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Factors Associated With Knowledge, Attitudes, and Practices of Oral Care Among Older Adults in Ire-Ekiti Community, Oye Local Government Area, Ekiti State, Nigeria

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ABSTRACT

This study examined factors associated with knowledge, attitudes, and practices of oral care among older adults in Ire-Ekiti Community, Oye Local Government Area, Ekiti State, Nigeria. A descriptive cross-sectional design was adopted. Data were collected from 381 residents aged 65 years and above using a structured questionnaire adapted from a validated oral care instrument and administered face-to-face. Data were analyzed using descriptive statistics, correlation analysis, and multiple regression in SPSS. Findings showed that respondents were mainly female, married, rural residents with low levels of formal education and low monthly incomes. Knowledge of oral hygiene was moderate and positively associated with attitudes, and attitudes were positively associated with oral hygiene practices. Socio-demographic and environmental factors showed weak direct relationships with oral care behaviour. Regression analysis showed that knowledge, attitudes, practices, and socio-demographic and environmental influences accounted for 19.5% of the variance in the model ($R^2 = 0.195$, $F = 22.79$, $p < 0.001$). The study concludes that knowledge and attitudes are important behavioural drivers of oral care among older adults and recommends community-based oral health education and improved access to preventive dental care in rural settings.

INTRODUCTION

Oral health is an essential part of general health, especially in later life, because it supports eating, speaking, social participation, dignity, and quality of life. Oral diseases among older adults can impair chewing, reduce dietary quality, increase pain, and worsen social withdrawal. Evidence also links oral diseases with systemic conditions such as diabetes and cardiovascular disease through shared risk factors and inflammatory pathways (Chan *et al.*, 2024). For this reason, oral care among older adults should be treated as a public health concern rather than a cosmetic matter.

The burden of oral health problems is heavier in rural communities where dental services are limited, preventive care is uncommon, and cultural beliefs may shape how older adults understand tooth loss and dental pain. In Nigeria, many older adults still seek dental care only when symptoms become severe, while preventive visits, professional cleaning, and restorative care remain low. Folurunsho *et al.* (2025) noted that access to dental care among older adults in Nigeria remains constrained by poverty, distance, and weak geriatric dental services. Cultural practices and inherited beliefs also influence oral health behavior, including the use of chewing sticks, herbal mixtures, and delayed professional care (Aliyu *et al.*, 2025; Foláyan *et al.*, 2025).

Ire-Ekiti, located in Oye Local Government Area of Ekiti State, represents a rural Nigerian setting where older adults face socio-economic and environmental conditions that may affect oral hygiene behavior. The community has been described as historically and culturally significant, with an estimated population of about 26,999 people

(Adeleye, 2019). In such a setting, oral care practices may be shaped by education, income, occupation, cultural perception, access to health information, and availability of dental services.

Although oral health education has expanded globally, there is still limited local evidence on how older adults in rural Nigerian communities understand, perceive, and practice oral care. This gap makes it difficult for policymakers, dental therapists, community health workers, and caregivers to design suitable interventions for this population. The present study was therefore conducted to examine the factors associated with knowledge, attitudes, and practices of oral care among older adults in Ire-Ekiti Community, Oye Local Government Area, Ekiti State, Nigeria.

The specific objectives were to assess the level of oral hygiene knowledge among older adults, examine their attitudes toward oral hygiene and dental care, investigate common oral hygiene practices such as brushing, dental visits, and use of dental products, and identify socio-demographic and environmental factors influencing knowledge, attitudes, and practices of oral care among older adults in Ire-Ekiti.

LITERATURE REVIEW

Oral Health and Aging

Aging is often accompanied by physical, cognitive, and socio-economic changes that can make oral hygiene more difficult. Tooth loss, periodontal disease, dental caries, dry mouth, oral pain, and ill-fitting dentures can restrict chewing and affect nutritional intake. Bolukbasi and Dundar (2024) argued that oral health in older

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adults should be understood within the broader context of healthy aging because oral conditions affect daily function, comfort, and social confidence. Chan *et al.* (2024) also emphasized that maintaining oral function supports healthy aging by reducing nutritional decline, frailty, and disability.

