

Original Article

ASSESSMENT OF SATISFACTION OF PATIENTS WITH
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ABSTRACT

Objectives: The aim of this study to evaluate the influence of demographic and prosthodontic variables on satisfaction outcomes over time.

Materials and Methods: A cross-sectional study on a total of 197 patients rehabilitated with Removable Partial Dentures, through non-probability consecutive sampling technique, was conducted at department of Prosthodontics, Foundation University College of Dentistry & Hospital, Islamabad over a period of six months (Nov 2025-April 2026). Patient-reported outcomes were assessed using the Oral-Health Impact Profile-14 questionnaire at one-month and three-month follow-up visits. Variables including age, gender, arch type, Kennedy classification, number of modification spaces, systemic health status, operator level, and previous denture experience were analyzed for their association with satisfaction outcomes. Statistical analysis was performed using Statistical Package for the Social Sciences (SPSS) version 23, with $p \leq 0.05$ considered statistically significant.

Results: The mean age of participants was 43.42 ± 12.70 years. using Oral-Health Impact Profile-14 scores demonstrated a statistically significant improvement between one-month and three-month follow-up visits, indicating progressive enhancement in patient satisfaction and functional adaptation following prosthodontic rehabilitation ($p < 0.05$). Functional limitation, particularly mastication, represented the most affected domain, followed by pain and psychological discomfort. Higher satisfaction trends were observed among female participants, maxillary Removable Partial Denture wearers, Kennedy Class III cases, and patients treated by postgraduate residents and consultants; however, these associations did not achieve statistical significance ($p > 0.05$).

Conclusion: Removable Partial Dentures significantly improve oral health-related quality of life and patient satisfaction over time, emphasizing the role of functional adaptation in prosthodontic rehabilitation.

Key words: Adaptation, Oral Health Impact Profile, Patient Satisfaction, Prosthodontics, Quality of Life, Removable Partial Denture.

Cite as: Afzal S, Ahmad S, Altaf A, Riaz A, Umair M, Rafiq F. Assessment of satisfaction of patients with removable partial dentures. Journal of Khyber College of Dentistry Sep 2026, Vol. 16, No. 3. <http://doi.org/10.33279/jkcd.v16i03.1029>

INTRODUCTION

Replacement of lost teeth with Removable Partial Denture (RPD) remains one of the most common

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Date Submitted: March 2026

Date Revised: June 2026

Date Accepted: July 2026

treatment in developing countries like Pakistan owing to its benefits like reduced cost, minimally invasive and ease of maintenance^{1,2}. While RPDs provide functional and esthetic benefits, they also present challenges such as discomfort, instability, and dissatisfaction with chewing or speech, which can influence patient satisfaction^{3,4}.

The evaluation of satisfaction with RPDs is essential for assessing treatment outcomes. Patient-reported satisfaction is multifactorial and can

be influenced by pre-treatment expectations, gender, arch restored, operator experience, and type of prosthesis⁵⁻⁷. Tools such as the validated Oral Health Impact Profile-14 (OHIP-14) have been validated for this purpose and have shown reliability in Urdu for Pakistani patients^{8,9}. (For the OHIP-14, the Cronbach's alpha (α) coefficient was estimated to be 0.837)⁸.

Bugaighis et al.¹ reported an overall RPD satisfaction rate of 68.1% in a sample of 160 patients. Whereas study by Ibrahim L M³ found only 47.05% satisfaction among RPD. A study by Almohsen and Mahmoud¹⁰ (2021), involving 80 patients, found that 62.5% were satisfied with their RPDs, while 17.5% were dissatisfied. Additionally, chewing efficiency and esthetics were rated positively by more than half of the participants, showing a regional trend of moderate-to-high satisfaction. A Pakistani study by Mumtaz et al.⁴ revealed that satisfaction levels improved with increased duration of RPD use ($p=0.005$) and were generally higher among females where patient's satisfaction with RPDs was not affected by age of the patient ($P = 0.191$). As compared to international studies, the mean OHIP-14 Score (23.2 ± 7.16) reported was lower showing less satisfaction with removable partial denture. A 2024 systematic review by Awawdeh et al.⁵ emphasized that satisfaction varies with gender, expectations, prosthesis type, and follow-up time.

