

COMMON ORAL HEALTH ISSUES AMONG ELDERLY PATIENTS ATTENDING A TERTIARY CARE HOSPITAL IN WESTERN TAMIL NADU, INDIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Objectives: Oral health is a pivotal and underestimated domain, especially among the various facets of our health. From the wear and tear accumulated over decades of use to the interplay of chronic health conditions and medications, the elderly population faces a distinct set of oral health concerns that demand careful attention and proactive management. Understanding the complex relationship between oral health and aging is essential, not only for promoting healthy smiles but also for safeguarding the overall well-being and quality of life of older adults. To address this concern, we conducted a study to identify the common oral health problems for the elderly attending a tertiary care hospital in Western Tamil Nadu, India.

Methods: This cross-sectional study was done among 384 elderly adults and senior citizens who attended the Dentistry Outpatient Department (OPD) of a tertiary care center in Coimbatore, Western Tamil Nadu, India. A structured questionnaire was used to collect disease information and demographic data.

Results: When assessed for common oral health conditions, 61.4% had periodontal diseases, 65% had dental caries, 13.8% had oral mucosal lesions, 55.5% had sensitive teeth, 13.3% had dry mouth, and 48.6% had edentulism.

Conclusion: The data presented in the present study explains the significance of various dental conditions among the study population. It reinforces the imperative of providing comprehensive oral healthcare and prioritizing preventive measures. Taking proactive steps to address these dental concerns, including scheduling regular dental check-ups, instilling proper oral hygiene practices, and intervening early when necessary is paramount in fostering ideal oral health and overall well-being among older adults.

Keywords: Oral problems, Gum diseases, Dental caries.

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INTRODUCTION

Oral health is a pivotal facet of overall well-being, a fact that is true beyond the boundaries of age. It becomes notably more important as individuals progress through the stages of life, especially in the case of the elderly. The aging population encounters unique challenges and considerations when addressing oral health, with profound implications on their quality of life, general health, and independence. The aging process renders individuals more vulnerable to oral health issues such as gum disease, tooth decay, and tooth loss. The effects of these issues extend far beyond cosmetic concerns, impacting fundamental aspects of elderly individuals' lives, including their physical well-being, psychological state, and social interactions [1,2].

The loss of teeth can trigger a chain reaction, potentially resulting in malnutrition, a compromised immune system, and a gradual decline in overall physical health [3]. Studies have shown a correlation between oral health and systemic health conditions in the elderly. Common diseases such as cardiovascular disease, diabetes, and respiratory infections can be exacerbated by inadequate oral health. The transference of bacteria from oral infections into the bloodstream can incite inflammation that extends to distant organs. Hence, oral health is not an isolated concern but an integral part of an individual's holistic health [4].

Oral health also exerts a substantial influence on psychological well-being. A healthy smile is often tied to self-esteem and confidence. For many elderly individuals, maintaining good oral health is intrinsically tied to their sense of self-worth. Conversely, oral health problems can lead to feelings of social withdrawal, embarrassment, and a noticeable decline in self-confidence [5].

Pain associated with oral health issues adds yet another layer to the psychological burden. Persistent oral pain can contribute to emotions of frustration, anxiety, and even depression. Tackling and preventing these oral health problems in elderly individuals can significantly alleviate this psychological distress, providing an enhanced overall quality of life [6].

By ensuring optimal oral health, elderly adults can continue their daily tasks and make choices about their lives independently [7]. Hence, this study was undertaken to identify the common oral conditions affecting the elderly population attending a tertiary care hospital in Western Tamil Nadu, India.

METHODS

This cross-sectional study was conducted among 384 elderly adults who attended the Dentistry Outpatient Department (OPD) of a tertiary care center in Coimbatore, Western Tamil Nadu, India. Ethical clearance was obtained from the Institutional Ethics Committee. Individuals above the age of 40 years were included in the study. After obtaining informed written consent, the demographic data and disease characteristics were collected using a structured validated questionnaire. In this research study, participants who met the inclusion criteria were explained about the need for the study, objectives, rights of the participant, and the other ethical issues concerned. The patient information sheet was provided, and adequate time was given for them to study and understand the contents. Written informed consent was obtained once they consented to participate in the study. After obtaining consent, the participants were examined in a private setting, to ensure confidentiality. The initial step involved thoroughly examining the participants' oral cavities,

which was conducted using wooden disposable tongue depressors. Subsequently, a structured interview approach was employed to collect data about sociodemographics, brushing frequency, brushing medium, and sickness absenteeism.

