

FACILITATORS AND BARRIERS TO ANTENATAL CARE UTILISATION IN PRIMARY HEALTHCARE FACILITIES OF THE NIGER DELTA: A COMMUNITY-BASED CROSS-SECTIONAL STUDY FROM YENAGOA, BAYELSA STATE, NIGERIA

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ABSTRACT

Background: Effective antenatal care (ANC) delivery in primary healthcare (PHC) facilities depends not only on supply-side service availability but on the interplay of facilitators that draw women into care and barriers that keep them away. In the Niger Delta, where riverine geography, road infrastructure deficits, and intermittent electricity supply compound the operational challenges of PHC, this interplay is particularly acute. Pharmacists and other PHC professionals have a direct stake in understanding it. **Objective:** To identify and characterise the facilitators and barriers to ANC utilisation among recent mothers attending PHC facilities in Yenagoa, Bayelsa State, with attention to the implications for social pharmacy and PHC service-delivery reform. **Methods:** A community-based cross-sectional study was conducted among 302 recent mothers in twelve communities across six wards in Yenagoa Local Government Area, using a four-stage multistage sampling design. Data on facilitators and barriers to ANC utilisation were collected through a pre-tested, interviewer-administered structured questionnaire. Descriptive statistics were used to summarise the relative frequency of each factor, and the principal patterns were interpreted with reference to the published Niger Delta and West African evidence base. **Results:** The principal facilitators of ANC utilisation reported were: the provision of information and services for a healthy pregnancy (23.2%), early detection of pregnancy complications (21.5%), reduction of maternal and neonatal morbidity and mortality (20.5%), and emotional support from providers, peers, and accompanying family members (27.5%). The principal barriers were: travel time to the nearest facility exceeding 30 minutes (35.4%), transportation costs exceeding ₦300 per trip (21.9%), poor road condition (17.9%), lack of reliable transportation (7.6%), absent prior knowledge of ANC services (7.0%), and adherence to cultural practices including herbal medication and geophagy (4.6%). At the health-system level, 88.4% of respondents identified service quality and 65.6% identified provider attitude as determining factors. The convergent picture is one in which structural-geographic and provider-behavioural barriers, rather than information deficits, dominate the non-utilisation profile. **Conclusion:** Non-utilisation of ANC at PHC level in the Niger Delta is driven primarily by structural-geographic and provider-behavioural factors rather than by absent maternal awareness. Interventions should therefore focus on the supply side of the system — including transportation support, road infrastructure investment, respectful-maternity-care training of PHC personnel, integration of pharmacists into ANC service delivery, and constructive engagement with traditional birth attendants — rather than investment in awareness campaigns alone.

KEYWORDS: antenatal care; barriers; facilitators; primary healthcare; Niger Delta; social pharmacy; Nigeria; respectful maternity care.

1. INTRODUCTION

Antenatal care (ANC) utilisation in primary healthcare (PHC) facilities is shaped by a complex constellation of factors operating at the individual, household, community, and health-system levels (Andersen, 1995; Gabrysch & Campbell, 2009). At its most useful for policy and service-delivery design, the analytical distinction between facilitators — factors that draw women into care — and barriers — factors that keep them away — clarifies the levers available to public health actors and identifies where investment is most likely to translate into improved uptake (Bohren et al., 2014; Ntoimo et al., 2019).

In the Nigerian context, and particularly in the Niger Delta where riverine geography, road infrastructure deficits, and intermittent electricity supply compound the operational challenges of PHC, this interplay is especially acute. Published qualitative evidence from Niger Delta states has documented poor road networks, transportation difficulties, long distances to facilities, informal user fees, and negative attitudes of health workers as recurrent drivers of non-utilisation of PHC for pregnancy care (Ntoimo et al., 2019; Owigho & Isara, 2022; Spiby et al., 2012). What has been less systematically quantified is the relative frequency with which these specific barriers — and their corresponding facilitators — are reported by recent mothers in contemporary PHC populations, particularly in Bayelsa State, where the limited published quantitative evidence base does not yet permit confident prioritisation of intervention investments.

This evidence gap is consequential for social pharmacy. Pharmacists and PHC professionals carry a substantial share of the ANC counselling, adherence-support, and supply-chain responsibility in Bayelsa PHC facilities; understanding which facilitators and barriers most powerfully shape utilisation is a precondition for designing pharmacist-led interventions that complement nurse- and midwife-led clinical care. This study was therefore designed to identify and characterise the facilitators and barriers to ANC utilisation among recent mothers attending PHC facilities in Yenagoa, Bayelsa State, and to interpret the findings with attention to their implications for social pharmacy and PHC service-delivery reform.

