REVIEW ARTICAL
ISSN 2645-4351
https://doi.org/10.22037/jds.v44i1.50161

Impact of Denture and Implant Prostheses on Oral Health-Related Quality of Life: A Comprehensive Review of Recent Evidence

Maryam Bakhtiari[a], Delara Kakavand[b], Hesam Hosseinzadeh[c*]

[a]Oral and Dental Disease Research Center, Department of Dental Public Health, School of Dentistry, Shiraz University of Medical Sciences, Shiraz, Iran.
[b]Department of Community Oral Health, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran.
[C]Department of Prosthodontics, Faculty of Dentistry, Shiraz University of Medical Sciences, Shiraz, Fars, Iran.
***Correspondence to Hesam Hosseinzadeh**; **Email:** hesamhosseinzadeh8@gmail.com

Submitted: 13 September 2025
Revised: 3 November 2025
Accepted: 10 November 2025
Published: May 2026

How to cite:
Bakhtiari M, Kakavand D, Hosseinzadeh H. Impact of Denture and Implant Prostheses on Oral Health-Related Quality of Life: A Comprehensive Review of Recent Evidence. J Dent Sch 2026;44(1): e13.

Abstract:

Objective(s): Numerous studies have examined the differences in quality of life (QoL) between users of conventional complete dentures (CCDs) and implant-retained overdentures (IRODs), and have shown different results. **Methods:** This comprehensive review synthesized findings from 49 studies assessing oral health-related quality of life (OHRQoL) and patient satisfaction among denture and implant prosthesis users. Databases including PubMed, Science Direct, and Google Scholar were searched (2015–2025), using MeSH terms such as “quality of life,” “satisfaction”, “overdenture”, and “denture types”, with Boolean operators. **Results:** Many studies employed validated instruments such as the Oral Health Impact Profile (OHIP-14 and OHIP-EDENT), Visual Analog Scales, and various satisfaction questionnaires to evaluate domains including functional limitation, pain, psychological discomfort, social impact, masticatory efficiency, and aesthetics. The evidence underscored the critical role of implant-supported prostheses in enhancing functional performance, psychological well-being, and social participation, thereby improving patients’ overall QoL. **Conclusion:** These findings provide valuable guidance for clinicians in selecting and tailoring prosthetic solutions to meet patient-centered goals effectively.

Keywords: Oral Health Related Quality of Life; Patient Satisfaction; Dentures; Dental Prosthesis

Introduction

Quality of life (QoL) differences between users of conventional complete dentures (CCDs) and implant-retained overdentures (IRODs) have been extensively studied. With the majority of studies suggesting that implant-retained overdentures provide better outcomes, multiple systematic reviews and clinical studies report that patients fitted with mandibular overdentures supported by two implants experience significantly better oral health-related quality of life (OHRQoL) and higher overall satisfaction compared to those using conventional dentures [1-4].

Patients with implant-retained overdentures typically report improvements in key domains such as comfort, stability, ability to chew, and speech. These functional gains translate into enhanced daily living, reducing physical pain and disability associated with conventional dentures. For example, studies using validated instruments like the Oral Health Impact Profile (OHIP) show statistically significantly better scores for implant overdenture users in physical pain, functional limitation, and psychological disability subscales. This suggests that implant overdentures not only improve oral function but also positively affect mental and social well-being [5-8].

However, some aspects, such as esthetics and hygiene, may not show consistent differences or may even be slightly less favorable in implant overdenture users due to maintenance requirements. Despite this, the overall patient satisfaction and QoL remain higher with implant-supported dentures. This superiority is attributed to the enhanced retention and stability provided by implants, which reduce denture movement and discomfort, common complaints with conventional dentures [9, 10].

Edentulous patients often experience significant challenges with essential oral functions, such as eating, speaking, and socializing. The transition from conventional dentures to implant-retained overdentures is associated with a marked improvement in these daily activities, leading to a better QoL. While implant-retained overdentures provide clear benefits, there are questions regrading the effect of financial considerations and patient's ability to adapt to new prostheses on treatment satisfaction. Not all patients may be able or willing to pursue implant-based options due to cost or personal circumstances [11-13].

