AUDIT OF CHILDBIRTH EMERGENCY REFERRALS BY TRADITIONAL BIRTH ATTENDANTS IN LAGOS, NIGERIA: A COMPREHENSIVE ANALYSIS OF MATERNAL-FETAL OUTCOMES AND SYSTEMIC BARRIERS

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ABSTRACT

Background:

Maternal and neonatal mortality remain critical public health challenges in Nigeria, where a substantial proportion of deaths occur outside formal health facilities. Traditional Birth Attendants (TBAs) continue to play a prominent role in childbirth, particularly in underserved communities. However, delays in referral and limited clinical capacity contribute to adverse outcomes. This study audits emergency obstetric referrals from TBAs to the Nigeria Police Hospital, Lagos, to evaluate clinical outcomes and systemic barriers.

Objective:

To assess the clinical outcomes and structural barriers associated with childbirth emergency referrals from TBAs to a secondary healthcare facility.

Methods:

A retrospective descriptive study conducted over 12 months (January 2025–January 2026). The study included 229 pregnant women referred as emergencies from TBA centres. Data were extracted using a structured proforma. Data were analyzed using IBM SPSS version 26, with results presented as frequencies and percentages in tables.

Results:

Most respondents were aged 30–39 years (73.8%), married (82.5%), and relatively educated. Nulliparous women constituted 33.2%. Obstetric haemorrhage (21.8%), severe pre-eclampsia (19.2%), and obstructed labour (12.7%) were the leading indications for referral. Most pregnancies were at term (86.5%), and emergency caesarean section was the predominant intervention (52.4%). Maternal survival was high (96.1%), although mortality was 3.9%.

Most neonates had good Apgar scores (81.2%), but perinatal asphyxia (14.4%), NICU admissions (14.4%), stillbirths (4.4%), and neonatal deaths (1.8%) were recorded.

Conclusion:

Although maternal and neonatal survival following TBA referrals was generally favourable, significant adverse outcomes persist, largely associated with delayed referrals and severe complications at presentation. Strengthening early referral practices, improving collaboration between TBAs and skilled providers, and enhancing emergency obstetric and neonatal care are essential to further reduce preventable morbidity and mortality.

Keywords: Traditional Birth Attendants; Obstetric Care; Referral System; Maternal Outcomes.

INTRODUCTION

Maternal mortality remains a critical global health concern, with low- and middle-income countries accounting for the vast majority of deaths. Sub-Saharan Africa, and Nigeria in particular, contributes significantly to this burden, with obstetric haemorrhage, hypertensive disorders of pregnancy, sepsis, and obstructed labour identified as the leading causes[1–3]. Despite ongoing efforts to improve maternal health services, access to timely and skilled obstetric care remains uneven, especially for women who initially seek care outside formal health systems.

A key determinant of adverse maternal and neonatal outcomes is the delay in accessing appropriate care. The widely recognized "Three Delays Model" includes delays in decision-making, reaching care, and receiving adequate treatment, and provides a useful framework for understanding these challenges[4]. In many settings, Traditional Birth Attendants (TBAs) continue to play a significant role in childbirth, particularly due to their accessibility, affordability, and cultural acceptance[5–7]. However, TBAs are often not equipped to manage obstetric emergencies, making timely recognition of complications and prompt referral to skilled facilities essential.

Evidence indicates that referrals from TBAs are frequently delayed, resulting in women presenting at healthcare facilities with advanced and life-threatening complications. Studies conducted in Nigeria have shown that such referrals are commonly associated with higher rates of emergency interventions, including caesarean sections, as well as increased risks of maternal and perinatal morbidity and mortality[8–10]. Furthermore, systemic barriers such as poor transportation, financial constraints, weak referral linkages, and inadequate communication between TBAs and formal healthcare providers exacerbate these delays and contribute to poor outcomes[9,11].

Although improvements in emergency obstetric and neonatal care have enhanced survival rates in tertiary institutions, preventable complications remain prevalent. Research consistently demonstrates that effective referral systems are critical in reducing maternal and neonatal mortality, particularly in settings where TBAs remain integral to maternal care[12–14]. Strengthening these systems requires a better understanding of the patterns, outcomes, and challenges associated with TBA referrals.

This study, therefore, aims to audit childbirth emergency referrals by Traditional Birth Attendants to the Nigeria Police Hospital, Lagos, with a focus on maternal and fetal outcomes as well as the

systemic barriers influencing referral practices. By examining these factors, the study seeks to provide evidence to inform strategies for improving referral systems, enhancing collaboration between TBAs and skilled healthcare providers, and ultimately reducing preventable maternal and neonatal morbidity and mortality.

Methodology

Study Design and setting

This research is a retrospective descriptive cross-sectional study of childbirth emergency referrals over a period of twelve months, from January 2025 to January 2026.

The study was conducted at the Nigeria Police Hospital, Lagos, Nigeria, with a robust obstetric unit, serving as a secondary referral node for community-based emergencies.

