-14 scale. The OHIP-14 consists of 14 questions grouped under seven spheres of influence, which includes functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. The index items were categorized as: 0 = never, 1 = rarely, 2 = sometimes, 3 = often, and 4 = always. The scores were added to give a complete score (range = 0–56), in which a score of 0 showed that the OHRQoL was generally excellent, whereas a score of 56 showed that the OHRQoL was poor. The mean area scores were controlled by separating the entirety of the subdomain score by the quantity of inquiries in that subdomain. Every one of the OHIP-14 responses was allocated a score of 0 if the reaction was “never” or “hardly ever” and a score of 1 if the reaction was “occasionally,” “fairly often,” or “very often,” dichotomizing reactions into “absence of impact” versus “presence of impact” [Table 3].

**Oral health examination**

Same dentist conducted the intraoral examinations under standardized conditions. Disposable mirrors and periodontal probes were used on the basis of the World Health Organization (WHO) oral well-being assessment criteria. For the investigation of the oral strength of members the Decayed, Missing, and Filled Teeth (DMFT) Index was used.

**Statistical analysis**

All the factual examinations were analyzed using the Statistical Package for the Social Sciences (SPSS) software, version 17.0. The expressive insights were displayed as rates and mean values ± standard deviations. The Student’s test was used to analyse persistent parametric factors of the autonomous gatherings. Relationship of the complete OHIP-14 score and its seven subscales was assessed using Spearman’s correlation.

**Result and Observation**

Of the participants, 54% reported that it is their first visit to the dentist, 46% stated that they have visited the dentist earlier also; 62% of the participants expressed that they brushed their teeth once per day and 28% mentioned that they brushed their teeth, twice per day. Statistically significant associations were established among:

1. The incidence of toothbrushing and the psychological discomfort subdomain

### Table 1: Demographic data

| Gender | No. of participants | Mean age | Minimum | Maximum |
|--------|---------------------|----------|---------|---------|
| Male   | 63 (63%)            | 15.12 ± 2.1 | 4 years | 19 years |
| Female | 37 (37%)            |          |         |         |
2. The dental visit recurrence and the physical pain, physical disability, and handicap subdomains

**DISCUSSION**

The present examination assessed the effect of oral well-being status and oral well-being dispositions on OHRQoL of children and adolescents. This examination uncovered that the recurrence of visits to a dental specialist and toothbrushing had effect on the OHRQoL of children and adolescents.

Participants had mean DMFT value of 3.1 ± 1.99, and 58% of the participants had the DMFT values more than 0. Various authors reported different range of DMFT in their studies in almost similar age as our study.

Gökalp et al.\(^{[12]}\) reported a mean DMFT estimation of 2.3 in their study in 15-year-old patients; Keles et al.\(^{[11]}\) in their study reported a mean DMFT of 2.37. Namal et al.\(^{[13]}\) detailed a mean DMFT estimation of 4.96 in participants aged 18–19 years, and Bal et al.\(^{[14]}\) reported a mean DMFT estimation of 4.26 in nursing undergraduates, and in this investigation, we saw that the participant’s mean DMFT values were either equivalent to or lower than the mean DMFT estimations of the participants of a similar age range revealed in previously mentioned examinations.

In this study, 62% of the participants mentioned that they brushed their teeth once every day and 28% mentioned that they brushed their teeth twice every day. Bal et al.\(^{[14]}\) found that 88.9% of nursing undergraduates brushed their teeth at least twice every day. In this examination, just 38.5% of the participants in almost same age-group mentioned brushing their teeth once every day. This distinction might be on the grounds that the two groups are in diverse fields of study; certainly, nursing undergraduates being in medical field have more knowledge about being healthy and are aware about measures to maintain healthy oral environment.

