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Satisfaction degree of elderly fully edentulous patients after insertion of a new fixed or removable full denture

An integrative systematic review

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Dissertação conducente ao Grau de Mestre em Medicina Dentária (Ciclo Integrado)

—

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Trabalho realizado sob a Orientação de **Mestre Juliana de Sà**

DECLARAÇÃO DE INTEGRIDADE

Eu, acima identificado, declaro ter atuado com absoluta integridade na elaboração deste trabalho, confirmo que em todo o trabalho conducente à sua elaboração não recorri a qualquer forma de falsificação de resultados ou à prática de plágio (ato pelo qual um indivíduo, mesmo por omissão, assume a autoria do trabalho intelectual pertencente a outrem, na sua totalidade ou em partes dele). Mais declaro que todas as frases que retirei de trabalhos anteriores pertencentes a outros autores foram referenciadas ou redigidas com novas palavras, tendo neste caso colocado a citação da fonte bibliográfica.

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RESUMO

Introdução: Progressivamente ao longo dos anos, o número de idosos tem vindo a aumentar. Nesta faixa etária, os problemas dentários tendem a ser mais persistentes e severos, por terem sido muitas das vezes negligenciados em prol de outras urgências sanitárias. Neste sentido, é crucial compreender como melhorar a atual qualidade de vida e determinar se os problemas e tratamentos dentários têm um impacto sobre ela.

Objectivo: Avaliar o grau de satisfação de pacientes idosos totalmente edêntulos após a inserção de uma nova prótese total fixa ou removível.

Materiais e métodos: Foi realizada uma pesquisa bibliográfica nas bases de dados *Pubmed, Scielo, Cochrane, Science direct e EBSCO*, utilizando a seguinte combinação de termos de pesquisa "Quality of life" OR "Satisfaction" AND "Elderly" OR "Aged" AND "Complete denture" AND "Edentulous".

Resultados: Foram seleccionados um total de 17 artigos publicados entre os anos 2012 e 2023, por cumprirem os critérios previamente definidos.

Discussão: Perceber os factores psicossociais que afectam a eficácia dos cuidados terapêuticos e a qualidade de vida dos pacientes edêntulos é crucial para melhorar o seu bem-estar. Estudos demonstraram que a satisfação do paciente com as novas dentaduras completas está significativamente associada a uma melhor qualidade de vida relacionada com a saúde oral, enquanto as próteses sobre implantes podem proporcionar maior estabilidade, força de mordida e satisfação, levando a uma melhor qualidade de vida global.

Conclusão: A qualidade de vida da população idosa total edêntula poderia ser melhorada através da realização de novas próteses totais.

Palavras-chave : "Quality of life", "satisfaction", "Elderly", "Aged", "Complete denture", "Edentulous"

ABSTRACT

Introduction: Progressively over the years, the number of elderly people has been increasing. In this age group, dental issues tend to be more persistent and severe, because they have often been neglected in favour of other health emergencies. In this sense, it is crucial to understand how to improve the current elderly people quality of life and determine whether dental issues and treatments have an impact on it.

Aim: Evaluate the satisfaction degree of elderly fully edentulous patients after insertion of a new fixed or removable full denture.

Materials and methods: A literature search was conducted in the Pubmed, Scielo, Cochrane, Science direct and EBSCO databases, using the following combination of search terms "Quality of life" OR "Satisfaction" AND "Elderly" OR "Aged" AND "Complete denture" AND "Edentulous".

Results: Were selected a total of 17 articles, published between the years 2012 and 2023, in order to meet the previously defined criteria.

Discussion: Understanding the psychosocial factors that impact the effectiveness of therapeutic care and quality of life for edentulous patients is crucial for improving their well-being. Studies have shown that patient satisfaction with new complete dentures is significantly associated with improved oral health-related quality of life, while implant overdentures can provide enhanced stability, bite force and satisfaction, leading to improved overall quality of life.

Conclusion: The quality of life of the total edentulous elderly population could be improved through the realisation of new total prostheses.

Keywords : "Quality of life", " satisfaction", "Elderly", " Aged", "Complete denture", "Edentulous"

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List of abbreviations and acronyms

CD : Complete denture

CI : Conventional implants

EMG : Temporal and masseter electromyography

GOHAI : Geriatric Oral Health Assessment Index

HRQoL : General health-related quality of life

IFD : Implant fixed denture

IOD : Implant overdentures

MA : Masticatory ability

MI : Mini implants

MNA : Mini Nutritional Assessment

MNA-SF : Mini Nutritional Assessment short-form

OHIP : Oral Health Impact Profile

OHIP-EDENT : Oral Health Impact Profile appropriate for use in edentulous patients

OHIP-EDENT-J : Japanese version of the Oral Health Impact Profile for edentulous people

OHIP-14 : 14-item Oral Health Impact Profile

OHIP-14K : 14-item Korean version of oral health impact profile

OHIP-14S : Original English version of short-form Oral Health Impact Profile

OHIP-14T : Taiwanese version of short-form OralHealth Impact Profile

OHIP-20 : 20-item Oral Health Impact Profile

OHIP-49 : 49-item Oral Health Impact Profile

OHRQoL : Oral health-related quality of life

QoL : Quality of Life

RPD : Partial removable denture

SEMG : Surface Electromyography

VAS : Visual analogue scale

Yo : Years old

INTRODUCTION

Due to industrialisation and a long period of high birth rates, the world is experiencing an aging population which is leading to an increase in the number of older patients treated by dental professionals. Despite the aging of the population, most studies have focused on independently younger patients so, little is known about rehabilitation treatment in older adults (1).