This comprehensive review evaluated the findings of some studies assessing OHRQoL and patient satisfaction among denture and implant users.

Methods

Search Methodology

First, a general search was conducted on the study's main objective of "quality of life in denture users compared to implant users" to ensure about the sufficient number of

studies on this topic. Then, for the main search, databases including PubMed, Science Direct, and Google Scholar were searched according to the medical subject headings (MeSH) in the domain from 2015 to 2025. The search strings for this topic included words or phrases such as "quality of life", "satisfaction", "overdenture", "complete denture", "implant denture", and "conventional denture". Advanced search was applied in the databases, and Boolean operators such as "AND" and "OR" were used to combine terms effectively. In addition to searching databases, the bibliography and citations of articles, and other search engines were checked to minimize the records failing.

Inclusion and Exclusion Criteria

Inclusion criteria were: a) studies published in English, b) articles comparing complete overdenture with implant overdenture, and c) studies reporting on QoL, satisfaction, or OHRQoL. Exclusion criteria were: a) articles that were published as case reports, systematic reviews, umbrella reviews, overviews, and protocols. b) studies not reporting QoL outcomes, and c) studies not reporting a comparison between types of overdentures. In situations of disagreement about including or excluding an article, the idea of the third fair evaluater was used.

Screening Process

After completing the search, the records were imported into the reference management software (EndNote 21), and duplicate records were automatically omitted. Then, the titles and abstracts were screened for eligibility, and in the next step, the full text of the articles was screened. If the full-text was not available, the authors contacted the first author of the record for the full-text request.

Results and Discussion

After a comprehensive screening of the literature, 49 studies were included. Figure 1 illustrates the distribution of included articles by publication year, showing a fairly even spread across most years with a slight increase in recent years. Notably, 2022 accounts for the largest share at 16% of the total articles, reflecting a growing research interest in this field. The majority of studies utilized validated instruments such as the OHIP-14 or OHIP-EDENT, Visual Analog Scales (VAS), and specific satisfaction or QoL questionnaires to assess outcomes across diverse populations and prosthetic modalities.

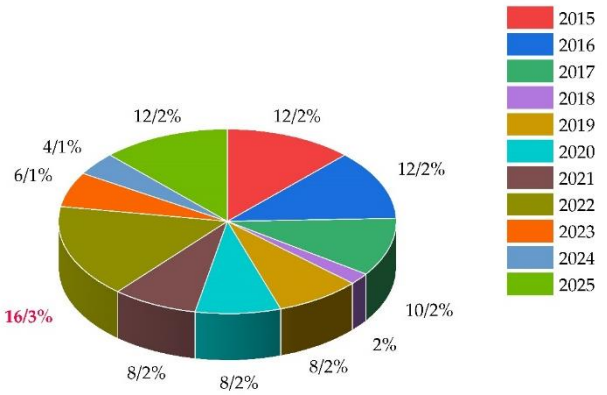

Figure 1: The distribution of included articles based on the publication year

Assessment of QoL and satisfaction in dental patients, particularly in the context of comparing denture users and implant users, relies on a variety of psychometric instruments designed to capture the multifaceted impact of oral health on daily living. These tools are essential for a comprehensive understanding of patient outcomes, extending beyond traditional clinical parameters. An overview of included studies on OHRQoL and patient satisfaction is shown in Table 1.

Table 1- Methods of QoL and satisfaction assessment among different studies

ID	Authors (Year)	QoL / Satisfaction Assessment Method(s)	Domains / Focus Areas	Remarks
1	Alves et al. (2018) [14]	OHIP-EDENT	Functional limitation, pain, and social impact	Evaluated QoL related to complete denture wearers
2	Azar et al. (2020) [15]	OHIP-14	Physical pain, psychological discomfort, and social disability	Compared conventional dentures vs implant-supported overdentures
3	Fernandez-Estevan et al. (2015) [16]	OHIP-14	General oral health impact	Retrospective cohort study comparing implant overdentures and conventional prostheses
4	Koçak et al. (2021) [17]	OHIP-14, Visual Analog Scale (VAS)	Patient satisfaction, QoL	Elderly edentulous patients; implant-retained vs conventional dentures
5	AlZarea (2017) [18]	OHIP-14	QoL in partially edentulous patients	Implant-supported single crowns vs fixed partial dentures
6	Berniyanti et al. (2023) [19]	OHIP-14	OHRQoL in partially edentulous patients	Compared patients with and without denture therapy

