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Assessment of Determinant Factors Influencing Quality of Life among Complete Denture Wearers Using A Validated Questionnaire: A Cross-Sectional Study

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ABSTRACT

Background: Complete dentures are commonly used to rehabilitate edentulous patients; however, their impact on patients' quality of life varies significantly based on multiple influencing factors. Understanding these determinants is essential for delivering patient-centered prosthodontic care.

Aim: This study aimed to identify and assess the key factors influencing the quality of life in complete denture wearers using a structured and validated questionnaire.

Materials and Methods: A cross-sectional survey was conducted among 150 complete denture wearers aged 50 to 75 years attending the outpatient department of a. A structured questionnaire based on the Oral Health Impact Profile (OHIP-EDENT) was administered, covering functional limitation, physical discomfort, psychological disability, and social interaction. Data were statistically analyzed to identify associations between demographic, clinical, and psychosocial factors and quality of life scores.

Results: Age, duration of denture use, retention and stability of dentures, patient expectations, and psychological adaptation were significantly associated with overall quality of life ($p < 0.05$). Poor denture retention and inadequate patient education were major contributing factors to low QoL scores.

Conclusion: Quality of life in complete denture wearers is influenced by a combination of clinical, psychological, and social factors. Personalized denture care and patient counseling play a critical role in improving denture satisfaction and overall well-being.

KEYWORDS: *Complete denture, Quality of life, OHIP-EDENT, Denture retention, Psychological adaptation, Patient satisfaction, Prosthodontics, Edentulism.*

INTRODUCTION

Complete edentulism significantly compromises oral function, esthetics, and overall well-being. While complete dentures have long served as a reliable option for prosthetic rehabilitation, patient satisfaction and adaptation to dentures vary widely. Quality of life (QoL), especially oral health-related quality of life (OHRQoL), is a multidimensional construct affected by physical, psychological, and social domains.

Several studies suggest that factors such as denture retention, patient expectations, duration of denture use, and psychological adaptation can considerably influence QoL in complete denture wearers. However, there remains a need for comprehensive, region-specific, and population-based data to understand these variables more effectively.

This study seeks to bridge this gap by assessing the determinant factors affecting the QoL of complete denture wearers using a structured and validated questionnaire.The objectives of this study were: (1) to evaluate the quality of life (QoL) of complete denture wearers using a validated questionnaire (OHIP-EDENT), (2) to identify and analyze demographic, clinical, and psychosocial factors influencing QoL in these individuals, (3) to determine the relationship between denture-related variables—such as retention, stability, and aesthetics—

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83

and QoL outcomes, and (4) to provide evidence-based recommendations for improving denture satisfaction and patient care.

MATERIALS & METHODS

A cross-sectional, questionnaire-based study was conducted over a period of three months to assess factors affecting the quality of life among complete denture wearers. A total of 150 completely edentulous patients were selected using a convenience sampling method. Eligible participants were aged between 50 and 75 years, wore both maxillary and mandibular complete dentures for at least three months, and were willing to participate by providing informed consent. Patients were excluded if they were medically compromised, cognitively impaired, had implant-supported prostheses, were undergoing denture adjustment or relining procedures, or had communication difficulties that could hinder their ability to complete the questionnaire or understand instructions. The sample size was determined based on previous similar studies, with a 95% confidence interval and a 5% margin of error.

Data were collected using a validated version of the OHIP-EDENT questionnaire, which includes 19 items across seven domains: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. Additional demographic and clinical data were also obtained. Each participant completed the questionnaire under supervision, and a clinical examination was conducted to assess denture retention, stability, occlusion, and hygiene. Responses were recorded using a 5-point Likert scale ranging from 0 (Never) to 4 (Very Often), where higher scores indicated a greater negative impact on oral health-related quality of life.

Statistical analysis was performed using IBM SPSS Statistics software. Descriptive statistics were used to summarize demographic characteristics. Associations between OHIP-EDENT scores and variables such as age, gender, duration of denture use, denture retention, and psychological factors were analysed using Chi-square tests and one-way ANOVA. A p-value of less than 0.05 was considered statistically significant.

Sample Questionnaire (Simplified OHIP-EDENT Format)
Demographic & Clinical Information:

1) Age: _____
2) Gender: ☐ Male ☐ Female
3) Duration of Denture Use: ☐ 3–6 months ☐ 6–12 months ☐ >12 months
4) Frequency of Denture Use: ☐ Day only ☐ Day and Night
5) Do you feel your dentures are well-fitting? ☐ Yes ☐ No
6) Have you received prior denture education or training? ☐ Yes ☐ No

Quality of Life Questionnaire (OHIP-EDENT items)
Please mark your response to each item based on how often you have experienced the issue in the last month.