According to Janto *et al.* [8], 32.1% of the study population was impacted by poor oral health conditions. Considering these values, the sample size was calculated using the following formula, $4PQ/L2$ at a relative precision of 20%, and a minimum sample size of 203 was arrived. Data were compiled in an Excel sheet. It was analyzed using SPSS 2. The results were tabulated as frequency and percentages.

RESULTS

Among the 384 participants, the majority of the study population 45.8% was in the age group of 51–60 years. Another 32.7% were in the age group of 61–70 years. Another 12% were in the age group of 71–80%. As far as gender distribution is concerned, 56.3% were males and the rest 43.7% were females (Table 1).

Among the study population, 74.4% brushed once a day while the rest 25.5% brushed twice a day. 56.3% of them used toothpaste, while another 33.5% used tooth powder. The rest 10.2% used other mediums such as charcoal and neem branch. (Table 2).

In the study population, 41.6% of the participants did not have a single dental visit in the last year, 60.6% of the participants have had a single dental visit, 22% had two dental visits, and 2.8% had three dental visits in the past year (Table 3).

About 36.6% of participants missed attending their work because of oral health problems and 63.4% did not report absenteeism from the work schedule. About 61.4% had periodontal diseases (Mobile Tooth, Bleeding Gums, Halitosis), 65% had tooth pain, 13.8% had oral mucosal lesions, 55.5% had sensitive teeth, 13.3% had dry mouth, and 48.6% had edentulism (Table 4).

The association between sex and common oral problems was analyzed. Females had more periodontal diseases than men. Similarly, those who brushed twice had less periodontal disease, less common oral problems, and less dry mouth. Those who used toothbrushes had less periodontal disease and less edentulism than those who used other mediums. Those who visited the dentist regularly had less periodontal disease, common oral problems, less sensitivity, and less edentulism than those who used other mediums. All these results were statistically significant.

DISCUSSION

Oral health problems are an important issue in the elderly population, due to a combination of physiological changes, lifestyle factors, and limited access to dental care. As individuals advance in age, they face a multitude of challenges related to their oral health. Oral health is essential for the elderly because it not only impacts their oral cavity but also has far-reaching effects on their overall health and quality of life. Promoting good oral health practices and ensuring access to dental care is crucial to helping the elderly maintain their oral health and enjoy a higher quality of life in their later years.

When age distribution is analyzed, the predominant age group appears to be in the 51–70 range, indicating a focus on middle-aged and elderly individuals. In addition, the gender distribution leans slightly toward males, but both genders are significantly represented (Table 1).

The majority of participants brushed their teeth once a day. This indicates that a significant portion of the study population follows a daily brushing routine, which aligns with the recommended minimum frequency for maintaining oral hygiene. A notable portion of participants brushed their teeth twice a day. This reflects a commitment to more frequent oral care, which is often considered an ideal brushing

Table 1: Age and gender distribution

Years	Frequency	Percentage
36–40	4	1.0
41–50	18	4.6
51–60	179	45.8
61–70	128	32.7
71–80	47	12.0
>80	15	3.8
Males	220	56.3
Females	171	43.7

Table 2: Brushing frequency and Brushing medium

Brushing frequency	Frequency	Percentage
Once a day	291	74.4
Twice a day	100	25.5
Brushing medium		
Tooth powder	131	33.5
Toothpaste	220	56.3
Others	40	10.2

Table 3: Frequency of dental visits per year

Frequency of dental visit	Frequency	Percentage
None	57	41.6
1	237	60.6
2	86	22.0
3	11	2.8

Table 4: Common oral health problems

Common oral health problems	No		Yes	
	F	%	F	%
Periodontal diseases	151	38.6	240	61.4
Dental caries	137	35.0	254	65.0
Oral mucosal lesions	337	86.2	54	13.8
Sensitivity	174	44.5	217	55.5
Dry mouth	339	86.7	52	13.3
Edentulism	201	51.4	190	48.6
Others	357	91.3	34	8.7

frequency for optimal oral health. Toothpaste is the most used brushing medium, followed by tooth powder, and “other” options could include various oral care products or homemade remedies such as using miswak sticks, neem sticks, and charcoal demonstrating some diversity in participants’ brushing habits (Table 2).

In the study population, it was found that a significant portion, amounting to 41.6% of the participants, had not attended a single dental visit in the past year. This highlights a gap in dental care utilization, suggesting potential unmet dental needs or barriers preventing access to regular dental care. On the other hand, 60.6% of the participants had a single dental visit in the past year, indicating that most of the population did seek dental care, but not necessarily on a more frequent schedule. In addition, 22% of participants had attended two dental visits, suggesting a somewhat higher level of engagement with preventive dental care or specific dental concerns. A smaller minority, approximately 2.8%, had gone for three dental visits in the past year, demonstrating a positive and proactive approach to dental health. These findings emphasize the importance of promoting regular dental check-ups and addressing barriers to dental care access to ensure optimal oral health among the study population (Table 3).