Table 1- Methods of QoL and satisfaction assessment among different studies

ID	Authors (Year)	QoL / Satisfaction Assessment Method(s)	Domains / Focus Areas	Remarks
7	Cardoso et al. (2016) [20]	OHIP-EDENT, masticatory efficiency tests	QoL and functional performance	Mandibular conventional denture and overdenture impact
8	Goiato et al. (2015) [21]	OHIP-14, satisfaction questionnaire	QoL and satisfaction with implant-supported fixed partial denture	Cross-sectional survey in Brazil
9	Martins et al. (2022) [22]	OHIP-EDENT	QoL changes over 12 months	Impact of new complete dentures
10	Shaghaghian et al. (2015) [23]	OHIP-14	QoL of removable partial denture wearers	Assessed related factors influencing QoL
11	Yamaga et al. (2019) [24]	OHIP-EDENT	Relationship between denture usage period and QoL	Longitudinal assessment
12	Yunus et al. (2016) [25]	OHIP-14	OHRQoL in partially and completely edentulous patients	Mandibular implant prostheses impact
13	Albuquerque et al. (2020) [26]	Patient perception questionnaire	Denture quality and patient satisfaction	Two-step impression technique impact on severely resorbed mandible denture fabrication
14	Erić et al. (2017) [27]	OHIP-EDENT	Changes in QoL and satisfaction over time	Elderly complete denture wearers
15	Perea et al. (2015) [28]	QoLDAS-9 (Quality of Life related to Dental Aesthetic Scale)	Aesthetic-related QoL	Compared muco-supported prosthesis and implant-retained overdentures
16	Sônego et al. (2022) [29]	OHIP-EDENT, satisfaction scales, occlusal force tests	QoL, satisfaction, functional parameters	Effects of relining on complete denture wearers
17	Abozaed (2025) [30]	OHIP-14, Visual Analog Scale (VAS)	Patient satisfaction, QoL	Quadrilateral bar vs bilateral linear bar attachment systems for mandibular implant overdentures
18	Bajunaid et al. (2022) [31]	OHIP-14, patient satisfaction questionnaire	QoL and satisfaction comparison	Conventional complete dentures vs implant-retained overdentures in Saudi Arabia
19	Cardoso et al. (2016) [32]	OHIP-EDENT, masticatory efficiency tests	QoL and function	Mandibular conventional denture and overdenture impact
20	Fonteyne et al. (2020) [33]	OHIP-14, personality and multi-informant questionnaires	QoL, social participation, psychological factors	Personality influences on dental rehabilitation outcomes
21	Hauck et al. (2021) [34]	OHIP-14, satisfaction questionnaires	Clinical outcomes, satisfaction	One vs two implants for mandibular overdentures
22	Komagamine et al. (2022) [35]	OHIP-14, patient-reported outcomes	Immediate loading mandibular overdentures	Early post-surgery QoL and satisfaction
23	Mendes et al. (2016) [36]	OHIP-EDENT, satisfaction questionnaire	Masticatory function, satisfaction, QoL	Implant-retained overdentures impact
24	Schuster et al. (2017) [37]	OHIP-EDENT	Short-term QoL changes after overdenture transition	Patient perception study
25	Tosun & Uysal (2024) [38]	OHIP-14, Visual Analog Scale (VAS)	QoL and patient satisfaction	Removable denture wearers
26	da Silva et al. (2025) [39]	OHIP-EDENT, clinical bone remodeling measures	Functional performance, QoL, bone remodeling	5-year cohort study on mandibular overdenture users
27	Ibrahim et al. (2025) [40]	OHIP-14, radiographic bone loss assessment	Retention system impact on QoL and bone loss	Telescopic vs LOCATOR attachments for maxillary overdentures
28	Jawad et al. (2017) [41]	OHIP-14, satisfaction questionnaire	Function and QoL in mini vs conventional implants	Pilot RCT

