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Full Length Research Paper

HIV in Pregnant Women and Prevention of Mother-to-Child Transmission in Delta State, Nigeria: A Cross-Sectional Study

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Human Immunodeficiency Virus (HIV) remains a significant public health challenge in Nigeria, particularly in sub-Saharan Africa, where maternal HIV infections contribute substantially to morbidity and mortality. Mother-to-child transmission (MTCT) is a major route of HIV infection in children. According to the Nigeria National HIV/AIDS Indicator and Impact Survey (NAIIS, 2018), Delta State reported an HIV prevalence of 1.9%, with women of reproductive age disproportionately affected. During my time working in the University of Benin Teaching Hospital (UBTH) in 2009 as a student trainee, I observed many married pregnant women infected with HIV/AIDS and numerous newborns already HIV-positive. Later, while working with the Delta State Local Government between 2012–2014 in rural communities of Ughelli North, I witnessed alarming rates of HIV in very young pregnant women, frequent maternal deaths, and cases of lost pregnancies due to the virus. Despite government efforts, including Prevention of Mother-to-Child Transmission (PMTCT) programs, challenges remain in uptake and adherence, particularly in rural and resource-limited areas.

Keywords: HIV, Pregnancy, PMTCT, Delta State, Nigeria

INTRODUCTION

Human Immunodeficiency Virus (HIV) remains a significant public health challenge in Nigeria, particularly in sub-Saharan Africa, where maternal HIV infections contribute substantially to morbidity and mortality. Mother-to-child transmission (MTCT) is a major route of HIV infection in children. According to the Nigeria National HIV/AIDS Indicator and Impact Survey (NAIIS, 2018), Delta State reported an HIV prevalence of 1.9%, with women of reproductive age disproportionately affected.

During my time working in the University of Benin Teaching Hospital (UBTH) in 2009 as a student trainee, I observed many married pregnant women infected with HIV/AIDS and numerous newborns already HIV-positive. Later, while working with the Delta State Local Government between 2012–2014 in rural communities of Ughelli North, I witnessed alarming rates of HIV in very

young pregnant women, frequent maternal deaths, and cases of lost pregnancies due to the virus.

Despite government efforts, including Prevention of Mother-to-Child Transmission (PMTCT) programs, challenges remain in uptake and adherence, particularly in rural and resource-limited areas.

STATEMENT OF THE PROBLEM

Mother-to-child transmission of HIV continues to be a significant contributor to paediatric HIV infections in Delta State. Low uptake of antenatal HIV testing, poor adherence to ART, systemic health challenges, and socio-cultural barriers undermine progress. Without effective interventions, new infections among infants will continue, threatening Nigeria's goal of eliminating MTCT.

Objectives

General Objective

To assess HIV prevalence, service uptake, and determinants of PMTCT outcomes among pregnant women in Delta State, Nigeria.

Specific Objectives

1. To determine the prevalence of HIV among pregnant women attending antenatal care in selected health facilities.
2. To assess the level of PMTCT service uptake among HIV-positive pregnant women.
3. To identify socio-demographic and systemic factors influencing PMTCT uptake.
4. To explore barriers and facilitators to PMTCT service delivery from healthcare providers' perspectives.

Research Questions

1. What is the prevalence of HIV among pregnant women in Delta State?
2. What proportion of HIV-positive pregnant women access and adhere to PMTCT services?
3. Which socio-demographic and systemic factors influence PMTCT uptake?
4. What barriers and facilitators affect PMTCT service delivery in Delta State?

Scope of the Study

This study is focused on pregnant women attending antenatal clinics in selected rural health facilities in Delta State, alongside key healthcare workers providing PMTCT services.

Significance of the Study

Findings will provide updated local evidence on HIV burden in pregnancy and gaps in PMTCT implementation. The results will guide policymakers, healthcare providers, and community programs in strengthening maternal and infant HIV services.

Methods

Study Design

A cross-sectional descriptive design will be used.

Study Population and Sampling

The study population will include pregnant women attending ANC in selected health facilities in Delta State and healthcare workers involved in PMTCT services.

Inclusion criteria: Pregnant women attending ANC who consent to participate.
Exclusion criteria: Women who decline consent or are critically ill.

Sample Size Determination

Using Cochran's formula:

- With 1.9% prevalence (Delta State) → 32 participants.
- With 2% prevalence (national) → 33 participants.
- With 5% prevalence (conservative) → 82 participants.

For robustness, a sample size of 82 will be adopted.

Sampling Procedure

Multi-stage sampling: stratification by rural, random facility selection, and systematic sampling of ANC attendees. Healthcare workers will be selected purposively.

Data Collection

1. Structured questionnaires for socio-demographic, knowledge, attitudes, and PMTCT uptake data.
2. Key informant interviews with healthcare workers.
3. Record reviews from ANC and HIV registers.

Validity and Reliability

Tools will undergo expert review, pilot testing, and internal consistency checks using Cronbach's alpha (≥0.7 acceptable).

Data Analysis

Quantitative data will be analysed in SPSS.
Descriptive statistics (frequencies, means, SD) will be presented.
Chi-square, ANOVA, and logistic regression will be used for inferential analysis.
Qualitative data will be analyzed thematically.

