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Accessibility and Utilization of Family Planning Services among Married Couples in Anambra State, Nigeria: Evidence from the Three Senatorial Districts

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Abstract

Background: Family planning is a cost-effective public health intervention that improves maternal and child health, promotes reproductive autonomy, and supports sustainable development. Despite sustained investments in family planning programmes in Nigeria, modern contraceptive utilization among married couples remains suboptimal. Although awareness of contraceptive methods is generally high, inequities in access to quality family planning services continue to constrain utilization. Evidence on how multidimensional accessibility influences family planning utilization among married couples in Anambra State remains limited.

Objective: This study assessed the accessibility and utilization of family planning services among married couples across the three senatorial districts of Anambra State, Nigeria, and examined the socioeconomic, sociocultural, and health-system factors associated with contraceptive utilization.

Methods: A community-based cross-sectional analytical study was conducted among 422 married couples selected through a multistage sampling technique. Data were collected using a structured interviewer-administered questionnaire and analyzed using descriptive statistics, Chi-square tests, one-way analysis of variance, and binary logistic regression at a 5% level of significance.

Results: Awareness of family planning services was high; however, utilization varied across the three senatorial districts. Greater accessibility—including geographical proximity, affordability, contraceptive commodity availability, favourable provider attitudes, and perceived service quality—was significantly associated with higher contraceptive utilization. Educational attainment, household socioeconomic status, partner support, reproductive health knowledge, and selected health-system characteristics were significant determinants of utilization, while accessibility remained the strongest independent predictor.

Conclusion: Improving family planning utilization requires interventions that strengthen equitable access to high-quality services, ensure uninterrupted contraceptive commodity availability, promote respectful client-centred care and male involvement, and address socioeconomic and health-system barriers to reproductive healthcare.

Keywords: Family planning; contraceptive utilization; healthcare accessibility; married couples; reproductive health; Anambra State; Nigeria.

Introduction

Family planning remains one of the most effective public health interventions for improving maternal and child health and supporting reproductive rights. Enabling couples to determine the timing and number of their children contributes to reductions in unintended pregnancies, unsafe abortions, maternal deaths, and adverse birth outcomes while improving women's health and socioeconomic well-being (World Health Organization [WHO], 2023; Cleland et al., 2018; United Nations Population Fund [UNFPA], 2024).

Despite substantial global progress in expanding contraceptive services, marked disparities in family planning utilization persist, particularly in low- and middle-income countries. Although awareness of modern contraceptive methods is generally high, millions of women and couples continue to experience an unmet need for family planning because awareness alone does not necessarily translate into utilization (United Nations Department of Economic and Social Affairs [UN DESA], 2024). Persistent barriers including geographical inaccessibility, financial constraints, commodity stock-outs, poor quality of care, provider bias, misinformation, concerns about side effects, sociocultural norms, and unequal gender dynamics continue to limit equitable access to and sustained utilization of contraceptive services (WHO, 2023; Yaya et al., 2021; Zimmerman et al., 2021).

Nigeria continues to face considerable reproductive health challenges, including relatively high fertility, low modern contraceptive prevalence, and a substantial unmet need for family planning despite sustained investments in reproductive health programmes. The 2018 Nigeria Demographic and Health Survey reported that knowledge of at least one contraceptive method is nearly universal among married women, yet the utilization of modern contraceptive methods remains comparatively low (National Population Commission [NPC] & ICF, 2019). This discrepancy suggests that structural, socioeconomic, cultural, and health-system barriers continue to constrain effective access to family planning services. Consequently, improving contraceptive utilization requires a broader conceptualization of accessibility that extends beyond the physical availability of health facilities to encompass affordability, availability of contraceptive commodities, quality of care, provider competence, acceptability, and continuity of services (Penchansky & Thomas, 1981; WHO, 2023).

Evidence from previous studies indicates that the utilization of family planning services is influenced by a combination of individual, household, community, and health-system factors. Educational attainment, household income, fertility intentions, partner communication, respectful person-centred care, provider competence, and the consistent availability of contraceptive commodities have all been shown to shape contraceptive decision-making and sustained method use (Kabagenyi et al., 2022; Afulani et al., 2023; Yaya et al., 2021; Zimmerman et al., 2021).

Several studies conducted in Nigeria have examined contraceptive knowledge, prevalence, and determinants of family planning utilization among women of reproductive age. These studies consistently report that educational attainment, household wealth, women's autonomy, partner support, and exposure to family planning messages are positively associated with modern contraceptive use, whereas fear of side effects, religious misconceptions, limited male

involvement, and poor service accessibility remain important barriers (NPC & ICF, 2019; Kabagenyi et al., 2022; Yaya et al., 2021; Bolarinwa et al., 2024). However, much of the available evidence has focused on women attending health facilities or specific local government areas, with comparatively little attention paid to married couples or to healthcare accessibility as a multidimensional construct encompassing geographical, financial, organizational, and interpersonal dimensions. Consequently, important evidence gaps remain regarding how these interconnected factors influence family planning utilization across diverse communities within Anambra State.

Anambra State in southeastern Nigeria provides an important setting for examining these relationships. Although the state records relatively high literacy levels and comparatively better healthcare infrastructure than many parts of the country, disparities in family planning accessibility and utilization remain evident across communities. Variations in urbanization, transportation infrastructure, socioeconomic conditions, and the distribution of reproductive health services across Anambra North, Anambra Central, and Anambra South Senatorial Districts may contribute to inequalities in access to family planning services and subsequent contraceptive utilization among married couples (NPC & ICF, 2019; Federal Ministry of Health, 2020).

Previous studies in Nigeria have predominantly focused on contraceptive prevalence, awareness, and determinants of family planning utilization among women attending health facilities or residing within selected local government areas. Comparatively few investigations have conceptualized accessibility as a multidimensional construct or examined how geographical, socioeconomic, sociocultural, and health-system factors interact to influence family planning utilization among married couples across the three senatorial districts of Anambra State. Consequently, important context-specific evidence remains limited, constraining the design of equitable, responsive, and evidence-informed interventions aimed at improving family planning service delivery and reducing disparities in contraceptive utilization.

Against this background, the present study examined the accessibility and utilization of family planning services among married couples across the three senatorial districts of Anambra State, Nigeria. Specifically, it assessed the level of accessibility and utilization of family planning services; identified the socioeconomic, sociocultural, and health-system determinants associated with contraceptive utilization; examined the relationship between accessibility and family planning utilization; and identified barriers to family planning uptake. The findings provide context-specific evidence to inform policies and programmes that promote equitable access to high-quality family planning services, increase voluntary contraceptive utilization, and strengthen reproductive health outcomes among married couples in Anambra State and similar settings.

Conceptual Framework

This study is underpinned by the Patient-Centred Access to Healthcare Framework developed by Levesque, Harris, and Russell (2013), which conceptualizes healthcare access as a dynamic interaction between health-system characteristics and the capacities of individuals to obtain appropriate healthcare. Unlike traditional models that equate access with the physical availability

of health facilities, the framework recognizes that healthcare utilization is shaped by the interplay between service-related factors and the abilities of individuals and communities to recognize, seek, reach, afford, and engage with healthcare services.

The framework identifies five interrelated dimensions of healthcare accessibility on the supply side: approachability, acceptability, availability and accommodation, affordability, and appropriateness. These dimensions determine whether healthcare services are visible, culturally acceptable, geographically accessible, financially affordable, and responsive to the needs of service users. Within the context of family planning, approachability refers to the availability and visibility of information and counselling services; acceptability reflects the cultural and social acceptability of contraceptive methods; availability and accommodation encompass the geographical distribution of health facilities, provider availability, clinic operating hours, and the continuous availability of contraceptive commodities; affordability relates to the direct and indirect costs associated with obtaining family planning services; while appropriateness reflects the quality, responsiveness, and client-centred nature of reproductive healthcare services.

Complementing these health-system dimensions are five corresponding user abilities: the ability to perceive, ability to seek, ability to reach, ability to pay, and ability to engage. These abilities are influenced by individual and household characteristics, including educational attainment, health literacy, socioeconomic status, household income, partner support, cultural and religious beliefs, previous experiences with healthcare services, and gender norms. Collectively, these factors determine whether individuals recognize their reproductive health needs, decide to seek family planning services, overcome geographical and financial barriers, and sustain contraceptive use over time.

