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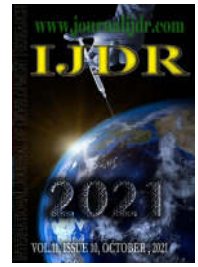
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NEUROLOGICAL DISORDERS AND ORAL HEALTH: AN INTEGRATIVE REVIEW

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ABSTRACT

Introduction: According to the World Health Organization (WHO), neurological diseases are a condition that has an important impact on the quality of life of a significant number of individuals worldwide. It is also known that patients with neurodegenerative diseases suffer from a certain apparatus to meet their deficiencies and needs and, therefore, guarantee the basic resources for the minimally desired care of their health in a global scope, including oral health. **Methodology:** This is an exploratory descriptive study that uses the integrative review method. In July 2021, the survey of articles indexed in the electronic database PubMed was carried out. The descriptors (DeCS) were used in English: “Neurology”; “Dental Care for Chronically Ill”; “Dental Care for Aged”; and “Dental Care for Disabled”. **Results and Discussion:** In the last decade, dentists were faced with the need to experience an unusual routine in the dental field: working in a multidisciplinary team, in health institutions specializing in the care of chronic degenerative diseases or hospital-related. There are several damages caused by neurological diseases, in addition to motor impairment, such patients are affected by cognitive changes that negatively influence oral health. **Conclusion:** Given the evidence, it is possible to observe the importance of oral health care in improving the quality of life and general health of individuals dependent on caregivers. In addition, it is essential to establish an oral hygiene protocol in order to prevent oral diseases in patients with such a profile, which could be feasible and reproducible.

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INTRODUCTION

According to the World Health Organization (WHO), neurological diseases are a condition that has an important impact on the quality of life of a significant number of individuals worldwide. This fact is independent of gender, age, education and income¹. It is also known that patients with neurodegenerative diseases suffer from a certain apparatus to meet their deficiencies and needs and, therefore, guarantee the basic resources for the minimally desired care of their health in a global scope, including oral health². Oral health is a fundamental indicator of general health and is closely related to well-being. The World Health Organization defined good oral health as “a complete state of inexistence of pain in the oral or facial cavity, oral or throat cancer, periodontal or gum diseases, tooth decay or tooth loss, oral infection or ulcers, in addition to other diseases that they repress their ability to chew, speak, bite and smile and have harmful

impacts on psychosocial well-being”. Poor oral health is related to unfavorable outcomes, such as aspiration pneumonia, prolonged hospital stay, low nutritional intake, increased dental treatment costs, as well as health problems within the dental sphere³. Neurological disorders affect the nervous system, causing different types of neurological disorders, where in their plurality they have a chronic character and result in disabilities. Such disorders can affect one or several segments of the nervous system, causing disturbances that are marked according to the damaged structure. Neurological disorders can come from physical damage caused in the brain, spinal cord or nerves, the existence of infections and certain diseases, in addition to heredity, however, there are conditions in which the causal factor is unknown. There are several origins of neurological disorders, they involve congenital, genetic, hereditary and acquired origin⁴. Periodontal disease, tooth decay and problems related to occlusion stand out as the main dental changes observed in patients with neurological diseases⁵. In view of these facts, the present study aimed

to evaluate the oral health conditions of patients with neurological disorders, considering that poor oral health provides significant discomfort, pain, and even increased risk of death, thus it is necessary to pay attention to the oral health of such patients.

METHODOLOGY

This is an exploratory descriptive study, which uses the integrative review method, a category that consists of exploring the knowledge already defined, including research with different techniques. The data were collected in the month of July of 2021, with the final date of the database search until July 26, 2021, through databases such as: Pubmed for articles published from the year of 2007, that could answer the following question: "What is the importance of oral health care in patients with neurological disorders?" The descriptive variables extracted were: Title, author, year, study design, number of participants, average age, medical diagnosis, evaluation methods and results. The online search was carried out in the different databases, using the PICO strategy (population, intervention, comparison/control and result), as follows: Population: patients with neurological disorders and intervention: dental care. The search terms used were respectively in English: "Neurology"; "Dental Care for Chronically Ill"; "Dental Care for Aged"; and "Dental Care for Disabled". Priority was given to applying "full texts" as a search filter, as the authors understand that the recognition of freely available works is of foremost importance and, above all, because they consider that these materials are essential to promote equal access to information.

- In Pubmed, the following applied filters were selected: Free full text; Complete text; Clinical Study; Clinical Trial; Comparative study; Controlled Clinical Trial; Randomized Clinical Trial; from 01/01/2007 to 07/26/2021 for qualified studies or abstracts brought the descriptors: Dental Care for Chronically Ill; Dental Care for the Elderly with 4 results. Using the descriptors: Dental Care for Chronic Patients, Dental Care for the Disabled, 8 results were selected. Using the descriptors: Neurology, Dental Care for Chronic Patients, 136 results were selected.

After a preliminary survey, the inclusion criteria did not include those that were not directly related to the topic. The potentially eligible studies had their texts analyzed based on the titles or reading of the texts' abstracts. During the manual search in the references, new studies were found. After selecting the single studies that matched the topic of interest, 18 articles were found. After the careful selection, a full reading of the 18 articles selected from the sample was started and the results were organized. Content analysis method was used. In this qualitative approach, the materials were examined and systematized, recognizing common themes, conformity or discrepancies and general trends.