Older adults with chronic illnesses may face additional barriers to oral care, including medication-related dry mouth, limited manual dexterity, and reduced ability to visit dental facilities. These problems are more serious in rural settings where transport, cost, and the shortage of dental professionals can delay treatment. Etiaba *et al.* (2015) reported that oral health policy development in Nigeria has faced structural and implementation challenges, including weak integration of oral health into primary healthcare. This suggests that oral care among older adults requires both individual behavior change and stronger community-level support.

Knowledge, Attitudes, and Practices of Oral Care

Knowledge of oral hygiene refers to awareness and understanding of the causes, prevention, and management of oral diseases. It includes knowing the importance of brushing, regular dental check-ups, fluoride toothpaste, reduced sugar intake, and early treatment of oral symptoms. Older adults with better oral health knowledge are more likely to adopt preventive habits, although knowledge alone may not always produce good practice when access and affordability are poor. Wong (2020) found that knowledge, attitudes, and practices related to oral care among elderly people are influenced by personal, social, and healthcare factors.

Attitudes toward oral care describe how older adults feel about dental hygiene, dental visits, preventive care, and the importance of the mouth to general health. Positive attitudes can encourage regular brushing and timely dental consultation, while negative attitudes may lead to neglect or care-seeking only during pain. Bashiru (2017) showed that oral health knowledge and attitude were important determinants of oral health behavior among older adults in Port Harcourt, Nigeria. This supports the view that education must target both awareness and belief systems. Oral hygiene practice includes tooth brushing, mouth rinsing, denture cleaning, use of dental products, and visits to dental professionals. These practices are influenced by habit, affordability, culture, physical ability, family support, and availability of dental services. GrönbeckLindén *et al.* (2017) observed that oral hygiene management in older persons is shaped by individual limitations and the support available to them. Therefore, oral care interventions for older adults should be practical, culturally acceptable, and sensitive to the physical realities of aging.

Socio-Demographic, Cultural, and Environmental Factors

Socio-demographic characteristics such as age, sex, education, occupation, marital status, and income can

influence oral health behavior. Older adults with little or no formal education may have less exposure to preventive health information, while low income can reduce the ability to buy oral care products or visit dental clinics. Choi and Jung (2021) reported that oral health-related quality of life among older adults in rural areas is shaped by broader personal and social factors.

In Nigeria, cultural practices also influence oral care. Foláyan *et al.* (2025) noted that cultural practices affect oral health service utilization in Africa, while Aliyu *et al.* (2025) identified cultural themes related to oral health beliefs and practices in Nigeria. These cultural factors may promote familiar traditional practices, but they may also delay professional dental care when oral diseases are interpreted as normal aging or spiritual events.

Environmental factors such as distance to dental clinics, transport difficulty, low availability of dental personnel, poor water and sanitation conditions, and weak health outreach can also affect oral hygiene practices. In rural communities, these conditions may create a gap between what people know and what they are able to do. Asanza *et al.* (2025) emphasized that caregiver education and supportive environments are important for improving oral hygiene outcomes among older adults.

Theoretical Link and Knowledge Gap

The study is guided by the idea that knowledge and attitudes can influence health behavior, but this relationship may be moderated by social and environmental conditions. This position aligns with oral care behavior models that view personal belief, perceived risk, self-efficacy, and access to support as important influences on preventive practice. In the context of Ire-Ekiti, the central gap is that little empirical evidence exists on how these factors interact among community-dwelling older adults. Addressing this gap can guide community-based oral health education, preventive care planning, and geriatric dental support in rural Nigeria.

MATERIALS AND METHODS

Study Design and Setting

The study adopted a quantitative descriptive cross-sectional design. This design was suitable because it enabled the collection of data from older adults at a single point in time and allowed the researcher to describe existing patterns of knowledge, attitudes, and practices of oral care. The study was conducted in Ire-Ekiti, a rural community in Oye Local Government Area of Ekiti State, Nigeria. The setting was selected because it represents a rural aging population with modest socio-economic conditions and limited access to advanced dental care facilities.

Population, Sample Size, and Sampling

The target population consisted of male and female residents of Ire-Ekiti aged 65 years and above who had lived in the community for at least six months. Participants were included if they were physically and cognitively able

to respond and gave informed consent. Older adults with severe illness or cognitive impairment that could affect response reliability were excluded. A sample size of 381 participants was used. The sample size was determined using Cochran's formula at a 95% confidence level, 5% margin of error, and assumed prevalence of 0.5. Participants were selected using simple random or systematic sampling across accessible households and community locations.