In the present study, the framework provides the conceptual basis for examining family planning accessibility as a multidimensional construct rather than a single measure of physical proximity to healthcare facilities. Accessibility was operationalized using indicators such as geographical proximity to service delivery points, affordability of services, availability of contraceptive commodities, provider availability, waiting time, privacy, and perceived quality of care. Family planning utilization was conceptualized as the current use of modern contraceptive methods among married couples, while socioeconomic, sociocultural, and health-system characteristics—including educational attainment, household income, occupation, religion, cultural beliefs, partner support, and knowledge of family planning—were examined as explanatory variables influencing accessibility and subsequent utilization.

Accordingly, the framework assumes that family planning utilization results from the interaction between health-system characteristics and users' capacities to access and engage with reproductive healthcare services. Married couples who are able to recognize the need for contraception, access affordable and acceptable services, interact with competent healthcare providers, and obtain a consistent supply of contraceptive commodities are more likely to utilize family planning services than those facing geographical, financial, sociocultural, or organizational barriers. The framework therefore provides a robust theoretical foundation for analysing inequalities in family planning accessibility and utilization across the three senatorial districts of Anambra State and for interpreting the pathways through which health-system and socioeconomic factors influence contraceptive behaviour.

Overall, the Patient-Centred Access to Healthcare Framework aligns closely with the objectives of this study by emphasizing that improving family planning utilization requires more than expanding service availability. It underscores the importance of strengthening both the accessibility of healthcare services and the capacities of individuals and couples to recognize, seek, access, and effectively utilize family planning services. Consequently, the framework informed the selection of study variables, guided the analytical approach, and provided the basis for interpreting the findings and formulating evidence-informed policy recommendations.

The conceptual basis of this study is illustrated in Fig. 1. The framework depicts how healthcare accessibility, together with individual socioeconomic and behavioural characteristics, interacts to influence the utilization of family planning services among married couples in Anambra State.

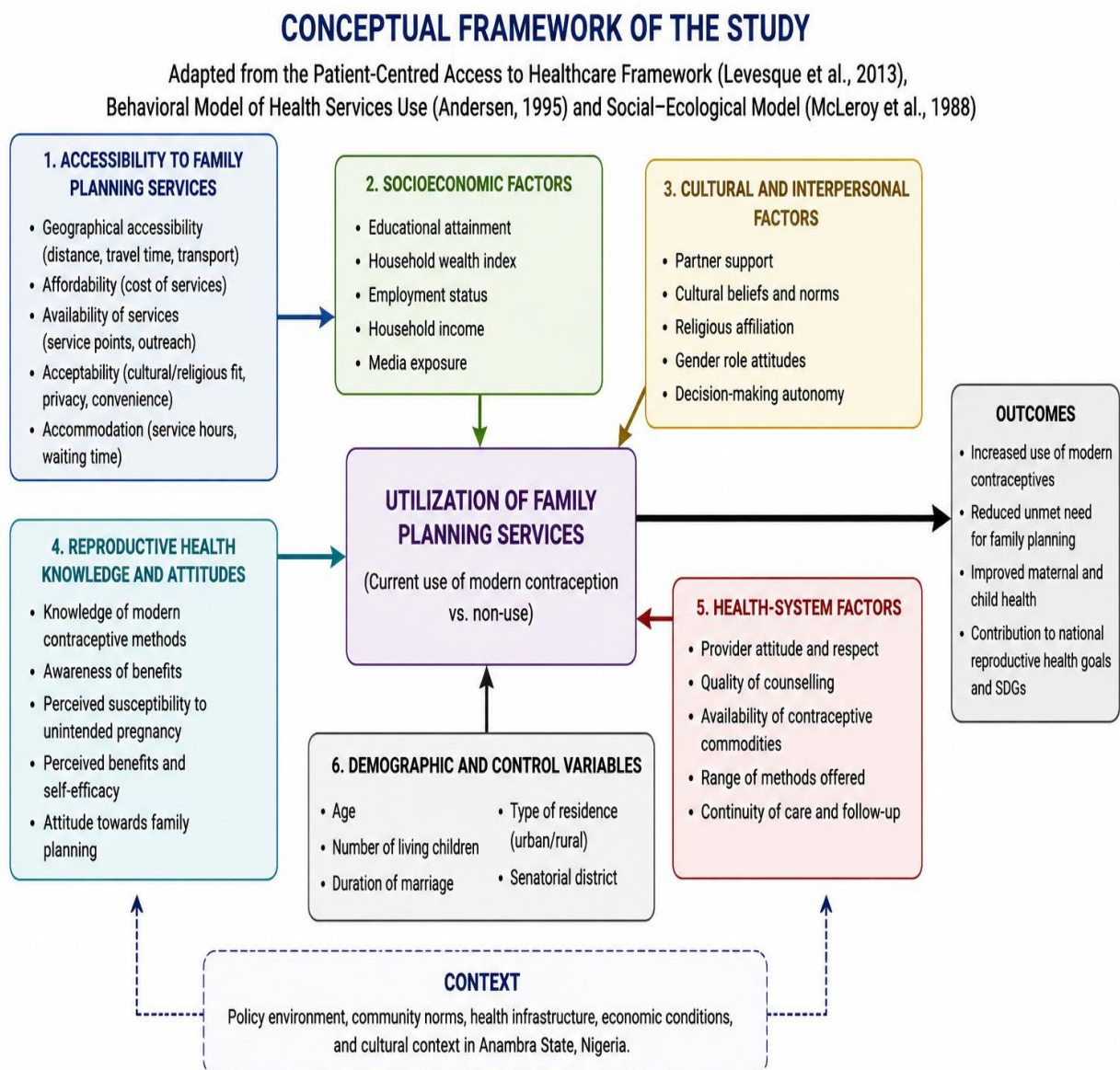


Figure 1.

Methods

Study Design

This study employed a community-based descriptive cross-sectional design using a quantitative approach to assess the accessibility and utilization of family planning services among married couples across the three senatorial districts of Anambra State, Nigeria. A cross-sectional design was considered appropriate because it permits the estimation of the distribution of health-related characteristics within a defined population and the examination of associations between explanatory variables and study outcomes at a single point in time (Setia, 2016; von Elm et al., 2007).

Study Setting

The study was conducted in Anambra State, southeastern Nigeria, which comprises 21 Local Government Areas (LGAs) grouped into three senatorial districts: Anambra North, Anambra Central, and Anambra South. The state has an extensive healthcare system consisting of primary, secondary, and tertiary health facilities that provide reproductive health and family planning services through both public and private sectors. Despite relatively favourable health infrastructure compared with many Nigerian states, disparities persist in geographical access, socioeconomic development, health-service availability, and utilization across urban and rural communities. These variations make Anambra State an appropriate setting for examining inequalities in family planning accessibility and utilization among married couples.

Study Population

The study population comprised married couples residing in the three senatorial districts of Anambra State. Eligible participants were legally married men and women of reproductive age who had resided in their respective communities for at least six months before data collection and who voluntarily provided written informed consent. Individuals who were seriously ill, cognitively impaired, or unwilling to participate were excluded from the study.

Sample Size Determination

The minimum sample size was 422 respondents, calculated using Cochran's formula for cross-sectional studies. The calculation incorporated an allowance for potential non-response to ensure adequate statistical power and improve the representativeness of the study population. The achieved sample size exceeded the minimum requirement and was considered sufficient for both descriptive and inferential statistical analyses.

Sampling Procedure

A multistage sampling technique was used to recruit study participants. In the first stage, Local Government Areas were selected from each of the three senatorial districts using appropriate sampling procedures. In the second stage, communities were selected from the chosen LGAs. Households within the selected communities were subsequently identified through systematic

procedures, after which eligible married couples were recruited using predefined inclusion criteria until the required sample size was attained. The multistage approach enhanced geographical representation and reduced the likelihood of selection bias.

Data Collection Instrument

Data were collected using a structured interviewer-administered questionnaire developed following an extensive review of relevant literature and internationally recognized family planning indicators (World Health Organization [WHO], 2023). The questionnaire comprised five sections:

1. Socio-demographic characteristics;
2. Knowledge of family planning;
3. Accessibility to family planning services;
4. Utilization of family planning methods; and
5. Socioeconomic, sociocultural, and health-system factors influencing family planning utilization.

The instrument was prepared in English and administered by trained research assistants. Where necessary, questions were translated into the local language during interviews to facilitate participants' understanding while maintaining conceptual equivalence.