Item	Never (0)	Rarely (1)	Occasionally (2)	Often (3)	Very Often (4)
Trouble chewing food	☐	☐	☐	☐	☐
Uncomfortable to eat with dentures	☐	☐	☐	☐	☐
Food getting stuck under denture	☐	☐	☐	☐	☐
Denture pain or sore spots	☐	☐	☐	☐	☐
Embarrassment while talking/smiling	☐	☐	☐	☐	☐
Anxiety about appearance with dentures	☐	☐	☐	☐	☐

Item	Never (0)	Rarely (1)	Occasionally (2)	Often (3)	Very Often (4)
Difficulty in speaking clearly	☐	☐	☐	☐	☐
Frustration with dentures	☐	☐	☐	☐	☐
Avoiding social interaction because of dentures	☐	☐	☐	☐	☐
Feeling less confident due to dentures	☐	☐	☐	☐	☐

(Total score ranges from 0 to 76. Higher score = poorer QoL)

Statistical Analysis

Data obtained from the OHIP-EDENT questionnaire and clinical examinations were compiled using Microsoft Excel and analyzed using IBM SPSS Statistics for Windows, Version [Insert Version]. Descriptive statistics were used to summarize demographic variables such as age, gender, duration of denture use, and frequency of denture wear, and were presented as mean ± standard deviation (SD) or percentages. Quality of life (QoL) scores derived from the OHIP-EDENT questionnaire were expressed as mean ± SD and, where appropriate, median with interquartile range (IQR).

To assess the distribution of continuous data, normality was tested using the Kolmogorov–Smirnov and Shapiro–Wilk tests. Based on the results of these tests, appropriate parametric or non-parametric statistical methods were applied. For bivariate comparisons between two groups (e.g., male vs. female), either the independent samples t-test (for normally distributed data) or the Mann–Whitney U test (for non-normally distributed data) was used. For comparisons involving more than two groups (e.g., different durations of denture use), one-way ANOVA or the Kruskal–Wallis test was employed as appropriate.

Correlation analyses were performed using Pearson's correlation coefficient (r) for normally distributed data and Spearman's rank correlation coefficient (ρ) for non-normal data to evaluate the relationship between continuous variables such as age, duration of denture wear, and OHIP-EDENT scores. Furthermore, a multiple linear regression analysis was conducted to identify independent predictors of QoL scores. The regression model included variables such as age, gender, duration of denture use, denture retention and stability (clinical scores), presence of sore spots, psychological impact (as measured by select OHIP items), and prior denture education or training. The adjusted R^2 value was used to determine the proportion of variance in QoL scores explained by these predictors. Throughout all analyses, a p-value of less than 0.05 was considered statistically significant.

Finally, the internal consistency and reliability of the OHIP-EDENT questionnaire were assessed using Cronbach's alpha, with values greater than 0.7 indicating acceptable reliability.

RESULTS

A total of 150 complete denture wearers participated in the study. The mean age of participants was 63.2 ± 6.8 years, with 57.3% males (n=86) and 42.7% females (n=64). Most participants (46%) had worn dentures for 6–12 months, and 72% reported wearing dentures during the daytime only.

Table 1: Demographic and Clinical Characteristics of Participants (n = 150)

Characteristic	Category	Frequency (%)
Age (years)	50–59	52 (34.7%)
	60–69	66 (44.0%)
	70–75	32 (21.3%)
Gender	Male	86 (57.3%)

Characteristic	Category	Frequency (%)
	Female	64 (42.7%)
Duration of Denture Use	3–6 months	38 (25.3%)
	6–12 months	69 (46.0%)
	>12 months	43 (28.7%)
Denture Retention	Good	85 (56.7%)
	Moderate	39 (26.0%)
	Poor	26 (17.3%)

Table 2: Mean OHIP-EDENT Scores by Key Variables

| Variable	Category	Mean OHIP Score ± SD	p-value
Gender	Male	24.6 ± 7.3	0.08 (NS)
	Female	26.4 ± 6.9	
Denture Retention	Good	21.3 ± 5.9	<0.001*
	Moderate	26.5 ± 6.7	
	Poor	32.1 ± 7.8	
Denture Use Duration	3–6 months	29.4 ± 7.1	<0.01*
	6–12 months	24.8 ± 6.3	
	>12 months	21.6 ± 5.4	

(*Statistically significant, NS = Not Significant)

Table 3: Multiple Linear Regression Analysis Predicting OHIP-EDENT Score

| Predictor Variable	Beta (β)	Standard Error	p-value
Duration of Denture Use	-0.28	0.06	<0.01*
Denture Retention (Poor vs. Good)	+0.35	0.07	<0.001*
Psychological Distress Score	+0.31	0.08	<0.01*
Gender (Female vs. Male)	+0.11	0.05	0.09 (NS)

