

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

Paradigm is now shifted in modern dental and health care policy around the whole world. Now attention is more on the improvement in quality of life of subjects rather than the slight care of physical and psychological maladies. The objective of this study was to determine 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.

This quasi experimental study was conducted on 209 participants at the Department of Prosthodontics, Bacha Khan Medical College, Mardan from October 2015 to April 2016. Patients between 18 and 60 years of age, good general health, able to understand and respond to the questionnaire, patients with one or two missing teeth which are going to be replaced by fixed partial denture, no soft or hard tissue inflammation in the oral cavity were included. Subjects with gross congenital or surgical defects of jaws, with drug abuse, psychologically unstable, with acute temporomandibular disorders related pain, with life threatening diseases, handicapped, uncooperative and with active periodontal disease/ caries were excluded. The OHIP score of a patient was recorded the total score for the 14 items in the OHIP questionnaire. Statistical analysis was done using SPSS version 17. Descriptive statistics were computed for all variables. OHIP Score was stratified among age groups and gender to see effect modifiers. Paired t test was applied for comparing pre and post Oral Health Impact Profile scores. Level of significance was taken at $P \leq 0.05$.

The mean change in OHIP score was recorded as 20.84 ± 3.25 which was statistically significant ($P < 0.0001$). Of total $n=179$ (85.64%) patients were with one missing teeth while $n=30$ (14.35%) patients were with two missing teeth. The fixed partial dentures can improve statistically significantly quality of life in partially dentate patient in term of mastication and esthetics.

KEY WORDS: Oral Health Impact Profile scores, OHRQoL, partial edentulism, fixed partial denture

INTRODUCTION

The outcome of any sort of dental care can be evaluated by biological and physiological characteristics, durability, social and financial factors.¹ Paradigm is now shifted in modern dental and health care policy around the whole world. Now attention is more on the improvement in quality of life of subjects rather than the slight care of physical and psychological maladies.² Quality of life is considered to the gap between a patient's hopes and reality suggesting the discernment of an individual to

his/her position in life relative to his/her aims and concerns.³ Tooth loss have a negative effect on individuals and Prosthodontic rehabilitation can improve the masticatory function as well as esthetics, thus promoting oral health related quality of life (OHRQoL).⁴ The improvement due to prosthodontic rehabilitation in the oral health related quality of life so can be easily noticed by subjects is directly proportional to their clinical gravity of problem.^{5,6} Fixed partial dentures are the treatment of choice to replace missing teeth in partially edentulous patients. It restores the function and esthetics, wherever possible. The perception of fixed partial dentures on OHRQoL is by far better than removable and conventional partial dentures, and can be compared to implant supported fixed prostheses.⁷⁻⁹

An adequate psychometric tool is mandatory for the evaluation of oral health related quality of

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life, to assess whether the fixed partial dentures provision can restore the oral functions and meet the patient needs. Oral Health Impact Profile -14 (OHIP-14), a simplified version of OHIP index having of 14 items, is one of a number of self reported measurement tool.

The OHIP-14 questionnaire quantifies the effect of various important factors like functional, psychological and sociological on Oral Health Related Quality of Life and provide a clue regarding the patient's perception about his/her life quality.⁹ Swelem et al.⁷ employed the Russian version of the OHIP-14 and reported it is a valid and reliable in the Russian individuals for the measurement of Oral Health Related Quality of Life.

In a study conducted by Petricevic et al.⁸ a significant difference was observed in OHIP scores before and after treatment. The base line mean values with standard deviation were 28.47 ± 20.44 and three weeks after treatment the scores were 5.89 ± 7.50 at $p < 0.001$.

There is lack of research on this perspective in our population. So the objective of this study was to determine the 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.

MATERIALS AND METHODS

This quasi experimental study was conducted on 209 participants at the Department of Prosthodontics, Bacha Khan Medical College, Mardan from October 2015 to April 2016. The sample size of 209 was calculated by using WHO calculator using the mean \pm SD of OHIP Score (Before) = 16.8 ± 12.50 , OHIP Score (After) = 3.44 ± 3.68 , Confidence level = 95%, Power of Test = 90%, Relative precision = 0.1453. Sample technique was non-probability, consecutive. Patients between 18 and 60 years of age, good general health, those who able to understand and respond to the questionnaire, with one or two missing teeth which are going to be replaced by fixed partial denture, no soft or hard tissue inflammation in the oral cavity were included. Subjects with gross congenital or surgical defects of jaws, with drug abuse, psychologically unstable, with acute temporomandibular disorders related pain, with life threatening diseases, handicapped, uncooperative and with active periodontal disease/caries were excluded.

Permission was taken from the hospital ethical committee and informed written consent was taken from all participants. According to inclusion and exclusion criteria, the accepted participants were interviewed in person and the oral health impact profile questionnaire was completed for them.

