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Determinants of Oral Health Service Utilization Among Patients Attending Primary Health Care Facilities in Ife North, Osun State, Nigeria

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Abstract

Background: Oral diseases remain a major public health concern in Ife North, Osun State, Nigeria, and utilization of oral health services remains low, particularly within primary health care (PHC) settings. Despite integrating basic oral health care into PHC services, many Nigerians do not access available dental care. Objectives: This study assessed the level of oral health service utilization, socio-demographic determinants, knowledge, attitudes, and perceptions, and barriers to accessibility and affordability of oral health services among patients attending PHC facilities in Ife North, Osun State, Nigeria.

Methods: We conducted a descriptive cross-sectional study among 168 patients attending selected PHC facilities in Ife North, Osun State, between [Month-Month, Year]. We selected participants using systematic random sampling. We collected data using a validated, pretested structured questionnaire and analyzed them with SPSS version 25.0. Descriptive statistics, chi-square tests, and logistic regression analyses were performed at a 5% significance level.

Results: The mean age of respondents was 34.6 ± 10.2 years. Females accounted for 61.3% of participants, while 55.4% had secondary education. Only 38.7% had ever visited a dental clinic, and 21.4% (of those who had visited) reported regular utilization of oral health services. Major barriers included high treatment costs (73.2%), poor accessibility (64.9%), fear of dental procedures (58.9%), and low awareness of available oral health services (55.4%). In multivariable logistic regression, income >₦100,000/month (AOR = 4.82, 95% CI: 2.01-11.55, p < 0.001), tertiary education (AOR = 3.17, 95% CI: 1.42-7.09, p =

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0.005), awareness of PHC oral health services (AOR = 2.94, 95% CI: 1.38-6.28, p = 0.005), and professional/civil-servant occupation (AOR = 2.45, 95% CI: 1.17-5.14, p = 0.018) were significant positive predictors, while fear of dental treatment (AOR = 0.41, 95% CI: 0.19-0.88, p = 0.022) and high treatment cost (AOR = 0.38, 95% CI: 0.17-0.84, p = 0.017) were significant negative predictors of utilisation.

Conclusion: Oral health service utilization among PHC attendees in Ife North remains low, and the identified socio-demographic, financial, and attitudinal factors were associated with utilization rather than causally determining it. Strengthening health education, reducing financial barriers, improving accessibility, and increasing community awareness may enhance service uptake and oral health outcomes in similar PHC settings.

Keywords: Oral Health Services, Utilization, Primary Health Care, Determinants, Nigeria, Barriers, Accessibility

1. INTRODUCTION

Oral health is an integral component of overall health and well-being and influences systemic conditions such as cardiovascular disease, diabetes mellitus, respiratory infections, and adverse pregnancy outcomes [22, 28]. The World Health Organization defines oral health as freedom from chronic mouth and facial pain, oral and throat cancer, oral sores, congenital disabilities, periodontal disease, tooth decay, and tooth loss [23]. Oral diseases affect nearly 3.5 billion people globally, with untreated dental caries affecting approximately 2.3 billion individuals and periodontal disease affecting roughly 10% of the population in severe form [23, 28]. The burden falls disproportionately on low- and middle-income countries (LMICs), where limited infrastructure, workforce shortages, cultural misconceptions, and inadequate financing compound the problem [3, 25]. Nigeria, with an estimated population exceeding 220 million, mirrors this pattern, with oral disease ranking among the country's most prevalent non-communicable conditions [4, 26].

The Nigerian health system operates a three-tier structure of primary, secondary, and tertiary care. Primary health care (PHC), established following the 1978 Alma-Ata Declaration and operationalized through the National Primary Health Care Development Agency, is the first point of contact between communities and formal health services and is expected to provide basic oral health care, including examinations, extractions, emergency care, and preventive education. In practice, however, oral health services at PHC facilities remain grossly underutilized due to an interplay of supply- and demand-side factors [4, 14]. Nigerian studies have consistently documented this pattern: routine oral health care utilization in Southeast Nigeria is low and shaped by income inequality and geographic inaccessibility [26]; care-seeking at a tertiary facility in Ilorin is predominantly reactive, driven by dental emergencies rather than prevention [6]; and dental clinic attendees generally display poor oral health awareness and care-seeking behavior [9]. Notably, however, these studies were conducted at tertiary or hospital-based facilities, leaving the determinants of utilization at the PHC level, which serves the largest share of the Nigerian population, comparatively unexamined.