Instrument and Data Collection

Data were collected using a structured closed-ended questionnaire adapted, with formal permission, from the validated instrument used by Wong (2020). The questionnaire covered socio-demographic information, knowledge of oral hygiene, attitudes toward oral hygiene and dental care, oral hygiene practices, and socio-demographic and environmental influences. Items were organized on a Likert-type response format where appropriate. The instrument was prepared in simple English and translated into Yoruba when needed to improve comprehension.

Face-to-face administration was used because some participants had reading or hearing difficulties. Trained research assistants visited selected households and community locations, including churches, markets, and a mosque. Data collection lasted five days and was supervised by the researcher to ensure consistency, ethical conduct, and completeness of responses.

Validity, Reliability, and Data Analysis

Content and face validity were established to ensure that the questionnaire measured the main study variables appropriately. Completed questionnaires were coded and analyzed using SPSS. Descriptive statistics, including frequency, percentage, mean, and standard

deviation, were used to summarize socio-demographic characteristics and study variables. Pearson correlation and multiple regression analyses were used to examine relationships among knowledge, attitudes, practices, and socio-demographic and environmental influences. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval was obtained from the Ethics and Research Committee of the Faculty of Medicine and Health Sciences, Frontier University, Garowe, Somalia, with Approval ID FU-REC/IDLPS/2025/027. Additional ethical clearance for fieldwork was obtained from the Ethics and Research Committee of Ekiti State University Teaching Hospital, Ado-Ekiti, with Protocol Number EKSUTH/A67/2025/12/003. Informed consent was obtained from all participants. Participation was voluntary, and confidentiality was maintained by using codes rather than personal identifiers.

RESULTS AND DISCUSSION

This section presents and discusses the major findings of the study. The results are arranged around the socio-demographic profile of respondents, descriptive statistics of the study variables, regression analysis, and correlation analysis. A total of 381 questionnaires were analyzed.

As shown in Table 1, the respondents were aged between 65 and 80 years, with the largest proportions at 65 years and 80 years. Female respondents were the majority, representing 73.8% of the sample. Almost all respondents were married, while most had no formal education. Farming and trading were the leading occupations, and the income pattern showed that most respondents earned less than ₦30,000 monthly. All respondents were rural residents. This profile reflects a population with limited education and low income, which may shape both access

Table 1: Socio-demographic profile of respondents

Variable	Category	Frequency	Percent
Age	65	100	26.2
	66	40	10.5
	68	60	15.7
	70	60	15.7
	75	21	5.5
	80	100	26.2
	Total	381	100.0
Sex	Male	100	26.2
	Female	281	73.8
	Total	381	100.0
Marital status	Married	380	99.7
	Widowed	1	0.3
	Total	381	100.0
Educational level	No formal education	241	63.3
	Primary	139	36.5

	Secondary	1	0.3
	Total	381	100.0
Occupation	Tailoring	21	5.5
	Farming	179	47.0
	Civil servant	20	5.2
	Photography	20	5.2
	Trader	141	37.0
	Total	381	100.0
Monthly income	Less than ₦10,000	180	47.2
	₦10,001–₦30,000	179	47.0
	₦30,001–₦50,000	22	5.8
	Total	381	100.0
Residence type	Rural	381	100.0
	Total	381	100.0

Table 2: Descriptive statistics of respondents and study variables

Variable	N	Minimum	Maximum	Mean	Std. deviation
Age	381	65	80	70.85	5.989
Sex	381	1	4	2.15	1.183
Marital status	381	2	3	2.00	0.051
Educational level	381	1	3	1.37	0.489
Occupation	381	1	5	3.21	1.478
Monthly income	381	1	3	1.59	0.599
Residence type	381	1	4	2.05	1.276
Valid N (listwise)	381				

to oral health information and use of dental care services. Table 2 shows that the mean age of respondents was 70.85 years, indicating that the study focused on older adults in

the early to advanced elderly age range. The descriptive results also show low educational attainment and low income, which are important background conditions for

