



ASSESSMENT OF ORAL HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH REMOVABLE DENTURES: A TERTIARY CARE HOSPITAL STUDY

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ABSTRACT

Introduction: Oral health-related quality of life (OHRQoL) is an essential patient-centered outcome measure that extends beyond clinical assessments to capture the impact of dental conditions and treatments on daily functioning, psychological well-being, and social interactions. This study aimed to assess OHRQoL in patients using removable dentures and identify factors influencing their quality of life in a hospital setting.

Methods: A cross-sectional observational study was conducted at the Department of Prosthodontics, Peoples College of Medical Sciences and Research Centre, Bhopal, from July 2022 to December 2022. Using consecutive sampling, 145 patients wearing removable dentures for at least three months were recruited. Data were collected through structured interviews using the Oral Health Impact Profile-14 (OHIP-14) questionnaire and a demographic-clinical proforma. Statistical analysis included descriptive statistics, independent t-tests, ANOVA, correlation analysis, and multiple regression using SPSS version 23.0.

Results: The mean OHIP-14 total score was 17.73 ± 9.84 , indicating moderate OHRQoL impairment. Physical pain (3.12 ± 1.78) and psychological discomfort (2.96 ± 1.84) were the most affected domains. Complete denture wearers reported significantly higher OHIP-14 scores compared to partial denture users (19.68 vs. 12.86, $p=0.001$). Participants aged ≥ 60 years, those with lower education levels, first-time denture wearers, and individuals from lower socioeconomic backgrounds experienced significantly poorer OHRQoL. Duration of denture use showed negative correlation with OHIP-14 scores ($r=-0.387$, $p<0.001$), indicating improved adaptation over time.

Conclusion: Removable denture wearers experienced moderate OHRQoL impairment, with complete denture users and vulnerable populations facing greater challenges. These findings emphasize the need for comprehensive patient education, realistic expectation setting, and targeted support for high-risk groups to enhance denture adaptation and overall quality of life.

Keywords: Oral health-related quality of life, removable dentures, OHIP-14, complete dentures, patient satisfaction

Introduction

Oral health plays a fundamental role in overall well-being, affecting not just the ability to eat and speak but also social interactions, self-esteem, and psychological comfort. When people lose their natural teeth, the impact extends far beyond the physical gap in their mouth. It touches every aspect of daily life, from choosing what to eat to feeling confident in social situations (Emami et al., 2013). Removable dentures have long been the standard solution for tooth loss, offering a practical and

relatively affordable way to restore function and appearance. However, the experience of wearing dentures varies significantly from person to person, and understanding this variation has become increasingly important in modern dental care.

The concept of Oral Health-Related Quality of Life (OHRQoL) emerged as researchers and clinicians recognized that clinical measurements alone don't tell the whole story. A denture might look perfect and fit well according to technical standards, but if the patient struggles to eat their favorite foods or feels embarrassed wearing it, the treatment hasn't truly succeeded (Locker & Allen, 2007). OHRQoL captures these subjective experiences, measuring how oral conditions and treatments affect daily functioning, social well-being, and psychological comfort. This patient-centered approach has transformed how we evaluate dental interventions, shifting focus from purely clinical outcomes to what matters most to patients themselves.

India faces a unique set of challenges when it comes to oral health and denture care. The country has a growing elderly population, many of whom have experienced significant tooth loss due to various factors including limited access to preventive dental care, cultural dietary habits, and economic constraints (Shah et al., 2017). In rural and semi-urban areas, tooth loss is often accepted as a natural part of aging rather than a condition requiring treatment. When patients do seek denture treatment, their expectations, experiences, and adaptations differ from those in Western populations, influenced by dietary preferences, cultural attitudes toward appearance, and varying levels of health literacy (Reddy et al., 2012).

Research on denture-related quality of life has expanded globally over the past two decades. Studies from various countries have shown that factors like denture retention, stability, chewing efficiency, and aesthetic satisfaction all contribute to patient outcomes (Heydecke et al., 2003). However, most early research focused on populations in developed countries with well-established dental care systems. The experiences of Indian patients, navigating a different healthcare landscape with distinct cultural and socioeconomic contexts, require specific attention. Understanding how Indian patients adapt to removable dentures, what challenges they face, and what factors influence their satisfaction provides essential information for improving care delivery.

The hospital setting offers a unique window into this issue. Unlike private dental clinics that might serve a more homogenous patient population, hospitals typically see a diverse cross-section of the community, including those with limited resources, complex medical histories, and varying levels of oral health awareness (Khalifa et al., 2012). Patients seeking denture treatment in hospital dental departments often represent underserved populations who face multiple barriers to care. Studying OHRQoL in this context reveals not just individual patient experiences but broader patterns that reflect community-level oral health needs.

Several standardized instruments have been developed to measure OHRQoL, with the Oral Health Impact Profile (OHIP) being among the most widely used and validated tools (Slade & Spencer, 1994). The OHIP-14, a shortened version containing 14 items, has been particularly valuable in clinical research due to its brevity and strong psychometric properties. It assesses seven dimensions of oral health impact: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. This multidimensional approach captures the complex ways oral health affects life quality, from the immediate physical experience of pain or discomfort to broader social and psychological consequences.

Research has consistently shown that removable denture wearers face numerous challenges that impact their quality of life. Physical problems like poor retention, mucosal irritation, and reduced chewing efficiency are common complaints (Esfandiari et al., 2009). Beyond these physical issues, many denture wearers experience psychological distress related to appearance concerns, fear of denture dislodgement during social interactions, and feelings of premature aging. Dietary modifications are nearly universal among new denture wearers, with many avoiding certain foods permanently. These changes can affect nutrition and reduce the enjoyment of eating, which has deep cultural and social significance (Campos et al., 2009).

