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Research Article

Oral Health Care for Geriatric Service in Faculty of Dentistry. University of Health Sciences, Laos

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Abstract

Background: Populations worldwide are aging rapidly, bringing significant physiological shifts, immunosenescence (age-related immune decline), and structural changes to oral tissues. Poor oral health drastically compromises geriatric quality of life, affecting mastication (chewing), speech, nutritional intake, and psychosocial well-being. Furthermore, the oral cavity serves as a major gateway for pathogens that can trigger or worsen systemic conditions. This study aimed to evaluate the oral health status, treatment utilization patterns, and systemic comorbidity profiles of elderly patients (aged 60 years and older) seeking clinical care at the Faculty of Dentistry, University of Health Sciences, Laos.
Methods: A collecting data using interview forms and oral examinations among the population aged 60 years come to service at dental clinic Faculty of dentistry University of health Sciences Lao PDR.
Results: The study population (N = 360) comprised 55.6% females (n = 200) and 44.4% males (n = 160). Age distribution was stratified as follows: Young-old (60–64 years): 45.9% (n = 165), Middle-old (65–69 years): 36.9% (n = 133), Old-old (age 70 years): 17.2% (n = 62).
Conclusion: Systemic Comorbidity and Medication Profiles A striking 88.8% (n = 320) of the sample population suffered from concurrent systemic comorbidities. Within this medically compromised group: Hypertension was the most prevalent condition, affecting 60.0% (n = 192). Diabetes mellitus was present in 29.7% (n = 95). Other systemic diseases accounted for 10.3% (n = 33).Pharmacological adherence stood at 60.9% (n = 195) taking regular prescribed medications, leaving 39.1% (n = 125) unmedicated. Dentition Status and Treatment Utilization Severe Tooth Loss: Only 22.8% (n = 82) of participants maintained a functional dentition of more than 20 natural teeth. Conversely, 77.2% (n = 278) presented with fewer than 20 remaining teeth.

1. Introduction

The United Nations (UN) defines an older person as any person aged 60 years or older, both male and female [1]. The proportion of older people in the global population is constantly increasing. However, as they age, their health is not as good as it used to be. This makes it more difficult for older people to maintain good oral hygiene [2]. The body of older people changes: in terms of health, the risk of disease

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increases with age. If older people take good care of their health, they will be able to slow down aging and stay healthy [3]. As in dentistry or public health, there are various measures and programs to support the problems of older people. Because patients aged 60 years or older not only have oral health problems, but older people also often have chronic diseases such as high blood pressure, heart disease, and diabetes. Even though older people are healthy and do not have any diseases, their immune systems are not as strong as they used to be. Including muscles, Bones, teeth and supporting organs, salivary glands, and various mucous membranes in the oral cavity can easily cause diseases and other problems in the oral cavity in the elderly [4].

These problems are divided into 7 categories:

1. Tooth decay and root canal problems
2. Periodontal disease and periodontitis
3. Tooth decay
4. Dry mouth problems
5. Tooth loss and dentures
6. Oral ulcers or oral cancer scars
7. Digestive system problems

All of which are problems for the elderly who need to see a dentist 4 because if they are sick and lose their teeth, it will have a lot of psychological impact on the elderly and also affect their daily life in terms of personality, confidence in social activities, speaking, chewing food, tasting food, etc [5]. Therefore, there is a definition of the quality of life in terms of dental health when people are 60 years old and older. They should have at least 20 permanent teeth that can be used, and at least 2 molars that can be used to chew food. In addition, they must have strong teeth that are not affected by dental disease to be considered people with good oral health [6]. The need for oral hygiene for the elderly. Maintaining oral health even though brushing and flossing regularly, as people age 60 and older may encounter some types of oral problems, such as dentures, taking certain medications, and other oral health problems. These problems are often encountered in the oral health of the elderly. Oral health is associated with physical health and systemic diseases. The oral cavity is considered an important portal of entry for disease. Because the human oral cavity contains microorganisms and local pathogens, they can spread to other organs, leading to infection of vital organs directly or indirectly. For the elderly, this may increase the risk of premature death [7].

In the past, oral diseases were classified as non-communicable diseases (NCDS) that were constantly detected and caused pain, discomfort, loss of beauty or spread to severe infections that could cause death. Elderly people around the world have to face the problem of tooth loss and are considered a social problem in the Eastern Pacific Region1 According to the World Health Organization in 2020, oral health is an important indicator in assessing the health of the elderly, so it is necessary to maintain good oral health so that there are still many teeth in the mouth as they get older.

