Original Article

Determinants Related to Disparities in Dental Care Utilization: Evidence from Thailand's Aging Society Prior to the National Oral Health Plan Implementation

Nhan Thu Le Truong[1,2], Tewarit Somkotra[3], Pagaporn Pantuwadee Pisarnturakit[3]

[1]Graduate program in Dental Public Health, Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand

[2]Faculty of Odonto-Stomatology, Can Tho University of Medicine and Pharmacy, Can Tho city, Vietnam

[3]Department of Community Dentistry, Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand

Abstract

The study aims to examine dental care utilization and the determinants contributing to the observed inequalities among Thai older adults during the demographic shift of Thailand to a complete-aged society, in which over 20% of the population are over the age of 60 years old, prior to the implementation of the national oral health plan for the older adults in 2015. This study analyzed data from the nationally representative Health and Welfare Surveys conducted in 2009 and 2015. Participants included individuals aged 60 years and older (N = 11,402 in 2009; N = 25,566 in 2015). Dental care utilization was measured by self-reported utilization within the past 12 months. Descriptive and logistic regression analyses were performed regarding the objective. Socioeconomic and geographic inequalities in dental care utilization persisted throughout the study period. Older adults with higher socioeconomic status were more likely to utilize dental care than their lower socioeconomic status peers. Utilization was highest in Bangkok and lowest in the rural areas of each region. The beneficiaries of the Civil Servant Medical Scheme were twice as likely to use dental services compared to those under the Universal Coverage Scheme. The findings from the multivariate analysis identify several key factors that significantly influence the utilization of dental care. These factors provide valuable insights into how demographic, socioeconomic, geographic, and health-related factors can influence access to dental services. Demographic Factors: Women tend to use dental care services more than men. In 2009, their Adjusted Odds Ratio (OR_{adj}) was 1.19 (1.02, 1.38), which increased to 1.31 (1.18, 1.47) by 2015. Younger older adults (ages 65-74) also exhibit higher dental visit rates, with an OR_{adj} of 2.28 (1.76, 2.96) in 2009 and 1.93 (1.57, 2.35) in 2015. Middle-aged older adults (ages 75-84) experienced a significant increase in dental care utilization, with OR_{adj} values of 1.86 (1.42, 2.43) in 2009 and 1.61 (1.30, 1.98) in 2015. Socioeconomic Factors: Individuals in the highest income group (5th quintile) had an OR_{adj} of 1.96 (1.60, 2.41) in 2009, which increased to 2.25 (1.94, 2.60) in 2015. Higher education levels, particularly completing secondary school, are associated with more frequent dental visits, reflected by an OR_{adj} of 1.78 (1.30, 2.43) in 2009 and 2.68 (2.03, 3.54) in 2015. Geographic Factors: Residents of the Central region utilize dental services less frequently. Their OR_{adj} was 0.44 (0.33, 0.59) in 2009 and decreased to 0.34 (0.27, 0.41) in 2015. Those living in rural areas also reported lower utilization rates, with an OR_{adj} of 0.49 (0.32, 0.54) in 2009 and 0.34 (0.28, 0.41) in 2015. Health-Related Factors: Being enrolled in the Civil Servant Medical Benefit Scheme (CSMBS) is associated with more dental visits, with an OR_{adj} of 1.85 (1.59, 2.14) in 2009, increasing to 2.10 (1.88, 2.35) in 2015. Additionally, having a chronic illness is linked to increased dental care utilization, with an OR_{adj} of 1.25 (1.10, 1.43) in 2009 and 1.29 (1.16, 1.43) in 2015. During the transition of aged society, inequalities in dental care utilization among Thai older adults persist, particularly among those with low socioeconomic status and residents in rural areas. Targeted policy reforms, such as expanding preventive programs and integrating dental services into primary care, are essential to promote equitable oral health access among Thailand's aging population.