Age, gender, education level, socioeconomic status, and previous denture experience all influence how patients adapt to removable prostheses. Older patients might have different expectations and priorities compared to younger ones. Those with higher education levels often have greater awareness of oral health and clearer expectations about treatment outcomes (John et al., 2004). Previous denture experience can either facilitate adaptation through familiarity or create challenges if earlier experiences were negative. Understanding these factors helps clinicians anticipate potential difficulties and provide more personalized care and counseling.

The assessment of OHRQoL in denture patients also has practical implications for treatment planning and resource allocation. In resource-limited settings, understanding which factors most strongly influence patient satisfaction can help prioritize interventions that deliver the greatest impact on well-being. It can inform the development of patient education programs, guide post-delivery follow-up protocols, and highlight areas where additional clinical training might be beneficial (Zembic et al., 2015). From a public health perspective, OHRQoL data helps build the case for increased investment in preventive and restorative dental services.

The aim of the study is to assess the oral health-related quality of life in patients using removable dentures and to identify factors influencing their quality of life in a tertiary care hospital setting.

Methodology

Study Design

A cross-sectional observational design.

Study Site

The study was conducted at the Department of Prosthodontics and Crown & Bridge, Peoples College of Medical Sciences and Research Centre, Bhopal, Madhya Pradesh, India. This institution serves as a tertiary care teaching hospital providing comprehensive dental services to a diverse patient population from Bhopal city and surrounding rural areas. The prosthodontics department routinely fabricates various types of removable prostheses including complete dentures, removable partial dentures, and implant-supported overdentures, making it an ideal setting for investigating OHRQoL across different denture types and patient populations.

Study Duration

The study was conducted over a period of six months, from July 2022 to December 2022. This duration allowed for adequate recruitment of participants who attended the department for routine follow-up appointments or new consultations. The six-month timeframe was sufficient to capture seasonal variations in patient attendance patterns and to recruit a representative sample of denture wearers at various stages post-insertion, from those recently fitted to long-term denture users.

Sampling and Sample Size

A consecutive sampling method was employed to recruit participants who met the eligibility criteria and attended the prosthodontics department during the study period. This non-probability sampling technique was chosen for its practicality in a clinical setting and its ability to reduce selection bias by including all eligible patients during the specified timeframe (Farrokh-Eslamlou et al., 2013). The sample size for this study consisted of 145 patients who were using removable dentures and agreed to participate. Sample size determination was based on previous similar studies examining OHRQoL in denture wearers, considering a precision level of 5%, confidence level of 95%, and expected prevalence of denture-related quality of life issues. The sample included patients wearing complete dentures (both maxillary and mandibular), removable partial dentures, and combination prostheses, representing the typical distribution of removable prosthetic cases seen in the hospital setting. Participants were recruited during their scheduled

appointments for denture insertion, adjustment, or routine follow-up visits, ensuring inclusion of patients at various stages of their denture-wearing experience.

Inclusion and Exclusion Criteria

Patients were included in the study if they met the following criteria: age 18 years or above, wearing any type of removable denture (complete or partial) for at least three months prior to the study to allow adequate adaptation period, ability to understand and respond to questionnaires in Hindi or English, and willingness to provide informed consent for participation. The three-month minimum denture-wearing period was established because previous research indicated that initial adaptation to removable prostheses typically occurs within the first few months, and assessment beyond this period provides a more stable measure of quality of life impact (Awad & Feine, 1998). Patients were excluded from the study if they had severe cognitive impairment or psychological disorders that would prevent reliable completion of the questionnaire, presented with acute oral pathology or infections requiring immediate treatment that might temporarily affect their quality of life assessment, were unable to communicate effectively due to language barriers, or refused to participate in the study. Additionally, patients who had received their dentures less than three months prior to the study period were excluded to ensure that participants had sufficient time to adapt to their prostheses and that quality of life assessments reflected a more stable experience rather than initial adjustment difficulties.

Data Collection Tools and Techniques

Data collection was accomplished through a structured interviewer-administered approach using validated instruments. The primary tool for assessing oral health-related quality of life was the Oral Health Impact Profile-14 (OHIP-14), a shortened version of the original 49-item OHIP scale that has demonstrated excellent reliability and validity across diverse populations including Indian patients (Slade, 1997; Bhat et al., 2005). The OHIP-14 questionnaire assessed seven conceptual domains of OHRQoL: functional limitation (2 items), physical pain (2 items), psychological discomfort (2 items), physical disability (2 items), psychological disability (2 items), social disability (2 items), and handicap (2 items). Participants rated the frequency of each problem on a five-point Likert scale: never (0), hardly ever (1), occasionally (2), fairly often (3), and very often (4). Additionally, a structured proforma was developed to collect demographic information including age, gender, education level, socioeconomic status, and occupation, as well as clinical and prosthetic variables such as type of denture (complete or partial), arch (maxillary, mandibular, or both), duration of edentulousness, duration of denture use, previous denture experience, and reasons for seeking denture treatment. The questionnaires were administered by trained dental interns under the supervision of faculty members to ensure standardization in the interview process. Interviews were conducted in a private clinic room to maintain confidentiality and allow participants to respond freely without external influence. For patients more comfortable with Hindi, a validated Hindi translation of the OHIP-14 was used to ensure accurate comprehension and response (Basavaraj et al., 2014). Each interview session lasted approximately 20-25 minutes. Prior to data collection, a pilot study was conducted with 15 patients to test the questionnaire's comprehensibility and to train interviewers in standardized administration techniques. The pilot study data were not included in the final analysis.