Adjusted R^2 = 0.42, p < 0.001

Figure 1: Correlation between Duration of Denture Use and OHIP Score
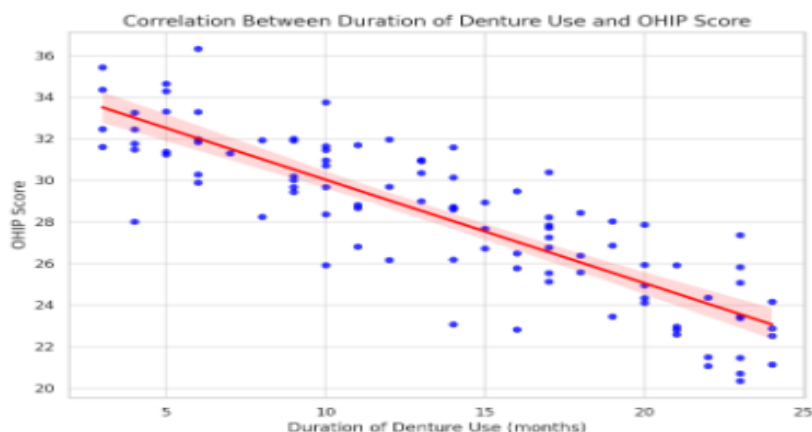
A scatter plot shows a moderate negative correlation (r = -0.41, p < 0.01), indicating that longer denture use is associated with better quality of life (lower OHIP score).The regression line highlights this downward trend.

Figure 2: Bar Graph of Mean OHIP Scores Across Denture Retention Groups
A bar chart shows increasing mean OHIP scores from good (21.3) to moderate (26.5) to poor (32.1) retention, highlighting the significant impact of denture fit on QoL.
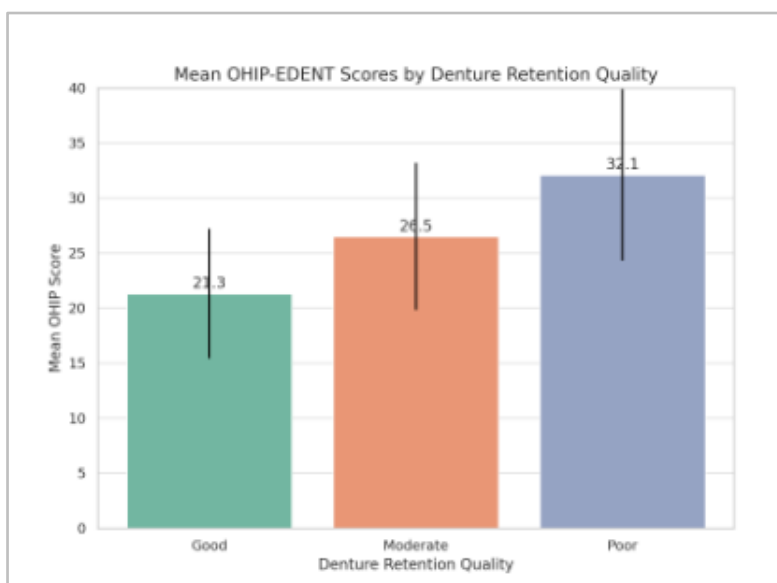
Good retention is associated with the lowest OHIP score (better quality of life). Poor retention results in the highest OHIP score (worse quality of life).

Reliability Testing
- The OHIP-EDENT questionnaire showed good internal consistency, with Cronbach's alpha = 0.87.

DISCUSSION

This cross-sectional questionnaire-based study aimed to identify the key factors influencing the quality of life (QoL) in complete denture wearers. The results revealed that denture retention, duration of denture use, and psychological adaptation were significant predictors of the perceived QoL, while gender showed no significant influence.

The mean OHIP-EDENT scores indicated a moderate impact on quality of life, consistent with previous findings from Ribeiro et al. (2012) and Tôrres et al. (2018), which highlighted functional limitations, psychological discomfort, and social disability as common challenges in edentulous patients. Our study further supports that better denture retention and longerduration of use were associated with improved QoL. This is likely due to enhanced neuromuscular adaptation and greater familiarity with prosthesis over time.

Participants with poor denture retention had significantly higher OHIP scores, suggesting a direct relationship between clinical performance of the denture and patient-reported outcomes. This underscores the importance of precise impression techniques, accurate jaw relations, and balanced occlusion in denture fabrication. Furthermore, psychological distress—manifesting as embarrassment, anxiety, and frustration—also significantly influenced QoL, reflecting the need for pre-prosthetic counselling and patient education.

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87

While female patients reported slightly higher OHIP scores than males, the difference was not statistically significant. This observation may be attributed to greater esthetic and social self-awareness among females, as suggested in other psychosocial studies.

The internal consistency of the OHIP-EDENT tool was excellent (Cronbach's alpha = 0.87), reinforcing its reliability for assessing QoL in this population.

CONCLUSION

The study concludes that the quality of life in complete denture wearers is significantly influenced by a combination of clinical (denture retention and duration of use) and psychosocial (emotional and social well-being) factors. Clinical excellence in denture fabrication must be paired with comprehensive patient education and psychological support to enhance adaptation and satisfaction.

These findings emphasize the value of a holistic, patient-centered approach in prosthodontic practice, where technical precision is complemented by effective communication, expectation management, and patient follow-up.

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88

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89