Local language was used for communication as well as the original English language oral health impact profile terms translated into it and explained to the patient by the investigator/interviewer. However, the oral health impact profile form was in English language and filled as such. The shortened version of oral health impact profile has been selected for the study comprising of 14 items organized into 4 subscales (functional limitation, pain and discomfort, psychological impacts, behavioral impacts). The items have 5 response options: never = 0, usually no = 1, sometimes = 2, usually = 3, and very often = 4. Higher scores amplify poorer oral health related quality of life because the oral health impact profile index measures the frequency of problem. The questions were asked in a personal interview before and three weeks after the treatment so as to record the impact of oral health related quality of life and hence to compare the global ratings of the oral health with our population.

Statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 17. Mean and standard deviations were measured for numerical values like age and OHIP Scores before and after. Frequency and percentages were computed for categorical variables like gender and number of missing teeth. OHIP Score was stratified among age groups and gender to see effect modifiers. Paired test t was applied for comparing pre and post Oral Health Impact Profile scores. Level of significance was taken at $p < 0.05$.

RESULTS

The males were $n = 156$ (74.64%) and females were $n = 53$ (25.35%). The male to female ratios was 2.9:1. The details are shown in table 1. Mean age was recorded as 41.69 ± 11.58 years. The age wise distribution showed that participants were in 18-30 age group was $n = 38$ (18.18%), in 31-40 age group was $n = 51$ (24.40%), in age group of 41-50 was $n = 60$ (28.70%) and in age group of 51-60 was also 60 (28.70%). (Table 2)

The frequency and percentages for missing teeth were recorded as 179 (85.64%) patients were with one missing teeth while 30 (14.35%) patients were with two missing teeth. (Table 3). The Mean and SD for OHIP Scores were recorded as OHIP Score (Before) was 34.83 ± 2.83 and OHIP Score (After) was 13.99 ± 1.39 . The Mean difference was recorded as 20.84 ± 3.25 . This difference was statistically significant ($P < 0.0001$). The details are given in table 4.

Stratification by different age group showed that mean change in OHIP score in all age groups were highly statistically significant ($P < 0.000$). Details are given in the table 5. Stratification by gender showed that change in mean OHIP score for both

genders were almost similar and highly statistically significant (P <0.0001). (Table 6)

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

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
Mean and SD	41.69±11.58	

Table 3: Frequency and percentage for missing teeth

Number of missing teeth (n=209)	Frequency	Percentage
One	179	85.64
Two	30	14.35

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		
Total	209		

*paired t test

DISCUSSION

Tooth loss have a negative effect on individuals and prosthodontic rehabilitation can improve the masticatory function as well as esthetics, thus promoting oral health related quality of life.⁴ The improvement due to prosthodontic rehabilitation in the oral health related quality of life so can be easily noticed by subjects is directly proportional to their clinical gravity of problem.⁵To replace missing teeth in partially edentulous patients fixed partial dentures is the treatment of choice. It restores the function and esthetics, wherever possible. The perception of fixed partial dentures on OHRQoL are by far better than removable and conventional partial dentures, and can be compared to implant supported fixed prostheses.^{7, 8}

We employed the 14 point version of OHIP questionnaire. It is used in many previous studies to record improvement in quality of life after provision of removable partial denture, fixed partial denture and implant supported prostheses.^{6, 7} This study was conducted at the Department of Prosthodontics, Bacha Medical Complex, Mardan on 209 patients. So this is a hospital based study. Swelem et al.⁷ also conducted a hospital based study. The males were more than females in our study. This may due to less oral hygiene measures in males and hence more loss of teeth and presentation for fixed partial denture treatment. In contrast to our study Swelem et al.⁷ had almost equal males and females. The difference in results may be due to educational and financial reasons.

Our findings showed that the mean SD for age was recorded as 41.69±11.58 years. similar results were found by Swelem et al.⁷ Our results showed that the provision of fixed partial dentures significantly improves quality of life in term of function and esthetics. The OHIP score before provision of fixed partial denture was very low as compared to after. Similar results was found by in Saudi Arabia by Swelem et al.⁷. They also included the patients wearing removable partial denture and implant supported

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

*paired t test

dentures and reported that change in mean OHIP score for fixed partial dentures were comparable to implant supported dentures.

Similarly in study by Nogawa et al.¹⁰ also reported that mean OHIP score after the provision of fixed partial denture significantly increases in partially edentulous patient. These results are in consistent with current study. However the results of the current study can be interpreted with caution as this study has some limitations like short follow up period and hence no mention of complications and no control group (quasi experimental design). So further studies of longterm follow up and with adequate control group of randomized control trial design are recommended on this population.

CONCLUSION

The fixed partial dentures can improve statistically significantly quality of life in partially dentate patients in term of mastication and esthetics.

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