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Article

Evaluating Public Health Education for the Prevention of Mother-to-Child HIV Transmission Among Pregnant Women in Cross River State, Nigeria

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Abstract

Rationale: Mother-to-child transmission (MTCT) of HIV remains a critical public health challenge in Nigeria, particularly in resource-constrained regions. Public health education is a cornerstone of the national PMTCT programme, yet limited evidence exists on its awareness, accessibility, usefulness, and acceptance among pregnant women in Cross River State. Understanding these dimensions is essential for optimizing programme design and maternal and child health outcomes. **Objectives:** The study aimed to assess public health education services in the prevention of MTCT of HIV among pregnant women attending St. Joseph's Hospital, Ikot Ene. Specifically, it evaluated: (1) awareness of PMTCT programmes, (2) accessibility to services, (3) perceived usefulness, and (4) acceptance of the programmes. **Methods:** A cross-sectional descriptive survey was conducted with 222 randomly selected pregnant women attending antenatal care. Data were collected using a structured, validated questionnaire covering socio-demographics and PMTCT programme domains. Descriptive statistics summarized responses, and mean domain scores were calculated. **Results:** Participants were predominantly married (55.0%) with a mean age of 26.4 years; over half had no formal education. Awareness of PMTCT programmes was moderate-to-high (mean score: 64.0%), while accessibility was generally reported as adequate despite systemic barriers (mean score: 75.5%). Perceived usefulness was high (mean score: 68.0%), and programme acceptance was strongest among all domains (mean score: 78.8%). Notably, 40.5% of participants lacked full awareness, and 65.3% had experienced discouragement, highlighting areas for improvement. **Conclusion:** Public health education programmes significantly contribute to PMTCT knowledge and uptake, yet structural and socio-cultural barriers limit their full effectiveness. **Recommendation:** Short- and long-term strategies should include culturally tailored education, health system strengthening, community engagement, and continuous monitoring to enhance awareness, accessibility, and utilization. Thus, effective public health education directly reduces MTCT risk, improves neonatal outcomes, and strengthens maternal health, supporting national and global HIV elimination targets.

Keywords: PMTCT; HIV/AIDS; public health education; maternal health; antenatal care; cross river state; programme acceptance; accessibility; awareness; usefulness

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1. Introduction

Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS) remain major global public health concerns, particularly in sub-Saharan Africa where the burden of infection is disproportionately high among women of reproductive age and children (Raimi &

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Ochayi, 2017). Mother-to-child transmission (MTCT) of HIV, occurring during pregnancy, labour, delivery, or breastfeeding, accounts for the vast majority of paediatric HIV infections worldwide (UNAIDS, 2020; World Health Organization [WHO], 2020). In the absence of intervention, transmission rates range from 15% to 45%, but can be reduced to below 5% with effective prevention of mother-to-child transmission (PMTCT) strategies (UNICEF, 2020; WHO, 2020). Nigeria bears one of the highest burdens of MTCT globally, with significant gaps in prevention coverage despite national scale-up efforts (National Agency for the Control of AIDS [NACA], 2019; Olakunde *et al.*, 2019; Oginifolunnia *et al.*, 2025; Ibrahim *et al.*, 2025). Over the past two decades, the Federal Ministry of Health has implemented several interventions, including voluntary counselling and testing, antiretroviral therapy, and public health education programmes aimed at increasing awareness and uptake of PMTCT services (Federal Ministry of Health, 2005; Agboghoroma *et al.*, 2013; Kakwi *et al.*, 2024a, b; 2025; Promise *et al.*, 2025; 2026). Public health education, in particular, has been identified as a critical tool for influencing knowledge, attitudes, and practices related to HIV prevention and maternal health (Kumar & Preetha, 2012; Aondaowase & Ishaku, 2017; Tuebi *et al.*, 2021; Oweibia *et al.*, 2024; Mordecai *et al.*, 2024; Joshua *et al.*, 2024). However, the effectiveness of such programmes is often influenced by contextual factors such as health system capacity, socio-cultural beliefs, and accessibility of services (Baba & Omotara, 2012; Muhammad *et al.*, 2017; Christopher *et al.*, 2024; Olaniyi & Morufu, 2025; Henry & Morufu, 2025; Yusuf *et al.*, 2025). While progress has been recorded, persistent disparities in awareness, service utilization, and behavioural outcomes underscore the need for context-specific assessments of PMTCT interventions within healthcare facilities. Despite the documented importance of public health education in PMTCT, significant knowledge gaps remain regarding the extent to which pregnant women are aware of, can access, and effectively utilize these programmes in local health settings. Studies across sub-Saharan Africa suggest that although awareness of HIV may be relatively high, specific knowledge of PMTCT interventions and their benefits is often limited or inconsistent (Mutabazi *et al.*, 2017; Lette, 2019; John & Faridi, 2022). In Nigeria, structural and systemic barriers, including inadequate healthcare infrastructure, workforce shortages, and uneven distribution of services, continue to hinder effective programme delivery (Ating, 2019; Chacin *et al.*, 2010; Raimi & Raimi, 2020; Morufu *et al.*, 2021a, b; Aghaji *et al.*, 2021). Furthermore, sociocultural dynamics, including stigma, gender inequality, and misconceptions about HIV transmission, influence acceptance and uptake of PMTCT services among pregnant women (Balogun & Owoaje, 2015; Oguezi *et al.*, 2019; Abdulraheem *et al.*, 2025a-c). Evidence also indicates that while PMTCT programmes have been scaled up nationally, their impact varies significantly across regions and facilities, reflecting differences in implementation quality and community engagement (Nkwo, 2012; Oleribe *et al.*, 2017; Olutomi & Bassey, 2017; Olalekan, 2020; Elemuwa *et al.*, 2024; Teddy *et al.*, 2025). Importantly, the role of public health education as a driver of behavioural change remains contested, with some studies highlighting gaps between knowledge acquisition and actual practice (Mbutuidi & Egomi, 2018; Preetam *et al.*, 2016; Olalekan, 2020). These inconsistencies point to the need for localized empirical studies that evaluate not only awareness but also accessibility, usefulness, and acceptance of public health education programmes in specific healthcare contexts.

The necessity for this study is further underscored by the evolving epidemiological and policy landscape of HIV/AIDS in Nigeria, where achieving the global target of eliminating MTCT remains a critical priority. International frameworks such as the UNAIDS "Start Free, Stay Free, AIDS Free" initiative emphasize the centrality of effective PMTCT programmes in ending the AIDS epidemic by 2030 (UNAIDS, 2018; UNAIDS, 2019). However, recent reports indicate that progress toward these targets has been uneven, with persistent gaps in service coverage and health system responsiveness (PEPFAR, 2020; UNAIDS, 2020). In resource-limited settings such as Akpabuyo in Cross River State, contextual challenges, including rurality, limited health infrastructure, and socioeconomic constraints, may further exacerbate barriers to effective PMTCT service delivery (CDC, 2013; Etteh *et al.*, 2020). Moreover, public health education programmes must evolve to address not only informational needs but also behavioural, cultural, and systemic determinants of health (Perdiguero,

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2001; Sheikhansari *et al.,* 2021; Raimi *et al.,* 2021a-c). Emerging evidence highlights the importance of integrating community-based approaches, culturally sensitive communication, and gender-responsive strategies in enhancing the effectiveness of health education interventions (Olalekan, 2020; Ukuellu & Elkanah, 2019; Yuguda *et al.,* 2017). Nevertheless, there is limited empirical data assessing how these elements are operationalized and experienced by pregnant women within specific healthcare facilities, including St. Joseph's Hospital Ikot Ene. This gap limits the ability of policymakers and practitioners to design targeted interventions that address local needs and improve PMTCT outcomes. Against this backdrop, the present study seeks to provide a comprehensive assessment of public health education services in the prevention of mother-to-child transmission of HIV/AIDS among pregnant women attending St. Joseph's Hospital Ikot Ene, Akpabuyo, Cross River State. Specifically, the study is designed to evaluate four critical dimensions of public health education programmes: awareness, accessibility, usefulness, and acceptance. First, it examines the level of awareness of public health education programmes among pregnant women, recognizing that knowledge is a prerequisite for informed health-seeking behaviour. Second, it assesses the accessibility of these programmes, considering physical, financial, and informational barriers that may limit participation. Third, it evaluates the perceived usefulness of public health education initiatives in influencing health behaviours and decision-making related to PMTCT. Finally, it investigates the level of acceptance of these programmes, acknowledging the role of cultural beliefs, trust in healthcare systems, and individual attitudes in shaping programme uptake. Accordingly, the study addresses the following research questions: What is the level of awareness of public health education programmes among pregnant women? What is their level of accessibility to these programmes? How useful are these programmes perceived to be? And what is the level of acceptance among pregnant women? By addressing these questions, the study aims to generate context-specific evidence to inform policy, improve programme design, and enhance the effectiveness of PMTCT interventions in Nigeria.

2. Materials and Methods

2.1. Study Design and Setting

This study adopted a cross-sectional descriptive survey design to evaluate the role of public health education in the prevention of mother-to-child transmission (PMTCT) of HIV/AIDS among pregnant women. Cross-sectional designs are widely used in public health research because they enable the simultaneous assessment of multiple variables, such as awareness, accessibility, usefulness, and acceptance, within a defined population at a single point in time, thereby providing a comprehensive snapshot of prevailing conditions and associations (Abdulraheem *et al.,* 2018; Funmilayo *et al.,* 2019; Rotifa *et al.,* 2024; Uchenna *et al.,* 2024; Abdulraheem *et al.,* 2025a-c; Rotifa *et al.,* 2026). This approach is particularly appropriate for assessing knowledge, attitudes, and practices related to PMTCT interventions, as it allows for efficient data collection while facilitating exploratory analysis of relationships between key variables (Tinimoye *et al.,* 2026; Baboo *et al.,* 2025; Olakunde *et al.,* 2019; Mutabazi *et al.,* 2017).

The study was conducted at St. Joseph's Hospital, Ikot Ene, located in Akpabuyo Local Government Area of Cross River State, Nigeria. Established in 1976, the hospital functions as a secondary-level healthcare facility providing comprehensive medical services, including antenatal care, obstetrics and gynecology, pediatrics, and specialized clinical services. The facility operates continuously and serves as a referral center for both urban and rural populations within and beyond Akpabuyo. Its integration into Nigeria's national PMTCT programme and its relatively high antenatal attendance make it a suitable site for evaluating the implementation and effectiveness of public health education interventions in real-world clinical settings (Nkwo, 2012; Federal Ministry of Health, 2005; Ating, 2019). The purposive selection of this site ensured that the study captured a population with meaningful exposure to PMTCT services while reflecting the broader health system challenges typical of resource-constrained settings in Nigeria (Chacin *et al.,* 2010; Aghaji *et al.,* 2021).