There is limited local evidence assessing patient satisfaction with RPDs fabricated at different levels of clinical training. This study aims to provide insight into short- and mid-term satisfaction with heat-cured acrylic RPDs fabricated in a teaching hospital and guide improvements in both patient care and clinical training.

The objective was to assess mean of satisfaction scores of patients rehabilitated with removable partial dentures fabricated at a "[For Blinding]" using OHIP-14 questionnaire and to evaluate the influence of demographic and prosthodontic variables on satisfaction outcomes over time.

MATERIALS AND METHODS

This cross-sectional study was conducted at the department of Prosthodontics, Foundation University College of Dentistry & Hospital Islamabad over a period of six months (Nov 2025-April 2026). Ethical

approval was obtained from the Institutional Ethical Review Committee, and data collection was initiated after approval from the Research and Review Committee (R&RC), College of Physicians and Surgeons Pakistan. From all participants prior to inclusion in the study, informed consent (verbally/written) was obtained.

Sample size was calculated using the WHO Sample Size Calculator for estimating population mean by taking a population mean of 23.2, standard deviation of 7.16, absolute precision of 1, and confidence level of 95%, resulting in a sample size of 197 participants. Non-probability consecutive sampling technique was used.

Inclusion criteria:

1. Male and female patients ranging in age from 20 to 70 years.
2. Patients provided with acrylic RPD with or without modifications in one arch only
3. Patient provided with acrylic RPDs made by either an undergraduate student, house officer, post-graduate resident or a consultant working in the prosthodontic department.
4. Patients wearing their RPDs for 1 month or more.

Exclusion criteria:

1. Patients who have any debilitating systemic conditions (e.g. Parkinson's disease, Multiple Sclerosis, Alzheimer's disease).
2. Mentally and physically handicapped patients
3. Patients having poor abutment teeth due to periodontal problems, extensive caries
4. Patients having severe malocclusion due to inter-arch discrepancy.

Patients coming on follow up visits at 1 month and 3 months interval after their insertion of heat-cured acrylic RPDs shall be assessed for inclusion in the study as per criteria given. Informed consent will be obtained for participation in this study.

At 1-month follow-up visit, in a relaxed position, patient will be seated on the dental unit. Initially, any presenting complaint of the patient shall be addressed. Then, proforma will be briefed to the

patient including the time required to answer all the questions and ensuring complete confidentiality. Post-treatment satisfaction will be determined by face-to-face interview with the resident trainee using Oral Health Index Profile-14 Questionnaire.¹⁰ For the patients who cannot visit the department, the questionnaire shall be administered through mobile phones/ social media by the resident trainee. Same shall be done on the 3-months follow up visit.

The questionnaire used for data collection will consist of 2 portions: First portion shall collect the demographic information and the second portion shall have OHIP-14 Questions. (Annexure 2) All the questions shall be translated from English to Urdu for the ease of communication with the patients. The OHIP-14 consists of seven evaluation categories:

1. Chewing-related problems → struggle chewing, inability to eat, denture mobility, interrupted meals, and uncomfortable eating
2. Difficulty in pronunciation → unclear speech
3. Esthetic concerns → mal-aligned teeth, avoid smiling, and feelings of discomfiture
4. Taste → altered taste
5. Pain → sensitive teeth, toothache, sore gum, mouth and jaw pain, headache, ulcers, and difficulty in brushing
6. Digestion → stomach pain and mal-digestion
7. Psychological problems → unease, despair, mood swings, concentration affected, avoid going out, less understanding to others, struggle doing jobs, sleep disturbance, and impact on the quality of life

In the OHIP-14 Questionnaire, each statement will be answered on a 5-point Likert scale from strongly disagree to strongly agree. For the purpose of data analysis, each of these 5 answers will be given a numerical value i.e. strongly disagree = 1, disagree = 2, undecided = 3, agree = 4, strongly agree = 5. Total scores will be computed by adding the numerical values. So, the total score will range from 14 to 70 (14 if all statements are answered as strongly disagree and 70 if all statements are answered as strongly agree). For ease of understanding, Satisfaction will be considered under the following 4 categories:

1. Very Poor (score of 14-28)
2. Relatively Poor (score of 29-42)
3. Relatively Good (score of 43-56)
4. Very Good (score of 57-70)

Satisfaction will be determined to be poor if the total score is less and good if the total score is higher.