The term "older person" refers to a person aged 60 years old and over, according to the World Health Organisation (WHO) and is characterised by a functional decline in the various body systems. It is accompanied by physiological changes and a more or less significant deterioration in the general health status, leading to disorders and dysfunctions (2).

At the oral level, many changes are also reported such as xerostomia, tooth decay, gum infections, periodontal disease and lead to tooth loss. Total edentulism is a common oral health issue that mainly affects the elderly and the World Health Organization (WHO) considers total edentulism as a physical disability (3).

Edentulism, which is the loss of all teeth, can have a significant impact on a person's overall health. In addition to causing chewing problems and increasing the risk of diseases, tooth loss often leads to bone resorption and loss of muscle tone, affecting a person's facial esthetics and nutritional status. In addition, edentulism can have a negative impact on mental and social health, leading to feelings of discomfort and social isolation (2,4,5,6).

Bone loss is a common issue in older people after tooth loss, which can make prosthetic treatment difficult due to poor adaptation of the prosthesis. This can lead to patient dissatisfaction, negatively impacting on their diet and quality of life. These problems can be caused by excessive use of the denture, wear of the materials or poor hygiene practices, which can lead to denture instability and impaired chewing. Tooth loss can also have a psychological impact on patients due to facial harmony and expressions loss. However, esthetic results are less important to older patients than chewing, comfort and functionality (3,7,8,9).

Lack of any type of prosthetic rehabilitation can lead to nutritional imbalance, which increases risk of malnutrition with a direct impact on the general health status. In order to improve their nutritional status, chewing efficiency must be improved. Thus, the insertion of a new adapted prosthesis has a positive impact on mastication, health, physical condition, self-confidence, self-esteem, reintegration into society and quality of life of these patients. For this purpose, there are different ways of rehabilitation possibilities : Conventional full dentures or implant-supported dentures which can be fixed or removable (6,7,8,9,10).

It is important to remember that elderly patients require special treatments due to their specific general pathology, which may have a direct impact on their oral health. The treatment assessment and planning for the edentulous patients therefore involves analysis of the remaining bony ridges and consideration of other medical factors such as physical disabilities, neuromuscular disorders, respiratory disorders, mucosal disorders, which may affect oral conditions and selection of rehabilitation type (1,2,5,11).

Patients' satisfaction with their dentures should be assessed in terms of their oral health-related quality of life. It is important to take into account psychosocial factors that may influence the patients care effectiveness and quality of life in order to find solutions to improve their wellness and treatments that are the most appropriate (11,12).

OBJECTIVE

The main objective is to evaluate the satisfaction degree of elderly fully edentulous patients after insertion of a new fixed or removable full denture.

The the second objective is to define the different rehabilitation options to compare the impact of wearing different types of prostheses on older adults quality of life.

In this work, we will study the different treatment options for the totally edentulous elderly in order to compare them. Dentists use fixed or removable structures to effectively treat edentulous patients, depending on clinical, technical and material conditions, costs and, most importantly, the patient preference (5,9).

In the case of insertion of a new prosthesis or a replacement, we can face different patterns :

Old rehabilitation	New rehabilitation
No previous prosthesis	CD/IOD/IFD
RPD	CD/IOD/IFD (Often requiring extraction of remaining teeth)
CD	New CD/IOD/IFD
IOD	IFD
IFD	IOD

Table 6 – Rehabilitation patterns

MATERIALS AND METHODS

Sources of Information

A literature search was conducted in the databases : Pubmed, Scielo, Cochrane, Science direct and EBSCO using the keywords and their association : "Quality of life" OR "Satisfaction" AND "Elderly" OR "Aged" AND "Complete denture" AND "Edentulous".

Eligibility Criteria

The literature review of this work was based on a total of 17 selected articles on the subject, duly analyzed according to the following criteria :

Inclusion criteria :

- Articles published between the years 2012 and 2023
- Articles written in French, English and Portuguese
- Articles type : clinical case reports, randomized clinical trials retrospective and descriptive studies, in vitro studies and clinical studies
- Articles studying oral rehabilitation in elderly patients (People considered as elderly : 60 years old and more according to the WHO, but in some articles from 50 years old)
- Articles whose study population is male/female, totally edentulous, wearing or not a maxillary and/or mandibular prosthesis (of all types : parcial removable denture, complete denture, implant overdentures, implant fixed denture), wanting to replace it with the same or another type of total rehabilitation.

Exclusion criteria :

- Articles that did not meet the inclusion criteria
- Articles whose study population is not elderly, not totally edentulous

- Articles that after reading and detailed analysis, showed no relevance to the development of this work
- Systematic review articles

As a starting point for this review, a question was formulated according to the PICO strategy "Population, Interest, Context" (Table 1).