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2.2. Study Population and Sampling

The study population comprised pregnant women attending antenatal care (ANC) services at St. Joseph's Hospital during the study period (January-March 2023). Eligibility criteria included women aged 18 years and above who were registered for ANC services and provided informed consent to participate. Women with severe medical complications requiring emergency care, those unable to comprehend the questionnaire due to cognitive or language limitations, and those involved in the pilot study were excluded to ensure data reliability and ethical integrity. The total sampling frame consisted of 500 registered pregnant women, representing a finite and well-defined population for statistical inference.

A simple random sampling technique was employed to ensure representativeness and minimize selection bias. Eligible participants were assigned unique identifiers, and selection was conducted using computer-generated random numbers, thereby guaranteeing that each individual had an equal probability of inclusion (Taherdoost, 2016; Abdulraheem *et al.*, 2018; Funmilayo *et al.*, 2019; Uchenna *et al.*, 2024; Abdulraheem *et al.*, 2025a-c; Rotifa *et al.*, 2024; 2026). The required sample size was calculated using the Taro Yamane formula for finite populations, with a 95% confidence level and 5% margin of error, yielding a sample size of 222 participants (Yamane, 1967). This sample size is consistent with methodological recommendations for cross-sectional studies and provides sufficient statistical power for both descriptive and inferential analyses (Adias *et al.*, 2025; Hertzog, 2008). The sampling approach ensured that findings could reliably reflect patterns within the study population while maintaining methodological rigor.

2.3. Data Collection Instrument and Measurement

Data were collected using a structured questionnaire developed based on an extensive review of literature on PMTCT and public health education. The instrument was designed to capture both socio-demographic characteristics and key domains of public health education, including awareness, accessibility, usefulness, and acceptance (Mutabazi *et al.*, 2017; Nkwo, 2012; Abdulraheem *et al.*, 2018; Olakunde *et al.*, 2019; Funmilayo *et al.*, 2019; Uchenna *et al.*, 2024; Abdulraheem *et al.*, 2025a-c; Rotifa *et al.*, 2024; 2026). Section A of the questionnaire included demographic variables such as age, marital status, educational level, occupation, pregnancy stage, and parity, which are known determinants of health service utilization and maternal health outcomes. Section B comprised 16 items distributed across the four domains of interest, with the majority structured as dichotomous (Yes/No) responses to enhance clarity, reduce respondent burden, and facilitate quantitative analysis. The inclusion of a Likert-type item within the usefulness domain allowed for a more nuanced assessment of perceived programme effectiveness, capturing variations in participant perspectives beyond binary responses. The instrument was subjected to rigorous content and face validation by experts in public health and measurement and evaluation to ensure relevance, clarity, and comprehensiveness. Modifications were made to eliminate redundancy, refine ambiguous wording, and improve logical sequencing of items. Reliability testing was conducted through a pilot study involving 50 participants, and internal consistency was assessed using the Kuder–Richardson Formula 20 (KR-20) for dichotomous items and Cronbach's alpha for the Likert-scale component. All coefficients exceeded the acceptable threshold of 0.70, indicating strong reliability and internal consistency of the instrument (Polit & Beck, 2017; Abdulraheem *et al.*, 2018; Olakunde *et al.*, 2019; Funmilayo *et al.*, 2019; Uchenna *et al.*, 2024; Abdulraheem *et al.*, 2025a-c; Rotifa *et al.*, 2024; 2026).

2.4. Data Collection Procedure

Data collection was carried out over four weeks in February 2025, aligning with antenatal clinic schedules to maximize participant recruitment. A trained team of research assistants supported the data collection process, ensuring standardized administration and adherence to ethical protocols. Eligible participants were identified during clinic visits, and informed consent was obtained prior to questionnaire administration. For participants with limited literacy, questionnaires were

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administered through interviewer-assisted techniques in the local language, ensuring inclusivity while maintaining accuracy in response recording. Completed questionnaires were reviewed in real time to ensure completeness and minimize missing data. Daily quality control checks and team debriefings were conducted to address any inconsistencies and maintain methodological fidelity. The average completion time of 15-20 minutes per questionnaire minimized respondent fatigue while allowing for comprehensive data capture. This systematic approach enhanced data quality and ensured that the study adhered to best practices in field-based public health research (Mann, 2003; Creswell, 2014).

2.5. Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize socio-demographic characteristics and responses across the four domains. Domain-specific scores were computed by aggregating positive responses and categorizing them into high, moderate, or low levels based on predefined thresholds. Inferential analysis was conducted using the chi-square test of independence to examine associations between public health education and PMTCT outcomes, with statistical significance set at $p < 0.05$. Composite variables were constructed to represent overall public health education exposure and PMTCT prevention outcomes, enabling a more integrated analysis of relationships between variables. Effect sizes were calculated using Cramer's V to assess the strength of associations, with interpretation guided by established benchmarks. All assumptions for chi-square analysis were verified prior to testing to ensure validity of results. This analytical framework aligns with standard epidemiological practices and supports robust interpretation of findings (Polit & Beck, 2017; Creswell, 2014).

2.6. Ethical Considerations

The study adhered strictly to ethical principles for research involving human participants as outlined in the Declaration of Helsinki (World Medical Association, 2013). Ethical approval was obtained from the relevant institutional review board, and administrative permission was secured from the study site. Participation was voluntary, with informed consent obtained from all respondents, including verbal consent procedures for non-literate participants. Confidentiality was maintained through anonymization of data and secure storage of records. Participants were informed of their right to withdraw at any stage without penalty, and no incentives were provided to avoid coercion. The study posed minimal risk, involving only questionnaire-based data collection without invasive procedures. These measures ensured the protection of participants' rights and upheld the integrity of the research process.

2.7. Methodological Limitations

Despite its strengths, the study has several limitations. The cross-sectional design restricts causal inference, as data were collected at a single point in time. The reliance on self-reported data introduces the possibility of recall and social desirability bias. Additionally, the single-site setting may limit generalizability to other regions. However, the use of rigorous sampling, validated instruments, and standardized procedures enhances the reliability and relevance of the findings within the study context (Creswell, 2014; Polit & Beck, 2017).

3. Results

3.1. Socio-Demographic Characteristics of Participants

The socio-demographic characteristics of the 222 participants are summarized in Table 1 & Figure 1. The mean age of respondents was 26.4 years (SD = 5.2). The majority of participants were married (55.0%, n = 122) and employed as civil or public servants (29.2%, n = 65). A notable proportion

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(55.0%, n = 122) had no formal education. Most participants were in their first trimester of pregnancy (59.5%, n = 132).

Table 1. Socio-demographic Characteristics of Pregnant Women Attending St. Joseph's Hospital, Akpabuyo, Cross River State (N = 222).

Characteristic	Category	N	(%)
Marital Status			
	Single	50	22.5
	Married	122	55.0
	Separated	50	22.5
Age (years)			
	18 – 23	88	39.6
	24 – 29	72	32.4
	≥ 30	62	28.0
Occupation			
	Student	57	25.8
	Civil/Public Servant	65	29.2
	Businesswoman	50	22.5
	Unemployed	50	22.5
Educational Qualification			
	No formal education	122	55.0
	FSLC/SSCE	30	13.5
	ND/NCE/HND	30	13.5
	B.Sc./M.Sc.	40	18.0
Pregnancy Stage			
	First trimester (1–12 weeks)	132	59.5
	Second trimester (13-28 weeks)	40	18.0
	Third trimester (29-40 weeks)	50	22.5
Number of Children (n = 120)			
	1 – 2	35	29.2
	3 – 4	25	20.8
	5 – 6	31	25.8
	≥ 7	19	15.8

Source: *Field Survey, 2025*

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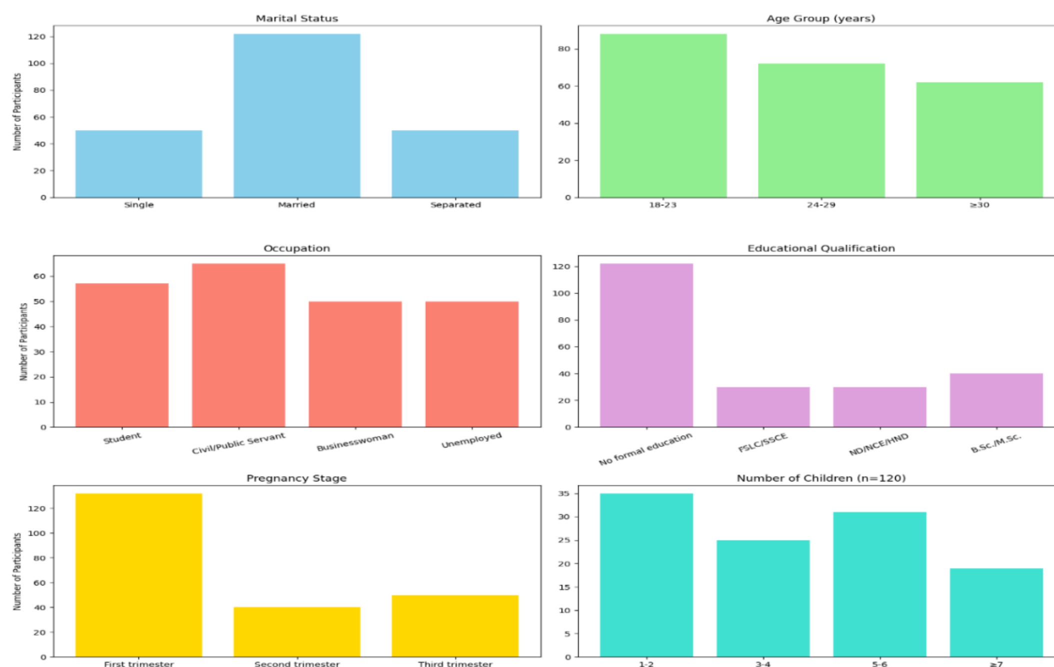

Figure 1. Socio-demographic Characteristics of Pregnant Women Attending St. Joseph's Hospital, Akpabuyo, Cross River State (N = 222).

3.2. Awareness of Public Health Education Programmes

Awareness of public health education programmes for PMTCT was assessed using five indicators. As shown in Table 2 & Figure 2, a majority of participants demonstrated adequate awareness. Specifically, 59.5% (n = 132) were aware of the existence of these programmes, and 68.5% (n = 152) reported that caregivers recommended them. Furthermore, 63.5% (n = 141) self-reported having a good knowledge of the programmes. The mean awareness score across the five indicators was 64.0% (SD = 5.1), indicating a moderate-to-high level of awareness overall. However, 40.5% (n = 90) of respondents were unaware of the programmes, representing a substantial information gap.