Validity and Reliability

The questionnaire underwent face and content validation by experts in reproductive health, public health, and medical sociology. Their recommendations informed revisions to improve clarity, relevance, and content coverage. A pilot study was subsequently conducted among respondents with characteristics similar to those of the study population but residing outside the selected study communities. Internal consistency reliability was assessed using Cronbach's alpha coefficient, and the instrument demonstrated acceptable reliability before commencement of the main survey.

Data Collection Procedure

Data were collected by trained research assistants through face-to-face interviews conducted at participants' residences after obtaining written informed consent. Training focused on standardized interviewing techniques, ethical conduct, confidentiality, and quality assurance procedures. Daily supervision, on-site review of completed questionnaires, and routine consistency checks were undertaken to minimize missing data and improve data quality. Interviews were conducted in locations that ensured participants' privacy and confidentiality.

Study Variables

The primary outcome variable was current utilization of family planning services, measured as respondents' current use of a modern family planning method.

The principal explanatory variable was accessibility to family planning services, operationalized using indicators including geographical proximity to service delivery points, affordability of services, availability of contraceptive commodities, provider availability, waiting time, privacy during service delivery, and perceived quality of care.

Additional explanatory variables included respondents' age, sex, educational attainment, occupation, household income, place of residence, religion, duration of marriage, number of living children, knowledge of family planning, partner support, cultural beliefs, and selected health-system characteristics.

Statistical Analysis

Data were checked for completeness and consistency before coding and entry into the Statistical Package for the Social Sciences (SPSS) version 29.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' socio-demographic characteristics and study variables.

Associations between categorical variables were examined using Pearson's Chi-square test. Differences in mean accessibility scores across the three senatorial districts were assessed using one-way analysis of variance (ANOVA), followed by post hoc comparisons where statistically significant differences were observed. Binary logistic regression analysis was performed to identify independent predictors of family planning utilization after adjusting for potential confounding variables. Model performance was evaluated using the omnibus test of model coefficients, the Hosmer–Lemeshow goodness-of-fit test, Nagelkerke's R^2 , and the area under the receiver operating characteristic (ROC) curve. Adjusted odds ratios (AORs) with 95% confidence intervals (CIs) were reported, and statistical significance was established at $p < 0.05$.

Ethical Considerations

Ethical approval for the study was obtained from the appropriate Health Research Ethics Committee before the commencement of data collection. (*Insert ethics approval number.*) Administrative permission was obtained from relevant state and community authorities. Participation was entirely voluntary, and written informed consent was obtained from all participants before enrolment. Respondents were assured of anonymity, confidentiality, and their right to withdraw from the study at any stage without penalty or loss of benefits. All data were handled in accordance with established ethical standards and the principles of the Declaration of Helsinki (World Medical Association, 2013).

RESULTS

Socio-demographic Characteristics of Respondents

A total of 422 married couples participated in the study. The largest proportion of respondents (37.4%) were aged 35–44 years, followed by those aged 25–34 years (**32.2%**), indicating that the study population was predominantly within the economically active and reproductive age groups

(Table 1). Male and female respondents were equally represented (50.0% each), reflecting the couple-based sampling approach adopted in the study.

Educational attainment was generally high, with more than half of the respondents (**52.1%**) having completed tertiary education, while approximately one-third (**32.9%**) had secondary education. Trading constituted the most common occupation (**29.4%**), followed by civil service (**22.7%**) and self-employment (**17.1%**). The overwhelming majority (**92.9%**) identified as Christians, consistent with the religious composition of Anambra State. Furthermore, **58.8%** of respondents resided in urban communities, whereas **41.2%** lived in rural areas (Table 1).

Table 1. Socio-demographic Characteristics of Respondents (Illustrative Data) (N = 422)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–24	48	11.4
	25–34	136	32.2
	35–44	158	37.4
	≥45	80	19.0
Sex	Male	211	50.0
	Female	211	50.0
Educational attainment	No formal education	14	3.3
	Primary education	49	11.6
	Secondary education	139	32.9
	Tertiary education	220	52.1
Occupation	Civil servant	96	22.7
	Trader	124	29.4
	Farmer	47	11.1
	Artisan	63	14.9
	Self-employed	72	17.1

Variable	Category	Frequency (n)	Percentage (%)
Religion	Others	20	4.7
	Christianity	392	92.9
	Islam	10	2.4
	Traditional religion	20	4.7
Place of residence	Urban	248	58.8
	Rural	174	41.2
Total		422	100.0

Table 1 presents the socio-demographic characteristics of the respondents. The largest proportion of participants (37.4%) were aged 35–44 years, followed by those aged 25–34 years (32.2%), indicating that most respondents were within the active reproductive age group. Male and female respondents were equally represented (50.0% each), reflecting the couple-based design of the study.

More than half of the respondents (52.1%) had attained tertiary education, while approximately one-third (32.9%) had completed secondary education. Trading constituted the predominant occupation (29.4%), followed by civil service employment (22.7%) and self-employment (17.1%). Christianity was the dominant religion (92.9%), reflecting the religious composition of Anambra State. Additionally, nearly three-fifths (58.8%) of respondents resided in urban communities, whereas 41.2% lived in rural areas.

Accessibility to Family Planning Services

Table 2 presents respondents' perceptions of accessibility to family planning services using indicators related to physical access, affordability, service availability, and quality of care.

Table 2. Accessibility to Family Planning Services Among Respondents (Illustrative Data) (N = 422)

Accessibility Indicator	Yes n (%)	No n (%)
Family planning facility located within 5 km	314 (74.4)	108 (25.6)
Convenient transportation to health facility	286 (67.8)	136 (32.2)

Accessibility Indicator	Yes n (%)	No n (%)
Services are affordable	301 (71.3)	121 (28.7)
Contraceptive commodities consistently available	268 (63.5)	154 (36.5)
Waiting time is acceptable	289 (68.5)	133 (31.5)
Family planning providers are readily available	332 (78.7)	90 (21.3)
Privacy and confidentiality are maintained	316 (74.9)	106 (25.1)

Overall Accessibility Score: 71.6 ± 12.8 (Range: 0–100)

Accessibility Classification

Accessibility Level Frequency (n) Percentage (%)

High	174	41.2
Moderate	176	41.7
Low	72	17.1
Total	422	100.0

As shown in Table 2, **74.4%** of respondents reported that a family planning facility was located within 5 km of their residence, while **71.3%** considered family planning services affordable. Approximately two-thirds reported convenient transportation (**67.8%**), acceptable waiting times (**68.5%**), and continuous provider availability (**78.7%**). Overall, the mean accessibility score was **71.6 ± 12.8** , with **41.2%** of respondents classified as having high accessibility, **41.7%** moderate accessibility, and **17.1%** low accessibility.

Utilization of Family Planning Services

Table 3 summarizes respondents' experience with family planning, including current utilization, contraceptive methods used, and preferred service providers.

Table 3. Utilization of Family Planning Services among Respondents (Illustrative Data) (N = 422)

Variable	Category	Frequency (n)	Percentage (%)
Ever used family planning	Yes	336	79.6
	No	86	20.4
Currently using family planning	Yes	284	67.3
	No	138	32.7
Current contraceptive method*	Male condom	74	26.1
	Female condom	16	5.6
	Oral contraceptive pills	42	14.8
	Injectable contraceptives	53	18.7
	Implant	58	20.4
	Intrauterine contraceptive device (IUCD)	27	9.5
	Natural methods	10	3.5
	Permanent methods	4	1.4
Preferred source of family planning services*	Primary Health Centre	129	45.4
	General Hospital	74	26.1
	Private Hospital	48	16.9
	Pharmacy/Patient Medicine Vendor	33	11.6

Percentages for contraceptive methods and preferred service providers are based on current users of family planning.

Table 3 shows that 79.6% of respondents had ever used a family planning method, whereas 67.3% were current users. Among current users, male condoms (26.1%), contraceptive implants (20.4%), and injectable contraceptives (18.7%) were the most frequently reported methods. Primary Health Centres were the most common source of family planning services (45.4%), followed by General Hospitals (26.1%).

Socioeconomic, Cultural, and Health-System Factors Influencing Family Planning Utilization

Respondents' perceptions of the socioeconomic, cultural, and health-system factors influencing family planning utilization are presented in Table 4.