Keywords: Aging society, Dental care utilization, Inequality, Thai older adults

Received date: Jun 14, 2025 **Revised date:** Aug 3, 2025 **Accepted date:** Aug 6, 2025
Doi:

Correspondence to:
Pagaporn Pantuwadee Pisarnturakit, Department of Community Dentistry, Faculty of Dentistry, Chulalongkorn University, 34 Henry Dunant Road, Pathumwan, Bangkok 10330, Thailand. Tel: 02-218-8545 Email: pagaporn.p@chula.ac.th

Introduction

Utilization of dental care is a fundamental component in achieving optimal oral health outcomes. Nevertheless, considerable disparities in access and use of dental services persist worldwide[1-3], particularly among socioeconomically disadvantaged groups and vulnerable populations such as older adults. These disparities have been identified as a pressing global public health issue.[1,2] In response, the World Health Organization (WHO) has emphasized the importance of universal health coverage (UHC) to ensure equitable access to healthcare services, including dental care, regardless of an individual's financial status.

In Thailand, the Universal Coverage (UC) policy was introduced in 2001 as a means to promote more equitable utilization of healthcare services. For older adults aged 60 and above, health insurance coverage is provided through two main schemes: The Civil Servant Medical Benefit Scheme (CSMBS) and the Universal Coverage Scheme (UCS). The CSMBS offers extensive benefits to retired civil servants and their eligible dependents, including access to all public health facilities and a wider array of dental treatments such as fixed prosthetics and endodontic procedures. Conversely, the UCS primarily serves the general population through public primary care units, such as community and sub-district hospitals, with access to higher-level care that requires a formal referral. Notably, neither scheme currently includes private dental providers, who are primarily concentrated in urban areas.

Despite the implementation of these health insurance schemes, disparities in dental care utilization remain, especially between urban and rural populations and across socioeconomic strata.[4] Utilization rates are consistently higher among wealthier individuals and those residing in urban areas, while the economically disadvantaged and rural dwellers exhibit substantially lower access to care. Since the designation of Thailand as an aging society in 2008, the country has faced the dual burden of meeting the healthcare demands of an expanding older adult population and ensuring equitable access across diverse population groups. Although the UC policy has improved overall healthcare accessibility, significant inequalities in dental care utilization persist among older adults.[5] Furthermore, the government implemented the National Oral Health Plan for Thai older persons (2015-2022) to advance the strategy for developing the system, models, and quality of dental care services for the older adult population.

This study is grounded in existing literature that identifies three key points: 1) significant disparities in healthcare persist, 2) socioeconomic factors have a strong impact on healthcare utilization, and 3) insurance schemes are vital for improving healthcare access. This research aims to examine the underlying determinants of disparities in dental care utilization among Thai older adults during this critical demographic transition. By identifying the key factors that influence dental care utilization within the context of the aging population of Thailand, this study will contribute valuable insights into how these factors can address healthcare disparities. Moreover, the findings will serve as a useful reference before the implementation of the National Oral Health Plan for older adults in Thailand. Additionally, the study will assess the progress made in achieving equitable access to dental care and share Thai policy experience as a

potential model for other developing countries that are working to enhance health equity for their aging populations.

Material and Methods

This study utilized data from the nationally representative Health and Welfare Survey (HWS), conducted in 2009 and 2015 by the National Statistical Office of Thailand. The HWS employed a two-stage stratified sampling design, with survey weights applied to ensure national representativeness. The sampling frame included non-institutional households of municipal (urban) and non-municipal (rural) areas in each province across the country. Fifteen households were systematically selected per municipal block and ten per rural village. Older adults, defined as individuals aged 60 and above from these households, were identified for inclusion in the study, totaling 11,402 respondents in 2009 and 25,566 in 2015. Data were collected via structured face-to-face interviews using standardized household and individual questionnaires. Although traditional sample size calculations were not applicable due to the use of comprehensive national HWS data, the large sample size provides robust statistical power and representativeness for population-level analysis. Additionally, the use of secondary data has several advantages: the dataset is nationally representative, was designed and conducted by reputable national health research institutions, and follows standardized data collection protocols with rigorous sampling methodologies.