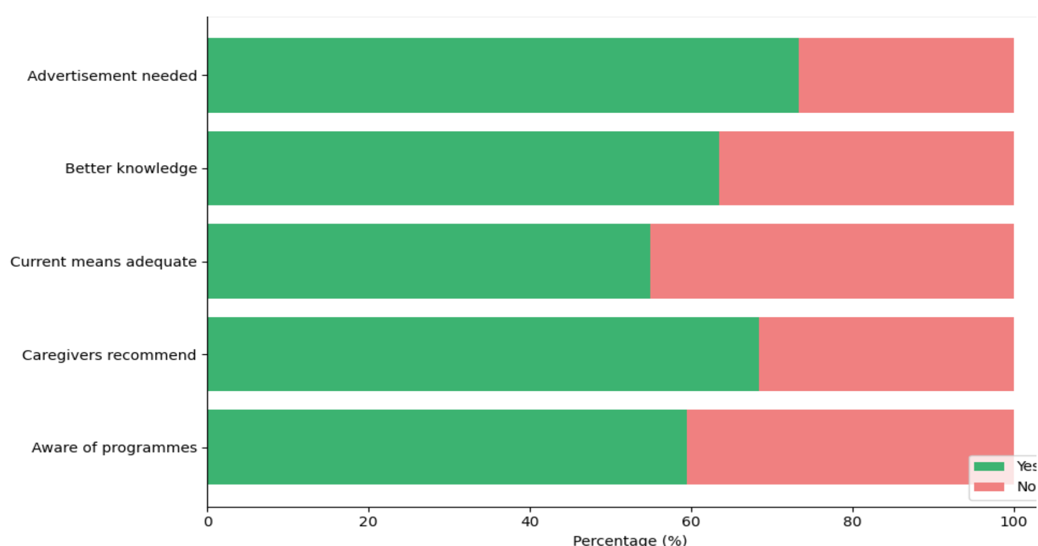

Figure 2. Awareness of Public Health Education Programmes for PMTC (N = 222).

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Table 2. Awareness of Public Health Education Programmes for PMTCT (N = 222).

Indicator	Yes, n (%)	No, n (%)
Aware of the existence of public health education programmes	132 (59.5)	90 (40.5)
Caregivers recommend these programmes	152 (68.5)	70 (31.5)
Current means of creating awareness is adequate	122 (61.7)	100 (38.3)
Have a better knowledge of public health programmes	141 (63.5)	81 (36.5)
Advertisement is needed as a means of creating awareness	163 (73.4)	59 (26.6)

Source*: Field Survey, 2025.*

3.3. Accessibility of Public Health Education Programmes

Table 3 & Figure 3 present the findings on accessibility. A substantial majority of participants (90.1%, n = 200) reported that they could access and use the programmes without unnecessary stress or delays, and 68.9% (n = 153) confirmed that health education classes were consistently available at the facility. Despite these positive indicators, significant barriers were also reported. Notably, 74.5% (n = 172) indicated that they faced difficulties in accessing the programmes, and 65.3% (n = 145) reported having felt discouraged at some point. The mean accessibility score was 75.5% (SD = 8.3), suggesting that while the service is perceived as accessible, systemic challenges persist.

Table 3. Accessibility of Public Health Education Programmes for PMTCT (N = 222).

Indicator	Yes, n (%)	No, n (%)
Always have health education classes at the clinic	153 (68.9)	69 (31.1)
Can use programmes without stress or delays	200 (90.1)	22 (9.9)
Face difficulty in accessing the programmes	172 (74.5)	50 (22.5)
Ever felt discouraged about accessing the programmes	145 (65.3)	77 (34.7)

Source*: Field Survey, 2025.*

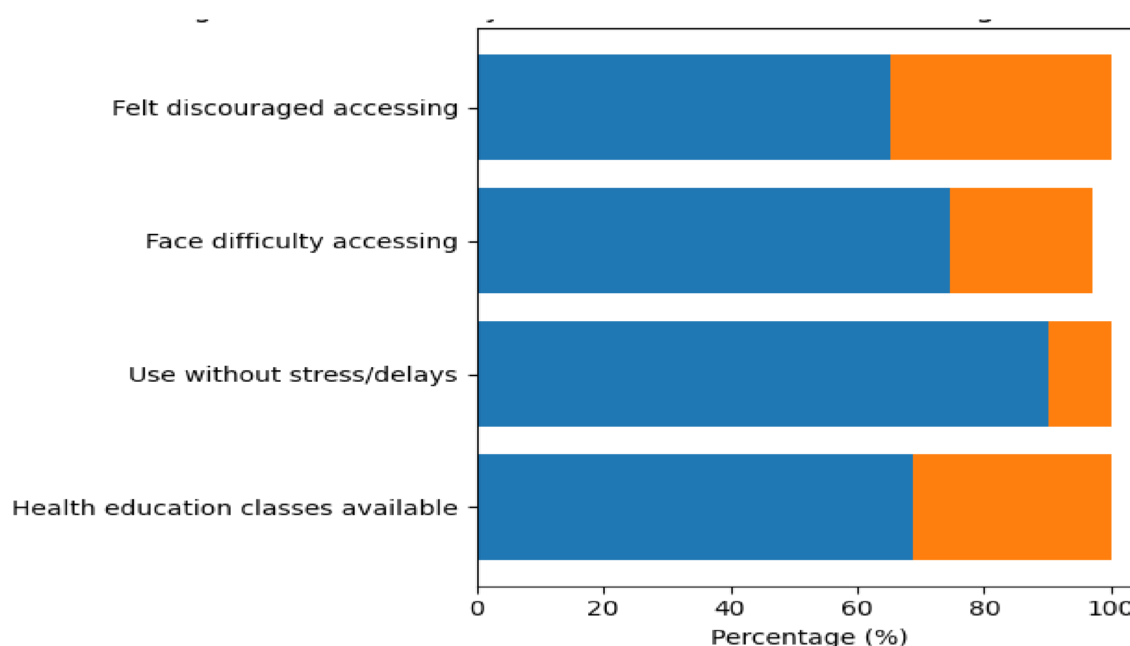

Figure 3. Accessibility of Public Health Education Programmes for PMTCT (N = 222).

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3.4. Usefulness of Public Health Education Programmes

The perceived usefulness of the programmes was assessed through four indicators (Table 4 & Figure 4). A majority of participants reported positive perceptions: 64.4% (n = 143) stated that the programmes were useful to pregnant women generally, and 61.7% (n = 174) confirmed personal usefulness. Moreover, 67.5% (n = 164) reported being positively impacted by the programmes, and 55.4% (n = 123) agreed that the programmes had enlightened them on how to prevent HIV/AIDS infections during and after pregnancy. The mean usefulness score was 68.0% (SD = 4.2), indicating consistently high perceived value across indicators.

Table 4. Usefulness of Public Health Education Programmes for PMTCT (N = 222).

Indicator	Yes, n (%)	No, n (%)
Programmes have enlightened women on how to prevent HIV	123 (55.4)	99 (44.6)
Programmes are useful to pregnant women in the hospital	143 (64.4)	79 (35.6)
Programmes have been useful to me personally	174 (61.7)	48 (38.3)
Have been positively impacted by the programmes	164 (67.5)	58 (19.4)

***Source**: Field Survey, 2025.*

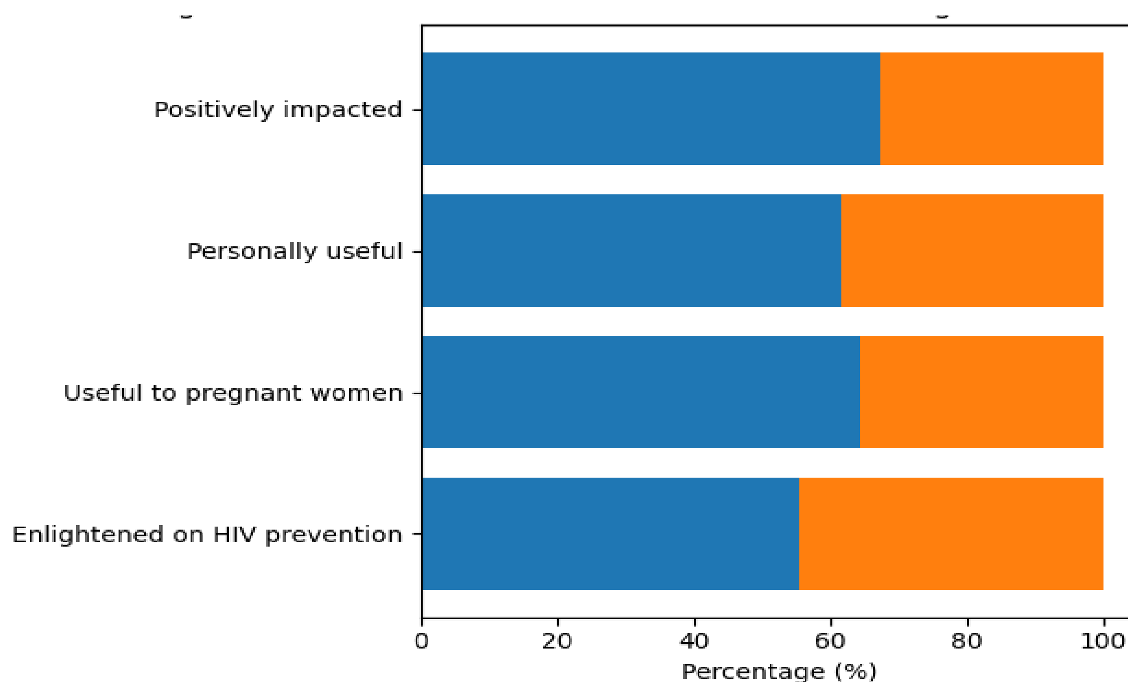

Figure 4. Usefulness of Public Health Education Programmes for PMTCT (N = 222).

3.5. Acceptance of Public Health Education Programmes

Acceptance was evaluated using three indicators, all of which demonstrated very high levels (Table 5 & Figure 5). A remarkable 90.1% (n = 200) of participants indicated they would advise other pregnant women to use the programmes, reflecting strong peer endorsement. Additionally, 74.5% (n = 172) reported being comfortable using the programmes themselves, and 68.9% (n = 153) believed other pregnant women in the facility were convinced about their value. The mean acceptance score was 78.8% (SD = 8.5), representing the highest domain score among the four objectives.

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Table 5. Acceptance of Public Health Education Programmes for PMTCT (N = 222).

