African Journal of
Medicine, Surgery and Public Health Research

ISSN: 1595-8000

Index: Harvard, Boston, Sydney University, Dimensions, Lens, ResearchGet Scilit, Semantic, Google Scholar, Base etc

https://doi.org/10.58578/AJMSPHR.v3i2.10078

Evaluation of the Factors Promoting Maternal Mortality in Wukari LGA

Egeonu US[1], Boyi RN[2], Boyi BI[3], Adeoti II[4]

[1,2,4]Federal University Wukari, Taraba State, Nigeria; [3]Biyama Hospital Wukari, Nigeria

umaruisaac@gmail.com

Article Info:

Submitted:	Revised:	Accepted:	Published:
Mar 28, 2026	Apr 25, 2026	May 7, 2026	May 12, 2026

Abstract

Maternal mortality remains a major public health concern, particularly in non-urban African settings where socioeconomic, infrastructural, and cultural barriers continue to limit progress in reducing preventable maternal deaths. This study assessed the factors contributing to maternal mortality in Wukari Local Government Area, Taraba State. A mixed-methods approach was employed, involving structured questionnaires administered to 400 respondents selected through simple random sampling across the 10 wards of Wukari LGA. Interviews were also conducted with healthcare providers, traditional birth attendants, and community leaders. Quantitative data were analyzed using descriptive statistics, including frequencies and percentages, and inferential statistics through the chi-square test, while qualitative data were analyzed thematically. The findings indicate that socioeconomic factors, including low income, limited education, and distance to the nearest health facility, influenced maternal health outcomes. Cultural practices were also prevalent, particularly reliance on traditional birth attendants, reported by 319 respondents (82.4%), and home deliveries, reported by 161 respondents (41.6%). Hypothesis testing showed that socioeconomic factors, limited access

to healthcare facilities, and cultural practices significantly influenced the prevalence of maternal mortality in Wukari LGA ($p < 0.05$). The study concludes that maternal mortality in Wukari LGA is driven by interconnected socioeconomic, infrastructural, and cultural factors. These findings contribute to maternal health research by highlighting the combined influence of household-level, health-system, and cultural determinants of maternal mortality. Practical implications include the need to upgrade health facilities, expand community education programs, subsidize maternal health services, and integrate traditional birth attendants into formal healthcare systems to reduce maternal mortality in Wukari LGA.

Keywords: Maternal Mortality; Socioeconomic Factors; Healthcare Access; Cultural Practices; Wukari LGA

INTRODUCTION

Maternal mortality or maternal death refers to death of a pregnant woman as a result of pregnancy-related problems, underlying conditions made worse by pregnancy, or the treatment of these disorders. This may happen during the pregnancy or within six weeks after the pregnancy ends (WHO, 2023). The maternal mortality ratio (MMR), the most widely utilized metric is the number of maternal deaths per 100, 000 live births per year from any cause associated with or made worse by pregnancy or its management (apart from unintentional or incidental causes) during pregnancy, child birth, or within 42 days of the end of pregnancy (Antsaklis *et al,* 2020). The ability of health systems to successfully prevent and treat pregnancy and delivery-related problems is reflected in this indicator. Additionally, it might draw attention to women's poor nutrition and general health as well as denial of their reproductive rights, which leads to recurrent and irregular spaced pregnancies (Starrs *et al,* 2018).

The total maternal mortality ratio (MMR) for the 185 countries and territories of the world was 223 uncertainly interval (UI) 202 to 255 maternal deaths per 100, 000 live births, with an expected 287000 (UI 273000 to 343000) maternal deaths occurring worldwide in 2020 (WHO, 2023). This equates to about 800 maternal fatalities every day and around one material mortality every two minutes worldwide.

Several factors contribute to maternal mortality. Pregnancy, delivery, termination or management- related problems are the main causes of direct obstetric mortality (WHO,

2021). Pre-existing illnesses (28%) and blood clots (3%) are also responsible (WHO, 2014). Another leading cause of maternal mortality is unsafe abortion. In 2009, the World Health Organization reported that complications from botched abortions claimed the life of one woman every eight minutes (WHO 2021). Multiple pregnancies with limited recovery time (Obeagu *et al.,* 2023), cultural barriers (Hamal *et al,* 2020), education (Gul *et al,* 2021), economic situation (Okongwu and Inwisi 2022), all play major roles in determining maternal mortality.