Data were analyzed using IBM SPSS version 23. Normality of quantitative data was assessed before inferential analysis. Continuous variables such as age and OHIP-14 scores at 1-month and 3-month follow-up were expressed as mean. Categorical variables including gender, Kennedy classification, arch type, systemic health status, previous denture experience, and number of modification spaces were presented as frequencies and percentages.

Comparison of mean OHIP-14 scores between 1-month and 3-month follow-up was performed using paired sample t-test. Stratification was applied for effect modifiers such as age, gender, Kennedy classification, and previous denture experience to control confounding. After stratification, independent sample t-test were applied where appropriate to determine differences between subgroups. A p-value ≤ 0.05 was considered statistically significant.

RESULT

A 197 sample of patients completed the OHIP-14 questionnaire at both 1-month and 3-month follow-up visits, with no missing data. Figure 1 shows gender distribution. The mean age of the participants was 43.42 ± 12.709 years. (FIGURE 2)

The OHIP-14 scores displayed a gradual improvement in overall patient satisfaction with continued use of removable partial dentures. The mean score at 1-month follow-up was 25.66 ± 9.29 ("Very Poor" category), which increased to 30.89 ± 13.33 (Relatively Poor category) at 3-month follow-up. The median score also increased from 23 at 1 month to 27 at 3 months, indicating a positive shift in satisfaction. The range of scores was 14 to 66 at 1 month and 14 to 70 at 3 months. A paired sample t-test demonstrated that this increase in satisfaction over time was statistically highly significant ($p < 0.001$).

The variables such as gender, age, Kennedy classification, modification spaces, arch, systemic health status, operator level, and past denture experience

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showed no statistically significant association with satisfaction outcomes ($p > 0.05$).

Domain-wise evaluation of the OHIP-14 instrument revealed that functional limitations related to mastication (chewing difficulties) constituted the most affected domain, followed by pain and discomfort and psychological factors, suggesting that these were the main source to reduced patient satisfaction. Esthetic concerns and speech-related difficulties demonstrated a moderate impact, whereas taste disturbance and digestive issues were the least

affected domains.

In general, this study demonstrated that patient satisfaction with removable partial dentures improved significantly over time, with the adaptation period playing a crucial role, while other factors showed no significant influence on satisfaction outcomes.