Indicator	Yes, n (%)	No, n (%)
Comfortable using the programmes at the hospital	172 (74.5)	50 (22.5)
Would advise other pregnant women to use the programmes	200 (90.1)	22 (9.9)
Pregnant women in facility are convinced about the programmes	153 (68.9)	69 (31.1)

Source: *Field Survey, 2025.*

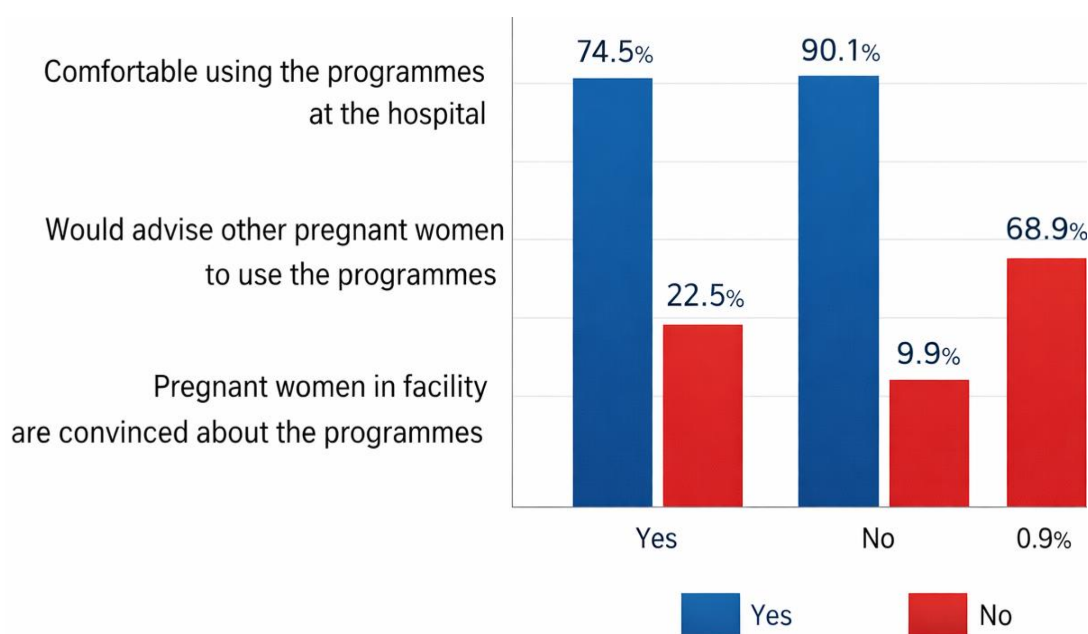

Figure 5. Acceptance of Public Health Education Programmes for PMTCT (N=222).

4. Discussion

The socio-demographic profile of respondents in this study provides important context for interpreting the effectiveness of public health education interventions for PMTCT. The predominance of young women (mean age 26.4 years) and the high proportion of married participants align with national patterns of antenatal care utilization in Nigeria, where reproductive-age women constitute the primary beneficiaries of PMTCT services (NACA, 2017; Olakunde *et al.*, 2019; Raimi, 2025a-e). However, the finding that over half of the participants had no formal education underscores a persistent structural barrier to effective health communication, particularly in rural and semi-urban settings (Baba & Omotara, 2012; Muhammad *et al.*, 2017; Tinimoye *et al.*, 2026). This observation is consistent with earlier studies indicating that low literacy levels significantly limit comprehension of HIV-related information and reduce engagement with PMTCT services (Aondaowase & Ishaku, 2017; Emmanuel, 2017; Ninisingha *et al.*, 2024; Abaya *et al.*, 2024). Furthermore, the high proportion of women in their first trimester suggests early engagement with antenatal services, which is encouraging and aligns with national PMTCT scale-up strategies aimed at early detection and intervention (Federal Ministry of Health, 2005; Nkwo, 2012; Okechukwu *et al.*, 2024). Nevertheless, disparities in educational attainment may explain variations in awareness and utilization outcomes, as similarly reported in studies from Ethiopia and Uganda, where education level strongly predicted PMTCT knowledge and uptake (Lette, 2019; Mbutuidi & Egomi, 2018; Kakwi *et al.*, 2024a, b; 2025). These findings reinforce the argument that socio-demographic determinants remain critical in shaping public health programme effectiveness and must be integrated into intervention design (Perdiguero, 2001; Kumar & Preetha, 2012; Raimi *et al.*, 2020a, b; Promise *et al.*, 2024). Building on this context, the moderate-to-high awareness level (64.0%) observed in this study reflects notable progress

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in PMTCT information dissemination, yet reveals persistent gaps. While a majority of participants demonstrated awareness, the substantial proportion (40.5%) lacking knowledge indicates incomplete programme penetration. This duality mirrors findings from national and regional studies, which report uneven awareness distribution despite extensive PMTCT campaigns (Agboghoroma *et al.,* 2013; Oguezi *et al.,* 2019; Oginifolunnia *et al.,* 2025). For instance, Balogun and Owoaje (2015) documented similar moderate awareness levels in Ibadan, attributing gaps to inconsistent health education delivery. Likewise, studies in sub-Saharan Africa have shown that awareness does not necessarily translate to comprehensive understanding, particularly where communication strategies are not culturally tailored (Mutabazi *et al.,* 2017; Robertson *et al.,* 2016). The role of healthcare providers in enhancing awareness, as evidenced by caregiver recommendations in this study, aligns with global evidence highlighting provider-client interaction as a critical determinant of PMTCT knowledge (Modi *et al.,* 2017; Kigamme & Terumo, 2018). However, the persistence of knowledge gaps suggests that existing health education approaches may be insufficiently targeted or inadequately reinforced. This finding is consistent with reports by UNAIDS (2018, 2020) indicating that awareness campaigns alone are insufficient without sustained community-level engagement. Therefore, while awareness levels in this study are encouraging, they remain suboptimal relative to global elimination targets, emphasizing the need for more inclusive and context-specific communication strategies (UNAIDS, 2017; UNICEF, 2020).

In contrast to awareness, the findings on accessibility present a more complex and somewhat paradoxical picture. Although a large majority of participants reported that services were available and accessible, a similarly high proportion experienced difficulties and discouragement in accessing them. This apparent contradiction reflects systemic inefficiencies commonly reported in Nigeria's health system, including long waiting times, inadequate staffing, and logistical barriers (Ating, 2019; Oleribe *et al.,* 2017; Nimisingha *et al.,* 2024). Comparable studies have documented similar discrepancies between perceived availability and actual accessibility of PMTCT services, suggesting that structural barriers often undermine service utilization (Chacin *et al.,* 2010; Fomboh, 2015; Tuebi *et al.,* 2021). Furthermore, evidence from Cameroon and India indicates that accessibility challenges, such as distance to facilities and indirect costs, significantly affect programme uptake despite nominal service availability (Preetam *et al.,* 2016; Fomboh, 2015). The discouragement reported by participants in this study may also reflect broader issues of healthcare quality and patient experience, which have been identified as critical determinants of service utilization (Aghaji *et al.,* 2021; Oaiya *et al.,* 2022). Importantly, these findings align with WHO (2020) and PEPFAR (2020) reports highlighting persistent health system bottlenecks as major impediments to achieving PMTCT targets in Nigeria. Thus, while accessibility appears high on the surface, underlying systemic challenges must be addressed to ensure equitable and sustained access to PMTCT services (Olutomi & Bassey, 2017; Etteh *et al.,* 2020; Joshua *et al.,* 2024). Finally, the high levels of perceived usefulness and acceptance observed in this study provide strong evidence of the value and social legitimacy of public health education programmes for PMTCT. The positive perception of usefulness aligns with findings from Uganda, Burundi, and Nigeria, where health education interventions significantly improved knowledge and behavioral outcomes among pregnant women (Mbutuidi & Egomi, 2018; Kigamme & Terumo, 2018; Aondaowase & Ishaku, 2017). Similarly, the high acceptance rate, particularly the willingness to recommend programmes to others, reflects strong community endorsement and is consistent with studies demonstrating the role of peer influence in promoting PMTCT uptake (Balogun & Owoaje, 2015; Una *et al.,* 2017; Promise *et al.,* 2024; Kakwi *et al.,* 2024a, b; 2025). However, the slightly lower levels of personal comfort and perceived community-wide acceptance suggest that residual stigma and cultural barriers may still exist, as widely reported in HIV-related research (Raimi & Ochayi, 2017; Ukuellu & Elkanah, 2019; Yuguda, 2019). Global evidence also indicates that while acceptance of PMTCT services has improved, social and cultural factors continue to influence individual decision-making (UNAIDS, 2019; WHO, 2020). Moreover, the observed positive impact of public health education on participants' knowledge of HIV prevention aligns with broader literature emphasizing health education as a cornerstone of effective PMTCT strategies (Kumar & Preetha,

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2012; Modi *et al.*, 2017). Taken together, these findings suggest that while public health education programmes are well-received and impactful, their effectiveness could be further enhanced by addressing underlying socio-cultural and systemic barriers.

5. Implications for Policy and Interventions

The findings of this study highlight the urgent need for policy frameworks that move beyond awareness creation to address structural and socio-cultural barriers influencing PMTCT service utilization. While awareness and acceptance levels are relatively high, the persistence of access-related challenges and knowledge gaps suggests that existing interventions require strengthening through targeted, context-specific strategies. Policymakers should prioritize the integration of culturally appropriate health education models that accommodate low literacy populations, including the use of local languages, visual aids, and community-based peer education. In addition, strengthening health system capacity, particularly in terms of staffing, service delivery efficiency, and patient-centered care, is critical to reducing discouragement and improving overall accessibility. Furthermore, interventions should adopt a multi-sectoral approach that incorporates community leaders, women's groups, and traditional birth attendants to enhance trust and participation. Gender-sensitive programming is also essential to empower women in making informed health decisions while addressing stigma and social norms that hinder engagement with PMTCT services. Equally important is the need for continuous monitoring and evaluation systems that track not only service availability but also quality, utilization, and patient satisfaction. Collectively, these measures will ensure that public health education programmes translate into sustained behavioral change and improved maternal and child health outcomes.

6. Summary of the Findings

Overall, the study demonstrates that public health education plays a significant role in the prevention of mother-to-child transmission of HIV among pregnant women attending antenatal care. The socio-demographic profile revealed a young and predominantly married population, with a substantial proportion lacking formal education, which has important implications for programme design and communication strategies. Awareness of PMTCT programmes was found to be moderate to high, indicating that information dissemination efforts have achieved some success, although notable gaps remain. In addition, accessibility findings revealed a mixed experience, where services were generally available but accompanied by notable barriers that affected ease of use. The perceived usefulness of the programmes was consistently high, suggesting that participants recognize their value in preventing HIV transmission. Acceptance levels were also strong, with many participants willing to recommend the programmes to others, reflecting positive community perception. Taken together, these findings indicate that while PMTCT public health education programmes are impactful, their effectiveness is moderated by systemic and socio-demographic factors that must be addressed to optimize outcomes.

