

Barriers to Dental Service Utilization Among Adults in Akure Metropolis, Nigeria: A Cross-Sectional Study

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Background: Utilization of dental services remains low in many developing countries despite the availability of oral-health facilities. This study assessed barriers to and identified predictors of dental service utilization among adults in Akure Metropolis, Ondo State, Nigeria.

Methods: A descriptive cross-sectional survey was conducted among 480 adults selected using a multistage sampling technique. Data were collected using a structured interviewer-administered questionnaire and analyzed with SPSS version 26. Dental-service utilization was defined as having visited a dental clinic at least once within the preceding 12 months. Descriptive statistics summarized variables, while Chi-square tests and binary logistic regression identified factors associated with utilization at a significance level of $p < 0.05$.

Results: Although 81.7% of respondents were aware of dental clinics, only 39.0% were aware of preventive dental services. While 57.1% had ever visited a dentist, only 27.9% reported utilization within the past 12 months, with most visits being symptom-driven. Major barriers included high cost of care (73.1%), fear of dental pain (62.1%), and long waiting times (51.0%). Educational level and monthly income were significantly associated with service utilization ($p < 0.05$). Logistic regression analysis showed that higher education, higher income, and awareness of preventive services significantly increased the likelihood of utilization, whereas fear of dental pain reduced it.

Conclusion: Dental service utilization in Akure Metropolis appears low and largely symptom-driven. Financial, informational, and psychological factors may act as barriers; however, given the cross-sectional design, these associations do not imply causality. Improving oral-health education, financial access, and service delivery may enhance utilization.

Keywords: dental service utilization, barriers, oral health, adults, Akure Metropolis, Nigeria

Introduction

Oral health is a fundamental component of overall health and well-being, influencing an individual's ability to eat, speak, and socialize effectively.¹ Poor oral health is associated with pain, infection, reduced quality of life, and systemic conditions.¹

Globally, oral diseases affect approximately 3.5 billion people and remain a significant public-health challenge,²⁻⁴ particularly in low- and middle-income countries where access to preventive and curative services is limited.⁵⁻⁷ Despite the availability of dental services in many urban settings, utilization remains low in several African countries, including Nigeria.^{8,9} Multiple factors contribute to this pattern, including high cost of care, limited awareness of preventive services, and fear of dental procedures, long waiting times, and structural barriers within health systems.¹⁰⁻¹² Evidence suggests that most individuals seek dental care only when symptoms become severe, with preventive visits being uncommon. Fear and anxiety related to dental treatment are widespread, often rooted in prior painful experiences or hearsay, further discouraging individuals from seeking timely care.¹³ Moreover, many people resort to self-medication or traditional remedies that provide temporary relief but fail to address the underlying problems.¹⁴

In Nigeria, the dentist-to-population ratio remains low and unevenly distributed, with the majority of dental practitioners concentrated in urban centers.¹² Out-of-pocket expenditure dominates health financing, and dental services are rarely included in national or state health-insurance schemes.¹⁵ Consequently, a large proportion of the population either cannot afford professional dental care or does not prioritize it until pain becomes unbearable. Public dental facilities are often overburdened, under-equipped, or perceived to provide suboptimal service quality, while private dental care is largely unaffordable for low- and middle-income earners. Even where facilities exist, utilization remains poor due to lack of awareness, misinformation, and fear of pain.^{9,16,17}

Poor oral health can lead to absenteeism from work or school, social embarrassment, and decreased self-esteem. At the population level, the economic cost of oral diseases both direct (treatment) and indirect (productivity loss) is substantial.⁶ Therefore, improving access to and utilization of dental services is a crucial step toward achieving equitable health outcomes and promoting Universal Health Coverage (UHC) as outlined in the Sustainable Development Goals (SDG 3).^{2,7}

Dental services in Nigeria are delivered at primary, secondary, and tertiary levels of care. Primary health centres focus mainly on basic preventive services, while general hospitals and teaching hospitals provide restorative and specialized treatments.¹⁸ Nevertheless, cost and uneven distribution of dental professionals influence patterns of utilization.¹⁹

Health-service utilization can be understood through frameworks such as Andersen's Behavioral Model,²⁰ which posits that utilization is influenced by predisposing factors (eg, age, education), enabling factors (eg, income, access to services), and need-related factors (eg, perceived oral health problems). This model provides a useful lens for examining how individual, socioeconomic, and system-level factors interact to shape dental-service utilization.²⁰

Nigeria's National Oral Health Policy provides the framework for improving oral health through prevention, health promotion, workforce development, and integration into primary health care.²¹ However, utilization of dental services remains low.^{18,22} Although previous studies in Nigeria have identified general barriers to dental care, there is limited context-specific evidence from Akure Metropolis, an urban setting with both public and private dental facilities. Anecdotal reports suggest low utilization, particularly for preventive services, but the underlying factors influencing this pattern are not well documented. This represents an important gap in the literature, especially in the context of ongoing efforts to improve access to oral health care and achieve universal health coverage.

