International Journal of Life Sciences, Biotechnology and Pharma Research Vol. 13, No. 7, July 2024 Online ISSN: 2250-3137
Print ISSN: 2977-0122

DOI: 10.69605/ijlbpr_13.7.2024.36

ORIGINAL RESEARCH

Oral Impacts on Daily Performance among Adult Patients Attending a Dental Institution in Patna, Bihar

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Received: 22 January, 2024 Accepted: 24 February, 2024

ABSTRACT

Background: Oral health conditions have an impact on Quality of Life as they influence how people enjoy life in terms of appearance and function, such as speech, chewing, nutrition and self-esteem thus affecting the physical and psychological wellbeing of an individual. The instrument Oral Impacts on Daily Performances (OIDP) focuses on measuring the serious oral impacts on the person's ability to perform daily activities. **Aim:** To assess the Oral Health Related Quality of Life (OHRQoL) in adult patients attending a dental institution by using OIDP scale. **Methodology:** A descriptive cross-sectional study was conducted among 216 patients visiting the dental hospital selected by simple random sampling method. Data was collected using close-ended self-administered questionnaire and oral examination and statistically analyzed using factorial ANOVA. Difference between two groups was determined using student t-test and the level of significance was set at $p < 0.05$. **Results:** The mean OIDP score of 216 subjects was 35.44±20.03 whereas the highest mean score was for eating (10.45±8.87) and the lowest mean score was for working (1.24±3.49). Statistically significant association was found between the mean OIDP scores and socio-economic status, self-rated oral health status and missing teeth. **Conclusion:** OIDP was found to be highly prevalent among the study subjects and oral problems had a greater impact on their daily activities affecting the OHRQoL severely in the present study.

Keywords: Oral impacts on daily performances, quality of life, Oral health related quality of life(OHRQoL).

INTRODUCTION

One of the greatest contributions of Dentistry to society is the improvement of quality of life through the prevention and treatment of oral diseases[1]. The World Health Organization (WHO) in 1952 defined the concept of Quality of Life (QoL), as "the proper and correct perception that a person has of itself in the cultural context and values on which it is embedded, in relation to its objectives, standards, hopes and concerns"[2]. Oral health conditions have an impact on QoL because they can influence how people enjoy life in terms of appearance and function, such as speech, chewing, nutrition and self-esteem thus affecting the physical and psychological wellbeing of an individual[3, 4]

Although oral health problems are rarely a matter of life and death they remain a major public health problem because of its prevalence and there are significant indications that oral health problems have social, economic and psychological consequences, this means that they have impact of quality of life. In fact, OHRQoL is recognized by the WHO as an important segment of the Global Oral Health Program. Oral health-related quality of life was defined as a "self-report specifically pertaining to oral health–capturing both the functional, social and psychological impacts of oral disease"[2].

An increasing concern about multidimensional concepts of oral health has led to the development of many theoretical concepts and measures of oral health related quality (OHRQoL) or socio-dental indicators. Socio-dental indicators, defined as "measures of the extent to which oral conditions disrupt normal social role functioning and lead to major changes in behaviours such as inability to work or attend school, or undertake parental or household duties"[5]. There is an impressive range of instruments that assess the impact of general and oral conditions on well being and quality-of-life[6].

DOI: 10.69605/ijlbpr_13.7.2024.36

The Oral Impacts on Daily Performances (OIDP) is a sociodental indicator which focuses on measuring the serious oral impacts on the person's ability to perform daily activities[7]. Considering respondent burden, this instrument is advantageous for use in population surveys, not only in terms of being easier whilst measuring behaviours rather than feeling states, but also in being short[6]. It is based on an explicit conceptual framework of the International Classification of Impairments, Disabilities, and Handicaps of the World Health Organization, amended for dentistry by Locker[7].

It was developed to measure the oral impacts on physical, psychological, and social aspects of everyday life[8]. Eight performances are being assessed in the OIDP scale, these are eating and enjoying food; speaking and pronouncing clearly; cleaning teeth; sleeping and relaxing; smiling, laughing and showing teeth without embarrassment; maintain usual emotional state without being irritable; carrying out major work or social role; and enjoying contact with people[7].

