Primary Healthcare Utilization: An Assessment of its Prevalence and Determinants Among Residents of Okada, Edo State, Nigeria

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ABSTRACT

Background: *Primary healthcare (PHC) is essential for equitable health access, yet its utilisation remains inconsistent across communities in Nigeria. This study assessed the prevalence and determinants of Primary healthcare utilisation in Ovia North East Local Government Area, Edo State.*

Methods: *A community-based cross-sectional study was conducted from February to November 2024 among 380 adults selected through multistage sampling. Data were collected via an interviewer-administered questionnaire and analysed using descriptive and bivariate statistics at a 5% significance level ($p<0.05$). Ethical approval was obtained (IUTH/R.24/VOL.I/102), and informed consent was secured. Participants with poor PHC use were counselled.*

Results: *Primary healthcare utilisation was reported by 299 respondents (78.7%). Utilisation was significantly associated with age ($\chi^2 = 44.485$, $p < 0.001$), marital status ($\chi^2 = 44.768$, $p < 0.001$), education ($\chi^2 = 53.342$, $p < 0.001$), employment ($\chi^2 = 10.098$, $p = 0.006$), and income ($\chi^2 = 20.803$, $p < 0.001$). Respondents earning ≤₦50,000 were over three times more* likely to utilise Primary healthcare than higher earners (OR = 3.178; 95% CI: 1.789–5.644). Similarly, those without tertiary education (OR = 3.542; 95% CI: 1.790–7.008) and those under 40 years (OR = 0.294; 95% CI: 0.129–0.667) showed distinct utilisation patterns. Males were significantly less

likely to utilize PHC (OR = 0.370; p = 0.002), while marital status was not predictive in the multivariate model.

Conclusion: *While overall PHC utilisation was high, disparities persist by age, sex, education, and income. Improving service quality and public trust are essential for improved utilisation. Mixed-method research is recommended to explore underlying behavioural and systemic barriers.*

KEYWORDS: Health Services Accessibility, Primary Health Care, Health Services Utilization, Socioeconomic Factors, Nigeria

Background

Primary healthcare (PHC) serves as the basis of healthcare service delivery, addressing up to 90% of an individual's health needs across their lifetime.[1]These include health promotion, disease prevention, treatment, rehabilitation, and palliative care, delivered in an integrated, accessible, and people-centred manner.[2] However, over half of the global population still lack access to essential PHC services, exposing a significant gap in equitable healthcare provision.[3]This disproportion challenges the principles of Universal Health Coverage (UHC) and the Sustainable Development Goals (SDGs), particularly in low- and middle-income countries (LMICs).[4]

Scaling up the utilisation of high-quality PHC in LMICs could avert as many as 60 million deaths by 2030 and increase life expectancy by 3.7 years.[5] Achieving these gains, however, requires significant financial investment, with current estimates suggesting an additional $200-328 billion globally each year.[6] Currently, low-income countries spend an average of $3 per capita on primary healthcare, and lower-middle-income countries spend about $16. Both figures fall significantly short of the recommended minimum—$65 for low-income countries and $59 for lower-middle-income countries[5,7]. By comparison, high-income countries invest substantially more in PHC, estimated to be about 60 to 100 times more per capita, delineating the inequity in financing and resource allocation.[8]

Successful PHC models from around the world demonstrate its critical role in healthcare systems. In the United Kingdom, the National Health Service (NHS) recorded over 374 million primary care appointments in 2023, accounting for about 90% of health care appointments, and emphasise PHC's importance as the first point of contact for health concerns.[9] Similarly, Thailand has achieved near universal health coverage, reaching over 99% of its population through its District Health Systems Networks, which deliver essential services in rural areas while addressing urban healthcare challenges through a mix of public and private providers.[10]Thailand's success with PHC is reflected in its average life expectancy of 77 years, significantly exceeding the global average of 73 years.

