Original Article

# ORAL HEALTH RELATED QUALITY OF LIFE BY USING ORAL HEALTH IMPACT PROFILE (OHIP) SCORES IN PARTIALLY DENTATE PATIENTS WITH PROVISION OF TOOTH- SUPPORTED FIXED PARTIAL DENTURES

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## ABSTRACT

*Globally, dentistry and healthcare policies now follow a different paradigm. These days, the focus is more on the individuals' improved quality of life than on the marginal treatment of physical and psychological illnesses. This study assessed the quality of life associated with oral health in patients who were partly dentate and receiving fixed partial dentures supported by teeth by utilizing the Oral Health Impact Profile (OHIP) scores. From October 2015 to April 2016, 209 participants in this quasi-experimental research were seen in the prosthodontics department in the prosthodontics department at Bacha Khan Medical College, Mardan. Patients with one or two missing teeth that will be replaced by a fixed partial denture, excellent general health, the ability to comprehend and react to the questionnaire, and no soft or hard tissue inflammation in the oral cavity were included. Patients ranged in age from 18 to 60. Excluded from the study were those with severe congenital or surgical deformities of the jaws, drug addiction, psychological instability, acute pain associated with TMJ disorders, life-threatening illnesses, disability, lack of cooperation, and active periodontal disease or caries. The cumulative score for each of the 14 questions in the OHIP questionnaire was recorded as the patient's OHIP score. With SPSS version 17, statistical analysis was carried out. For every variable, descriptive statistics were calculated. Age and gender-based stratification of the OHIP Score was done to look for impact modifiers. The Paired T-test compared the Oral Health Impact Profile scores before and after. A significant threshold of $P \leq 0.05$ was used.*

*The OHIP score changed on average by $20.84 \pm 3.25$, a statistically significant change ($P<0.0001$). Thirty patients (14.35%) had two missing teeth, compared to n=179 (85.64%) who had one missing tooth overall. In terms of mastication and aesthetics, fixed partial dentures may statistically considerably enhance a partly dentate patient's quality of life.*

***Study design:*** *A quasi-experimental study*

***Duration and place of study :*** *From October 2015 to April 2016, 209 participants in this quasi-experimental research were seen in the prosthodontics department at the Bacha Khan Medical College, Mardan*

***Keywords:*** *OHRQoL, fixed partial denture, partial edentulism, and Oral Health Impact Profile scores*

## INTRODUCTION

Dental care may be assessed based on biological and physiological traits, longevity, social and economic considerations, etc.[1] The global paradigm for dentistry and health care policy has now changed. These days, the focus is more on the individuals' improved quality of life than on the marginal treatment of physical and psychological illnesses.[2] The quality of life is defined as the difference between a patient's expectations and reality, implying that a person should be able to detect where they are in life about their goals and worries.[3] Individuals who lose teeth have negative effects. Prosthodontic rehabilitation may enhance masticatory function and aesthetics, improving oral health-related quality of life (OHRQoL).[4] The degree

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to which participants' oral health-related quality of life has improved due to prosthodontic rehabilitation is closely correlated with the clinical severity of their underlying condition.[5, 6] For individuals who are partly edentulous, fixed partial dentures are the recommended course of action for replacing lost teeth. Whenever feasible, it restores both aesthetics and functionality. Compared to conventional and removable partial dentures, fixed partial dentures have a higher quality of life on OHRQoL and are comparable to implant-supported fixed prostheses.[7-9]

A suitable psychometric instrument is required to evaluate the quality of life connected to oral health and determine if fixed partial dentures can satisfy the patient's demands and restore oral functions. The Oral Health Impact Profile -14 (OHIP-14) is a self-reported measuring instrument comprising 14 items and is a reduced version of the OHIP index.

The OHIP-14 questionnaire measures the impact of many significant variables, including functional, psychological, and social elements, on Oral Health-Related Quality of Life. As a result, it offers insight into the patient's impression of the quality of their life.9.Swelem et al. [7] used the OHIP-14 in Russian and found that it is a valid and reliable tool for measuring Oral Health-Related Quality of Life in Russian persons.

There was a significant change in the OHIP scores before and after therapy in research by Petricevic et al. 8. The mean scores at baseline, with a standard deviation of 28.47±20.44, were compared to 5.89±7.50 at $p<0.001$ three weeks after the therapy.