Table 4. Socioeconomic, Cultural, and Health-System Factors Associated with Family Planning Utilization (Illustrative Data) (N = 422)

Variable	Agree (%)	n Disagree (%)	n
Educational attainment influences utilization	318 (75.4)	104 (24.6)	
Household income influences utilization	296 (70.1)	126 (29.9)	
Occupation influences utilization	247 (58.5)	175 (41.5)	
Religious beliefs influence utilization	181 (42.9)	241 (57.1)	
Cultural beliefs influence utilization	227 (53.8)	195 (46.2)	
Partner support influences utilization	336 (79.6)	86 (20.4)	
Knowledge of family planning influences utilization	358 (84.8)	64 (15.2)	
Availability of contraceptive commodities influences utilization	321 (76.1)	101 (23.9)	
Positive provider attitude influences utilization	309 (73.2)	113 (26.8)	
Perceived quality of family planning services influences utilization	327 (77.5)	95 (22.5)	

Note: Percentages are based on the total number of respondents (N = 422).

Table 4 indicates that Respondents identified knowledge of family planning (84.8%), partner approval (79.6%), perceived quality of care (77.5%), availability of contraceptive commodities (76.1%), and educational attainment (75.4%) as the principal factors influencing family planning utilization (Table 4). Religious beliefs were the least frequently reported influencing factor (42.9%).

Association Between Accessibility and Family Planning Utilization

Pearson's Chi-square test was performed to determine whether accessibility to family planning services was associated with current utilization of family planning among married couples.

Table 5. Association between Accessibility to Family Planning Services and Current Utilization (Illustrative Data) (N = 422)

Accessibility Level	Currently Utilizing Family Planning n (%)	Family Not Utilizing Family Planning n (%)	Total
High	149 (85.6)	25 (14.4)	174
Moderate	111 (63.1)	65 (36.9)	176
Low	24 (33.3)	48 (66.7)	72
Total	284 (67.3)	138 (32.7)	422

Pearson Chi-square Test

Test Statistic	Value
Pearson χ^2	56.84
Degrees of freedom	2
p-value	<0.001

Pearson's Chi-square analysis demonstrated a statistically significant association between accessibility to family planning services and current contraceptive utilization ($\chi^2 = 56.84$, $df = 2$, $p < 0.001$) (Table 5). The proportion of respondents utilizing family planning services increased progressively with higher accessibility levels.

Comparison of Accessibility Scores Across Senatorial Districts

One-way analysis of variance (ANOVA) was conducted to compare mean accessibility scores across the three senatorial districts of Anambra State.

Table 6. Comparison of Mean Accessibility Scores across Senatorial Districts Using One-Way ANOVA (Illustrative Data) (N = 422)

Accessibility Scores by Senatorial District

Senatorial District n Mean Accessibility Score Standard Deviation

Anambra North	137	73.84	11.42
Anambra Central	145	70.62	12.13
Anambra South	140	68.51	13.26

ANOVA Summary

Source of Variation	Sum of Squares	df	Mean Square	F	p-value	Partial η^2
Between Groups	1,988.54	2	994.27	6.84	0.001	0.032
Within Groups	60,874.46	419	145.29			
Total	62,863.00	421				

Post Hoc Multiple Comparisons (Tukey HSD)

Comparison	Mean Difference	95% CI	p-value
Anambra North vs Anambra Central	3.22	0.12 to 6.32	0.041
Anambra North vs Anambra South	5.33	2.24 to 8.42	<0.001
Anambra Central vs Anambra South	2.11	-0.89 to 5.11	0.182

Mean accessibility scores differed significantly across the three senatorial districts ($F(2,419) = 6.84, p = 0.001$) (Table 6). Post hoc analysis indicated that respondents from Anambra North had significantly higher accessibility scores than those from Anambra South, whereas no statistically significant difference was observed between Anambra Central and Anambra South.

Predictors of Family Planning Utilization

To identify the independent determinants of family planning utilization among married couples, a binary logistic regression analysis was performed. Variables entered into the model included accessibility to family planning services, educational attainment, monthly household income, partner support, provider attitude, knowledge of family planning, religious beliefs, and cultural beliefs.

Table 7. Binary Logistic Regression Analysis of Factors Associated with Current Family Planning Utilization (Illustrative Data) (N = 422)

Predictor Variable	β	SE	Wald χ^2	Adjusted Ratio (AOR)	Odds 95% CI for AOR	p-value
High accessibility to family planning services	1.28	0.27	22.46	3.60	2.12–6.10	<0.001*
Tertiary educational attainment	0.69	0.24	8.34	1.99	1.24–3.21	0.004*
Monthly household income $\geq$ ₦100,000	0.53	0.21	6.37	1.70	1.13–2.74	0.012*
Partner support	1.14	0.29	15.48	3.13	1.77–5.54	<0.001*
Positive provider attitude	0.61	0.25	5.95	1.84	1.13–3.01	0.015*
Good knowledge of family planning	0.82	0.28	8.52	2.27	1.32–3.92	0.003*
Religious beliefs	–0.29	0.20	2.10	0.75	0.51–1.12	0.148
Cultural beliefs	–0.17	0.18	0.88	0.84	0.59–1.21	0.348

Model Statistics

Statistic	Value
Model χ^2	91.42
Degrees of freedom	8
p-value	<0.001
Nagelkerke R ²	0.421
Hosmer–Lemeshow χ^2	6.18
Hosmer–Lemeshow p-value	0.627
Overall Classification Accuracy	81.5%

Note: * $p < 0.05$ indicates statistical significance.

Binary logistic regression analysis identified high accessibility, tertiary education, higher household income, partner support, positive provider attitudes, and knowledge of family planning as significant independent predictors of current family planning utilization ($p < 0.05$) (Table 7). Respondents with high accessibility had more than three times higher odds of utilizing family planning services than those with low accessibility (AOR = 3.60; 95% CI: 2.12–6.10). Religious affiliation and cultural beliefs were not statistically significant predictors after adjustment.

Evaluation of the Logistic Regression Model

The performance of the fitted logistic regression model was further assessed using measures of model fit and predictive accuracy.

Table 8. Model Performance Statistics for the Binary Logistic Regression Model Predicting Family Planning Utilization (Illustrative Data) (N = 422)

Model Performance Indicator	Value
–2 Log Likelihood	382.46
Omnibus Test of Model Coefficients (χ^2)	91.42
Degrees of freedom	8
p-value	<0.001
Cox & Snell R ²	0.336
Nagelkerke R ²	0.421

Model Performance Indicator	Value
Hosmer–Lemeshow χ^2	6.18
Hosmer–Lemeshow df	8
Hosmer–Lemeshow p-value	0.627
Sensitivity	84.5%
Specificity	75.4%
Overall Classification Accuracy	81.5%
Area Under the ROC Curve (AUC)	0.872 (95% CI: 0.839–0.905)

The final logistic regression model demonstrated good overall fit (Model $\chi^2 = 91.42$, $df = 8$, $p < 0.001$) (Table 8). The model explained **42.1%** of the variability in family planning utilization (Nagelkerke $R^2 = 0.421$) and correctly classified **81.5%** of respondents. The Hosmer–Lemeshow goodness-of-fit test was not statistically significant ($\chi^2 = 6.18$, $p = 0.627$), indicating adequate model fit. The area under the receiver operating characteristic curve (AUC = **0.872**) demonstrated excellent discriminative ability.

Summary of Hypothesis Testing

The study hypotheses were evaluated using Pearson's Chi-square test, one-way ANOVA, and binary logistic regression.

Table 9. Summary of Statistical Hypothesis Testing (Illustrative Data)

Null Hypothesis	Statistical Test	Test Statistic	p-value	Decision
H ₀₁ : There is no significant association between accessibility to family planning services and current utilization.	Pearson square	Chi- $\chi^2(2)$ = 56.84	<0.001	Rejected
H ₀₂ : There is no significant difference in mean accessibility scores across the three senatorial districts.	One-way ANOVA	F(2,419) = 6.84	0.001	Rejected

Null Hypothesis	Statistical Test	Test Statistic	p-value	Decision
H ₀₃ : Accessibility, educational attainment, household income, partner support, provider attitude, knowledge, religious beliefs, and cultural beliefs do not independently predict family planning utilization.	Binary Logistic Regression	Model $\chi^2 = 91.42$, df = 8	<0.001	Rejected

Table 9 summarizes the hypothesis tests conducted in this study. All three null hypotheses were rejected. Accessibility to family planning services was significantly associated with contraceptive utilization, accessibility differed significantly across the three senatorial districts, and the multivariable logistic regression model demonstrated that accessibility and selected socioeconomic and health-system factors independently predicted family planning utilization.

