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ASSESSMENT OF ORAL HEALTH-RELATED QUALITY OF LIFE AMONG PATIENTS RECEIVING PROSTHODONTIC TREATMENT: A PROSPECTIVE STUDY

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ABSTRACT

Tooth loss is a common oral health problem that can significantly affect an individual's ability to chew, speak, and maintain facial aesthetics, thereby negatively influencing psychological well-being, social interactions, and overall quality of life. Prosthodontic rehabilitation plays a critical role in restoring oral function and appearance through the replacement of missing teeth and supporting structures. A total of 120 patients receiving prosthodontic treatment completed the OHIP-14 questionnaire before treatment and during the post-treatment follow-up period. Changes in overall and domain-specific OHIP-14 scores were evaluated using paired statistical tests, and factors influencing the magnitude of improvement were examined. The results demonstrated a substantial and statistically significant improvement in patient-reported quality of life following prosthodontic rehabilitation. Mean total OHIP-14 scores decreased from 24 before treatment to 11 after treatment, indicating a marked reduction in the negative impact of oral health problems on daily life ($p < 0.001$). Significant improvements were observed across all OHIP-14 domains, reflecting enhanced oral function, reduced pain and discomfort, improved psychological well-being, greater social confidence, and better overall life satisfaction. Patients with greater baseline impairment experienced larger improvements in quality of life, suggesting that those with the greatest treatment need derived the most benefit from rehabilitation. Furthermore, individuals who underwent complete prosthodontic rehabilitation demonstrated significantly greater gains than those receiving more limited treatment. These findings highlight the substantial positive impact of prosthodontic care on patient-centred outcomes and emphasize the importance of considering quality-of-life measures alongside traditional clinical indicators when evaluating treatment success. In conclusion, prosthodontic rehabilitation significantly enhances oral health-related quality of life across multiple functional, psychological, and social dimensions, underscoring its value in restoring not only oral health but also overall well-being and quality of life. The results support the continued integration of patient-reported outcome measures such as the OHIP-14 into routine prosthodontic assessment and clinical decision-making.

KEY WORDS: Oral health-related quality of life; OHIP-14; Prosthodontic treatment; Tooth loss; Dentures; Patient-reported outcomes.

INTRODUCTION

Tooth loss remains a prevalent oral health problem worldwide and continues to pose significant challenges to functional ability, aesthetics, and overall well-being. The loss of natural teeth can adversely affect essential oral functions such as mastication and speech, while also altering facial appearance and self-confidence, leading to

social embarrassment, reduced self-esteem, and diminished quality of life [1,2]. These consequences often extend beyond physical impairment, influencing psychological health, interpersonal relationships, and daily activities. Prosthodontic rehabilitation, encompassing both removable and fixed prosthetic treatments, plays a crucial role in

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restoring oral function, improving facial aesthetics, and enhancing patient comfort and confidence [3]. While traditional assessments of prosthodontic treatment outcomes have largely focused on clinical parameters such as prosthesis stability, retention, and functional performance, increasing emphasis has been placed on patient-centred outcomes that reflect the individual's perception of treatment benefit. Oral health-related quality of life (OHRQoL) has emerged as a valuable construct for evaluating the broader impact of oral health conditions and dental interventions on an individual's physical, psychological, and social well-being. Among the available assessment tools, the Oral Health Impact Profile-14 (OHIP-14) is one of the most widely validated and frequently used instruments for measuring OHRQoL. The OHIP-14 evaluates seven dimensions of oral health impact, including functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap, thereby providing a comprehensive assessment of the patient's experience and perceived quality of life [4,5]. Previous studies have consistently demonstrated that prosthodontic rehabilitation can improve OHRQoL by reducing oral health-related problems and enhancing functional and psychosocial outcomes. However, the magnitude of improvement varies according to several factors, including the type of prosthesis provided, the severity of baseline impairment, patient expectations, adaptation to the prosthesis, treatment complexity, and socioeconomic factors [6,7]. Understanding these variations is important for optimizing treatment planning, improving patient counselling, and evaluating the effectiveness of prosthodontic services. Furthermore, documenting changes in OHRQoL before and after treatment provides valuable evidence regarding the real-world benefits of prosthodontic care and supports the integration of patient-reported outcome measures into routine clinical practice and healthcare evaluation [8]. In light of the growing emphasis on patient-centred dentistry, the present prospective study was undertaken to assess oral health-related quality of life among patients undergoing prosthodontic rehabilitation. The primary objective was to compare overall OHIP-14 scores before and after prosthodontic treatment, while secondary objectives included evaluating changes in individual OHIP-14 domains and identifying factors associated with greater improvements in quality of life. The study tested the null hypothesis (H_0) that OHIP-14 scores would not change following prosthodontic treatment against the alternative hypothesis (H_1) that prosthodontic rehabilitation would result in significant improvements in oral health-related quality of life.