Table 1- Methods of QoL and satisfaction assessment among different studies

ID	Authors (Year)	QoL / Satisfaction Assessment Method(s)	Domains / Focus Areas	Remarks
29	Jayasinghe et al. (2024) [42]	OHIP-14, satisfaction questionnaires	Single vs two-implant mandibular overdentures	Function, satisfaction, QoL, treatment success
30	Lidani et al. (2025) [43]	OHIP-EDENT, satisfaction questionnaires	Anchorage surface extension impact on QoL	5-year RCT follow-up
31	Lidani et al. (2022) [44]	OHIP-EDENT, satisfaction questionnaires	Anterior-posterior spread impact on QoL	Randomized clinical trial
32	Lo-Sardo et al. (2025) [45]	QoLIP-10, QoLDAS-9, QoLFAST-10	Oral health-related QoL modulators	Maxillary implant overdenture users' analysis
33	Possebon et al. (2021) [46]	OHIP-EDENT, masticatory efficiency tests	Prosthetic aftercare, mastication, QoL	Narrow-implant mandibular overdenture wearers
34	Schuster et al. (2023) [47]	OHIP-EDENT, radiographic bone remodeling	Bone atrophy effect on QoL	Implant-retained mandibular overdenture after 3 years
35	Uehara et al. (2022) [48]	OHIP-14, satisfaction questionnaire	Single-implant overdentures vs removable dentures	Randomized crossover clinical trial
36	Castillo-Oyagüe et al. (2016) [10]	QoLFAST-10	QoL in implant overdenture and fixed hybrid prosthesis wearers	Validation of a specific short OHRQoL scale
37	Faot et al. (2025) [49]	OHIP-EDENT, masticatory function tests	Maxillary resorption and masticatory function	Prospective longitudinal study with 3 years follow-up
38	Faot et al. (2023) [50]	OHIP-EDENT, functional performance tests	QoL impact of three mandibular edentulism treatments	Cross-sectional study
39	Galo Silva et al. (2019) [51]	Patient satisfaction questionnaire	Prosthetic component evaluation	Use of polyethylene terephthalate in overdenture implant prosthesis
40	García-Minguillán et al. (2021) [52]	OHIP-14, self-perceived OHRQoL questionnaire	QoL differences by prosthesis type and socio-demographics	Fully dentate vs edentulous patients
41	Karayazgan-Saracoglu et al. (2017) [53]	OHIP-14, satisfaction questionnaire	QoL in implant-retained overdentures vs fixed prostheses	Patients with marginal mandibulectomy
42	Michelon et al. (2019) [54]	OHIP-14, clinical stability measures	Retention system influence on overdenture stability	Maxillary implant overdentures vs fixed and conventional dentures
43	Patil & Seow (2020) [55]	OHIP-14, patient satisfaction questionnaire	Crestal bone changes and satisfaction	Mandibular overdentures retained by one or two implants with immediate loading
44	Perea et al. (2015) [56]	QoLDAS-9	Oral aesthetic-related QoL	Muco-supported prosthesis vs implant-retained overdenture wearers
45	Schuster et al. (2022) [57]	OHIP-EDENT, clinical peri-implant wound healing	Effect of residual ridge regularization on healing	Narrow diameter implants as overdenture retainers
46	Campos Sugio et al. (2022) [58]	OHIP-14, masticatory efficiency tests	Impact of removable complete or partial dentures	Cross-sectional mapping study
47	Castillo-Oyagüe et al. (2016) [59]	QoLFAST-10	QoL in implant-supported fixed partial dentures	Validation of specific QoL scale
48	Perea et al. (2015) [60]	QoLIP-10	QoL with cement-retained implant-supported restorations	Validation of implant prostheses QoL questionnaire
49	Pereira et al. (2019) [61]	Economic evaluation, patient-reported outcomes (questionnaire unspecified)	Budgetary impact and QoL	Oral rehabilitation with complete dentures in São Paulo State, Brazil

The development of validated, prosthesis-specific QoL instruments such as QoLFAST-10, QoLDAS-9, and QoLIP-10 has enhanced the precision of patient-reported outcome measures [10, 45, 60]. These tools enable nuanced

assessment of functional, aesthetic, and psychosocial domains, facilitating better clinical decision-making and research comparability.

