CHARACTERIZATION OF THE ORAL HEALTH OF INDIVIDUALS WITH SPECIAL NEEDS AT CERCI PORTALEGRE

CARACTERIZAÇÃO DA SAÚDE ORAL DE INDIVÍDUOS COM NECESSIDADES ESPECIAIS DE PORTALEGRE **PT**

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CARACTERIZACIÓN DE LA SALUD BUCAL DE PERSONAS CON NECESIDADES ESPECIALES EN PORTALEGRE **ES**

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ABSTRACT

Introduction: At the present time, progress has been made between the relation in oral health and general health. Therefore, deepen knowledge of the oral health status of a population is essential for the establishment of health promotion measures. Since populations with special needs require a multidisciplinary approach, it is even more important to define these measures. The first step will be to establish the baseline values of a population, and thus to better understand their oral health needs. Objectives: This work aims to characterize the oral health status of a population with special needs at Cerci Portalegre. Methods: After obtaining the informed consent of the heads of the institution and the individuals' legal guardians, as well as the consent of the individuals, the observation of the oral cavity was carried out to collect the present and past history of dental caries using the DMFT index (index of decayed, missing and filled teeth) and the evaluation of bacterial plaque accumulation on the dental surface by the DI'S index (bacterial plaque index). Results: Forty individuals were observed, 29 men and 11 women, with a mean age of 35 years. It was observed that these individuals had a mean value of DMFT of 4.7 decayed, missing and filled teeth, with no statistically significant difference between men and women (p=0.952). The mean value of DI'S was 2.02 which represents a high value of bacterial plaque accumulation which, being an etiological factor of oral diseases, indicates a risk of developing oral health problems. Conclusions: Patients with disabilities in most cases require more care at the level of oral health, due to their physical and mental inability to perform correct oral hygiene habits. Therefore, promoting oral health and educational measures may play a relevant role in the study population for the prevention of oral health problems and consequently other health problems.

Keywords: *Oral Health, Dental Caries, Health Promotion*

RESUMO

Introdução: Atualmente, tem existido um progresso na forma como a saúde oral é encarada face à saúde geral. Desta forma, o conhecimento do estado da saúde oral de uma população é essencial para o estabelecimento de medidas promotoras de saúde. Dado de que estas populações com necessidades especiais querem uma abordagem multidisciplinar, é então ainda mais relevante a definição destas mesmas medidas. O primeiro passo será estabelecer valores de base da população, e desta forma conhecer mais adequadamente as suas necessidades de saúde oral. Objectivos: Este trabalho tem por objetivo caracterizar o estado de saúde oral de uma população com necessidades especiais da Cerci Portalegre. Métodos: Após a obtenção do consentimento informado e esclarecido dos responsáveis da instituição e responsáveis legais dos indivíduos, assim como o assentimento dos indivíduos, efetuou-se a observação da cavidade oral para recolha da história presente e passada de cárie dentária pelo índice CPOD (índice de dentes cariados, perdidos e obturados) e a avaliação de acumulação de placa bacteriana na superfície dentária pelo índice DI'S (índice de placa bacteriana). Resultados: Foram observados 40 indivíduos, 29 homens e 11 mulheres, com uma idade média de 35 anos. Observou-se que estes indivíduos apresentavam um valor médio de CPOD de 4.7 dentes cariados, perdidos e obturados, sem diferença estatisticamente significativa entre homens e mulheres (p=0.952). O valor médio de DI'S foi de 2.02 o que representa um valor elevado de acumulação de placa bacteriana que, sendo um fator etiológico das doenças orais indica um risco de desenvolvimento de problemas de saúde oral. Conclusões: Na

maioria dos casos de indivíduos com deficiências, devido à sua incapacidade física e mental para realizar hábitos correctos de higiene oral requerem mais cuidados ao nível da saúde oral. Por conseguinte, a promoção da saúde oral e medidas educativas podem desempenhar um papel relevante na população estudada para a prevenção de problemas de saúde oral e, consequentemente, de outros problemas de saúde.

