



Dentistry and palliative care: a concise systematic review

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Abstract

Introduction: In recent decades, there has been a change in the age pyramid, through progressive population aging. This aging presents itself as a risk factor for several diseases, such as cancer and chronic degenerative diseases. Patients should be regularly questioned and evaluated regarding their oral health conditions. Patients in palliative care present severe functional restrictions and impairment of oral functions, which is even more common when the disease itself already affects the oral cavity, such as head and neck cancer. **Objective:** It was to carry out a systematic review to present the main considerations and clinical importance of palliative care in dentistry. **Methods:** The PRISMA Platform systematic review rules were followed. The search was carried out from January to March 2024 in the Scopus, PubMed, Science Direct, Scielo, and Google Scholar databases. The quality of the studies was based on the GRADE instrument and the risk of bias was analyzed according to the Cochrane instrument. **Results and Conclusion:** A total of 129 articles were found, 45 articles were evaluated in full and 18 were included and developed in the present systematic review study. Considering the Cochrane tool for risk of bias, the overall assessment resulted in 12 studies with a high risk of bias and 32 studies that did not meet GRADE and AMSTAR-2. Most studies did not show homogeneity in their results, with $X^2=77.8\%>50\%$. It was concluded that understanding the importance of the dentist in caring for patients with diseases that threaten the continuity of life, through relieving suffering and promoting quality of life, based

on oral health. Thus, with the work of the multidisciplinary health team, the patient, their family members, and caregivers will have adequate assistance, based on the particularities of each case.

Keywords: Dentistry. Palliative care. Palliative dentistry. Principles.

Introduction

In recent decades, there has been a change in the age pyramid, through progressive population aging [1]. This aging presents itself as a risk factor for several diseases, such as cancer and chronic degenerative diseases. According to the definition of the World Health Organization – WHO, "Palliative Care is an approach that promotes the quality of life of patients and their families, who face illnesses that threaten the continuity of life, through the prevention and relief of suffering. It requires the early identification, assessment, and treatment of pain and other problems of a physical, psychosocial, and spiritual nature" [2].

In this context, seeking to allow harmonious assistance for the patient and their family, palliative care must be implemented by a multidisciplinary team that must seek to include and involve the patient's caregivers and family members. Therefore, professionals involved in assistance must establish a bond and relationship between the team, family, and community [1-3].

The multidisciplinary team must promote the relief of pain and other unpleasant symptoms, affirm life, and consider death as a normal process, but not accelerate or postpone death. It is necessary to integrate

psychological and spiritual aspects in patient care and offer a support system that allows the patient to live as actively as possible, in addition to helping family members during the patient's illness and providing support in coping with grief. Therefore, the team must start this care protocol as early as possible, to provide a better quality of life and positively influence the course of the disease [4,5].

How can the Dentistry professional contribute to promoting quality of life for patients in Palliative Care? It's simple to find this answer. Imagine that the patient is shaken by the effects that the disease itself and the medications have on their body, how can they deny their oral well-being and the pleasure of smiling? The dentist has a very important role in the multidisciplinary team since the oral cavity can host numerous pathological processes and present different side effects resulting from drug treatments aimed at managing the central disease. These diseases can compromise the oral cavity directly or indirectly and affect nutrition and communication, therefore they must be correctly diagnosed and treated to provide comfort to the patient [6,7].

The worsening of the disease affecting the patient can lead to a reduction in functional capacity, which will make self-cleaning and understanding oral problems impossible. In this sense, the dental approach aims to maintain oral health, preventing periodontium, teeth, restorations, implants, and prosthetics. In addition to establishing health education actions with caregivers and family members and carrying out pain relief interventions when complications are already present [1,7].

Patients should be regularly questioned and evaluated regarding their oral health conditions. Many do not spontaneously report their problems and discomforts because they believe that they are normal for the disease that systematically affects them or because they are physically or mentally unable to take care of their health. Patients in Palliative Care present severe functional restrictions and impairment of oral functions, which is even more common when the disease itself already affects the oral cavity, such as head and neck cancer [2,8].