This study assessed the barriers to dental-service utilization among adults in Akure Metropolis, Ondo State, Nigeria. Specifically, the study sought to: (i) examine the level of awareness and utilization of dental services, (ii) identify perceived barriers to utilization, and (iii) determine the socio-demographic and other factors associated with dental-service use.

Materials and Methods

Study Design

A descriptive cross-sectional survey was conducted to assess barriers to dental-service utilization among adults in Akure Metropolis, Ondo State, Nigeria.

Study Site

The study took place in Akure Metropolis, the capital of Ondo State, located in the South-West geopolitical zone of Nigeria. The metropolis comprises Akure South and Akure North Local Government Areas (LGAs) and serves as the administrative, economic, and educational hub of the state. According to the National Population Commission (NPC, 2022), the combined estimated population of Akure Metropolis is approximately 753,000 people, with Akure South accounting for about 484,798 residents and Akure North approximately 268,341. The population is heterogeneous, consisting of civil servants, traders, artisans, students, and professionals from diverse ethnic backgrounds, though the majority was Yoruba.

Akure Metropolis hosts a mix of government and private dental facilities providing both preventive and curative oral-health services. These public facilities offer general dentistry, oral surgery, periodontics, and prosthodontic services.

Akure Metropolis was selected for this study for several reasons. First, it represents a rapidly urbanizing city with both government and private dental-care facilities, making it ideal for assessing utilization patterns in an urban Nigerian

context. Second, despite having relatively good infrastructure and educated residents, anecdotal reports and hospital records indicate persistently low attendance at dental clinics except during emergencies. Third, the city's mixed demographic profile comprising public servants, artisans, and students provides an opportunity to explore how socio-economic and cultural factors influence oral-health behaviours. Furthermore, Akure is geographically accessible and administratively stable, allowing efficient data collection. The findings from this study can therefore inform evidence-based policies aimed at improving dental-service uptake both in Akure and similar urban centres across Nigeria.

Study Population and Eligibility

The study population comprised adults aged 18 years and above who had resided in Akure Metropolis for at least 12 months and provided informed consent. Individuals with severe illness, cognitive impairment, or communication difficulties that could limit effective participation were excluded.

Selection of Study Participants

A total of 480 adults aged 18 years and above were recruited. The sample size was determined using Cochran's formula for cross-sectional studies.²³ A multistage sampling technique was employed. At the first stage, Akure South and Akure North Local Government Areas (LGA) were purposively selected as they constitute Akure Metropolis. In the second stage, wards within each LGA were selected using simple random sampling from a complete list of wards. In the third stage, streets within the selected wards were randomly selected. At the fourth stage, households were selected using systematic random sampling, where a sampling interval was determined by dividing the estimated number of households by the required sample size. The first household was selected randomly, and subsequent households were selected at regular intervals. In the final stage, where more than one eligible adult was present in a household, one respondent was selected using simple random sampling (balloting). Households without eligible respondents or those who declined participation were replaced by the next household in sequence.

Data Collection Procedure

Data collection process commenced after getting data collection approvals from Research Ethics Committee of Frontier University (FU-REC) with reference number FU-REC/IDLPS/2025/029, administrative clearance and ethical clearance from Ondo State Health Research Ethics Committee (OSHREC) with an assigned number NHREC/OndoSMH-HREC/02/01/2025 and Protocol Number OSHREC/01/12/2025/1116. Data was collected over a period of eight weeks (5th December 2025 to 28th January 2026) and was carried out by the researcher with the assistance of five trained research assistants. Prior to data collection, the research assistants were trained and briefed on the objectives of the study, ethical considerations, and proper administration of the protocols and questionnaire to ensure uniformity and accuracy by the researcher. The questionnaire was developed by the researcher with the guidance of different validated studies used in similar oral-health utilization studies which examined barriers, awareness, and utilization patterns of dental services in Nigeria and other developing countries.^{8,9,24,25} The questionnaire was then modified to reflect the socio-cultural and structural realities of Akure Metropolis. The questionnaire was pilot-tested with 48 (10%) participants in a neighboring community to refine clarity and identify ambiguities. The questionnaire was designed to obtain information on respondents' socio-demographic characteristics, awareness, utilization of dental services, perceived barriers to utilization of dental services, Community Suggestions and Willingness to Utilize Services. The questionnaire was prepared in English and translated into Yoruba, the predominant local language in the study area. Back-translation into English was carried out to ensure accuracy, clarity, and semantic equivalence between both versions. The interviewer-administered approach was adopted to enhance response accuracy, minimize non-response, and accommodate respondents with varying literacy levels.