South Africa offers a tailored approach to PHC, addressing specific health priorities such as Human immunodeficiency virus (HIV), tuberculosis, and maternal and child health, having made investments in more than 400 upgraded PHC centres, and the integration of community health workers (CHWs) into services for underserved communities.[11]In contrast, in sub-Saharan Africa, PHC utilisation remains

inconsistent, hampered by systemic barriers such as inadequate infrastructure, workforce shortages, and financial constraints.[12]Nigeria exemplifies these issues, with approximately 34,000 PHC facilities comprising 85% of the nation's healthcare infrastructure with only 20% meeting the basic operational standards due to inadequate funding, insufficient staffing, and limited essential medical supplies, as well as high out-of-pocket expenses, which account for 77% of Nigeria's total health expenditure and further hinder access.[13]Consequently, PHC utilisation in Nigeria is suboptimal, with many individuals bypassing PHC facilities for tertiary centres or traditional medicine. Multiple factors shape the utilisation of PHC services in Nigeria, ranging from individual and household characteristics to system-level issues. Socioeconomic constraints—particularly among the unemployed, those with limited education, or residents in rural areas—often limit access and health-seeking behaviours. Perceptions of poor service quality, long waiting times, lack of essential medicines, and inadequate staffing contribute to low confidence in PHC facilities.[14] These challenges push many to seek care in secondary or tertiary centres, or resort to self-medication and traditional medicines, despite the proximity and affordability of PHC services. There is also a variance in the quality of PHC distribution across the country, with key Northern states such as Abuja and Kaduna having a notably higher quantity and quality of PHC services in comparison to other parts of the country.[15]

Cultural beliefs and gender dynamics also influence PHC use, with some populations perceiving government facilities as inefficient or unfriendly. Women, especially in patriarchal settings, may be restricted from seeking care independently or may prefer female health workers who are not always available in PHC centres. Meanwhile, awareness campaigns and community engagement strategies have shown promise in boosting PHC patronage, particularly when services are delivered by trusted community health workers. Addressing these behavioural, social, and systemic barriers is essential to improve PHC utilization and move toward equitable healthcare access.

Workforce challenges also remain a critical barrier to PHC utilisation in Nigeria, with the healthcare workforce density being 1.95 per 1,000 population, significantly below the World Health Organisation's (WHO)-recommended threshold.[16]The Coronavirus 2019 (COVID-19) pandemic highlighted the fundamental role of strong PHC systems in health system resilience, as countries with strong PHC infrastructure were better able to detect and respond to the crisis while maintaining routine services. In Nigeria, however, the pandemic exposed vulnerabilities in the country's underfunded PHC system, emphasising the urgent need for sustained investment.[13] Against this backdrop, this study aimed to assess the prevalence of PHC utilisation in Okada, Edo State, and identify key factors influencing service use.

MATERIAL AND METHODS

Study Area

The study was carried out in Ovia North East Local Government Area (LGA) of Edo State, Nigeria, which encompasses several communities within its jurisdiction. The LGA is home to several PHC facilities that provide 24-hour services, including antenatal care, immunisation, Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) care, family planning, health education, as well as maternal and newborn care services Most PHCs are manned by community health extension workers, with some support from nurses, midwives, and visiting medical officers. However, many face limitations such as inadequate infrastructure, shortages of skilled personnel, and inconsistent drug supplies. Based on the 2006 census, Ovia North East LGA had a population of 155,344 and covered a land area of 2,301 square kilometres. At an annual population growth rate of 2.5%, the population is expected to rise to about 242,071 by the end of 2024. The region is diverse, with communities such as Okada, Uhen, Utese, and others, inhabited by various ethnic groups including the Bini, Igbo, Yoruba, Urhobo, and more. This community-based study was conducted within this dynamic and culturally rich region. The LGA has a significant Christian population, with smaller groups practicing Islam and African Traditional Religion. It is also home to Igbinedion University and a variety of economic activities, including saw milling, which shapes the local economy.

Study Population

This community-based study focused on all individuals aged 18 years and above who had resided in Ovia North East LGA for at least one year before the study. This population was selected due to their potential awareness and experiences with the utilisation of PHC services within the local government area. The inclusion of individuals 18 years and above ensured that the study captured the perspectives of adults, who are the primary users of health services, particularly in terms of decision-making and healthcare-seeking behaviour.

Sampling Technique

The minimum sample size was calculated using the formula for single population proportions, with a 95% confidence level, 5% margin of error, and a PHC utilisation prevalence of 42.5% from a similar study. This yielded a sample size of 376, which was adjusted to 418 to account for a 10% non-response rate. Thereafter, a three-stage sampling technique was used to select the study sites and participants. In the first stage, three communities—Okada, Iguomo, and Egbeta—were selected from Ovia North East LGA using simple random sampling. The second stage involved stratified sampling with proportional allocation based of the sample size on their populations: Okada (25,479): 339 respondents, Iguomo (2,540): 34 respondents and Egbeta (3,413): 45 respondents. In the final stage, residential clusters such as streets and compounds within each community were randomly selected using a table of random numbers. Data collectors approached households within the selected clusters, starting from a central location (e.g., a market square or town hall) and moving systematically house-to-house. In each household, the first eligible adult encountered was invited to participate. If more than one eligible adult was present, one was randomly selected. This continued until the required number of respondents for each community was reached. Of the 418 individuals approached, data for 380 eligible participants were analyzed, giving a response rate of 90.9%.