MATERIALS AND METHODS

This prospective observational study was conducted and reported in accordance with the

Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines to ensure methodological rigor and transparent reporting. Participants were assessed at baseline prior to treatment and subsequently reassessed during a follow-up visit, typically conducted between one and three months after delivery of the prosthesis, allowing sufficient time for functional adaptation and patient acclimatization. Ethical approval for the study was obtained from the Institutional Ethics Committee and written informed consent was secured from all participants before enrollment. The study adhered to the ethical principles outlined in the Declaration of Helsinki for research involving human participants. Eligible participants included adults receiving prosthodontic rehabilitation in the form of complete dentures, removable partial dentures, or fixed prosthetic restorations. Patients were excluded if they were unable to comprehend or complete the study questionnaire, had major medical, neurological, or psychiatric conditions that could influence self-reported outcomes, or failed to complete the scheduled follow-up assessment. A total of 120 patients fulfilling the eligibility criteria were enrolled and completed the study protocol. The primary outcome measure was oral health-related quality of life, which was assessed using the validated Oral Health Impact Profile-14 (OHIP-14) questionnaire. The OHIP-14 consists of 14 items distributed across seven domains, namely functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. Each item is scored on a Likert scale reflecting the frequency of oral health-related problems, with higher total scores indicating poorer oral health-related quality of life and greater negative impact on daily functioning and well-being [9]. The questionnaire was administered under standardized conditions before treatment and repeated at follow-up using the same instrument to ensure consistency and comparability of measurements. Sample size estimation indicated that approximately 66 participants would be required to detect a clinically meaningful paired difference in OHIP-14 total scores corresponding to an effect size (d_z) of 0.4, with a significance level of 0.05 and statistical power of 90%. To compensate for potential attrition, missing data, and planned subgroup analyses according to prosthesis type and baseline characteristics, a larger sample of 120 participants was recruited. Statistical analyses were performed using continuous variables were summarized as means and standard deviations or medians and interquartile ranges depending on data distribution, while categorical variables were expressed as frequencies and percentages. [10-12] Comparisons between pre-treatment and post-treatment OHIP-14 total scores were conducted using paired t-tests for normally distributed data or Wilcoxon signed-rank tests for non-normally distributed data. Similar analyses

were performed for each OHIP-14 domain to evaluate domain-specific changes following rehabilitation. To identify factors associated with the magnitude of improvement in OHRQoL, regression analyses were undertaken incorporating relevant demographic, clinical, and treatment-related variables. All statistical tests were two-sided, and a p-value of less than 0.05 was considered statistically significant.

RESULTS

Participant characteristics

Of 120 patients (mean age 56 ± 12 years; 64 [53%] female), 48 (40%) received complete dentures, 50 (42%) partial dentures, and 22 (18%) fixed prostheses. Baseline OHIP-14 total score was 24 ± 7 (Table 1).