The dependent variable was dental care utilization, defined by a self-reported response to the question: "Have you utilized dental care at any facility during the past 12 months preceding the survey?" In addition, independent variables were categorized into two main factors: the predisposing and enabling factors. Predisposing factors comprised of six domains: a) household living standards assessed via an asset index which is derived through Principal Component Analysis (PCA) using STATA. It is based on the ownership of household assets such as electronic items (television, mobile phone, computer), vehicles (car/truck/minibus, motorcycle), and household appliances (refrigerator), and etc. The asset index is then categorized into quintiles. The other domains include: b) age groups (60–69 years, 70–79 years, 80 years and above); c) sex (male, and female), and d) marital status (married, single, widowed/ divorced/separated), e) educational attainment (no formal education, primary, secondary, vocational, tertiary), and f) health conditions (presence of chronic illness (yes/no) and dependency in daily self-care activities (dependent/independent)). Enabling factors comprised four domains: a) geographic characteristics: five regions (North, Northeast, Central, South, and Bangkok) and area of residence (urban/rural), and b) working status was measured through whether the older adults were economically active. Furthermore, c) health insurance entitlements were categorized into the UCS, CSMBS, and those who were not entitled to the publicly subsidized schemes. Lastly, d) health-related behaviors were categorized into health-compromising behaviors (smoking and alcohol consumption) and health-enhancing behaviors (whether the older adult had obtained health promotion and prevention services in the past year (yes/no)).

Descriptive statistics were used to calculate the percentage and 95.0% confidence intervals (CIs) of dental care utilization across all determinants variables. Bivariate analyses were conducted to explore crude associations. Associations between determinants and dental care utilization were assessed using multivariate logistic regression, yielding adjusted odds ratios (ORs) with 95% CIs. In the process of determinant selection in this analysis, binary logistic regression was used, and stepwise methods were employed according to the theoretical framework. Along with these, potential confounders (age, sex, region, and insurance scheme) identified a priori were also included in the model. All analyses accounted for survey design using weights and were performed in STATA 14 (StataCorp, College Station, TX, USA), with statistical significance set at $\alpha = 0.05$.

This study utilized publicly available secondary data. Ethical approval for the use of this dataset was obtained from the Research Ethics Committee of the Faculty of Dentistry, Chulalongkorn University (HREC-DCU 2017059). Informed consent was obtained from all participants in the original HWS surveys, and all data were anonymized prior to analysis.

Results

This study analyzed data from the 2009 and 2015 Health and Welfare Surveys (HWS) to assess patterns of dental care utilization among Thai older adults and the determinants associated with such utilization. The descriptive statistics (Table 1) indicate that across both survey years, the majority of respondents were in the early older adult group (60–69 years), comprising 52.4% in 2009 and 56.3% in 2015. Women consistently represented the majority (approximately 57%), and most participants were married. The educational attainment level among Thai older adults was consistent, with more than 70% having primary education. A substantial share of the older adults fell into the lower asset quintiles, although a gradual shift toward higher quintiles was observed in 2015.

Table 1 *Characteristics of samples of Thai older adults in HWS 2009 and HWS 2015*