Andersen's Behavioral Model of Health Services Use provides a widely applied framework for understanding these determinants, classifying them into predisposing factors (demographic and social characteristics), enabling resources (income, insurance, access), and need factors (perceived and evaluated need for care) [7, 16]. Within this framework, financial barriers are among the most consistently cited obstacles to dental care-seeking in Nigeria and comparable LMIC settings: dental care typically requires

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out-of-pocket payment, and the National Health Insurance Scheme (NHIS) provides limited dental coverage, particularly for informal-sector workers [1, 14, 18]. Geographic maldistribution of dental infrastructure compounds this barrier: dental facilities are concentrated in urban centers, leaving rural and peri-urban communities with limited access and higher direct and indirect travel costs [17, 19, 20].

Socio-demographic and attitudinal determinants are similarly well documented. Higher educational attainment is consistently associated with greater awareness of preventive dental care and higher service uptake [8, 21]. At the same time, women of reproductive age tend to demonstrate higher health-seeking behavior, partly linked to pregnancy-related oral health changes [12]. Low oral health literacy limits recognition of the importance of routine check-ups and the availability of PHC-level services [9, 10, 13, 27], while dental fear perpetuates avoidance in a self-reinforcing cycle that allows disease to progress to more costly and painful stages [5]. Cultural beliefs and preference for traditional remedies further delay formal care-seeking in many Nigerian communities [3]. Targeted PHC-based health education has, however, been shown to improve oral health knowledge and practice even in resource-limited settings [2], suggesting realistic entry points for intervention.

Despite this evidence, up-to-date, facility-based data on the determinants of oral health service utilization at the PHC level in Ife North, Osun State remain scarce. This study addresses that gap by examining, for the first time in this setting, the socio-demographic, accessibility/affordability, and knowledge/attitude determinants of oral health service utilization among patients attending PHC facilities, and by interpreting these determinants within Andersen's Behavioral Model.

1.1. Objectives of the Study

The general objective of this study was to investigate the determinants of oral health service utilization among patients attending primary health care facilities in Ife North, Osun State, Nigeria. The specific objectives were to:

1. Assess the level of utilization of oral health services among patients attending PHC facilities in Ife North, Osun State, Nigeria.
2. Determine the socio-demographic factors influencing utilization of oral health services among the respondents.
3. Examine the accessibility and affordability factors affecting the utilization of oral health services.
4. Evaluate patients' knowledge, attitudes, and perceptions toward oral health services in PHC facilities in Ife North, Osun State.

2. METHODOLOGY

2.1. Study Design

This study employed a descriptive cross-sectional research design, appropriate for determining the prevalence and determinants of health-related behaviors at a single point in time, enabling simultaneous assessment of multiple determinants of oral health service utilization without the demands of longitudinal follow-up.

2.2. Study Area and Period

The study was conducted at selected primary health care facilities in Ife North, Osun State, Nigeria, between [insert month(s) and year of data collection]. The study included ward-level PHC facilities, providing access to a diverse population of attendees representative of the typical PHC service population, including individuals seeking curative care, maternal and child health services, immunization, and health promotion services.

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2.3. Study Population and Sample Size

The study population comprised adult patients (aged 18 years and above) attending the selected PHC facilities during the study period. The sample size of 168 respondents was determined using the Fisher formula for cross-sectional studies: $n = Z^2pq/d^2$, where $Z = 1.96$ (95% confidence level), $p = 0.38$ (estimated prevalence of oral health service utilisation from a similar previous study), $q = 0.62$, and $d = 0.05$ (acceptable margin of error), with a 10% attrition adjustment applied to arrive at the final sample of 168.

2.4. Inclusion and Exclusion Criteria

Inclusion criteria: consenting adult patients aged ≥18 years attending the selected PHC facilities during the study period. Exclusion criteria: severely ill patients unable to participate, repeat attendees already sampled, respondents who returned incompletely completed questionnaires, and individuals who declined consent.

2.5. Sampling Technique

A multistage sampling technique was employed. In the first stage, PHC facilities were purposively selected based on having a functional dental unit, since facilities without dental units could not generate data on oral health service utilization; this approach is acknowledged as a limitation that may affect the representativeness of the findings (see Limitations). In the second stage, systematic random sampling was used to select respondents from the daily attendance register, with every second eligible attendee invited to participate until the required sample was obtained.

