Impact of Oral Health on the Quality of Life of the Elderly

Abstract

Objective: To evaluate the oral health conditions of elderly patients at a dental student clinic in Brazil. **Methodology:** This descriptive, quantitative, cross-sectional study was conducted using 2023 medical records from a student dental clinic in Brazil, focusing exclusively on an elderly population. The sample size was determined using convenience sampling. A total of 50 records were analyzed. Collected data were compiled and organized using Excel software. **Results:** Analysis of the 50 records revealed that 62% of participants had chronic conditions, such as hypertension. Anxiety was also significantly prevalent, affecting 46% of participants. Regarding procedural needs, 56% of patients required restorations, and 52% needed dental prosthetics. Furthermore, it was observed that 54% of the patients did not complete their dental treatments. **Discussion:** The findings provide insights into the demographic characteristics, systemic health profiles, medication use, and oral health behaviors of this population. By identifying prevalent conditions, treatment needs, and barriers to completing care, the research highlights the critical role of tailored interventions in promoting oral and overall health among seniors. **Conclusion:** The assessment of the oral health conditions of elderly patients highlighted the need for greater attention to this population. These findings underscore the importance of raising awareness among the elderly about the benefits of regular dental visits and completing proposed treatments, aiming to improve their quality of life and well-being.

Keywords: Oral Health. Dental Health Services. Dental Care for the Elderly, Medication.

INTRODUCTION

The life expectancy of the Brazilian population has been rapidly increasing since the early 1960s, a period when the age structure of the population began to change (Soares, 2009). There is a notable variability in lifestyle among Brazilian seniors, with more active elderly individuals demonstrating better quality of life across various aspects, including oral health (de Andrade et al., 2012; Albeny at al., 2018).

In Brazil, demographic data from the Brazilian Institute of Geography and Statistics (IBGE) reveal that the proportion of individuals aged 60 and older increased from 11.3% to 14.7% of the population between 2012 and 2021. In absolute terms, this segment grew from 22.3 million to 31.2 million people, representing a 39.8% increase over the period. This shift in the age composition of the Brazilian population underscores a decline in the proportion of young people and a corresponding rise in the share of elderly individuals (Brazilian Institute of Geography and Statistics, 2022).

The natural physiological changes associated with aging can often lead to unavoidable conditions, requiring elderly care to extend beyond mere assistance, focusing instead on improvement and recovery (Darden et al., 2021). Aging is a result of numerous bodily modifications, influenced by physical and psychosocial factors accumulated throughout an individual's life. It is a dynamic and progressive process characterized by functional, morphological, and biochemical changes that continually alter the body's structure until death (Teixeira et al., 2017). Among the numerous challenges associated with aging, oral health problems, particularly tooth loss, stand out due to their profound impact on both physical and psychosocial well-being.

Tooth loss is among the most prevalent dental problems affecting elderly individuals and is recognized as a major public health issue with significant implications for their quality of life (Azevedo et al., 2023). Its impacts include diminished functional capacities for chewing and speaking, nutritional deficits, aesthetic and psychological challenges, reduced self-esteem, and impaired social interactions. In oral health, partial or total edentulism is a critical condition linked to both functional and aesthetic impairments, disrupting the balance of the stomatognathic system and adversely affecting overall quality of life (Emami et al., 2013).

In Brazil, edentulism has affected 11 million people in recent decades (Hugo et al., 2022). This reality underscores the need to enhance the care models provided to the elderly. It highlights the importance of including specific policies for elderly health and

investing in personal and social resources to promote healthier lives for elderly patients (van den Bos, Arends & Emmelot-Vonk, 2020).

Oral health is critical to individuals' well-being at all life stages. However, seniors are especially vulnerable to oral health deterioration due to factors such as natural aging and chronic systemic diseases. Oral health problems in this population can directly impact overall health, increasing the risk of cardiovascular and respiratory diseases and worsening existing conditions like diabetes mellitus (Persson et al., 2022). Many individuals lack access to essential oral health information, often addressing only symptoms rather than the root causes, leading to more severe complications (Costa et al., 2023).

Seniors are at risk of chronic oral diseases, including dental infections (e.g., cavities, periodontitis), tooth loss, benign mucosal lesions, and oral cancer. Other common oral conditions in this population include xerostomia (dry mouth) and oral candidiasis, which can cause pseudomembranous candidiasis (thrush), erythematous lesions (denture stomatitis), or angular cheilitis (Freitas, 2020). These various issues reflect the oral health conditions of the elderly population. As age advances, the incidence of comorbidities and general health problems increases, exacerbated by poor oral health due to inadequate hygiene or lack of simple guidance on oral care (Ferreira et al., 2021). Despite declining rates of dental caries, periodontal disease, encompassing gingivitis and periodontitis, has become a prominent oral health issue, especially in older populations (Sødal et al., 2022).