Determinants (=1 if yes, =0 if otherwise)	Proportionate distribution of samples, and dental care utilization			
	HWS 2009 (N=11,402)		HWS 2015 (N=25,566)	
	Sample (%)	Dental care (%)	Sample (%)	Dental care (%)
Predisposing factors				
Household living standards:				
1st Quintile	25.13	6.31	22.25	4.91
2nd Quintile	24.92	6.83	25.66	4.61
3rd Quintile	9.19	7.82	16.16	5.47
4th Quintile	19.28	9.14	16.24	6.98
5th Quintile	21.47	14.71	19.67	10.39
Educational level attainment:				
Not attended formal education	14.35	5.14	9.64	3.16
Up to Primary	73.63	8.36	77.43	5.46
Secondary	7.07	13.41	6.08	10.52
Vocational	4.49	11.76	1.83	16.78
Tertiary or higher	0.45	17.13	4.88	17.18
Age groups (years):				
Early older adult (60-69)	52.38	10.69	56.26	7.46
Middle older adult (70-79)	33.56	8.91	29.82	5.68
Late older adult (80 and over)	14.04	4.31	13.91	3.19
Sex:				
Male	42.61	8.62	43.72	6.03
Female	57.38	9.15	56.27	6.57
Marital status:				
Single	3.89	9.46	3.93	7.18
Married	60.37	9.75	62.15	6.98
Widowed/ divorced/ separated	35.74	7.48	33.92	5.04
Health conditions:				
Presence of chronic illness	54.91	9.81	56.03	6.94
Dependency for routine self-care or daily activities	58.97	10.83	54.22	7.54
Enabling factors				
Region:				
Bangkok	4.13	16.14	3.61	14.70
Central	31.39	8.86	28.47	5.92
North	24.83	7.59	25.37	6.86
Northeast	24.81	8.69	28.32	5.34
South	14.84	9.69	14.22	6.08

Table 1 *Characteristics of samples of Thai older adults in HWS 2009 and HWS 2015 (cont.)*

Determinants (=1 if yes, =0 if otherwise)	Proportionate distribution of samples, and dental care utilization			
	HWS 2009 (N=11,402)		HWS 2015 (N=25,566)	
	Sample (%)	Dental care (%)	Sample (%)	Dental care (%)
Area of residence:				
Urban (excluding Bangkok)	53.78	9.61	50.69	6.46
Rural	42.08	7.31	45.70	5.54
Working status:				
Economically active	36.37	10.01	38.40	6.79
Health insurance entitlement:				
UCS	74.54	7.40	79.27	5.19
CSMBS	21.62	13.91	18.26	10.66
Not entitled to public subsidized insurance	2.83	9.90	1.22	11.96
Health-related behaviors:				
Smoking habit	14.36	8.01	13.34	5.44
Alcohol consumption	7.22	7.52	15.56	7.28
Obtained health promotion and prevention in the past year	4.99	18.28	17.67	12.57

Dental care utilization remained low overall, exhibiting apparent socioeconomic and geographic disparities. In 2009, utilization among those in the highest asset quintile was 14.7%, nearly three times higher than that of those in the lowest quintile (6.3%). This pattern persisted in 2015, with utilization at 10.4% for the highest quintile and only 4.9% for the lowest. Similarly, individuals with higher educational levels consistently reported greater use of dental services. For instance, those with tertiary education had utilization rates of 17.1% in 2009 and 17.2% in 2015, while those with no formal education had rates of only 5.1% and 3.2%, respectively. Age and functional status play a crucial role in influencing utilization patterns for dental services. Research indicates that early older adults demonstrate the highest levels of service use, while utilization tends to decrease with age. For instance, in 2015, only 3.2% of individuals aged 80 and older accessed dental care, compared to 7.5% among those aged 60 to 69.

Additionally, individuals who maintain independence in their daily activities are more inclined to seek care than those who experience dependency. Geographical disparities were notable. Bangkok had the highest rates of utilization (16.1% in 2009 and 14.7% in 2015), while across all regions outside of Bangkok, utilization remained at lower rates and rural areas consistently showed the lowest rates (7.3% in 2009; 5.5% in 2015). Regarding health insurance, individuals covered by the Civil Servant Medical Benefit Scheme (CSMBS) had significantly higher utilization rates (13.9% in 2009 and 10.7% in 2015) than those under the Universal Coverage Scheme (7.4% and 5.2%, respectively). Utilization was higher among those who had participated in health promotion and prevention programs in the past year, at 18.3% in 2009 and 12.6% in 2015, compared to those who had not.

