

## IMPACT OF PERIODONTAL DISEASE ON ORAL HEALTH RELATED QUALITY OF LIFE AMONG PATIENTS

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### ABSTRACT

**OBJECTIVE:** The objective of the study was to assess the impact of periodontal disease on oral health related quality of life among patients.

**METHODS:** It was a cross-sectional descriptive study in which 384 patients visiting Oral Health Science Department, Shaikh Zayed Hospital and Postgraduate Federal Institute Lahore were included. The data was collected through questionnaire which was analyzed by using SPSS version 20.0.

**RESULTS:** Out of 384 patients, 73.2% were males and 55.7% was upto 35 years old. Among the patients, 82.6% had never trouble in pronouncing words due to periodontal disease. 37.2% patients felt that sense of taste has worsen, 56.8% patients were having painful itching in mouth, 59.1% patients were uncomfortable in eating food and 51.3% felt tense owing to periodontal disease. 47.7% patients had interruption in meals, 36.2% were found irritable with other persons and 34.6% patients had difficulty in performing usual job. 24.5% patients were entirely unable to function. Majority (60.2%) patients had BOP in less than 6 sites, 84.6% had PPD  $\geq$ 4mm and 61.2% patients had CAL 2mm or above.

**CONCLUSION:** Periodontal disease was most prevalent among males and young age group people. Majority of the patients were uncomfortable in eating food. A large numbers of patients had BOP in less than 6 sites, PPD 4mm or above and CAL 2mm or above.

**KEY WORDS:** Oral, Periodontal, Disease, Quality of Life.

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### INTRODUCTION

Oral health plays an essential role in general health and quality of life (QoL) of people. It is a state in which an individual is free from facial and mouth chronic pain, oral infection, throat and oral cancer, tooth loss, tooth decay and periodontal diseases (1). QoL is described like a general well-being of an individual or society in relations to happiness and health more than wealth. World Health Organization (WHO) Global Oral Health Program 2003 identifies the significance of oral-health associated with QoL (2). Oral health-related quality of life (OHRQoL) is described like a multidimensional build that demonstrates comfort of people while eating, talking, working, sleeping and pleasure with regards to oral health (3). The WHO believes oral-health to have an extensive impact on quality of life (4).

Periodontal illnesses are persistent communicable illnesses that lead to swelling of the specialized tissues that encircle and hold the teeth. It can cause a progressive loss of the connective tissue connection and alveolar bone. Destruction of this tissue is identified through periodontal pockets formation that works like bacterial colonization reservoirs of dento-gingival atmosphere. Periodontal diseases are classified into two main categories namely Gingivitis – reversible and nondestructive gingival infection associated with a nonspecific bacterial challenge; and periodontitis – destructive infection of the teeth holding tissues (cementum, alveolar bone and periodontal ligament) associated with some particular periodontal pathogens (5). Chronic periodontitis of mild to moderate type is most frequent, with 13% to 57% prevalence depending upon the definition used and sample characteristics (6). Acute periodontal disease that can cause in the tooth loss is

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observed among 15-20% middle-aged adults (35-44 years)(1) and is believed to be a leading oral health issue.(6)

A study done in Pakistan demonstrated that periodontal health of people is very discouraging and just 28 percent of 12 years old keep healthy gums and above 93 percent of 65 years old have several periodontal or gingival diseases. According to these results, periodontal disease as well as gingivitis is prevalent in Pakistan and the frequency is more among rural population (7). As the persistent periodontitis is considered to be asymptomatic in its early phases, it has been recommended that people may be not aware about their medical periodontal condition and miscalculate that what type of treatment is needed, as judged by the dental doctors (8). In its further advanced phases, persistent periodontitis can be linked with symptoms and signs that are easily recognizable by persons, for example pain, tooth mobility, eating problems, discomfort and unaesthetic loss of the anterior interproximal papillae (9). The acuteness of periodontal disease is normally recognized by the research

clinicians utilizing clinical parameters for example bleeding on probing (BOP), probing pocket depth (PPD), and clinical attachment level (CAL) (10).

Nevertheless, several other symptoms of the periodontal disease comprise the outcomes of persistent inflammation and tooth supporting tissues destruction, for example, bleeding while brushing, redness, loosening of the affected teeth and constant bad breath. Such symptoms are not generally recognized in the research studies. These symptoms, though, are greatly related from viewpoint of patients and mostly have a significant adverse effect on their daily QoL (8). Periodontal disease could comprise practical aspects of stomatognathic system, for example swallowing, mastication, smile esthetics, speech and thus self-esteem. When compared with the healthy persons, those with periodontal illness have a weak perception regarding their oral health and poor QoL that confirms earlier results that periodontal illness is not like a "silent" issue with regards to quality of life, as was once considered (10).

The periodontal disease is associated with lower QoL. Decrease in oral health-related quality of life may be caused by raised pain, tooth loss and resultant function loss. As an instance, people with periodontal disease demonstrate pessimistic impacts regarding their oral health on entire functioning for example greater working limitation, psychological discomfort and physical pain (11). Owing to the harmful effects of disease on an individual health and QoL, it is significant

to recognize potentially adaptable factors that can intercede these relationships. Knowing such indirect methods can provide areas for the future interventions to assist alleviate more direct negative impacts on quality of life.