The OIDP determines whether an oral problem exists and evaluates the frequency and severity to which the life of the patient has been deleteriously affected by the problem. According, to this scale, a higher score indicates a lower OHRQoL.[3]

Determining the influence and oral impact on the performance of daily activities is essential, since the aspects considered are not only biological and measurable, but also concern the individuals' self-perception. Hence, with this background the present study was conducted with following aim and objectives;

AIM OF THE STUDY

To assess the Oral Health Related Quality of Life (OHRQoL) in adult patients attending a dental institution by using OIDP scale.

Objectives of the study

- To assess the OHRQoL using OIDP scale.
- To determine the association between OHRQoL with socioeconomic status, self rated oral health status and clinical dental measures (i.e. number of missing teeth).

METHODOLOGY

A descriptive cross-sectional study was conducted among the patients visiting Buddha Institute of Dental Sciences & Hospital, Patna, Bihar. The study was conducted for duration of two months during February to March 2019. Ethical clearance was obtained from the ethical review board of the institution. Informed Consent was obtained from the patients after explaining the importance and objectives of the study.

Data had been obtained from a sample of 216 patients visiting the dental hospital selected by simple random sampling method. Patients of age ≥18 years who came for regular check-up or with complaint of pain/acute infections and willing to participate in the survey were included in the present study.

Questionnaire

The data was collected using close-ended self-administered questionnaire. The questionnaire comprised of four major parts; the first part consisted of general information such as age, gender, education, occupation and income. Kuppuswamy scale 2018 was used to calculate the socio-economic status of the patients. The second part consisted of questions regarding the reason for dental visit and self – rated oral health status. Third part consisted of Oral Impacts on Daily Performances (OIDP) for adults to measure the Oral Health Related Quality of Life (OHRQoL) and in the fourth part specific clinical dental measure i.e. number of missing teeth was recorded.

Oral Impact of Daily Performances (OIDP)[7]: It is a self-assessment instrument which assesses impacts of oral health conditions that affect eight daily activities of an individual during the past 6 months. All responses were recorded using Likert Scale for frequency and severity scores.

Frequency scores: The respondent was asked to describe the frequency of impact by the pattern of occurrence and to rate the score, ranging from 0 to 5 (0= Never affected, 1= less than once a month, 2= Once/ twice a month, 3= Once /twice a week, 4= 3-4 times a week, 5= every /nearly every day).

Severity scores: The perceived severity of impacts in the OIDP was derived by asking respondents to rate the score, ranging from 0 to 5, as an indication of how much trouble it caused to their daily living. (0= none, 1= Questionable, 2= Mild, 3= Moderate, 4= Severe, 5= Very severe).

Scoring method: The score representing the total impact on each performance was calculated by multiplying the frequency with the severity score. The total score was the sum of all the performance scores for an individual. Then the sum was divided by the maximum possible score (sum of 8 performances × 5 frequency score × 5 severity score = 200) and multiplying by 100 to give a percentage score.

Translation of questionnaire

The questionnaire was translated from English to local language (Hindi) with the help of professional bilingual translators, and the validity was assessed by a back - translation method, involving blind re-translation into English.

Pilot study

Pilot study was carried out to know the validity and reliability of the translated questionnaire and to know the feasibility in our population. The Oral Impacts on Daily Performances measure has acceptable psychometric properties, as well as a sound theoretical basis. OIDP was satisfactory as regards construct and criterion validity.

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Data collection

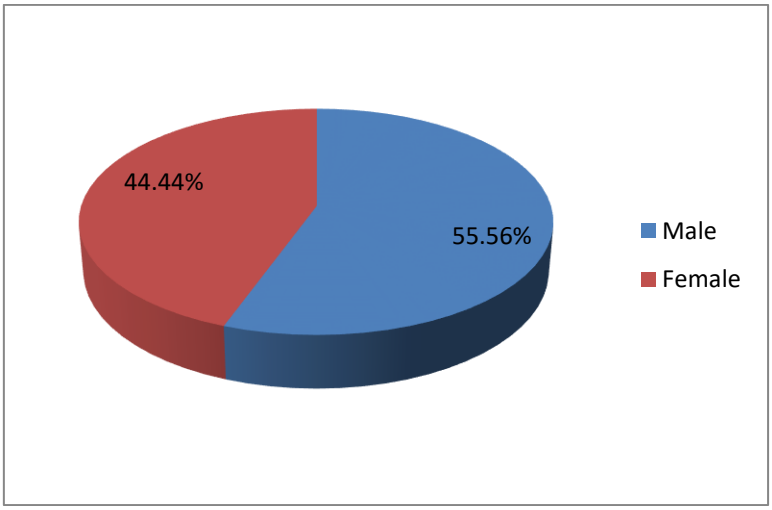
The participants were included after meeting the inclusion criteria and exclusion criteria. The questionnaires were distributed to the randomly selected patients, and were self-completed by them. For illiterate patients, examiner had filled the questionnaire by asking and explaining the questions. ADA Type III oral examination was conducted on the patients. The frequency and severity scores as filled by the patients were later subjected for calculation to get the OIDP score by the examiner.