Palavras-chave: *Saúde oral, cárie dentária, promoção de saúde,*

RESUMEN

Introducción: En la actualidad, se han producido avances en la forma de considerar la salud bucodental en relación con la salud general. Por lo tanto, el conocimiento del estado de salud bucodental de una población es esencial para el establecimiento de medidas de promoción de la salud. Dado que las poblaciones con necesidades especiales requieren un enfoque multidisciplinar, es aún más importante definir estas medidas. El primer paso será establecer los valores de referencia de la población, y así conocer más adecuadamente sus necesidades de salud bucodental. Objetivos: Este trabajo tiene como objetivo caracterizar el estado de salud bucal de una población con necesidades especiales en Cerci Portalegre. Métodos: Luego de obtener el consentimiento informado e informado de los responsables de la institución y de los tutores legales de las personas, así como el consentimiento de las personas, se realizó la observación de la cavidad bucal para recolectar la historia actual y pasada de caries dental. utilizando el índice CPOD (índice de dientes cariados, perdidos y obturados) y la evaluación de la acumulación de placa bacteriana en la superficie dental mediante el índice DI'S (índice de placa bacteriana). Resultados: Se observaron 40 individuos, 29 hombres y 11 mujeres, con una edad promedio de 35 años. Se observó que estos individuos tenían un valor medio de CPOD de 4,7 dientes cariados, perdidos y obturados, sin diferencia estadísticamente significativa entre hombres y mujeres (p = 0,952). El valor medio de DI'S fue 2,02 lo que representa un alto valor de acumulación de placa bacteriana que, al ser un factor etiológico de enfermedades bucodentales, indica riesgo de desarrollar problemas de salud bucal. Conclusiones: En la mayoría de los casos de personas con discapacidad, debido a su incapacidad física y mental para llevar a cabo unos hábitos de higiene bucal correctos, requieren más cuidados a nivel de la salud bucodental. Por lo tanto, las medidas de promoción y educación de la salud bucodental pueden desempeñar un papel relevante en la población estudiada para la prevención de problemas de salud bucodental y, en consecuencia, de otros problemas de salud.

Palavras-chave: *Salud bucal, Caries dental, Promoción de la salud*

INTRODUCTION

Oral health and quality oral healthcare contribute to holistic health. It should be a human right, not a privilege. Disability is the loss or limitation of opportunities to participate in normal community life on an equal level with others due to physical and social barriers. The barriers to oral health that people with special needs encounter vary according to age and the level of parental or social support received. Attitudes toward oral health, dental hygiene, and dental health care and the relative value placed on these factors should be viewed in the context of disease, disability, socioeconomic status, and the stress imposed on daily life for individuals, family members, and caregivers.

Oral health can have a low priority in the context of these pressures and other disabilities, which are more life threatening. It therefore requires a change in attitude and practice for parents/carers to help with oral health as part of routine care. Evidence confirms that screening services for people with learning disabilities are lower and they have poor oral health compared to the general population. Poor oral health can add to a problem, whereas good oral health has holistic benefits as it can improve general health, dignity and self- esteem, social integration and quality of life.

Regarding the oral health of people with special needs, it only started to be considered a need a few years ago. Some studies refer that these individuals have poor oral hygiene and a high prevalence of oral diseases compared to the general population (Glassman & Miller, 2009; Koneru & Sigal, 2009).

The knowledge of the oral health status of a population is essential for the establishment of health-promoting measures, since the relationship between oral health and general health is well established (Haumschild & Haumschild, 2009). The information of populations with special needs is even more relevant when defining these same measures, as well as their multidisciplinary approach (Borbolla et al., 2018). A first step is to establish baseline values of the population to know their oral health needs (Mullan & Epstein, 2002).

Several studies state that continuous plaque control intervention is necessary for a reduction in oral diseases.

Tooth brushing is the main mechanical method of removing plaque and, when carried out effectively, is one of the main procedures in the fight against dental caries and periodontal pathology. To be effective, this measure must follow a certain technique and sequence so that all dental surfaces are cleaned. However, not all individuals have the motor and intellectual abilities to do this correctly. It has been shown that individuals with special needs have greater difficulty in plaque control than their non-disabled peers, and that for plaque removal to be effective, greater attention from caregivers and/or tools adapted to the motor function may be necessary.

This study aims to characterize the oral health status of a population with special needs at Cerci Portalegre.

1. THEORETICAL FRAMEWORK

Oral health in people with special needs is a very complex issue that, for most of these people, includes several factors besides oral health and has a major impact on overall health.