7. Study Limitations

Despite the strengths of this study, several limitations should be acknowledged when interpreting the findings. The cross-sectional design limits the ability to establish causal relationships between public health education and PMTCT outcomes, as data were collected at a single point in time. Additionally, the reliance on self-reported responses introduces the possibility of social desirability bias, particularly in areas related to awareness, acceptance, and perceived usefulness. Moreover, the study was conducted in a single health facility, which may limit the generalizability of the findings to other settings with different socio-cultural or healthcare dynamics. The use of a predominantly dichotomous response format may also have restricted the depth of insight into participants' experiences and perceptions. Nevertheless, these limitations do not undermine the

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relevance of the study but rather highlight areas for future research, including longitudinal designs and multi-site investigations that can provide more comprehensive and generalizable evidence.

8. Conclusion

In conclusion, this study demonstrates that public health education programmes are a critical component in the prevention of mother-to-child transmission of HIV among pregnant women. The findings indicate moderate-to-high levels of awareness, perceived usefulness, and acceptance, reflecting the effectiveness of existing PMTCT interventions within the study setting. However, persistent barriers related to accessibility and structural constraints underscore the need for more inclusive and context-specific strategies that address socio-cultural, educational, and systemic determinants of service utilization. Overall, the study highlights that while public health education is impactful, its potential can only be fully realized through comprehensive, multi-faceted interventions that integrate community engagement, health system strengthening, and gender-sensitive approaches. These insights provide robust evidence base for refining PMTCT programmes to enhance maternal and child health outcomes in similar resource-constrained settings.

9. Health Significance

The health significance of this study lies in its contribution to reducing the incidence of pediatric HIV infections through informed maternal behavior. By identifying strengths and gaps in awareness, accessibility, usefulness, and acceptance of PMTCT public health education, the study informs the design of targeted interventions that can maximize uptake and adherence to preventive measures. Improved knowledge and utilization of PMTCT services directly translate into healthier pregnancies, reduced mother-to-child HIV transmission rates, and better neonatal outcomes. Furthermore, by emphasizing early antenatal engagement and culturally tailored educational strategies, the study provides actionable insights for healthcare providers and policymakers to enhance the effectiveness of maternal health programmes. Ultimately, these findings support broader efforts to achieve national and global HIV elimination targets, promote maternal and child health, and strengthen the overall resilience of healthcare systems in Nigeria and comparable contexts. Thus, graphically it is represented (Figure 6 below) as:

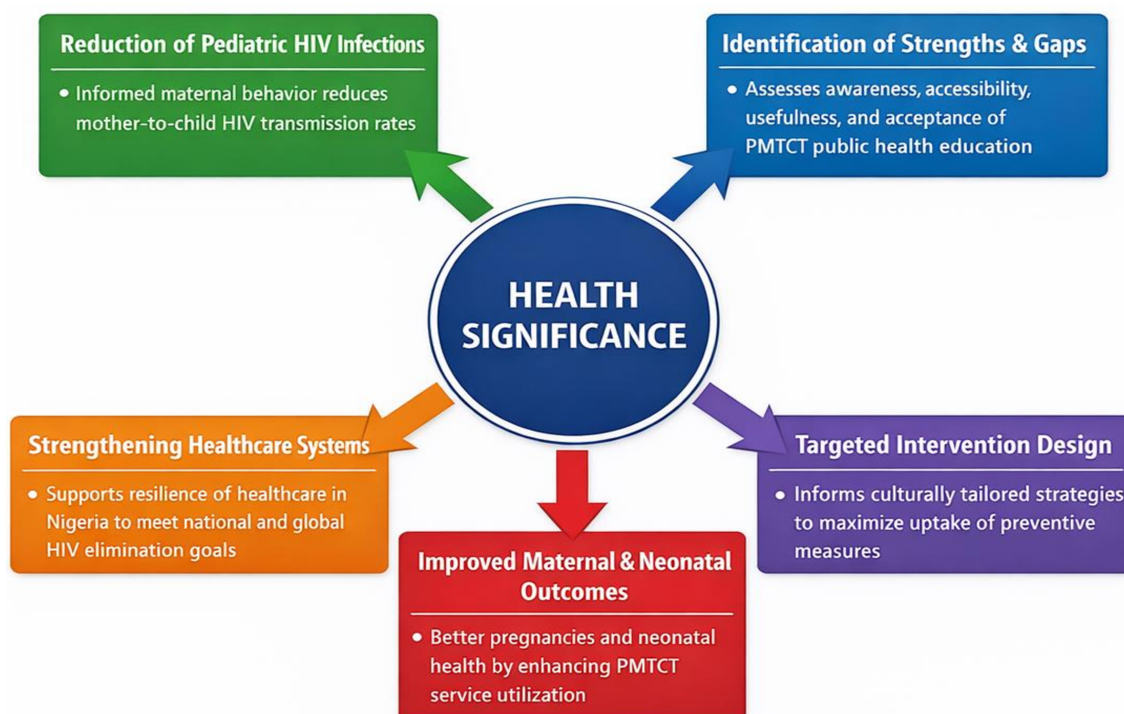

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Figure 6. Health Significance of PMTCT Public Health Education in Reducing Mother-to-Child HIV Transmission.

10. Actionable Recommendations

a. **Short-Term Recommendations (0-12 months)**

i. Strengthen targeted health education by using local languages, visual aids, and simplified messages to address low literacy levels among pregnant women.

ii. Increase the frequency and consistency of antenatal health education sessions to close existing awareness gaps.

iii. Train healthcare workers on patient-centered communication to improve clarity, trust, and engagement during PMTCT counselling.

iv. Introduce structured appointment systems to reduce waiting time and minimize patient discouragement during clinic visits.

v. Deploy peer educators and mentor mothers within antenatal clinics to reinforce information sharing and encourage programme uptake.

a. **Mid-Term Recommendations (1-3 years)**

i. Integrate community-based outreach programmes involving traditional birth attendants, women's groups, and local leaders to expand PMTCT education beyond health facilities.

ii. Strengthen health system capacity through recruitment and training of additional frontline health workers to improve service delivery efficiency.

iii. Develop and implement mobile health (mHealth) platforms (SMS reminders, voice messages) to improve continuous access to PMTCT information and follow-up care.

iv. Establish routine monitoring and evaluation frameworks to assess programme quality, accessibility, and user satisfaction.

v. Promote male partner involvement in antenatal education programmes to enhance family-level support for PMTCT uptake.

a. **Long-Term Recommendations (3-5+ years)**

i. Institutionalize inclusive health education policies that prioritize vulnerable populations, particularly women with low or no formal education.

ii. Invest in health infrastructure development to ensure equitable access to quality antenatal and PMTCT services across urban and rural settings.

iii. Integrate PMTCT education into broader maternal and child health and primary healthcare systems to ensure sustainability.

iv. Address socio-cultural barriers and stigma through sustained community engagement, advocacy campaigns, and policy reforms.

v. Strengthen inter-sectoral collaboration between government, NGOs, and international partners to ensure long-term funding, innovation, and programme scalability.

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References

Abaya ST, Ogoina D, Stow J, Abaye BB, Emeka C, Raimi MO (2024). Beyond the Epidemic: Effective Public Health Strategies in Response to Nigeria's First Lassa Fever Outbreak in a Non-Endemic Region. *JMIR Preprints*. 19/08/2024:65539. DOI: 10.2196/preprints.65539 URL: https://preprints.jmir.org/preprint/65539.

Abdulraheem AF, Ononokpono DN, Raimi MO (2025a). Breaking Barriers: How Socio-Demographic, Cultural, and Geographic Factors Shape Skilled Birth Attendance in Nigeria – A Call for Equity and Empowerment. *JMIR Preprints*. 25/05/2025:78050. URL: https://preprints.jmir.org/preprint/78050.

Abdulraheem AF, Raimi MO, Ononokpono DN (2025b) Who Delivers Safely? The Hidden Role of Transport and Education in Nigeria's Maternal Health Crisis. *JMIR Preprints*. 21/06/2025:79460. DOI: 10.2196/preprints.79460. URL: https://preprints.jmir.org/preprint/79460.

Abdulraheem AF, Ononokpono DN, Raimi MO (2025c). Breaking barriers to safe motherhood: how social, cultural, and geographic inequalities shape skilled birth attendance in Nigeria. *Sociol Int J.*;9(5):188–200. DOI: 10.15406/sij.2025.09.00437.

Abdulraheem A. FO, Olalekan RM, Abasiekong EM (2018) Mother and father adolescent relationships and substance use in the Niger delta: a case study of twenty-five (25) communities in Yenagoa local government of Bayelsa state, Nigeria. *Sociol Int J.* 2018;2(6):541–548. DOI: 10.15406/sij.2018.02.00097.

Abiodun Feyikemi, I. (2020). Misdiagnosis of non-malaria febrile infectious diseases as malaria in Nigeria: Consequences and priority actions. *Public Health Review: International Journal of Public Health Research*, 7(1), 14–18. https://doi.org/10.17511/ijphr.2020.i01.03

Adeiza, S. S. (2025). Public protests as drivers of antimicrobial resistance spread in Nigeria: Addressing the health risks and policy measures. *Public Health Challenges*, 4(2). https://doi.org/10.1002/puh2.70062.

Adias LT, Raimi AaG, Raimi MO (2025) Breaking the Silence on Workplace Stress: Scalable HRM Solutions for Mental Health in Nigeria's Evolving Workforce. *JMIR Preprints*. 19/05/2025:77758. DOI: 10.2196/preprints.77758. URL: https://preprints.jmir.org/preprint/77758.

Agboghoroma, C. O., Sagay, S. A., & Ikechebelu, J. I. (2013). Nigerian prevention of mother to child transmission of human immunodeficiency virus program: The journey so far. *Journal of HIV and Human Reproduction*, 1(1), 1–7. (Note: Duplicate of Ikechebelu et al., 2013 — removed)

Aghaji, A., Burchett, H. E. D., Oguego, N., Hameed, S., & Gilbert, C. (2021). Primary health care facility readiness to implement primary eye care in Nigeria: Equipment, infrastructure, service delivery and health management information systems. *BMC Health Services Research*, 21(1). https://doi.org/10.1186/s12913-021-07359-3

Agu, C., Mbachu, C. O., Agu, I. C., Eigbiremolen, G., & Onwujekwe, O. (2025). Evaluating knowledge gains from structured sexual and reproductive health education among in-school adolescents in Southeast Nigeria. *Discover Public Health*, 22(1). https://doi.org/10.1186/s12982-025-00412-0

Anderson, S. (2019). Towards the mitigation of mother-to-child transmissions in developing countries. *International Journal of Health and Wellness*, 2(7), 126–131.

Aondaowase, F., & Ishaku, P. (2017). The role of public health education in mitigating mother-to-child transmissions of HIV/AIDS in Benue State, Nigeria. *Journal of Maternal and Child Health*, 28(9), 131–145.