2. METHODS

2.1 Study Design and Setting

A community-based descriptive cross-sectional study was conducted in Yenagoa Local Government Area (LGA), Bayelsa State, in the South-South geopolitical zone of Nigeria. Yenagoa LGA covers approximately 706 km², has a population of approximately 352,285 persons, and contains 32 PHC centres, six secondary health centres, and one tertiary health centre (National Bureau of Statistics, 2006).

2.2 Population and Sampling

Recent mothers with at least one delivery in the previous five years and at least six months' residence in the study

community were eligible for inclusion. A four-stage multistage sampling design was used to recruit 302 participants across twelve communities (Swali, Gwegwe, Agbura, Famgbe, Igbogene, Okutukutu, Amarata, Azikoro, Ogboloma, Nedugo-Agbia, Onopa, and Ovom) drawn from six randomly selected wards (Atissa I, Atissa II, Epie I, Epie II, Ovom, and Gbarain I). The minimum sample size of 302 was derived from the Cochran formula using $p = 0.77$ (Dairo & Owoyokun, 2010), $Z = 1.96$, $d = 0.05$, and a 10% non-response adjustment.

2.3 Data Collection Instrument

A pre-tested, interviewer-administered structured questionnaire captured socio-demographic characteristics, ANC utilisation, and respondents' assessments of the principal facilitators and barriers to their ANC use during the most recent pregnancy. Facilitators were assessed using an open-ended item set that captured reasons cited for use (information access, complication detection, mortality reduction, and emotional support). Barriers were assessed using a structured item set covering geographic distance, transportation cost, road condition, transportation availability, prior knowledge of services, and adherence to cultural practices. Health-system factors — including service quality, provider attitude, supplies and logistics, and waiting time — were captured in a parallel item set as influencers of utilisation.

2.4 Data Analysis

Data were analysed in IBM SPSS Statistics version 21.0 using descriptive statistics (frequencies and percentages). Findings are interpreted with reference to the published Niger Delta and West African evidence base, with attention to convergence and divergence from prior qualitative studies.

2.5 Ethical Approval

Ethical approval was obtained from the Human Research Ethics Committee of the University of Port Harcourt. Written informed consent was obtained from each participant prior to data collection, with assurances of voluntariness, confidentiality, anonymity, and the right to withdraw at any time without consequence.

3. RESULTS

3.1 Sample Profile

All 302 sampled recent mothers completed the interview, yielding a response rate of 100%. Mean age was 30.8 ± 7.6 years; 57.6% were aged 26–35 years, 81.8% were married, 42.4% had attained tertiary education, and 69.2% reported a monthly income at or below ₦10,000. The sample was therefore predominantly composed of married women of peak reproductive age living under conditions of limited household economic capacity — a profile broadly representative of the recent-mother population attending Yenagoa PHC facilities.

3.2 Facilitators of ANC Utilisation

The principal facilitators of ANC utilisation reported by respondents centred on the informational, screening, and supportive functions of ANC. The provision of information and services for a healthy pregnancy was identified by 23.2% of respondents as a reason for use; early detection of pregnancy complications by 21.5%; and reduction of maternal and neonatal morbidity and mortality by 20.5%. Emotional support — from ANC providers, the peer group of fellow attendees, and accompanying family members — was cited by 27.5% of respondents. The convergence of these four factors indicates that the perceived value of ANC among Yenagoa recent mothers rests substantially on what may be characterised as a 'comprehensive care' rationale: ANC is valued not merely as a clinical service but as a structured opportunity for information, screening, support, and reassurance during a period of physiological and psychosocial vulnerability.

3.3 Barriers to ANC Utilisation

The principal barriers reported by respondents are summarised in Table 1. Distance and transportation-related barriers dominated: 35.4% of respondents reported travel time to the nearest health facility exceeding 30 minutes; 21.9% reported transportation costs exceeding ₦300 per trip; 17.9% reported poor road condition; and 7.6% reported the absence of any reliable means of transportation. Information-deficit barriers were comparatively minor: only 7.0% of respondents cited absence of prior knowledge of ANC services as a reason for non-utilisation, consistent with the high awareness levels documented in this and other Nigerian studies. Cultural practices — including reliance on herbal medication, abdominal massage, geophagy (consumption of chalk or clay), and protein-restriction during pregnancy — were reported as barriers by 4.6% of respondents.