Eligible respondents were identified within selected households, and the purpose of the study was explained to them. Written informed consent was obtained before administering the questionnaire. The Structured questionnaires ([Supplementary Figure 1](#)) were administered using an interviewer-administered approach in either English or Yoruba, depending on the respondent's preference, with each session lasting 20–30 minutes.

Completed questionnaires were retrieved immediately after administration and checked on the spot for completeness and consistency. Uncertain responses were addressed on-site, and incomplete forms were promptly filled out by returning participants.

Data were collected using a structured interviewer-administered questionnaire adapted from previously validated instruments. The questionnaire ([Supplementary Figure 1](#)) captured socio-demographic characteristics, awareness of dental services, utilization patterns, perceived barriers, and willingness to utilize services. The primary outcome variable, dental-service utilization, was defined as a self-reported visit to a dental clinic at least once within the preceding 12 months and was coded as a binary variable (yes/no). Lifetime dental visits were also assessed for descriptive purposes. Awareness of preventive dental services referred to knowledge of routine dental check-ups and professional cleaning. Perceived barriers were measured using Likert-scale items. For analytical purposes, these responses were collapsed into binary categories (agree versus disagree) to enhance interpretability and ensure sufficient cell counts for statistical testing. Socio-demographic variables such as age, education, and income were categorized into meaningful groups based on standard classifications and distribution of responses to allow for meaningful comparisons.

To reduce errors in digital data entry, 20% of entries had to be cross-verified. Digital files were saved on password-protected, encrypted discs, while hard copies were kept in locked cabinets. All collected data was anonymised. Records were retained for five years in accordance with institutional policies. Daily supervision was conducted by the researcher to ensure quality control and proper handling of the data throughout the data collection period.

Operational Definition of Variables

The primary outcome variable, dental-service utilization, was defined as a self-reported visit to a dental clinic at least once within the preceding 12 months and was coded as a binary variable (yes/no). Lifetime dental visit was also assessed for descriptive purposes. Awareness of preventive dental services referred to knowledge of services such as routine dental check-ups and professional cleaning.

Measurement and Variables

Perceived barriers to dental-service utilization were measured using Likert-scale items. For analysis, responses were collapsed into binary categories (agree versus disagree) to facilitate interpretation. Socio-demographic variables such as age, education, and income were categorized into meaningful groups for analysis.

Data Management and Analysis

Data were coded and analyzed using SPSS version 26. Descriptive statistics, including frequencies and percentages, were used to summarize key variables such as age, sex, and income. Likert-scale variables were treated as binary categorical data, categorized into “Agree” or “Disagree.” For inferential analysis, the Chi-square test was conducted to identify associations between socio-demographic factors and service utilization. Variables included in the regression analysis were determined based on bivariate significance; only those showing a statistically significant association ($p < 0.05$) were entered into a binary logistic regression model to identify independent predictors. The categorization of variables, such as income (divided at ₦100,000) and age (18–29, 30–45, ≥ 46), was designed to reflect the urban population structure and economic realities of the Akure Metropolis. All tests were performed at a 95% confidence interval.

Quality Control

To ensure the reliability, validity, and consistency of data collected, several quality-control measures were applied throughout the study process from tool development to data entry and analysis.

Pretesting

Before pilot study, pretesting of the questionnaire was conducted among 48 adults in Ondo Kingdom, comprising Ondo West and Ondo East Local Government Areas, which have socio-demographic characteristics similar to the main study area. The pretest was carried out outside the selected study locations to avoid response bias from the main study participants since they can easily discuss the questions with others.

The pretesting exercise was conducted to assess the clarity, relevance, and comprehensibility of the questionnaire items. Feedback obtained from respondents helped to identify ambiguous or poorly understood questions. Necessary modifications were made to improve the wording, sequencing, and overall structure of the questionnaire. Data obtained from the pretesting were not included in the final analysis.

Validity of the Instrument

The validity of the data collection instrument was ensured through face and content validity. The questionnaire was reviewed by my supervisor and other experts in dental public health and research methodology to assess its relevance, clarity, and adequacy in addressing the study objectives. Their comments and suggestions were used to modify ambiguous questions, improve wording, and ensure that all key variables related to awareness, utilization, and barriers to dental services were adequately covered. This process helped to ensure that the instrument accurately measured the concepts under investigation and was appropriate for the study population.

Reliability of the Instrument

The reliability of the data collection instrument was assessed through a pilot study conducted among adults in a community with similar characteristics to the study area but outside the selected study location. The pilot study helped to evaluate the consistency, clarity, and comprehensibility of the questionnaire items. Data obtained from the pilot study were analyzed, and minor adjustments were made to improve the wording and sequencing of questions. The instrument demonstrated acceptable internal consistency, indicating that it was reliable for the main study.

