

TACKLING THE DELAYS IN THE PROVISION OF EMERGENCY OBSTETRIC CARE IN NIGERIA: A SYSTEMATIC REVIEW

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ABSTRACT

We investigated emergency obstetric care (EmOC) delay in Nigeria through the three delays model and interventions to prevent delay. Studies (2014–2024) were analyzed per PRISMA guidelines using the CASP checklist. Major delays can be attributed to a range of socio-cultural, economic and geographic constraints, inadequate referral networks and lack of staff, and material. Interventions, such as the improvement of states' EmOC facilities, and the promotion of health insurance, showed promise. While community-based approaches raise more awareness and male involvement, even then, the maternal mortality rates are still not significantly lower; complete resolution of these issues needs multilevel systemic approaches.

Keywords: Emergency obstetric care (EmOC), Three delays model, Maternal and child health

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INTRODUCTION

Maternal mortality continues to be a critical global public health issue and low- and middle-income countries are disproportionately affected. Nigeria, the most populous country in Africa, accounts for ~20% of global maternal deaths¹ and has a maternal mortality rate of 512/100 000 live births - far exceeding both the Sustainable Development Goal target (SDG) of 70/100 000 live births by 2030². One of the reasons for such a high mortality rate is the lack of access to emergency obstetric care (EmOC) that has an ownership of approximately 75% of the maternal deaths worldwide³.

This delay extends not only to decision about seeing a doctor, but also to decision about going to health facilities, and to decision about appropriate treatment. The initial delay is due to lack of good health literacy, culturally restrictive beliefs, and women's lack of power to make decisions^{4,5}. The second lag is related to lack of transport infrastructure and transportation distance to facilities (especially in rural)⁶. The third delay involves systemic healthcare issues, including shortages of skilled workers, insufficient medical supplies, and poor referral systems⁷.

Nigeria's health care system is severely hampered by a lack of doctors, only four per 10,000 population compared to WHO requirement of 23 per 10,000 population for universal health coverage⁸. This shortage is especially bad in rural settings and specialists, such as obstetricians and gynecologists. The inequalities in access to and quality of EmOC in cities compared with localities are dramatic with northern

localities having the worst maternal health outcomes².

These challenges have broader societal implications, affecting families and communities while perpetuating cycles of poverty and underdevelopment⁹. Economic limits are substantial, as most Nigerians earn as little as \$1 per day⁶. The flaws of the healthcare system are also clearly observed in the insufficient health financing with 3.89% of GDP in 2018, far from the Abuja 15% target⁹.

The COVID-19 pandemic has made these challenges worse via supply chain interruptions, health resource shifting and fear of infection¹¹. While government efforts such as the National Strategic Health Development Plan, the Saving One Million Lives Programme, and the Midwives Service Scheme have been in place, operational and system level barriers continue to hinder the provision of timely and quality maternal care. These ongoing issues require strategies with multiple facets in the form of policy changes, upgrading infrastructure, and the involvement of the community to improve maternal care service delivery in Nigeria. The demands in delivery (MDG, SDGs) are such that changes to the current infrastructure, healthcare system, and the health service delivery (processes, strategies, approaches) can create instability at the policy, managerial, and operational levels.

This systematic review intends to do an in-depth analysis of the factors that are responsible for the delays in availing emergency obstetric care in Nigeria, apart

from assessing effective interventions for such delays. These specific objectives guide the study include to systematically review and synthesize existing literature on the delays in EmOC provision in Nigeria, to identify the key factors contributing to each of the three delays in EmOC provision in

Nigeria, to evaluate the effectiveness of previously implemented interventions aimed at reducing delays in EmOC provision in Nigeria and to explore the role of healthcare policies and healthcare system capacity in mitigating delays in EmOC provision in Nigeria.

MATERIALS AND METHODS

This work used a qualitative systematic review approach to elucidate factors associated with delays in provision of Emergency Obstetric Care (EmOC) in Nigeria and assess potential interventions. Using PRISMA guidelines for reporting transparency¹², a systematic search was conducted across the aforementioned databases (PubMed/MEDLINE, African Journals Online (AJOL) and Google Scholar). Additionally, reference lists of included studies were manually searched to identify relevant articles potentially missed in the initial search.

