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Attitudes and practices regarding preventive oral health self-care among patients at Ha Dong General Hospital in 2025

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ABSTRACT

***Objective**: To describe the attitudes and practices regarding preventive oral health self-care among patients visiting Ha Dong General Hospital in 2025. **Methods**: A cross-sectional descriptive study was conducted on 401 patients attending the Odonto-Stomatology Clinic at Ha Dong General Hospital from March to May 2025. Data were collected using a validated questionnaire assessing attitudes and practices towards preventive oral care, yielding Cronbach's alpha reliability coefficients of 0.933 and 0.947 for the attitude and practice domains, respectively. **Results**: Regarding attitudes toward preventive oral self-care, 60.1% of patients demonstrated a good attitude, 19.7% were average, and 20.2% were poor. In terms of practices, 60.1% exhibited good practices, 10.2% were average, and 29.7% were poor. The mean scores for attitudes and practices varied significantly according to gender and age ($p < 0.05$). Furthermore, a strong and statistically significant positive correlation was observed between patients' attitudes and their practices ($r = 0.924$, $p = 0.001$). **Conclusion**: Patient attitudes and practices concerning preventive oral health self-care remain suboptimal. Targeted oral health counseling and health education, meticulously tailored to specific age groups and genders, must be prioritized by nursing staff in clinical settings.*

***Keywords**: Oral diseases, self-care, attitudes, practices, preventive dentistry.*

INTRODUCTION

Oral health is not merely about maintaining aesthetically pleasing and sound teeth; it serves as a fundamental pillar of systemic health and significantly impacts an individual's overall quality of life [1]. Many oral diseases are highly preventable through appropriate health education and risk factor management. Efficacious oral hygiene is critical for maintaining optimal oral health, systemic well-being, and overall quality of life. Furthermore, adequate knowledge and positive attitudes toward oral healthcare are essential prerequisites for initiating and sustaining preventive health practices [2].

Achieving optimal oral health requires a synergistic combination of robust knowledge, a positive attitude, and consistent oral hygiene practices [1, 3]. Conversely, negative attitudes frequently precipitate suboptimal oral hygiene practices, serving as a primary etiology

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for oral pathologies [4, 5]. Previous literature highlights this concern; for instance, a study by Bumb et al. demonstrated that 19.6% of participants harbored negative preventive attitudes, and 52.3% exhibited inadequate oral hygiene practices [4]. Similarly, Nguyen reported that 45.5% of subjects lacked positive attitudes and 90.9% maintained poor oral hygiene routines. Currently, the diagnosis, treatment, and prevention of oral diseases encounter numerous challenges, exacerbated by the general population's limited oral health literacy [4, 6].

At the Odonto-Stomatology Clinic of Ha Dong General Hospital, patient visits are predominantly curative, focusing on the treatment of existing dental conditions, while systematic counseling and guidance regarding preventive oral self-care remain under-evaluated. To date, no empirical study has been conducted at this institution to comprehensively describe patients' attitudes and practices concerning preventive oral self-care or to determine the correlation between these variables. This research gap underscores the critical need for an empirical investigation to provide a scientific foundation for developing tailored oral health education and communication strategies. Therefore, this study was conducted to describe the attitudes and practices regarding preventive oral care among patients visiting Ha Dong General Hospital in 2025.

METHODS

Study design: A cross-sectional descriptive study design was employed.

Study setting and duration: The research was conducted at the Odonto-Stomatology Clinic, Ha Dong General Hospital. The data collection phase took place from March to May 2025.

Study population: The study population comprised patients presenting for examination at the Odonto-Stomatology Clinic, Ha Dong General Hospital.

Inclusion Criteria: Patients aged 18 years and older, possessing the cognitive and communicative abilities to complete the questionnaire, who provided voluntary informed consent to participate.

Exclusion Criteria: Patients presenting with acute medical emergencies precluding survey participation, and individuals diagnosed with severe psychiatric disorders impairing their cognitive capacity.

Sample size and sampling method: The required sample size was determined using the formula for estimating a single population proportion:

$$n = Z^2_{(1-\alpha/2)} \frac{p(1-p)}{d^2}$$

Where: n: Minimum required sample size. Z: Confidence level coefficient, Z = 1.96 for a 95% confidence interval (α = 0.05). p: The estimated proportion of patients with good preventive oral care practices, referenced at p = 0.473 (47.3%) based on a previous study by Pham Hong Phuc [7]. d: Allowable margin of error, set at d = 0.05.