The signs and symptoms that the patient presents must be properly attended to and treated. The most common oral problems are open wounds, opportunistic infections, dysphagia, xerostomia, pain, bleeding, trismus, malnutrition, and dehydration. The professional must be aware of the need for treatment and how to carry it out since its absence or even carrying it out inappropriately can lead to a worsening of the patient's health and quality of life [9,10].

Therefore, the present study aimed to carry out a

systematic review to present the main considerations and clinical importance of palliative care in dentistry.

Methods

Study Design

The present study followed the international systematic review model, following the rules of PRISMA (preferred reporting items for systematic reviews and meta-analysis). Available at: <http://www.prisma-statement.org/?AspxAutoDetectCookieSupport=1>. Accessed on: 03/25/2024. The methodological quality standards of AMSTAR-2 (Assessing the methodological quality of systematic reviews) were also followed. Available at: <https://amstar.ca/>. Accessed on: 03/25/2024.

Data Sources and Research Strategy

The literary search process was carried out from January to March 2024 and was developed based on Scopus, PubMed, Web of Science, Lilacs, Ebsco, Scielo, and Google Scholar, covering scientific articles from various to the present. The descriptors (MeSH Terms) were used: "*Dentistry. Palliative care. Palliative dentistry. Principles*" and using the Boolean "and" between the MeSH terms and "or" between historical discoveries.

Study Quality and Risk of Bias

Quality was classified as high, moderate, low, or very low in terms of risk of bias, clarity of comparisons, precision, and consistency of analyses. The most evident emphasis was on systematic review articles or meta-analyses of randomized clinical trials, followed by randomized clinical trials. The low quality of evidence was attributed to case reports, editorials, and brief communications, according to the GRADE instrument. The risk of bias was analyzed according to the Cochrane instrument by analyzing the Funnel Plot graph (Sample size versus Effect size), using the Cohen test (d).

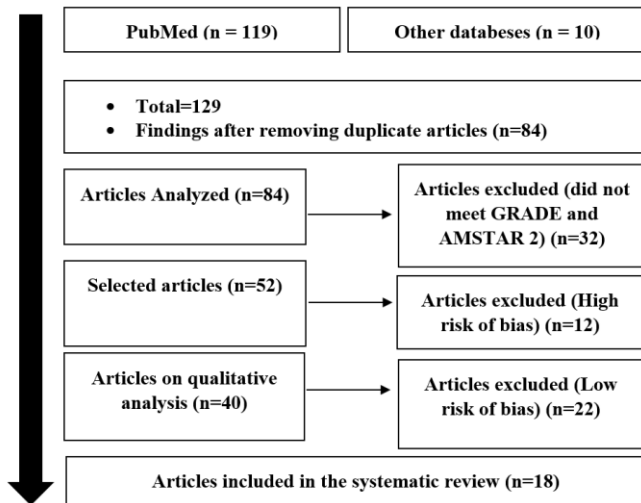
Results and Discussion

Summary of Findings

A total of 129 articles were found that were subjected to eligibility analysis, with 18 final studies being selected to compose the results of this systematic review. The studies listed were of medium to high quality (Figure 1), considering the level of scientific evidence of studies such as meta-analysis, consensus, randomized clinical, prospective, and observational. The biases did not compromise the scientific basis of the studies. According to the GRADE instrument, most studies showed homogeneity in their results, with $X^2=77.8\%>50\%$. Considering the Cochrane tool for risk

of bias, the overall assessment resulted in 12 studies with a high risk of bias and 32 studies that did not meet GRADE and AMSTAR-2.

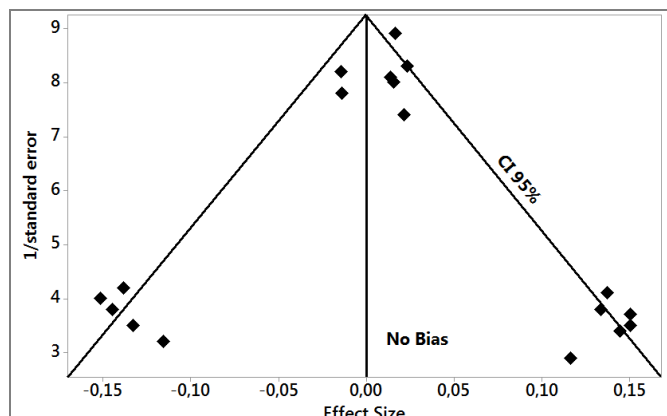
Figure 1. The article selection process by the level of methodological and publication quality.