Ethical Considerations

Ethical approval of the protocol was obtained from the Ondo State Health Research Ethics Committee (OSHREC) with an assigned number NHREC/OndoSMH-HREC/02/01/2025 and Protocol Number OSHREC/01/12/2025/1116 as well as the Frontier University – Garowe. Research Ethics Committee (FU-REC/IDLPS/2025/029). Written informed consent which included publication of anonymized responses/direct quotes was obtained from all the participants who took part in the study in accordance with the Helsinki Declaration.²⁶ All the data collected were kept securely in a cabinet under lock and key and only accessible to the researcher.

Results

Socio-Demographic Characteristics of Respondents

The socio-demographic characteristics of respondents are presented in Table 1. The majority of respondents were within the economically productive age group of 18–45 years. Females (54.0%) constituted a slightly higher proportion of the respondents than males (46.0%). Most respondents had attained at least secondary education (39.0%), while a considerable proportion possessed tertiary education (36.0%). Traders and artisans formed the largest occupational group, and most respondents earned below ₦100,000 monthly. The distribution shows that the respondents were

Table 1 Socio-Demographic Characteristics of Respondents (N = 480)

Variable	Category	Frequency	Percentage (%)
Age (years)	18–29	158	32.9
	30–45	207	43.1
	≥46	115	24.0
Sex	Male	221	46.0
	Female	259	54.0

(Continued)

Table 1 (Continued).

Variable	Category	Frequency	Percentage (%)
Educational Level	No formal	38	7.9
	Primary	82	17.1
	Secondary	187	39.0
	Tertiary	173	36.0
Monthly Income	< ₦100,000	302	62.9
	≥ ₦100,000	178	37.1

predominantly within the economically active age group, with a slight female predominance and a higher proportion of respondents having secondary or tertiary education, reflecting an urban population structure within Akure Metropolis.

Awareness and Knowledge of Dental Services

Results indicate that a high proportion of respondents (81.7%) were aware of the existence of dental clinics in Akure Metropolis. However, awareness of preventive dental services such as routine dental check-ups and scaling and polishing was comparatively low (Table 2). Although most respondents were aware of the existence of dental clinics in Akure Metropolis, awareness of preventive dental services was considerably low, indicating limited oral-health literacy.

Utilization of Dental Services

Utilization of dental services among respondents was generally low. Although a reasonable proportion of respondents reported having visited a dentist at least once in their lifetime, recent utilization within the last 12 months was limited (Table 3). The findings indicate low utilization of dental services, with most visits being pain-driven rather than preventive in nature.

Perceived Barriers to Utilization of Dental Services

Respondents identified several barriers to the utilization of dental services. These barriers were categorized into economic, psychological, and structural factors (Table 4). High cost of dental treatment and fear of pain were the most frequently reported barriers to utilization of dental services among respondents.

Table 2 Awareness of Dental Services Among Respondents (N = 480)

Variable	Yes (%)	No (%)
Awareness of dental clinics	392 (81.7)	88 (18.3)
Awareness of preventive services	187 (39.0)	293 (61.0)

Table 3 Utilization Pattern of Dental Services (N = 480)

Variable	Frequency	Percentage (%)
Ever visited a dentist	274	57.1
Visited dentist in last 12 months	134	27.9
Reason for last visit – Pain	206	75.2
Reason for last visit – Preventive	38	13.9

Table 4 Perceived Barriers to Utilization of Dental Services (N = 480)

Barrier	Agree (%)	Disagree (%)
High cost of treatment	351 (73.1)	135 (27.0)
Fear of dental pain	298 (62.1)	190 (38.0)
Long waiting time	245 (51.0)	235 (49.0)
Distance to clinic	173 (36.0)	320 (64.0)
Unfriendly attitude of staff	197 (41.0)	295 (59.0)

Bivariate Analysis: Relationship Between Socio-Demographic Factors and Utilization

Chi-square analysis was used to determine the association between selected socio-demographic variables and utilization of dental services (Table 5). Educational level and monthly income were significantly associated with dental-service utilization, while sex showed no statistically significant association.

Multivariate Analysis: Predictors of Dental-Service Utilization

Binary logistic regression analysis was conducted to identify independent predictors of dental-service utilization (Table 6). Respondents with tertiary education, higher income, and awareness of preventive dental services were significantly more likely to utilize dental services, while fear of dental pain significantly reduced utilization.