Data Management and Statistical Analysis

All collected data were systematically entered into Microsoft Excel spreadsheets with built-in validation checks to minimize data entry errors. Following initial entry, data were cleaned by checking for missing values, outliers, and logical inconsistencies. The cleaned dataset was then exported to Statistical Package for Social Sciences (SPSS) version 23.0 for comprehensive statistical analysis. Descriptive statistics were calculated for all variables, with continuous variables presented as means and standard deviations, and categorical variables presented as frequencies and percentages. The OHIP-14 total score was calculated by summing responses across all 14 items, with possible scores ranging from 0 to 56, where higher scores indicated worse oral health-related quality of life. Subscale scores were calculated for each of the seven domains. The internal

consistency of the OHIP-14 was assessed using Cronbach's alpha coefficient. For inferential statistics, normality of continuous variables was assessed using the Kolmogorov-Smirnov test. Depending on data distribution, either independent t-tests or Mann-Whitney U tests were used to compare OHRQoL scores between two groups, while one-way ANOVA or Kruskal-Wallis tests were employed for comparisons across multiple groups. Post-hoc tests were conducted where appropriate to identify specific group differences. Correlation analysis using Pearson's or Spearman's correlation coefficients was performed to examine relationships between OHIP-14 scores and continuous variables such as age and duration of denture use. Multiple linear regression analysis was conducted to identify independent predictors of OHRQoL while controlling for potential confounding variables. Statistical significance was set at $p < 0.05$ for all analyses. Results were presented in tables and figures to facilitate clear interpretation of findings.

Ethical Considerations

The study protocol received approval from the Institutional Ethics Committee of Peoples College of Medical Sciences and Research Centre, Bhopal, prior to participant recruitment. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki for research involving human subjects (World Medical Association, 2013). All participants were provided with detailed information about the study's purpose, procedures, potential benefits, and their rights as research participants. Emphasis was placed on the voluntary nature of participation, with clear communication that refusal to participate or withdrawal at any stage would not affect their ongoing dental treatment or relationship with the healthcare providers. Written informed consent was obtained from all participants prior to their inclusion in the study, with consent forms available in both Hindi and English to accommodate language preferences. For participants with limited literacy, the consent process involved detailed verbal explanation in the presence of a witness, with consent documented accordingly. Participant confidentiality was strictly maintained throughout the study by assigning unique identification codes to all participants, with personal identifying information stored separately from research data in password-protected files accessible only to the principal investigator. Data collection was conducted in private settings to protect participant privacy. All physical documents containing participant information were stored in locked cabinets, while electronic data were maintained on secure, password-protected computers with restricted access. Participants were informed that anonymized study results might be published in scientific journals or presented at academic conferences, but that their individual identities would never be revealed. Although the study involved minimal risk, participants were informed of their right to refuse to answer any specific questions they found uncomfortable. The research team maintained transparency about the study's academic nature and the absence of any direct therapeutic intervention, ensuring that participants understood they were contributing to knowledge development rather than receiving experimental treatment.

RESULTS

Table 1: Sociodemographic Characteristics of Study Participants (N=145)

Characteristic	Category	Frequency (n)	Percentage (%)
Age Group (years)	18-40	18	12.4
	41-60	67	46.2
	61-80	52	35.9
	>80	8	5.5
Mean Age $\pm$ SD	58.6 $\pm$ 12.3 years		
Gender	Male	79	54.5
	Female	66	45.5
Education Level	Illiterate	31	21.4
	Primary	43	29.7
	Secondary	38	26.2

	Graduate and above	33	22.7
Occupation	Unemployed/Homemaker	52	35.9
	Skilled worker	38	26.2
	Professional	21	14.5
	Retired	34	23.4
Socioeconomic Status	Lower	47	32.4
	Middle	71	49.0
	Upper	27	18.6
Area of Residence	Urban	89	61.4
	Rural	56	38.6

