ARTIGO DE REVISÃO

HOW TREATMENT WITH IMPLANT PROSTHESIS IMPACTS PATIENT'S QUALITY OF LIFE

Como o tratamento com prótese sobre implante impacta a qualidade de vida dos pacientes

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ABSTRACT

Tooth loss is a major global health issue, impairing oral function, aesthetics, and quality of life. Dental implants offer a reliable solution, especially when conventional dentures fail due to poor stability and retention. The objective of the present study is to conduct an integrative review of the literature to assess the impact of implant-supported complete dentures on patients' quality of life. The search was conducted in the electronic databases, using the following descriptors: "Total denture" OR "Implant-supported prosthesis" OR "Protocol prosthesis" OR "Implant" OR "Overdenture" OR "Edentulism" AND "Satisfaction" OR "Quality of life". Considering the relationship between implant-supported prostheses and patients' quality of life, especially among elderly individuals, the use of implant-supported prostheses provides a significantly superior quality of life compared to mucosa-supported prostheses. This improvement is primarily attributed to the enhanced retention and stability offered by implant-supported prostheses.

Keywords: Dental implants, dental prosthesis, jaw edentulous, quality of life, patient satisfaction.

RESUMO

A perda dentária é um importante problema de saúde global, prejudicando a função oral, a estética e a qualidade de vida. Os implantes dentários oferecem uma solução confiável, especialmente quando as próteses convencionais falham devido à baixa estabilidade e retenção. O objetivo do presente estudo é realizar uma revisão integrativa da literatura para avaliar o impacto das próteses totais implanto-suportadas na qualidade de vida dos pacientes. A busca foi realizada em bases de dados eletrônicas, utilizando os seguintes descritores: "Total denture" OR "Implant-supported prosthesis" OR "Protocol prosthesis" OR "Implant" OR "Overdenture" OR "Edentulism" AND "Satisfaction" OR "Quality of life". Considerando a relação entre próteses implanto-suportadas e a qualidade de vida dos pacientes, especialmente entre os idosos, o uso de próteses implanto-suportadas proporciona uma qualidade de vida significativamente superior em comparação com próteses suportadas por mucosa. Essa melhora é atribuída principalmente à maior retenção e estabilidade oferecidas pelas próteses implanto-suportadas.

Palavras-chave: Implantes dentários, prótese dentária, maxilar edêntulo, qualidade de vida, satisfação do paciente.

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INTRODUCTION

Despite significant global advances in dentistry, tooth loss remains highly prevalent, with dental caries and periodontal disease identified as the primary etiological factors[1–2]. According to the World Health Organization (WHO), oral diseases are estimated to affect approximately 3,7 billion people worldwide, with untreated dental caries in permanent teeth continuing to rank among the most common health conditions[3]. In light of these challenges, tooth loss compromises not only oral function and aesthetics but also individuals' overall quality of life, thus amplifying the demand for effective rehabilitation strategies.

Within this context, dental implants have emerged as a reliable and highly successful alternative, providing prosthetic stability and promoting both functional and aesthetic restoration[4–8]. In particular, in cases of complete edentulism, alveolar bone resorption significantly impairs retention[9–11] and compromises the stability of conventional dentures[5,11–14]. This has led implant-supported prostheses to become the preferred rehabilitation option for both fully and partially edentulous patients[4–6,8,12,15].

Given these considerations, the objective of the present study is to conduct an integrative review of the literature to assess the impact of implant-supported complete dentures on patients' quality of life.

Search strategy

This study is exploratory bibliographic research aimed at qualitatively analyzing the impact of implant-supported prosthetic treatment on patients' quality of life. To achieve the proposed objectives, a comprehensive review of relevant scientific studies was conducted to ensure the credibility of the analysis[16].

The search was conducted in the electronic databases PubMed (National Library of Medicine), Google Scholar and LILACS (Latin American and Caribbean Health Sciences Literature), using the following descriptors: "Total denture" OR "Implant-supported prosthesis" OR "Protocol prosthesis" OR "Implant" OR "Overdenture" OR "Edentulism" AND "Satisfaction" OR "Quality of life".