Between January and December 2024, there were 1,374 patients who came to the dental clinic of the Faculty of Dentistry, University of Health Sciences, including 360 patients aged 60 and over, an average of 2 patients per day. All of these are reasons to choose to study to understand how to maintain oral health in the elderly.

2. Research Methodology

This is an analytical cross-sectional study, collecting data using interview forms and oral examinations among the population aged 60 years come to service at dental clinic Faculty of dentistry University of health Sciences Lao PDR,

Definition

Elderly Population

Refers to individuals aged 60 years and older. For demographic and statistical analysis, this population is categorized into three distinct age cohorts:

- Young-old (60–64 years)
- Middle-old (65–69 years)
- Old-old (70 years and older

Oral Healthcare Services

Defined as the utilization of clinical dental services across public healthcare facilities. These services encompass a comprehensive continuum of care, including oral health promotion, disease prevention, therapeutic treatment, and rehabilitative care.

Ethical Aspects

This study was approved by the Research Ethics Committee of the Faculty of Dentistry, University of Health Sciences, Laos. Under no. 512/2024.

3. Results

Between January and December 2024, the dental clinic at the Faculty of Dentistry, University of Health Sciences, recorded a total of 1,374 patient visits. Among these, 360 patients were aged 60 years and older, representing an average of two geriatric patient consultations per day. This significant and consistent clinical volume highlights a pressing demand for geriatric dental care. Consequently, these data establish a

compelling rationale to conduct this study, which aims to evaluate and optimize oral health maintenance strategies for the elderly population. The study sample comprised 360 participants aged 60 years and older.

3.1. Demographic and Clinical Profiles

The study cohort comprised 360 participants aged 60 years and older. Demographically, the sample included 160 male participants (44.4%) and 200 female participants (55.6%). Regarding clinical baseline status, a significant majority of the participants n = 320, (88.8%) presented with concurrent systemic comorbidities. Among those diagnosed with underlying health conditions, 195 individuals (60.9%) reported regular adherence to prescribed pharmacological treatments as shown in Table 1.

Table 1: Demographic and Clinical Characteristics of the Study Population

Variable	Frequency (n)	Percentage (%)
Sex		
Male	160	44.4%
Female	200	55.6%
Systemic Comorbidities		
Personal illness	320	88.8%
No	40	11.2%
Regular Medication Use (among those with comorbidities, n =320)		
Yes	195	60.9%
No	125	39.1%

3.2. Personal illness

Out of the total sample population, 320 individuals presented with an identified systemic disease. As shown in Table 2, hypertension was the most prevalent condition, accounting for 60.0% of cases (n = 192), followed by diabetes mellitus at 29.7% (n = 95). The remaining 10.3% (n = 33) of the diagnosed population presented with other.

Table 2: Systemic Diseases Among Participants (N = 320)

Medical Condition	Frequency (n)	Percentage (%)
Hypertension (High Blood Pressure)	192	60.0
Diabetes	95	29.7
Other Diseases	33	10.3
Total	320	100.0

3.3. Age group

The demographic analysis of the study population (N = 360) by age category is summarized in Table 3. The largest age cohort consisted of participants aged 60–64 years, representing 45.9% (n = 165) of the total sample. This was followed by the 65–69 age bracket, which accounted for 36.9% (n = 133) of the population. The remaining 17.2% (n = 62) of participants were aged 70 years and older.

Table 3: Participants by Age Group (N = 360)

Age Group (Years)	Frequency (n)	Percentage (%)
60–64	165	45.9
65–69	133	36.9
70 years and over	62	17.2
Total	360	100.0

3.4. Type of Dental service

In this study, a total of 360 people participated, including 60 people who had dental fillings (16.7%), 35 people who had root canal treatment (9.7%), 75 people who had dentures (20.8%), 140 people who had teeth extracted (38.9%), and 50 people who had dental scaling (13.9%). Show in Table 4.

Table 4: Distribution of Study Participants by Type of Dental Service Received (N = 360)

Dental Service Type	Frequency (n)	Percentage (%)
Tooth Extraction	140	38.9
Dentures	75	20.8
Dental Fillings	60	16.7
Dental Scaling	50	13.9
Root Canal Treatment	35	9.7
Total	360	100.0

3.5. Participants and Dental Status

The study sample comprised 360 elderly participants. Of these, 82 individuals (22.8%) retained more than 20 natural teeth, while the remaining 278 individuals (77.2%) presented with fewer than 20 teeth, as detailed in Table 5.