Population	<ul style="list-style-type: none"> - Elderly patients - Total edentulous patients - Patients with removable prosthesis and/or fixed prosthesis in need of replacement - Patients who are already totally rehabilitated or not, in need of a new prosthesis
Interest	Evaluate the level of satisfaction (before/) after substitution/placement of the new prosthesis
Context	The number of elderly individuals is progressively growing. Among this population, dental issues tend to be more persistent and severe, having always been neglected in favor of other health concerns. It is crucial to understand how to enhance their quality of life and determine if dental problems and treatments have an impact on it. This study aims to investigate shifts in patient behavior patterns based on the type of dental prosthesis worn, which could indicate changes in their overall quality of life

Table 2 - PICO Strategy

Data Collection Process

Then, a bibliographic search was conducted in the database up to the year 2023, in search engines: Pubmed, Scielo, Cochrane, Science direct and EBSCO. Articles published between 2012 and 2023 in the languages French, English, Portuguese were analyzed. The search used keywords and MeSH terms related to the topic in question.

Regarding the selection of articles, first an advanced search was performed using the keywords in the database with different combinations. In a second step, potentially eligible studies, which the inclusion criteria, were read in their entirety and assessed for eligibility. Finally, a full evaluation of the articles was completed. The data were extracted and organized in table form (Table 2).

RESULTS

Selection of articles

The literature search identified a total of 17 articles in the search engines Pubmed, Scielo, Cochrane, Science direct and EBSCO. 160 articles were excluded for not having the inclusion criteria. The 35 potentially relevant studies were evaluated. Of these studies, 1 duplicate and 18 articles were considered irrelevant and therefore excluded. Finally, 17 articles were included in this systematic review (Figure 1)

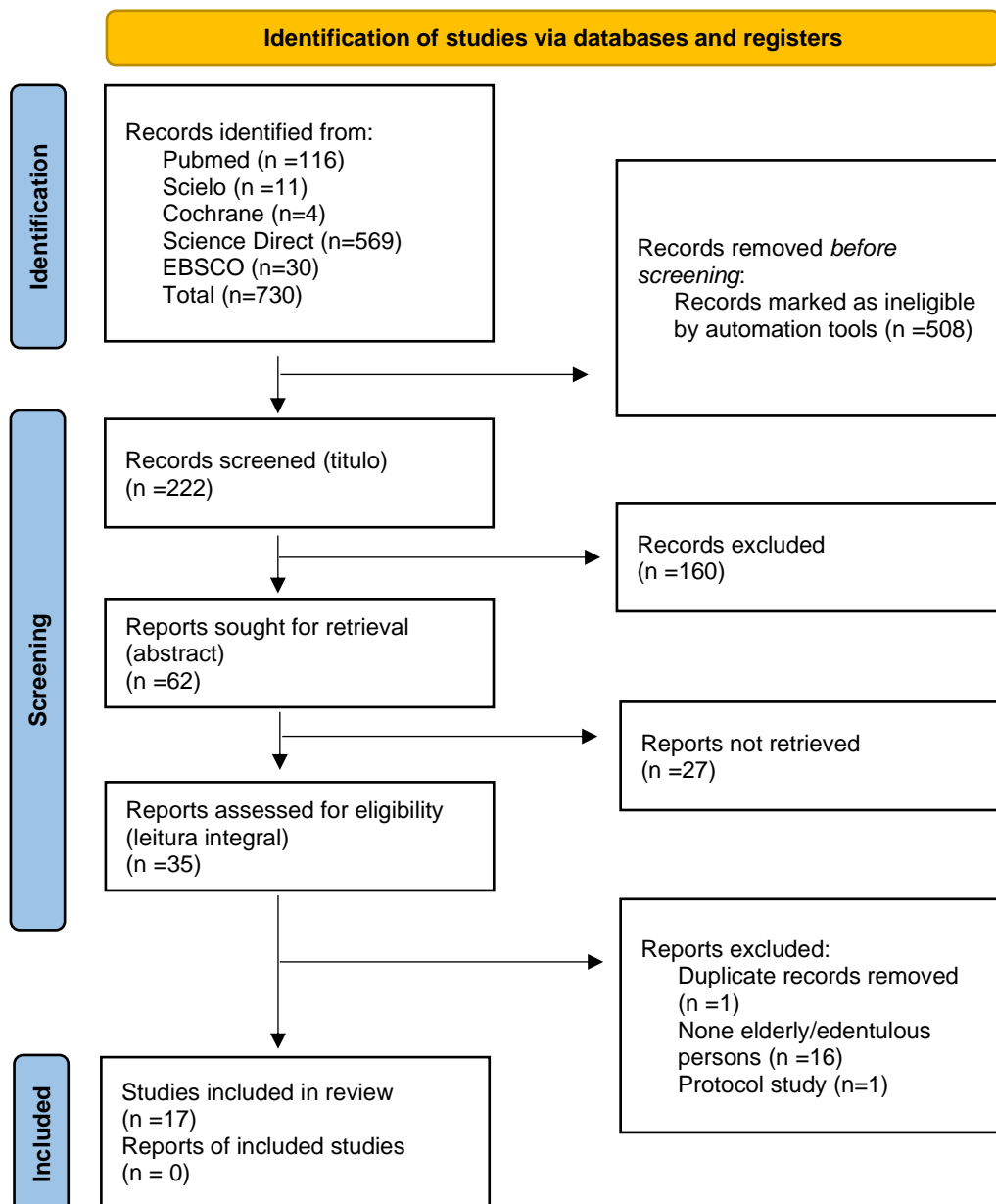


Figure 1 - PRISMA flow chart

Year of publication

Regarding the period of publication, a total of 17 articles have been found on this topic matter ; years 2012 and 2017 registered the largest number of articles (4 articles) ; years 2013, 2015 and 2018 presented 2 articles each and finally, years 2014, 2016 and 2019 presented 1 article each. Figure 2 shows the publications distribution by year.

