

Evaluation of Patient Satisfaction with Conventional Complete Dentures

A Retrospective Study from An Academic Prosthodontics Clinic

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Abstract

To restore masticatory efficiency, phonetic capability and facial aesthetics, conventional complete dentures exist as an important treatment modality for complete edentulism. With a clinical approach and prosthetic success, we need the patient's experience to be better informed. In this study, we investigate patient satisfaction with conventional complete dentures according to aesthetic perception, functional adaptation, comfort and stability, alongside assessing potential demographic influences such as age and gender. A retrospective observational study was conducted on 100 edentulous patients from September 2023 to March 2024 at the College of Dentistry, Hawler Medical University. Data on demographic parameters and clinical variables were obtained. Satisfaction in patients was measured on a three-point Likert scale (1 = Poor, 2 = Fair, 3 = Good) for seven parameters. Chi-square tests, independent sample t-tests, and correlation matrices were used for analysis. The median age of the participants in this study was 61.2 ± 9.3 years with a ratio of males to females of about 4:1. Satisfaction scores mostly were based on aesthetics (2.54 ± 0.69) and cleaning experience (2.58 ± 0.63). On the other hand, stability (2.13 ± 0.88) and comfort (2.17 ± 0.86) were the most frequently cited areas of patient dissatisfaction. There was no significant gender or age difference in satisfaction ($p > 0.05$). Stability ($r = 0.81$) and comfort ($r = 0.78$) were associated with overall satisfaction. Although they do serve very well to suit the aesthetic requirements of the patient in conventional dentures, functional retention and long-term comfort are still significant challenges. Better border molding accuracy, occlusion balance, and follow-up protocols are needed to optimize clinical outcomes after the insertion and post-insertion.

Open Access

Citation: Akram BL et al. (2026) Evaluation of Patient Satisfaction with Conventional Complete Dentures. Dentistry 3000. 1:a001 doi:10.5195/d3000.2026.1585

Received: September 9, 2026

Accepted: September 19, 2026

Published: September 22, 2026

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Introduction

Edentulism (complete loss of natural teeth) is one of the most serious public health problems and strongly affects nutritional status, phonetic clarity, facial support, and psychological health [1]. Even though implant dentistry has advanced, conventional complete dentures (CCDs) are currently the most cost-effective, non-invasive and reliable treatment for completely edentulous arches in developing

countries and geriatric populations [2]. However, clinical success with CCDs is still biomechanically challenging. Patients are often uncomfortable with removable prostheses because their mucosal support is weak, the residual alveolar ridge resorption is progressing, peripheral seals are weak and neuromuscular control is poor [3]. These factors influence prosthetic retention and stability and are directly related to patient satisfaction and quality of life [4]. Academically based dental

institutions such as the College of Dentistry at Hawler Medical University (HMU) also need to offer necessary and fair clinical education to all patients as well as affordable prosthetic care. Retrospective information of this sort can help to identify clinical challenges in practice, create institutional efforts, and form the pedagogical framework of the practice. Therefore, this study aims to assess patient satisfaction with conventional complete dentures in terms of aesthetic perception, comfort, stability, and

functional adaptation and the impact of age and gender on the overall acceptance of treatment.

Material and Methods

Study Design, Setting, and Duration

This retrospective observational study was conducted at the Department of Prosthodontics, College of Dentistry, Hawler Medical University (HMU), Erbil, Iraq. The patient records were captured from the clinical records for conventional complete denture treatments (September 2023-March 2024). We used mixed-methods data collection to link the clinical records to the standardized telephone satisfaction surveys. Through a mixed-methods data collection, we compared the clinical records with the standardized telephone survey.

Participant Selection and Eligibility Criteria

To sample 100 well-documented edentulous cases, we employed a purposive sampling method. Inclusion criteria include patients aged ≥ 40 years who received maxillary and mandibular CCDs completed in oral and medical records, had at least one post-insertion follow-up appointment and gave verbal consent to participate in the satisfaction survey. Exclusion criteria were incomplete records, treatment with implant-supported prostheses or removable partial dentures, failure to attend any post-insertion follow-up, and major systemic comorbidities known to impair prosthetic adaptation (e.g., uncontrolled diabetes mellitus, advanced osteoporosis or oncological bone resections).

Clinical Fabrication Protocol

As a result, all the production strategies were applied and clinical parameters were followed: Primary Impressions: The trays were filled with irreversible hydrocolloid (alginate) or impression compound for resorbed ridges. Final Impressions: These were made with custom acrylic trays with border molding (greenstick compound) and zinc oxide eugenol impression paste for an accurate peripheral seal. Maxillo-mandibular records: Vertical dimension and centric relation of teeth were achieved by wax occlusal rims supported by anatomical landmarks. Occlusal scheme: The artificial teeth were placed in a bilateral balanced occlusion scheme to minimize tipping forces during eccentric movements. Processing and Delivery: PMMA (Polymethyl methacrylate) resin was used to build the denture base and clinical decisions were made after delivery.

Data collection and evaluation

Variables considered included patient age, gender, ridge morphology, and post-insertion complications. Patient satisfaction was assessed using a validated three-point Likert scale (1 = Poor, 2 = Fair and 3 = Good) and

telephone interviews and a variety of factors including overall satisfaction, comfort, aesthetics, masticatory efficiency, speech adaptation, stability and ease of cleaning.