The association between consistent, appropriate oral health practices and individual well-being has a positive impact on the elderly community. Dentists and other professionals involved in elderly care play a crucial role in this regard. Dental approaches should evolve to improve seniors' quality of life, encourage self-care, and promote enhanced oral health (Araújo, Andrade & Pinto, 2020). Providing the elderly with aging processes that emphasize quality of life and dental care tailored to their needs is essential, particularly in light of the natural pathologies of aging.

Recognizing the complex needs of elderly patients, dentists must stay informed about the specific challenges this age group faces. Holistic treatment approaches are critical, considering the prevalence of systemic conditions that often impact oral health in seniors (Sødal et al., 2022). In line with these considerations, the aim of this study is to evaluate the oral health conditions of elderly patients at a dental student clinic in Brazil.

MATERIALS AND METHODS

This descriptive study adopted a qualitative, cross-sectional design using medical records from a student dental clinic in Brazil. The research focused on a population of elderly individuals, analyzing 50 medical records. The sample size was determined through convenience sampling. Charts with incomplete or missing information were excluded from the study. The study aimed to analyze oral health patterns in this age group, identify specific needs, and propose effective interventions to enhance their quality of life.

For data collection, records from the database made available by the clinic were evaluated, containing information about elderly patients treated in 2023. The representative responsible for the records was contacted to schedule the most convenient days and times for their evaluation. The collected data were stored, and percentages were calculated using Microsoft Excel spreadsheets.

RESULTS

From the analysis of the 50 medical records, a slight predominance of women was observed, representing more than half of the participants, with 44% being male and 56% female. Of these, 70% were aged between 60 and 70 years, while the remaining 30% were between 71 and 85 years old.

Regarding medications, the most used were those for hypertension (66%), followed by diabetes (22%). Additionally, a considerable number of patients (16%) were not taking

any medication. The most common conditions were hypertension (62%) and anxiety (46%), followed by diabetes (26%). Chronic and inflammatory diseases: Issues such as rheumatism/arthritis (16%) and gastritis (18%) were also identified. Conditions such as seizures, heart attacks, osteoarthritis, and ulcers were reported by only 2% of patients, while 10% of patients reported no illnesses.

Table 1: Gender, Age Group Frequency, Medications Used, and Prevalence of Diseases in Elderly Patients

Category	Details	Percentage (%)
Gender	Male (n=22)	44%
	Female (n=28)	56%
Age	60 to 70 years (n=35)	70%
	71 to 85 years (n=15)	30%
Medications	Hypertension (n=33)	66%
	Diabetes (n=11)	22%
	Painkillers and anti-inflammatories (n=6)	12%
	Anxiety medication (n=6)	12%
	Cholesterol medication (n=4)	8%
	Respiratory disease medication (n=1)	2%
	Anticoagulants (n=2)	4%
	Supplements and vitamins (n=3)	6%
	Rheumatoid arthritis and fibromyalgia (n=2)	4%
	Thyroid disorder medication (n=2)	4%
	No medications (n=8)	16%
Diseases	Hypertension (n=31)	62%
	Diabetes (n=13)	26%
	Anxiety (n=23)	46%
	Kidney disease (n=7)	14%
	Cardiac problems (n=6)	12%
	Sinusitis (n=9)	18%
	Glandular disorders (n=2)	8%
	Anemia (n=4)	8%
	Gastritis (n=9)	18%
	Rheumatic fever (n=4)	8%
	Pulmonary diseases (n=3)	6%
	Migraine (n=6)	12%
	Hepatitis (n=2)	4%

	Herpes (n=2)	4%
	Rheumatism and arthritis (n=8)	16%
	Fainting (n=3)	6%
	Heart attack (n=1)	2%
	Seizures (n=2)	4%
	Neurological problems (n=2)	4%
	Ulcers (n=1)	2%
	Osteoarthritis (n=1)	2%
	Asthma (n=2)	4%
	No diseases reported (n=5)	10%

Table 2: Allergies, Hemorrhage, Radiation Treatment Profile, Cancer Diagnosis, Pacemaker Use, and Medical Monitoring.