Statistical analysis

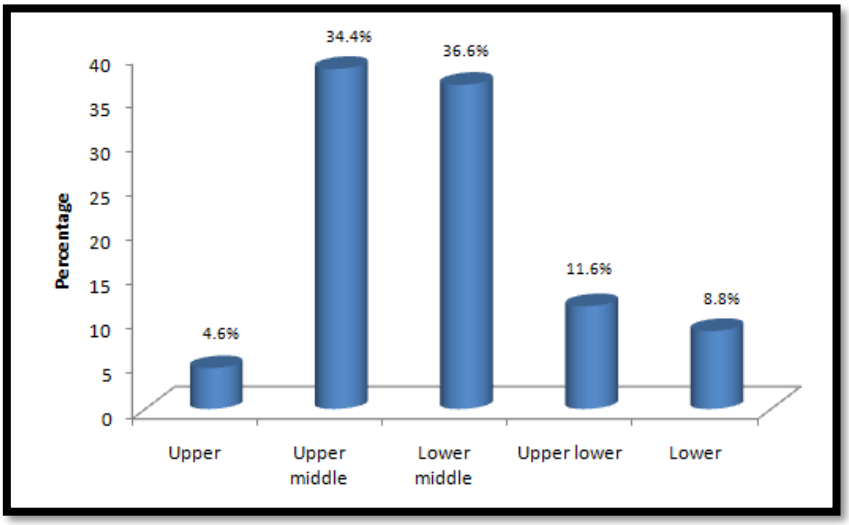
Data so collected was tabulated in an excel sheet. The means and standard deviations of the measurements per group were used for statistical analysis (SPSS 22.00 for windows; SPSS inc., Chicago, USA). For each assessment point, data were statistically analyzed using factorial ANOVA. Difference between two groups was determined using student t-test and the level of significance was set at $p < 0.05$.

RESULTS

Among 216 adult patients who visited the dental hospital, males comprised 55.56% and females 44.44% (graph 1). The mean ages of male and female study participants were 36.46±13.43 and 35.86±12.35, respectively (range: 18-70 years). The socio-economic status of the study subjects has been shown in graph 2.



Graph 1: Distribution of study subjects according to gender

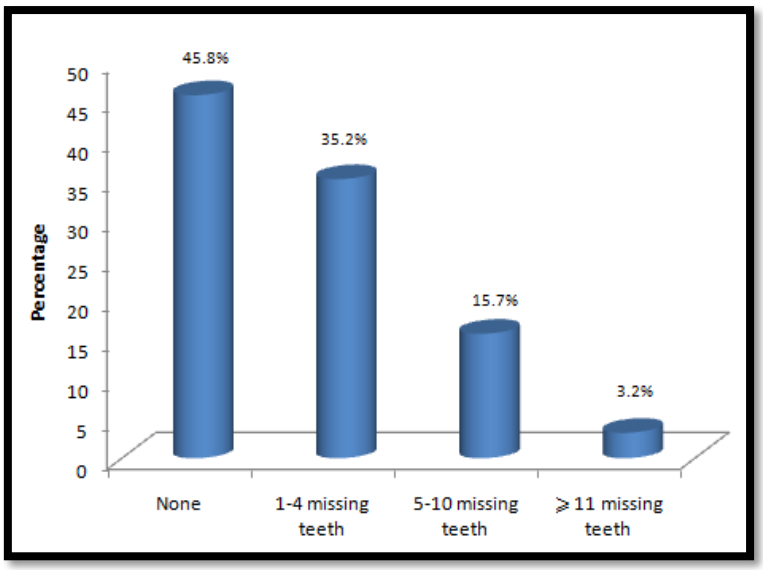


Graph 2: Distribution of study subjects according to socio-economic status

The most common reason for dental visit in this study was pain and acute problems, affecting majority of the subjects (59.7%) followed by 40.3% subjects who visited the hospital for routine check up.