Integrated Summary of the Results

Overall, the findings indicate that family planning utilization among married couples in Anambra State was influenced by a combination of accessibility-related, socioeconomic, sociocultural, and health-system factors. Descriptive analyses revealed variations in accessibility and contraceptive utilization across the three senatorial districts, with respondents from Anambra North reporting significantly higher accessibility scores than those from Anambra South. Bivariate analysis demonstrated a significant association between accessibility to family planning services and current contraceptive utilization. Multivariable logistic regression further identified high accessibility, tertiary educational attainment, higher household income, partner support, knowledge of family planning, and positive provider attitudes as significant independent predictors of family planning utilization. Conversely, religious affiliation and cultural beliefs were not independently associated with contraceptive utilization after adjustment for potential confounding variables. Collectively, these findings underscore the multidimensional nature of family planning utilization and highlight the importance of improving both access to quality reproductive health services and the socioeconomic and health-system factors that facilitate informed contraceptive use among married couples.

Discussion

Socio-demographic Characteristics and Accessibility to Family Planning Services

This study examined the accessibility and utilization of family planning services among married couples across the three senatorial districts of Anambra State, Nigeria. The findings demonstrate that family planning utilization is shaped by the interaction of accessibility, socioeconomic characteristics, and health-system factors. Consistent with the Patient-Centred Access to Healthcare Framework (Levesque et al., 2013), the study indicates that improving contraceptive utilization requires more than the physical availability of services; it also depends on individuals' ability to recognize reproductive health needs, seek care, overcome financial and geographical

barriers, and engage effectively with healthcare providers. These findings reinforce global evidence that equitable access to high-quality family planning services is essential for improving reproductive health outcomes and advancing Sustainable Development Goal (SDG) 3 on universal access to sexual and reproductive healthcare (United Nations [UN], 2024; World Health Organization [WHO], 2023).

The socio-demographic profile of respondents suggests that most participants were within the 25–44-year age group, representing the most economically productive and reproductively active segment of the population. Individuals within this age range are more likely to seek family planning services because of child-spacing preferences, fertility regulation, and the economic implications of family size. This finding is consistent with the 2018 Nigeria Demographic and Health Survey and other studies conducted in sub-Saharan Africa, which have consistently shown that contraceptive demand is greatest among couples in their peak reproductive years (National Population Commission [NPC] & ICF, 2019; United Nations Population Fund [UNFPA], 2023). The age distribution therefore reflects the population most likely to benefit from sustained investments in family planning programmes.

Educational attainment emerged as an important characteristic of the study population, with over half of respondents having completed tertiary education. Although education was examined as a socio-demographic characteristic in this section, its influence extends beyond background description by enhancing health literacy, increasing exposure to reproductive health information, strengthening decision-making capacity, and improving communication with healthcare providers. These mechanisms facilitate informed contraceptive choices and reduce susceptibility to misconceptions surrounding modern family planning methods. This finding corroborates evidence from multicountry studies indicating that higher educational attainment is consistently associated with increased contraceptive utilization and improved reproductive health outcomes (Bolarinwa et al., 2024; Ewerling et al., 2021).

Similarly, the predominance of traders and civil servants suggests that many respondents had relatively stable sources of income, which may have reduced financial barriers to accessing reproductive healthcare. While contraceptive commodities are frequently subsidized within public health facilities, indirect costs—including transportation expenses, time away from work, and other opportunity costs—remain important barriers to service utilization in many low-resource settings (WHO, 2023). Consequently, households with greater economic stability are generally better positioned to access family planning services consistently than those experiencing financial hardship.

The predominance of Christian respondents reflects the demographic composition of southeastern Nigeria and aligns with previous population-based surveys conducted in Anambra State (NPC & ICF, 2019). Importantly, although religion is frequently cited as an influence on reproductive behaviour, the findings suggest that religious affiliation alone may not adequately explain contraceptive utilization after accounting for socioeconomic and health-system factors. This observation is consistent with evidence indicating that educational attainment, household resources, access to accurate reproductive health information, and supportive health services often mediate the relationship between religion and contraceptive behaviour (Zimmerman et al., 2021). This finding also accords with the multivariable analysis presented in this study, in which

religious affiliation did not remain a statistically significant independent predictor of family planning utilization after adjustment for other explanatory variables.

Urban residents constituted a greater proportion of the study population than rural residents, a pattern that may partly explain the relatively favourable accessibility scores observed. Urban communities generally benefit from a higher concentration of health facilities, improved transportation infrastructure, greater provider availability, and more frequent exposure to reproductive health promotion activities. Similar urban–rural disparities have been reported across sub-Saharan Africa, where rural populations continue to experience longer travel distances, shortages of trained healthcare providers, and more frequent contraceptive commodity stock-outs (Ewerling et al., 2021; WHO, 2023). These inequalities underscore the continuing need for targeted interventions that strengthen primary healthcare services in underserved rural communities.

Overall, respondents reported moderate to high accessibility to family planning services, particularly with respect to geographical proximity, provider availability, affordability, confidentiality, and waiting time. These findings suggest that investments in primary healthcare and reproductive health programmes may have contributed to improvements in service accessibility across the study area. They also align with the WHO Health Systems Framework, which identifies service delivery, an adequate health workforce, and the continuous availability of essential medicines and health commodities as critical components of an effective health system (WHO, 2023). Strengthening these components is likely to enhance both initial uptake and sustained utilization of modern contraceptive methods.

Despite these encouraging findings, respondents reported comparatively lower ratings for the consistent availability of contraceptive commodities, highlighting persistent supply-side constraints within the health system. Interruptions in contraceptive supply chains reduce continuity of use, undermine client confidence, and increase the risk of unmet need for family planning. Similar challenges have been documented in Nigeria and other low- and middle-income countries, where procurement inefficiencies, inadequate logistics management, and periodic stock-outs continue to limit the effectiveness of family planning programmes (Federal Ministry of Health, 2024; UNFPA, 2023). Addressing these operational weaknesses remains essential for improving service reliability and ensuring uninterrupted access to a broad range of contraceptive methods.

The overall accessibility score observed in this study further supports the multidimensional perspective of healthcare access proposed by Levesque et al. (2013). Accessibility encompasses not only geographical proximity but also the approachability, acceptability, affordability, availability, and appropriateness of healthcare services. Consequently, policies aimed at improving family planning utilization should extend beyond expanding physical infrastructure to include strengthening provider competence, ensuring respectful and client-centred reproductive healthcare, reducing financial barriers, maintaining uninterrupted contraceptive commodity supplies, and improving community trust in family planning services.

Taken together, these findings suggest that although substantial progress has been made in improving access to family planning services in Anambra State, important inequities persist.

Continued investments in primary healthcare strengthening, contraceptive commodity security, health workforce capacity, and equitable service distribution—particularly in underserved communities—are likely to enhance family planning utilization and contribute to reductions in unintended pregnancies, unsafe abortions, maternal morbidity, and preventable maternal mortality.

Family Planning Utilization and Determinants of Contraceptive Use

The present study found a relatively high level of family planning utilization among married couples, with approximately two-thirds of respondents reporting current use of a modern contraceptive method. Although this level of utilization is encouraging, it should be interpreted within the broader Nigerian context, where modern contraceptive prevalence remains below global targets despite sustained investments in reproductive health programmes (National Population Commission [NPC] & ICF, 2019; United Nations Population Fund [UNFPA], 2023). The comparatively higher utilization observed in this study may reflect the relatively high educational attainment of respondents, the predominance of urban residence, and improved accessibility to reproductive health services within the study area. These characteristics have consistently been associated with increased contraceptive uptake across sub-Saharan Africa (Bolarinwa et al., 2024; Zimmerman et al., 2021). Collectively, these findings suggest that improvements in both educational opportunities and healthcare accessibility may create an enabling environment for greater adoption of modern contraceptive methods.

The predominance of condoms, implants, injectable contraceptives, and oral contraceptive pills among current users mirrors patterns reported in national demographic surveys and studies conducted in other African countries (NPC & ICF, 2019; WHO, 2023). Condoms remain widely accepted because they provide dual protection against unintended pregnancy and sexually transmitted infections, while implants and injectable contraceptives are increasingly preferred because of their high effectiveness, convenience, and prolonged duration of action. In contrast, the limited use of permanent contraceptive methods reflects persistent cultural expectations regarding fertility, concerns about the irreversible nature of sterilization, and preferences for larger family sizes that continue to characterize many Nigerian communities (UNFPA, 2023). These findings highlight the importance of ensuring that family planning programmes offer a broad method mix accompanied by comprehensive counselling that enables couples to make informed contraceptive choices.