The majority of included studies utilized questionnaire-based assessments to quantify QoL and patient satisfaction. The OHIP, in its various forms (e.g., OHIP-14, OHIP-5), emerges as a highly prominent and widely validated instrument for measuring OHRQoL across diverse patient populations, including those undergoing dental implant treatment and school-aged children. Its comprehensive nature, covering multiple dimensions of impact, makes it a robust choice for capturing the full spectrum of oral health's influence on daily life. Beyond OHIP, specialized instruments have been developed to cater to specific populations or clinical scenarios. For instance, a novel OHRQoL questionnaire was designed for young adults to address age-specific self-perception and anxiety related to oral health. Similarly, the OHQE was specifically developed and validated for patients with endodontic conditions, highlighting impacts unique to dental pain such as taste, digestion, and appearance. The Oral Health Quality of Life Inventory stands out for its specific scales and questionnaires tailored for denture wearers, making it particularly relevant for prosthodontic interventions.

The methodology for data collection primarily involved self-reported questionnaires, sometimes supplemented by interviews or administered by trained personnel. The analysis often involved standard statistical methods such as t-tests, ANOVA, and correlation analysis to assess statistical significance and the impact of different factors on OHRQoL. While some tools such as the Dental Impact on Daily Living (DIDL) focus on socio-dental measures and perceived impacts, others such as the University of Washington Quality of Life scale appear to offer a more generalized QoL assessment. The trend indicates a move towards more patient-centered outcome measures, acknowledging that patient satisfaction and their subjective experience of oral health are crucial indicators of treatment success. The comparative analysis of QoL outcomes between conventional denture users and implant prosthesis users over the past decade reveals consistent trends favoring implant-supported rehabilitations, albeit with nuances related to patient demographics, prosthesis type, and clinical context. This review synthesized findings from ٤٩ studies published between 2015 and 2025, encompassing complete and partial edentulism, mandibular and maxillary prostheses, and various implant attachment systems.

Quality of Life with CCDs

Several studies have documented that CCDs significantly improve OHRQoL compared to edentulous states [14, 22, 27]. These improvements are particularly notable within the first year post-insertion, reflecting adaptation and restoration of basic masticatory function. However, limitations persist, especially in mandibular dentures, where retention and stability remain problematic [20, 24]. The progressive alveolar ridge resorption and mucosal discomfort contribute to a decline in satisfaction over time [26, 47]. Despite refinements such as relining [29], conventional dentures often fail to fully restore masticatory efficiency or patient confidence in social settings [33].

IRODs: Enhanced Function and Satisfaction

In contrast, IRODs, especially in mandible, consistently demonstrate superior QoL outcomes [15-17]. These prostheses provide improved retention, stability, and occlusal force, translating into better masticatory performance and patient satisfaction [31, 36]. The meta-systematic review by Rajaraman et al. [62] have consolidated evidence that two-implant mandibular overdentures represent a significant advancement over conventional dentures in terms of both functional and psychosocial parameters. Studies comparing one versus two implants for overdentures [34, 42, 55] suggest that while single-implant overdentures improve QoL compared to conventional dentures, two implants yield better retention and patient-reported outcomes. Immediate loading protocols have also been shown to maintain high satisfaction without compromising implant survival [35].

Masticatory Efficiency and Nutritional Implications

Masticatory function, a critical determinant of QoL, is markedly improved with IRODs. Overdenture wearers demonstrate increased occlusal force and chewing efficiency compared to CCD users [20, 50]. This functional enhancement is linked to better nutritional status and overall health [19, 58]. However, even among implant users, factors such as residual ridge morphology and prosthetic aftercare influence outcomes [46, 47].