Inclusion criteria encompassed articles published between 1977 and 2025 in Portuguese, English, or Spanish. Duplicate articles, as well as those published outside the selected time frame, were excluded. Relevant literature on prosthetics and quality of life was also researched in dental textbooks. All review articles, original studies, in vivo/in vitro studies, controlled clinical trials, and theses were considered for this review. The references from these articles were analyzed, and some were selected for their relevance to this study. Greater emphasis was placed on studies that address how implant-supported prosthetic treatment impacts patients' quality of life. Relevant data were collected, grouped, and finally synthesized.

RESULTS AND DISCUSSION

Edentulism, defined as the total absence of teeth[2,11,17-18], is a major public health challenge, particularly among the elderly[2,13-14,18]. Periodontal disease accounts for about 60% of tooth loss in individuals aged 35–446, increasing demand for rehabilitation. Globally, edentulism affects around 7% of people over 20 years and 23% of those over 602. Its consequences include physical, physiological, and psychological impairments[5,11-14, 19-21], complicating adaptation[9,13-14].

Physical impacts involve temporomandibular joint (TMJ) changes[22], speech alterations, and nutritional deficits[11]. TMD, a major orofacial pain cause, is often linked to missing teeth[23]. Mucosa-supported denture users show high rates of occlusal changes, instability, and dysfunction symptoms[14,23], with occlusal adjustments and splints recommended[23]. Poorly adapted dentures affect phonetics, causing "hissing" and articulation changes[8,14].

Edentulism also heightens nutritional risks[11,24-25], impairs communication[19], and affects quality of life[11-12,20,25]. Maintaining at least 20 natural teeth, as per WHO standards[26], preserves oral function and well-being.

Tooth loss impacts aesthetics, mastication[10-11,19-20, 24, 27], and psychological health, increasing depression rates in the elderly[21], [28-33]. Aging, edentulism, and depression are interlinked[14, 28-33], leading to poor oral hygiene, more caries, and periodontitis[34]. Thus, preserving natural teeth enhances quality of life[35], as even a single tooth loss can affect health, self-esteem, and social life[8,10,15,20,25,33,36-38].

The total loss of teeth poses a major challenge in restorative dentistry, affecting masticatory function, facial aesthetics, phonetics, and quality of life[1,10,15,17-18,20,38]. Prosthetic treatments have been developed considering anatomical conditions, individual needs, and socioeconomic factors[1,10,13-15]. Options include mucosa-supported complete dentures[12,38,40], implant-supported prostheses[18,41-43], and overdentures[5,9,42,44-47], each with specific characteristics, indications, and limitations[5,9, 12,40-47].

Mucosa-supported complete dentures are characterized by their low cost and lower technical complexity[38,48-49]. However, they present issues with retention and stability, compromising function, aesthetics, psychological health, and other factors[44,50]. As individuals age, the degree of satisfaction with these prostheses tends to be negative[49]. Despite these limitations, they remain widely used in developing countries[44]. To ensure proper retention and stability, adequate alveolar support is necessary. The use of poorly adapted prostheses increases the incidence of hyperplasia and traumatic ulcers, and the presence of xerostomia further exacerbates retention difficulties[51-53].

Implant-supported prostheses offer advantages such as reduced bone resorption and better retention and stability when compared to mucosa-supported complete dentures[45, 54]. Additionally, they provide greater patient

satisfaction, improved masticatory efficacy, stability, and enhanced sensory perception[41,55]. They also increase safety and comfort, promoting elevated self-esteem and body image[46,48]. Despite these benefits, the decision to proceed with this treatment should consider other clinical, financial, and individual factors[42,55].

Overdentures are costlier rehabilitative options, requiring careful fabrication and ongoing maintenance[56]. Frequently used in edentulous mandibles as an alternative to fixed implant-supported prostheses, they can be retained with only two implants, usually placed in the canine or second premolar regions to reduce costs[57]. Maxillary implants, however, show lower survival rates than mandibular implants due to bone quality differences[7,51].