Data Collection

Data for this study was collected using structured, interviewer-administered questionnaire, which was designed to capture sociodemographic characteristics, prevalence of PHC utilisation, and determinants of PHC utilisation. The questionnaire, adapted from existing instruments, was tailored to the study context.[17,18]The first section of the questionnaire collected data on participant's sociodemographic characteristics such as age, sex, marital status, education level, occupation, and religion. These variables were important for identifying potential factors that might influence PHC utilisation. The second section assessed the prevalence of PHC utilisation, asking respondents about their usage of PHC services in the past year, the types of services accessed, and the frequency of visits. This provided a clear picture of the proportion of the population utilising PHC services and the factors that affected their usage. The final section focused on the determinants of PHC utilisation, exploring factors like socioeconomic status, proximity to healthcare facilities, service quality, and cultural beliefs. The aim was to identify barriers to PHC usage, such as financial constraints, transportation issues, or negative perceptions of services. A pre-test was conducted in Okha community, Ovia South West LGA, with 42 participants. Feedback from the pre-test led to adjustments in the questionnaire to ensure clarity and relevance for the main study. This approach ensured the data collection tool was both reliable and valid for the research objectives. Data collection took place over a three-week period within this time frame.

Ethical Considerations

Ethical clearance for this study was granted by the Ethical and Research Committee of Igbinedion University, Okada (Ethical clearance certificate number: IUTH/R.24/VOL.I/102). Informed consent was obtained from all participants, ensuring they were fully aware of the study's aims and that participation was voluntary. Confidentiality was maintained throughout the study, with no personal identifiers included in the questionnaires. Participants were informed of their right to withdraw from the study at any time without consequence. All data collected were securely stored, with access restricted to the research team. At the end of data collection, participants identified as having poor utilisation of PHC services were counselled on the importance of regular and timely use of available primary healthcare facilities.

Data Analysis

The data was analysed using IBM SPSS Statistics version 27. Descriptive statistics, including frequency and percentage distributions, were used to summarise the data. Univariate and bivariate analyses were conducted to explore associations between variables, using chi-square tests. A p-value of less than 0.05 was considered significant. Results were presented in frequency tables and pie charts.

Results

Sociodemographic characteristics of respondents

The participants were aged <18 to >50 (mean 35.1 ± 13.8) years, with 32.9% (125) aged 20–29 years and 24.2% (92) aged 30–39 years. Those aged ≥50 years were 69 (18.1%). There were 235 (61.8%) females and 145 (38.2%) males with 49.2% (187) married; 162 (42.6%) single, and 25 (6.6%) widowed.

Educational attainment was mainly secondary (166; 44.7%) and tertiary (152; 40.0%) with only 6 (1.6%) having no formal education. Most respondents were employed (268; 70.5%), while 57 (15.0%) were students and 55 (14.5%) unemployed. Regarding income, 173 (45.6%) earned below ₦30,000, 81 (21.3%) earned ₦30,000–₦49,999, 82 (21.6%) earned ₦50,000–₦99,999, and 44 (11.5%) earned above ₦100,000.

Prevalence of PHC utilisation

Out of 380 respondents, 299 (78.7%) had ever visited a PHC facility, while 81 (21.3%) had not. Among those who had used PHC, 164 (54.8%) last visited more than six months ago, 92 (30.8%) within the past 1–6 months, and 43 (14.4%) within the last month.

Factors affecting the utilisation of PHC

Primary health care facility utilisation was significantly associated with age, marital status, education, employment, and income ($p < 0.05$). All respondents aged 18–19 and 40–49 years reported PHC use, while utilisation was lowest among those aged 30–39 years (56; 60.9%) ($\chi^2 = 44.485$, $p < 0.001$). Married (162; 86.6%) and widowed (25; 100.0%) participants had higher utilisation compared to singles (112; 69.1%) and divorced individuals (0.0%) ($\chi^2 = 44.768$, $p < 0.001$).

Primary health care facility use was highest among those with only primary education (56; 100.0%) and lowest among tertiary-educated respondents (102; 67.1%) ($\chi^2 = 53.342$, $p < 0.001$). Employment status was also significant ($\chi^2 = 10.098$, $p = 0.006$), with higher utilisation among the unemployed (49; 89.1%) compared to students (37; 64.9%).