### METHODS

It was a cross-sectional descriptive study in which 384 patients visiting Oral Health Science Department, Shaikh Zayed Hospital and Postgraduate Federal Institute Lahore were included. A translated Urdu version of standardized validated oral health impact profile-14 (OHIP-14) questionnaire was utilized for quantifying the impact of periodontal disease on QoL. An examination set comprising of dental mirror and UNC-12 calibrated probe were due to a single examiner to evaluate the parameters of periodontal disease (CAL, BOP and PPD). The collected data through questionnaire was analyzed by using SPSS 20.0. Frequencies and percentages were calculated and data was presented in tables and figures. Confidentiality of the data was also ensured.

### RESULTS

Out of 384 patients, 281 (73.2%) were males and 103 (26.8%) were female. 214 (55.7%) were ≤ 35 years old while 170 (44.3%) patients were > 35 years old. Among 384 patients, 82.6% had never problem in pronouncing words owing to periodontal disease while 25 (6.5%), 23 (6.0%) and 19 (4.9%) patients had sometimes, often and everyday/almost every day problem, respectively. 241

(62.8%) never felt that sense of taste had worsen while 63 (16.4%), 41 (10.7%) and 39 (10.1%) patients had sometimes, often and everyday/almost every day this problem, respectively. Among patients, 166 (43.2%) never had painful itching in mouth while 83 (21.6%), 77 (20.1%) and 58 (15.1%) patients had sometimes, often and everyday/almost every day this problem, respectively. Among patients, 157 (40.9%) were never uncomfortable in eating food while 71 (18.5%), 73 (19.0%) and 83 (21.6%) patients had sometimes, often and everyday/almost every day this problem, respectively. Among patients, 195 (50.8%) never felt self conscious while 63 (16.4%), 69 (18.0%) and 57 (14.8%) patients had sometimes, often and everyday/almost every day this problem, respectively. Among patients, 187 (48.7%) never felt tense caused by periodontal disease while 71 (18.5%), 66 (17.2%) and 60 (15.6%) patients had sometimes, often and everyday/almost every day this problem, respectively. Among patients, 199 (51.8%) were never unsatisfied with their diet while 70 (18.2%), 59 (15.4%) and 56 (14.6%) patients had sometimes, often and everyday/almost every day this problem, respectively. (Table 1) Out of 384 patients, 231 (60.2%) had bleeding on probing in < 6 sites and 153 (39.8%) patients had bleeding in ≥ 6 sites. Similarly among 384 patients, 59 (15.4%) had PPD < 4 mm and majority 325 (84.6%) had PPD ≥ 4 mm. Among the patients, 149 (38.8%) had CAL < 2mm and mainstream 235 (61.2%) had CAL ≥ 2mm (Table 2).

Table-1: Oral health related quality of life

Question	Never	Sometimes	Often	Everyday/ Almost Everyday
<b>Functional limitation</b>				
Q1. Had trouble pronouncing words.	317 (82.6%)	25 (6.5%)	23 (6.0%)	19 (4.9%)
Q2. Felt that sense of taste had worsen.	241 (62.8%)	63 (16.4%)	41 (10.7%)	39 (10.1%)
<b>Physical pain</b>				
Q3. Had Painful itching in mouth.	166 (43.2%)	83 (21.6%)	77 (20.1%)	58 (15.1%)
Q4. Was uncomfortable eating food.	157 (40.9%)	71 (18.5%)	73 (19.0%)	83 (21.6%)
<b>Psychological discomfort</b>				
Q.5. Has been feeling self conscious.	195 (50.8%)	63 (16.4%)	69 (18.0%)	57 (14.8%)
Q6. Has felt tense.	187 (48.7%)	71 (18.5%)	66 (17.2%)	60 (15.6%)
<b>Physical disability</b>				
Q7. Diet has been unsatisfactory.	199 (51.8%)	70 (18.2%)	59 (15.4%)	56 (14.6%)

Q8. Has had to interrupt meals.	201 (52.3%)	61 (15.9%)	72 (18.8%)	50 (13.0%)
<b>Psychological disability</b>				
Q9. Finds it difficult to relax.	206 (53.7%)	80 (20.8%)	61 (15.9%)	37 (9.6%)
Q10. Has been a bit emberasee.	202 (52.6%)	68 (17.7%)	65 (16.9%)	49 (12.8%)
<b>Social disability</b>				
Q11. Has been irritable with other people.	245 (63.8%)	49 (12.8%)	54 (14.1%)	36 (9.3%)
Q12. Has had difficulty doing usual jobs.	251 (65.4%)	46 (12.0%)	55 (14.3%)	32 (8.3%)
<b>Handicap</b>				
Q13. Has found life less satisfying.	239 (62.3%)	60 (15.6%)	49 (12.8%)	36 (9.3%)
Q14. Has been totally unable to function.	290 (75.5%)	41 (10.7%)	24 (6.3%)	29 (7.5%)