The distribution of the study subjects according to their self – rated oral health status revealed that majority of the subjects 33.8% rated their oral health as fair followed by 27.8%, 25.9% and 7.4% who rated their oral health status as bad, good and very bad respectively. Whereas, only 5.1% of the subjects rated their oral health status as very good. It was observed that majority of the subjects were having missing teeth (54.2%) (graph 3).

DOI: 10.69605/ijlbpr_13.7.2024.36



Graph 3: Distribution of study subjects according to their number of missing teeth

The mean OIDP score of 216 subjects was 35.44±20.03 whereas among the OIDP components the highest mean In the present study, in all participants, oral and dental problems had affected at least one of their daily activities during the past six months. In majority of the subjects (77.78%) the greatest effects were on eating, followed by speaking (68.52%) , smiling (66.20) and sleeping (56.02). whereas , maintaining emotional stability (29.63%) and working (38.43%) were the least affected activities. In terms of frequency of impacts, eating was most frequently affected (2.72±1.96) whereas working had the lowest frequency (0.50±1.08). The most severely affected activity was eating (2.61±1.99) while working (0.45±0.99) was least affected. (Table 1).

Table 1: Prevalence, frequency and severity of overall oral impacts in the studied subjects (n=216)

Variables	N	%	Frequency		Severity	
			Mean	SD	Mean	SD
Eating	168	77.78	2.72	1.96	2.61	1.99
Speaking	148	68.52	0.91	1.53	0.76	1.31
Cleaning teeth	106	49.07	1.39	1.58	1.31	1.50
Sleeping	121	56.02	1.32	1.60	1.22	1.52
Smiling	143	66.20	1.35	1.83	1.19	1.58
Emotional state	64	29.63	1.76	1.49	1.49	1.21
Working	83	38.43	0.50	1.08	0.45	0.99
Socializing	97	44.91	1.61	1.67	1.54	1.60

Table 2 shows the association between OIDP score and socio-economic status, self rated oral health, missing teeth and gender. The results are presented here under the heading of various parameters considered for this study.

Socio-economic status

The maximum mean OIDP score (48.88±24.49) was in the upper lower class. Whereas, the minimum mean OIDP score (23.9±18.14) was in upper class and this was found be statistically significant ($p<0.01$).

Self-rated oral health status

The subjects who rated their oral health status as very bad and bad had the maximum OIDP scores as 53.31±20.55 and 42.68±21.85 respectively. The subjects who rated their oral health status as good had the least OIDP score (26.95±17.14). And a statistically significant association was found between the mean OIDP scores and self-rated oral health status and the result was statistically significant ($p<0.01$).

Missing teeth

The number of missing teeth was found to be directly associated with the OIDP scores and the subjects with 11 or number of missing teeth had the highest OIDP score (79.71±28.37) whereas those having no missing teeth had the lowest OIDP score (29.79±16.66), this result was found to be statistically significant ($p<0.01$).

Gender

Male subjects had higher OIDP score (37.53±19.67) as compared to the female subjects (32.83±20.27). No statistical significance was found between the gender and mean OIDP score ($p=0.09$).

DOI: 10.69605/ijlbpr_13.7.2024.36

Table 2: Association between OIDP score and socio-economic status, self rated oral health, missing teeth and gender

Variables	Mean OIDP score	SD	Anova test	p value
Socio-economic status				
Upper	23.9	18.14	5.61	<0.01*
Upper middle	33.33	18.18		
Lower middle	32.73	16.78		
Upper lower	48.88	24.49		
Lower	44.32	25.28		
Self rated oral health status				
Very good	33.46	17.14	9.38	<0.01*
Good	26.95	17.86		
Fair	32.38	15.92		
Bad	42.68	21.85		
Very bad	53.31	20.55		
Missing teeth				
None	29.79	16.66	30.29	<0.01*
1-4	31.84	15.92		
5-10	50.79	16.81		
11+	79.71	28.37		
Gender			**t test**	**p value**
Male	37.53	19 .67	2.95	0.09
Female	32.83	20.27		

(*: statistically significant)

DISCUSSION

Oral health has been increasingly recognized as a factor that affects the quality of life of individuals. Negative impacts on oral health adversely influence people's daily performance[10]. The OIDP index is one of the most widely used socio-dental indicators which attempts to use the logical approach of impact quantification by assessing both frequency and severity. In the present study, the OHRQoL of adult patients attending a dental institution was evaluated by using OIDP index and also the relationships between this scale with socio-economic status, self-rated oral health status and number of missing teeth.