Applying these parameters, the calculated minimum sample size was 382. To account for a potential 5% non-response or dropout rate, the final sample size was adjusted to 401 patients. Participants were recruited using a consecutive convenience sampling method.

Data collection: Data collection followed a rigorously structured protocol:

Step 1: Eligible patients were identified daily from the hospital's electronic medical records system based on the inclusion and exclusion criteria.

Step 2: Trained researchers approached the selected patients, comprehensively explained the study's objectives, ensured strict data confidentiality, and clarified that participation would not affect their clinical care. Written informed consent was obtained from those willing to participate.

Step 3: Data were collected via face-to-face interviews utilizing a pre-tested questionnaire. Each interview lasted approximately 20–30 minutes, during which researchers provided neutral clarifications if needed to ensure accurate comprehension.

Step 4: Completed questionnaires were meticulously cross-checked at the end of each session. Any incomplete, torn, or illegible forms were excluded from the final dataset.

Instruments and scoring criteria: The data collection tool was developed based on the Vietnamese Ministry of Health guidelines for the diagnosis and treatment of odonto-stomatological diseases (Decision No. 3108/QD-BYT, 2015) [8] and adapted from a validated questionnaire by Pham Hong Phuc [7]. Following its development, the instrument was evaluated for validity and pilot-tested on 30 patients; the Cronbach's alpha reliability coefficients for the attitude and practice domains were 0.933 and 0.947, respectively.

The questionnaire comprised three parts:

Part A: Sociodemographic Characteristics (e.g., age, gender).

Part B: Attitudes Toward Preventive Oral Care (8 items). Patients rated the necessity of various preventive measures (e.g., daily oral hygiene, therapeutic dental interventions, post-meal brushing, use of fluoridated toothpaste and mouthwash, dental flossing, and biannual scaling and check-ups). A score of 1 was awarded for a "Necessary" response, and 0 for "Unnecessary".

Part C: Preventive Oral Care Practices (9 multiple-choice items). Each item possessed one correct evidence-based practice (e.g., brushing 2–3 times daily for 2–3 minutes; brushing after waking up and before sleeping; utilizing vertical and circular brushing motions; replacing the toothbrush quarterly; daily flossing; biannual dental scaling and check-ups; and seeking immediate dental care upon noticing abnormal signs such as halitosis, gingival bleeding, or tooth discoloration). Correct answers received 1 point, while incorrect or ambiguous answers scored 0.

Scoring Classification: For both attitudes and practices, the total scores were transformed into percentages and categorized into three levels: Good (≥ 80%), Moderate (50–79%), and Poor (< 50%).

Statistical analysis: Data entry, cleaning, and analyses were performed using SPSS software version 20.0. Descriptive statistics, including frequencies, percentages, means, and standard deviations (SD), were utilized to summarize the variables. Differences in mean attitude and practice scores across demographic groups were assessed using independent-samples t-tests. The correlation between attitudes and practices was evaluated using Pearson's correlation coefficient (r). A p-value of < 0.05 was considered statistically significant.

Ethical considerations: The study protocol was rigorously reviewed and approved by the Institutional Review Board of Nam Dinh University of Nursing (Approval No. 579/GCN-HDDD, dated March 5, 2025) and officially authorized by Ha Dong General Hospital. Participation was entirely voluntary, and all collected data were anonymized and used exclusively for academic purposes.

RESULTS

Table 1. Sociodemographic characteristics of the study population (N = 401)

Characteristics		n	%
Age (years)	18 - 34	112	27.9
	35 - 44	62	15.5
	45 - 60	75	18.7
	> 60	152	37.9
	Mean ± SD (Min – Max)	49.43 ± 17.63 (20-74)	
Gender	Male	150	37.4
	Female	251	62.6

As detailed in Table 1, the mean age of the participants was 49.43 ± 17.63 years (range: 20–74 years). The elderly cohort (> 60 years) constituted the largest demographic segment, accounting for 37.9% of the total sample. Regarding gender distribution, the majority of the participants were female (62.6%).

