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Original Article

Mean Satisfaction Scores in Patients Wearing Removable Dental Prosthesis According to Oral Health Index Profile-14

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ABSTRACT

Removable dental prosthetics, also known dentures, are used to restore function, appearance, and phonation after tooth loss. However, the majority of people who wear dentures are not satisfied with them. **Objective:** To assess the mean fulfillment score of patients utilizing removable denture prosthesis as per oral health index record profile-14 (OHIP-14). **Methods:** A cross-sectional descriptive study was conducted at the Department of Prosthodontics, Bacha Khan Medical College, Mardan from 5th November 2020 to 25th May 2021. A total of 272 participants of both gender with ages between 20 to 70 years, wearing acrylic removable partial denture in or the two arches for something like one year, and had no indications of pathology in leftover teeth were enrolled in this study. OHIP-14 examiner was utilized to gauge the factors of fulfillment with removable dental prosthesis. OHIP-14 scores were stratified among age groups and gender to see effect modifiers. The data were analyzed using SPSS 26.0. **Results:** The mean age of the participants in the study was. 53.28±10.997 years. The mean OHIP-score was 23.63±7.095. The mean OHIP-score in males was 23.34±6.641 and in females was 23.91±7.523. The difference in OHIP-14 score was not statistically significant (p=0.51). The highest mean OHIP-14 score was present in age group 20-30 years (25.20±5.673) followed by age group 61-70 years (24.27±7.290). The lowest OHIP-14 score was in age group 22.57±6.448 years. **Conclusions:** The average OHIP-14 score is lower, which further indicates reduced satisfaction with removable partial dentures. Age and gender had little impact on how satisfied people were with removable partial dentures.

INTRODUCTION

Dental issues essentially influence different parts of prosperity, incorporating financial, social, physical, and mental aspects because of their high prevalence [1, 2]. As characterized by the World Health Organization (WHO), wellbeing is an expansive idea enveloping a singular's impression of their physical, mental, and social prosperity considering their social foundation, values, individual objectives, assumptions, and concerns. [ ]. Since, self-confidence is more of a psychological term, even common dental conditions like dental trauma, tooth loss, and untreated carious lesions can have an impact on one's self-esteem, which can then have an impact on their quality of life [4]. The majority of the time, prosthetics are used to restore function, appearance, and phonation after tooth loss [5]. For both financial and biological reasons, conventional dentures are still the treatment of choice in many situations [6]. However, the majority of people who wear dentures are not happy with them. Despite conflicting findings about connections with denture acceptance, emotional and psychological aspects are crucial in determining whether or not people will accept dentures [7]. The patient's capacity for both emotional and functional adjustment to the detachable dentures will determine how satisfied they are with their use [8]. It is insufficient to describe the state of oral and general health using only clinical signs. Some indices, such as the dental

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Health Index Profile (OHIP)-49 and the condensed version, OHIP-14, are used to assess the quality of life connected to dental health [9]. The Oral Health Impact Profile (OHIP-14) is a broadly utilized survey intended to evaluate the oral health related personal satisfaction. Created by Slade and Spenser in Australia, it follows a model of oral health that considers the effect on seven key spaces [1]. The OHIP-14 draws motivation from the World Health Organization's (WHO) structure for characterizing debilitations, incapacities, and impediment [2]. This poll's accessibility in different dialects, including Chinese, German, and Sinhalese, features its multifaceted pertinence [1]. Earlier examination has shown that patients with complete false teeth experience lower oral wellbeing related personal satisfaction, with a mean OHIP-14 score of 54.12 revealed in one study [3, 4]. This proposes disappointment with customary false teeth among edentulous people [5].

The current study focused on assessing the typical fulfillment score utilizing removable dental prostheses inside the Mardan locality.