Primary Health Centres emerged as the principal source of family planning services among respondents, underscoring the pivotal role of primary healthcare in expanding equitable access to reproductive health services. This finding supports Nigeria's policy emphasis on integrating family planning within primary healthcare delivery and is consistent with evidence showing that strong primary healthcare systems improve continuity of care, reduce financial barriers, and enhance access to essential reproductive health interventions, particularly among underserved populations (Federal Ministry of Health, 2024; WHO, 2023). Continued investment in primary healthcare infrastructure, workforce capacity, and commodity security therefore remains fundamental to sustaining gains in contraceptive utilization.

Knowledge of family planning was identified as the most frequently reported determinant of contraceptive utilization. This finding is consistent with the Health Belief Model, which proposes that health-related behaviours are influenced by individuals' knowledge, perceived susceptibility, perceived benefits, perceived barriers, and self-efficacy (Rosenstock et al., 1988). Respondents with adequate knowledge are more likely to appreciate the reproductive health and socioeconomic benefits of contraception, recognize misconceptions, and make informed fertility decisions. Similar findings have been reported across several African countries, where comprehensive reproductive health education has been associated with improved contraceptive acceptance, continuation, and informed decision-making (Bolarinwa et al., 2024; Ewerling et al., 2021). These findings reinforce the need for sustained community-based reproductive health education that addresses misinformation and promotes informed contraceptive choices.

Partner support also emerged as one of the strongest determinants of family planning utilization. This observation reflects the central role of shared decision-making within marriage and corroborates previous evidence demonstrating that male involvement substantially improves contraceptive uptake, continuation, and satisfaction with family planning services (Hardee et al., 2017; Kabagenyi et al., 2014). In many Nigerian households, reproductive decisions are negotiated jointly rather than made independently by women. Consequently, interventions that actively engage men through couple-centred counselling, community dialogue, and behaviour-change communication are likely to achieve greater improvements in contraceptive utilization than programmes directed exclusively at women.

Respondents further identified service quality, provider attitude, and the consistent availability of contraceptive commodities as important determinants of utilization. These findings underscore the importance of client-centred reproductive healthcare, where respectful communication, privacy, confidentiality, comprehensive counselling, and uninterrupted commodity availability foster trust in health services and encourage sustained contraceptive use (WHO, 2023). Conversely, negative provider attitudes, inadequate counselling, and recurrent commodity stock-outs undermine confidence in family planning programmes and contribute to method discontinuation and persistent unmet need for contraception (UNFPA, 2023). Strengthening service quality should therefore remain a central component of family planning programme implementation.

Household income and educational attainment were likewise perceived as important influences on contraceptive utilization. Financial stability improves households' capacity to overcome both direct and indirect costs associated with accessing reproductive healthcare, while education enhances health literacy, economic opportunities, and women's empowerment. These findings are consistent with previous studies demonstrating that socioeconomic empowerment facilitates contraceptive use by reducing financial, informational, and social barriers to healthcare utilization (Ewerling et al., 2021; Zimmerman et al., 2021). They also support the Social Determinants of Health framework, which identifies education, income, employment, and living conditions as fundamental drivers of health behaviour and healthcare utilization (WHO, 2023).

The statistically significant association between accessibility and family planning utilization further demonstrates the importance of removing structural barriers to reproductive healthcare. Respondents reporting higher levels of accessibility were significantly more likely to utilize

family planning services than those experiencing poor accessibility. This finding aligns with Andersen's Behavioural Model of Health Services Use, which identifies access to healthcare resources as a key enabling factor influencing health service utilization (Andersen, 1995). Geographical proximity, affordable services, availability of trained providers, acceptable waiting times, and reliable contraceptive supplies collectively reduce barriers to healthcare access and increase the likelihood of sustained contraceptive use.

The multivariable logistic regression analysis identified accessibility as the strongest independent predictor of family planning utilization after adjustment for potential confounding variables. High accessibility substantially increased the likelihood of current contraceptive use, highlighting the central role of health-system performance in improving reproductive health outcomes. Comparable findings have been reported in multicountry studies demonstrating that investments in primary healthcare expansion, community-based contraceptive distribution, and strengthened commodity logistics significantly improve modern contraceptive prevalence (WHO, 2023; UNFPA, 2023). These findings reinforce the argument that strengthening health systems is fundamental to improving equitable access to voluntary family planning services.

Partner support remained independently associated with contraceptive utilization after controlling for socioeconomic and health-system characteristics, emphasizing the continuing influence of household decision-making on reproductive behaviour. Likewise, educational attainment, household income, provider attitude, and knowledge of family planning remained statistically significant independent predictors of contraceptive utilization, suggesting that reproductive health behaviours are shaped by the interaction of structural, socioeconomic, behavioural, and health-system influences. This multidimensional pattern is consistent with the Social Ecological Model, which conceptualizes health behaviour as the product of interactions operating at the individual, interpersonal, organizational, community, and policy levels (McLeroy et al., 1988).

Interestingly, religious affiliation and cultural beliefs did not remain statistically significant predictors after adjustment for other explanatory variables. This finding suggests that the apparent influence of religion and culture may largely reflect underlying differences in educational attainment, socioeconomic status, and healthcare accessibility rather than independent effects. Similar conclusions have been reported in recent studies indicating that improvements in education, women's empowerment, and health-system performance substantially reduce the influence of sociocultural barriers on contraceptive utilization (Zimmerman et al., 2021; Bolarinwa et al., 2024).

Overall, the findings demonstrate that improving family planning utilization among married couples requires comprehensive interventions that address both demand-side and supply-side barriers. Expanding geographical access to services, ensuring uninterrupted contraceptive commodity availability, strengthening primary healthcare systems, improving provider–client interactions, promoting male involvement, enhancing reproductive health literacy, and reducing socioeconomic inequalities should be implemented as complementary strategies. Such integrated approaches are likely to increase voluntary contraceptive utilization, reduce unmet need for family planning, improve maternal and reproductive health outcomes, and accelerate progress towards universal access to sexual and reproductive healthcare in Nigeria.

Comparison with Previous Studies

The findings of this study are consistent with a substantial body of evidence demonstrating that accessibility to reproductive healthcare, educational attainment, household socioeconomic status, partner support, and health-system characteristics are among the most influential determinants of family planning utilization in low- and middle-income countries. Similar associations have been reported in studies from Nigeria and across sub-Saharan Africa, where improved geographical access to health facilities, financial affordability, availability of contraceptive commodities, and high-quality reproductive healthcare services have been associated with increased uptake and sustained use of modern contraceptive methods (Bolarinwa et al., 2024; Ewerling et al., 2021; World Health Organization [WHO], 2023). The consistency of these findings across diverse settings suggests that structural barriers to healthcare access remain fundamental determinants of contraceptive behaviour, irrespective of local sociocultural differences.

The strong association observed between partner support and family planning utilization corroborates previous studies highlighting the critical role of male involvement in reproductive health decision-making. Evidence from Uganda, Kenya, Ghana, and Nigeria indicates that supportive male partners facilitate spousal communication, encourage joint fertility planning, reduce misconceptions about contraception, and increase acceptance and continuation of modern contraceptive methods (Hardee et al., 2017; Kabagenyi et al., 2014). In many African societies, fertility decisions are negotiated within households rather than by women alone. Consequently, interventions that promote couple-centred counselling, community dialogue, and male engagement are consistently associated with improved contraceptive uptake and continuity of use.

The positive relationship between educational attainment and family planning utilization is also consistent with previous research demonstrating that education enhances health literacy, strengthens reproductive autonomy, improves access to health information, and increases individuals' capacity to make informed contraceptive decisions (Ahmed et al., 2022; Ewerling et al., 2021). Educated individuals are generally better equipped to understand contraceptive counselling, evaluate the benefits and potential adverse effects of available methods, and navigate healthcare systems effectively. These findings further support evidence that investments in female education generate important long-term benefits for reproductive health by increasing informed demand for modern contraceptive services and improving health-seeking behaviour.