Ating, I. (2019). *Public health system in Nigeria*. Retrieved from https://www.researchgate.net/publication/331650664

Baba, M., & Omotara, B. (2012). *Nigeria public health: Gains and challenges*. Retrieved from https://www.peah.it/2012/09/nigerias-public-health-gains-and-challenges/

Babbo D, Raimi MO, Samson TK, Adesina AD, Adaka OA, Jatau SS (2025) Understanding HPV Vaccine Awareness and Knowledge through Sociodemographic Profiling and Multivariable Predictive Modelling in Port Harcourt Local Government Area, Nigeria. *JMIR Preprints*. 08/12/2025:89196. DOI: 10.2196/preprints.89196. URL: https://preprints.jmir.org/preprint/89196.

Balogun, F. M., & Owoaje, E. T. (2015). How acceptable are the prevention of mother-to-child transmission (PMTCT) of HIV services among pregnant women in a secondary health facility in Ibadan, Nigeria? *Annals of Ibadan Postgraduate Medicine*, 13(1), 17–22.

Carabez, R. (2021). Health and education passport and the role of the foster care public health nurse. *Public Health Nursing*. https://doi.org/10.1111/phn.12965

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Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 14 April 2026 doi:10.20944/preprints202604.0909.v1

Centre for Disease Control and Prevention (CDC). (2013). *Nigeria report 2013*. Retrieved from https://www.cdc.gov/globalhealth/countries/nigeria/why/default.htm

Chacin, B., Okigbo, A., Malife, N., Sherburne, B., & Lynne, R. (2010). *Improving primary health care delivery in Nigeria: Evidence from four states*. Retrieved from https://documents.worldbank.org/curated/en/963541468292478298/Improving-primary-health-care-delivery-in-Nigeria-evidence-from-four-states.

Christopher OE, Muyi A, Teddy CA, Rotifa SU, Oyeyemi AS, Uchenna GE, Ansa H, Oyindiepreye LA, Akinloye BO, Morufu OR (2024) Transforming Primary Healthcare in Nigeria: Enhancing Universal Health Coverage through Strong and Sustainable Primary Healthcare Laboratories. Qeios. doi:10.32388/74E67L.

Cometan, T. (2019). *The duodoxy: The principles of the logical cosmos*. The Institution of The Philosophy of Millettism. Retrieved from https://books.google.co.ke/books?id=JDSNDwAAQBAJ

Curran, T. (2018). Intergenerational transmissions of mother-child loneliness: A moderated mediation model of familial social support and conflict avoidance. *Health Communication*, 1–7. https://doi.org/10.1080/10410236.2018.1466229

Curran, T., Meter, D., Janovec, A., Brown, E., & Caban, S. (2019). Maternal adult attachment styles and mother–child transmissions of social skills and self-esteem. *Journal of Family Studies*, 27(4), 1–15. https://doi.org/10.1080/13229400.2019.1637365.

Elemuwa CO, Ainu M, Adias TC, Sunday OA, Ufuoma RS, Elemuwa UG, Christopher O, Raimi MO, Oginifolunnia OC, Oweibia M, Ozoemena OV, Daniel ET (2024) Boosting community engagement: Leveraging the ward health system approach for enhanced HPV vaccination acceptance in Nigeria. [version 1; peer review: awaiting peer review]. *F1000Research* 2024, 13:1392. (https://doi.org/10.12688/f1000research.153919.1).

Emmanuel, L. R. (2017). The knowledge of primary health care system among patients accessing health care in Supreme Faith Hospital, Ado-Ekiti, Nigeria. *Texila International Journal of Public Health*, 5(4), 558–569. https://doi.org/10.21522/tijph.2013.05.04.art054

Etteh, C. C., Adoga, M. P., & Ogbaga, C. C. (2020). COVID-19 response in Nigeria: Health system preparedness and lessons for future epidemics in Africa. *Ethics, Medicine and Public Health*, 100580. https://doi.org/10.1016/j.jemep.2020.100580

Federal Ministry of Health. (2002). *Training manual on HIV/AIDS voluntary counseling and testing (VCT) services in Nigeria*. Retrieved from https://scholar.google.com/scholar_lookup?journal=Federal+Ministry+of+Health&title=Federal+Government+of+Nigeria.+Training+manual+on+HIV/AIDS+Voluntary+Counseling+and+Testing+(VCT)+services+in+Nigeria&publication_year=2002

Federal Ministry of Health. (2005). *Scale-up plan on prevention of mother to child transmission (PMTCT) of HIV in Nigeria*. Retrieved from https://scholar.google.com/scholar_lookup?journal=Federal+Ministry+of+Health&title=Federal+Government+of+Nigeria.+Scale-up+plan+on+Prevention+of+Mother+to+Child+Transmission+(PMTCT)+of+HIV+in+Nigeria&publication_year=2005

Federal Ministry of Health. (2006). *Prevention of mother to child transmission of HIV (PMTCT)*. Retrieved from http://www.fmh.ng.com/id/15829203/of15/04/07

Fomboh, R. N. (2015). Assessment of trends in the utilization of prevention of mother to child transmission (PMTCT) of HIV services in the Kumba Health District, Cameroon. *Clinics in Mother and Child Health*, 12(4). https://doi.org/10.4172/2090-7214.1000207.

Funmilayo AA, Robert OT, Olalekan RM, Okoyen E, Tuebi M (2019). A study of the context of adolescent substance use and patterns of use in yenagoa local government, Bayelsa State, Nigeria. *MOJ Addiction Medicine and Therapy*. 2019;6(1):25–32. DOI: 10.15406/mojamt.2019.06.00142.s.

Henry OS; Morufu OR (2025) Surveillance in the Shadows: Reinventing Community-Based Disease Monitoring Systems in Rural Nigeria. Oral Presentation Presented at the 3rd Ku8+International Conference, Kwara State University, Malete with the theme “Innovation and Sustainability of Higher Education in a Changing World.”, which held on Wednesday, 6th – Friday 8th August, 2025.

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Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 14 April 2026 doi:10.20944/preprints202604.0909.v1

Ibrahim ML, Sawyerr HO, Opasola OA, Adiama YB, Raimi MO (2025) Bridging Knowledge and Practice Gaps in Lassa Fever Prevention: Awareness, Attitudes, and Infection Control Measures Among Healthcare Workers and Residents in Edo, Ondo, and Kwara States. *JMIR Preprints*. 30/03/2025:75233. DOI: 10.2196/preprints.75233. URL: https://preprints.jmir.org/preprint/75233.

Ikechebelu, J., Sagay, S., & Agboghoroma, C. (2013). Nigerian prevention of mother to child transmission of human immunodeficiency virus program: The journey so far. *Journal of HIV and Human Reproduction*, 1(1), 1. https://doi.org/10.4103/2321-9157.116527

Ilankoon, I., & Goonewardena, C. (2016). Public health midwives' role in health education regarding vaginal discharge: A cross sectional descriptive study. *International Journal of Scientific Research and Management*. https://doi.org/10.18535/ijsrm/v4i6.12

Ishikawa, N., Newman, L., & Taylor, M. (2016). Elimination of mother-to-child transmission of HIV and syphilis in Cuba and Thailand. *Bulletin of the World Health Organization*, 94, 787–787A.

John, A., & Faridi, T. A. (2022). Awareness and knowledge of human immunodeficiency virus transmission and prevention from mother to child: A cross-sectional study among female sex workers. *Pakistan BioMedical Journal*, 54–58. https://doi.org/10.54393/pbmj.v5i5.422

John, H., & Donaven, E. (2011). *Why is HIV/AIDS lethal?* Retrieved from http://www.publichealthusa.org/cdc/usaid/hiv-aids-lethal.aspx

Joshua MT, Austin-Asomeji I, Izah SC, Raimi MO (2024) Environmental Factors Exacerbating Hepatitis Transmission: A Mini Review. *J. Pharmacol Clin Toxicol* 12(1):1181.https://www.jscimedcentral.com/jounal-article-info/Journal-of-Pharmacology-and-Clinical-Toxicology/Environmental-Factors--Exacerbating-Hepatitis--Transmission%3A-A-Mini-Review-11615.DOI: https://doi.org/10.47739/2333-7079/1181.

Kakwi JD, Yakasai KM, Kakwi JD, Raimi MO (2025). Promotion over pixels: a mixed-methods analysis of vaccine communication strategies in Plateau State, Nigeria. *BMJ Open* 2025;0:e094029. doi:10.1136/ bmjopen-2024-094029.

Kakwi JD, Yakasai KM, Raimi MO, Kakwi JD (2024a) Understanding the Dynamics of COVID-19 Vaccine Uptake in Plateau State, Nigeria: Analyzing Socioeconomic, Cultural, and Communication Influences. *JMIR Preprints*. 30/12/2024:70702. DOI: 10.2196/preprints.70702. URL: https://preprints.jmir.org/ojs/index.php/preprints/preprint/70702.

Kakwi JD, Yakasai KM, Kakwi JD, Raimi MO (2024b) Campaigning Against Vaccine Hesitancy: Evaluating the Effectiveness of Health Communication on COVID-19 Vaccination Uptake in Plateau State, Nigeria. *JMIR Preprints*. 22/09/2024:66755. DOI: 10.2196/preprints.66755 URL: https://preprints.jmir.org/preprint/66755.

Kigamme, G., & Terumo, C. (2018). Impact of public health programmes on mother-to-child transmissions (MTCT) of HIV/AIDS in Burundi. *Global Health Action*, 7(2), 111–124.

Kumar, S., & Preetha, G. (2012). Health promotion: An effective tool for global health. *Indian Journal of Community Medicine*, 37(1), 5.

Lette, A. (2019). Knowledge, attitude and practice towards prevention of mother to child transmission of HIV among pregnant women attending antenatal care in Southeast Ethiopia. *Nursing & Healthcare International Journal*, 3(5). https://doi.org/10.23880/nhij-16000201

Ma, L., Alla, N. R., Li, X., Mynbaev, O. A., & Shi, Z. (2014). Mother-to-child transmission of HBV: Review of current clinical management and prevention strategies. *Reviews in Medical Virology*, 24(6), 396–406. https://doi.org/10.1002/rmv.1801

Mahamat, P. F. L. (2015). Immediate post-partum haemorrhage: Epidemiological aspects and maternal prognosis at N'Djamena Mother and Child Hospital (Chad). *Clinics in Mother and Child Health*, 12(2). https://doi.org/10.4172/2090-7214.1000182

Mbutuidi, E., & Egomi, W. (2018). Public health education and prevention of mother to child transmissions in Uganda. *African Journal of Reproductive Health*, 12(3), 141–150.