Compared to mucosa-supported dentures, overdentures offer superior retention, support, stability, and cost-effectiveness. The choice of retention system depends on the number and location of implants or teeth, clinical practicality, and cost[40]. Implant-retained overdentures function similarly to conventional dentures, relying on mucosal support, with improved retention through implant fixation[43,54]. Retention systems include bar-clip attachments[47], spherical attachments facilitating hygiene[42], and magnetic attachments for isolated implants[58].

Overdentures are less costly than protocol-type prostheses[59] and significantly enhance functional efficiency and quality of life by overcoming retention and stability deficiencies of mucosa-supported dentures[40,42,51,60]. Treatment success depends on the stability and retention of attachments and the proper distribution of forces across implants and the alveolar ridge[52,55].

Factors such as poor prosthetic adaptation and inadequate hygiene can cause oral lesions, compromising patients' oral health. Continuous use of prostheses, especially complete dentures, promotes ulcerative, infectious, neoplastic, inflammatory, and hyperplastic lesions due to microbiota imbalance, increasing the risk of complications[61-62]. Most complete denture wearers are elderly, a group more susceptible to infections from systemic diseases associated with aging[1,18]. Hyperplasias and infections like oral candidiasis are frequently observed in users of poorly adapted prostheses[53,63].

The severity of tissue damage varies with prosthetic adaptation and the patient's systemic condition, requiring individualized treatment based on lesion severity[64-65]. Therapeutic strategies include correcting prosthetic fit, promoting hygiene, using biocompatible materials, and ensuring regular follow-up[66].

The literature highlights the need for long-term monitoring, especially in elderly patients, to prevent complications that severely affect quality of life[17]. Treatment may involve prosthetic adjustments and local therapies, depending on the extent of tissue damage[54-55].

Patient satisfaction with conventional complete dentures (mucosa-supported) and implant-supported prostheses was evaluated

after six months of use. Although both groups reported contentment, overall satisfaction was considerably higher among users of implant-supported prostheses[54]. Furthermore, functions such as mastication and speech showed significant improvements with implant-supported prostheses compared to conventional dentures[55,60,66].

The loss of masticatory function can lead to significant health consequences, as the instability and lack of retention associated with conventional dentures may cause psychological effects and impair quality of life[67]. While many patients adapt to this type of rehabilitation, a significant portion still reports discomfort, difficulty relaxing, and social embarrassment[11, 35,68].

An effective and cost-efficient alternative is the overdenture supported by two implants, which significantly improves masticatory function and quality of life[46]. When comparing patients with overdentures and those with fixed implant-supported prostheses (protocol-type), no significant differences in satisfaction were observed. However, overdenture users reported greater ease in cleaning removable prostheses[6].

Oral rehabilitation has a particularly relevant impact on the quality of life of elderly patients[28,59]. Although implant-supported prostheses improve functional aspects, the subjective perception of quality of life is not always superior to that reported with conventional dentures[69]. Nevertheless, implant-supported removable prostheses show a marked increase in satisfaction and quality of life, and regular follow-up is recommended to manage potential complications[70].

Patients rehabilitated with the All-on-Four concept reported high levels of satisfaction, although more robust studies are needed to confirm these findings[71]. Similar results were observed with the All-on-Six protocol, showing high satisfaction and improved esthetics, although the All-on-Four group showed a slight reduction in phonetic satisfaction[72-73].

Therefore, implant-supported prostheses have demonstrated a significant positive impact on patients' quality of life, enhancing functional, esthetic, and psychological aspects, as well as contributing to improved self-esteem and overall well-being.

CONCLUSION

Considering the relationship between implant-supported prostheses and patients' quality of life, especially among elderly individuals, the use of implant-supported prostheses provides a significantly superior quality of life compared to mucosa-supported prostheses. This improvement is primarily attributed to the enhanced retention and stability offered by implant-supported prostheses.

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Observação: os/(as) autores/(as) declaram não existir conflitos de interesses de qualquer natureza.