EmOC provision delays "emergency obstetric care," "EmOC," "delay*," "barrier*"; the three delays framework "first delay," "second delay," "third delay"; intervention effectiveness "intervention*," "strategy*," "outcome*"; and healthcare policy "healthcare policy," "system capacity". These phrases were assembled with Boolean connectors and customized to each of the databases' individual needs.

The inclusion criteria specified studies that: (1) focused on emergency obstetric care in Nigeria; (2) addressed at least one of the three delays in EmOC provision; (3) were published in English between January 2010

and December 2023; (4) were peer-reviewed original research articles; and (5) employed qualitative or mixed-methods approaches. Studies were not included if they were restricted to the normal delivery, if they took place outside Nigeria, if they were quantitative only, review articles, editorials, or opinions.

Quality assessment was performed using the CASP Qualitative Checklist^{13,14}, with two blinded reviewers performing the screening. It was chosen because this instrument is appropriate for quality research and widely accepted in systematic reviews. Data extraction was done independently by two reviewers using a standardized data extraction sheet that included characteristics of studies, methodological designs, primary outcomes, and interventions - intervention reported success and conclusions of authors. Disagreements were resolved through discussion, with a third reviewer consulted when necessary.

Developing an initial synthesis of findings, examining data relationships, and examining the robustness of the synthesis. The thematic analysis¹⁶ was used to find and describe patterns within the data thus providing an opportunity to synthesize findings from

studies to describe main themes related to EmOC provision delay.

Since this literature review did not require formal ethical approval, adherence to ethical principles was observed in the transparency of reporting and fair representation of primary studies. The limitations in this study

include possible language bias because of the English-only inclusion and the possibility of publication bias. Due to the qualitative nature of this review, generalization of statistics is limited. This review has been through a very rigorous methodology and comprehensively covers the complex factors that affect the provision of EmOC in Nigeria.