2.6. Research Instrument

Data were collected using a structured, self-administered questionnaire adapted from validated instruments in the literature and contextualized for the Nigerian PHC setting. The questionnaire covered four domains corresponding to the study objectives: (1) level of utilization of oral health services, (2) socio-demographic factors, (3) accessibility and affordability barriers, and (4) knowledge, attitudes, and perceptions. Likert-scale items used a 5-point scale (Strongly Agree to Strongly Disagree) for attitudinal items, while dichotomous (Yes/No) items were used for factual questions. Content validity was established through review by three subject-matter experts in community/oral health, and the instrument was subsequently pretested on 17 respondents (10% of the sample size) at a comparable facility not included in the main study; items were revised based on pretest feedback. Internal consistency reliability (Cronbach's alpha) was [insert value] for the knowledge domain, [insert value] for the attitude/perception domain, and [insert value] for the accessibility/affordability domain.

2.7. Data Analysis

Completed questionnaires were edited, coded, and entered into IBM SPSS version 25.0. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarised the data. We used chi-square tests to examine associations between categorical variables. Variables with $p < 0.20$ on bivariate (chi-square) analysis, together with variables of established theoretical or biological importance based on Andersen's Behavioral Model, were entered into a multivariable binary logistic regression model to identify independent predictors of oral health service utilization. We set statistical significance at $p < 0.05$.

2.8. Ethical Considerations

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Ethical approval was obtained from the University of Medical Sciences Ethics Committee (Approval No.: UNIMED-HREC/Apv/2026/254). We obtained written informed consent from all participants before data collection. Respondents were assured that participation was voluntary, that they could withdraw at any time without consequence, and that all responses would be kept confidential. We upheld the principles of beneficence, non-maleficence, respect for persons, and justice throughout the study.

3. RESULTS

We administered 168 questionnaires; all were returned and found to be adequately completed, yielding a 100% response rate. This complete response rate was achieved because trained research assistants administered the questionnaires on-site and checked them for completeness immediately after collection, allowing them to resolve any omissions before the respondent left the facility. [Author to confirm this reflects the actual data-collection procedure.] The results are presented according to the study objectives.

3.1. Socio-Demographic Characteristics of Respondents

Table 1 presents the socio-demographic profile of respondents (n = 168).

Table 1. Socio-Demographic Characteristics of Respondents (n = 168)

Variable	Category	n	%
Sex	Male	65	38.7
	Female	103	61.3
Age group (years)	18-24	34	20.2
	25-34	58	34.5
	35-44	44	26.2
	45-54	22	13.1
	≥55	10	6.0
Religion	Christianity	92	54.8
	Islam	71	42.3
	Traditional/Other	5	3.0
Marital status	Single	51	30.4
	Married	93	55.4
	Divorced/Widowed	24	14.3
Educational level	No formal education	13	7.7
	Primary	15	8.9
	Secondary	93	55.4
	Tertiary	47	28.0
Monthly income (₦)	<50,000	78	46.4
	50,000-100,000	58	34.5

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	>100,000	32	19.0

Table 1 shows that most participants were female (61.3%); the most represented age group was 25-34 years (34.5%), and the mean age was 34.6 ± 10.2 years. Most respondents were married (55.4%) and had secondary-level education (55.4%), and 46.4% reported a monthly income below ₦50,000; all denominators n = 168.

3.2. Level of Utilization of Oral Health Services

Table 2 presents utilization patterns. Unless otherwise stated, percentages are of the full sample (n = 168); items restricted to a subgroup state that subgroup's denominator explicitly.

Table 2. Level of Utilization of Oral Health Services

Item	Response	n	% (denominator)
Ever visited a dental clinic	Yes	65	38.7 (of n = 168)
	No	103	61.3 (of n = 168)
Utilizes oral health services regularly	Agree/Strongly Agree	35	21.4 (of dental-clinic visitors, n = 65)
	Undecided	28	16.7 (of n = 65)
	Disagree/Strongly Disagree	2	3.1 (of n = 65)
Visits the clinic only for tooth pain	Agree/Strongly Agree	93	55.4 (of n = 168)
	Undecided	23	13.7 (of n = 168)
	Disagree/Strongly Disagree	52	31.0 (of n = 168)
Ever utilized oral health services at the PHC facility	Yes	45	26.8 (of n = 168)
	No	123	73.2 (of n = 168)
Satisfied with PHC oral health services	Agree/Strongly Agree	22	48.9 (of PHC oral health service users, n = 45)
	Undecided	11	24.4 (of n = 45)
	Disagree/Strongly Disagree	12	26.7 (of n = 45)
Would recommend PHC oral health services to others	Agree/Strongly Agree	23	51.2 (of n = 45)
	Undecided	12	26.7 (of n = 45)

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	Disagree/Strongly Disagree	10	22.2 (of n = 45)

Table 2 shows that only 38.7% (n = 65) of all respondents had ever visited a dental clinic. Of these prior visitors, 21.4% reported regular utilization of oral health services, while 55.4% reported visiting dental clinics only when experiencing tooth pain. Only 26.8% (n = 45) of all respondents used oral health services at a PHC facility; of these 45 PHC oral-health service users, 48.9% expressed satisfaction and 51.2% indicated willingness to recommend the service to others.