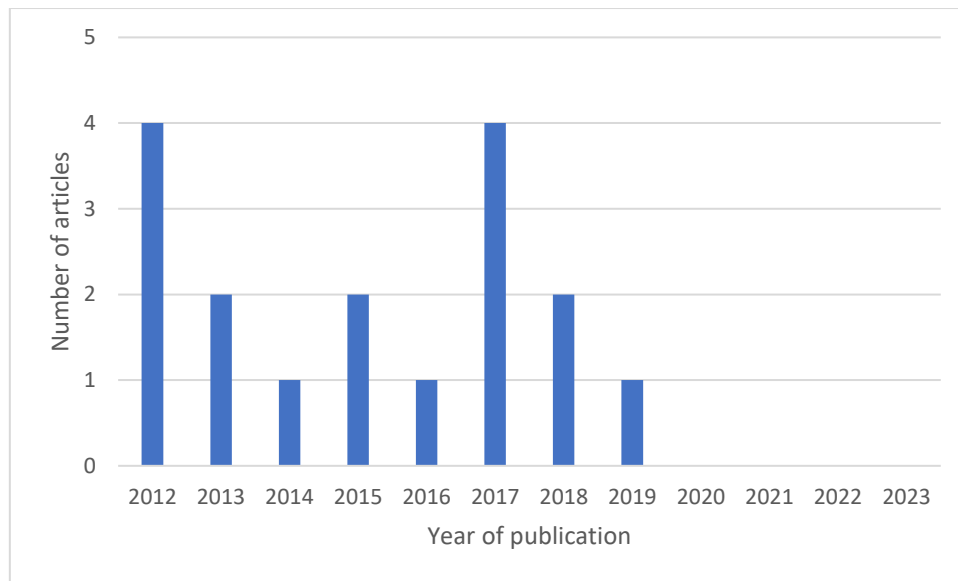


Figure 2 - Distribution by year of publication of the articles included

Type of study

Regarding the type of studies of the evaluated articles, 29% were randomized controlled clinical trial studies, 29% were follow-up studies, 18% were cohort studies, 12% were prospective studies, 6% were in vitro studies and 6% were retrospective study (Figure 3).

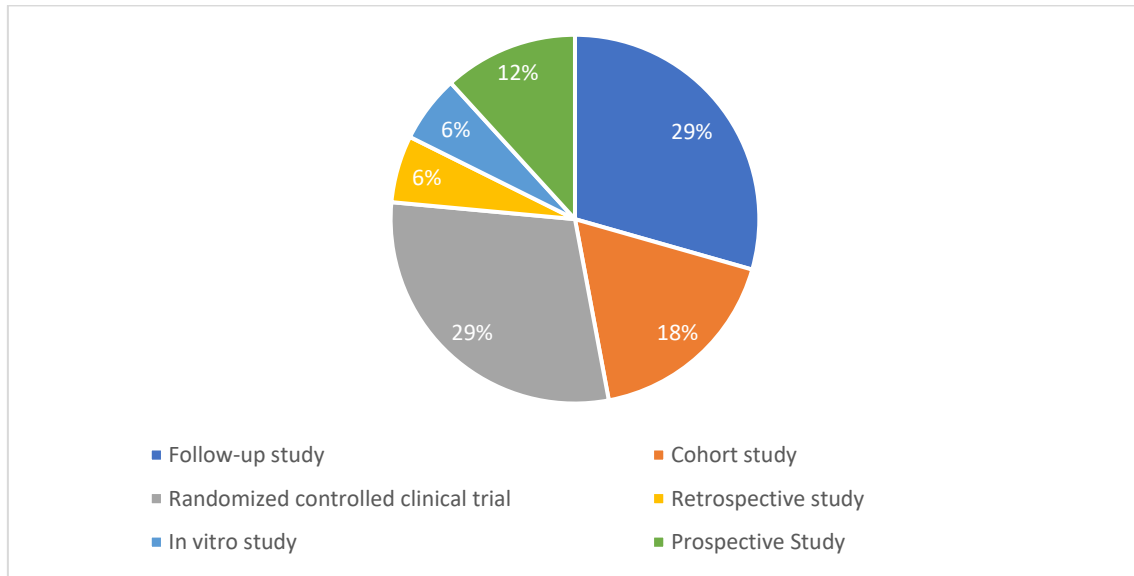


Figure 3 - Distribution according to the type of study

The most pertinent results found in each study were extracted and subsequently organized in a table in order to provide a more simplified analysis (Table 2).