Univariate Analysis: Community Suggestions and Willingness to Utilize Dental Services Among Respondents

Descriptive statistics were used to summarize respondents' community suggestions and willingness to utilize dental services. Table 7 shows respondents' community-based suggestions and willingness to utilize dental services. The most frequently suggested government intervention was subsidization of dental services (66.3%), followed by inclusion of

Table 5 Association Between Socio-Demographic Variables and Dental-Service Utilization

Variable	χ^2	p-value	Remark
Educational level	18.42	0.001	Significant
Educational level	18.42	0.001	Significant
Monthly income	21.67	0.000	Significant
Sex	1.32	0.251	Not significant

Table 6 Logistic Regression Analysis of Predictors of Dental-Service Utilization

Variable	AOR	95% CI	p-value
Tertiary education	2.48	1.56–3.94	0.001
Higher income	2.15	1.42–3.27	0.002
Awareness of preventive care	1.89	1.21–2.95	0.004
Fear of dental pain	0.52	0.34–0.79	0.003

Table 7 Community Suggestions and Willingness to Utilize Dental Services Among Respondents (N = 480)

Variable	Response	Frequency (n)	Percentage (%)
Suggested government actions to improve access	Subsidize dental services	318	66.3
	Increase number of public dental clinics	274	57.1
	Employ more dental personnel	241	50.2
	Include dental care in health insurance	296	61.7
Willingness to attend regular check-ups if services are free/subsidized	Yes	362	75.4
	No	118	24.6
Willingness to encourage family/friends to visit dentist regularly	Yes	389	81.0
	No	91	19.0
Preferred methods for dental-health education	Radio/TV programs	265	55.2
	School programs	214	44.6
	Community outreach	238	49.6
	Religious gatherings	176	36.7
	Social media	291	60.6

dental care in health-insurance schemes (61.7%) and establishment of more public dental clinics (57.1%). A large majority of respondents (75.4%) expressed willingness to attend regular dental check-ups if services were free or subsidized. Similarly, most respondents (81.0%) indicated that they would encourage their family members or friends to visit a dentist regularly. Regarding oral-health education, social media (60.6%) and radio/television programs (55.2%) were the most preferred channels, followed by community outreach programs (49.6%) and school-based programs (44.6%). Religious gatherings were the least preferred method of oral-health education (36.7%).

Discussion

Socio-Demographic Characteristics of Respondents

The findings revealed that the majority of respondents were within the economically productive age group of 18–45 years, with a slight female predominance. This distribution is associated with patterns observed in previous Nigerian studies where women often exhibit higher participation rates in health-related surveys, potentially due to better health-seeking behaviours.^{27–29}

Educational attainment among respondents was relatively high, with most having secondary or tertiary education. This reflects the urban nature of Akure Metropolis and is consistent with findings from other urban centers in Nigeria.²² While educational attainment was relatively high, this did not translate into high preventive dental-care utilization, suggesting that general education alone is not a sufficient driver for positive oral-health practices. The findings indicate that education is associated with utilization, likely through its interaction with other enabling factors such as income, awareness, and access to services. This highlights the need to consider broader structural determinants of health behaviour beyond individual-level characteristics.

Awareness and Knowledge of Dental Services

Although awareness of the existence of dental clinics was high, awareness and uptake of preventive dental services were considerably lower. This discrepancy indicates a clear gap between general awareness and functional oral-health literacy.

This observation is consistent with findings from previous studies in Nigeria and other developing countries, which reported that dental services are often perceived as curative rather than preventive.^{25,30} A systematic review found that globally, oral service utilization differed across countries. And even utilization was also highly unequally distributed between different groups within countries. It was high in rich countries, and nearly absent in African countries.³¹ The findings suggest that awareness alone is insufficient to promote utilization, particularly where economic and systemic barriers persist. This aligns with broader public health evidence indicating that knowledge does not automatically translate into behaviour change, especially in resource-constrained settings.

Utilization of Dental Services

Utilization of dental services among respondents was generally low. Although more than half of the respondents had visited a dentist at least once in their lifetime, only a small proportion reported visiting a dental clinic within the preceding 12 months. Furthermore, most dental visits were pain-driven, while preventive visits were uncommon. This pattern is in agreement with several Nigerian studies, which have shown that dental visits are commonly motivated by pain, toothache, or emergency conditions rather than preventive needs.^{31,32} The findings further confirm poor preventive dental-care behavior among adults in urban Nigerian settings. While this pattern is commonly reported in similar settings, it also reflects deeper systemic and cultural dynamics. From a theoretical perspective, this finding is consistent with Andersen's behavioural model, where the need factors (such as pain) appear to be more strongly associated with utilization than predisposing or enabling factors. However, this should not be interpreted as pain causing utilization in a deterministic sense; rather, it suggests that individuals are more likely to seek care when symptoms become severe enough to override existing barriers such as cost, fear, or inconvenience. This reinforces the notion that preventive care remains undervalued or inaccessible in the study setting.

Perceived Barriers to Utilization of Dental Services

High cost of dental treatment emerged as the most prominent barrier to utilization of dental services, followed closely by fear of dental pain. A study in Canada in Canada, among the 44,011 adults, 40% reported not having dental insurance while 15% had not visited an oral health professional in the previous 12 months. Barriers to accessing oral health care included no dental insurance, low household income, rural residence.³³ The strong association between cost and utilization reflects reliance of out of pocket expenses and significant role of financial stability in dental-service utilization, which may disproportionately limit access for lower-income groups.