Table-2: Periodontal disease parameters

	Frequency	Percentage (%)
<b>Bleeding on probing (BOP)</b>		
Less than 6 sites	231	60.2
6 or more sites	153	39.8
Total	384	100.0
<b>Periodontal pocket depth (PPD)</b>		
Less than 4mm	59	15.4
4mm or above	325	84.6
Total	384	100.0
<b>Clinical attachment loss (CAL)</b>		
Less than 2mm	149	38.8
2mm or above	235	61.2
Total	384	100.0

## DISCUSSION

Periodontal disease is considered a leading health dilemma that affects health related quality of life of people. Present study assessed the impact of periodontal disease on oral health related quality of life among patients visiting Oral Health Science Department, Shaikh Zayed Hospital and Postgraduate Federal Institute Lahore. A group of 384 patients participated in the study. Study revealed that most of the patients (73.2%) were males and remaining portion (26.8%) was of females. But a similar study carried out by Dahl et al. demonstrated that majority (51.0%) of the patients were females and 49.0% were male patients (12). Age is a leading factor and with increasing age health problems including periodontal disease increase but the study denoted that major proportion of the patients was upto 35 years old.

Periodontal disease not only affects the quality of life but also the performance of patients. Due to this disease people sometimes feel problem in pronouncing the words but results of the study indicated that major proportion (82.6%) of the patients had never difficulty in

pronouncing the words and only 17.4% patients faced this difficulty. The results of the study undertaken by Al Habashneh and colleagues exhibited better scenario who confirmed that 93.3% patients had no difficulty in pronouncing the word and just 6.7% patients faced such difficulty caused by periodontal disease (13). Results of the study indicated that 62.8% patients never felt that sense of taste had worsen but the study performed by Murariu and Hanganu showed better results who reported that significant majority (95.0%) of patients had no such problem that their sense of taste had worsen (14).

Patients feel painful itching in mouth due to periodontal disease which affects their health related QoL. Study highlighted that more than half (56.8%) of the patients had painful itching in the mouth. A study performed by Al Habashneh and associates showed more appalling situation that 70.7% patients had painful itching in their mout (13). It is evident from study that large numbers (59.1%) of patients were uncomfortable during eating food caused by periodontal disease. Virtually a similar situation was also observed in a study carried out by Al

Habashneh and associates who asserted that 64.2% patients were uncomfortable during eating food (13). Study also indicated that about half of the patients (49.2%) had feeling of self conscious but the study conducted by Murariu and Hanganu elucidated that just 24.0% patients had such feelings (14).

Study showed very discouraging results that 51.3%, 48.2%, 47.7%, 46.3%, 47.4% and 36.2% patients were not satisfied with their diet, had interruption in the meals, felt difficult to relax, embarrassed and irritable with others people, respectively. Such factors ultimately affected their health related quality of life. The findings of the study carried out by Al Habashneh and associates confirmed that 61.0% patients felt tense, 26.7% unsatisfied with their diet, 57.7% had interrupted meals, 51.7% had difficult to relax, 51.7% embarrassment and 41.7% were irritable with other people due to periodontal disease (13). Like several other types of diseases, periodontal disease also disrupts people efficiency and patients are not satisfied with their functioning. It was found during study that 34.6% patients had difficulty in performing daily jobs. The

findings of study conducted by Al Habashneh and associates showed almost similar results that 35.2% patients had trouble in doing their regular job (13).

People who are not capable to perform their activities adequately are less satisfied with their life. During study 37.7% patients were found less satisfied with their life because their functioning was affected by periodontal disease. While another study undertaken by Murariu and Hanganu showed better situation that 21.0% patients were less satisfied with their life (14). It was found during study that 24.5% patients were totally unable to function. The findings of our study are virtually similar with the study done by Al Habashneh and associates who also confirmed that 25.7% patients were totally unable to function. Adequate counseling and timely treatment is essential for these patients to improve their quality of life (13).

Periodontal disease acuteness is mostly recognized through clinical parameters namely bleeding on probing, periodontal pocket depth and clinical attachment level. After thorough examination of patients, it was found that 60.2% patients had BOP in < 6 sites and 39.8% patients had in  $\geq 6$  sites. Similarly 15.4% patients had PPD < 4mm and major proportion (84.6%) had  $\geq 4$ mm while findings of the study performed by Muwazi and teammates confirmed that 29.0% patients had periodontal pockets of  $\geq 4$  mm deep (15). Study further disclosed that large numbers (61.2%) of patients had CAL  $\geq 2$ mm and 38.8% patients had CAL < 2mm. The results of the study conducted by Collins and partners indicated that 15.0% patients were found having CAL  $\leq 2$  mm (16).

## CONCLUSION

Periodontal disease is one of the major public health problems which affect health related quality of life of patients. Study concluded that disease was most prevalent among males and young age group people. Majority of the patients were uncomfortable in eating food, about half were not satisfied with their diet and one-fourth of the patients were entirely unable to function. Among the patients, mainstream had BOP in less than 6 sites, PPD 4mm or above and CAL 2mm or

above. Further studies are need on large scale to know the impact of periodontal disease on oral health related quality of life among patients.

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