AUTHORS (Year of publication)	TYPE OF STUDY	TEST	SAMPLE AGE GENDER	TYPE OF INITIAL REHABILITATION		TYPE OF FINAL REHABILITATION		CONCLUSION
				Maxillar	Mandibular	Maxillar	Mandibular	
1- Ha J, Heo Y, Jin B et al. (2012)	Follow-up study	- OHIP-14K	- 178 subjects - Range : 65–92 yo - Mean age : 74 ,7 yo - 28% males - 71% females	- None : 27,5% - CD/RPD : 72,5%		CD	CD	This study found that correcting the fitting surface of dentures may lead to favorable adaptation of the surrounding tissue and high satisfaction with the dentures received. This could ultimately enhance the OHRQOL and daily contentment of older individuals.

<p>2- Assist Viorel Perieanu U, Ciochinda G, Mihai A et al.</p> <p>(2018)</p>	<p>Follow-up study</p>	<p>- 5-point questionnaire</p>	<p>- 39 subjects - Range : 67-77 yo - Mean age : not mentioned - 56.41% females - 43.59% males</p>	<p>CD or none</p>	<p>CD or none</p>	<p>- CD - IOD</p>	<p>- CD - IOD</p>	<p>70% of participants rated IOD as an ideal treatment option, but some had concerns about cost and maintenance. After 12 months, 74.36% of patients found this solution to be quite convenient and functional, while the remaining 25.64% found it to be satisfactory but costly. Overall, most patients expressed gratitude for the IOD treatment, although some had a lower satisfaction due to the high cost.</p>
<p>3- Jawad S, Barclay C, Whittaker W et al.</p> <p>(2017)</p>	<p>Pilot randomised controlled trial</p>	<p>- OHIP-20 Profile-EDENT - Chewing test - Assessment of Prosthesis scale</p>	<p>- 44 subjects - Range : 60-77 yo - Mean age : 68,3 yo - 42,2% males - 57,8% females</p>	<p>/</p>	<p>CD</p>	<p>/</p>	<p>- 50% IOD fixed on MI - 50% IOD fixed on CI</p>	<p>The study found that both MI and CI were effective in improving OHRQoL, and that the OHIP-20 and Assessment of Prosthesis scale were sensitive to changes before and after placement of implants.</p> <p>The pilot trial also indicated that survival should be the primary outcome measure of future trials, as it is the key determinant of clinical and economic outcomes. The literature suggests that MI have a lower survival rate than conventional implants, but they are less expensive to place and replace if they fail.</p>

<p>4- Amagai N, Komagamine Y, Kanazawa M et al. (2017)</p>	<p>Double-blind randomized controlled clinical trial</p>	<p>- OHIP-EDENT-J</p>	<p>-62 subjects -Range : 69-85 yo -Mean age : 77 yo -50% males -50% females</p>	<p>Unsatisfactory denture (Type of denture not mentionned)</p>		<p>CD</p>	<p>CD</p>	<p>Under the limited conditions of this study, there was no between-group difference in the scores of the OHIP-EDENT, despite significant improvement of some subscales between the pre- and post-treatment assessments in both groups.</p>
<p>5- El Osta N, El Osta L, Moukaddem F et al. (2017)</p>	<p>Observational clinical prospective study</p>	<p>- MNA - GOHAI</p>	<p>- 51 subjects - Range : 60-88 yo - Mean age : 69.39 yo - 45% females - 55% males</p>	<p>- No previous denture - CD - IOD</p>	<p>- No previous denture - CD - IOD</p>	<p>- CD or - IOD</p>	<p>- CD or - IOD</p>	<p>The study found a significant link between how patients perceive their oral health and their nutritional status, specifically in those who received IOD compared to those who received CD. The results suggest that IOD treatment is the most effective way to improve both oral health and nutritional status. Despite potential barriers such as cost, long treatment times, and fear of surgery, IOD offer a valuable opportunity for dentists to improve their patient's QoL.</p>

<p>6- Suzuki H, Kanazawa M, Komagamine Y et al. (2018)</p>	<p>Randomized controlled trial</p>	<p>- MNA-SF</p>	<p>- 59 subjects - Range : 69-84yo - Mean age 76.7 yo - 50,8% females - 49,2% males</p>	<p>Not mentioned</p>		<p>CD</p>	<p>CD</p>	<p>The nutritional intake and MNA-SF score were significantly higher in the intervention group after CD treatment. This study suggests that dentists may be able to improve the nutritional status and QoLs' of the edentulous elderly patients by fabricating new CD and providing simple dietary advice.</p>
<p>7- Figueredo O, Câmara-Souza M, Carletti T et al. (2019)</p>	<p>Cohort study</p>	<p>- MA (VAS) - OHIP-EDENT</p>	<p>- 20 subjects - Range : 69-87 yo - Mean age : 77.6 yo - % males : Not mentionned - % females : Not mentionned</p>	<p>Unsatisfactory CD</p>	<p>Unsatisfactory CD</p>	<p>CD</p>	<p>CD</p>	<p>Inserting new CD in elderly patients can improve their QoL, especially for frail patients. The treatment can increase self-perceived QoL by improving psychological discomfort and handicap values, mastication, phonation, swallowing, and self-esteem. New well-fitted CD have been shown to provide better adaptation to tissues, which increases maximum bite force and promotes masseter muscle development. The OHIP-EDENT results suggest that the nonfrail control group tended to have worse perception of psychological discomfort before prosthetic treatment than the frail patients.</p>