Sofola et al.\(^{[15]}\) and Okoye and Ekwueme\(^{[16]}\) in their studies on dental care practice by adolescents showed that toothbrush with toothpaste was the most common method of cleaning teeth, and majority cleaned their teeth once daily. Dental visit behavior was poor as 90.6% and 56.8% had never visited a dentist, according to the studies by Sofola et al.\(^{[15]}\) and Okoye and Ekwueme,\(^{[16]}\) respectively. Regular tooth cleaning was the finest approach to keep up oral health.\(^{[17,18]}\) The teeth should be brushed at least twice a day. One time in the dawn and the next before going to bed at night.\(^{[19]}\) Additional similar vital precautionary procedures other than toothbrushing consist of cleaning with dental floss, use of fluorides, and regular visit to the dentist.\(^{[20]}\)

Those who do not visit the dentists are bound to have a poor dental status and more terrible oral well-being than individuals who as a rule visit the dentist.\(^{[21]}\) Of the participants, 54% reported that it is their first visit to the dentist, 46% stated that they have visited the dentist earlier also. Montero et al.\(^{[21]}\) reported that frequent dental checkups improve the OHRQoL, and that the participants who possibly went to dentists in case of trouble had more OHIP-14 scores estimating physical pain. Our results are reliable with this examination; statistically noteworthy associations were found between the regularity to clean teeth and the psychological discomfort subdomain and the regularity in dental visit and the physical pain, physical disability, and handicap subdomains.

The oral well-being effect on the individual’s quality of life, however of a low effect, was not totally unimportant in any event for such an overall public study. It would be of incredible help to additionally examine the oral

| Table 2: Parents education and income |
|--------------------------------------|
| Education                           | Father | Mother |
| No education                        | 0      | 1      |
| Primary school                      | 12     | 18     |
| Secondary or higher                 | 88     | 81     |
| Occupation                          |        |        |
| No occupation                       | 0      | 46     |
| Self-employed                       | 24     | 16     |
| Salaried occupation                 | 76     | 38     |

| Table 3: Mean scores on Oral Health Impact Profile-14 subdomains as per visit to dentist and frequency of brushing |
|---------------------------------------------------------------|
| Function limitation  | Physical pain | Psychological discomfort | Physical disability | Psychological disability | Social disability | Handicap | OHIP-14 (total score) |
| Mean ± SD           | Mean ± SD     | Mean ± SD                | Mean ± SD           | Mean ± SD             | Mean ± SD        | Mean ± SD  | Mean ± SD               |
| Visiting dentist    |               |                          |                     |                      |                    |           |                         |
| First visit         | 1.27 ± 0.45   | 1.09 ± 1.13              | 3.1 ± 1.22          | 1.94 ± 0.97          | 2.3 ± 1.17       | 1.5 ± 0.98 | 1.01 ± 1.9               | 14.98 ± 7.94 |
| Another visit       | 1.23 ± 1.1    | 1.05 ± 1.12              | 3.3 ± 1.78          | 2.04 ± 1.5           | 2.3 ± 1.11       | 1.2 ± 1.2  | 1.5 ± 1.3               | 16.33 ± 9.12 |
| Brushing (in a day) |               |                          |                     |                      |                    |           |                         |                  |
| Once                | 1.09 ± 1.2    | 1.3 ± 0.98               | 2.7 ± 1.65          | 2.1 ± 1.58           | 3.01 ± 1.9      | 2.2 ± 1.1  | 1.4 ± 1.7               | 13.88 ± 7.9   |
| Twice               | 1.5 ± 1.22    | 1.39 ± 1.7               | 2.9 ± 1.9           | 2.5 ± 2.1            | 2.76 ± 2.0      | 1.9 ± 0.98 | 1.51 ± 1.56             | 15.47 ± 10.11 |

SD = standard deviation
health quality of people especially those who are at higher risk and have oral diseases in present or in past. In fact, the major limitation of this examination is the absence of information regarding periodontal health of the participants. The information about periodontal status is essential for proper diagnosis, treatment and to proficiently use all the resources in dentistry.\(^{[22]}\) It is imperative to put dental and oral well-being in the proper context and to show the forces that this factor influences the capability to work, which thus has increasingly far-reaching economic ramifications.\(^{[31]}\)

**Conclusion**

Dental and oral health of an individual has a great impact on their quality of life. Some action should be taken in future, to educate and make children and adolescents aware of importance of oral health. Also measures should be taken for promotion good oral hygiene and reduction of caries.

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**Conflicts of interest**

There are no conflicts of interest.

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