A total of 120 patients undergoing prosthodontic rehabilitation completed both baseline and follow-up assessments and were included in the final analysis. Evaluation of oral health-related quality of life using the Oral Health Impact Profile-14 (OHIP-14) demonstrated a substantial and statistically significant improvement following treatment. The mean total OHIP-14 score decreased from 24 ± 7 before treatment to 11 ± 5 after treatment, representing a marked reduction in the negative impact of oral health problems on daily life and indicating significantly improved oral health-related quality of life ($p < 0.001$). Analysis of individual OHIP-14 domains revealed significant improvements across all dimensions assessed. Functional limitation scores decreased from 5.8 ± 2.0 before treatment to 2.6 ± 1.5 after treatment ($p < 0.001$), suggesting enhanced ability to perform routine oral functions such as chewing and speaking. Similarly, physical pain scores improved significantly, declining from 5.2 ± 1.9 to 2.4 ± 1.4 ($p < 0.001$), indicating substantial relief from oral discomfort and pain-related limitations. Psychological discomfort also showed marked improvement, with mean scores decreasing from 4.9 ± 1.8 before treatment to 2.1 ± 1.3

after treatment ($p < 0.001$), reflecting greater confidence, reduced anxiety, and improved emotional well-being following prosthodontic rehabilitation. The combined domain of social disability and handicap exhibited one of the largest improvements, with scores decreasing from 7.7 ± 2.6 at baseline to 3.2 ± 1.8 during follow-up ($p < 0.001$), highlighting the positive impact of treatment on social interactions, self-esteem, and participation in daily activities. Overall, the findings indicate that prosthodontic rehabilitation resulted in meaningful improvements across functional, physical, psychological, and social aspects of quality of life. Subgroup analyses further demonstrated that all categories of prosthodontic treatment were associated with significant gains in OHIP-14 scores. Patients receiving complete dentures experienced the greatest mean improvement, with a reduction of 15.2 points in total OHIP-14 scores ($p < 0.001$), followed by those receiving partial dentures, who demonstrated a mean improvement of 12.6 points ($p < 0.001$). Patients treated with fixed prostheses also experienced substantial benefits, with a mean improvement of 11.1 points ($p < 0.001$). Furthermore, individuals with greater baseline impairment exhibited larger improvements following treatment, suggesting that patients with more severe pre-treatment functional and psychosocial limitations derived the greatest benefit from prosthodontic rehabilitation. Collectively, these results demonstrate that prosthodontic treatment significantly enhances oral health-related quality of life and provides meaningful patient-centred benefits across a broad range of functional and psychosocial outcomes.

Domain-level and subgroup improvement

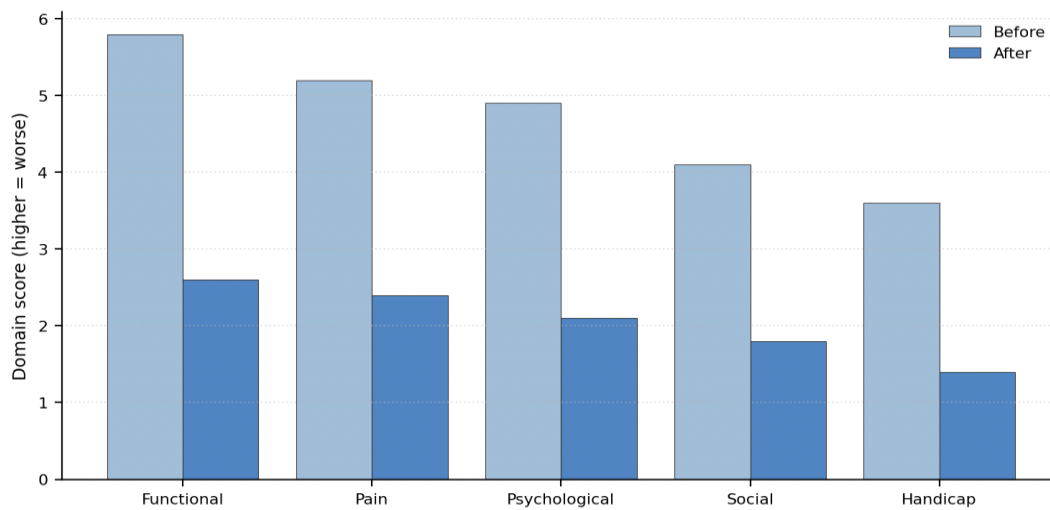
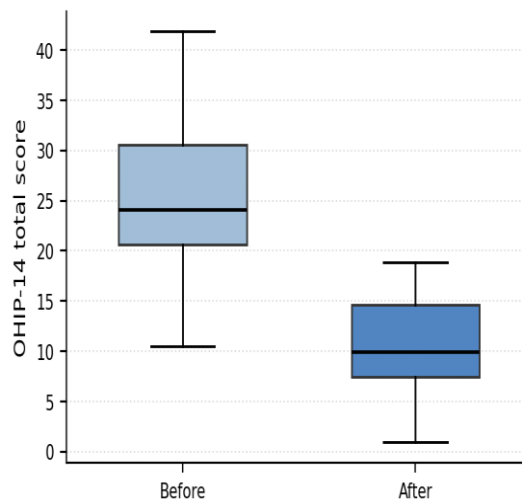
All domains improved after treatment (Figures 1–2). Greater baseline impairment and complete rehabilitation were associated with larger improvements (Table 2).