METHODS

This cross-sectional descriptive study was carried out at Department of Prosthodontics, Bacha Khan Medical College, Mardan form 5th November 2020 to 25th May 2021 after obtaining approval from Institutional Review Board. Sample size was 274, calculated by WHO calculator using following parameters: Mean ± SD of anterior tooth size discrepancy = 54.12±2.11 from previous study [5], confident level= 95%, absolute precision = 0.25 and Relative Precision = 0.0046. This study included adult participants (20-70 years) of both genders who had worn acrylic removable dental prosthesis for something like one year in one or the two arches. Those who had cast partial dentures, Congenital or surgical jaw defects, Neuromuscular or neurological disorders, History of drug addiction, Difficulty cooperating with the study procedures or physical limitations hindering participation were excluded. This study enlisted contributors from the prosthodontics department at Bacha Khan medical college Mardan, Pakistan from outpatient. All contributors met the pre-characterized incorporation standards and gave composed educated consent after an exhaustive clarification regarding the review techniques. The study convention was endorsed by the Institutional Ethics Advisory group. Following assent, an extensive intraoral assessment was led to record the sort and area of removable dentures worn by every contributor. Age, gender and responses of OHIP-14 questionnaire were recorded from each participant. The individuals were questioned about how frequently they had noticed how removable dental prostheses affected their quality of life (QOL) for each OHIP statement. According to the OHIP-14 scale, subjects were asked to rate their satisfaction with using removable dental prostheses. On a Likert-type scale, responses were recorded as follows: never = 0, scarcely ever = 1, occasionally = 2, pretty often = 3, and very often = 4. No effect of a statement (never = 0) is regarded on this scale as the smallest effect, and no further investigation of the magnitude of this "no" effect is necessary. The 49-item and 14-statement original English-language OHIP Form served as the basis for these 14 questions. The data were analyzed using SPSS 26.0. Quantitative variables like age and responses of OHIP-14 questions were calculated as mean and standard deviation. Categorical variables like gender and age groups were calculated as frequencies and percentages. OHIP-14 scores were stratified among age groups and gender to see effect modifiers. Post stratification ANOVA tests were applied for age groups and independent samples t-test for gender. P≤0.05 was considered significant.

RESULTS

The study participants had a mean age of 53.28 years (standard deviation ±10.997 years), with age range from 20 to 70 years. The typical OHIP score, a proportion of oral health related personal satisfaction, was 23.63 (SD±7.095) (Table 1). The most common age group was 51-50 years (n=90, 32.85%) followed by 41-50 years (n=64, 23.36%). Least number of participants was in age group 20-30 years.

Table 1: Mean of age and OHIP-score

Variable	Mean ± SD	Range
Age (years)	53.28±10.997	20-70
OHIP-14 Score	23.63±7.095	2-39

Out of 274 participants, the males were 135(49.27%) and females were 139(50.73%) as shown in figure 1.

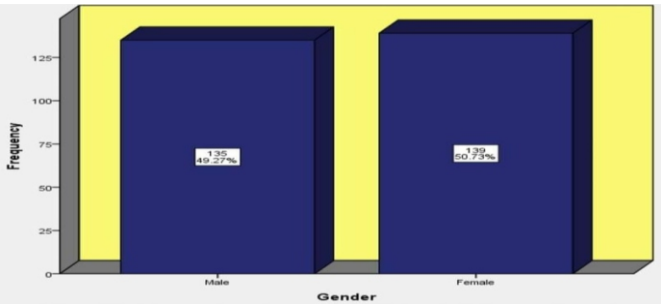

Figure 1: Gender distribution of the study participants (n=274)

No significant association was observed between OHIP-14 scores and gender as shown in table 2.

Table 2: Comparison of OHIP-14 score among genders

Gender		Mean ± SD	95% CI	p-Value*
OHIP-14 Score	Male	23.34±6.641	-2.25, 1.12	.510
	Female	23.91±7.523		

*Independent t test

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Table 3: Comparison of OHIP-14 score among age groups

Age Group (years)	Mean ± SD	Range	95% CI	p- Value*
20-30	25.20±5.673	17-34	21.14, 29.26	.494
31-40	23.62±8.809	13-39	20.27, 26.97	
41-50	24.06±7.078	9-34	22.29, 25.83	
51-60	22.57±6.448	13-34	21.22, 23.92	
61-70	24.27±7.290	35-39	22.66, 25.88	