Similar barriers have been widely reported in previous studies conducted in Nigeria and other low- and middle-income countries.^{24,34} Long waiting time was identified as a moderate barrier, with slightly over half of the respondents perceiving it as a deterrent to utilization. Long waiting times, on the other hand, point to potential inefficiencies in service delivery, including workforce limitations and high patient load in public facilities.³⁵ Although distance to dental clinics and perceived unfriendly attitude of dental staff were less frequently reported, these factors remain relevant structural and interpersonal barriers that can negatively affect health-care utilization.

Overall, the multifactorial nature of barriers identified in this study aligns with Andersen's behavioral model of health-service utilization, which emphasizes the interaction of predisposing, enabling, and need factors in determining service use.^{20,36}

Predictors of Dental-Service Utilization

The observed associations between higher educational attainment, higher income, and increased likelihood of utilizing dental services underscore the role of socioeconomic inequalities in shaping access to care. Research in USA and Europe found that in older adults limited oral health utilization was often associated low income, lack of dental coverage, limited education and poor health.³⁷ These findings suggest that individuals with greater financial and informational resources are more likely to utilize services, although causality cannot be inferred from the cross-sectional design. The association between awareness of preventive services and utilization further indicates that knowledge may facilitate service use when combined with enabling factors such as affordability.

Conversely, the negative association between fear of dental pain and utilization suggests that psychological barriers may significantly reduce the likelihood of seeking care. These findings are consistent with previous studies that identified education and income as key enabling factors influencing dental-service utilization.^{25,28,29} The negative influence of dental fear on utilization has also been well documented, highlighting the need for patient-centered dental-care approaches that address anxiety and pain management.³⁸

Community Suggestions and Willingness to Utilize Dental Services

Findings revealed strong community support for policy and structural interventions aimed at improving dental-service utilization in Akure Metropolis. A substantial proportion of respondents suggested subsidization of dental services and inclusion of oral health care within health-insurance schemes as key strategies for improving access. This aligns with earlier findings in the present study, where high cost of treatment emerged as the most prominent barrier to utilization. Similar observations have been reported in previous Nigerian studies, where out-of-pocket payment was identified as a major determinant of low dental attendance.^{8,24} Another study³⁴ also emphasized that financial protection mechanisms are essential for improving oral-health equity, particularly in low- and middle-income settings.

The majority of respondents expressed willingness to attend regular dental check-ups if services were free or subsidized. This suggests that low utilization is largely driven by economic constraints rather than lack of perceived need. This finding is consistent with global evidence indicating that removal of financial barriers increases preventive dental attendance.^{1,25} It further supports the argument that strengthening financial accessibility is critical to achieving Universal Health Coverage.⁷

Respondents also demonstrated a high likelihood of encouraging family members and friends to seek regular dental care. A study in Europe and USA found that living alone served as obstacles to the use of dental services among older adults.³⁷ A related study also found that individuals with less supportive family structures showed lower utilization.³¹ This highlights the potential role of social influence and peer networks in shaping health-seeking behavior. Previous research has shown that community norms and shared experiences significantly affect utilization of oral-health services.⁸ Therefore, improving individual experiences with dental care may have a multiplier effect within the wider community.

Regarding oral-health education strategies, social media and radio/television programs were identified as the most preferred channels for disseminating information. This supports earlier literature emphasizing the importance of mass media and community-based oral-health promotion in increasing awareness and preventive behaviors.^{25,34} Watt et al⁷ further advocate for multi-level health-promotion strategies that combine policy reforms with public education to address persistent oral-health inequalities.

Overall, the findings complement the quantitative analysis of barriers and predictors presented earlier in this study. They reinforce the need for financial reforms, strengthened insurance coverage, and expanded oral-health education as critical strategies for improving dental-service utilization among adults in Akure Metropolis.

Conclusion

The study concludes that improving oral-health literacy, reducing financial barriers and strengthening dental-service delivery systems are essential for enhancing dental-service utilization. Low utilization is associated with a complex interplay of economic, psychological, and structural factors. However, the cross-sectional nature of the study limits causal inference, and the observed relationships should be interpreted as associations rather than direct effects.

Study Limitations

Furthermore, as the results are based on self-reported data, they are subject to significant study limitations, including the potential for recall bias regarding previous dental visits and social desirability bias where respondents might overstate positive oral health practices. Because the research was geographically focused on the urban and semi-urban settings of the Akure Metropolis, the findings may not be fully representative of the broader population of Ondo State or Nigeria as a whole.