DISCUSSION

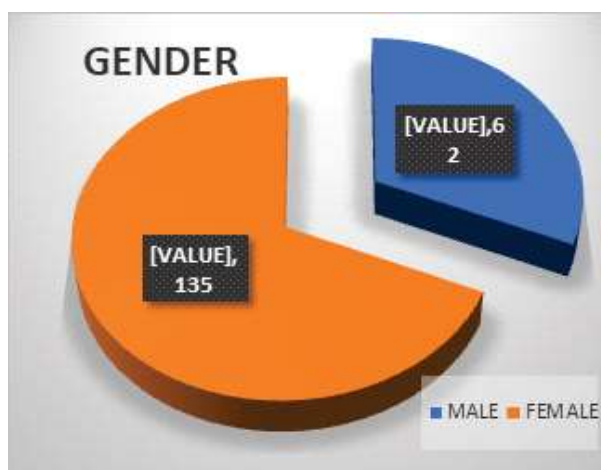


Fig 1: Gender distribution

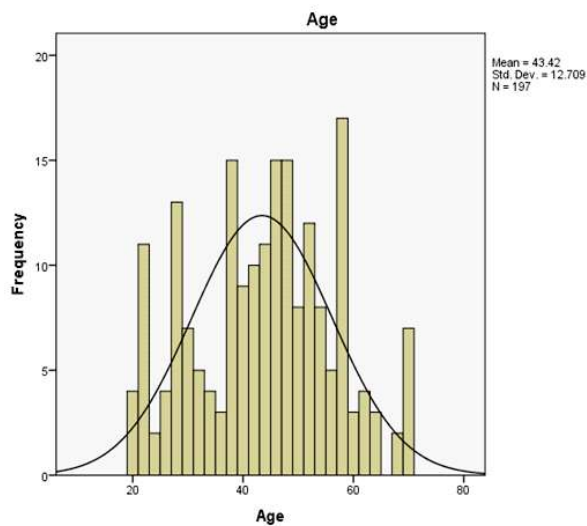


Fig 2: Frequency of age distribution

Table 1: Comparison of variables total scores at 1 and 3 month follow up

VARIABLES		Total score at 1st month follow up (mean satisfaction score)	Total score at 3rd month follow up (mean satisfaction score)
Gender	Male	26.68	32.58
	Female	25.19	30.12
Arch	Maxillary	25.55	30.69
	Mandibular	25.74	31.04
RPD provided by	Undergraduate Students	20.08	23.13
	House Officers	26.05	32.53
	Post-Graduate Residents	35.81	43.26
	Consultants	48.4	62
Co-Morbidities	Absent	26.37	31.4
	Present	25.03	30.44
Kennedy's Classification	Class 1	28.81	34.56
	Class 2	25.91	30.32
	Class 3	24.81	30.9
	Class 4	23.84	26.26
Modification Spaces	Absent	24.39	31.63
	Present	27.02	30.63
Past Denture Experience	No	25.34	30.88
	Yes	26.38	30.92

The current study measured patient satisfaction with RPDs based on OHIP-14 scores and found a significant improvement in satisfaction levels over time, emphasizing the importance of adaptation in the prosthodontic rehabilitation process. This temporal trend is due to the dynamic interplay between neuromuscular coordination, tolerance, and functional adaptation after prosthesis insertion^{4,12,19}.

These findings are comparable with previous literature. In a similar study conducted in Pakistan, Mumtaz et al⁴ found an increase in satisfaction levels among patients who had been wearing RPDs for extended periods as their study included patients who were wearing RPDs for at least one year. In present study, satisfaction of patients was analyzed after 1-month and 3-month periods, with improvement in OHIP-14 scores observed during that time. Awawdeh et al⁵ (2024) noted that the follow-up period was a critical factor influencing patient satisfaction, as early dissatisfaction often indicated a temporary adaptation stage rather than treatment failure. In international studies, similar results have been reported evaluating oral-health-related quality of life among removable prosthesis wearers^{13,15,19}. Recent clinical and longitudinal observed studies further support the idea that patient-reported outcomes significantly improve in the early months after prosthesis insertion^{12,16}.

While previous studies have reported correlations between patient satisfaction and variables including demographic factors (age, gender), prosthesis-related characteristics (arch type, Kennedy classification, and number of modification spaces), systemic health status, and prior denture experience, the present study did not exhibit statistically significant relationships with these variables, suggesting that patient-reported satisfaction may be more strongly influenced by individual adaptation and perception rather than isolated clinical or demographic factors^{6,9,10}.

Unlike these studies, the present study was restricted to RPD rehabilitation and employed OHIP-14 assessment at the 1- and 3-month follow-up, which allowed assessment of patient-reported outcomes in the early adaptation phase after prosthetic insertion. A key strength was the complete paired follow-up of 197 patients which allowed the assessment of changes in satisfaction over time. However, the external validity of the results and the assessment

of long-term prosthetic adaptation and alternative RPD designs are limited by the single-center nature of the study, the short follow-up period, and the fact that only heat-cured acrylic RPDs were evaluated.