Category	Response	Percentage (%)
Medication Allergy. Which?	No (n=43 patients)	86%
	Yes (n=7 patients): Buscopan, Dipyrone, Benzetacil, Anesthetic, Plasio, and Torsilax	14%
Bleeding After Extraction	No (n=46 patients)	92%
	Yes (n=4 patients)	8%
Allergic to Food or Products	No (n=42 patients)	84%
	Yes (n=8): Cement, Cleaning products, Dust, Soy milk, Calabrese, Old paper, Hypochlorite, Pork, and Bleach	16%
Treatment by Radiation	No (n=50)	100%
	Yes (n=0)	0%
Cancer	No (n=50)	100%
	Yes (n=0)	0%
Pacemaker	No (n=49)	98%
	Yes (n=1)	2%
Under Medical Supervision	No (n=28)	56%
	Yes (n=22)	44%

Approximately 86% of patients reported no medication allergies, while 14% reported having allergies. Among the patients, 92% did not experience bleeding after extractions, whereas 8% reported such occurrences. Regarding allergies to foods or products, 84% had none, while 16% reported having some type of allergy. Patients who had or

currently have cancer and those who underwent radiation therapy accounted for the same percentage (0%), while those who neither had cancer nor underwent radiation therapy represented 100%. Additionally, 98% of patients do not use a pacemaker, while 2% reported using the device. Of the 50 patients, 56% do not undergo regular medical follow-ups, while 44% receive regular medical care.

Table 3: Use of Bisphosphonates, General and Oral Health, Frequency of Dental Visits, Habits, and Health Conditions.

Category	Response	Percentage (%)
Use of Bisphosphonates	No (n=49)	98%
	Yes (n=1)	2%
Health Condition	Good (n=21)	42%
	Excellent (n=12)	24%
	Fair (n=16)	32%
	Poor (n=1)	2%
Smoking, Alcoholism, Drugs, and Parafunctional Habits	No (n=36)	72%
	Yes (n=14)	28%
Hospitalized in the Last 2 Years	No (n=43)	86%
	Yes (n=7)	14%
Last Visit to the Dentist	Up to 6 months (n=22)	44%
	6 months to 1 year (n=15)	30%
	1 year to 10 years (n=13)	26%
Frequency of Brushing	Twice a day (n=23)	46%
	Three times a day (n=25)	50%
	Four times a day (n=2)	4%
Use Dental Floss	Yes (n=34)	68%
	No (n=16)	32%

Of the 50 patients, 56% do not have regular medical follow-ups, while 44% do. Among them, 66% rate their health as good or excellent, but a considerable portion (32%) considers their health to be fair. Regarding harmful habits, 72% reported no involvement in behaviors such as smoking, excessive alcohol consumption, drug use, or other harmful habits. However, 28% still engage in these behaviors. Hospitalization was reported by 14% of patients, while the majority (86%) had not faced severe health conditions recently.

In terms of dental care, 74% of patients visited the dentist within the last 12 months, while 26% had longer intervals between visits. According to the data, 96% brush their teeth at least twice a day, and 68% use dental floss. However, 32% do not use dental floss.

Table 4: Needs Analysis, Dental Treatment Performed, Completed Treatment, Reasons for Treatment Interruption.

Category	Response	Percentage (%)
Individual Assessment	Need for restoration (n=28)	58%
	Need for endodontic treatment (n=9)	18%
	Need for prosthesis (n=26)	52%
	Need for scaling (n=5)	10%
	Surgery (n=11)	22%
Treatment Performed	Resin restorations (n=15)	30%
	Endodontic treatment (root canal) (n=7)	14%
	Complete, partial, or removable prosthesis (n=16)	32%
	Scaling (n=5)	10%
	Surgery (n=7)	14%
	Cleaning and prophylaxis (n=8)	16%
	Evaluation (n=7)	14%
	Referral (n=6)	12%
Completed Treatment	No (n=27)	54%
	Yes (n=23)	46%
Reason for Not Completing Treatment	Patient did not return (n=20)	40%
	Patient was referred to Postgraduate studies (n=6)	12%
	Patient had high blood pressure (n=1)	2%

Among these elderly patients, 56% required dental restorations, and 52% needed dental prostheses. Additionally, 18% required endodontic treatment (root canal therapy), suggesting the presence of infections or deep lesions in the teeth. Scaling was necessary for 10%, and surgery for 22%. The placement of resin restorations and prostheses was performed for 30% and 32% of the patients, respectively. Root canal treatments and surgeries were carried out in 14% of the patients. Cleaning and

prophylaxis procedures, essential for maintaining oral health, were performed in 16% of cases. Referrals to postgraduate care accounted for 12% of cases. Completed treatments represented 46%, while 54% of treatments were unfinished. The primary reasons for incomplete treatments were the lack of patient follow-up (40%), the need for specialized care (12%), and high blood pressure in one patient (2%).

DISCUSSION

This study evaluated the oral health conditions of elderly patients treated at a dental student clinic in Brazil. The findings provide insights into the demographic characteristics, systemic health profiles, medication use, and oral health behaviors of this population. By identifying prevalent conditions, treatment needs, and barriers to completing care, the research highlights the critical role of tailored interventions in promoting oral and overall health among seniors. These results aim to inform strategies for improving care delivery, addressing systemic and oral health challenges, and fostering a holistic approach to elderly patient management.