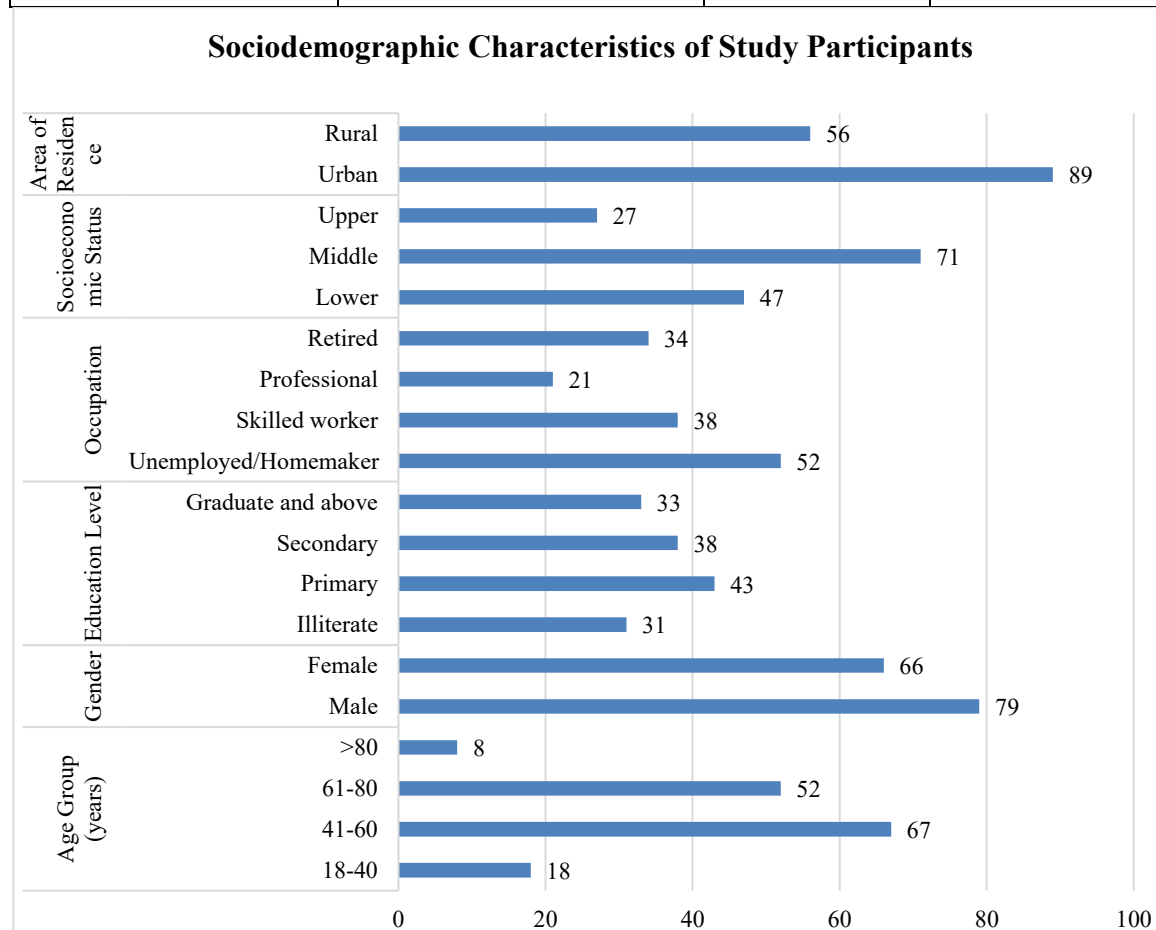


Fig: 1

Table 2: Clinical and Prosthetic Characteristics of Study Participants (N=145)

Characteristic	Category	Frequency (n)	Percentage (%)
Type of Denture	Complete denture (both arches)	68	46.9
	Maxillary complete denture	23	15.9
	Mandibular complete denture	12	8.3
	Removable partial denture	42	29.0
Duration of Edentulousness	<1 year	14	9.7
	1-5 years	56	38.6
	6-10 years	48	33.1
	>10 years	27	18.6
Duration of Denture Use	3-6 months	38	26.2
	7-12 months	41	28.3

	1-3 years	43	29.7
	>3 years	23	15.8
Previous Denture Experience	Yes	54	37.2
	No	91	62.8
Primary Reason for Denture	Functional (eating)	87	60.0
	Aesthetic	31	21.4
	Both	27	18.6
Self-reported Denture Problems	Retention issues	63	43.4
	Pain/Discomfort	48	33.1
	Speech difficulty	27	18.6
	No problems	34	23.4