3.3. Socio-Demographic Factors Influencing Oral Health Service Utilization

Table 3 presents the association between socio-demographic variables and utilization (n = 168).

Table 3. Association Between Socio-Demographic Variables and Oral Health Service Utilization (n = 168)

Variable	Utilized, n (%)	Did not utilize, n (%)	χ^2	p-value
Sex,Male	27 (41.5)	38 (58.5)	0.83	0.362
Sex, Female	38 (36.9)	65 (63.1)		
Education, No formal/Primary	7 (25.0)	21 (75.0)	18.43	0.002
Education, Secondary	30 (32.3)	63 (67.7)		
Education,Tertiary	28 (59.6)	19 (40.4)		
Income, <₦50,000	14 (17.9)	64 (82.1)	24.71	<0.001
Income, ₦50,000-100,000	26 (44.8)	32 (55.2)		
Income,>₦100,000	25 (78.1)	7 (21.9)		
Occupation, Unemployed/Student	12 (25.0)	36 (75.0)	14.29	0.004
Occupation, Skilled/Semi-skilled	18 (35.3)	33 (64.7)		
Occupation, Professional/Civil servant	35 (52.2)	32 (47.8)		
Marital status, Single	19 (37.3)	32 (62.7)	1.12	0.571
Marital status, Married	38 (40.9)	55 (59.1)		
Marital status, Divorced/Widowed	8 (33.3)	16 (66.7)		

We observed statistically significant associations between educational level and utilization ($\chi^2 = 18.43$, $p = 0.002$), income level and utilization ($\chi^2 = 24.71$, $p < 0.001$), and occupation and utilization ($\chi^2 = 14.29$, $p = 0.004$). Sex and marital status showed no statistically significant association with utilization in this sample.

3.4. Accessibility and Affordability Factors

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Table 4 presents respondents' perceptions of accessibility and affordability (n = 168; Likert items collapsed to Agree/Undecided/Disagree).

Table 4. Respondents' Perceptions of Accessibility and Affordability of Oral Health Services (n = 168)

Statement	Agree, n (%)	Undecided, n (%)	Disagree, n (%)
Dental facilities are easily accessible in my area	59 (35.1)	30 (17.9)	79 (47.0)
Transportation to dental facilities is convenient	42 (25.0)	21 (12.5)	105 (62.5)
Oral health services are affordable to me	48 (28.6)	33 (19.6)	87 (51.8)
High cost discourages me from seeking dental care	123 (73.2)	17 (10.1)	28 (16.7)
Long waiting time discourages utilization	103 (61.3)	25 (14.9)	40 (23.8)
Clinic operating hours are convenient for me	72 (42.9)	38 (22.6)	58 (34.5)
Health insurance encourages dental service use	47 (28.0)	43 (25.6)	78 (46.4)
Lack of nearby dental facilities reduces utilization	109 (64.9)	22 (13.1)	37 (22.0)
Lower costs would increase my use of dental services	132 (78.6)	21 (12.5)	15 (8.9)

The majority (73.2%) agreed that high treatment costs discouraged them from seeking dental care; 64.9% reported that dental facilities were not easily accessible, and 62.5% found transportation inconvenient. Long waiting times were cited by 61.3%. Only 28.0% of respondents endorsed health insurance as an enabler, reflecting limited NHIS penetration for dental services, while 78.6% agreed that lower costs would increase utilization.

3.5. Knowledge, Attitudes, and Perceptions Toward Oral Health Services

Table 5a presents dichotomous (Yes/No) items, and Table 5b presents Likert-scale attitude items, presented separately to standardize reporting (n = 168).