Study Population

The study population included all pregnant women (n=229) presenting as emergencies following referral or transfer from a TBA centre and managed in the study setting over the period of the study.

Data Management and Analysis

Data were extracted from Labour Ward Registers, Theatre Records, Neonatal Intensive Care (NICU) Admission Books, and the "Key Observations" handwritten clinical log (Jan 2025 - Jan 2026) was entered into a structured pro forma.

Sorting and cleaning of the pro forma were done, and data were entered into an IBM SPSS version 26. A univariate and multivariate analysis was done for the test of an association. Results were presented in tables.

Ethical Consideration: A letter of approval was obtained from the Department of Obstetrics and Gynaecology of the police hospital, which was taken to the facility's health record unit for the retrieval of patients' information from the case note and the EMR. Confidentiality was ensured while handling patients' information.

Consent to Participate Declaration: Not applicable

Trial Registration: Not applicable

RESULTS

A total of five hundred and fifty (550) deliveries were conducted in the period under review. Out of this, 229 (9.01%) women were referred from a TBA centre for childbirth, and all were included in this study.

Table 1: Sociodemographic characteristics

Variable	Frequency(n=229)	Percentage
Age		
20-29	40	17.5
30-39	169	73.8
>40	20	8.7
Tribe		
Igbo	10	4.5
Hausa	23	10.0
Yoruba	190	82.9
Others	06	2.6
Marital status		
Single	25	10.9
Married	189	82.5
Divorced	15	6.6
Religion		
Christianity	169	73.8
Islam	47	20.5
Traditional	13	5.7
Educational status		
None/Primary	26	11.4
Secondary	98	42.8
Tertiary	105	45.9
Occupation		
Civil servants	40	17.5
Artisans	75	32.8
Traders	59	25.8
Farmer	12	5.2
Unemployed	34	14.8

The mean age was 33.4 ± 4.4 years, and the modal age was 32 years

Most respondents were aged 30–39 years (73.8%), with fewer aged 20–29 (17.5%) and above 40 (8.7%). The majority were Yoruba (82.9%), married (82.5%), and Christians (73.8%). Regarding their educational status, 45.9% had a tertiary education, 42.8% had secondary education, and 11.4% had no education or only primary education. In terms of occupation, artisans (32.8%) and traders (25.8%) were the predominant groups, followed by civil servants (17.5%), unemployed

individuals (14.8%), and farmers (5.2%). Overall, respondents were largely within the active reproductive age, married, relatively educated, and engaged in income-generating activities.

Table 2: Distribution Based on Obstetric characteristics

Variable	Frequency(n=229)	Percentage
Parity		
0	76	33.2
1	61	26.6
2-4	52	22.7
>4	40	17.5
Indication for referral		
Hypertensive Urgency	18	7.9
Severe Pre-eclampsia	44	19.2
Eclampsia	20	8.7
Puerperal Sepsis	17	7.4
Obstructed Labour	29	12.7
Cord Prolapse	11	4.8
Hand prolapse	12	5.2
Uterine rupture	05	2.2
Obstetric Haemorrhage	50	21.8
Retained placental	15	6.6
Others	08	3.5
Gestational age at Presentation		
<32	06	2.6
32-36	25	10.9
≥37	198	86.5
Mode of intervention		
Exploration with uterine repair	04	1.7
Obsteteic hysterectomy	01	0.4
Vaginal delivery	12	5.2
Instrumental delivery	02	0.9
Emergency caesarean delivery	120	52.4
Manual removal of placental	15	6.6
Others	75	32.8

This shows the distribution of respondents based on obstetric characteristics. Most women were nulliparous (33.2%), followed by those with one previous birth (26.6%), while multiparous women (>4) accounted for 17.5%.

Obstetric haemorrhage was the leading indication for referral (21.8%), followed by severe pre-eclampsia (19.2%) and obstructed labour (12.7%). Other causes included eclampsia (8.7%), hypertensive urgency (7.9%), puerperal sepsis (7.4%), and retained placenta (6.6%), with fewer cases of cord prolapse, hand prolapse, uterine rupture, and others.

Most women (86.5%) presented at term (≥37 weeks), while only 2.6% presented before 32 weeks.

Emergency caesarean delivery was the most common intervention (52.4%), followed by other interventions (32.8%). Vaginal delivery (5.2%) and manual removal of placenta (6.6%) were less common, while instrumental delivery, uterine repair, and hysterectomy were rare.

Table 3: Distribution Based on Obstetric Outcome

VARIABLES	FREQUENCY	PERCENTAGE (%)
Maternal Outcome		
Alive	220	96.1
Maternal death	08	3.9
Fetal Outcome		
Good Apgar Score (score ≥7)	186	81.2
Perinatal Asphyxia	33	14.4
NICU Admission	33	14.4
Still Birth/IUFD	10	4.4
Neonatal Death	04	1.8

Table 3 presents the distribution of respondents based on obstetric outcomes, covering both maternal and fetal indicators.