Modi, S., Callahan, T., & Rodrigues, S. (2017). Overcoming health system challenges for women and children living with HIV through the global plan. *Journal of Acquired Immune Deficiency Syndrome*, 75(1), 76–85.

Mor, Z., Sheffer, R., & Chemtob, D. (2017). Mother-to-child HIV transmissions in Israel, 1985–2011. *Epidemiology and Infection*, 145(9), 1913–1921. https://doi.org/10.1017/s0950268817000577.

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Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 14 April 2026 doi:10.20944/preprints202604.0909.v1

Mordecai O, Uchenna GE, Emma A, Elemuwa TD; Gabriel JO; Egberipou T; Etim EO; Christopher OE; Morufu OR; Anuoluwapo B (2024). Analyzing Nigeria's Journey Towards Sustainable Development Goals: A Comprehensive Review From Inception to Present. Qeios. doi:10.32388/8O5QEG.

Morufu OR, Aziba-anyam GR and Teddy CA (2021a) 'Silent Pandemic': Evidence-Based Environmental and Public Health Practices to Respond to the Covid-19 Crisis. *IntechOpen.* DOI: http://dx.doi.org/10.5772/intechopen.100204. ISBN 978-1-83969-144-7. https://www.intechopen.com/online-first/silent-pandemic-evidence-based-environmental-and-public-health-practices-to-respond-to-the-covid-19-Published: December 1st 2021; ISBN: 978-1-83969-144-7; Print ISBN: 978-1-83969-143-0; eBook (PDF) ISBN: 978-1-83969-145-4. Copyright year: 2021.

Morufu OR, Aziba-anyam GR, Teddy CA (2021b). Evidence-based Environmental and Public Health Practices to Respond to the COVID-19 Crisis, 07 May 2021, PREPRINT (Version 1) available at *Research Square* [https://doi.org/10.21203/rs.3.rs-504983/v1] https://europepmc.org/article/PPRID/PPR335534; EMSID:EMS123969.

Muhammad, F., Abdulkareem, J. H., & Chowdhury, A. (2017). Major public health problems in Nigeria: A review. *South East Asia Journal of Public Health*, 7(1), 6–11.

Mutabazi, J., Zarowsky, C., & Trottier, H. (2017). The impact of programs for prevention of mother-to-child transmission of HIV on health care services and systems in sub-Saharan Africa—A review. *Public Health Review*, 12(38), 28–34.

National Agency for the Control of AIDS (NACA). (2015). *Nigeria GARPR 2015*. Retrieved from http://www.unaids.org/sites/default/files/country/documents/NGA_narrative_report_2015.pdf.

National Agency for the Control of AIDS (NACA). (2016). *Fact sheet: Prevention of mother to child transmission (PMTCT)*. Retrieved from https://naca.gov.ng/fact-sheet-prevention-mother-child-transmission-pmtct-2016/

National Agency for the Control of AIDS (NACA). (2017). *National strategic framework on HIV and AIDS: 2017–2021*. Retrieved from https://www.childrenandaids.org/sites/default/files/2017-11/NATIONAL-HIV-AND-AIDS-STRATEGIC-FRAMEWORK.pdf

National Agency for the Control of AIDS (NACA). (2019). *Revised national HIV/AIDS strategic framework 2019-2021*. Retrieved from https://naca.gov.ng/revised-national-hiv-and-aids-strategic-framework-2019-2021/

Nimisingha JA, Morufu OR, Lawan MI, Alina P, Anuoluwapo AB, Sarah SJ, Funmilayo AA (2024) Advancements in Disaster Response through Telemedicine and Emergency Medical Operating System (TELEMED-EMOS) Integration: A Narrative Review. *Advance.* August 20, 2024. DOI: 10.31124/advance.172416246.69722926/v1.

Nkwo, P. O. (2012). Prevention of mother to child transmission of human immunodeficiency virus: The Nigerian perspective. *Annals of Medical and Health Sciences Research*, 2(1), 56–65. https://doi.org/10.4103/2141-9248.96940

Oaiya, A. I., Tinuoye, O., Olatawura, L., Balarabe, H., & Abubakar, H. (2022). Determining staffing needs for improving primary health care service delivery in Kaduna State, Nigeria. *F1000Research*, 11, 429. https://doi.org/10.12688/f1000research.110039.2.

Oginifolunnia OC, Elemuwa CO, Adias TC, Raimi MO, Angalabiri C (2025) Bridging the Gaps: Unveiling Weaknesses in Disease Surveillance During Mass Immunization Campaigns in Nigeria *JMIR Preprints.* 04/07/2025:80148. DOI: 10.2196/preprints.80148. URL: https://preprints.jmir.org/preprint/80148.

Oguezi, P., Yusouf, E., Mohammed, T., & Orji, S. (2019). *HIV and AIDS in Nigeria*. Retrieved from https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/nigeria.

Okechukwu CO, Ainu M, Adias TC, Elemuwa CO, Rotifa SU, Ogbointuwei C, Raimi MO, Oweibia M, Alabo AF, Okoyen E, Appah WW (2024) Evaluating the Impact of Rotavirus Vaccination on Childhood Diarrhea Incidence in Bayelsa State, Nigeria: Achievements, Challenges, and Future Directions. JMIR Preprints. 27/07/2024:64822. DOI: 10.2196/preprints.64822. URL: https://preprints.jmir.org/preprint/64822.

Olalekan RM (2020). "What we learn today is how we behave tomorrow": a study on satisfaction level and implementation of environmental health ethics in Nigeria institutions. *Open Access Journal of Science*; 4(3):82–92. DOI: 10.15406/oajs.2020.04.00156.

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Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 14 April 2026 doi:10.20944/preprints202604.0909.v1

Olakunde, B., Adeyinka, D., Olawepo, J., Pharr, J., Ozigbu, C., Wakdok, S., Oladele, T., & Ezeanolue, E. (2019). Towards the elimination of mother-to-child transmission of HIV in Nigeria: A health system perspective of the achievements and challenges. *International Health*, 11(4), 240–249.

Olaniyi AO; Morufu OR (2025) From Crisis to Catalyst: Leveraging Public Health Emergencies to Redesign Urban Health Policy in Nigerian Megacities. Oral Presentation Presented at the 3rd Ku8+International Conference, Kwara State University, Malete with the theme "Innovation and Sustainability of Higher Education in a Changing World.", which held on Wednesday, 6th – Friday 8th August, 2025.

Oleribe, O., Iyalla, G., Taiwo, J., Enenche, E., Amadi, B., Nwabuzor, S., Akinola, E., Ekom, E., Nwachukwu, C., Osita-Oleribe, P., & Taylor-Robinson, S. (2017). A comprehensive HIV program by an indigenous organization in Nigeria: A 5-year progress report. *Annals of Medical Health Sciences Research*, 7, 101–105.

Olutomi, Y. S., & Bassey, E. (2017). An appraisal of the prevention of mother-to-child transmission of hepatitis B virus health system in Nigeria. *Journal of Public Health and Epidemiology*, 9(12), 309–317. https://doi.org/10.5897/jphe2017.0978.

Oweibia M, Elemuwa UG, Akpan E *et al* (2024). Analyzing Nigeria's Journey Towards Sustainable Development Goals: A Comprehensive Review From Inception To Present [version 1; peer review: awaiting peer review]. *F1000Research* 2024, 13:984 (https://doi.org/10.12688/f1000researtch.148020.1).

Oyinlola, O. (2024). Addressing the challenges of dementia care in Nigeria: A call for a comprehensive national strategy. *Public Health Challenges*, 3(2). https://doi.org/10.1002/puh2.186.

PEPFAR. (2020). Large national survey shows smaller HIV epidemic in Nigeria than once thought and highlights key gaps towards reaching HIV epidemic control. Retrieved from https://www.pepfar.gov/press/releases/290345.htm.

Perdiguero, E. (2001). Anthropology in public health: Bridging differences in culture and society. *Journal of Epidemiology & Community Health*, 55(7), 528b–528.

Preetam, Q., Krishan, P., & Fatool, G. (2016). Public health programmes and the prevention of mother-to-child transmissions (PMTCT) in India. *Asian Journal of Reproductive Health and Medicine*, 23(9), 240–249.

Promise, V.I., Alabere, I., Abdulraheem, I. and Raimi, M.O. (2026) Improving Childhood Immunization Completion in Rural Bayelsa State, Nigeria: A Pragmatic Cluster Randomized Trial of Mobile Phone Reminders and Home Visits. *Open Journal of Preventive Medicine*, 16, 1-20. https://doi.org/10.4236/ojpm.2026.161001.

Promise VI, Alabere I, Abdulraheem I, Raimi MO (2025) The Effect of Mobile Phone and Home Visit on Childhood Vaccination Uptake in Rural Communities of Bayelsa State Nigeria. A Pragmatic Cluster Randomized Control Trial. *JMIR Preprints*. 01/04/2025:75332. DOI: 10.2196/preprints.75332. URL: https://preprints.jmir.org/preprint/75332.

Promise VI, Macauley T, Alabere I, Abdulraheem I, Raimi MO (2024) Closing the Gap: Assessment of Vaccination Coverage Among Under Two Children in Bayelsa State, Nigeria. *JMIR Preprints*. 29/12/2024:70671. DOI: 10.2196/preprints.70671. URL: https://preprints.jmir.org/preprint/70671.

Raimi MO (2025a). Peer Review Report For: Zero-Dose Childhood Immunization in Conflict-Affected Productive Safety Net Program Districts of Ethiopia: A Comparative Cross-Sectional Study [version 2; peer review: 2 approved with reservations, 1 not approved]. VeriXiv 2025, 2:140 (https://doi.org/10.21956/verixiv.1436.r3292).

Raimi MO (2025b). Peer Review Report For: Zero-Dose Childhood Immunization in Conflict-Affected PSNP Districts of Ethiopia: A Comparative Cross-Sectional Study [version 3; peer review: 1 approved, 1 approved with reservations, 1 not approved]. VeriXiv 2025, 2:140 (https://doi.org/10.21956/verixiv.2425.r4026).

Raimi MO (2025c). Peer Review Report For: Mapping Community Vulnerability to reduced Vaccine Impact in Uganda and Kenya: A spatial Data-driven Approach [version 2; peer review: 1 approved with reservations]. NIHR Open Res 2025, 5:24 https://doi.org/10.3310/nihropenres.15272.r36384.

Raimi MO (2025d). Peer Review Report For: Mapping Community Vulnerability to reduced Vaccine Impact in Uganda and Kenya: A spatial Data-driven Approach [version 3; peer review: 2 approved]. *NIHR Open Res* 2025, 5:24 (https://doi.org/10.3310/nihropenres.15354.r37261).