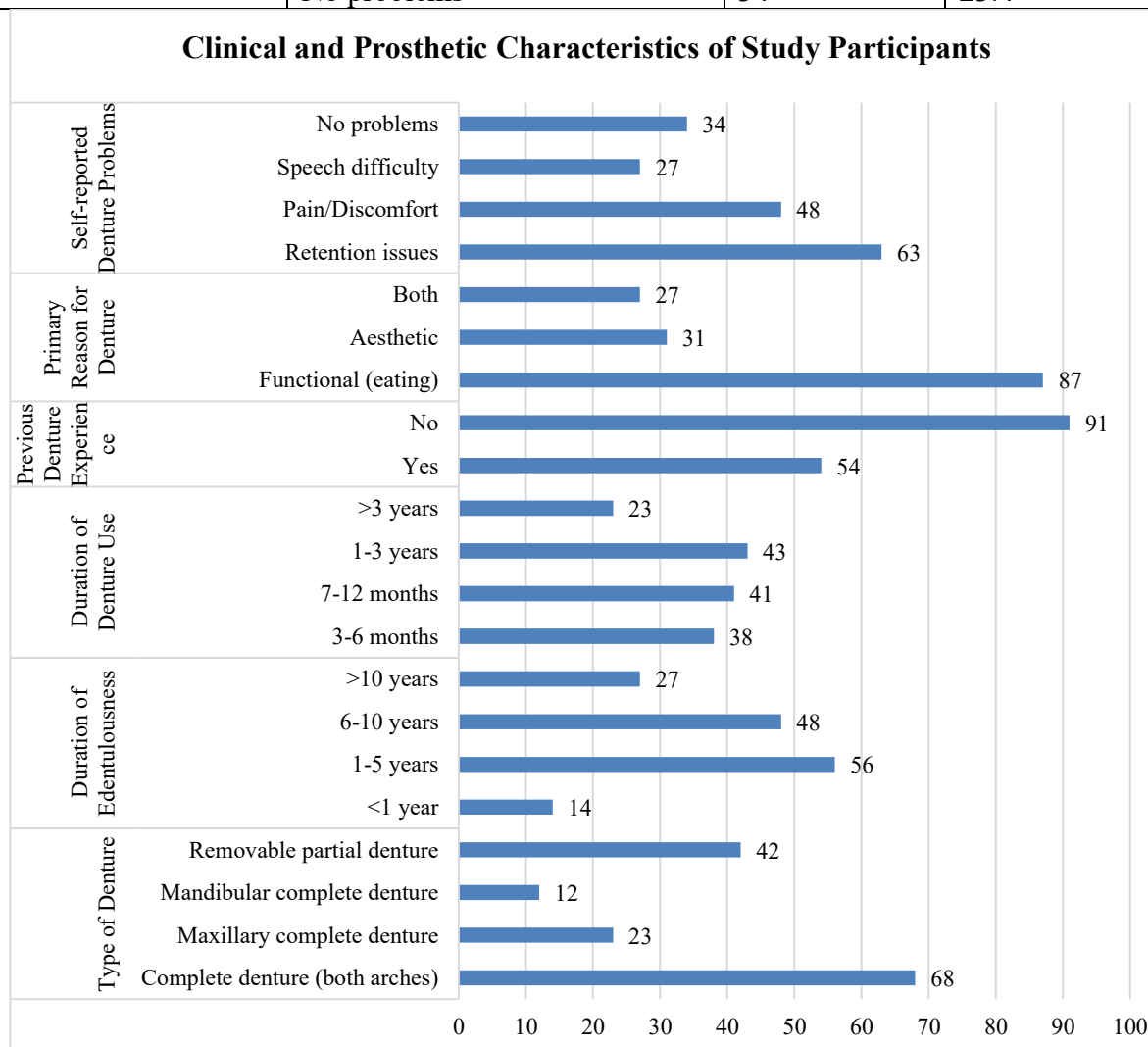


Fig: 2

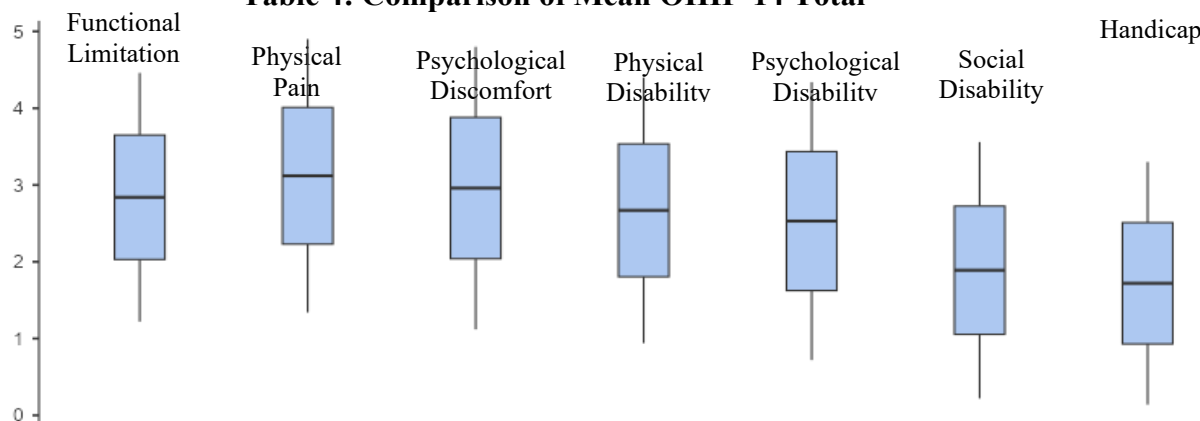
Table 3: Mean OHIP-14 Domain Scores and Total Score (N=145)

OHIP-14 Domain	Mean Score $\pm$ SD	Median	Range	Possible Score Range
Functional Limitation	2.84 $\pm$ 1.62	3.0	0-8	0-8
Physical Pain	3.12 $\pm$ 1.78	3.0	0-8	0-8
Psychological Discomfort	2.96 $\pm$ 1.84	3.0	0-8	0-8
Physical Disability	2.67 $\pm$ 1.73	2.0	0-8	0-8
Psychological Disability	2.53 $\pm$ 1.81	2.0	0-8	0-8

Social Disability	1.89 ± 1.67	2.0	0-7	0-8
Handicap	1.72 ± 1.58	1.0	0-7	0-8
Total OHIP-14 Score	17.73 ± 9.84	17.0	2-46	0-56

Cronbach's Alpha = 0.88

Table 4: Comparison of Mean OHIP-14 Total



Scores by Selected Variables (N=145)

Variable	Category	n	Mean OHIP-14 Score ± SD	p-value
Gender	Male	79	17.21 ± 9.52	0.372
	Female	66	18.36 ± 10.24	
Age Group	<60 years	85	15.84 ± 8.96	0.012*
	≥60 years	60	20.35 ± 10.38	
Education Level	Up to primary	74	20.42 ± 10.18	0.003*
	Secondary and above	71	14.94 ± 8.76	
Type of Denture	Complete denture	103	19.68 ± 9.87	0.001*
	Partial denture	42	12.86 ± 7.94	
Duration of Denture Use	<1 year	79	20.14 ± 9.96	0.005*
	≥1 year	66	14.89 ± 8.94	
Previous Denture Experience	Yes	54	14.72 ± 8.67	0.002*
	No	91	19.58 ± 10.12	
Socioeconomic Status	Lower	47	21.34 ± 10.42	0.008*
	Middle/Upper	98	16.02 ± 9.06	

*Statistically significant (p<0.05)

Table 5: Correlation Between Continuous Variables and OHIP-14 Total Score (N=145)

Variable	Correlation Coefficient (r)	p-value	Interpretation
Age	0.298	0.001*	Weak positive correlation
Duration of edentulousness	0.342	<0.001*	Weak positive correlation
Duration of denture use	-0.387	<0.001*	Weak negative correlation
Number of denture adjustments	0.421	<0.001*	Moderate positive correlation
Education years	-0.316	<0.001*	Weak negative correlation

*Statistically significant (p<0.05)

DISCUSSION

The present study revealed that patients wearing removable dentures at Peoples College of Medical Sciences and Research Centre, Bhopal, experienced a moderate impact on their oral health-related quality of life, with a mean OHIP-14 total score of 17.73 ± 9.84. This finding suggests that while

dentures provide functional and aesthetic restoration, they do not completely eliminate the negative impact of tooth loss on daily living. The moderate OHRQoL impairment observed in this study aligns with findings from various international and Indian studies that have documented the challenges faced by denture wearers. Emami et al. (2013) emphasized that edentulism and subsequent denture rehabilitation significantly affect multiple dimensions of patient well-being, extending beyond mere oral function. The internal consistency of the OHIP-14 in this study was excellent, with Cronbach's alpha of 0.88, confirming the reliability of the instrument in the Indian hospital setting and supporting its use for assessing OHRQoL in similar populations.