With respect to maternal outcomes, the findings show that the vast majority of mothers survived childbirth, with 220 (96.1%) recorded as alive, while a small proportion, 8 (3.9%), resulted in maternal death. This indicates a relatively high maternal survival rate within the study population, although the presence of maternal mortality remains a critical concern requiring continued attention.

Regarding fetal outcomes, most newborns had a favourable condition at birth. A total of 186 (81.2%) babies had a good Apgar score (≥7), suggesting that the majority were delivered in stable condition. However, some adverse neonatal outcomes were observed. Perinatal asphyxia was reported in 33 cases (14.4%), indicating that a notable proportion of newborns experienced difficulty initiating and sustaining breathing at birth. Similarly, 33 (14.4%) of the newborns required admission into the Neonatal Intensive Care Unit (NICU), reflecting the presence of complications requiring specialized care.

In addition, 10 cases (4.4%) were recorded as stillbirths or intrauterine fetal deaths (IUFD),

highlighting instances of fetal loss before or during delivery. Furthermore, neonatal death occurred in 4 cases (1.8%), indicating mortality within the neonatal period.

Overall, while the findings demonstrate generally positive maternal and neonatal outcomes, the occurrence of maternal deaths, perinatal complications, stillbirths, and neonatal deaths underscores the need for improved obstetric and neonatal care services to further reduce adverse outcomes.

DISCUSSION

This study provides important insight into emergency obstetric referrals by Traditional Birth Attendants (TBAs) in Lagos, Nigeria, highlighting both improved outcomes and persistent systemic gaps. Although maternal and neonatal survival rates were relatively high, the findings suggest that delays in referral and severity of complications at presentation continue to influence outcomes.

The sociodemographic profile indicates that TBA utilization extends beyond uneducated or rural populations, as most women were educated, married, and within the active reproductive age group. This aligns with existing evidence that TBA patronage is driven by accessibility, affordability, and cultural acceptability across socioeconomic groups[15,16]. The high proportion of nulliparous women is concerning, given their increased obstetric risk and need for skilled care.

The leading indications for referral were haemorrhage, severe pre-eclampsia, and obstructed labour, which are consistent with the major causes of maternal morbidity and mortality globally and in Nigeria.[17,18] Their persistence as primary referral reasons suggests that while TBAs may recognize complications, delays in referral allow progression to severe states. This is further supported by the high rate of emergency caesarean sections observed, indicating late presentation when surgical intervention becomes necessary.[19,20]

Despite these challenges, the maternal survival rate of 96.1% reflects improvements in emergency obstetric care at referral centres, particularly in urban settings. However, the maternal mortality rate remains significant and highlights the continued impact of delayed referrals, poor pre-referral stabilization, and barriers such as transportation and cost.[20,21] These findings are consistent with previous studies emphasizing the role of systemic delays in adverse maternal outcomes.

Neonatal outcomes were generally favourable, with 81.2% of newborns having good Apgar scores. Nevertheless, the occurrence of perinatal asphyxia (14.4%), NICU admissions (14.4%), stillbirths

(4.4%), and neonatal deaths (1.8%) indicates a considerable burden of neonatal morbidity and mortality. These findings are consistent with prior research demonstrating that delayed intrapartum care and prolonged labour significantly increase the risk of neonatal asphyxia and adverse outcomes.[17,22]

The findings reflect the "Three Delays Model," particularly delays in decision-making and access to care. TBAs often contribute to these delays due to prolonged attempts at managing complications and limited integration with formal health systems.[20,21,23] Weak referral linkages and inadequate coordination further exacerbate these challenges.

Overall, this study highlights the need to integrate TBAs into the formal healthcare system through structured referral pathways and training. Improving collaboration, strengthening referral systems, and ensuring timely access to skilled care are essential to further reduce maternal and neonatal morbidity and mortality.

CONCLUSION

This study shows that although maternal and neonatal survival following TBA referrals in Lagos is relatively high, significant gaps persist in referral timing and coordination. The prevalence of preventable complications and high emergency caesarean rates indicates delayed presentation. Strengthening referral systems, improving collaboration, and enhancing timely access to skilled care are essential to reduce adverse outcomes.

RECOMMENDATION

Strengthening TBA training in early complication recognition and prompt referral is essential. Formal referral systems, improved emergency transport, and enhanced community awareness should be prioritised. Integrating TBAs into the health system with proper supervision, alongside sustained investment in emergency obstetric and neonatal care, will help reduce maternal and neonatal morbidity and mortality.

Since the findings of this audit strongly support the current drive by the Lagos State Traditional Medicine Board (LSTMB) to tighten regulations and implement the "Hospital Immersion Program." There is an urgent need to transition TBAs from independent practitioners to "Referral Agents" who are incentivised for early transfers rather than "successful" deliveries. The success of technology-driven initiatives like Mama-Link in Alimosho should be scaled to the Ikoyi/Falomo axis to bridge the gap between TBA homes and secondary facilities.

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