Income was a strong determinant ($\chi^2 = 20.803$, $p < 0.001$) of utilisation with those earning ≤₦50,000 having greater PHC use (217; 85.4%) than those earning above ₦50,000 (82; 65.1%). Although bivariate analysis showed no statistically significant association between sex and PHC utilisation ($p = 0.116$), females reported slightly higher usage (191; 81.3%) than males (108; 74.5%). However, in the multivariate model, females were significantly more likely to use PHC services compared to males (OR = 2.703; 95% CI: 1.423–5.128; $p = 0.002$). Similarly, respondents under 40 years of age had significantly lower odds of utilising PHC services compared to those aged 40 and above (OR = 0.294; 95% CI: 0.129–0.667; $p = 0.003$).

Educational level remained a strong predictor of PHC utilisation. Respondents with non-tertiary education (i.e., primary or secondary) were over three times more likely to utilise PHC than those with tertiary education (OR = 3.542; 95% CI: 1.790–7.008; $p < 0.001$). Notably, none of the six participants without formal education reported using PHC services, though their small number limited statistical inference.

Similarly, income was a significant determinant of PHC utilisation with those earning ₦50,000 or less being over three times more likely to use PHC services compared to higher-income earners (OR = 3.178; 95% CI: 1.789–5.644; $p < 0.001$).

Marital and employment status were not significantly associated with PHC utilisation in the adjusted model ($p > 0.05$).

Table 1: Sociodemographic characteristics of the study participants

Variables	Frequency (n=380)	Percentage (%)
Age (years)		
18 - <20	31	8.2
20 - <30	125	32.9
30 - <40	92	24.2
40 - <50	63	16.6
≥50	69	18.1
Mean Age (± S.D)	**35.1 ±13.8**	
Sex		
Male	145	38.2
Female	235	61.8
Marital Status		
Single	162	42.6
Married	187	49.2
Divorced	6	1.6
Widowed	25	6.6
Highest Level of Education		
Primary	56	14.7
Secondary	166	44.7
Tertiary	152	40.0
No formal education	6	1.6
Occupation		
Employed	268	70.5
Unemployed	55	14.5
Schooling	57	15.0
Monthly Income (₦)		
<30,000	173	45.6
30,000-<50,000	81	21.3
50,000-<100,000	82	21.6
≥100,000	44	11.5

Table 2: Prevalence of PHC utilisation

Variables	**Frequency (n=380)**	**Percentage** (%)
Ever visited a PHC		
Yes	299	78.7
No	81	21.3
Time of last visit		
Less than a month	43	11.3
1-6 months	92	24.2
More than 6 months	164	43.2
Never	81	21.3

Table 3: Factors associated with PHC utilisation

Variables	PHC utilisation		OR (95% CI)	χ^2	p-value
	Yes (n = 299) n (%)	No (n=81) n (%)			
Age					
18 - <20	31 (100.0)	0 (0.0)		Fischer's exact	<0.001*
20 - <30	99 (79.2)	26 (20.8)			
30 - <40	56 (60.9)	36 (39.1)			
40 - <50	63 (100.0)	0 (0.0)			
≥50	50 (72.5)	19 (27.5)			
Sex					
Male	108 (74.5)	37 (25.5)	0.672 (0.409-1.105)	2.468	0.116
Female	191 (81.3)	44 (18.7)			
Marital Status					
Single	112 (69.1)	50 (30.9)		Fischer's exact	<0.001*
Married	162 (86.6)	25 (13.4)			
Divorced	0 (0.0)	6 (100.0)			
Widowed	25 (100.0)	0 (0.0)			
Level of education					
No formal education	0 (0.0)	6 (100.0)		Fischer's exact	<0.001*
Primary Education	56 (100.0)	0 (0.0)			
Secondary Education	141 (84.9)	25 (15.1)			
Tertiary Education	102 (67.1)	50 (32.9)			
Employment status					
Employed	213 (79.5)	55 (20.5)		10.098	0.006*
Unemployed	49 (89.1)	6 (10.9)			
Schooling	37 (64.9)	20 (35.1)			
Monthly Income (₦)					
≤50,000	217 (85.4)	37 (15.6)	3.147 (1.898 – 5.218)	20.803	<0.001*
>50,000	82 (65.1)	44 (34.9)			