Source: Own authorship.

Figure 2 presents the results of the risk of bias of the studies using the Funnel Plot, showing the calculation of the Effect Size (Magnitude of the difference) using the Cohen Test (d). Precision (sample size) was determined indirectly by the inverse of the standard error (1/Standard Error). This graph had a symmetrical behavior, not suggesting a significant risk of bias, both between studies with a small sample size (lower precision) that are shown at the bottom of the graph and in studies with a large sample size that are presented at the top.

Figure 2. The symmetric funnel plot suggests no risk of bias among the small sample size studies that are shown at the bottom of the graph. High confidence and high recommendation studies are shown above the graph (n=18 studies).



Source: Own authorship.

Major Clinical Findings - Dentistry and Palliative Care

Hospitalized patients with systemic diseases are most often completely dependent on care, consequently unable to guarantee adequate oral hygiene, and require the support of health professionals to carry out this and other activities. Therefore, acquiring and maintaining oral health, in addition to greater integration of medicine and dentistry, becomes necessary [11].

The existence of bacterial plaque in the mouth can interfere with medical treatments. This occurs due to the virulence factors of the microorganisms found in it, which can be intensified by the presence of other oral manifestations, such as periodontal disease, pulp necrosis, caries, fractured or infected teeth, mucosal lesions, trauma resulting from mobile or fixed prostheses. Such changes can worsen the patient's systemic condition. For adequate treatment of these conditions, the presence of a dental surgeon in a hospital environment is essential to diagnose oral changes and assist with medical therapy. This professional will work in emergency procedures in the face of trauma, in restorative and curative procedures to adapt to the oral environment, and in preventive procedures against the worsening of systemic disease or the appearance of hospital infection, in addition to providing comfort to the patient [3,11].

Systemic complications arising from oral pathogens have already been exposed since the main microorganisms associated with a primary focus in the oral cavity are *Pseudomonas aeruginosa*, *Staphylococcus aureus*, and *Streptococcus coagulase*. It is proven that improving oral hygiene and monitoring by a qualified professional drastically reduces the development or progression of respiratory diseases in high-risk adult patients who undergo palliative care and, especially, in patients in the therapy intensive care unit (ICU) [4,11].

Palliative care (PC) is defined as interdisciplinary and comprehensive care for patients and families facing a terminal illness, with the main focus on supporting and comforting these individuals. To help people in the process of death and with the increasing aging of the population, generating life-threatening chronic illnesses, the need for palliative care becomes increasingly greater [10]. The role of oral health professionals as providers of services performed in hospital or outpatient settings, especially in the ICU, aims to collaborate, offer, and add greater strength to the hospital, with a greater emphasis on comprehensive care and assistance [2-4].

Oral diseases, such as xerostomia, candidiasis, and stomatitis, have a high prevalence in older adults with serious illnesses, which can generate fatal complications

and compromise the quality of life of these patients. Dry mouth is the most common condition in individuals with serious illnesses and affects more than 90% of cancer patients undergoing palliative care. Furthermore, it can impair speech, taste, chewing, swallowing and affect social activities. Caries disease is also common in elderly people at the end of life, with 40% of the remaining teeth affected. A condition that can hinder nutrient intake is odontogenic pain, as it compromises the quality of life of these patients. If acute infection or dental pain is not treated, it can result in delirium and disruptive behaviors, in addition to altering the homeostatic balance and increasing the risk of cardiovascular complications. Another very common problem in patients at the end of life is poorly adapted prostheses, whose quality of life can be impaired [4,5].