Research on this viewpoint in our demographic needs to be improved. Therefore, this research aimed to assess the quality of life associated with oral health in partly dentate patients receiving tooth-supported fixed partial dentures using the Oral Health Impact Profile (OHIP) scores.

## MATERIALS AND METHODS

From October 2015 to April 2016, 209 participants in this quasi-experimental research were seen in the prosthodontics department at the Bacha Khan Medical College, Mardan. Using the WHO calculator, the sample size of 209 was determined by taking the mean ± SD of the OHIP Score (Before) = 16.8+12.50, the OHIP Score (After) = 3.44 + 3.68, the confidence level = 95%, the test power = 90%, and the relative precision = 0.1453. The sample method was sequential and non-probability.

Patients with one or two missing teeth that will be replaced by a fixed partial denture, excellent general health, the ability to comprehend and answer the questionnaire, and no soft or hard tissue inflammation in the oral cavity were included. Patients ranged in age from 18 to 60. Excluded from the study were those with severe congenital or surgical deformities of the jaws, drug addiction, psychological instability, acute pain associated with TMJ disorders, life-threatening illnesses, disability, lack of cooperation, and active periodontal disease or caries.

The hospital ethics committee granted permission, and each participant provided informed written consent. The approved participants had in-person interviews, and the inclusion and exclusion criteria filled out the oral health impact profile questionnaire. In addition to translating and explaining the original English phrases from the oral health impact profile to the patient, the investigator/interviewer also employed local language for communication. On the other hand, the oral health impact profile form was completed in English.

A condensed version of the oral health impact profile with 14 questions divided into 4 subscales (functional limitation, pain and discomfort, psychological effects, and behavioural impacts) has been used for the research. The questions have five possible answers: never=0, typically no=1, occasionally=2, typically=3, and very frequently=4.

Since the oral health impact profile index gauges the frequency of issues, higher scores magnify worse oral health-related quality of life. To document the influence of dental health-related quality of life and compare the worldwide evaluations of oral health with our population, the questions were answered in a personal interview conducted before and three weeks after the treatment.

Version 17 of the Statistical Package for Social Sciences (SPSS) was used for the statistical analysis. Mean, and standard deviations were assessed before and after for numerical variables such as age and OHIP Scores. For categorical data like gender and number of missing teeth, frequency and percentages were calculated. Age and gender-based stratification of the OHIP Score was done to look for impact modifiers. The Oral Health Impact Profile scores were compared before

**Table 1: Gender wise distribution of the study**

| Gender | Frequency | Percentage |
|---|---|---|
| Male | 156 | 74.64 |
| Female | 53 | 25.35 |
| Total | 209 | 100 |

**Table 2: Age wise distribution of the sample**

| Gender | Frequency | Percentage |
|---|---|---|
| Age Group (Yrs) | Frequency | Percentage |
| 18-30 | 38 | 18.18 |
| 31-40 | 51 | 24.4 |
| 41-50 | 60 | 28.7 |
| 51-60 | 60 | 28.7 |
| Total | 209 | 100 |
| Mean and SD | 41.69+11.58 | |

**Table 3: Frequency and percentage for missing teeths**

| Number of missing teeth (n=209) | Frequency | Percentage |
|---|---|---|
| One | 179 | 85.64 |
| Two | 30 | 14.35 |
| RRFL | 53 | 3.53 |

**Table 4: Comparison of OHIP scores before and after provision of fixed partial denture**

| OHIP Score | Mean and SD | Mean Diff | P-value |
|---|---|---|---|
| OHIP Score (Before) | 34.83±2.83 | 20.84±3.25 | 0.01* |
| OHIP Score (After) | 13.99±1.39 | | |

*paired t test

and after using a paired test. A significance threshold of $p<0.05$ was used.

## RESULTS

There were n = 156 (74.64%) men and n = 53 (25.35%) females. The ratio of men to women was 2.9:1. Table 1 displays the information. The average age was 41.69±11.58 years. The age distribution of the participants revealed that n=38 (18.18%) belonged to the 18–30 age group, n=51 (21.40%) to the 31–40 age group, n=60 (28.70%) to the 41–50 age group, and n=60 (28.70%) to the 51–60 age group. (Refer to Table 2)

Thirty patients (14.35%) had two missing teeth, whereas 179 (85.64%) had one missing tooth. These numbers represent the incidence and percentages of missing teeth. (Table 3). The OHIP Scores' mean and standard deviation were 34.83+2.83 for the OHIP Score (before) and 13.99+1.39 for the OHIP Score (after). The recorded mean difference was 20.84 + 3.25. There was a statistically significant difference (P<0.0001). Table 4 provides the information.