*** Significant**

Table 4: Predictors of PHC utilization

Predictors	β (Regression co-efficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)					
<40	-1.225	0.294	0.129	0.667	0.003**
≥ 40*		1			
Sex					
Female	0.994	2.703	1.423	5.128	0.002**
Male*		1			
Marital Status					
Never married	-0.120	0.887	0.429	1.834	0.746
Ever married*		1			
Level of education					
Non-tertiary	1.265	3.542	1.790	7.008	<0.001**
Tertiary*		1			
Employment					
Employed	0.197	1.217	0.628	2.359	0.560
Student/Unemployed*		1			
Monthly income (₦)					
≤50,000	1.156	3.178	1.789	5.644	<0.001**
>50,000*		1			

**Reference category, ** Statistically significant, R^2 = 13.9% - 21.6%*

Discussion

Although there was a high rate of primary healthcare (PHC) utilisation among residents of Ovia North East LGA, the use of PHC services was not evenly distributed across demographic groups, highlighting the influence of socioeconomic and individual-level factors in shaping healthcare-seeking behaviour. The levels of PHC utilisation observed in our study are comparable to those reported in a study conducted in Kaduna, where nearly all respondents utilised PHC services.[18] This similarity may reflect improvements in PHC development across both regions. While the rate reported in Kaduna is somewhat higher, such variation across regions may be influenced by contextual differences in healthcare delivery models, health awareness, or community engagement, which were not directly examined in this study. Nonetheless, the high uptake in both settings reinforces the relevance of PHC in meeting population-level healthcare needs in Nigeria. Future research comparing system-level drivers such as service availability, accessibility, and perceived quality would provide clearer insight into regional utilisation disparities.

Age emerged as a significant determinant of PHC utilisation. While younger adults may seek care more frequently due to reproductive health needs and greater exposure to health messaging via schools or youth-targeted programmes, the decline observed among middle-aged individuals may stem from time constraints, work-related responsibilities, or a preference for private healthcare perceived as faster or

more effective.[19,20] Cultural norms that equate midlife with strength and self-reliance may also discourage formal healthcare use during this stage. This suggests a need for more flexible, workplace-friendly PHC services and community-based sensitisation that normalises routine care-seeking in mid-adulthood.

Gender differences were also evident, with females significantly more likely to utilise PHC services than males, aligning with broader evidence suggesting that women, due to maternal health responsibilities and greater interaction with the health system, are more frequent users of PHC.[21] Their frequent contact with the healthcare system for antenatal care, family planning, and child health services highlights the central role of maternal health responsibilities in shaping PHC engagement among women.

Marital status was significantly associated with PHC utilisation, with higher usage among married and widowed respondents. This likely reflects increased demand for maternal and reproductive health services, which our study identified as the main reason for PHC use.

While almost all respondents with only primary education utilised PHC services, utilisation declined progressively with higher education levels, with individuals without tertiary education being three times more likely to use PHC services than those with tertiary education. This contrasts with studies showing higher utilisation among more educated individuals, likely due to health literacy and awareness.[18,22] The inverse trend in this setting may reflect differences in health-seeking preferences or facility choice, with more educated individuals possibly opting for private or specialist care. However, this study did not assess the types of health conditions prompting PHC use, so it remains unclear whether the nature of health needs differs significantly across educational levels. Further research is warranted to understand the motivations and constraints driving PHC choices across different educational groups.

Income emerged as a significant predictor of PHC utilisation, with lower-income individuals demonstrating higher levels of use compared to their higher-income counterparts. These findings mirror trends observed in other studies, where affordability makes PHC a preferred option for low-income groups.[17] Although this study did not explore reasons for utilisation, the observed pattern reinforces the relevance of PHC as a vital access point for underserved populations. Strengthening the quality and reach of PHC services remains essential to ensure that these facilities can continue to meet the needs of economically vulnerable groups.

Conclusion

This study revealed high PHC utilisation in Ovia North East, particularly among older adults, lower-income earners, and those with less education. However, lower uptake among middle-aged and more educated groups suggests disparities in healthcare preferences. Addressing this requires further investigation into the motivations and perceptions influencing healthcare choices, especially among underutilising subgroups, alongside sustained efforts to strengthen PHC quality and responsiveness across all demographic strata.

Limitations

No further diagnostic or confirmatory tools were used to confirm or refute the crude findings generated from the used General Health Questionnaire and as such, the prevalence and determinants of utilisation of primary health care may be over or under-reported. The lack of qualitative components, such as facility data, key informant interviews (KIIs), or focus group discussions (FGDs), limited deeper exploration of contextual factors influencing utilisation. A mixed-methods approach would have provided more comprehensive insights.

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