Individuals with special needs are considered a high-risk group for the development of oral diseases such as dental caries, periodontal disease, and occlusion challenges. The presence of enamel changes, soft sticky diet, frequent intake of carbohydrates, chronic use of medication, difficulty or inability to perform dental hygiene, inadequate movement of the masticatory muscles and tongue, changes in salivary flow, and difficulty in maintaining oral hygiene are risk factors that contribute to the higher prevalence of oral diseases in this population.

These people have worse oral health when compared to the general population due to their limitations in performing an adequate dental hygiene, and also due to feeding difficulties and medication associated with their condition (Pereira et al., 2010).

In some Portuguese studies done with this population, it was possible to verify that people with disabilities have a worse oral health status when compared to the rest of the population (Bizarra and Graça, 2010; Bizarra, 2015).

Individuals with disabilities often have many oral problems due to their own characteristics, and most of the time, they have reduced access to diagnosis, prevention and treatment.

In addition to these difficulties, they often lack financial resources from family members/caregivers, which contributes to many only receiving dental treatment in emergency situations.

Most individuals with special needs usually lack the ability to effectively control dental plaque and often do not allow others to do so adequately because they exhibit involuntary movements or even aggressive behavior.

Individuals with special needs show high rates of periodontal disease, dental caries, and have worse levels of care and more teeth with untreated active dental caries; however, they receive far fewer dental treatments than the general population (Silva, 2020).

In the most vulnerable groups, such as people with disabilities, oral health is generally worse than in the general population due to the limitations they have in adopting behaviors that promote or maintain good oral health status (Pereira et al., 2010).

Given this reality, there is a need for the implementation of health education and prevention activities, and the participation of the oral health professional in the rehabilitation and integration of these special patients in the social environment is of utmost importance.

In order to implement any intervention in oral health prevention and promotion, it is first necessary to obtain information to characterize the oral health.

The maintenance of good oral health depends on the individual being able to have good dental hygiene habits, promoting a plaque-free mouth, performing a proper tooth brushing and flossing technique, which allows for a proper hygiene of the tooth surfaces (Sherman et al., 2008).

As individuals have difficulties in performing correct oral hygiene, family members and caregivers of institutions should be guided and taught to perform it.

The improvement of access to oral health care by individuals with special needs has been developed in order to reduce inequalities, due to their characteristics, are the fact that they are more susceptible to oral diseases and have greater difficulty in accessing appointments in this area of health (Silva, 2020).

The level of access to oral health appointments results from multiple factors that may be related to the individual, but also to the service system, to oral health professionals and to the society where they live.

Individual-related barriers focus on the characteristics of people with special needs and the difficulty they have in achieving or maintaining good oral health. The inability to understand, to communicate, anxiety and fear result in reduced access to dental treatment, mainly due to the difficulty of collaboration in consultations.

Regarding satisfaction with oral health services, people with higher education have lower levels of satisfaction, this may be related to greater knowledge about the quality of services and increased expectations. Socioeconomic level is described by several authors as one of the factors that produces more inequalities in access to oral health services (Patel, 2012). People from more advantaged socioeconomic groups access more oral health services and have better oral health status (Silva, 2020).

In Portugal, dentistry is mostly private, which makes it more difficult for family members to bear the costs of appointments and treatments. People with special needs belong to vulnerable groups, which in general have more difficulty in accessing oral health care.

Regarding health attitudes, people who give greater importance to oral health also give greater importance to dental hygiene habits and the need to make oral health appointments, and consequently, have a better oral health (Silva, 2020).

People living in rural areas access oral health services less because they are more isolated and have less oral health services available. Besides being associated with differences in access to oral health services, the place of residence may also influence oral health status.

Regarding the level of independence, there are no studies that allow establishing a relationship between the level of independence in walking and the regular use of oral health services. However, it is understood that associated with a lower degree of independence there may be a lower degree of autonomy to go to appointments.

Regarding the degree of independence in performing dental hygiene, the study by Esteves et al. (2017) found that people with special needs that are more dependent had better oral health status. This result, according to the authors, can be justified by the fact that third parties perform the oral hygiene of the person with special needs more effectively.

This study aimed to characterize the oral health status of a population with special needs from an institution.