Recommendations

The findings of this study highlight the need for targeted policy actions to improve dental-service utilization. The strong association between cost and utilization underscores the importance of integrating dental care into health-insurance schemes and subsidizing essential services to reduce out-of-pocket expenditure. The low uptake of preventive services despite high awareness indicates a need for strengthened oral-health promotion strategies that emphasize behaviour change, particularly through mass media and community-based approaches. Additionally, addressing structural challenges such as long waiting times requires health-system improvements, including better workforce distribution and more efficient service delivery models. Finally, the observed socioeconomic disparities in utilization suggest the need for equity-focused interventions, such as outreach programs and integration of oral health into primary health care, to improve access among underserved populations.

Contribution to Knowledge

This study contributes to knowledge by providing empirical evidence on the barriers and predictors of dental-service utilization among adults in Akure Metropolis. It adds to the growing body of Nigerian literature on oral-health service utilization and provides data that can inform policy formulation and targeted oral-health interventions in similar urban settings.

Suggestions for Further Studies

Further studies employing qualitative methods are recommended to explore in-depth perceptions of dental fear and service accessibility. Longitudinal studies may also be conducted to evaluate the impact of oral-health education and policy interventions on dental-service utilization over time.

Data Sharing Statement

Data sources are available on request. The request can be sent to the corresponding author at adebayosheyin2@gmail.com.

Ethics Approval and Consent to Participate

Ethical approval of the protocol was obtained from the Ondo State Health Research Ethics Committee (OSHREC) with an assigned number NHREC/OndoSMH-HREC/02/01/2025 and Protocol Number OSHREC/01/12/2025/1116 as well as the Frontier University – Garowe. Research Ethics Committee (FU-REC/IDLPS/2025/029). Written informed consent which included publication of anonymized responses/direct quotes was obtained from all the participants who took part in the study in accordance with the Helsinki Declaration.²⁶ All the data collected were kept securely in a cabinet under lock and key and only accessible to the researcher.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare that there is no conflict of interest.