Table 5: Dentition Status Among the Elderly Participants (N = 360)

Dental Status	Number of Participants (n)	Percentage (%)
Retained >20 natural teeth	82	22.8
Fewer than 20 teeth	278	77.2
Total	360	100.0

4. Discussions

This study aimed to evaluate the oral health status of elderly patients seeking care at the Faculty of Dentistry. The study population comprised 360 participants. Current Findings (2024) The current investigation revealed that a substantial majority of the participants exhibited compromised dentition, with 278 individuals (77.2%) presenting with fewer than 20 remaining teeth. Conversely, only 82 participants (22.8%) maintained more than 20 teeth. Association Between Dentition and Systemic Health These findings align with established literature highlighting the systemic implications of tooth loss. A 2010 study conducted in Japan demonstrated that the number of retained teeth is significantly associated with overall health outcomes in the elderly. Specifically, individuals with 20 or more remaining teeth exhibited a lower incidence of major non-communicable diseases (NCDs) including diabetes, cardiovascular disease, malignancy, coronary heart disease, hypertension, and hypercholesterolemia—compared to those with fewer than 20 teeth [8].

Oral Health Trends in Thailand (2017) National data from Thailand's 2017 oral health survey further underscores these age-related challenges:

Aged 60–74 Years: Within this cohort, 56.1% retained at least 20 functional teeth, though only 39.4% possessed a minimum of two posterior occluding pairs (matching upper and lower molars). Complete edentulism (total tooth loss) was observed in 8.7% of this population. Regarding prosthetic needs, 42.6% required partial dentures, while 2.7% required full dentures. Pathologically, the prevalence of untreated dental and root caries stood at 52.6%. Periodontal disease was highly prevalent: 16.5% of individuals exhibited root-surface attachment loss, 36.3% presented with deep periodontal pockets, and 12.2% suffered from severe periodontal disease. Aged 80–85 Years: Natural tooth loss escalated markedly in this advanced age group. Only 22.4% retained at least 20 functional teeth, and a mere 12.1% maintained two posterior occluding pairs. The prevalence of complete edentulism rose sharply to 31.0%. Additionally, 12.5% presented with active dental caries, and 13.1% required complete denture rehabilitation. Strategic Frameworks for Geriatric Oral Health Consequently, strategic frameworks established in 2015 to address geriatric oral health issues categorized the primary challenges into seven distinct priority areas [9]. This framework incorporates six core indicators defined by the World Health Organization (WHO), supplemented by an additional region-specific problem:

1. Tooth Loss and Prosthetic Rehabilitation Outcomes (including complications associated with removable dentures)
2. Dental Caries and Endodontic Pathologies (diseases requiring root canal treatment)
3. Periodontal Diseases
4. Oral Mucosal Lesions and Malignancies
5. Xerostomia (dry mouth)
6. Coronal and Root Caries
7. Oral Manifestations of Systemic Illnesses in Geriatric Patients

Demographic projections in developed nations underscore the urgency of addressing these priorities. For instance, in Sweden, the proportion of the "oldest-old"—individuals aged 80 years and above—is projected to increase by 50% in the near future [10]. Concurrently, this rapid expansion of the geriatric population is anticipated to drive a significant rise in the number of individuals requiring long-term care [11, 12]. This oldest-old cohort is highly characterized by clinical frailty and multi-morbidity [13]. Physiologically, frailty precipitates heightened susceptibility to disease due to progressive immunosenescence (age-related immune decline) and a systemic reduction in physiological reserve across multiple organ systems [14]. Functional Dependence and Oral Healthcare Needs Epidemiological data from Sweden indicates a strong correlation between compromised oral health and functional dependence. Older adults who require assistance with basic activities of daily living (ADLs)—such as bathing and dressing—demonstrate a significantly increased need for assisted oral care [15]. This escalates because geriatric patients frequently present with complex comorbidities and frailty, which systematically diminishes their capacity for self-care [16]. Consequently, very old adults who exhibit dependence in daily physical functioning are highly likely to require direct, caregiver-assisted daily oral hygiene to maintain oral health and prevent secondary systemic complications [17].

5. Conclusion

This study establishes a firm baseline demonstrating that elderly dental patients in Laos present with a high burden of tooth loss and complex medical histories, dominated by hypertension and diabetes. The heavy reliance on extractions (38.9%) over preventive care highlights an urgent need for targeted public health frameworks, preventive protocols, and integrated oral-systemic medical management tailored specifically for the expanding Lao elderly population.

Article Information

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Disclaimer (Artificial Intelligence): The 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 writing or editing of manuscripts.

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