

Condições periodontais em pacientes com deficiências. Uma revisão de literatura

Periodontal conditions in patients with disabilities. A literature review.

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Resumo

Objetivo: Trata-se de uma revisão de literatura que tem como objetivo identificar as condições periodontais mais prevalentes em pacientes com deficiência e discutir o atendimento odontológico a esses pacientes. **Revisão da literatura:** As bases de dados Pubmed, Scielo, Scopus e Google acadêmico foram utilizadas para pesquisa de agosto de 2022 a julho de 2023. Os termos de pesquisa utilizados foram "necessidades especiais", "indivíduos com deficiência", "deficiência intelectual", "paralisia cerebral", "espectro autista", "síndrome de Down", "saúde bucal", "doenças periodontais", "tratamento periodontal" e "atendimento odontológico". Não houve limitação de idioma e as referências recentes tiveram prioridade. **Considerações Finais:** Os principais achados mostram que os dentistas frequentemente tratam pacientes com transtorno do espectro do autismo, síndrome de Down e paralisia cerebral. A dificuldade em manter a higiene bucal, tanto do paciente quanto do cuidador, contribui para o desenvolvimento de patologias bucais, principalmente doenças periodontais. As condições periodontais mais comuns encontradas nesses pacientes são gengivite induzida por placa, periodontite e hiperplasia gengival medicamentosa. Os profissionais devem desenvolver estratégias de prevenção e identificação de fatores de risco para oferecer uma condição bucal mais saudável e melhor qualidade de vida aos pacientes.

Palavras-chave: saúde bucal; doenças periodontais; cuidado dental; crianças deficientes.

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Introduction

In Brazil, approximately 24% of the population reports having difficulties with vision, hearing, mobility, or mental/intellectual disabilities¹. These individuals require special care in the health field and are identified as Patients with Disabilities (DP). DP often exhibits chronic conditions that can lead to physical, cognitive, or behavioral limitations, which can interfere with dental appointments². Patients with intellectual limitations, such as those with Down syndrome, cerebral palsy, and autism spectrum disorder^{3,4}, are particularly at risk in dental care, as they are more prone to oral hygiene issues and susceptible to periodontal disease (PD) and caries⁵. Autonomy level often influences DP's oral hygiene practices, and caregivers often assist with oral hygiene. However, caregivers' education level and workload can influence the care quality provided⁶.

PDs are prevalent among DP and are characterized by inflammatory disorders that progressively destroy the periodontium⁷. Gingivitis is the initial stage and is easily corrected if treated promptly. If not, it can lead to periodontitis, which is characterized by the downward shift of the junctional epithelium and damage of the periodontal ligament and alveolar bone⁸. Besides biofilm accumulation, immune response, and risk factors influence PD development⁹.

Treatment of PDs involves scaling and root planing to lessen the pathogenic microbial load. In addition, patients need to maintain good oral hygiene practices at home, such as using toothbrushes, dental floss, and interdental brushes, as well as fluoride dentifrices, which can help lessen periodontal inflammation¹⁰.

Given their psychomotor limitations, DP faces a higher risk of developing PDs¹¹. Unfortunately, DP struggles to access dental care. Many dental professionals are unprepared to handle them, making it crucial to include DP in regular dental care to guarantee oral health maintenance and prevent PDs' systemic consequences¹². Therefore, this article aims to present a

narrative review of periodontal disease literature, particularly focusing on DP's importance in dental care.

Review of literature

Methods

This study presents a literature review in narrative format. The Pubmed, Scielo, Scopus, and academic Google databases were used to search from August 2022 to July 2023. The search terms used were "special needs", "disabled individuals", "intellectual disabilities", "cerebral palsy", "autistic spectrum", "Down syndrome", "oral health", "periodontal diseases", "periodontal treatment", and "dental care." There was no language limitation, and recent references were given priority.

As this was a narrative review, the inclusion criteria were broad and included case reports, clinical trials, and other review studies, as well as book chapters and manuals related to the theme of this study.

Results and Discussion

Patients with disabilities (DP) are individuals with biological, physical, mental, social, or behavioral changes or conditions, which can be simple or complex, momentary, or permanent, requiring appropriate multidisciplinary approaches and specific protocols¹³. DP are classified based on their impairments or areas of dysfunction or ailment, such as intellectual, social, psychological, and behavioral problems, physical and congenital deficiencies, sensory and auditory communication issues, chronic systemic and endocrine-metabolic diseases, and certain physiological conditions¹⁴.

The latest census by the Brazilian Institute of Geography and Statistics reports that 23.9% of the national population has some form of disability¹. Mental deficiency, cerebral palsy, and hereditary inheritance, such as Down syndrome, are the most cited types of disabilities, with Down syndrome affecting 1 in every 1000 live births according to a study by the São Paulo State University¹⁵.