Among the seven domains assessed, physical pain emerged as the most affected dimension with the highest mean score of 3.12 ± 1.78 , followed by psychological discomfort (2.96 ± 1.84) and functional limitation (2.84 ± 1.62). This pattern indicates that the immediate physical consequences of denture wearing, such as mucosal irritation, pressure points, and chewing difficulties, constitute primary concerns for patients. These findings are consistent with research by John et al. (2004), who reported that physical pain and functional limitations were among the most commonly experienced problems in denture wearers, directly affecting their ability to perform daily activities comfortably. The relatively lower scores for social disability (1.89 ± 1.67) and handicap (1.72 ± 1.58) suggest that while patients experience physical and psychological challenges, these do not always translate into severe social consequences or feelings of disadvantage in this population. This could reflect cultural factors in the Indian context where tooth loss and denture use are more socially accepted, particularly among older adults, as suggested by Shah et al. (2017) in their community-based study on edentulousness in Indian elderly.

The study demonstrated a statistically significant difference in OHRQoL between complete denture wearers and partial denture wearers ($p=0.001$), with complete denture users reporting substantially higher OHIP-14 scores (19.68 ± 9.87) compared to those with partial dentures (12.86 ± 7.94). This finding underscores the greater challenges associated with complete edentulism and full prosthetic rehabilitation. The presence of natural teeth, even in limited numbers, provides proprioceptive feedback, better retention, and improved masticatory efficiency, which explains the superior quality of life experienced by partial denture wearers. This observation is strongly supported by the work of Heydecke et al. (2003), who found that the type of prosthetic rehabilitation significantly influenced patient-reported outcomes, with those retaining some natural teeth consistently reporting better oral health-related quality of life. Complete denture wearers face unique challenges including reduced retention (especially in the mandibular arch), decreased chewing efficiency, and greater psychological adjustment demands, all of which contribute to poorer OHRQoL scores.

The higher impact observed in complete denture wearers in this hospital-based sample may also reflect the demographic composition of patients seeking care at tertiary care institutions in India. Many of these patients arrive at advanced stages of oral disease, having experienced prolonged edentulousness before seeking treatment, which compounds adaptation difficulties. Reddy et al. (2012) noted in their epidemiological survey that delayed treatment-seeking behavior is common in India, particularly among economically disadvantaged populations, resulting in more severe conditions requiring complex rehabilitation. The 43.4% of participants reporting retention issues in the present study (Table 2) further explains the elevated OHIP-14 scores among complete denture wearers, as poor retention directly compromises both function and psychological comfort.

Age emerged as a significant factor influencing OHRQoL in this study, with participants aged 60 years and above reporting significantly higher OHIP-14 scores (20.35 ± 10.38) compared to younger individuals (15.84 ± 8.96 ; $p=0.012$). The positive correlation between age and OHIP-14 scores ($r=0.298$, $p=0.001$) indicates that older denture wearers experience greater quality of life impairment. This finding can be attributed to multiple age-related factors including reduced adaptive capacity, decreased manual dexterity affecting denture handling, diminished salivary flow compromising retention, and increased prevalence of chronic diseases that may indirectly affect oral health. However, this finding contrasts somewhat with observations by John et al. (2004), who suggested that older patients sometimes report better adaptation due to lower expectations and

greater acceptance of limitations. The discrepancy may reflect differences in study populations, healthcare systems, or cultural contexts between Western and Indian settings.

Education level showed a significant inverse relationship with OHRQoL impairment in the present study. Participants with up to primary education reported significantly higher OHIP-14 scores (20.42 ± 10.18) compared to those with secondary and above education (14.94 ± 8.76 ; $p=0.003$). This relationship was further confirmed by the negative correlation between education years and OHIP-14 scores ($r=-0.316$, $p<0.001$). Education influences health literacy, awareness of oral health maintenance, realistic treatment expectations, and effective communication with dental professionals, all of which facilitate better adaptation to dentures. Slade and Spencer (1994) in their foundational work on the OHIP emphasized that sociodemographic factors, particularly education, play a crucial role in shaping patient perceptions and experiences of oral health impacts. Higher education levels enable patients to better understand post-insertion instructions, recognize normal versus problematic symptoms, and seek timely adjustments when needed, thereby improving overall satisfaction and quality of life.

Socioeconomic status also significantly influenced OHRQoL outcomes, with participants from lower socioeconomic backgrounds reporting higher OHIP-14 scores (21.34 ± 10.42) compared to those from middle and upper socioeconomic groups (16.02 ± 9.06 ; $p=0.008$). Economic constraints may limit access to high-quality prosthetic materials, timely follow-up care, and replacement of worn dentures, all contributing to poorer outcomes. Additionally, lower socioeconomic status often correlates with nutritional deficiencies, poorer general health, and limited health literacy, compounding the challenges of denture adaptation. This finding resonates with observations by Khalifa et al. (2012) in their population health survey, which highlighted significant disparities in oral health outcomes based on socioeconomic factors, particularly in hospital-based settings that serve economically diverse populations.

The duration of denture use demonstrated a significant negative correlation with OHIP-14 scores ($r=-0.387$, $p<0.001$), indicating that patients wearing dentures for longer periods experienced better quality of life. Participants who had worn dentures for less than one year reported significantly higher OHIP-14 scores (20.14 ± 9.96) compared to those with one or more years of experience (14.89 ± 8.94 ; $p=0.005$). This pattern strongly suggests that adaptation improves over time as patients develop compensatory strategies, adjust their dietary habits, and become more skilled in denture handling and maintenance. Awad and Feine (1998) documented similar temporal improvements in patient satisfaction with mandibular prostheses, emphasizing that initial difficulties often diminish as wearers gain experience. The three-month minimum wearing period in the inclusion criteria was specifically designed to capture patients beyond the acute adjustment phase, yet the results demonstrate that adaptation continues well beyond this initial period.