2. METHODS

The present work is characterized as a community-based study where a convenience sample was used, having been obtained through a non-probabilistic sampling technique. This sample consisted of institutionalized and non-institutionalized young people from Cerci de Portalegre.

The young people who participated in this study were authorized by their guardians and/or guardians, where the intention of the intervention by the group of students of the 3rd year of Oral Hygiene at ESS/IPP was explained.

Inclusion criteria: For this study, only young people who met the inclusion criteria stipulated by the researchers were included: having special needs, having authorization from the parent/guardian for the intervention, having been observed by the 3rd year Oral Hygiene students.

Exclusion criteria: The young people who were excluded from this study did not meet the following criteria, not being authorized by the parent/guardian, not having been observed by the students of the 3rd year of Oral Hygiene.

Data collection instruments: After obtaining the informed consent of those responsible for the institution and the individuals' legal guardians, as well as the consent of the individuals, the oral cavity was observed to collect the present and past history of dental caries using the DMFT index (decayed, missing and filled teeth index) and the evaluation of bacterial plaque accumulation on the tooth surface using the DI'S index (Debris - bacterial plaque index).

Data collection for this study was conducted by a group of six 3rd year students of the Degree in Oral Hygiene of the School of Health of the Polytechnic Institute of Portalegre.

After the organization of students by pairs, observations and data collection were carried out. Within each pair there was an observer and a recorder and at the end the teacher in charge confirmed the data collected.

For the DMFT Index, which is used to measure the prevalence of dental caries, regarding the number of decayed teeth (D), teeth lost by caries (M) and teeth filled due to caries (F), on the number of observed individuals, a mouth mirror and a probe were used as means of observation aid. According to its evaluation criteria, established by the WHO (WHO, 1997), all teeth present in the oral cavity are observed, assigning a code according to the type of dentition to which they belong. The codes assigned for each permanent tooth were, respectively: 0 - healthy and without clinical evidence of caries, where healthy teeth are considered as white, pigmented or rough spots, fissures without softening, areas with moderate or intense fluorosis and, finally, areas with attrition/abrasion; 1 - decayed and presenting one of the following characteristics: loss of substance, soft cavity or a softened wall. Also considered decayed are teeth that have provisional fillings and have recurrent caries despite being restored or sealed; 2 - restored and carious where there is no distinction between primary and secondary caries, having one or more restored and carious areas; 3 - restored without caries with one or more fillings; 4 - extracted due to caries where they are excluded for other reasons; 5 - absent for other reasons that tooth that extracted due to trauma, periodontal disease, orthodontics or absent for congenital reasons; 6 - sealants on occlusal surface; 7 - bridge abutment, crown or implant; 8 - unerupted applying when there is an unoccupied space; T (for both dentitions) - trauma with loss of part or all of the tooth with no evidence of caries; 9 - not recorded when the tooth cannot be observed due to orthodontic bands, severe hypoplasia or other congenital malformation.

As for the DI'S index it evaluates the presence of soft deposits and consists in the observation of the six teeth (16; 11; 26; 36; 31 and 46). The surfaces are evaluated according to the following criteria: 0 - absence of soft deposits or extrinsic staining; 1 - soft deposits covering no more than one third of the observed surface; 2 - soft deposits present on more than one third, but not more than two thirds of the observed surface; 3 - soft deposits present on more than two thirds of the observed surface.

The Community Periodontal Index (CPI) allows the evaluation of the periodontal condition in terms of bleeding, presence of calculus and pockets (WHO, 1997). The examination is performed with the CPI probe. The mouth is divided into sextants according to the following criteria: 0 - healthy; 1 - presence of bleeding; 2 - presence of calculus; 3 - pockets of up to 5.5 mm; 4 - pockets greater than 6 mm. Each sextant is classified based on the worst situation found.

Statistical analysis: All data collected during the work were statistically analyzed using the SPSS application (Statistical Package for the Social Science) version 26. Descriptive statistics were used to process the collected data, and inferential statistics were applied to study the relationship between the variables and to obtaining significance.