Table 1: OHIP-14 scores before and after treatment (n = 120).

Score	Before	After	p
OHIP-14 total	24 ± 7	11 ± 5	<0.001
Functional limitation	5.8 ± 2.0	2.6 ± 1.5	<0.001
Physical pain	5.2 ± 1.9	2.4 ± 1.4	<0.001
Psychological discomfort	4.9 ± 1.8	2.1 ± 1.3	<0.001
Social disability/handicap	7.7 ± 2.6	3.2 ± 1.8	<0.001

Table 2: Mean OHIP-14 improvement by prosthesis type.

Prosthesis type	Mean improvement (points)	p
Complete dentures (n = 48)	15.2	<0.001
Partial dentures (n = 50)	12.6	<0.001
Fixed prostheses (n = 22)	11.1	<0.001

Figure 1. OHIP-14 domain scores before and after prosthodontic treatment**Figure 2. OHIP-14 total score before and after treatment**

DISCUSSION

The findings of the present prospective study demonstrate that prosthodontic rehabilitation leads to substantial and clinically meaningful improvements in oral health-related quality of life (OHRQoL), as evidenced by significant reductions in overall OHIP-14 scores and consistent improvements across all evaluated domains. The marked decrease in OHIP-14 total scores following treatment indicates that prosthodontic rehabilitation effectively alleviates the functional, physical, psychological, and social burdens associated with tooth loss and oral disability. These results support previous research showing that successful replacement of missing teeth can significantly enhance patient well-being and reinforce the

patient-centred value of prosthodontic care [13]. The observed improvements are likely attributable to the restoration of essential oral functions, including mastication, speech, and oral comfort, together with the aesthetic benefits associated with replacing missing teeth. Improved appearance and facial support may enhance self-confidence and self-esteem, reduce psychological distress, and facilitate more positive social interactions. Consequently, patients may experience not only better oral function but also greater emotional well-being and social participation, which is reflected in the significant improvements observed across all OHIP-14 domains [14-15]. The reductions in scores related to functional limitation and physical pain suggest that prosthodontic treatment effectively addressed