The multivariable logistic regression results (Table 2) further confirmed a significant association between socioeconomic status and dental care utilization. In both survey years, individuals in the highest asset quintile had significantly higher odds of dental service use compared to the lowest quintile (OR = 1.96; 95% CI: 1.60–2.41 in 2009; OR = 2.25; 95% CI: 1.94–2.60 in 2015). Education level also exhibited a strong, graded effect; in 2015, those with tertiary or higher education were over four times more likely to utilize services compared to those with no formal education (OR = 4.03; 95% CI: 3.05 – 5.32). Region of residence was another strong predictor. Compared with Bangkok, all other regions showed significantly lower odds of utilization. For example, in 2015, residents of the Northeast had an OR of 0.30 (95% CI: 0.24–0.37), while those in the Central region had an OR of 0.34 (95% CI: 0.27–0.41).

Insurance status significantly influenced service utilization. In 2015, beneficiaries of CSMBS were twice as likely to utilize dental care compared to those enrolled

in the UCS (OR = 2.10; 95% CI: 1.88–2.35). Interestingly, individuals without any public insurance had even higher odds of utilizing dental services (OR = 2.42; 95% CI: 1.72–3.41). This likely reflects their greater economic resources and access to private services. Several demographic factors were also positively associated with service utilization, including being female, being married, being economically active, and not having physical dependencies. Health-related behaviors showed mixed associations. In 2015, alcohol consumption was associated with slightly higher odds of utilization (OR = 1.23; 95% CI: 1.06–1.42), while smoking was negatively associated (OR = 0.83; 95% CI: 0.70–0.98). Participation in health promotion activities emerged as the strongest predictor of service use, with odds of use exceeding 2.5 in both years.

Table 2 *Associations of determinants and dental care utilization during the past 12 months of Thai older adult, in HWS 2009 and HWS 2015*

Determinants (=1 if yes, =0 if otherwise)	Adjusted odds ratio with 95%confidence interval	
	HWS 2009	HWS 2015
Predisposing factors		
Household living standards:		
1st Quintile	reference	reference
2nd Quintile	1.02 (0.82, 1.25)	0.94 (0.79, 1.10)
3rd Quintile	1.15 (0.88, 1.51)	1.12 (0.94, 1.34)
4th Quintile	1.32 (1.07, 1.63)	1.45 (1.23, 1.72)
5th Quintile	1.96 (1.60, 2.41)	2.25 (1.94, 2.60)
Educational level attainment:		
Not attended formal education	reference	reference
Up to Primary	1.72 (1.12, 1.79)	1.48 (1.18, 1.85)
Secondary	1.78 (1.30, 2.43)	2.68 (2.03, 3.54)
Vocational	2.99 (1.16, 4.54)	1.02 (2.88, 5.63)
Tertiary or higher	1.38 (0.56, 3.76)	4.03 (3.05, 5.32)
Age groups (years):		
Early older adult (60-69)	2.28 (1.76, 2.96)	1.93 (1.57, 2.35)
Middle older adult (70-79)	1.86 (1.42, 2.43)	1.61 (1.30, 1.98)
Late older adult (80 and over)	reference	reference
Sex:		
Male	reference	reference
Female	1.19 (1.02, 1.38)	1.31 (1.18, 1.47)
Marital status:		
Single	1.31 (0.94, 1.85)	1.03 (0.79, 1.33)
Married	1.36 (1.17, 1.58)	1.19 (1.06, 1.35)
Widowed/ divorced/ separated	reference	reference
Health conditions:		
Presence of chronic illness	1.25 (1.10, 1.43)	1.29 (1.16, 1.43)
Dependency for routine self-care or daily activities	1.83 (1.58, 2.10)	1.59 (1.43, 1.77)
Enabling factors		
Region:		
Bangkok	reference	reference
Central	0.44 (0.33, 0.59)	0.34 (0.27, 0.41)
North	0.36 (0.27, 0.49)	0.39 (0.32, 0.48)
Northeast	0.42 (0.31, 0.57)	0.30 (0.24, 0.37)
South	0.48 (0.35, 0.66)	0.34 (0.27, 0.43)