Autism spectrum disorder (ASD) is believed to result from a gene mutation that occurs at the beginning of fetal development, inhibiting the expression of other genes that are not mutated¹⁶. Genetic, neurobiological, and environmental factors are also thought to contribute to the development of ASD¹⁷. Down syndrome is caused by a chromosomal alteration (T21) and can occur in all ethnicities and social classes¹⁸. Cerebral palsy can result from lack of oxygenation, cerebral ischemia, or genetic malformation during the prenatal period, neonatal anoxia, prematurity, and low birth weight during the perinatal period, or meningeal infection, encephalitis, cerebral vasculitis, or viral infection postnatally, and is more prevalent up to 2 years of age¹⁹.

Patients with disabilities: most prevalent conditions

Autism Spectrum Disorder

Patients with Autism Spectrum Disorder (ASD) comprise a significant proportion of People with Disabilities, with an incidence rate of 1 for every 68 children. It has been estimated that boys are more affected than girls in a ratio of 4:5²⁰. This neurological disorder is characterized by deficits in social interaction, repetitive activities, and interests, as well as sensory abnormalities. These characteristics persist throughout an individual's life, with speech impairments such as absence, delay, or incomprehension being common. Individuals with ASD often require assistance with their oral hygiene due to difficulties in performing it. Some medications taken by ASD patients can also lead to oral changes such as xerostomia, gingival hyperplasia, and caries²¹.

Down Syndrome

Down syndrome is characterized as a genetic condition with a prevalence of 14 in 10,000 live births. It results from total or partial trisomy of chromosome 21, leading to the presence of an extra chromosome - 47 chromosomes. Intellectual impairment is a common feature among individuals with this syndrome, along with phenotypic traits such as narrow eyes, flat noses, short stature, flattened face, and brachycephaly. People with Down syndrome may also experience various health complications including heart disease, thyroid abnormalities, overweight, vitamin and mineral deficiencies, and hypercholesterolemia²². Regarding oral characteristics, notable findings include a narrow, high, and ogival palate, small mouth and jaw, fissured tongue, macroglossia, open bite or crossbite, crowding, and malocclusion²³.

Cerebral Palsy

Cerebral Palsy (CP) is a non-progressive chronic neurological condition that primarily affects the motor and cognitive development of individuals. Its etiology is closely associated with factors that negatively impact maternal health during pregnancy, such as exposure to toxins and infectious agents, inadequate nutrition, hypoxia, perinatal trauma, and prematurity before 28 weeks²⁴. The primary manifestations of CP include muscle weakness, limb stiffness, involuntary movements, and respiratory impairment, which significantly impact independence and quality of life in affected individuals³. Due to cognitive impairment, individuals with CP often face challenges in maintaining oral hygiene, leading to a high prevalence of caries and periodontal disease in most cases.

Periodontal Diseases

Periodontal disease is an inflammatory process that leads to progressive destruction of the supporting tissues of the teeth. This process is influenced by an imbalance between the pathogenic

microbiota, mainly gram-negative bacteria, in a susceptible individual, and the host's immune response, which can result in tooth loss²⁵. Epidemiological data indicate that 45 to 50% of the global population has compromised periodontal health, primarily presenting as gingivitis and periodontitis²⁶.

The diagnosis of periodontal disease is based on signs and symptoms, clinical examinations, and complementary tests that evaluate periodontal parameters such as bleeding on probing, periodontal probing depth, clinical attachment level, and radiographic bone loss. Gingivitis, the initial form of periodontal disease, is diagnosed by bleeding from the gingival margin. On the other hand, periodontitis, the more severe form of the disease, is diagnosed by the presence of gingival recession, periodontal pockets, or both, indicating the loss of supporting tissues²⁷.

The treatment of periodontal disease includes the mechanical plaque control that aims to remove supragingival biofilm to reduce the prevalence of these diseases. This control is achieved through oral hygiene practices, including brushing, flossing, and the use of auxiliary instruments. In patients with reduced manual dexterity or inability to adequately control supragingival plaque, the use of electric toothbrushes and adjunctive antimicrobial methods such as chlorhexidine or mouth rinses containing essential oils may be recommended²⁸.

When necessary, intervention in the subgingival environment is an essential part of periodontal disease treatment and should only be performed by a dentist, as the patient cannot access this area. By controlling the risk factors that contribute to the onset and progression of the disease, improvements in periodontal clinical parameters can be expected, such as a reduction in probing depth, bleeding on probing, plaque indices, and gingival and suppuration indices²⁹.

Furthermore, periodontal disease has been associated with various systemic conditions, including cardiovascular diseases, adverse pregnancy outcomes, respiratory diseases, and the bidirectional relationship between periodontitis and diabetes mellitus, among others¹². Therefore,

evidence suggests that treating periodontal diseases can lead to a decrease in serum levels of inflammatory factors, demonstrating the systemic impact of this disease³⁰.