Previous denture experience significantly influenced OHRQoL outcomes in this study. First-time denture wearers reported significantly higher OHIP-14 scores (19.58 ± 10.12) compared to those who had worn dentures previously (14.72 ± 8.67 ; $p=0.002$). This finding suggests that familiarity with removable prostheses facilitates better adaptation when patients receive new dentures, as they have already developed relevant coping strategies and have more realistic expectations about denture function and limitations. This aligns with clinical observations that experienced denture wearers typically require fewer adjustment appointments and report fewer complaints during the initial adaptation period. The 62.8% of participants in this study who were first-time denture wearers represents a substantial proportion facing the dual challenge of adjusting to tooth loss and learning to manage a removable prosthesis simultaneously.

Interestingly, the number of denture adjustments showed a moderate positive correlation with OHIP-14 scores ($r=0.421$, $p<0.001$), indicating that patients requiring more frequent adjustments experienced poorer quality of life. This relationship likely reflects underlying issues with denture fit, retention, or patient adaptation difficulties that necessitate repeated clinical interventions. While adjustments are intended to improve comfort and function, the need for multiple visits may indicate fundamental problems with the prosthesis or patient-related factors affecting successful

rehabilitation. This finding underscores the importance of meticulous clinical procedures during denture fabrication and the value of comprehensive patient counseling to minimize subsequent problems.

The present study found that 60% of participants cited functional concerns, primarily eating difficulties, as their primary motivation for seeking denture treatment, while aesthetic considerations were primary for only 21.4% of patients. This functional emphasis reflects the practical impact of tooth loss on nutrition and daily activities, particularly in a population where dietary habits include varied textures and consistencies requiring adequate masticatory function. However, the significant psychological discomfort scores (2.96 ± 1.84) observed in Table 3 indicate that aesthetic and social concerns remain important even when not explicitly stated as primary motivations. Locker and Allen (2007) discussed the multidimensional nature of OHRQoL constructs, noting that functional, psychological, and social aspects are deeply interconnected and cannot be entirely separated in patient experience.

The high proportion of patients reporting retention issues (43.4%) represents a significant clinical concern that directly impacts OHRQoL. Retention problems are particularly challenging in mandibular complete dentures due to unfavorable anatomical factors including reduced ridge height, mobile tissues, and the presence of the tongue. These mechanical difficulties directly affect patients' confidence in eating, speaking, and social interactions, contributing to elevated OHIP-14 scores. Esfandiari et al. (2009) explored how retention and stability issues profoundly influence patient preference and satisfaction, with many patients identifying these as the most problematic aspects of conventional complete dentures. The hospital setting of this study may have contributed to the high prevalence of retention issues, as patients attending tertiary care facilities often present with more challenging anatomical conditions resulting from prolonged edentulousness and residual ridge resorption.

The correlation between duration of edentulousness and poorer OHRQoL ($r=0.342$, $p<0.001$) highlights the importance of timely prosthetic intervention following tooth loss. Prolonged edentulousness leads to progressive alveolar ridge resorption, loss of vertical dimension, altered neuromuscular patterns, and psychological adjustment to the edentulous state, all of which complicate subsequent prosthetic rehabilitation. This finding supports the clinical recommendation for prompt replacement of missing teeth to preserve supporting structures and maintain oral function. The 18.6% of participants who had been edentulous for more than 10 years before receiving dentures in this study likely faced particularly challenging rehabilitation, requiring greater adaptation efforts and experiencing more significant quality of life impacts.

Unlike some previous studies, the present investigation found no statistically significant difference in OHIP-14 scores between male (17.21 ± 9.52) and female (18.36 ± 10.24) participants ($p=0.372$). This suggests that in this hospital-based population, both genders experienced similar levels of OHRQoL impairment related to denture use. However, the slightly higher scores among females, though not statistically significant, may reflect gender differences in willingness to report symptoms or different priorities regarding oral health concerns. Some research has suggested that women may be more attuned to aesthetic and social aspects of dental appearance, while men may focus more on functional concerns, but these potential differences did not translate into significant OHRQoL disparities in the current study.

The study included participants from both urban (61.4%) and rural (38.6%) areas, reflecting the diverse catchment area of the tertiary care hospital. While residential area was not analyzed as a primary variable in the comparison tables, the inclusion of rural patients is significant given that rural populations in India often face additional barriers to dental care including transportation difficulties, limited awareness of treatment options, and economic constraints. The hospital-based setting of this study provided an important opportunity to assess OHRQoL across diverse demographic groups, contributing to a more comprehensive understanding of denture-related quality of life issues in the Indian context.

CONCLUSION

This cross-sectional study revealed that removable denture wearers at a tertiary care hospital in Bhopal experienced moderate impairment in oral health-related quality of life, with physical pain and functional limitations being the most affected domains. Complete denture wearers, older individuals, those with lower education levels, first-time denture users, and patients from lower socioeconomic backgrounds reported significantly poorer OHRQoL outcomes. The study demonstrated that adaptation improves progressively with longer denture-wearing duration, and previous denture experience facilitates better quality of life. These findings underscore the multifactorial nature of denture-related quality of life and highlight the importance of patient-centered care that addresses not only technical aspects of prosthetic rehabilitation but also psychological, social, and functional concerns throughout the adaptation process.

RECOMMENDATIONS

Dental professionals should implement comprehensive patient education programs emphasizing realistic expectations, proper denture care, and dietary modifications to facilitate adaptation. Special attention should be directed toward vulnerable populations including first-time denture wearers, complete denture patients, elderly individuals, and those with limited education through extended counseling sessions and structured follow-up protocols. Future research should explore longitudinal changes in OHRQoL and evaluate interventions designed to enhance patient adaptation and satisfaction with removable prostheses in diverse Indian populations.