Table 1: Barriers to ANC utilisation reported by respondents (N = 302).

Barrier	Frequency (n)	Percentage (%)
Travel time to nearest facility >30 minutes	107	35.4
Transportation cost >₦300 per trip	66	21.9
Poor condition of access road	54	17.9
Lack of means of transportation	23	7.6
No prior knowledge of ANC services	21	7.0
Cultural practices (herbal medication, abdominal massage, geophagy, dietary restriction)	14	4.6
Unspecified / do not know	17	5.6

Note: Percentages do not sum to 100% because some respondents reported more than one barrier. ANC = antenatal care; ₦ = Nigerian naira.

3.4 Health-System Factors as Influencers of Utilisation

Health-system factors emerged as the most strongly endorsed determinants of ANC utilisation (Table 2). The quality of ANC services was identified by 88.4% of respondents as a determining factor; the attitude of health workers by 65.6%; and the adequacy of supplies and logistics by 61.9%. A further 64.6% agreed that ANC services should be free of charge to all women, and 59.6%

identified waiting time as a determinant. The convergence of these findings indicates that, even where awareness and intention are high, the experienced quality of the care encounter — the welcome received, the waiting time, the empathy of providers, the availability of supplies, and the cost incurred — substantially determines whether intention translates into sustained utilisation.

Table 2: Health-system factors as influencers of ANC utilisation (N = 302).

Health-system factor	Agreed: Yes n (%)	Endorsement rate (%)
Quality of ANC services is a determining factor	267 (88.4)	88.4
Attitude of health workers influences ANC utilisation	198 (65.6)	65.6
ANC services should be free of charge	195 (64.6)	64.6
Reducing access barriers (distance) is important	195 (64.6)	64.6
Waiting time is a determinant of utilisation	180 (59.6)	59.6
Adequacy of supplies and logistics influences utilisation	187 (61.9)	61.9
National policies and guidelines protect women's rights	189 (62.6)	62.6

Note: Endorsement rate = percentage of respondents who responded 'Yes' to each item. ANC = antenatal care.

4. DISCUSSION

This study documents the facilitators and barriers to ANC utilisation among recent mothers in Yenagoa, Bayelsa State, and identifies a coherent and policy-actionable picture. Facilitators centre on the informational, screening, and supportive functions of ANC. Barriers are dominated

by structural-geographic factors — distance, transportation cost, and road condition — and provider-behavioural factors, particularly provider attitude and service quality, rather than by information deficits or cultural opposition. This pattern has important

implications for the design and prioritisation of public health interventions in the Niger Delta.

4.1 Information is the Principal Facilitator — and is Largely Being Delivered

The finding that 23.2% of respondents identified the informational role of ANC as a principal facilitator, combined with the broader evidence that health providers are the principal source of ANC information in this setting, indicates that the PHC information function in Yenagoa is substantially operating as intended. This is consistent with the AlAteeq and Al-Rusaies (2015) multi-country study, which found that women in developing-country settings actively value the comprehensive information ANC provides — particularly on psychosocial dimensions of pregnancy, breastfeeding, danger signs, and complication recognition. The implication for pharmacy practice is that pharmacist-led counselling on antenatal supplements (iron-folate, intermittent preventive treatment in pregnancy [IPTp], calcium), safe use of over-the-counter remedies during pregnancy, and avoidance of contraindicated herbal preparations can be effectively integrated into the broader information function that women already value and seek out.

4.2 Structural-Geographic Barriers Dominate the Non-Utilisation Profile

The dominance of distance, transportation cost, and road condition in the barriers profile — together accounting for more than 75% of structured barrier responses — reinforces the qualitative findings of Ntoimo et al. (2019), Afaya et al. (2020), and Bohren et al. (2014). Ntoimo et al. (2019) specifically documented that non-utilisation of PHC for pregnancy care in Nigeria was associated with poor road networks, difficulty obtaining transportation, long distances to facilities, and uncertainty about facility opening hours. Afaya et al. (2020) reported that women who trekked long distances to health facilities for ANC were substantially less likely to achieve four or more ANC visits. The convergence of qualitative evidence from elsewhere in Nigeria with the quantitative findings of the present study indicates that supply-side investment in transportation infrastructure — including road improvement, community-based transportation schemes, and emergency referral provision — is among the highest-leverage interventions available in the Bayelsa State context.