Periodontal Diseases and DPs

The commitment of caregivers, the preparedness of the dentist, diet, medications, breathing, socioeconomic determinants, and the unique needs of individuals with disabilities directly influence the oral hygiene and oral health of individuals with disabilities (DP)³¹. Considering these factors, along with the prioritization of overall healthcare, higher levels of bacterial plaque accumulation are observed, contributing to the development of oral diseases³².

Among the oral pathologies prevalent in individuals with disabilities, periodontal diseases are significant, and their presence can cause physical and psychological discomfort due to functional impairments in affected individuals³³. Approximately 80% of patients with developmental disabilities, intellectual disabilities, or both are affected by periodontitis, while the remaining 20% are affected by plaque-induced gingivitis³⁴. It is crucial to consider that the challenges associated with performing adequate oral hygiene contribute to the greater severity of periodontal diseases in this population.

Patients with syndromes such as Down Syndrome are more prone to the development of generalized gingivitis and rapid progression of periodontitis, which can lead to tooth mobility and subsequent tooth loss by the fourth decade of life¹¹. In addition to the compromised immune response, the presence of macroglossia and tongue hypotonia in these patients further contributes to the progression of oral infectious diseases, including periodontitis³⁵. Moreover, gingival hyperplasia, gingival recession, tooth mobility, and periodontal pockets are commonly observed in these individuals. Furthermore, periodontal disease in these individuals can be classified as a manifestation of a genetic disorder associated with immunological dysfunction, with its progression and severity influenced by age³⁶.

Additionally, it is important to highlight that DP who use medications that interfere with the inflammatory and immune response are also at a higher risk of developing periodontal diseases, as these drugs can have adverse effects such as drug-induced gingival hyperplasia³⁷. Some examples of such medications include anticonvulsants, calcium channel blockers, and immunosuppressants.

Dental Care for DP

Dental care for DP is currently considered a challenge by dentists. This is primarily due to a lack of knowledge and preparation among professionals to cater to this patient profile, as well as a scarcity of professionals available to assist with the procedures. It is important to note that the demand for oral health care for individuals with disabilities has significantly increased in recent years, largely due to improvements in their survival rates³⁸.

In this context, the dentist's attitude during the appointment becomes crucial to ensure that patients and caregivers do not perceive any insecurity or anxiety, thereby avoiding discomfort and fears and establishing a good relationship between all parties involved. However, individuals with disabilities require additional attention and care during dental procedures to facilitate their adaptation to the professional and dental environment³⁹.

When it comes to cooperation from individuals with disabilities during dental appointments and effective communication, behavior management techniques should be employed based on the patient's clinical and systemic health condition¹³. Among these methods, the Tell-Show-Do technique and Positive Reinforcement are widely used. The former involves explaining and demonstrating the procedure to the patient before its execution, while the latter involves using games or providing rewards to encourage the cooperation of individuals with disabilities during dental care⁴⁰.

Similarly, providing a tour of the dental office, engaging in dialogue, offering clear explanations, practicing empathetic listening, and keeping consultations short can help improve

the relationship between individuals with disabilities, their caregivers, and the dentist. In cases where patients have severe difficulty understanding and cooperating during appointments, requiring more complex treatments, consideration should be given to multidisciplinary dental care in a hospital environment under general anesthesia.

Therefore, considering the challenges associated with accessing professional care due to the increased difficulty in providing dental care for individuals with disabilities, it is crucial for dentists to intervene and identify risk factors, develop preventive protocols, and closely monitor the patients and their caregivers. These strategies aim to prevent and minimize oral problems resulting from difficulties in performing oral hygiene, predisposing factors specific to the individual, medications used by them, or a combination of these factors.

Conclusion

This narrative review emphasizes the importance of individuals with disabilities visiting the dentist and receiving individualized dental care, with the active involvement of family members and caregivers. The review also highlights the need for health promotion through preventive and curative actions. Additionally, it identifies a deficiency in the training of dental professionals to provide adequate care for individuals with disabilities and emphasizes the high demand for increased knowledge and practices in this area.

Abstract

Objective: This is a literature review that aims to identify the most prevalent periodontal conditions in patients with disabilities and to discuss dental care for these patients. Literature review: The Pubmed, Scielo, Scopus, and academic Google databases were used to search from August 2022 to July 2023. The search terms used were "special needs", "disabled individuals", "intellectual disabilities", "cerebral palsy", "autistic spectrum", "Down syndrome", "oral health", "periodontal diseases", "periodontal treatment", and "dental care." There was no language limitation, and recent references were given priority. Final Considerations: The main findings show that dentists often treat patients with autism spectrum disorder, Down syndrome, and cerebral palsy. The difficulty in maintaining oral hygiene, for both the patient and the caregiver, contributes to the development of oral pathologies, especially periodontal diseases. The most common periodontal conditions found in these patients are plaque-induced gingivitis, periodontitis, and medicated gingival hyperplasia. Professionals must develop strategies for the prevention and identification of risk factors to offer a healthier oral condition and a better quality of life for the patients.

Keywords: oral health; periodontal diseases; dental care; disabled children.

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