RESULTS AND DISCUSSION

PRISMA Flow Diagram

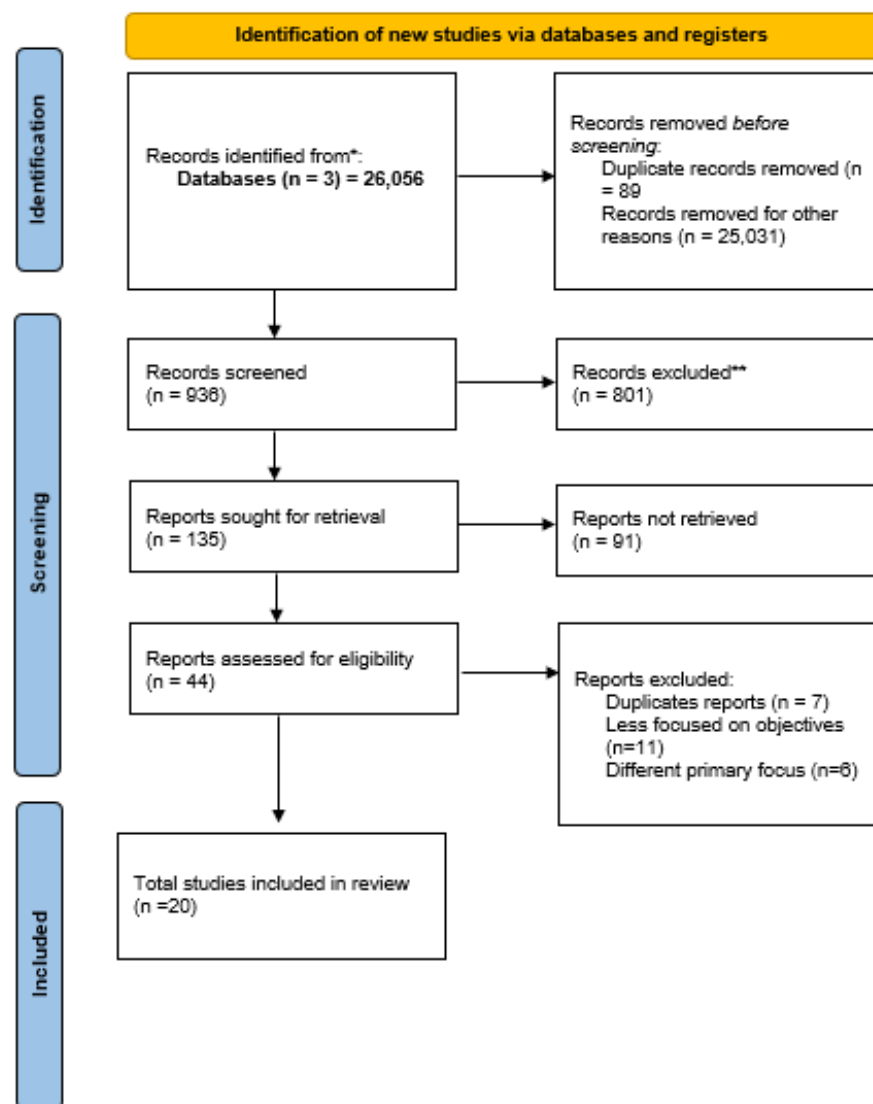


Fig 2.0. PRISMA Flow Diagram

Findings

Author(s) & Year	Study Design	Study Focus	Key Findings
Kabo et al. ¹⁷	Pre-post intervention study	Impact of quality improvement interventions on EmOC in Bauchi State	Quality improvement interventions in Nigeria increased EmOC facility coverage (10.2% to 35.6%), service provision (basic: 2.6% to 18.4%; comprehensive: 14.3% to 61.9%), and utilization rates, though case fatality also rose (3.1% to 4.0%).
Banke-Thomas et al. ¹⁸	Methodological study	Estimating travel time to EmOC facilities	- Highlighted limitations of common approaches for estimating travel times - Introduced OnTIME project for more accurate travel time estimates in urban LMIC settings
Ekpenyong ¹⁹	Mixed-methods study	Factors influencing access to EmOC in Delta State	Maternity care use is shaped by socioeconomic and access factors; a framework tackles barriers at policy, facility, community, and individual levels.
Okonofua et al. ²⁰	Quasi-experimental study	Improving quality of antenatal care in referral hospitals	- Improvements in counseling and information sharing quality indicators. - Limited impact on maternal/fetal measurements and disease testing - Highlighted need for addressing staff workload and resource constraints
Esan et al. ²¹	Cross-sectional study	Association between health insurance and maternal healthcare access	- 18.5% of women attended 8+ ANC visits - 40.6% delivered in a health facility - Women with health insurance had higher odds of attending 8+ ANC visits (AOR 1.9) and delivering in a health facility (AOR 2.0)
Abba et al. ²²	Literature review and expert consultation	Determinants and interventions for ANC utilization in Yobe State	Determinants include individual, community, and systemic factors; strategies focus on outreach, education, male involvement, insurance, skill-building, and task-shifting.
Bamgboye et al. ²³	Cross-sectional facility-based survey	Assessment of EmOC services in Oyo State	- Gross lack of basic EmOC facilities (0-5.4 per 500,000 population) - Available facilities clustered in urban areas
Jaja and Ogolodom ²⁴	Cross-sectional questionnaire-based survey	Status of EmOC in South-South Nigeria	While basic EmOC functions like antibiotic and oxytocic administration were common, comprehensive EmOC services showed significant deficiencies.
Ya'u Samira & Tukur ²⁵	Cross-sectional study	Availability and utilization of EmOC in Zaria	- No designated basic EmOC facilities met UN criteria