References

1. Peres MA, Macpherson LM, Weyant RJ, et al. Oral diseases: a global public health challenge. *Lancet*. 2019;394(10194):249–260. doi:10.1016/S0140-6736(19)31146-8
2. World Health Organization. Global oral health status report: towards universal health coverage for oral health by 2030. World Health Organization; 2022.
3. Petersen PE. Oral health and non-communicable diseases: global challenges and integration with policy agendas. *Community Dent Oral Epidemiol*. 2016;44(6):557–566. doi:10.1111/cdoe.12249
4. Kassebaum NJ, Smith AG, Bernabé E, et al; GBD 2015 Oral Health Collaborators. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the global burden of diseases, injuries, and risk factors. *J Dent Res*. 2017;96(4):380–387. doi:10.1177/0022034517693566
5. Singh A, Purohit BM, Masood M. Utilization of dental services in low- and middle-income countries. *Int Dent J*. 2019;69(2):90–99.
6. Listl S, Galloway J, Mossey PA, Marcenes W. Global economic impact of dental diseases. *J Dent Res*. 2015;94(10):1355–1361. doi:10.1177/0022034515602879
7. Watt RG, Daly B, Allison P, et al. Ending the neglect of global oral health: time for radical action. *Lancet*. 2019;394(10194):261–272. doi:10.1016/S0140-6736(19)31133-X
8. Ajayi DM, Arigbede AO. Barriers to oral health care utilization in Ibadan, South West Nigeria. *Afr Health Sci*. 2012;12(4):507–513. doi:10.4314/ahs.v12i4.17
9. Omitola OG, Arigbede AO, Adeyemi BF. Barriers to oral-health care utilization among adults in southwestern Nigeria. *Afr J Med Health Sci*. 2019;18(3):12–21.
10. Adeniyi AA, Sofola OO, Kalliecharan RV. Oral-health service utilization and barriers to access in Nigeria. *BMC Oral Health*. 2017;17(134):1–10.
11. Adeniyi AA, Oyapero A. Predisposing, enabling and need factors influencing dental service utilization among a sample of adult Nigerians. *Popul Med*. 2020;2:1–9. doi:10.18332/popmed/128504
12. Akinkugbe AA, Adeniyi AA, Folayan MO. Distribution and challenges of oral-health workforce in Nigeria. *Niger Med J*. 2020;61(2):56–63.
13. Armfield JM, Heaton LJ. Management of fear and anxiety in the dental clinic: a review. *Aust Dent J*. 2013;58(4):390–407. doi:10.1111/adj.12118
14. Onyejaka NK, Folayan MO, Folaranmi N. Barriers and facilitators of dental service utilization by children aged 8 to 11 years in Enugu State, Nigeria. *BMC Health Serv Res*. 2016;16(1):93. doi:10.1186/s12913-016-1341-6
15. Adeniyi AA, Sofola OO. Strengthening the oral health system in Nigeria. *Niger J Clin Pract*. 2018;21(5):429–436. doi:10.4103/njcp.njcp_41_17
16. Aikins EA, Braimoh OB. Utilization of dental services among civil servants in Port Harcourt, Nigeria. *J Dent Res Rev*. 2015;2(2):62–66. doi:10.4103/2348-2915.161202
17. Chukwu CI, Adeleke OA, Ekeke CN. Utilization of dental services among civil servants in Port Harcourt, Rivers State, Nigeria. *J Dent Res Rev*. 2017;4(2):43–48.
18. Adeniyi AA. An appraisal of the oral health care system in Nigeria. *J Int Soc Prev Community Dent*. 2022;12(4):394–401. doi:10.4103/jispcd.jispcd_66_22
19. Olatosi OO, Sote EO, Akinsola OJ. Utilization of oral health services in Nigeria: a review of recent literature. *Niger J Clin Pract*. 2021;24(9):1245–1252.
20. Babitsch B, Gohl D, Von Lengerke T. Re-revisiting Andersen's behavioral model of health services use: a systematic review of studies from 1998–2011. *GMS Psycho-Soc-Med*. 2012;9:Doc11. doi:10.3205/psm000089
21. Federal Ministry of Health. National oral health policy. Nigeria: Federal Ministry of Health; 2012. Available from: https://extranet.who.int/ncdccs/Data/NGA_B8_ORALHEALTHPOLICY.pdf. Accessed April 15, 2026.
22. Etiaba E, Uguru N, Ekenso B, et al. Development of oral health policy in Nigeria: an analysis of the role of context, actors and policy process. *BMC Oral Health*. 2015;15(1):56.8. doi:10.1186/s12903-015-0040-8
23. Cochran WG. *Sampling Techniques*. John Wiley & Sons; 1977.
24. Adedigba MA, Ogunbodede EO, Jeboda SO, Naidoo S. Dental care utilization among adults in a Nigerian urban population. *J Public Health Dent*. 2015;75(2):123–130.
25. Petersen PE. World Health Organization global policy for improvement of oral health-World Health Assembly 2007. *Int Dent J*. 2008;58(3):115–121. doi:10.1111/j.1875-595X.2008.tb00185.x
26. World Medical Association. Declaration of Helsinki: ethical principles for medical research involving human subjects. *J Am Med Assoc*. 2013;310(20):2191–2194. doi:10.1001/jama.2013.281053
27. Akinyamoku CA, Gbadebo SO, Akinboboye BO. Oral health awareness and dental service utilization among Nigerian adults. *West Afr J Med*. 2018;35(3):150–156.
28. Okunseri C, Okunseri E, Garcia RI, Visotcky A. Dental care utilization among adults: the role of socio-economic status. *Community Dent Oral Epidemiol*. 2020;48(2):150–158.
29. Baelum V, Fejerskov O. How big is the problem? Epidemiological. In: *Dental Caries: The Disease and Its Clinical Management*. John Wiley & Sons, Oxford Ltd; 2015:21.
30. Adekoya-Sofowora CA, Nasir WO, Oginni AO, Taiwo M. Dental service utilization patterns among adults in Southwest Nigeria. *Afr J Oral Health*. 2016;6(1):45–52.
31. Reda SM, Krois J, Reda SF, Thomson WM, Schwendicke F. The impact of demographic, health-related and social factors on dental services utilization: systematic review and meta-analysis. *J Dent*. 2018;75:1–6. doi:10.1016/j.jdent.2018.04.010
32. Akinboboye BO, Akinboboye OO, Okeigbemen SA. Reasons for dental visits among adults in an urban Nigerian population. *Niger J Clin Pract*. 2014;17(5):617–621.
33. De Rubeis V, Jiang Y, de Groh M, et al. Barriers to oral care: a cross-sectional analysis of the Canadian longitudinal study on aging (CLSA). *BMC Oral Health*. 2023;23(1):294. doi:10.1186/s12903-023-02967-3
34. Okoye LO, Ekwueme OC, Okoye OI. Dental care utilization and barriers among adults in Southeast Nigeria. *Int Dent J*. 2029;69(1):45–52.
35. Oginni AO, Olusile AO. Waiting time and patient satisfaction in Nigerian public dental clinics. *Niger Dent J*. 2026;24(2):87–92.

36. Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? *J Health Soc Behav.* 1995;36(1):1–10. doi:10.2307/2137284
37. Manski R, Moeller J. Barriers to oral health across selected European countries and the USA. *Int Dent J.* 2017;67(3):133–138. doi:10.1111/idj.12283
38. Armfield JM. The extent and nature of dental fear and phobia in Australia. *Aust Dent J.* 2010;55(4):368–377. doi:10.1111/j.1834-7819.2010.01256.x

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