When absenteeism from work was analyzed, it was found that a notable 36.6% of the participants had missed work due to oral

health problems, underscoring the real-life impact of such issues on individuals' professional lives. These findings indicate that a significant portion of the study population had experienced oral health challenges severe enough to disrupt their work attendance, potentially affecting their productivity and overall well-being. Conversely, the majority, comprising 63.4% of participants, did not report absenteeism from their work schedule due to oral health problems. This suggests that many were able to effectively manage their oral health or perhaps did not encounter severe issues that necessitated taking time off from work. These insights emphasize the significance of oral health not only for personal well-being but also for maintaining an uninterrupted work schedule, highlighting the importance of preventive oral care and its potential economic implications (Table 4).

A significant majority of the study population, over 61%, reported experiencing periodontal diseases such as mobile teeth, bleeding gums, or halitosis. These conditions can be indicative of various oral health issues and emphasize the importance of regular dental check-ups and preventive measures to address and manage periodontal diseases effectively [9,10]. The percentage of individuals reporting these symptoms highlights the relevance of periodontal health in the overall context of oral care among the study population.

Most of the study population, about 65%, reported having experienced dental caries at some point. Dental caries are common and can result from various factors, including poor oral hygiene and dietary habits. The high percentage of individuals reporting dental caries highlights the significance of preventive dental care, regular check-ups, and oral hygiene practices in managing and reducing the occurrence of tooth decay [11,12].

Oral mucosal lesions can include a range of conditions, such as ulcers, sores, or other abnormalities in the soft tissues of the mouth. The smaller percentage of individuals reporting these lesions highlights that while they are present in the population, they are not as common as their absence. It is essential to identify and address oral mucosal lesions, as they can sometimes be indicative of underlying health issues or may require specific treatments or further evaluation by dental or medical professionals [13,14].

Tooth sensitivity is relatively common among the study population, with many participants, around 55.5%, reporting this issue. Dental sensitivity, often characterized by discomfort or pain when consuming hot or cold foods and beverages, can be caused by various factors, including exposed tooth roots, cavities, or worn enamel. The higher percentage of individuals reporting dental sensitivity underscores the importance of addressing this issue through dental care and management strategies [15]. Dental professionals can provide guidance and treatments to alleviate sensitivity and improve overall oral comfort for affected individuals.

Dry mouth, also known as xerostomia, can result from various causes, including medication side effects, medical conditions, or lifestyle factors. A smaller proportion of individuals reported experiencing dry mouth, emphasizing that the majority did not face this oral health concern. It is important to address dry mouth, as it can lead to discomfort, difficulty in speaking and swallowing, and an increased risk of dental issues such as cavities [16,17]. Dental professionals can guide the usage of artificial saliva to manage symptoms of dry mouth for affected individuals.

Edentulism is a significant oral health concern among the study population, affecting nearly half of the participants. Edentulism can result from various factors, including tooth loss due to decay, gum disease, or other dental issues. The relatively high percentage of individuals reporting edentulism underscores the importance of dental care, including preventive measures and tooth preservation, to mitigate the risk of complete tooth loss and maintain oral health [18,19]. Dental professionals can provide guidance and treatment options, such

as dentures or dental implants, to address the oral health needs of edentulous individuals.

Reenu and Yadhav in their study have commented that change in oral microbiota with the use of multiple plant products for dental hygiene over time is an important cause of dental caries [20], while Nivetha *et al.* from Chennai have described in their article the benefits of various plant products in the improvement of dental hygiene [21]. The effects of plant products on the improvement of dental hygiene among the elderly need to be studied in detail.

CONCLUSION

Oral healthcare for the elderly is of paramount importance, as it significantly impacts their overall well-being and quality of life. As individuals age, they become more susceptible to a range of oral health problems including gum disease, tooth decay, tooth loss, sensitivity, and dry mouth. These issues can lead to physical discomfort, pain, malnutrition, and even social isolation. To address these challenges, a comprehensive approach to oral healthcare for the elderly is necessary. Regular dental check-ups, preventive care, and education on proper oral hygiene practices are fundamental components of this approach. By prioritizing and supporting good oral health practices in older adults, we can enhance their well-being, prolong their independence, and contribute to a more inclusive and compassionate society for our aging population.

CONTRIBUTION OF AUTHORS

1. S. Sriram Balaji and GM Sharavanan: Concept, design of the study, data collection, and manuscript writing.
2. Vidhya: Data Compilation, manuscript editing.
3. S. Jeevithan: Data analysis and manuscript editing.

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