			- Only 8% of births took place in health facilities - 0.7% of deliveries by cesarean section - Met need for EmOC: 25.1%
Onoja-Alexander et al. ²⁶	Cross-sectional facility-based survey	Availability and accessibility of EmOC in Kano	- Only 6.4% of health personnel trained in EmOC services - Varying levels of equipment availability across departments
Ijase & Makwe ²⁷	Retrospective study	Trends in obstetric emergencies in Lagos	Obstetric emergencies rose from 9.4% to 15% over five years, with common cases including labor dystocia (20.7%), preeclampsia/eclampsia (19.7%), fetal distress (17.1%), and obstructed labor (10.5%).
Abegunde et al. ²⁸	Cross-sectional facility-based survey	Availability, utilization, and quality of EmOC in Bauchi State	- Only 10.2% of facilities met UN requirements for EmOC centers - 3.9% of expected obstetric complications managed in EmOC facilities
Ogbuabor & Onwujekwe ²⁹	Qualitative case study	Implementation of free maternal and child healthcare policies in Nigeria	Active health facility committees, supportive supervision, and drug revolving funds enhanced capacity to offer free care. Ineffective decentralization, irregular supervision, and weak citizen participation limited capacity.
Actis Danna et al. ³⁰	Qualitative evidence synthesis	Utility of Three-Delays Model for accessing intrapartum care in LMICs	The Three-Delays Model needs modification to include individual perspective and prospective identification of issues. A new framework, the Women's Health Empowerment Model, was proposed.
Adenigbagbe et al. ³¹	Cross-sectional survey	Impact of healthcare infrastructure on maternal mortality in Nigeria	Quality of care and availability of healthcare facilities significantly influence maternal mortality rates. Institutional capacity did not have a significant impact.
Geleto et al. ³²	Systematic review	Barriers to access and utilization of emergency obstetric care in sub-Saharan Africa	Barriers occur at multiple levels: home, on the way to facilities, and at facilities. Socio-demographic, economic, cultural, and health system factors all contribute to delays in seeking care.
Banke-Thomas et al. ³³	Mixed-methods study	Geographical access to emergency obstetric care in Lagos, Nigeria	80% of women reached facilities within 60 minutes. Period of day and referral status significantly affected travel time. Four hotspots with >60-minute travel time were identified.
Garba et al. ³⁴	Mixed-methods study	Evaluation of emergency obstetric care services in	Common maternal health problems identified, but emergency obstetric care

		primary health care facilities in Niger State, Nigeria	services were not provided in almost all primary health care facilities visited.
Banke-Thomas et al. ³⁵	Mixed-methods study	Multi-stakeholder perspectives on emergency obstetric care in Lagos, Nigeria	Discrepancies found between government perceptions and women's experiences of access to care. Issues identified with availability of staff, infrastructure, and blood products.
Kabo et al. ³⁶	Prospective before-and-after study	Impact of quality improvement interventions on emergency obstetric care in Bauchi state, Nigeria	Interventions led to increased facilities providing emergency obstetric care, higher facility births, and improved met need for care.

DISCUSSION OF RESULTS

Emergency obstetric care (EmOC) in Nigeria is greatly constrained, especially in rural regions. It has been shown to be the case that there is a lack of basic EmOC facilities due to a number of both local and regional studies revealing a few as low as 0-5.4 basic EmOC sites available per 500,000 population²³. There are overall critical gaps in primary healthcare level emOC delivery in which only basic interventions for example, antibiotic administration, and oxytocine administration are routinely done, but important services such as administration of anticonvulsants, removal of retained products, assisted delivery, blood transfusion, and emergency cesarean sections are often lacking^{24,25}.

Physical access is still a significant bottleneck, most notable in rural areas where access to health facilities may require days on foot. Inefficient transport infrastructure in regions such as Kano exacerbate these difficulties²⁶. Human resources are scarce most, only 6.4% of the total of 204 health professionals including obstetrics and gynecology doing EmOC course in Kano²⁶.

Infrastructure and equipment shortages also degrade the quality of care the visits receive, equipment availability across a given facility also varies considerably labor wards 63.3% availability, theatres 85.4% availability²⁶.

Socio-cultural and economic barriers significantly impact EmOC utilization. In Zaria LGA, only 8% of births occurred in health facilities²⁵. Obstacles include lack of obstetric emergency awareness, financial constraints, preference for traditional birth attendants, and women's limited decision-making power²⁸. These problems are consistent with the "Three Delays" Model for delays in the process of seeking, reaching for, and receiving care²⁶.