3. RESULTS

Forty individuals were observed, 29 males and 11 females, with a mean age of 35 years. It was observed that these individuals had a mean DMFT (DMFT result = D + M + F (number of teeth) value of 4.7 decayed, missing and filled teeth (figure 1), with no statistically significant difference between gender (p=0.952). The mean number of decayed teeth, missing teeth and filled teeth was 1.4; 0.1 and 3.1 respectively.

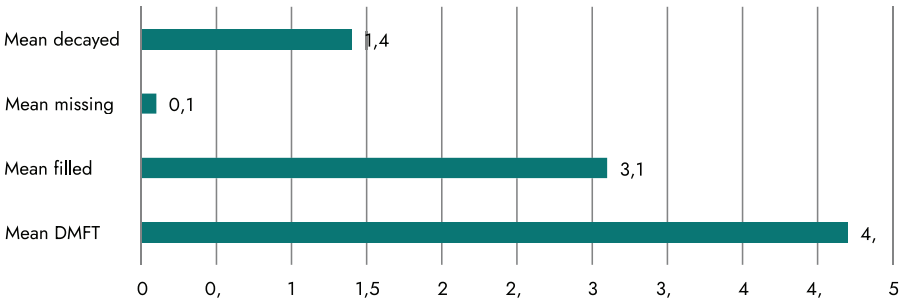

FIGURE 1: MEAN NUMBER OF DECAYED, MISSING AND FILLED TEETH AND DMFT.

When the individuals were evaluated regarding the ID index, only 28 individuals had teeth for this evaluation. The mean DI'S value was 2.02 which represents a high value of bacterial plaque accumulation that, being an etiological factor of oral diseases, indicates a risk of developing oral health problems (figure 2).

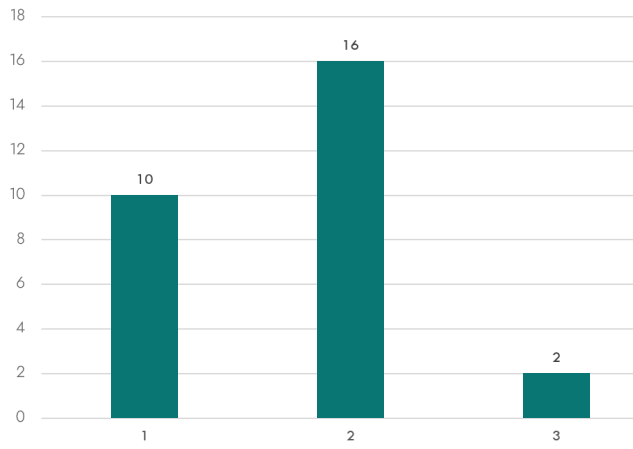

FIGURE 2: DI'S BY INDIVIDUALS.

As for the evaluation of the CPI index, only 34 individuals had dental pieces to perform this. Of the 34 (85%) participants assessed as to CPI it was concluded that the maximum value observed was 3.4 and that the posterior sextants presented on average the worst periodontal situation (figure 3).

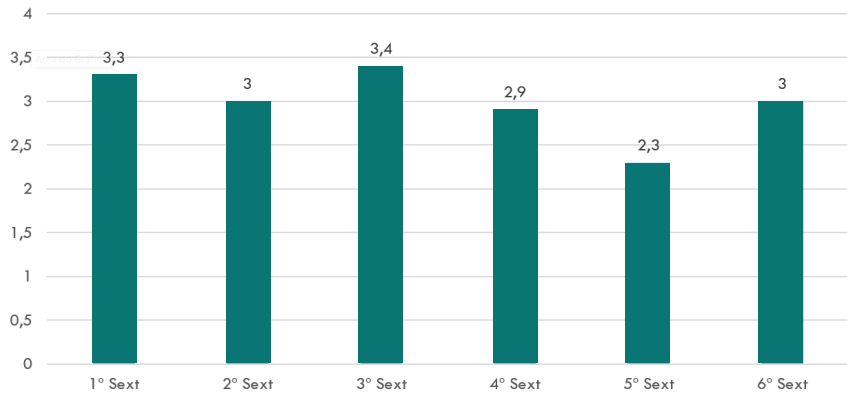

FIGURE 3: AVERAGE CPI BY SEXTANT.

Of the 40 participants 47.5% have manual dexterity to brush their teeth, 67.5% need and allow help to brush, 40% use excessive force and long movements, 22.5% have dental trauma and 17.5% abrasion injuries.