Table 3: Regression analysis of factors associated with oral care outcomes

Panel	Statistic or predictor	B	Std. error	Beta	t/F/Sig.
Model summary	R	0.442			
	R square	0.195			
	Adjusted R square	0.187			
	Std. error of estimate	0.91100			
ANOVA	Regression	75.654	18.914		F = 22.790, p = 0.000
	Residual	312.048	0.830		df = 376
	Total	387.702			df = 380
Coefficients	Constant	8.336	0.775		t = 10.751, p = 0.000
	Knowledge of oral hygiene	-0.044	0.009	-0.230	t = -4.934, p = 0.000
	Attitudes toward oral hygiene and dental care	-0.001	0.000	-0.360	t = -7.555, p = 0.000
	Oral hygiene practices	0.095	0.025	0.182	t = 3.735, p = 0.000
	Socio-demographic and environmental influences	0.007	0.040	0.008	t = 0.170, p = 0.865

Table 4: Correlation matrix of knowledge, attitudes, practices, and socio-demographic/environmental influences

Variable	1	2	3	4
1. Knowledge of oral hygiene	1	.230**	.032	-.327**
2. Attitudes toward oral hygiene and dental care	.230**	1	.223**	.110*
3. Oral hygiene practices	.032	.223**	1	.018
4. Socio-demographic and environmental influences	-.327**	.110*	.018	1

interpreting oral health behavior in this rural setting.

The regression result in Table 3 indicates that the combined predictors explained 19.5% of the variance in the model ($R^2 = 0.195$). The model was statistically significant ($F = 22.790$, $p < 0.001$), suggesting that the selected variables jointly contributed to explaining oral care-related outcomes. Knowledge of oral hygiene and attitudes toward oral hygiene and dental care were statistically significant predictors. Oral hygiene practices were also significant, while socio-demographic and environmental influences were not statistically significant in the coefficient table. This shows that behavioral factors had stronger explanatory value than background conditions in the reported model.

The correlation results in Table 4 show that knowledge of oral hygiene had a positive relationship with attitudes toward oral hygiene and dental care ($r = .230$, $p < .01$). Attitudes also had a positive relationship with oral hygiene practices ($r = .223$, $p < .01$). These results suggest that knowledge may help shape positive attitudes, and positive attitudes may encourage better oral care behavior. However, knowledge had a negative relationship with socio-demographic and environmental influences ($r = -.327$, $p < .01$), indicating that social and environmental constraints may weaken the effect of knowledge in this population.

The findings agree with Bashiru (2017), who reported that knowledge and attitude are important determinants of oral health behavior among older adults in Nigeria. They also support Wong (2020), who showed that oral care knowledge, attitudes, and practices among elderly people are linked with social and health-related factors. In this study, the moderate level of knowledge and practice suggests that older adults may have some awareness of oral hygiene, but this awareness does not always translate into strong preventive behavior. This gap may be explained by cost, distance, physical limitations, and cultural beliefs.

The strong representation of low-income, low-education respondents is important because oral health interventions in Ire-Ekiti should not depend only on written education materials or clinic-based messages. Community-based education delivered through local leaders, family networks, religious centers, markets, and primary healthcare outreach may be more effective. The findings also suggest that improving attitudes toward oral care is as important as increasing knowledge, because attitudes were more directly associated with practices than knowledge alone.

Overall, the study shows that older adults in Ire-Ekiti require oral health support that combines education, affordable preventive products, accessible dental services, and culturally sensitive communication. While socio-demographic factors had limited direct statistical influence in the reported regression, they still form the social context within which older adults make oral care decisions. Therefore, effective oral health interventions should address both behavior and access.

CONCLUSION

This study concludes that older adults in Ire-Ekiti Community possess moderate knowledge of oral hygiene, and this knowledge contributes to more positive attitudes toward oral care. Attitudes toward oral hygiene and dental care are linked with actual oral hygiene practices, showing that belief and perception remain important drivers of preventive behavior in later life. The findings also show that socio-demographic and environmental factors had a limited direct statistical influence in the reported model, although they remain important background conditions affecting access, affordability, and consistency of oral care.

The study is important because it provides local evidence from a rural Nigerian community where older adults are likely to face financial, educational, cultural, and service-access barriers. Its limitation is that the findings are based on self-reported behavior from one rural community, which may limit wider generalization and may include recall or social desirability bias. The study recommends community-based oral health education, integration of geriatric oral care into primary healthcare services, periodic outreach by dental professionals, caregiver involvement, and affordable access to toothbrushes, fluoride toothpaste, denture care guidance, and preventive dental checks. Future studies should include clinical oral examination and expand coverage to other rural communities for broader comparison.

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