<p>8- Goiato M, Bannwart L, Moreno A et al. (2012)</p>	<p>Cohort study</p>	<p>- OHIP-EDENT - PERCEPTION questionnaire</p>	<p>- 60 subjects - Range : 60–87 yo - Mean age 71 yo - 71,7% females - 28,3% males</p>	<p>CD</p>	<p>CD</p>	<p>CD</p>	<p>CD</p>	<p>Patients who received new CD experienced significant improvements in nearly all of the factors that were evaluated. This had a positive impact on their ability to chew, their overall physical health, their self-confidence and self-esteem, their ability to reintegrate into society, and their overall QoL.</p>
<p>9- Moukaddem F, Fakhoury J, El Osta N (2017)</p>	<p>Clinical prospective study</p>	<p>- GOHAI</p>	<p>- 51 subjects - Range : 63-77 yo - Mean age : 69.39 yo - % females : not mentionned - % males : not mentionned</p>	<p>- No previous denture - CD - IOD</p>	<p>- No previous denture - CD - IOD</p>	<p>- CD - IOD - IFD</p>	<p>- CD - IOD - IFD</p>	<p>The results showed a different improvement depending on the type of treatment proposed. After insertion of the prosthesis, the OHRQoL was better in participants rehabilitated with an implant-supported prosthesis, and less in those rehabilitated with a CD in the maxilla and mandible. Perceived oral health was better in participants with a complete supra-implant prosthesis 2 to 3 weeks after insertion compared with subjects with a new CD. Implant-supported prostheses can greatly improve the subject's QoL, speech, appearance, and ability to eat and function normally.</p>

<p>10- Müller F, Duvernay E, Loup A et al. (2013)</p>	<p>Randomized Controlled Trial study</p>	<p>- OHIP-EDENT</p>	<p>- 16 subjects - Mean age : 85 yo - Range 75-92 yo - 56,25% females - 43,75% males</p>	<p>/</p>	<p>CD</p>	<p>/</p>	<p>IOD with Locator attachments systeme</p>	<p>Providing IOD to elderly edentulous patients has been found to result in significantly high levels of satisfaction. The treatment concept of IOD has been shown to have high survival and success rates, demonstrating its feasibility. However, it is important to select attachments that are suitable for the patient's level of manual force and dexterity, and to monitor these factors. The treatment has also been shown to provide functional and morphological benefits, including increased maximum voluntary bite force and masseter muscle bulk, even in very elderly patients.</p>
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<p>11- Dable R, Nazirkar G, Singh S et al. (2013)</p>	<p>Randomized controlled clinical trial study</p>	<p>- GOHAI</p>	<p>- 63 subjects - Range :60–82 yo - Mean age : 69.41 yo - 55,6% females - 44,4% males</p>	<p>Unsatisfactory denture or no previous denture (Type of denture not mentionned)</p>	<p>CD</p>	<p>CD</p>	<p>The study found that there was no notable change in self-rated general health scores before and after prosthetic treatment, indicating that improved dental health did not have a significant impact on overall health status. However, patients who experienced some level of improvement were found to have had a positive effect on their psychological well-being following treatment. Additionally, the study identified a significant difference in GOHAI scores between males and females, with females demonstrating greater acceptance of prescribed treatments.</p>
<p>12- Sivakumar I, Sajjan S, Ramaraju A et al. (2014)</p>	<p>Follow-Up Study</p>	<p>- OHIP-EDENT</p>	<p>- 56 subjects - Range : 55-81 yo - Mean age : 60.54 yo - 55% females - 38% males</p>	<p>No previous history of denture treatment</p>	<p>CD</p>	<p>CD</p>	<p>In this study, it was found that the elderly participants experienced an improvement in their overall OHRQoL after receiving CD treatment. After six months of having their new CD, female participants had notably better OHRQoL than males. Additionally, the participant's initial expectations for functional and aesthetic benefits from CD treatment did not significantly affect their overall OHRQoL.</p>

<p>13-Kuo H, Kuo Y, Lee I et al. (2012)</p>	<p>Follow-up study</p>	<ul style="list-style-type: none"> - HRQoL - OHIP-49 - OHIP-14S - OHIP-EDENT - OHIP-14T 	<ul style="list-style-type: none"> - 224 subjects - Range : 65-75 yo - Mean age : 72 yo - 70.54 % males - 29.56 % females 	<ul style="list-style-type: none"> - No previous denture - CD /RPD 	<ul style="list-style-type: none"> - No previous denture - CD /RPD 	<p>CD</p>	<p>CD</p>	<p>The study found that there were improvements in the 'physical pain' and 'psychological discomfort' dimensions of the OHIP after new CD treatment. Patients satisfied with 'comfort' and 'ease of cleaning' of their new CD were significantly associated with the improvement of the OHIP-49 and OHIP-14T. The majority of participants reported moderate satisfaction with their new CD from the denture welfare plan, and patient satisfaction was significantly linked to improvements in OHRQoL but had little significant association with improvements in HRQoL.</p>
<p>14- Jabbour Z , Emami E, de Grandmont P et al. (2012)</p>	<p>Longitudinal cohort study</p>	<ul style="list-style-type: none"> - OHIP-20 	<ul style="list-style-type: none"> - 172 subjects - Range : 66-75 yo - Mean age : 71 yo - 51,6% females - 48,4% males 	<p>/</p>	<p>Not mentioned</p>	<p>/</p>	<ul style="list-style-type: none"> - 55,2% two-implant IOD - 44,8% CD 	<p>This study showed that both CD and two-implant IOD improved OHRQoL, and the treatment effect remained stable over time. However, the IOD group had a significantly greater improvement in OHRQoL compared to the CD group.</p>