Statistical Analysis

Data were collected and analyzed with the Statistical Package for the Social Sciences (SPSS, IBM, USA). As described in Section 1, descriptive statistics were used to calculate the means, standard deviations and percentage distributions. Chi-square tests for categorical associations (gender vs. satisfaction) and independent sample t-tests were performed in the data (<60 years vs. ≥ 60 years) to assess age-related differences. Pearson's correlation matrix was used for bivariate relationships. Statistical significance was measured as $p < 0.05$.

Results

Demographic Characteristics

The retrospective data sample consisted of 100 edentulous patients. The mean age of the study population was 61.2 ± 9.3 years from 40 to 84 years, where most patients were in the 50 to 70 years age group. The gender distribution was 81 male patients and 19 female patients, a ratio of about 4:1.

Patient Satisfaction Analysis

Evaluation of the seven satisfaction parameters on a 1-to-3 scale indicated distinct variations in patient perception. The highest scores were recorded for ease of cleaning (2.58 ± 0.63) and aesthetics (2.54 ± 0.69). Conversely, the lowest scores were associated with denture stability (2.13 ± 0.88) and overall comfort (2.17 ± 0.86).

Subgroup and Inferential Analyses

Different from each other in terms of gender, there are no statistically significant differences in satisfaction across all parameters by gender ($p > 0.05$). Overall satisfaction for males and females was 2.24 ± 0.87 and 2.26 ± 0.84 respectively. In the case of the independent t-test of younger patients (<60 years) and older patients (≥ 60 years) in the same sample it was found to not differ in both overall satisfaction ($t = 1.30$, $p = 0.196$). The Pearson correlation matrix calculations indicate a good correlation between overall patient satisfaction and denture stability ($r = 0.81$) and comfort ($r = 0.78$), whereas ease of cleaning exhibited a weak correlation ($r = 0.43$).

Discussion

As such, the results from this retrospective study offer us an insight into clinical effectiveness and patient satisfaction of conventional complete dentures produced by an academic institution. The high satisfaction of patients with aesthetics and cleaning has led to a high level of confidence that dental education can be effective to achieve visual expectations and

hygiene education [5]. The restoration of dental appearance is a crucial factor for a patient's self-esteem and social status after the loss of teeth. Lower stability and comfort scores show the chronic clinical problems with complete denture prosthodontics [6]. Indeed, as Fenlon and Sherriff (2018) [7] stress, poor stability is still a major cause of patient dissatisfaction.

It is often worsened by anatomical factors, such as progressive residual alveolar ridge resorption in the mandibular arch where bone loss is up to four times faster than in the maxilla. Additionally, the relationship between overall satisfaction and denture stability ($r = 0.81$) shows that functional security is at the heart of the long-term acceptance of prosthetic care much more than aesthetic considerations [8]. However, neither gender nor chronological age had a significant impact on overall satisfaction ($p > 0.05$). Our results are in line with Al-Dwairi et al. (2022) [9] and Okamoto, M. (2025) [10] who have held that biological sex and age are not important but psychological adaptability, pre-treatment counseling and the technical precision of the prosthesis are. While elderly patients may not be able to control their neuromuscular and salivary functions, the strict implementation of standardized clinical procedures at HMU probably mitigated these effects. There are several limitations that need to be noted. First, the retrospective design and reliance on self-reported phone surveys may lead to response bias. Second, the study was conducted in a single academic center, so findings may not be generalizable to private practice. And lastly, we do not have objective functional parameters such as bite force quantification or electromyographic assessment of masticatory muscles to relate to the physiological effects.

Conclusion

Even though conventional complete dentures were not well tolerated as well as in the retrospective study, these results demonstrate that despite the availability of new treatments, conventional dentures can be a good option for patients who are edentulous: visual appearance and daily hygiene are highly important in terms of treatment success. At the same time, denture stability and comfort were still two of the most critical clinical issues and appeared to be the most important determinants of patient satisfaction. In contrast to age and gender, there was no significant impact on adaptation to dentures or satisfaction. More attention should be given to clinical measures that enhance prosthesis performance; border molding, balanced occlusal adjustment and well-structured post-insertion follow-up visits, as these are essential to patients' comfort level and continue to be successful in the long term.

Overall satisfaction was associated with stability and comfort, with age and gender not significantly affected. Satisfaction was more about aesthetics and cleaning, whereas comfort and stability were lower.

Conflict of Interest

The authors declare that they have no competing financial, professional or personal interests in the design, conduct, analysis, interpretation, or reporting of this retrospective study on patient satisfaction with complete dentures.

Acknowledgements

The authors sincerely thank the staff of the Department of Prosthodontics, College of Dentistry, Hawler Medical University for patient care and record support and all the patients who cooperated greatly in our study.

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Table 1. Summary of patient satisfaction scores across evaluated parameters.

Satisfaction Parameter	Mean Score (1-3 Scale)	Standard Deviation
Ease of Cleaning	2.58	0.63
Aesthetics	2.54	0.69
Speaking Ability	2.39	0.80
Overall Satisfaction	2.25	0.86
Comfort	2.17	0.86
Chewing/Mastication	2.17	0.86
Stability	2.13	0.88