Psychological and Social Dimensions

Beyond physical function, implant-supported prostheses positively affect psychological well-being and social participation [33, 45]. Enhanced aesthetics and prosthesis stability reduce social anxiety and improve self-esteem [60]. Conversely, some denture wearers experience persistent dissatisfaction due to concerns about prosthesis movement and speech difficulties [23, 38]. Longitudinal studies underscore the benefits of implants in preserving alveolar bone and mitigating resorption compared to conventional dentures [39, 49]. Implant overdentures reduce maxillary bone loss by improving occlusal load distribution, which contributes to sustained prosthesis function and patient comfort. However, bone atrophy remains a challenge that can affect implant success and QoL in the long-term [47]. While implant treatments provide superior QoL outcomes, economic evaluations highlight significant cost barriers [61]. Conventional dentures remain the primary rehabilitation modality in many regions due to affordability and accessibility. The challenge lies in balancing cost-effectiveness with patient-centered outcomes, advocating

for public health policies that expand implant therapy access for underserved populations.

Studies addressing complex clinical scenarios, such as patients with marginal mandibulectomy or severely resorbed ridges, confirm that implant-supported prostheses improve QoL even in challenging cases [26, 53]. However, these patients require individualized treatment planning, considering anatomical constraints and prosthetic design to optimize outcomes. Emerging evidence supports the use of innovative materials and prosthetic components, such as polyethylene terephthalate, to enhance implant overdenture performance [51]. Additionally, ongoing randomized controlled trials are investigating optimal implant number, loading protocols, and attachment systems to refine rehabilitation strategies [41, 43]. Further research should also focus on long-term QoL trajectories and cost-benefit analyses to guide clinical practice.

Conclusion

This comprehensive review of studies from 2015 to 2025 confirmed that implant-supported prostheses, including overdentures and fixed restorations, consistently provide superior outcomes in OHRQoL, patient satisfaction, and functional performance compared to conventional complete dentures. Implant-supported treatments improve masticatory efficiency, stability, aesthetics, and psychosocial well-being, addressing critical limitations commonly associated with traditional dentures.

Despite their clinical advantages, implant therapies are not universally accessible due to economic constraints and patient-specific anatomical or health factors. Consequently, conventional dentures remain an essential rehabilitative option for many patients, especially those facing financial or clinical limitations. This underscores the importance of individualized treatment planning, taking into account patient needs, expectations, and resource availability, to optimize therapeutic outcomes.

The evidence highlighted that implant overdentures offer a cost-effective and less invasive alternative to fixed implant prostheses without compromising patient-reported outcomes, making them particularly valuable for patients who cannot afford or are unsuitable for extensive fixed restorations. Moreover, implant-supported restorations demonstrate benefits in preserving alveolar bone and mitigating long-term resorption, contributing to sustained prosthesis function and comfort.

Future research should focus on long-term longitudinal data to better understand quality of life trajectories, biological impacts such as bone preservation, and comprehensive economic evaluations. Such evidence will guide clinicians in balancing clinical efficacy with cost-effectiveness and accessibility, ultimately supporting patient-centered, evidence-based prosthodontic care that addresses both functional and psychosocial dimensions.

Acknowledgement: The authors are grateful to Shiraz University of Medical Sciences.

Author Contributions:
H.H.: Conceptualization, Investigation, Writing – Original Draft. Writing – Review & Editing, Supervision; M.B.: Conceptualization, Investigation; D.K.: Investigation, Writing – Original Draft, Writing – Review & Editing.

Funding: No funding was received for this research.

Ethical Approval Code: Not applicable.

Informed Consent Statement: This study was a review, and there was no human contribution or animal testing.

Data Availability Statement: All the information was prepared in the text body.

Using AI: The AI was used for corrections to increase the accuracy of the originality of the text's language.

Conflict of Interest: The authors declare no conflict of interest.

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