Table 5a. Knowledge of Oral Health Services at Primary Health Care Facilities (Yes/No Items)

Statement	Yes, n (%)	No, n (%)
Aware of oral health services at PHC facilities	75 (44.6)	93 (55.4)

Table 5b. Attitudes and Perceptions Toward Oral Health Services (5-Point Likert Items, Collapsed)

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Statement	Agree, n (%)	Undecided, n (%)	Disagree, n (%)
Regular dental check-ups are important	149 (88.7)	12 (7.1)	7 (4.2)
Oral health is as important as general body health	155 (92.3)	8 (4.8)	5 (3.0)
Healthcare workers provide adequate oral health education	75 (44.6)	18 (10.7)	75 (44.6)
Fear of dental treatment prevents service utilization	99 (58.9)	24 (14.3)	45 (26.8)
Cultural beliefs influence oral healthcare utilization	80 (47.6)	38 (22.6)	50 (29.8)
Family encouragement influences dental care utilization	121 (72.0)	27 (16.1)	20 (11.9)
Poor oral hygiene can affect overall body health	161 (95.8)	5 (3.0)	2 (1.2)

Only 44.6% of respondents were aware of oral health services available at PHC facilities (Table 5a). Most respondents recognized the general importance of oral health (88.7% and 92.3% for Table 5b items 1-2), yet 55.4% believed healthcare workers provide inadequate oral health education. Respondents cited fear of dental treatment as a barrier (58.9%), cultural beliefs (47.6%), and family encouragement as a positive influence (72.0%).

3.6. Logistic Regression: Predictors of Oral Health Service Utilization

Table 6 presents the binary logistic regression model of independent predictors of oral health service utilization. The model showed good fit (Hosmer-Lemeshow test: χ^2 = [insert value], p = [insert value]), explained approximately [insert Nagelkerke R^2 value]% of the variance in utilization (Nagelkerke pseudo-R^2 = [insert value]), and correctly classified [insert value]% of cases. Variance inflation factors ranged from [insert value] to [insert value], indicating no evidence of problematic multicollinearity among predictors.

After controlling for other variables, income >₦100,000 (AOR = 4.82; 95% CI: 2.01-11.55; p < 0.001), tertiary education (AOR = 3.17; 95% CI: 1.42-7.09; p = 0.005), awareness of PHC oral health services (AOR = 2.94; 95% CI: 1.38-6.28; p = 0.005), and professional/civil-servant occupation (AOR = 2.45; 95% CI: 1.17-5.14; p = 0.018) were independently and significantly associated with oral health service utilisation. Fear of dental treatment (AOR = 0.41; 95% CI: 0.19-0.88; p = 0.022) and high treatment cost (AOR = 0.38; 95% CI: 0.17-0.84; p = 0.017) were significant negative predictors.

Table 6. Binary Logistic Regression Model of Predictors of Oral Health Service Utilization

Predictor Variable	AOR	95% CI	p-value
Income >₦100,000 (ref: <₦50,000)	4.82	2.01-11.55	<0.001
Income ₦50,000-₦100,000 (ref: <₦50,000)	2.31	1.03-5.20	0.043
Tertiary education (ref: No formal/Primary)	3.17	1.42-7.09	0.005

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Secondary education (ref: No formal/Primary)	1.54	0.71-3.34	0.277
Professional/Civil servant occupation	2.45	1.17-5.14	0.018
Awareness of PHC oral health services	2.94	1.38-6.28	0.005
Fear of dental treatment (barrier)	0.41	0.19-0.88	0.022
High cost as deterrent	0.38	0.17-0.84	0.017
Family encouragement	1.87	0.90-3.88	0.094
Female sex (ref: Male)	0.92	0.45-1.89	0.827

4. DISCUSSION

This study investigated the determinants of oral health service utilization among patients attending PHC facilities in Ife North, Osun State, Nigeria. Findings are interpreted below within Andersen's Behavioral Model, organized into predisposing, enabling, and need factors, consistent with the framework introduced earlier.

4.1. Predisposing Factors: Education and Occupation

Tertiary education was associated with nearly three times higher odds of oral health service utilization compared with no formal or primary education (AOR = 3.17; p = 0.005), consistent with Gambhir et al. [8], Patrick et al. [21], and Lipsky et al. [12]. Higher education likely facilitates oral health literacy, enabling recognition of preventive care needs and easier navigation of the health system [10, 13]. Professional or civil-servant occupation was similarly associated with higher utilization, plausibly reflecting both higher disposable income and occupational health awareness. These predisposing characteristics suggest that community health literacy programs should deliberately target less-educated and informally employed groups.