<p>15- Sônego M, Goiato M, dos Santos D (2016)</p>	<p>Follow-up study</p>	<p>- SEMG - OHIP-EDENT</p>	<p>- 13 subjects - Range : not mentioned - Mean age : 73 yo - 84,6% females - 15,4% males</p>	<p>CD</p>	<p>CD</p>	<p>CD</p>	<p>2 implants IOD</p>	<p>The EMG results showed a decrease in muscle activity during rest, the mastication, and lateral movements when the overdentures were installed. In terms of bite force and quality of life, there was a progressive improvement from the placement of the healing abutments period that was maintained until the follow-up. The study concludes that there was an improvement in comfort and stability during the treatment, which is demonstrated by the positive QoL and bite force results. These findings could encourage elderly patients who might reject implant-supported overdentures due to the treatment length.</p>
<p>16-Fiener I, Aslan M, Tek M et al. (2015)</p>	<p>In vivo study</p>	<p>- VAS - Chewing satisfaction</p>	<p>- 15 subjects - Range : 55-80 yo - Mean age : 66.4 yo - 33,3% females - 66,6% males</p>	<p>/</p>	<p>CD</p>	<p>/</p>	<p>2 implants IOD</p>	<p>According to the current study, IOD resulted in a significant increase in both biting force and chewing satisfaction compared to convencional CD.</p>

<p>17- Martín-Ares M, Barona-Dorado C, Guisado-Moya B et al. (2015)</p>	<p>Transversal retrospective study</p>	<p>- OHIP-14</p>	<p>- 150 subjects - Range : 66-80 yo - Mean age : 72 yo - 50% females - 50% males</p>	<p>Unsatisfactory denture (Type of denture not mentioned)</p>	<p>- 33,3% : CD - 33,3% : 8 implants IFD - 33,3% : 4 implants IOD</p>	<p>- 33,3% CD - 33,3% 6 implants IFD - 33,3% 4 implants IOD</p>	<p>The degree of satisfaction for fully edentulous patients varied depending on the type of prosthesis used. Patients who had implant-supported prostheses expressed higher levels of overall satisfaction compared to those using CD. Patients with IFD reported a higher level of satisfaction than those with IOD.</p>
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Table 3 – Table of results

DISCUSSION

It is essential to understand the psychosocial factors that could have an impact on the overall effectiveness of therapeutic care and QoL of edentulous patients, in order to find solutions to improve their wellness. In 2012, Kuo H and al. concludes that patient's satisfaction with new CD is significantly associated with the OHRQoL improvement but less significantly associated with the HRQoL improvement. The study highlights the importance of considering patient's satisfaction as an outcome measure in total rehabilitation treatment (11,12,13).

Several studies have found that the insertion of new CDs have a positive impact on the elderly people OHRQoL who require dentures. Patient satisfaction with the CDs provision has been linked to improvements in OHRQoL. The studies conclude that CD rehabilitation is an effective treatment that can greatly improve self-perceived masticatory ability and OHRQoL, especially in frail elderly patients (1,7,8,12,14).

Some other studies show that there is no significant difference between general health and QoL before and after total rehabilitation treatment. This indicates that improved dental health does not necessarily lead to improving general health or QoL. There are several possible reasons for this, including patient dissatisfaction with pain or discomfort, high expectations that are not met, or the reluctance of older people to accept change and their limited ability to adapt, which is closely related to emotional and mental status. Overall, the others studies suggest that the provision of full dentures and simple dietary advice can have positive effects on the oral and nutritional health of edentulous elderly patients. This means that the insertion of a CD alone would not be enough to improve OHRQoL. Dentists and dental technicians have to work closely with patients so as to manage their expectations realistically and to address their concerns during the fitting and adaptation of their new prosthesis, this shall improve patients satisfaction and QoL (4,6,8,11,12).

With regards to IODs rehabilitated patients, Müller F et al. (2013) found that IODs are more stable, and participants in the intervention group demonstrated significantly higher denture satisfaction as well as an OHRQoL, compared to the control group. Maximum voluntary bite force improved significantly with IODs, yet the chewing efficiency was not different between groups. Masseter muscle thickness increased with IODs, mainly on the preferred chewing side. However, body mass index decreased in both groups. These studies concluded that IODs can be a beneficial treatment option for very old edentulous patients. Also, several studies on IODs supported the idea that they can provide improved comfort and stability, leading to improved QoL and bite force results. Implant survival is an important outcome measure for patients and can have a significant impact on clinical effectiveness and costs. Overall, these findings suggest that IODs can be an effective treatment option for patients seeking improved comfort and stability, but careful consideration of implant survival should be taken into account as a primary outcome measure (3, 6, 14,15).