*ANOVA test

DISCUSSION

This study assessed the mean fulfillment score of patients utilizing the removable denture on the basis of Oral health Effect Profile-14 (OHIP-14) survey. The typical OHIP-14 score was 23.63±7.095, demonstrating a moderate effect on oral health related personal satisfaction. Strangely, age and dental replacement type didn't fundamentally impact fulfillment levels. system and once there is complete loss of natural teeth, resorption of the alveolar bone occurs and hampers the oral health and function. This incidence often causes the psychological and negative social effects on the patients [10, 11]. There has been a documented decline in the occurrence of complete edentulism in several countries, but there are still many more patients in these nations who need rehabilitation with complete dentures [12]. The rehabilitation of the edentulous patients in such conditions is by the conventional complete dentures (CCDs) which is a very common treatment modality followed throughout the world [13]. People with low socioeconomic status are more likely to be edentulous, so there is a greater need to reduce the cost of rehabilitation with dentures so that these underprivileged patients can receive effective care at a reasonable price [14]. It is crucial to accurately analyze each patient's awareness and needs during initial visits in order to develop our diagnostic abilities and to reach the objectives of total denture therapy [15]. The esthetic parameters of conventional CDs can be size of the teeth, shape of the teeth, colour of the teeth, with display of denture teeth, with display of teeth during smile, the facial support, and shade of pink colour part. These parameters were asked in our study to value the patient's perception and to assess their satisfaction. There are standard guidelines on which we fabricate the CDs for our patients. However, due to social and ethnic norms the satisfaction level may be different in our population than internationally recommended guidelines [16]. To evaluate the fulfillment of study participants with their removable dental prostheses, the Oral Health Effect Profile-14 (OHIP-14) was used. The OHIP-14 is a deeply grounded device recently utilized in comparable exploration [17]. This 14-points poll, obtained from the first 49-points OHIP, assesses seven critical parts of oral health related personal satisfaction: utilitarian restrictions, torment, mental uneasiness, physical and mental incapacity, social inability, and impediment. Both the OHIP-14 and its ancestor, the OIDP, are well known decisions for populace studies because of their quickness and insignificant weight on contributors. Both measures appear to function well when utilising unweighted scores as opposed to weighted scores, despite the OIDP inventory's individually sensitive weighting system giving respondent views more weight and greater validity [18]. In a study by Kovač et al., on the multivariate analysis of several parameters influencing patient overall satisfaction with complete dentures [19]. In spite of the clinical perfection of their prostheses, their findings indicated that the majority of patients are satisfied with complete dentures that are well designed and made. Although their study was on overall satisfaction of patients from complete dentures but the results are in consistent to our study that most of the denture wearers were satisfied. In order to gauge the patients' happiness with the colour, personalization, and aesthetics of undergraduate-made denture bases, Nandhini et al., performed a poll [20]. Their investigation came to the conclusion that patients receiving comprehensive denture therapy had aesthetic expectations that were not entirely met. The majority of undergraduate students may not prioritize denture base colour, personalization, and aesthetics, which could be the cause. The patient might not be aesthetically satisfied with the denture once it has been made. On other hand our patients were extremely satisfied with complete denture esthetics mad by postgraduate trainee. So, the post graduate students give more importance to esthetic parameters while fabricating CDs. The aesthetic pleasure of total denture therapy and variables like age, gender, and aesthetic expectations were examined in a study by McCunniff et al [21]. After completing denture therapy, patients were, on the whole, more aesthetically satisfied than they had anticipated; this contentment did not change based on gender or age. Although their study was on relation between expectation and satisfaction but their results are similar to our study because most were satisfied from esthetics of denture. Past research upholds an association between dental replacement quality and patient fulfillment. The research by Rella et al., found that majority of the participants detailed being "sensibly fulfilled" or "extremely fulfilled" with their denture prosthesis [22]. This lines up with our own discoveries, where a high extent of participants communicated fulfillment with the very much developed false teeth in current study. It's critical to take note of that our denture prosthesis were manufactured by exceptionally talented postgraduate students. One more research by Ramli et al., was conducted on the oral health related personal satisfaction (OHRQoL) of patients with

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both upper and lower total denture prosthesis to those with only one [23]. The participants showed a mean OHIP score of 35.12 ± 2.11 for customary removable false teeth, which is somewhat higher than the scores observed in current study. This distinction could be ascribed to the nature of manufacture in our study (RPDs rather than complete denture) and possibly likewise because of varieties in understanding assumptions.

CONCLUSIONS

Within the bounds of our study, we can draw the conclusion that the average OHIP-14 score is lower, which further indicates reduced satisfaction with removable partial dentures. Age and gender had little impact on how satisfied people were with removable partial dentures.

Authors Contribution

Conceptualization: HW
Methodology: AM, HW, SU
Formal analysis: HU[2]
Writing-review and editing: AM, HU[1], AS

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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