Table 2 *Associations of determinants and dental care utilization during the past 12 months of Thai older adult, in HWS 2009 and HWS 2015 (cont.)*

Determinants (=1 if yes, =0 if otherwise)	Adjusted odds ratio with 95%confidence interval	
	HWS 2009	HWS 2015
Area of residence:		
Urban (excluding Bangkok)	0.55 (0.43, 0.72)	0.40 (0.33, 0.48)
Rural	0.49 (0.32, 0.54)	0.34 (0.28, 0.41)
Working status:		
Economically active	1.23 (1.08, 1.49)	1.23 (1.11, 1.38)
Health insurance entitlement:		
UCS	reference	Reference
CSMBS	1.85 (1.59, 2.14)	2.10 (1.88, 2.35)
Not entitled to public subsidized insurance	1.11 (0.75, 1.63)	2.42 (1.72, 3.41)
Health-related behaviors:		
Smoking habit	1.08 (0.87, 1.34)	0.83 (0.70, 0.98)
Alcohol consumption	0.88 (0.66, 1.17)	1.23 (1.06, 1.42)
Obtained health promotion and prevention in the past year	2.40 (1.92, 3.01)	2.59 (2.33, 2.89)

Discussion

This study analyzes data from the Health and Welfare Surveys of Thailand (2009, 2015) to examine inequalities in dental care utilization among older adults during the transition of the country to a complete-aged society, in which over 20% of the population are over the age of 60 years old. Despite the Universal Health Coverage (UHC) policy, significant inequalities in dental care utilization persist, particularly among individuals with lower socioeconomic status.

The years 2009 and 2015 were chosen strategically due to significant demographic and healthcare policy milestones in Thailand. In terms of demographics, Thailand was officially recognized as an "aging society" by the United Nations in 2008. The year 2009 marked the beginning of an important period of demographic transition, making it a suitable baseline year to capture the early stages of population aging. From a policy perspective, the National Oral Health Plan for Thai Older Adults (2015-2022) was launched in 2015. This plan provides a comprehensive framework to examine healthcare access both before and during the implementation of targeted oral health policies. These years are significant for research as they represent a crucial time for demographic and healthcare policy changes. Selecting 2009 and 2015 allows for an analysis of healthcare utilization patterns during this critical transition phase, and facilitates an assessment of how policies have affected dental care access for older adults. Overall, these selected years offer an insightful opportunity to capture early demographic shifts, evaluate pre-implementation healthcare access, and examine the initial impacts of national oral health strategies.

The research utilizes secondary data, which might present potential selection and sampling challenges. Selection bias may occur if the survey's sampling frame is inappropriate, leading to biases in the original data collection process and affecting the representativeness of the sample. While there are some strengths to using secondary data from the National Health and Welfare Survey, several limitations must be considered in this analysis. The predefined questionnaire restricts the scope of this study. There may be a mismatch between the original research objectives and the current research questions. There is a risk of recall bias in the self-reported data. Predefined variables limit our analytical flexibility. There is limited ability to validate the data collection methods. The depth of health-related information may be insufficient. Critical variables necessary for this current research might be missing. There is a lack of comprehensive contextual

data. The data collection protocol cannot be modified. Additional information was unable to be collected. Assessment of health is limited in depth. These limitations should be considered when interpreting or applying the findings of this study. Additionally, several potential confounding variables were identified, and statistical adjustments were used to control for demographic factors and health-related characteristics through multivariable regression models. Specifically, binary logistic regression was employed with stepwise selection methods to include variables.

Research indicates that early older adults exhibit the highest levels of service use, while utilization typically declines with age. Furthermore, individuals who remain independent in their daily activities are more likely to seek care compared to those who are dependent on others. Understanding these trends can help develop healthcare strategies that better support older adults and enhance access to dental services. However, it is essential to acknowledge that these observations are based on a descriptive cross-sectional study, which imposes certain limitations on interpretation.