Table 2. Patients' attitudes toward preventive oral care measures (N = 401)

Preventive Measures	Necessary		Unnecessary	
	n	%	n	%
Brushing teeth 2–3 times daily	381	95.0	20	5.0
Seeking treatment for dental diseases	381	95.0	20	5.0
Brushing teeth after meals to protect oral health	390	97.3	11	2.7
Rinsing with fluoridated mouthwash	241	60.1	160	39.9
Brushing with fluoridated toothpaste	241	60.1	160	39.9
Using dental floss instead of toothpicks	241	60.1	160	39.9
Undergoing dental scaling every 6 months	321	80.0	80	20.0
Attending regular dental check-ups every 6 months	321	80.0	80	20.0

The majority recognized the necessity of basic oral hygiene, with 97.3% affirming that post-meal brushing protects oral health, and 95.0% acknowledging the importance of brushing 2–3 times daily and treating existing dental diseases. Furthermore, 80.0% of the participants valued biannual dental scaling and regular check-ups. However, only 60.1% deemed the use of fluoridated mouthwash and toothpaste, as well as replacing toothpicks with dental floss, as necessary practices.

Table 3. Self-reported preventive oral care practices (N = 401)

Items	Performed	
	n	%
Brush teeth 2-3 times a day.	381	95.0
Brushing for 2–3 minutes per session	301	75.1
Brush after meals.	305	76.1
Using vertical and circular brushing motions	281	70.1
Replacing the toothbrush every 3 months	269	67.1
Cleaning interdental spaces daily with dental floss	207	51.6
Attending regular dental check-ups every 6 months	281	70.1
Undergoing dental scaling every 6 months	281	70.1
Seeking immediate dental care upon noticing abnormal signs (e.g., discoloration, halitosis, bleeding gums)	282	70.3

Table 3 showed that 95.0% of the patients reported brushing their teeth 2–3 times a day. However, adherence to optimal brushing protocols was lower: 76.1% brushed after meals, 75.1% brushed for the recommended duration of 2–3 minutes, and 70.1% utilized the correct vertical and circular brushing motions. Routine clinical preventive practices, such as biannual scaling and check-ups, were observed in 70.1% of the cohort. Notably, daily interdental cleaning using dental floss exhibited the lowest compliance rate, practiced by only 51.6% of the participants.

Table 4. Overall classification of attitudes and practices (N = 401)

Domains	Good		Moderate		Poor	
	n	%	n	%	n	%
Attitudes	241	60.1	79	19.7	81	20.2
Practices	241	60.1	41	10.2	119	29.7

Good attitudes and practices were both observed in 60.1% of the study population. Conversely, 20.2% exhibited poor attitudes, and nearly one-third (29.7%) demonstrated poor preventive practices.

Table 5. Mean attitude and practice scores stratified by gender and age (N = 401)

Characteristic		Attitude		Practice	
		Mean ± SD	p-value*	Mean ± SD	p-value*
Gender	Male (n = 150)	3.71 ± 1.40	0.001	2.60 ± 2.54	0.001
	Female (n = 251)	7.81 ± 0.87		8.76 ± 0.73	
Year old	< 45 (n = 174)	7.93 ± 0.55	0.001	9.00 ± 0.00	0.001
	≥ 45 (n = 227)	5.01 ± 2.28		4.50 ± 3.43	

**Independent-samples t-test*

Table 5 revealed statistically significant differences in both attitude and practice scores across demographic subgroups. Female patients achieved significantly higher mean scores in both domains compared to their male counterparts (p = 0.001). Similarly, younger patients (< 45 years) demonstrated significantly better attitudes and preventive practices than those aged 45 years and older (p = 0.001).

Table 6. Correlation between attitudes and preventive oral care practices (N = 401)

Variables	Pearson's r	p-value
Attitude vs. Practice	0.924	0.001

Pearson's correlation analysis established a strong, positive, and statistically significant correlation between patients' attitudes toward preventive oral care and their actual self-care practices (r = 0.924, p = 0.001).

DISCUSSION

The present study, evaluating 401 patients at the Odonto-Stomatology Clinic, revealed that 60.1% of the participants possessed a good attitude toward preventive oral self-care. The highest levels of awareness were observed for basic hygiene routines, notably brushing after meals (97.3%) and maintaining daily oral hygiene (95.0%). However, only 60.1% of the patients recognized the necessity of using fluoridated products (toothpaste and mouthwash) and substituting toothpicks with dental floss. This rate is substantially lower than the findings reported by Rui et al [9] in China. During data collection, many patients disclosed a lack of awareness regarding fluoride, frequently purchasing toothpaste without considering its active ingredients. This highlights a critical knowledge gap; therefore, targeted health communication emphasizing the prophylactic benefits of fluoride and interdental cleaning is imperative to cultivate a comprehensive preventive mindset.