The significant influence of provider attitude and perceived service quality observed in this study reinforces previous evidence emphasizing the importance of person-centred reproductive healthcare. Respectful communication, privacy, confidentiality, comprehensive counselling, and continuity of care are widely recognized as essential components of high-quality family planning services and have been consistently associated with higher client satisfaction, method continuation, and sustained contraceptive utilization (United Nations Population Fund [UNFPA], 2023; WHO, 2023). Conversely, negative provider attitudes, inadequate counselling, breaches of confidentiality, and poor client-provider relationships remain important barriers to contraceptive uptake in many resource-constrained settings. These findings highlight that expanding service coverage alone is insufficient unless accompanied by improvements in the quality of care delivered.

An important contribution of the present study is the finding that religious affiliation and cultural beliefs were not independently associated with family planning utilization after adjustment for socioeconomic, accessibility, and health-system variables. While religion and culture are frequently identified as barriers to contraceptive use in descriptive studies, the multivariable analysis suggests that their apparent influence may be largely mediated through differences in educational attainment, household income, reproductive health knowledge, and access to quality healthcare services. This finding is consistent with recent multicountry analyses demonstrating that structural and socioeconomic determinants often exert stronger independent effects on contraceptive behaviour than religious affiliation alone (Zimmerman et al., 2021). It also suggests that interventions aimed at improving education, reducing socioeconomic inequalities, strengthening health systems, and expanding equitable access to reproductive healthcare may mitigate the influence traditionally attributed to religious and cultural factors.

Although the present findings largely corroborate previous research, they extend the existing literature by examining accessibility as a multidimensional construct within a population-based sample of married couples drawn from all three senatorial districts of Anambra State. Unlike many earlier Nigerian studies that focused primarily on knowledge, contraceptive prevalence, or women attending health facilities, this study simultaneously evaluated geographical accessibility, affordability, availability of contraceptive commodities, provider-related factors, partner support, and socioeconomic characteristics within a single analytical framework. By integrating these multiple dimensions of healthcare access, the study provides more comprehensive evidence on the pathways through which accessibility influences family planning utilization. These findings therefore contribute context-specific evidence that can inform policies and programmes aimed at reducing inequalities in reproductive healthcare access and increasing voluntary contraceptive utilization in Anambra State and similar settings.

Public Health and Policy Implications

The findings of this study have important implications for reproductive health policy, programme implementation, and health-system strengthening in Nigeria. The identification of accessibility as a major determinant of family planning utilization underscores the need for policies that address both the geographical distribution and the quality of reproductive health services. Improving equitable access to comprehensive family planning services, particularly through the primary healthcare system, should remain a national priority. Expanding service coverage in underserved rural communities, strengthening community-based outreach programmes, improving transportation linkages, and increasing the availability of trained family planning providers could substantially reduce barriers to contraceptive access and contribute to achieving universal access to sexual and reproductive healthcare, as articulated in Sustainable Development Goal (SDG) 3 (United Nations [UN], 2024; World Health Organization [WHO], 2023).

The findings also highlight the importance of ensuring uninterrupted availability of contraceptive commodities. Although respondents generally reported favourable accessibility, concerns regarding the consistent availability of contraceptive methods indicate that supply-side constraints remain an important challenge. Strengthening procurement systems, improving logistics management, enhancing inventory monitoring, and establishing resilient supply-chain

mechanisms are therefore essential for minimizing stock-outs and ensuring continuity of contraceptive services. Sustained investment in commodity security will enhance client confidence, reduce method discontinuation, and improve the overall effectiveness of family planning programmes (United Nations Population Fund [UNFPA], 2023; WHO, 2023).

The strong influence of partner support on family planning utilization suggests that reproductive health programmes should incorporate strategies that promote constructive male engagement while safeguarding women's autonomy, informed choice, and reproductive rights. Community mobilization, couple-centred counselling, workplace health education, and collaboration with traditional, religious, and community leaders may foster supportive household decision-making, improve communication between spouses, and encourage shared responsibility for reproductive health. Such approaches are consistent with contemporary rights-based models of family planning that emphasize voluntary, informed, and equitable participation of both partners in reproductive decision-making (Hardee et al., 2017; WHO, 2023).

Furthermore, the significant influence of provider attitudes and perceived service quality reinforces the importance of continuous professional development for healthcare workers. Capacity-building initiatives should strengthen competencies in respectful, person-centred reproductive healthcare, effective interpersonal communication, informed consent, confidentiality, and comprehensive contraceptive counselling. Enhancing the quality of client-provider interactions is likely to improve user satisfaction, increase method continuation, and strengthen public confidence in family planning services, thereby supporting sustained contraceptive utilization (WHO, 2023; UNFPA, 2023).

The observed associations between educational attainment, household socioeconomic status, and family planning utilization further indicate that reproductive health outcomes are shaped by broader social determinants of health. Consequently, multisectoral policies that promote girls' education, women's economic empowerment, poverty reduction, and equitable access to information are likely to generate long-term improvements in contraceptive uptake and reproductive health. Integrating family planning within broader social protection, education, and community development initiatives may therefore produce more sustainable gains than health-sector interventions implemented in isolation.

Finally, the multidimensional determinants identified in this study highlight the need for integrated and context-specific family planning strategies. Policymakers should prioritize interventions that simultaneously strengthen health-system performance, improve service accessibility, promote reproductive health literacy, encourage supportive partner involvement, and address socioeconomic barriers to healthcare utilization. Such comprehensive approaches are likely to reduce inequalities in access to family planning services, increase voluntary contraceptive utilization, improve maternal and child health outcomes, and accelerate progress towards achieving universal access to quality sexual and reproductive healthcare in Nigeria.

Strengths of the Study

This study has several methodological strengths that enhance the credibility and relevance of its findings. First, the inclusion of respondents from all three senatorial districts of Anambra State

improved the geographical representativeness of the study, enabling comparisons across different sociocultural and administrative settings and increasing the applicability of the findings within the state. Second, the community-based design provided population-level evidence that extends beyond facility-based studies, thereby offering a more comprehensive understanding of family planning accessibility and utilization among married couples.

Third, the study adopted a multidimensional assessment of healthcare accessibility by incorporating geographical, financial, organizational, and service-quality indicators. This broader conceptualization reflects contemporary frameworks of healthcare access and provides a more comprehensive understanding of the pathways through which accessibility influences contraceptive utilization than studies relying solely on geographical proximity or service availability (Levesque et al., 2013).

Fourth, the use of multivariable logistic regression enabled adjustment for potential confounding variables and facilitated the identification of independent predictors of family planning utilization. This analytical approach strengthened the internal validity of the findings and provided more robust estimates of the relationships between accessibility, socioeconomic characteristics, health-system factors, and contraceptive use.

Finally, by simultaneously examining accessibility, socioeconomic characteristics, partner support, cultural influences, and health-system factors within a single analytical framework, the study provides comprehensive, context-specific evidence that can inform reproductive health policy and programme implementation in Anambra State and similar settings. This integrated approach contributes to the growing body of evidence on the multidimensional determinants of family planning utilization in low- and middle-income countries and offers practical insights for improving equitable access to reproductive healthcare services.

Limitations of the Study

The findings of this study should be interpreted in light of several limitations. First, the cross-sectional design precludes the establishment of temporal or causal relationships between accessibility and family planning utilization. Although significant associations were identified, causal inferences cannot be drawn because exposure and outcome variables were measured at a single point in time.

Second, the study relied on self-reported data, which are inherently susceptible to recall bias and social desirability bias. Given the sensitive nature of reproductive health behaviours, some respondents may have overreported socially acceptable practices or underreported behaviours perceived as culturally sensitive. Nevertheless, the use of trained interviewers, standardized data collection procedures, and assurances of anonymity and confidentiality was intended to minimize these potential sources of bias.

Third, although participants were recruited from all three senatorial districts of Anambra State using a multistage sampling technique, caution should be exercised when generalizing the findings beyond the study setting. Variations in sociocultural norms, health-system capacity,

healthcare infrastructure, and family planning programme implementation across different regions of Nigeria may limit the external applicability of the findings.

Fourth, while the study examined a broad range of accessibility, socioeconomic, sociocultural, and health-system factors, some potentially important determinants of contraceptive utilization were not assessed. Variables such as fertility intentions, women's reproductive decision-making autonomy, previous contraceptive experiences, exposure to mass media, perceived side effects, and partner fertility preferences may also influence family planning utilization and should be considered in future investigations.