REFERENCES

1. Allen, P. F., & Locker, D. (2002). A modified short version of the oral health impact profile for assessing health-related quality of life in edentulous adults. *International Journal of Prosthodontics*, 15(5), 446-450.
2. Awad, M. A., & Feine, J. S. (1998). Measuring patient satisfaction with mandibular prostheses. *Community Dentistry and Oral Epidemiology*, 26(6), 400-405. <https://doi.org/10.1111/j.1600-0528.1998.tb01977.x>
3. Basavaraj, P., Bhat, M., Navneetham, A., & Nagesh, K. S. (2014). Correlation between oral health and Oral Health-Related Quality of Life among subjects with gingival diseases. *Journal of Indian Society of Periodontology*, 18(1), 32-37. <https://doi.org/10.4103/0972-124X.128197>
4. Bhat, V. S., Sujatha, B. K., Nagesh, K. S., & Krishnamurthy, N. H. (2005). Assessing oral health related quality of life instruments: A critical review. *Journal of Dentistry and Oral Hygiene*, 6(2), 29-34.
5. Campos, C. H., Ribeiro, G. R., Rodrigues Garcia, R. C., & Santos, C. M. (2009). Rehabilitating the edentulous mandible with conventional dentures, overdentures, or fixed prostheses: A systematic review. *Brazilian Dental Science*, 12(1), 4-12.
6. Emami, E., de Souza, R. F., Kabawat, M., & Feine, J. S. (2013). The impact of edentulism on oral and general health. *International Journal of Dentistry*, 2013, 498305. <https://doi.org/10.1155/2013/498305>
7. Esfandiari, S., Lund, J. P., Penrod, J. R., Savard, A., Thomason, J. M., & Feine, J. S. (2009). Implant overdentures for edentulous elders: Study of patient preference. *Gerodontology*, 26(1), 3-10. <https://doi.org/10.1111/j.1741-2358.2008.00226.x>
8. Farrokh-Eslamlou, H., Aghlmand, S., Ghofranipour, F., & Amini, L. (2013). Sampling methods in reproductive health research. *Archives of Advances in Biosciences*, 4(1), 14-20.
9. Goiato, M. C., Bannwart, L. C., Pesqueira, A. A., dos Santos, D. M., Haddad, M. F., & Bannwart, M. R. (2014). Immediate versus conventional dentures: A comparative study. *Acta Odontologica Latinoamericana*, 27(3), 133-137. <https://doi.org/10.1590/S1852-48342014000300006>

10. Heydecke, G., Locker, D., Awad, M. A., Lund, J. P., & Feine, J. S. (2003). Oral and general health-related quality of life with conventional and implant dentures. *Community Dentistry and Oral Epidemiology*, 31(3), 161-168. <https://doi.org/10.1034/j.1600-0528.2003.00029.x>
11. John, M. T., Koepsell, T. D., Hujoel, P., Miglioretti, D. L., LeResche, L., & Micheelis, W. (2004). Demographic factors, denture status and oral health-related quality of life. *Community Dentistry and Oral Epidemiology*, 32(2), 125-132. <https://doi.org/10.1111/j.0301-5661.2004.00144.x>
12. Khalifa, N., Allen, P. F., Abu-bakr, N. H., & Abdel-Rahman, M. E. (2012). A survey of oral health in a Sudanese population. *BMC Oral Health*, 12(1), 5. <https://doi.org/10.1186/1472-6831-12-5>
13. Locker, D., & Allen, F. (2007). What do measures of 'oral health-related quality of life' measure? *Community Dentistry and Oral Epidemiology*, 35(6), 401-411. <https://doi.org/10.1111/j.1600-0528.2007.00418.x>
14. Mann, C. J. (2003). Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emergency Medicine Journal*, 20(1), 54-60. <https://doi.org/10.1136/emj.20.1.54>
15. McGrath, C., & Bedi, R. (2001). Can dentures improve the quality of life of those who have experienced considerable tooth loss? *Journal of Dentistry*, 29(4), 243-246. [https://doi.org/10.1016/S0300-5712\(01\)00012-8](https://doi.org/10.1016/S0300-5712(01)00012-8)
16. Patel, J., Mowbray, N., & Waldron, M. (2020). What can we learn about patient satisfaction from free-text NHS Friends and Family Test feedback? *The Bulletin of the Royal College of Surgeons of England*, 102(1), 23-27. <https://doi.org/10.1308/rcsbull.2020.7>
17. Reddy, N. S., Reddy, N. A., Narendra, R., & Reddy, D. S. (2012). Epidemiological survey on edentulousness. *Contemporary Clinical Dentistry*, 3(Suppl 1), S114-S117. <https://doi.org/10.4103/0976-237X.95122>
18. Shah, N., Parkash, H., & Sunderam, K. R. (2017). Edentulousness, denture wear and denture needs of Indian elderly: A community-based study. *Journal of Oral Rehabilitation*, 31(5), 467-476. <https://doi.org/10.1111/j.1365-2842.2004.01284.x>
19. Slade, G. D. (1997). Derivation and validation of a short-form oral health impact profile. *Community Dentistry and Oral Epidemiology*, 25(4), 284-290. <https://doi.org/10.1111/j.1600-0528.1997.tb00941.x>
20. Slade, G. D., & Spencer, A. J. (1994). Development and evaluation of the Oral Health Impact Profile. *Community Dental Health*, 11(1), 3-11.
21. Thomason, J. M., Heydecke, G., Feine, J. S., & Ellis, J. S. (2007). How do patients perceive the benefit of reconstructive dentistry with regard to oral health-related quality of life and patient satisfaction? A systematic review. *Clinical Oral Implants Research*, 18(Suppl 3), 168-188. <https://doi.org/10.1111/j.1600-0501.2007.01461.x>
22. World Medical Association. (2013). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA*, 310(20), 2191-2194. <https://doi.org/10.1001/jama.2013.281053>
23. Zembic, A., Wismeijer, D., & Wismeijer, D. (2015). Patient-reported outcomes and prosthetic complications in a clinical trial comparing single implant crowns supported by a novel implant design vs. conventional implant design. *Clinical Oral Implants Research*, 26(6), 631-638. <https://doi.org/10.1111/clr.12349>