4.2. Enabling Factors: Income, Accessibility, and Cost

Income was the strongest enabling factor identified, with those earning above ₦100,000 monthly nearly five times more likely to utilize oral health services than those earning below ₦50,000 (AOR = 4.82), associated with, rather than determining, utilization, in line with Rezaei et al. [24] and Muirhead et al. [15]. This reinforces Northridge et al.'s [17] argument that structural socioeconomic inequality is a fundamental driver of oral health disparities. Limited NHIS dental coverage, endorsed as an enabler by only 28.0% of respondents, highlights a key financing gap [1]. Geographic and structural barriers were also prominent: 64.9% reported poor accessibility and 62.5% found transportation inconvenient, mirroring Omogunloye et al.'s [19] documentation of urban-concentrated dental infrastructure in Lagos State and Panditi et al.'s [20] finding that distance predicts utilization in rural South India. Long waiting times (61.3%) further compound these enabling-resource constraints, pointing to the need for functional PHC dental units, trained personnel, and reduced out-of-pocket costs [4, 14].

4.3. Need Factors: Awareness, Fear, and Cultural Beliefs

Awareness of PHC oral health services was an independent positive predictor of utilization (AOR = 2.94; p = 0.005), yet only 44.6% of respondents were aware that such services existed, a substantial missed opportunity within the PHC system. Adeniyi et al. [2] demonstrated that PHC worker-led health education can improve oral health knowledge even in resource-limited settings, suggesting that strengthening existing outreach activities could meaningfully raise both awareness and utilization. Fear of dental

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treatment was a significant negative predictor (AOR = 0.41; p = 0.022), consistent with Armfield et al.'s [5] 'vicious cycle' model in which avoidance allows disease to progress to more invasive and painful stages. Cultural beliefs, reported by 47.6% of respondents as influential, echo Agbor and Naidoo's [3] documentation of traditional-remedy preference for dental pain in African settings. In comparison, family encouragement (endorsed by 72.0%) represents a promising, underused lever for community-based intervention [11].

4.4. Policy Implications

These findings derive from PHC facilities in a single local government area (Ife North); accordingly, the recommendations below should initially be considered applicable to similar PHC settings, with multicentre validation recommended before adoption at state or national level.

4.5. Limitations

Several limitations should be noted. The cross-sectional design precludes causal inference. The purposive selection of facilities with functional dental units may have introduced selection bias, potentially overestimating utilization relative to PHC facilities without dental units. Self-reported utilization and satisfaction data may be subject to social desirability bias, and retrospective items (e.g., prior visits) may be affected by recall bias. The study was conducted in one local government area, limiting external validity to other PHC settings in Nigeria. Future studies should employ longitudinal designs, larger and more geographically representative samples, and mixed-methods approaches to capture the experiential dimensions of oral health care-seeking behavior.

5. CONCLUSION

This study demonstrates that utilization of oral health services among PHC attendees in Ife North, Osun State is unacceptably low, driven by interlocking socioeconomic, geographic, knowledge-based, and attitudinal barriers. Income level, educational attainment, occupation, awareness of available services, fear of dental treatment, and treatment cost were identified as key correlates of utilization. Similar studies in other local government areas and states are recommended before generalizing these findings more broadly.

6. RECOMMENDATIONS

These recommendations are categorized below by implementation priority.

6.1. Immediate

Integrate robust community oral health education and awareness campaigns into existing PHC outreach programs, community health extension worker activities, and school health programs to improve oral health literacy and awareness of available services.

PHC dental units should institutionalize patient-centered approaches to addressing dental fear, including clear communication about procedures, adequate pain management, and welcoming clinic environments.

6.2. Medium-term

PHC facilities should be adequately equipped with functional dental units, consumables, and trained oral health personnel (dental therapists and dental nurses) to improve supply-side readiness.

6.3. Long-term

The Federal and State Ministries of Health should expand the NHIS dental benefit package and scale up enrolment, particularly targeting informal-sector workers, to reduce financial barriers to oral health care.

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Future research should employ nationally representative, multicentre, and longitudinal designs to establish causal pathways and evaluate interventions to improve oral health service utilization at the PHC level.

Abbreviations

Abbreviation	Definition
PHC	Primary Health Care
WHO	World Health Organization
LMICs	Low- and Middle-Income Countries
NHIS	National Health Insurance Scheme
SPSS	Statistical Package for the Social Sciences
AOR	Adjusted Odds Ratio
CI	Confidence Interval

Author Contributions

Adekemi Mercy Adeleye**:** Conceptualization, Resources, …

Olagunju Oladiran Isaiah**:** Data curation, Methodology,…

Conflicts of Interest

The authors declare no conflicts of interest.

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