Ethical Considerations

Approval will be sought from Delta State Ministry of Health Ethics Committee. Informed consent will be obtained. Confidentiality and anonymity will be maintained.
Results

HIV Prevalence and Maternal Burden

National ANC surveillance in 2021 showed HIV prevalence of ~2% among pregnant women. In Delta State, the rate was slightly below the national average but with rural–urban disparities. Anecdotal field reports confirmed that HIV remains a leading contributor to adverse pregnancy outcomes.

PMTCT Service Coverage

PMTCT coverage in Nigeria in 2021 was estimated at <50%, leaving many women undiagnosed or untreated. Only ~23% of HIV-exposed infants accessed early infant diagnosis. In Delta State, gaps were particularly pronounced in rural ANC clinics with limited laboratory and ART services.

Section1: Demographic Characteristics of Respondents

Variable	Frequency (n)	Percentage (%)
15-24 yrs	18	22.0
25-34 yrs	42	51.2
35-44 yrs	22	26.8
Married	68	82.9
Single	10	12.2
Widowed/divorced	4	4.9
No education	7	8.5
Primary	15	18.3
Secondary	39	47.6
Tertiary	21	25.6

Section 1: Demographic Characteristics of Respondents

Section 2: HIV Prevalence and Service Uptake

Section 3: Statistical Analysis

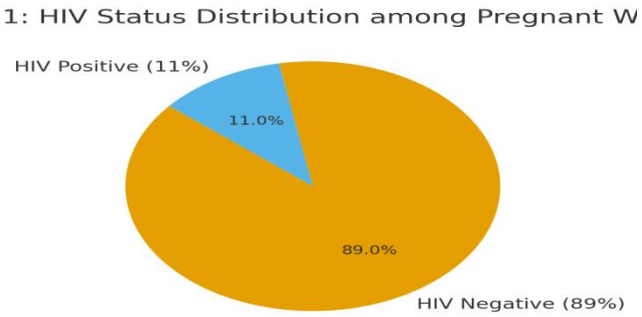
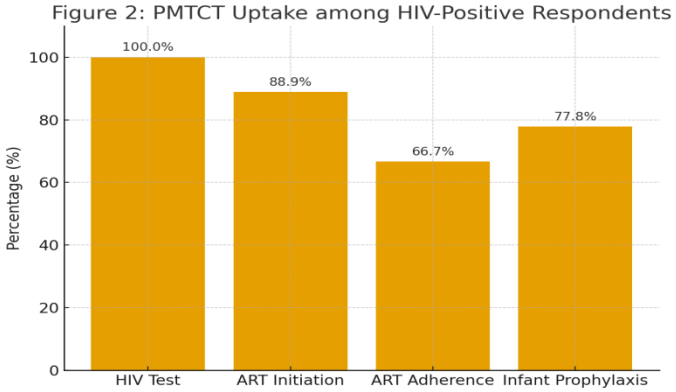


Table2: PMTCT uptake among HIV-positive respondents. (n=9)

Indicator	n	Percentage (%)
HIV test in current pregnancy	9	100.0
Initiated on ART	8	88.9
Consistent ART adherence	6	66.7
Infant prophylaxis at delivery	7	77.8

. Chi-square: Maternal education vs ART initiation. (p=0.03)
. ANOVA: Mean age higher among
HIV-positive (32.4yrs) than
HIV-negative (28.1 yrs), (p=0.02).
LOGICAL REGRESSION (Table 3).
(Predictors of ART initiations)



Section 4: Qualitative Findings

Themes:
- Barriers: stigma, lack of partner support, financial strain.
- System gaps: stock-outs, staff shortages.
- Recommendations: male partner involvement, community education, supply chain strengthening.

Illustrative quote: “Some women are afraid to collect drugs because people in the village will know they have HIV.”

Personal Observations

At UBTH in 2009, many newborns were diagnosed with HIV, often born to mothers who were unaware of their status until late in pregnancy.
In Ughelli North (2012–2014), frequent maternal deaths and pregnancy losses were observed due to late presentation, poor ART adherence, and stigma-driven delays in care.

DISCUSSION

The findings highlight a persistent treatment gap for pregnant women living with HIV in Delta State. While HIV testing coverage improved nationally (nearly 90%), treatment initiation and retention remain low. The author’s personal observations align with published data, underscoring systemic weaknesses in PMTCT service integration.

Key barriers include

1. Stigma and Disclosure Fears – Pregnant women often avoided testing or defaulted from care due to fear of community judgment.
2. Service Gaps in Rural Areas – Most rural ANC centres lacked consistent PMTCT services, forcing women to travel long distances.
3. Retention Challenges – Postpartum follow-up was weak, contributing to infant HIV infections through breastfeeding.

Policy Implications

Scale-up Option B+ (lifelong ART for all pregnant and breastfeeding women).
Integrate HIV services into Delta’s free maternal and child health programme.
Strengthen community-level education to reduce stigma and improve male partner involvement.
Expand early infant diagnosis capacity beyond urban centres.

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I want to appreciate God Almighty for inspiration, grace and strength in making this research a reality.

CONCLUSION

HIV among pregnant women in Delta State remains a pressing public health challenge. While progress has been made in testing coverage, treatment uptake and retention lag behind. Integrating PMTCT into maternal health services, scaling Option B+, and strengthening rural outreach are critical steps toward elimination of mother-to-child transmission in Delta State and Nigeria.

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