4.3 Provider Attitude as a Modifiable Barrier

The identification of provider attitude as a determinant of utilisation by 65.6% of respondents is consistent with the findings of Owigho and Isara (2022), who reported that women's perceptions of healthcare workers in Benin City were generally poor and were associated with reluctance to use health facility services in the future. Bohren et al. (2014), in a global qualitative evidence synthesis, identified disrespect and abuse of women during pregnancy and childbirth as a recurrent and consequential phenomenon across low- and middle-income settings. The

implication for the Bayelsa State PHC system is that respectful-maternity-care training of all PHC personnel — including nurses, midwives, community health extension workers, and pharmacists — is a modifiable and high-leverage intervention. The current national emphasis on the Continuum of Care framework and the Federal Ministry of Health's commitment to respectful maternity care provide the policy infrastructure within which such training can be operationalised.

4.4 Cultural Practices: A Smaller but Clinically Important Barrier

The reporting of cultural practices as a barrier by 4.6% of respondents, although numerically smaller than structural barriers, carries disproportionate public health significance because these practices intersect directly with the pharmacotherapy and dietary advice delivered in ANC. Herbal medication may carry teratogenic, hepatotoxic, or uterotonic effects and may interact adversely with iron-folate supplementation and IPTp prophylaxis; geophagy is associated with anaemia, parasitic infection, and gastrointestinal complications; and protein restriction worsens nutritional status during a period of elevated physiological requirement (Onyeka et al., 2018; Kennedy et al., 2013; Aikpitanyi et al., 2025). The implication for social pharmacy is that constructive — rather than dismissive — engagement with traditional birth attendants and senior female relatives, combined with non-judgmental disclosure-seeking during ANC counselling, is more likely to identify hazardous practices and reinforce safe alternatives than outright rejection of all cultural practice.

4.5 Implications for Social Pharmacy and PHC Service-Delivery Reform

Drawing the foregoing together, this study has four direct implications for social pharmacy and PHC service-delivery reform in Bayelsa State. First, pharmacist-led ANC counselling can be integrated into existing PHC workflows to reinforce the information function that women already value, with particular attention to safe medicine use, adherence to iron-folate and IPTp regimens, and identification of harmful herbal preparations. Second, supply-chain integrity — particularly availability of iron-folate supplements, sulphadoxine-pyrimethamine, tetanus-toxoid vaccine, and other essential ANC commodities — should be foregrounded as a quality-of-care determinant, given that 61.9% of respondents identified supplies and logistics as influencing utilisation. Third, respectful-maternity-care training should be extended to pharmacy and community health extension worker cadres, not confined to nurses and midwives. Fourth, integration of pharmacists into multidisciplinary maternal-health outreach teams — particularly in remote ward communities where distance is the dominant barrier — could materially reduce the geographic access gap.

4.6 Strengths and Limitations

The principal strengths of this study include a 100% response rate, multistage random sampling across twelve communities representative of urban and peri-urban Yenagoa, and a pre-tested instrument. The principal limitations are the cross-sectional design (which precludes causal inference), reliance on maternal recall of factors influencing utilisation during pregnancies of up to five years prior (which may introduce recall bias), and the absence of a qualitative strand (which limits the depth of cultural and provider-behavioural insight available). Future research should incorporate focus-group discussions with both pregnant women and PHC personnel, and should extend geographic coverage to the more remote riverine LGAs of Bayelsa State.

5. CONCLUSION

Non-utilisation of ANC at PHC level in Yenagoa is driven primarily by structural-geographic barriers — distance, transportation cost, and poor road conditions — and by provider-behavioural factors — provider attitude and service quality — rather than by absent maternal awareness or cultural opposition. Information and supportive functions constitute the principal facilitators and are largely delivered by the existing PHC information ecosystem. Interventions to improve ANC uptake should therefore focus on the supply side of the system: transportation support and road infrastructure investment, respectful-maternity-care training of all PHC cadres, supply-chain integrity, integration of pharmacists into multidisciplinary maternal-health outreach, and constructive engagement with traditional birth attendants and cultural practices. The findings provide a quantitative foundation on which targeted, evidence-informed service-delivery reforms in Bayelsa State and the wider Niger Delta can be designed and evaluated.

Declarations

Ethics approval: Obtained from the Human Research Ethics Committee, University of Port Harcourt. Written informed consent was obtained from all participants prior to data collection.

Data availability: Datasets are available from the corresponding author on reasonable request.

Competing interests: None declared.

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Author contributions: B.O.B. conceived the study, designed the instrument, supervised data collection, conducted statistical analysis, and wrote the manuscript.

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