Jawad S et al. (2017) compared MI and CI retained dentures on the function and QoL of patients with a total edentulous mandible. The results showed that the pain scores of the participants in the CI group were significantly higher than those of the participants in the MI group at 24 hours and 7 days after the procedure. The level of satisfaction was high in both groups after implant placement. Speech ability, comfort level, denture stability, perceived chewing ability and function showed similar improvement in both groups before and after implant placement. The literature suggests that MI has a lower survival rate than CI but appears to be less expensive to place and replace in case of failure (3).

Müller F et al. (2013) studied IOD stabilisation with Locator in the elderly. Use of the Locator attachment has proven to be difficult as food debris can block the inner part, preventing the correct placement of the prosthesis. In addition, in patients with arthritis and/or muscle weakness, the attachment may be too tight, which is not ideal for patients with poor manual dexterity. Another study has shown that the type of implant and attachment for mandibular implant-supported removable prostheses does not

affect masticatory performance, however, the choice of attachment should be adapted to the patient's manual strength and dexterity (10,16).

Jabbour Z et al. (2012) concluded that mandibular two-implant IODs have a stable and significant effect on OHRQoL over a 2-year period (14).

Various studies compared CD and IOD and it was found that both treatments can result in statistically significant improvements in patient's OHRQoL, with IODs resulting in a greater improvement. IODs have been found to significantly improve bite force and chewing satisfaction compared to conventional full dentures, which argues for wider application of this type of prosthesis. In addition, total rehabilitation, whether with CD or IOD, was shown to improve the QoL of the participants and these results suggest that IODs and CDs may be effective treatments for improving OHRQoL in patients with a total tooth loss (9,14,16).

Some other studies compare IFDs with other types of rehabilitation. It was found that patients with implant-supported dentures had a higher level of satisfaction than those with CD, and IFD had a higher level of satisfaction than adjunctive dentures. Improvement varied according to the type of treatment, with HRQoL being better in participants rehabilitated with IOD or IFD than with CD in the maxilla and mandible.

Total edentulous patients who received IFD treatment showed confidence in this treatment option, and found the dental implant convenient and functional. Although elderly patients are considered to be at risk for dental implant treatment failure ; this was a satisfactory option for main participants. IFD can significantly improve patient's QoL by improving their appearance, speech, eating ability, specifically by improving their chewing strength and denture stability to a much greater extent than removable dentures (CD and IOD). However, in the elderly, their use can raise hygiene issues due to their lack of dexterity and manual strength. Also, patients may reject this treatment for cost reasons, prolonged treatment time, or surgery fear. Dentists must be aware of patient's subjective perceptions to get an objective view of the advantages and disadvantages of each type of prosthetic rehabilitation. That way, they shall avoid false expectations that could cause patient frustration with the treatment outcomes. In

conclusion, it is recommended to consider IFD as an alternative treatment for edentulism, although it is important that dental professionals carefully assess each patient needs before recommending the treatment and also provide appropriate advice to ensure good oral hygiene (2,5,17).

Moreover, it is crucial to assess the impact of gender on treatment outcomes, as psychosocial disparities between the genders can have major consequences.

Statistical differences were found in some studies between genders OHRQoL. Women tend to be more anxious about a procedure and to have higher expectations in terms of aesthetics than men, and at last, men have a significantly higher bite force than women. However, in several studies, it was found that women have higher quality of life scores, suggesting greater acceptance of treatment out of concern for oral health. After prosthetic treatment, women reported a significant improvement in their oral health condition, with fewer issues with social disability (11,12, 16,17).

LIMITATIONS

It should be noted that this review has some limitations due to the diversity of studies that analysed different aspects of satisfaction and quality of life. For example, the studies are highly heterogeneous and have a short follow-up period. In addition, there are significant differences between the patient groups studied, such as age, number of participants, male/female ratio, socio-economic level, duration of edentulism prior to treatment and the different tests used in the studies. These factors make the comparison of results less relevant.

Another limitation is that pre-treatment care varied from a patient to another, some having undergone tooth extractions or bone grafts. The prostheses were produced by using different methods and also often produced by students, which led to differences in the quality of the prosthetic treatments. All this underlines the importance of conducting studies with more rigorous methodologies, with longer-term assessments, to more accurately assess the impact of prostheses on edentulous patients satisfaction and quality of life.

CONCLUSION

In conclusion, this systematic review aimed to examine totally edentulous elderly people satisfaction after the fitting of new fixed or removable dentures using QoI and patient satisfaction tests and showed that the different types of total dental rehabilitation has various effects on the QoI of patients and generally gets better results after the fitting of the new denture. Implant-supported dentures offer better stability and chewing comfort than CD, which are easier to maintain but less stable. Both conventional and implant-supported dentures can significantly improve the nutritional status and perceived oral health of edentulous elderly patients, but the improvement varies between the treatment modalities. Participants with implant-supported dentures had a better oral health perception than those with CD. Elderly patients often opted for less complex and less expensive treatments that do not require surgery, such as CD, or for treatments that require fewer implants. In terms of clinical practice, it is a matter of understanding, hopes and wishes of each patient ; dentists shall ensure that the proposed treatment meets their requirements and expectations to improve their quality of life.

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