Previous interventions have shown mixed results. In Bauchi State, quality improvement projects expanded basic EmOC facilities from 2.6% to 18.4% and comprehensive EmOC facilities from 14.3% to 61.9% from 2012 to 2015. In spite of, at the same time, increases in institutional deliveries (3.6% increase to 8% and caesarean sections (3.8% increase to 5.6%, the case fatality rate

increased from 3.1% to 4.0%³⁶. The OnTIME project has emerged as a promising initiative using big data to estimate travel times to EmOC services more accurately in urban settings³³.

Importance Healthcare policies are very important but implementation is frequently hampered because of contextual factors and institutional constraints. These studies established that quality of care was at β .643 and p .001, and availability of healthcare facilities was β .362 and p .001, which suggests that they are significantly associated with maternal mortality rates³¹. System-capacity barriers refer to lack of supply, lack of resources, mismanagement, and underdeveloped infrastructures³².

Overall, the system of health care works on a gradient, with it being more competent in urban centers than in rural areas. Travel time and referral pathway play an important role in EmOC access in Lagos³⁵. Niger State's primary healthcare facilities show critical

CONCLUSION

This review of the EmOC in Nigeria points out a series of problems, especially critical for rural areas with minimal health care infrastructure. Facility shortages, poor access, and substandard quality of care are some of the core issues. Major barriers to the utilization of EmOC include socio-economic factors, cultural practices, geographic constraints, inadequate medical supplies, and weak human resources and institutional capacity. In spite of free maternal health policies, weak decentralization and inadequate supervision hinder effective implementation. The Three Delays Model illustrates this complex interplay of health

gaps, with EmOC services largely unavailable despite frequent obstetric complications⁴². Insurance effect has been demonstrated to be positive, insured women tend to have proportionally more antenatal care (AOR 1.9, 95% CI 1.26-2.95) and facility delivery (AOR 2.0, 95% CI 1.39-2.82)²¹.

Success in the improvement of EmOC provision deals with multilevel approaches that account for policy and capacity issues. The willingness of stakeholders to participate, having policies tuned according to user requirements, has been emphasized as being very important³⁵. Interventions put in place, like strategic planning, staff training automated appointment systems, couple-focused health education, and maternal death reviews, have shown promise. Resource constraints and workload of staff remain challenges that are regularly witnessed while improving the quality of ANC care²⁰.

policy and system capacity: delays in the decision to seek care, reach facilities, and receive proper treatment. Although, positive interventions do open the door for hope. For instance, improvement endeavors in Bauchi State show how the function enhancement of EmOC services when supplemented with community sensibility can be transformative. Other illustrative measures are women autonomy in health care, enhanced networks, infrastructural enhancement and health blueprints. It has also emphasized on the fact that progress requires continued, coordinated multi stakeholder participation from the

policy, provider and community levels required for putting policy into practice.

REFERENCES

1. WHO. Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2019.
2. National Population Commission (NPC) [Nigeria] and ICF. Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF; 2019.
3. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health*. 2014;2(6):e323-33.
4. Azuh DE, Azuh AE, Iweala EJ, Adelaye D, Akanbi M, Mordi RC. Factors influencing maternal mortality among rural communities in southwestern Nigeria. *Int J Women's Health*. 2017;9:179-88.
5. Aborigo RA, Moyer CA, Gupta M, Adongo PB, Williams J, Hodgson A, et al. Obstetric danger signs and factors affecting health seeking behaviour among the Kassena-Nankana communities of Northern Ghana: a qualitative study. *Afr J Reprod Health*. 2018;22(1):38-49.
6. Hirose A, Borchert M, Niksear H, Alkozai AS, Cox J, Gardiner J, et al. Difficulties leaving home: A cross-sectional study of delays in seeking emergency obstetric care in Herat, Afghanistan. *Soc Sci Med*. 2015;127:1-8.
7. Oyeneyin LO, Akintan AL, Aderoba AK, Owa OO. Maternal mortality ratio in a tertiary hospital offering free maternity services in South-western Nigeria - a five-year review. *Trop J Obstet Gynaecol*. 2017;34(2):112-5.
8. World Health Organization. The 2018 update, Global Health Workforce Statistics. Geneva: World Health Organization; 2018.
9. World Bank. World Development Indicators 2021. Washington, DC: World Bank; 2021.
10. Yaya S, Bishwajit G, Uthman OA, Amouzou A. Why some women fail to give birth at health facilities: A comparative study between Ethiopia and Nigeria. *PLoS One*. 2019;14(4):e0214875.
11. Ogunkola IO, Adebisi YA, Imo UF, Odey GO, Esu E, Lucero-Prisno DE III. Rural communities in Africa should not be forgotten in responses to COVID-19. *Int J Health Plann Manage*. 2020;35(6):1302-5.
12. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*. 2021;372:n71.
13. Critical Appraisal Skills Programme. CASP Qualitative Checklist [Internet]. 2018 [cited 2024]. Available