difficulties in chewing, speaking, and oral discomfort, while improvements in psychological discomfort, social disability, and handicap indicate enhanced confidence, reduced self-consciousness, and improved engagement in everyday activities. Furthermore, the finding that patients with greater baseline impairment experienced larger improvements is consistent with previous studies and suggests that individuals with the most severe functional and psychosocial limitations have the greatest potential to benefit from rehabilitation. Similarly, participants who underwent complete prosthodontic rehabilitation demonstrated larger gains in quality of life compared with those receiving partial rehabilitation or fixed prostheses, possibly because complete restoration addresses a broader range of functional and aesthetic deficits and therefore offers greater opportunities for improvement. These findings highlight the importance of considering patient-specific needs and baseline oral health status when planning treatment and discussing expected outcomes. The results also emphasize the value of incorporating patient-reported outcome measures into routine prosthodontic practice. While clinical indicators such as prosthesis retention, stability, fit, and longevity remain important measures of treatment success, they do not fully capture the patient's perception of benefit and overall satisfaction. Instruments such as the OHIP-14 provide valuable insight into the real-world impact of treatment on daily life and can assist clinicians in evaluating treatment effectiveness, monitoring patient adaptation, and improving patient counselling and shared decision-making processes [16]. Several strengths support the validity of the present study, including its prospective design, assessment of patients before and after treatment, use of a validated and widely accepted OHRQoL instrument, and detailed domain-level analysis. However, certain limitations should be acknowledged. The absence of a non-treatment control group limits the ability to establish definitive causal relationships between treatment and observed improvements. In addition, the single-centre setting may reduce the generalizability of the findings to other populations and healthcare environments. The relatively short follow-up period may not fully capture long-term adaptation to prostheses, changes in patient expectations, or potential declines in satisfaction over time. Furthermore, because OHRQoL assessments rely on self-reported responses, the findings may be influenced by individual perceptions, expectations, and response bias. Attrition and loss to follow-up, although minimized in the present study, may also have affected outcome estimates. Future research should include longer-term longitudinal studies and multicentre investigations to evaluate the durability of OHRQoL improvements over time. [17] Comparative studies examining different prosthesis types, implant-supported restorations, digital prosthodontic approaches, and patient-specific factors influencing

adaptation would further enhance understanding of quality-of-life outcomes following rehabilitation. Overall, the present findings provide strong evidence that prosthodontic treatment significantly improves oral health-related quality of life and underscore the importance of integrating patient-reported outcomes into the evaluation and delivery of prosthodontic care.

CONCLUSION

The findings of this prospective study demonstrate that prosthodontic rehabilitation produces substantial and clinically meaningful improvements in oral health-related quality of life among patients with tooth loss and associated functional limitations. Significant reductions in OHIP-14 scores were observed following treatment, indicating marked enhancement across all assessed domains, including functional limitation, physical pain, psychological discomfort, social disability, and overall handicap. These improvements reflect the ability of prosthodontic treatment to restore essential oral functions such as mastication and speech, improve facial aesthetics, enhance self-confidence, and promote better social interaction and psychological well-being. The results highlight that the benefits of prosthodontic rehabilitation extend beyond traditional clinical outcomes and encompass important patient-centred dimensions that directly influence daily living and overall quality of life. The study further emphasizes the value of incorporating patient-reported outcome measures, such as the OHIP-14, into routine prosthodontic assessment, treatment planning, and outcome evaluation. Such measures provide meaningful insight into patients' perceptions of treatment effectiveness and satisfaction, enabling clinicians to deliver more personalized and patient-focused care. The observed association between greater baseline impairment and larger post-treatment improvements suggests that individuals with the greatest treatment needs may derive the most substantial benefits from rehabilitation. While the findings strongly support the effectiveness of prosthodontic treatment in improving quality of life, the limitations inherent in the study design warrant consideration. Consequently, future research should include controlled, multicentre investigations with larger and more diverse populations, as well as longer follow-up periods to evaluate the long-term sustainability of treatment benefits and patient adaptation to different prosthetic modalities. Comparative studies examining conventional, implant-supported, and digitally fabricated prostheses would further enhance understanding of factors influencing patient outcomes. Overall, the present study provides compelling evidence that prosthodontic rehabilitation significantly improves oral health-related quality of life and reinforces the importance of integrating patient-reported outcomes into comprehensive prosthodontic care and clinical decision-making.

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