The mean change in OHIP scores across all age groups was highly statistically significant (P<0.000), according to stratification by age group. Table 5 provides more information. Gender stratification revealed that the mean OHIP score change was almost identical and statistically significant (P <0.0001) for both genders. (List 6)

**Table 5: Stratification of OHIP score by age group**

| Age | Frequency | Mean SD for OHIP Score (Before) | Mean SD for OHIP Score (After) | Mean difference of OHIP | P-value* |
|---|---|---|---|---|---|
| 18-30 | 38 | 35.21±3.25 | 13.56±1.57 | 21.64±3.68 | <0.0001 |
| 31-40 | 51 | 33.11±1.93 | 14.44±1.31 | 18.67±2.66 | <0.0001 |
| 41-50 | 60 | 35.26±2.19 | 13.63±1.17 | 21.63±2.29 | <0.0001 |
| 51-60 | 60 | 35.66±3.20 | 14.23±1.40 | 21.43±3.47 | <0.0001 |

*paired t test

**Table 6: Stratification of OHIP score with respect to gender**

| Gender | Frequency | Mean SD for OHIP Score (Before) | Mean SD for OHIP Score (After) | Mean Change | P-value |
|---|---|---|---|---|---|
| Male | 156 | 34.50±2.62 | 13.98±1.36 | 20.52±3.15 | <0.0001 |
| Female | 53 | 35.81±3.22 | 14.03±1.49 | 21.77±3.38 | <0.0001 |

## DISCUSSION

Individuals who lose teeth have negative effects. However, prosthodontic rehabilitation may enhance masticatory function and aesthetics, improving oral health-related quality of life.4 The degree to which participants' oral health-related quality of life has improved due to prosthodontic rehabilitation is closely correlated with the clinical severity of their condition. [5] For partly edentulous people, fixed partial dentures are the preferred method of replacing lost teeth. Whenever feasible, it restores both aesthetics and functionality. Fixed partial dentures, which are comparable to implant-supported fixed prostheses, are seen as having a considerably superior OHRQoL than conventional and detachable partial dentures.[7, 8]

We used the 14-point OHIP version of the survey. It has been utilized in several prior studies to document improvements in quality of life after supplying implant-supported prostheses, fixed partial dentures, and detachable partial dentures.[6, 7]

This research included 209 individuals and was carried out at the Bacha Medical Complex in Mardan in the department of prosthodontics. This research is thus hospital-based. Additionally, Swelem et al.[7] carried out research at a hospital. In our study, there were more men than females. Males may be less likely to practice good oral hygiene, leading to higher tooth loss and cases of permanent partial dentures. The gender distribution of Swelem et al.[7] was almost equal, in contrast to our investigation. Financial and educational factors might be to blame for the outcome discrepancy.

Our research shows the age's mean, standard deviation was 41.69±11.58 years. Swelem et al. observed comparable outcomes [7].

According to our findings, having fixed partial dentures greatly enhances one's quality of life regarding appearance and functionality. Before installing a fixed partial denture, the OHIP score was much lower than after that. Swelem et al.[7] observed similar findings in Saudi Arabia. They also included patients with implant-supported dentures and detachable partial dentures, and they found that the mean OHIP score change for fixed partial dentures was similar to that of implant-supported dentures.

Similar findings were made by Nogawa et al. (2010), who found that partly edentulous patients saw a substantial rise in mean OHIP score after administering a fixed partial denture. These findings align with the ongoing research.

However, given the study's limitations—such as its short follow-up time, which prevented difficulties from being mentioned, and its quasi-experimental design, which lacked a control group—the findings should be regarded cautiously. Therefore, further long-term follow-up research on this population and randomized control trials with a sufficient control group are advised.

## CONCLUSION

Regarding mastication and aesthetics, fixed partial dentures may significantly enhance the quality of life for partly dented individuals.

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