Hospital dentistry aims to provide the patient with an improvement in their systemic condition. People with systemic illnesses who are hospitalized are generally dependent on care, which makes adequate oral hygiene difficult [1,2]. One of the main functions of the oral health team is to care for patients with a tracheostomy or tracheal intubation. The dental intervention group should improve the care of the mouth of patients with or without mechanical ventilation, brushing the teeth and tongue, in addition to applying 0.12% chlorhexidine gluconate to the mucosa, teeth, gums, and palate and humidification of the lips and oral cavity [5,12].

Until now, chlorhexidine has been the most effective agent in controlling dental biofilm. This substance demonstrates good substantivity, as it adheres to oral surfaces and has bacteriostatic properties for up to 12 hours after application. The recommended concentration is 0.12%, as it provides retention of more than 30% of the substance, through the mouthwash, in the soft tissues, increasing the antimicrobial activity time [13,14].

It is important to highlight that dental care for critically ill patients favors the prevention of hospital infections, especially respiratory infections, such as nosocomial pneumonia, which is one of the main infections in ICU patients generated by microorganisms that grow in the oropharynx. Its occurrence is worrying, because it is very common among hospitalized patients, generating a significant number of deaths, extending the individual's hospitalization, and requiring a greater number of medications and care [15].

Therefore, when performed properly, oral care greatly reduces the occurrence of pneumonia associated with the use of artificial ventilation in ICU patients, due to the dental and nursing teams working on oral care and primary foci of infection [5].

Differences Between Basic Care and Palliative Dental Care

Basic hospital dental care includes diagnosis of oral lesions and assistance in the treatment of oral manifestations arising from systemic diseases; diagnosis and treatment of oral diseases that can generate hemorrhagic, infectious, neurological or cardiovascular complications, both as a result of the local and systemic condition, and as a result of the treatment the patient is receiving; diagnosis and treatment of oral conditions that may contribute to the continuation or worsening of serious systemic disorders; action before treatments that may generate orofacial or systemic complications in the future; care for hospitalized individuals who manifest infection or pain of dental origin, and care for any condition that requires intervention in the hospital environment, due to the risk of infectious or hemorrhagic complications, whether at a systemic or local level [3,4].

PC is defined as the management of individuals with an advanced disease, in which the oral cavity is compromised, either due to the disease or as a result of treatment. The purpose of palliative care is to provide patients with alleviating the pain, symptoms, and stress of a serious illness, regardless of the diagnosis, and improve the quality of life of the patient and their family [6,10].

Also, PC is not based on protocols, but on principles such as providing relief from pain and other symptoms that are not pleasant; affirming life and judging death as a normal process of life; not advancing or postponing death; integrating spiritual and psychological conditions in the care of the individual; promote a support system that makes it possible for the patient to live as actively as possible until death; provide a support system to help the family during illness and grief; certify a multidisciplinary approach focused on the needs of patients and their families, especially support for mourning; improve quality of life and have a positive influence on the course of the illness, and Implement as early as possible, along with other therapeutic measures [5].

Finally, after evaluating the condition of the patient's oral cavity, care must be taken to prevent or treat problems found or that may affect the mouth. One of the main protocols is oral hygiene guidance, instructing the caregiver or the patient on the correct way to perform mechanical brushing and, if necessary, recommending additional medication [1]. Prosthetics and intra and extraoral wounds must be cleaned, associated with the application of local antiseptics, in addition to controlling pain in these wounds with the use of anesthetic solutions and ointments. If opportunistic infections such as candidiasis

are present, it is necessary to treat them with antifungals [4]. In cases of xerostomia, oral moisturizer can be applied, and/or artificial saliva can be used. If infectious foci and trauma to the mucosa are present, carry out appropriate treatment and remove any agent causing trauma and irritation. In addition, provide dietary guidance, instructing you to avoid citrus, spicy, and hot foods [16-18].

Conclusion

It was concluded that understanding the importance of the dentist in caring for patients with diseases that threaten the continuity of life, through relieving suffering and promoting quality of life, based on oral health. Thus, with the work of the multidisciplinary health team, the patient, their family members, and caregivers will have adequate assistance, based on the particularities of each case.

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