The gender distribution reveals a slight predominance of female patients compared to males. This is a common trend in studies involving the elderly, as women typically have a longer life expectancy, consistent with demographic data in Brazil. According to the 2022 IBGE Census, women constitute 51.5% of the general population, while men account for 48.5%. The study shows that 70% of patients attending the clinic are between 60 and 70 years old, while 30% are aged 71 to 85. Brazilian demographic studies indicate that most elderly individuals are concentrated in the 60–69 age group, reflecting the onset of population aging in Brazil. The 2022 Census highlights life expectancy and age structure as factors contributing to the larger proportion of elderly people in this age bracket (Brazilian Institute of Geography and Statistics, 2022).

Studies indicate that approximately 80% of Brazilian seniors use at least one continuous-use medication, primarily for managing chronic conditions such as hypertension and diabetes (Rozenfeld, 2003). Additionally, 36% of elderly individuals

engage in polypharmacy—defined as the use of five or more medications—which increases the risk of drug interactions and adverse effects (Zazzara et al., 2021). Conversely, 16% of seniors do not take any medication, potentially reflecting a healthier subset of the population or individuals with less need for pharmacological intervention.

Hypertension and diabetes are prevalent among the elderly, with IBGE data showing that 85% of Brazilian seniors have at least one chronic disease. Among these, approximately 50% are affected by hypertension, and 20% by diabetes (IBGE, 2019). Studies suggest that anxiety in older adults may stem from fear of dental procedures, past negative experiences, and social isolation, all of which negatively impact oral self-care (Hassan et al., 2022). Furthermore, anxiety can affect seniors' perception of their health, increasing feelings of incapacity and hindering adherence to regular treatments (de Carvalho et al., 2012).

Most patients (72%) reported no engagement in harmful habits such as smoking, excessive alcohol consumption, or drug use, while 28% still exhibited these behaviors, posing potential risks to general and oral health. A 2018 Ministry of Health survey reported that 11% of seniors smoked and 10% consumed alcohol regularly, behaviors linked to increased risks of systemic and oral diseases (Ministry of Health, 2018).

About 74% of patients visited a dentist in the past 12 months, reflecting a positive attitude toward oral health. However, 26% reported longer intervals between visits, indicating a need for increased awareness of the importance of regular dental check-ups. In terms of oral hygiene, 96% of patients brushed their teeth at least twice daily, a positive practice for oral health. A similar study found that approximately 80% of seniors brushed their teeth twice daily. Additionally, 68% used dental floss, essential for removing debris between teeth. However, 32% did not use dental floss, increasing their risk for issues like gingivitis and plaque buildup.

This study highlighted that most seniors required restorations and prostheses, indicating dental caries or tooth loss, common in this age group. Treatments included resin

restorations and prosthesis placement, reflecting earlier findings. Root canals and surgeries were performed on 14% of patients each, indicative of more complex dental conditions. Only 46% of treatments were completed, while 54% remained unfinished, underscoring the importance of strategies to encourage patient follow-up and treatment continuity. The main reason for incomplete treatments was patient non-return, potentially due to financial, mobility, or access barriers or a lack of awareness about the importance of completing treatment. Elevated blood pressure in one patient also influenced dental care, highlighting the impact of systemic conditions on treatment outcomes. Research by Niesten, van Mourik & van der Sanden (2013) suggest that treatment discontinuation is common among seniors, as oral health often takes a backseat to other medical priorities. This can lead to interruptions when symptoms subside, ignoring the need for comprehensive care to prevent future issues.

This study has some limitations, including its reliance on convenience sampling, which may not fully represent the broader elderly population. Additionally, the study was conducted at a single dental student clinic, potentially limiting the generalizability of the findings to other settings or regions. Future research should explore longitudinal designs to better understand treatment outcomes and adherence over time. Expanding the scope to include diverse clinics and populations would provide a more comprehensive picture of elderly oral health. Further studies should also investigate the integration of systemic health management with dental care, emphasizing preventive strategies and personalized approaches to improve the quality of life in this age group.

CONCLUSION

The evaluation of oral health conditions among elderly patients highlighted the need for greater attention to this population, particularly regarding the impact of chronic conditions such as hypertension and anxiety. The significant prevalence of anxiety underscores the importance of psychological support, as it can affect treatment adherence and overall well-being. The low rate of treatment completion emphasizes the need to address emotional, physical, and economic barriers while promoting awareness

of the importance of regular dental care to improve quality of life. Future research should expand to broader populations and explore holistic, preventive strategies to enhance systemic and oral health outcomes for the elderly.

Ethical Approval:

This study was approved by the Research Ethics Committee (CEP/SOEBRAS), under the opinion number 7.080.670 and CAAE: 82876624.9.0000.514, adhering to all criteria outlined in Resolutions No. 466/2012 and 510/2016 of the National Health Council, which regulate research involving human subjects in Brazil.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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