Recently, several predictors of patient satisfaction have been proposed by Alqutaibi et al⁶ and Yoshimoto et al⁷ including pretreatment expectations, gender, arch restored, operator experience, prosthesis type, and masticatory function, and these factors may act as mediators through various functional and psychosocial mechanisms. However, based on the most recent evidence, demographic patient variables may not play a significant role in patient satisfaction, a finding that is in agreement with the results of our study and which suggest that individual prosthodontic adaptation and patient perception may have a greater influence than isolated demographic or clinical variables^{5,10}.

Despite the lack of statistical significance, some clinical trends were identified. Higher satisfaction scores were seen in women, maxillary removable partial denture (RPD) wearers, and subjects treated by postgraduate residents and consultants compared to those under the care of undergraduate students and house officers. In addition, patients who had no underlying health issues had relatively higher satisfaction scores compared to those with ailments like hypertension and diabetes mellitus. With regards to prosthodontics variables like patients with Kennedy Class III arches and those without modification spaces also presented better satisfaction trends^{9,15,17}.

These trends, while lacking in statistical significance, correlate well with previous studies. According to established prosthodontic principles, maxillary dentures provide more stability and retention owing to broader denture-bearing areas and favorable anatomic support compared to mandibular dentures^{14,18}. Moreover, tooth-supported prosthesis (Kennedy Class III) tend to yield superior functional results^{14,17,18}. Recent researches have highlighted the importance of prosthesis design and biomechanical stability in determining the oral health related quality of life and patient satisfaction levels, confirming the observed trends in this study^{13,14,19}. Modern researches have demonstrated that women generally tend to be satisfied in various aspects such as esthetics and psychosocial domains, consistent with the current study trend^{6,9}.

The domains analysis of OHIP-14 revealed that the most impacted domain is the functional limitation specifically mastication. Pain and psychological discomfort were the following factors contributing to reduced satisfaction. These results are consistent with those reported by Yoshimoto et al⁷ who explained mastication as the principle determinant of satisfaction among RPD users. In many other studies evaluating oral health-related quality of life among partially rehabilitated with removable prostheses similar results were observed^{12,15,19}. The latest research on the subject also proves that chewing ability and pain impact the oral health-related quality of life the most, confirming the conclusions drawn here¹⁵.

While the relationship between operator level and satisfaction was not statistically significant, satisfaction scores trended positively with higher operator levels. This finding aligns with the work of Bugaighis et al¹ and Kavita et al⁹, who described technical expertise and skillful fabrication of prostheses as essential to the acceptance of prostheses. However, it is argued that recent advancements in digital and computer-aided manufacturing of removable partial dentures may not enhance patient satisfaction in the absence of effective clinical practice and patient care^{14,20}.

The design of this study, being a single-center study, and the relatively short duration of follow-up, may limit the generalizability of the study as well as the assessment and understanding of the long-term adjustment of patients to removable partial dentures. The study was also limited to the assessment of heat-cured acrylic RPDs, with no assessment being made of cast partial dentures or digitally made prostheses. It is recommended that future studies focus on a patient-reported and satisfaction-driven approach by evaluating different prosthodontic interventions, combining cross-sectional and longitudinal study designs, and incorporating a larger number of centers^{13,16,20}.

Overall, these studies revalidate the current prosthodontic philosophy that patient satisfaction is a multidimensional concept that evolves over time, relating to the functional and psychological components of adaptation, the prosthesis' functionality, and the individualized therapeutic experience.^{4,5,12,19}

CONCLUSION

The single-center design and relatively short follow-up period of this study limits the generalizability of its findings and limits the ability to assess the long-term adaptation of patients to removable partial dentures. Furthermore, the study evaluated only heat-cured acrylic RPDs and did not assess cast partial dentures or partial dentures made using digital technology. The assessment of patient satisfaction and the oral health-related quality of life is recommended to be explored further in prospective, multi-center, longitudinal studies.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
GRANT SUPPORT AND FINANCIAL DISCLOSURE
None declared.

AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design: SA, SA, AA, MU, FR
Acquisition, Analysis or Interpretation of Data: SA, SA, AA, MU, FR
Manuscript Writing & Approval: SA, SA, AA, MU, FR

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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