The buccal surfaces of all sextants were the most brushed surfaces by an average of 60% of participants, followed by occlusal surfaces (38%) and lingual surfaces (18%).

4. DISCUSSION

The population of this study was composed of individuals with special needs who attend the Cerci Institution of Portalegre. Although the sample was conducted in only one institution, this study aimed to know the state of oral health in order to establish health-promoting measures.

In this study, we observed that the mean number of decayed, lost and filled teeth was 4.7, which means a high DMFT value, the mean number of decayed teeth was 1.4, the mean number of lost teeth was 0.1, and the mean number of filled teeth was 3.1. When compared to other studies, these results are relatively lower than those of other studies, which showed DMFT values of 8.7 and 7.21, respectively (Pini et al., 2016, Bizarra, 2016). As for the mean number of decayed teeth, the mean number of lost teeth and the mean number of filled teeth also showed lower values compared to the means of the study of Pini (Pini et al., 2016), who obtained the mean number of decayed, lost, and filled teeth of 3.70; 3.85; and 1.17 and (Bizarra, 2016) found the following mean number of decayed, lost, and filled teeth of 1.65; 4.11, and 1.41, respectively.

In relation to plaque accumulation, this study found a DI`S value of 2.02, which means poor oral hygiene; this result is similar to that of Pini et al. The study of Bizarra, (2016) found a value of 1.8 for plaque accumulation.

With regard to the CPI, we concluded that the maximum value observed was 3.4, with the posterior sextants having on average the worst periodontal situation. This is in line with other studies that refer that the posterior sextants are those where individuals have greater difficulty in removing deposits (Pini et al., 2016; Bizarra, 2016).

In the study by Garcez et al., (2012) it was found that inadequate oral hygiene is the main cause of periodontal disease in people with some type of disability, and that there is a relationship between the levels of oral hygiene and the degree of disability.

When oral hygiene habits were studied in our study, we found that 47.5% have manual dexterity to brush their teeth, 67.5% allow help for brushing, 40% use excessive force and long movements, 22.5% have dental trauma and 17.5% present bruxism. The buccal surfaces of all sextants were the most brushed surfaces on average 60% of the participants, followed by occlusal surfaces (38%) and lingual surfaces (18%). Data from the study of Pini et al. (2016) are consistent with our study, most participants had regular oral hygiene, brushing 3 times a day without the help of third parties.

CONCLUSION

The present study aimed to characterize the oral health status of a population with special needs.

Patients with disabilities in most cases require more care at the level of oral health, due to their physical and mental inability to perform correct oral hygiene habits. The prevalence of dental caries, as well as of periodontal diseases and poor plaque control found in the course of the study of the assessment of these individuals may be explained by their inability and lack of dexterity, lack of knowledge of effective oral hygiene practices by those around them, i.e., parents and caregivers, lack of motivation and lack of economic support for treatment needs.

Promoting oral health, - a way to boost awareness of the importance of oral health and the necessity to seek dental health treatment early, - and educational measures may play a relevant role in the studied population for the prevention of oral health problems, and consequently other health problems. The existence of a present and past history of high dental caries and poor oral hygiene and periodontal condition reinforces the need for this intervention.

Although we can learn a lot from this study, and especially from working with the individuals from CERCI Portalegre, there are some limitations:

The few numbers of individuals studied (40), despite being a moderately high number for a small town in Portugal, it still is a small amount to be able to give a concrete conclusion on what measures to take. In Portugal alone there are over 250.000 people physically and/or mentally ill (Pordata, 2001), so in order to give our study a better background, we should invest further in studying and characterizing a greater number of individuals that are affected by these disabilities, whether in private institutions like this one or even in public ones,

There was also a greater number of men, more than double that of women. Woman have a higher risk of developing dental cavities when compared to men (92.66% vs 90.57%) (Ferraro, 2010), in this study that wasn't the case, with both men and women showing no statistically significant difference. And although dental cavities may not represent a statistically significant difference, recent data from the National Health and Nutrition Examination Survey showed that men were more likely to develop periodontal diseases than women (56.4% vs 38.4%), in that way, in future studies we could also identify and determinate what individuals are affected by this disease and what oral health habits and educational measures we could partake on that population.

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