Regarding oral self-care practices, 60.1% of the cohort demonstrated good preventive practices. Although toothbrushing is the most fundamental, cost-effective, and efficacious method for preventing dental caries and periodontal diseases [10], only 76.1% of our participants brushed at optimal times (e.g., after meals). This adherence rate is notably lower than the 96.2% reported by Pham [7], which may be attributed to the prevalent habit of brushing immediately before bedtime rather than shortly after dinner. Furthermore, only 70.1% employed the correct vertical and circular brushing motions. The ubiquitous, incorrect habit of horizontal brushing not only fails to effectively disrupt dental plaque but also exacerbates gingival recession and cervical abrasion.

Daily interdental cleaning with dental floss exhibited the lowest compliance, practiced by only 51.6% of the cohort, directly mirroring the suboptimal attitudes toward this behavior. The entrenched cultural habit of using wooden toothpicks, which are easily accessible and inexpensive, poses a significant barrier to adopting dental floss. Consequently, clinical nurses and dental hygienists must utilize visual aids, such as dental models and instructional videos, to explicitly demonstrate proper

brushing mechanics and flossing techniques during routine consultations.

The study identified significant demographic disparities in preventive oral care. Patients under 45 years of age exhibited significantly higher mean scores in both attitudes and practices compared to their older counterparts (≥ 45 years). This aligns with findings by Kassebaum et al [11], affirming that advanced age is inversely associated with oral health literacy and preventive practices. This demographic vulnerability underscores the necessity for healthcare facilities to design tailored, highly visual, and easily comprehensible educational interventions specifically for the elderly population, incorporating repetitive practical instructions to ensure skill retention.

Gender also emerged as a significant determinant, with females demonstrating superior attitudes and practices compared to males ($p = 0.001$). Interestingly, this divergence contrasts with studies by Tanvi et al [12], Rui et al [9], and Luong et al [13], which found no significant gender-based differences ($p > 0.05$). This localized finding suggests that male patients at this facility may require more targeted, concise, and visually engaging counseling seamlessly integrated into their clinical visits.

Crucially, Pearson's correlation analysis revealed a strong, positive, and statistically significant relationship between patients' attitudes and their preventive practices ($r = 0.924$, $p < 0.001$). This robust correlation corroborates similar findings by Wang et al [14] ($r = 0{,}503$; $p < 0{,}001$), Bumb et al [15], Reddy et al [3], and Rui et al [9], reinforcing the premise that a positive cognitive disposition is foundational to enacting healthy practices. Negative or apathetic attitudes directly elevate the risk of poor oral hygiene practices. Therefore, clinical interventions must transcend mere knowledge dissemination; they should actively utilize motivational interviewing and small-group counseling to transform patient attitudes, thereby fostering sustainable, long-term improvements in oral self-care practices.

While this study provides valuable insights applicable to patient management and clinical care, several limitations must be acknowledged. First, the reliance on convenience sampling at a single institution limits the generalizability of the findings to the broader population. Second, the cross-sectional design precludes the establishment of causal relationships between demographic variables, attitudes, and oral care practices. Finally, although the instrument demonstrated high internal consistency, it has not been exhaustively validated for construct validity within this specific demographic and may be susceptible to floor effects. Future multi-center, longitudinal studies employing objectively validated clinical measures are recommended to corroborate these findings.

CONCLUSION

This cross-sectional study demonstrates that attitudes and practices regarding preventive oral health self-care among patients at Ha Dong General Hospital are only moderately satisfactory, with 60.1% achieving a "Good" classification in both domains. Significant deficiencies persist regarding the utilization of fluoridated products, adherence to correct brushing techniques, and daily dental flossing. Mean scores for both attitudes and practices were significantly influenced by age and gender, and a strong positive correlation was established between the two domains

($r = 0.924$, $p = 0.001$). To optimize clinical outcomes, healthcare providers must deliver personalized, visually supported oral health education tailored to specific demographic vulnerabilities, emphasizing the correction of detrimental habits. Furthermore, integrating automated appointment reminders into the hospital's management system is highly recommended to encourage adherence to regular biannual dental check-ups and scaling.

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