A total of 216 subjects were recruited in this study with the mean age of 36.19±12.93, similar to those in the study of Kakoei et al. (34.00±8.04)[9]. Also, gender distribution was found to be similar in both the studies. Majority of the patients (59.7%) had visited the dental hospital for pain and acute problems, this was in accordance to the study conducted in the Bengaluru city[5].

All participants explained that oral and dental problems had affected at least one of their daily activities. In other words, the prevalence of OIDP was very high and might be considered as severe. This was found to be in accordance with the study conducted by Reddy et al[5]. where 92% of adults reported one or more oral impacts in the 6 months preceding the survey. Different values have been reported for the prevalence of OIDP by Kida et al. (51.2% in urban and 61.2% in rural areas)[11], Dorri et al. (64.9%)[12], Srisilapanan and Sheiham (52.8%)[13], Peker et al. (65.2%),[4] Priya et al. (54.3% among dental students)[6] and Khodadadi et al. (80.6%)[14]; the variation is caused by the differences in disease conditions according to different populations, places and cultures in these studies.

The mean OIDP score was 35.44 ± 20.03 in the current study. Dorri et al. reported the mean OIDP score as 4.15 ± 5.94[12]. In the study of Srisilapanan and Sheiham found older people to have lower OIDP scores (below 8%)[13]. These differences are justifiable since our participants were selected from people attending dental hospital, i.e. people who definitely had oral or dental problems. Other studies, however, selected subjects from different population.

The highly affected activity among the subjects was eating (77.78%) followed by speaking (68.52%); this further supports the view that the study population was more concerned about the interference in the physical activities. This finding is in accordance to the study conducted by Sombateyotha k. [eating (52.2%) and speaking (51.9%)][15] and Reddy et al.[5]

In terms of frequency and severity of impacts, eating was most frequently (2.72±1.96) and most severely (2.61±1.99) affected daily performance, which was similar to the results of the study done the Bengaluru city[5] and in contrast to the findings of study conducted by Sombateyotha k[15]. in which smiling was the most frequently and severely affected activity. These findings highlight the importance of the physical aspects of the teeth and mouth on participant's lives.

Socioeconomic position affects oral health services in developing countries and there is evidence that low socioeconomic status is associated with worse dental health[8]. This finding reinforced the results of this study which revealed that with the increase in socioeconomic status the OIDP score decreased.

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Similar results were found in the study done by Gouvea GR et al[8]. and Peker et al[4].

Self - rated oral health is the key element that has a greater effect on quality of life and found to be authentic and logical to consider this as an indicator for overall oral health status[16]. Individual expectations, experiences and preferences influence subjective oral health evaluation and these factors may change with age, socioeconomic status and absence of natural teeth[4]. In this study, self-reported oral health status and OIDP scores of the participants was found to be statistically significant and it was reported that OIDP scores of the people whose self-reported oral health status was poor were found to be higher than the people with good self-reported oral health.

In the present study the number of missing teeth is considered as the specific clinical dental measure as it is the end sequlae of periodontal disease and dental caries and it was found that the subjects with no missing teeth reported least OIDP than those with missing teeth.

With regard to gender, female subjects had higher OIDP scores than males, although no significant difference was found between OIDP scores and gender; Montero et al. suggested oral and dental problems to affect women's daily activities more than men's. The differences in perception of the value of oral health between the two genders, can be attributed to hormonal conditions and higher prevalence of systemic diseases that influence women's oral health[8].

The present study supports earlier findings about strong inter-relationships among socioeconomic status, self-rated oral health status and number of missing teeth with OHRQoL. In addition to oral conditions, the OIDP scores reflect individual's tendency to complain because of their social and psychological situation.

This study has the limitations inherent to a cross-sectional design, especially the extrapolation of results. Therefore, further longitudinal research has to be carried out, which would help to determine how the impact of oral conditions vary over time. Intervention studies are needed to assess whether dental care reduces the impacts and affects quality of life.

CONCLUSION

High prevalence of OIDP was observed among the study subjects and oral problems had a greater impact on their daily activities affecting the OHRQoL severely in the present study. It was also found that the subjects of lower socio economic group, who had rated their oral health status as bad and those having greater number of missing teeth had high OIDP score and thus poor oral health related quality of life.

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