from: <https://casp-uk.net/casp-tools-checklists/>

14. Long HA, French DP, Brooks JM. Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Res Methods Med Health Sci*. 2020;1(1):31-42.
15. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews. A product from the ESRC methods programme. Lancaster: Lancaster University; 2006.
16. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101.
17. Kabo I, Orobato N, Abdulkarim M, Otolorin E, Akomolafe T, Abegunde D, et al. Strengthening and monitoring health system's capacity to improve availability, utilization and quality of emergency obstetric care in northern Nigeria. *PLoS ONE*. 2019;14(2):e0211858.
18. Banke-Thomas A, Macharia PM, Makanga PT, Beňová L, Wong KLM, Gwacham-Anisiobi U, et al. Leveraging big data for improving the estimation of close to reality travel time to obstetric emergency services in urban low- and middle-income settings. *Front Public Health*. 2022;10:931401.
19. Ekpenyong MS. Factors influencing access to emergency obstetric care amongst women seen in one of the tertiary health facilities in Delta State, Nigeria [dissertation]. Wolverhampton: University of Wolverhampton; 2017.
20. Okonofua FE, Ntoimo LFC, Ekezue B, Ohenhen V, Agholor K, Gana M, Igboin B, Ekwo C, Imongan W, Galadanci H, Ogu R. Outcome of multifaceted interventions for improving the quality of antenatal care in Nigerian referral hospitals. *Reprod Health*. 2020 Nov 4;17(1):170.
21. Esan OT, Adeomi AA, Afolabi OT. Health insurance coverage and access to maternal healthcare services by women of reproductive age in Nigeria: A cross-sectional study. *BMJ Public Health*. 2023;1:e000482.
22. Abba B, Gana ML, Musa A, Abba U. Antenatal care services in Yobe state Nigeria: The determinants and interventions to increase utilization. *Int J Sci Res Archive*. 2024;11(02):1316-32.
23. Bamgboye EA, Adebisi AO, Fatiregun AA. Assessment of Emergency Obstetric Care Services in Ibadan-Ibarapa Health Zone, Oyo State, Nigeria. *Afr J Reprod Health*. 2016;20(1):88-97.
24. Jaja ID, OgoLOdom MP. Assessment of the Status of Emergency Obstetric Care Services in Primary Health-Care Centers in Selected Local Government Areas of Rivers State, Nigeria. *J Public Health Prim Care*. 2023;4(2):92-102. doi:10.4103/jphpc.jphpc_28_22
25. Ya'u Samira L, Tukur J. Availability and utilization of emergency obstetric care public health facilities in Zaria, Northern Nigeria. *Int J Reprod Contracept Obstet Gynecol*. 2019;8(9):3535-42.