Consistent with earlier findings, the study reveals a significant monotonic dose-response relationship between household socioeconomic status and dental care utilization: older adult individuals in higher household asset quartiles were more likely to utilize dental services. Educational attainment, a proxy for socioeconomic status, was also positively associated with utilization. Notably, Thai older adults with higher education levels consistently appeared in higher SES groups. These results align with comparative studies from high-income countries that employ diverse healthcare financing systems, including Bismarckian, social insurance, and tax-based models, which found persistent socioeconomic status-related inequalities in dental care.[6-8] However, such inequalities appear largely independent of specific financing models, suggesting that factors beyond insurance structures play a critical role. In Thailand, the utilization of dental care among older adults remains lower than in developed countries, likely due to systemic challenges beyond financial protection. The uneven distribution of dental professionals, concentrated in urban centers due to the growth of the private sector, contributes to geographic inequalities.[9-11] Addressing this imbalance requires policy measures, such as incentives for rural dental practices and expanded public-private partnerships to improve access for vulnerable populations.[1,2]

Non-financial barriers also play a significant role. Older adults often face physical and cognitive limitations, reduced awareness of oral health needs, and low motivation to seek care. Chronic health conditions, mobility impairments, vision loss, and dependency on caregivers further restrict their ability to maintain oral hygiene and attend dental appointments. Transportation costs and other indirect expenses also deter access. To mitigate these barriers, mobile dental units and portable equipment can facilitate outreach, particularly for individuals who are homebound or institutionalized, thereby improving access to dental care. Residential care settings provide opportunities for on-site service delivery. Expanding the role of dental nurses and training primary healthcare workers in geriatric dentistry may enhance the integration of oral health into primary care. Such approaches can help reduce socioeconomic disparities and improve health literacy and self-care among older adults.[7, 12-14]

Importantly, while these barriers do not entirely prevent dental service use, they significantly constrain access, particularly for those facing multiple disadvantages. In some cases, dental care becomes practically unattainable. Therefore, improving access requires incorporating oral health into broader health promotion efforts. Oral health remains disconnected from general health systems, despite being a key determinant of overall well-being. Integrating geriatric oral health into comprehensive healthcare strategies would enhance access to and improve the quality of care for aging populations. Cross-disciplinary collaboration is vital; for example, medical professionals and oral health providers must work together to raise awareness and coordinate services. A life-course approach emphasizing prevention and early intervention should underpin oral health policy.[9-11] Furthermore, the implementation of tele-dentistry strategies is essential for reducing disparities in dental care utilization among older adults, particularly those residing in rural areas.

Despite the strength of the findings, some limitations exist. The reliance on self-reported survey data introduces the potential for recall and reporting bias, which may slightly affect the accuracy of prevalence estimates. Nonetheless, the study provides a valid overview of oral health disparities among older Thais. Future research should further investigate the personal, structural, and systemic factors underlying low dental care utilization to inform targeted interventions and policy reforms aimed at improving oral health equity for the aging population.

In conclusion, this study found that despite the presence of the Universal Coverage Scheme (UCS) in Thailand, dental service utilization among the older adults remains low and inequitable. Key determinants include economic, social, geographic, and health-related factors that are related with the inequality in dental care utilization among Thai older adults. Addressing these persistent disparities requires a robust, equity-oriented primary healthcare system that emphasizes prevention, health promotion, and fair access to care. Integrating oral health into routine primary care, enhancing service delivery models, and adopting innovative outreach strategies will be essential. Furthermore, integrating oral health care services for older adults into the national development plan is critical during the transition in Thailand from a complete-aged to a super-aged society.

Acknowledgement

The researcher gratefully acknowledges the ASEAN Scholarship by Chulalongkorn University for their financial support. Appreciation is extended to the faculty and staff at the Faculty of Dentistry, Chulalongkorn University, for their invaluable assistance, especially during the COVID-19 pandemic. Their cooperation was crucial to the successful completion of this study. All contributions are gratefully acknowledged.

Conflict of Interest: The authors declare no potential conflicts of interest related to this research, authorship, or publication.

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