RESULTS AND DISCUSSION

In the last decade, dentists were faced with the need to experience an unusual routine in the dental field: working in a multidisciplinary team, in health institutions specializing in the care of chronic degenerative diseases or of hospital nature. Managing patients who are overly dependent in carrying out their daily activities, such as clothing, food and especially bodily and oral hygiene tasks⁶. In the hospital environment, the importance of dental care and the encouragement of the nursing staff to carry out supervised daily oral hygiene activities is substantial⁷. In the case of patients with neurological disorders, who in their plurality have other related deficiencies, such as visual, hearing, language component disorders, in addition to the inability to coordinate movements, requesting oral hygiene may sometimes not be workable. This condition is restricted to the patient and their caregiver, due to the patient's non-cooperation or even the team's lack of motivation⁸. With regard to the oral health of patients with neurological disorders, these patients are often

affected by nutritional disorders, in which the use of enteral nutrition is indicated.

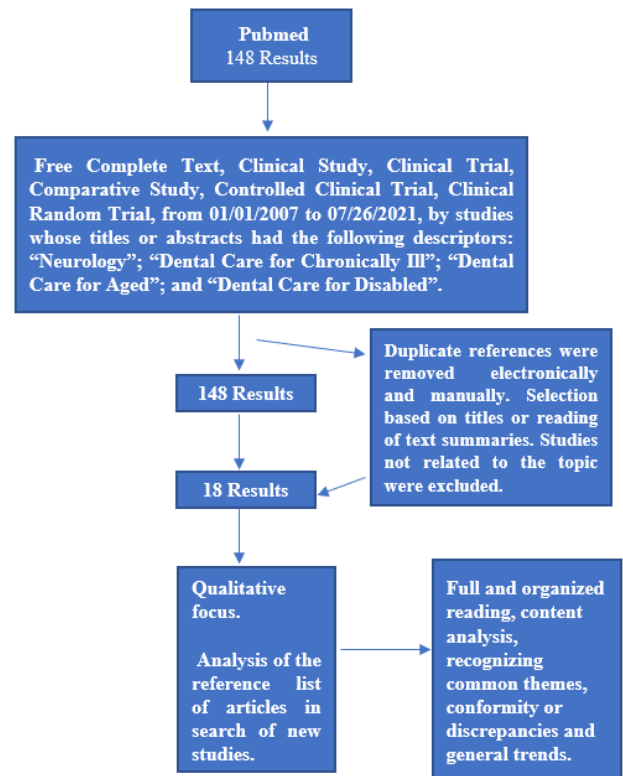


Figure 1. Shows the study review flowchart (adapted from PRISMA)

The current feeding status of these individuals causes changes in the oral cavity microbiota, potentiating the harmful actions of the dental biofilm⁹. The Biofilm and dental calculus are important reservoirs of anaerobes in the oral cavity. Thus, chemical and mechanical controls deserve special attention in all clinical protocols aimed at patients with neurological disorders, in order to prevent microbial aspiration and the development of sepsis. Furthermore, severe gingivitis and periodontitis can act as a means of dissemination of such pathogens, favoring the occurrence of nosocomial pneumonia, especially in institutionalized patients¹⁰. The discernment of the role of oral biofilm as originating from microorganisms involved in serious infections resulted in researches that sought to ensure the prevention of septic conditions in patients with intensive care, especially through 0.12% chlorhexidine gluconate and xylitol, an artificial sweetener, whose function is to increase the antimicrobial characteristics of the chlorhexidine gluconate solution, configuring itself as an effective procedure in combating oral microbiota^{11,18}.

According to Brown (2007), aspiration pneumonia is one of the most common serious infections, providing important mortality and morbidity rates, both being applied to healthy and weakened individuals. It is also stated that any methods of preventing pneumonia have substantial benefits and important implications for health care¹². It is noteworthy that the use of psychotropic medications showed harmful associations with the occurrence of yeasts in the oral cavity of patients, with this presentation being higher in elderly patients with a higher rate of decayed, missing and filled teeth (DMFT) and impaired oral hygiene. This fact reflects the organic weakness of these patients, since fungi present themselves as opportunistic pathogens^{6,17}. The sequelae imposed by neurodegenerative diseases generate disorders and lead to criminal impacts, in addition to difficulties and dependence to perform basic tasks of daily living and to practice self-care with general and oral health. The dental biofilm that can be formed in these patients occurs more easily, predisposing to periodontal disease. The difficult removal of this biofilm is highlighted, as these patients are unable to

perform correct and vigorous oral hygiene. Thus, it is necessary to carry out periodontal therapy through the execution of supra and sub gingival scaling to remove accumulated dental biofilm and tartar¹³. There are several damages caused by neurological diseases, in addition to motor impairment, such patients are affected by cognitive changes that negatively influence oral health¹⁴. Poor oral health in dementia, for example, can be attributed to the following reasons: first, to carry out adequate personal hygiene, including oral health, correct cognitive functioning is necessary, therefore, it becomes laborious for these patients to maintain minimally satisfactory hygiene. Second, motor impairment, psychological and behavioral disorders in dementia restrict patients' ability to perform oral care, in addition to becoming a difficult task for caregivers to provide sufficient care. Third, caregivers assigned to this role commonly neglect it, as the behavioral and psychological aspects of dementia are generally treated as priorities^{15,16}.

CONCLUSION

Given the evidence, it is possible to observe the importance of oral health care in improving the quality of life and general health of individuals dependent on caregivers. Thus, both family members and healthcare professionals who take care of them are the ones who most need to be educationally motivated by the dentist, especially when the caregiver is responsible for a patient with neurological disorders. Furthermore, it is essential to establish an oral hygiene protocol in order to prevent oral diseases in patients with such a profile, which could be viable and reproducible.

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