Despite these limitations, the study provides robust, population-based evidence on the multidimensional determinants of family planning accessibility and utilization among married couples in Anambra State. The inclusion of respondents from all three senatorial districts, the use of standardized data collection procedures, and the application of multivariable statistical analyses strengthen the validity and policy relevance of the findings. Consequently, the results make an important contribution to the evidence base on family planning utilization in Nigeria and other low- and middle-income countries.

Recommendations for Future Research

Future research should employ longitudinal or prospective cohort designs to clarify the temporal relationships between healthcare accessibility and family planning utilization. Mixed-methods and qualitative studies would further enhance understanding of the contextual, sociocultural, and behavioural factors that influence contraceptive decision-making, method continuation, and discontinuation among married couples. In addition, implementation research evaluating interventions designed to improve accessibility, strengthen primary healthcare services, enhance male involvement, and ensure contraceptive commodity security would provide valuable evidence for programme improvement. Comparative multicentre studies conducted across different geopolitical zones of Nigeria would also improve understanding of regional variations in family planning accessibility and utilization, thereby supporting the development of context-specific reproductive health policies and interventions.

Conclusion

This study provides comprehensive evidence that family planning utilization among married couples in Anambra State is influenced by a complex interplay of accessibility, educational attainment, household socioeconomic status, partner support, reproductive health knowledge, and health-system characteristics. Among these factors, accessibility to family planning services emerged as the strongest independent predictor of current contraceptive utilization, underscoring the importance of ensuring that reproductive health services are geographically accessible, financially affordable, culturally acceptable, and delivered through high-quality, person-centred care.

The findings further demonstrate that health-system factors including provider attitudes, the consistent availability of contraceptive commodities, and the quality of client-provider interactions play a pivotal role in shaping contraceptive uptake. In contrast, religious affiliation

and cultural beliefs were not independently associated with family planning utilization after adjustment for socioeconomic and health-system factors, suggesting that structural and service-related determinants exert a greater influence on contraceptive behaviour than religious or cultural affiliation alone.

By examining accessibility as a multidimensional construct within a population-based sample drawn from the three senatorial districts of Anambra State, this study contributes context-specific evidence to the growing literature on the determinants of family planning utilization in Nigeria and other low- and middle-income countries. The findings highlight the need for integrated interventions that strengthen primary healthcare systems, ensure uninterrupted contraceptive commodity security, improve the quality and responsiveness of reproductive health services, promote informed and supportive partner involvement, expand reproductive health education, and address broader socioeconomic barriers to healthcare utilization.

Implementing these evidence-informed strategies has the potential to increase voluntary modern contraceptive utilization, reduce unmet need for family planning, improve maternal, newborn, and child health outcomes, and accelerate progress towards achieving Nigeria's reproductive health priorities and the Sustainable Development Goals. The evidence generated by this study provides a valuable basis for policymakers, programme managers, and healthcare providers seeking to design equitable, context-responsive, and sustainable family planning interventions that improve reproductive health outcomes among married couples in Anambra State and comparable settings.

Declarations

Ethical Considerations

Ethical approval for this study was obtained from the Chukwuemeka Odumegwu Ojukwu University Faculty Health Research Ethics Committee before the commencement of data collection (Approval No.: COOU/FHREC/2025/017). Administrative permission was also obtained from the relevant state and local health authorities before the study was conducted. Written informed consent was obtained from all participants prior to enrolment after the study objectives, procedures, potential benefits, and participants' rights had been fully explained. Participation was entirely voluntary, and respondents were informed of their right to decline participation or withdraw from the study at any stage without penalty or adverse consequences. To ensure confidentiality and privacy, no personally identifying information was collected, all responses were anonymized prior to analysis, and the data were securely stored and used solely for research purposes. The study was conducted in accordance with the ethical principles of the **Declaration of Helsinki** (World Medical Association, 2013).

Consent for Publication

Not applicable.

Availability of Data and Materials

The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

Competing Interests

The author declares that there is no competing interest.

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Authors' Contributions

Egwuaba EU: Conceptualization; Methodology; Investigation; Data Curation; Formal Analysis; Validation; Visualization; Writing-Original Draft; Writing-Review & Editing; Supervision; Project Administration.

The author read and approved the final version of the manuscript and accepts responsibility for the integrity and accuracy of all aspects of the work.

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References

Afulani, P. A., Phillips, B., Aborigo, R. A., & Moyer, C. A. (2023). Person-centred reproductive health care and contraceptive use in sub-Saharan Africa: A systematic review. *BMJ Global Health*, 8(2), e011245. <https://doi.org/10.1136/bmjgh-2022-011245>

Ahmed, S., *et al.* (2022).

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36(1), 1–10. <https://doi.org/10.2307/2137284>

Bolarinwa, O. A., Ahinkorah, B. O., Seidu, A.-A., *et al.* (2024). Determinants of modern contraceptive utilization among women in sub-Saharan Africa: A multilevel analysis. *BMC Women's Health*.

Cleland, J., Ali, M., Benova, L., & Daniele, M. (2018). The promotion of intrauterine contraception in low- and middle-income countries. *Contraception*, 97(5), 389–394. <https://doi.org/10.1016/j.contraception.2017.07.143>

Ewerling, F., McDougal, L., Raj, A., Ferreira, L. Z., Blumenberg, C., Parmar, D., Barros, A. J. D., & Vitoria, C. G. (2021). Modern contraceptive use among women in low- and middle-income countries: A comparative analysis of demographic and health surveys. *The Lancet Global Health*.

Federal Ministry of Health. (2020). *Nigeria family planning blueprint (2020–2024)*. Federal Ministry of Health.

Hardee, K., Croce-Galis, M., & Gay, J. (2017). Are men well served by family planning programs? *Reproductive Health*, 14, 14. <https://doi.org/10.1186/s12978-017-0278-5>

Kabagenyi, A., Habaasa, G., Rutaremwa, G., & Ndugga, P. (2022). Determinants of modern contraceptive use among married women in sub-Saharan Africa: A multilevel analysis of demographic and health survey data. *BMC Women's Health*, 22, 215. <https://doi.org/10.1186/s12905-022-01762-4>

Kabagenyi, A., Jennings, L., Reid, A., Nalwadda, G., Ntozi, J., & Atuyambe, L. (2014). Barriers to male involvement in contraceptive uptake and reproductive health services: A qualitative study of men and women's perceptions in two rural districts in Uganda. *BMC Public Health*, 14, 1038. <https://doi.org/10.1186/1471-2458-14-1038>

Levesque, J.-F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: Conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health*, 12, 18. <https://doi.org/10.1186/1475-9276-12-18>

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*, 15(4), 351–377. <https://doi.org/10.1177/109019818801500401>

National Population Commission (NPC) [Nigeria] & ICF. (2019). *Nigeria demographic and health survey 2018*. NPC and ICF.

Penchansky, R., & Thomas, J. W. (1981). The concept of access: Definition and relationship to consumer satisfaction. *Medical Care*, 19(2), 127–140.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Health Education Quarterly*, 15(2), 175–183. <https://doi.org/10.1177/109019818801500203>

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations.

United Nations. (2024). *The Sustainable Development Goals Report 2024*. United Nations.

United Nations Department of Economic and Social Affairs. (2024). *World family planning 2024: Meeting the changing needs for family planning*. United Nations.

United Nations Population Fund. (2023). *State of World Population 2023: 8 billion lives, infinite possibilities—The case for rights and choices*. UNFPA.

United Nations Population Fund. (2024). *State of World Population 2024: Interwoven lives, threads of hope*. UNFPA.

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., & Vandenbroucke, J. P. (2007). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: Guidelines for reporting observational studies. *PLoS Medicine*, 4(10), e296. <https://doi.org/10.1371/journal.pmed.0040296>

World Health Organization. (2023). *Family planning/Contraception*. World Health Organization.

World Medical Association. (2013). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA*, 310(20), 2191–2194. <https://doi.org/10.1001/jama.2013.281053>

Yaya, S., Ghose, B., Udenigwe, O., & Shah, V. (2021). Socioeconomic inequalities in modern contraceptive use among women in sub-Saharan Africa: A systematic review. *Reproductive Health*, 18, 134. <https://doi.org/10.1186/s12978-021-01193-7>

Zimmerman, L. A., Bell, S. O., Li, Q., Morzenti, A., Anglewicz, P., Tsui, A. O., & Radovich, E. (2021). Individual, partner, and community influences on modern contraceptive use in sub-Saharan Africa: A systematic review. *Studies in Family Planning*, 52(4), 337–365. <https://doi.org/10.1111/sifp.12173>