26. Onoja-Alexander MOA, Idris SH, Igboanusi CJC, Onoja AD, Istifanus AJ, Olawepo OA. Assessment of the availability and accessibility of emergency obstetric care services in Murtala Mohammed Specialist Hospital, Kano, Nigeria. *J Community Med Prim Health Care*. 2017;29(1):35-43.
27. Ijasan O, Makwe CC. Obstetric emergencies in a tertiary hospital in Lagos, Nigeria. *Niger Q J Hosp Med*. 2018;28(1).
28. Abegunde D, Kabo IA, Sambisa W, Akomolafe T, Orobato N, Abdulkarim M, et al. Availability, utilization, and quality of emergency obstetric care services in Bauchi State, Nigeria. *Int J Gynaecol Obstet*. 2015;128(3):251-5.
29. Ogbuabor DC, Onwujekwe OE. Implementation of free maternal and child healthcare policies: assessment of influence of context and institutional capacity of health facilities in South-east Nigeria. *Glob Health Action*. 2018;11(1):1535031.
30. Actis Danna V, Bedwell C, Wakasiaka S, Lavender T. Utility of the three-delays model and its potential for supporting a solution-based approach to accessing intrapartum care in low- and middle-income countries. A qualitative evidence synthesis. *Glob Health Action*. 2020;13(1):1819052.
31. Adenigbagbe KA, Izang PP, Gambo N, Kaoje YB, Adenigbagbe IA. Impact of Healthcare Infrastructure on Maternal Mortality in Nigeria. *Eur J Bus Innov Res*. 2024;12(5):1-23.
32. Geleto A, Chojenta C, Musa A, Loxton D. Barriers to access and utilization of emergency obstetric care at health facilities in sub-Saharan Africa: a systematic review of literature. *Syst Rev*. 2018;7(1):183.
33. Banke-Thomas A, Wong KLM, Collins L, Olaniran A, Balogun M, Wright O, et al. An assessment of geographical access and factors influencing travel time to emergency obstetric care in the urban state of Lagos, Nigeria. *Health Policy Plan*. 2021;36(9):1384-96.
34. Garba SN, Ibrahim AH, Anyebe EE, Yunusa U, Lawal UB, Abdurashid I, et al. Evaluation of Emergency Obstetric Care Services in Primary Health Care Facilities in Niger State: A Mixed Methods Study. *Bayero J Nurs Health Care*. 2021;3(1):918-26.
35. Banke-Thomas A, Wright K, Sonoiki O, Ilozumba O, Ajayi B, Okikiolu O, et al. Multi-stakeholder perspectives on access, availability and utilization of emergency obstetric care services in Lagos, Nigeria: A mixed-methods study. *J Public Health Afr*. 2017;8(2):717.
36. Kabo I, Orobato N, Abdulkarim M, Otolorin E, Akomolafe T, Abegunde D, Oginni A. Strengthening and monitoring health system's capacity to improve availability, utilization and quality of emergency obstetric care in northern Nigeria. *PLoS One*. 2019;14(2):e0211858.
37. Odimegwu C, Adewuyi A, Odebiyi T, Aina B, Adesina Y, Olatubara O, et al. Men's role in emergency obstetric care

- in Osun State of Nigeria. *Afr J Reprod Health*. 2005;9(3):59-71.
38. Essendi H, Mills S, Fotso JC. Barriers to Formal Emergency Obstetric Care Services' Utilization. *J Urban Health*. 2011;88(Suppl 2):356-69.
 39. Babandi ZS, Wakawa MM, Suleiman AG, Abubakar BG, Dahiru T. Identifying Barriers to Utilization of Basic Emergency Obstetric and NewBorn Care Services in Jigawa State, North-western Nigeria: A Qualitative Study. *J Community Med Prim Health Care*. 2017;36(1):15-27.
 40. Cavallaro FL, Marchant TJ. Responsiveness of emergency obstetric care systems in low- and middle-income countries: a critical review of the "third delay". *Acta Obstet Gynecol Scand*. 2012;92(5):496-507.
 41. Ochejele S, Enegele J, Heywood A. Assessment of the Quality of Emergency Obstetric Care at the Federal Medical Centre, Makurdi, Nigeria. *Trop J Obstet Gynaecol*. 2004;21(2):160-3.
 42. Garba SN, Ibrahim AH, Anyebe EE, Yunusa U, Lawal UB, Abdurashid I, Murtala HH, Ladan MA. Evaluation of Emergency Obstetric Care Services in Primary Health Care Facilities in Niger State: A Mixed Methods Study. *Bayero J Nurs Health Care*. 2021;3(1):918-926.

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