Raimi MO (2025e). Peer Review Report For: Development of a Health Impact Assessment Implementation Model: Enhancing Intersectoral Approaches in Tackling Health Inequalities- A Mixed Methods Study

© 2026 by the author(s). Distributed under a Creative Commons CC BY license.

Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 14 April 2026 doi:10.20944/preprints202604.0909.v1

Protocol [version 3; peer review: 2 approved, 1 approved with reservations]. *HRB Open Res* 2025, 7:14 (https://doi.org/10.21956/hrbopenres.15466.r45418). https://hrbopenresearch.org/articles/7-14/v3#referee-response-45418.

Raimi MO, Emeka CL, Ebikapaye O, Angalabiri C, Christopher O, Atoyebi B (2021a) COVID-19 Decision Impacts: Vaccine Hesitancy, its Barriers and Impact Studies: Taking Bayelsa State as an Example., 27 May 2021, PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.3.rs-566532/v1].

Raimi OM, Lucky EC, Okoyen E, Clement A, Ogbointuwei C, *et al.* (2021b) Making Better Informed, More Confident COVID-19 Decisions: Vaccine Hesitancy, Its Barriers and Impact Studies: Taking Bayelsa State as an Example. Int J Vaccine Immunizat 5(1): dx.doi. org/10.16966/2470-9948.126. https://sciforschenonline.org/journals/vaccines/IJVI126.php.

Raimi, MO., Mcfubara, KG., Abisoye, OS., Ifeanyichukwu EC., Henry SO., & Raimi, GA (2021c) Responding to the call through Translating Science into Impact: Building an Evidence-Based Approaches to Effectively Curb Public Health Emergencies [COVID-19 Crisis]. *Global Journal of Epidemiology and Infectious Disease*, 1(1). DOI: 10.31586/gjeid.2021.010102. Retrieved from https://www.scipublications.com/journal/index.php/gjeid/article/view/72.

Raimi MO & Raimi AG (2020). The Toughest Triage in Decision Impacts: Rethinking Scientific Evidence for Environmental and Human Health Action in the Times of Concomitant Global Crises. *CPQ Medicine*, 11(1), 01-05.

Raimi MO, Moses T, Okoyen E, Sawyerr HO, Joseph BO, Oyinlola BO (2020a) "A Beacon for Dark Times: Rethinking Scientific Evidence for Environmental and Public Health Action in the Coronavirus Diseases 2019 Era" *Medical and Research Microbiology*, Vol. 1, Issues 3.

Raimi MO, Ihuoma BA, Esther OU, Abdulraheem AF, Opufou T, Deinkuro NS, Adebayo PA and Adeniji AO (2020b) "Health Impact Assessment: Expanding Public Policy Tools for Promoting Sustainable Development Goals (SDGs) in Nigeria". *EC Emergency Medicine and Critical Care* 4.9 (2020).

Raimi MO, and Ochayi EO. (2017) Assessment of the Rate of Sexually Transmitted Diseases in Kubwa F.C.T. Abuja, Nigeria, *Science Journal of Public Health*. Vol. 5, No. 5, 2017, Pp. 365-376. DOI: 10.11648/J.Sjph.20170505.12.

Robertson, F., Zwemba, P., & Mpemba, T. (2016). The role of public health initiatives in managing mother-to-child transmissions of HIV: The South African perspective. *African Journal of Reproductive Health*, 28(5), 190–201.

Rotifa SU, Awotua-Efebo EB, Owapiriba JA, Adesina AD, Oyeyemi AS, Raimi AaG, Elemuwa CO, Raimi MO, Oginifolunnia OC (2024) Ignoring Reason and Evidence: Factors Influencing Learning Preferences and Modalities Among Clinical Students in a South-South Nigerian Medical School. *JMIR Preprints.* 18/06/2024:63404. DOI: 10.2196/preprints.63404. URL: https://preprints.jmir.org/preprint/63404.

Rotifa SU, Awotua-Efebo EB, Owapiriba PA, Adesina AD, Abisoye OS, Raimi A-AG, Elemuwa CO, Raimi MO, Oginifolunnia OC (2026) Learning Style Preferences Among Clinical Students in Nigeria: Evidence from a Cross-Sectional Study Using the VARK Model. JMIR Form Res 2026;0:e0. URL: https://formative.jmir.org/2026/0/e0/doi: 10.2196/84089.

Sheikhansari, N., Abraham, C., Denford, S., & Eftekhar, M. (2021). A qualitative assessment of the sexual-health education, training and service needs of young adults in Tehran. *BMC Public Health*, 21(1). https://doi.org/10.1186/s12889-021-11371-x

Sofoluwe, G. O., Schram, R., & Ogunmekan, D. A. (1996). *Public health in Africa* (1st ed.). Ibadan: University of Ibadan Printing Press.

Teddy CA; Christopher OE; Morufu OR (2025) Community Engagement and Social Innovation for Environmental Justice in Sub-Saharan Africa. Oral Presentation Presented at the 1st International Conference of the Faculty of Science, Federal University Otuoke, Bayelsa State on the theme: Revolutionizing a Sustainable Tomorrow: Harnessing Science, Innovation and Community Power to Drive Circular Economy Solutions, Climate Resilience, and a Thriving Green Economy, which held Tuesday, 4th – Friday 7th March, 2025. Pp. 75.

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Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 14 April 2026 doi:10.20944/preprints202604.0909.v1

Tinimoye, M.; Raimi, M. O.; Daberechi, A (2026). Urban-Rural Disparities in Primary Healthcare Service Delivery and Implications for Sustainable Development Goal 3 in Southern Nigeria. *Preprints* 2026, 2026010828. https://doi.org/10.20944/preprints202601.0828.v1.

Tolulope Joseph Ogunniyi, Dike, U. P., Turzin, J. K., & Paul-Worika, P. N. (2025). Infectious diseases surveillance system in Nigeria: Lesson from COVID-19 pandemic. *Public Health Challenges*, 4(2). https://doi.org/10.1002/puh2.70057

Tuebi M; Franco, A; Raimi, MO; Chidubem, O; Sampou, WD (2021). The Quality and Acceptance of Family Planning Services in Improving Bayelsa State: Lessons Learnt From a Review of Global Family Planning Programs. *Greener Journal of Medical Sciences*, 11(2): 212-225.

Uchenna GE, Enato E, Christopher OE, Tochukwu DE, Morufu OR (2024) Pentavalent Vaccine: How Safe Is It Among Infants Accessing Immunization In Nigerian Health Facilities. medRxiv 2024.05.28.24307998; doi: https://doi.org/10.1101/2024.05.28.24307998.

Ukuellu, W., & Elkanah, D. (2019). Mitigating the prevalence of mother-to-child transmissions through effective public health programmes. *European Journal of Community Health and Development*, 19(9), 221–243.

Una, A., Ogbonnaya, L., Obionu, C., Omeje, K., & Obi, E. (2017). Training of traditional birth attendants on prevention of mother to child transmission of HIV: Effect on their knowledge and delivery of prevention of mother to child transmission of HIV services in Igbagu, Ebonyi State Nigeria. *Archives of Current Research International*, 8(2), 1–12. https://doi.org/10.9734/acri/2017/34390

UNAIDS. (2010). *Report on the global HIV/AIDS epidemic*. Retrieved from https://scholar.google.com/scholar_lookup?title=Report+on+the+Global+HIV/AIDS+Epidemic&publication_year=2010

UNAIDS. (2013). *2013 UNAIDS report on the global AIDS epidemic*. Retrieved from https://www.unaids.org/en/resources/documents/2013/20130923_UNAIDS_Global_Report_2013

UNAIDS. (2014). *Fast-Track: Ending the AIDS epidemic by 2030*. Retrieved from https://scholar.google.com/scholar_lookup?title=Fast-Track%3A%20ending%20the%20AIDS%20epidemic%20by%202030&publication_year=2014.

UNAIDS. (2016). *On the Fast-Track to an AIDS-free generation* [Conference session]. Geneva, Switzerland.

UNAIDS. (2017). *Ending AIDS: Progress towards the 90-90-90 targets*. Retrieved from http://www.unaids.org/sites/default/files/media_asset/Global_AIDS_update_2017_en.pdf

UNAIDS. (2018). *Miles to go: Global AIDS update*. Retrieved from https://www.unaids.org/en/20180718_GR2018

UNAIDS. (2018). *Start free, stay free, AIDS free: 2017 progress report*. Retrieved from http://www.unaids.org/sites/default/files/media_asset/JC2923_SFSFAF_2017progressreport_en.pdf.

UNAIDS. (2019). *AIDS info*. Retrieved from http://aidsinfo.unaids.org/

UNAIDS. (2019). *Nigeria*. Retrieved from http://www.unaids.org/en/regionscountries/countries/nigeria

UNAIDS. (2019). *Start free stay free AIDS free – 2019 report*. Retrieved from https://www.unaids.org/en/resources/documents/2019/20190722_UNAIDS_SFSFAF_2019

UNAIDS. (2020). UNAIDS report on the global AIDS epidemic shows that 2020 targets will not be met because of deeply unequal success; COVID-19 risks blowing HIV progress way off course. Retrieved from https://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2020/july/20200706_global-aids-report

UNICEF. (2020). *Elimination of mother-to-child transmission*. Retrieved from https://data.unicef.org/topic/hivaids/emtct/

Warigon, C. (2019). *HIV initiative 'prevention of mother-to-child transmission' saves exposed infants in Nigeria*. Retrieved from https://www.afro.who.int/news/hiv-initiative-prevention-mother-child-transmission-saves-exposed-infants-nigeria

William, G., & Fitcher, R. (2004). *HIV/AIDS: All there is to know*. Retrieved from http://www.hivaids.org/canadian-government-resource/all-to-know.aspx

World Health Organization (WHO). (2020). *Mother-to-child transmission of HIV*. Retrieved from https://www.who.int/hiv/topics/mtct/en/

Yuguda, E. (2019). Prevention of mother-to-child transmissions of HIV/AIDS in Northern Nigeria through public health education (Master's thesis). Ahmadu Bello University, Zaria.

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Preprints.org (www.preprints.org) | NOT PEER-REVIEWED | Posted: 14 April 2026
doi:10.20944/preprints202604.0909.v1

Yuguda, I., Abdulazeez, S., & Mustapha, A. (2017). Imperatives of public health programmes in the eradication of mother-to-child transmissions in Somalia. *Somali Health Watch*, 7(3), 34–47.

Yusuf BA; Morufu OR; Agbebaku HU (2025) Echoes of Outbreaks Past: Rethinking Public Health Preparedness in Sub-Saharan Africa in the Age of Emerging Pandemics. Oral Presentation Presented at the 3rd Ku8+International Conference, Kwara State University, Malete with the theme "Innovation and Sustainability of Higher Education in a Changing World.", which held on Wednesday, 6th – Friday 8th August, 2025.

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