The consequences of maternal mortality are enormous. It has profound emotional, social and economic consequences for the husband and the children left behind (Zhao *et al,* 2018, Lawn *et al,* 2020) and also affect the stability of the family unit (Walsh and Mc Goldrick, 2023),breeds motherless babies faced with higher risks of malnutrition, infections and mortality (Ajmal, 2024). The burdens of maternal mortality are so much that effective measures should be in place to mitigate against them.

MATERIALS AND METHODS

Sample size- Yamane Taro (1964). Formula $n = N/1+N(e)^2$

N=Sample size, N=Population size, e=Limit of tolerance error. Was used to obtain a sample size of 399 in a population of 374, 800 people in Wukari LGA (City population, 2022).

Sampling Technique

A simple random sampling (SRS) was employed to select the sample for the study. Wukari LGA was purposely selected out of 16 LGAs in Taraba State, Nigeria. In the second stage, all 10 political wards in Wukari LGA were selected. Forty respondents for each ward were targeted to collect information from eligible respondents for the quantitative study. Eligible respondents consisted of husbands whose wives had died during pregnancy, in the course of delivery or 42 days thereafter in the 5 years preceding the survey. Informants were employed to aid in locating respondents through the assistance of health workers in the hospital/primary health centers and traditional birth attendants facilities. Where the husband was not available, a close sister or head of household who was fully aware of the case was approached for eliciting information on maternal death and issues related to it, as contained in the research instrument.

Methods of Data Collection

a. Questionnaire

A pilot study with 100 structured questionnaire was first distributed, collected and analyzed for improvement

Four hundred questionnaires were distributed to 40 eligible respondents from the 10 wards in Wukari LGA. The questionnaire was divided into two sections (A and B). Section A was for the collection of information on respondents' biography, while Section B consisted of information that captured the research questions. (age, education, income. Etc.), access to maternal healthcare services (antenatal care visits, skilled birth attendance, etc.), knowledge and awareness of maternal health issues, barriers to accessing healthcare services, and experiences with pregnancy and childbirth outcomes.

b. Interview: The oral-interview method was used to collect data from healthcare providers, Traditional Birth Attendants and community leaders, and a sample of patients who have experienced pregnancy, childbirth, or related health issues in the last five years. These stake-holders were considered to be associated with pregnancy (pre-and post-pregnancy issues) and child deliveries in the study area. The essence was to explore perceptions, challenges and cultural factors influencing maternal health in the study location.

Ethical approval

This was obtained from the appropriate committee. Informed consent was voluntary obtained from all the respondents before the interview. Respondents were informed of the purpose of the study and assured of the confidentiality of the information supplied.

RESULTS

A total of 400 questionnaires were distributed out of which 387 (97 .7 %) were retrieved and worked with while 13(3.3 %) were not retrieved.

Table 1: Age Distribution of the Respondents

Age	Frequency	Percentage
15 – 24	85	22.0
25 – 34	131	33.9

Age	Frequency	Percentage
35 – 44	123	31.8
45 and above	48	12.4
Total	387	100.0

Table 2: Gender Distribution of the Respondents

Gender	Frequency	Percentage
Male	49	12.7
Female	338	87.3
Total	387	100.0

Table 3: Educational Status of Respondents

Level of Education	Frequency	Percentage
No formal education	24	6.2
Primary education	42	10.9
Secondary education	58	15.0
Tertiary education	263	68.0
Total	387	100.0

Table 4: Occupation of Respondents

Occupation	Frequency	Percentage
Unemployed	83	21.4
Self-employed	84	21.7
Government worker	163	42.1
Private sector employee	57	14.7
Total	387	100.0

Table 5: Annual Household income of Respondents

Annual household income	Frequency	Percentage
Less than 100, 000	150	38.8
100,000 - 500, 000	97	25.1
500, 001 - 1, 000, 000	82	21.2
Above 1, 000, 000	58	15.0
Total	387	100.0

Table 6a: Responses of Participants to Posed Questions

Questions	Response Yes	Response No	Total
Do you or your spouse accept family planning?	238 (61.5%)	149 (38.5%)	387 (100.0%)
Did financial constraints prevent you from attending antenatal care?	203 (52.5%)	184 (47.5%)	387 (100.0%)
Do you or your spouse have health insurance?	203 (52.5%)	184 (47.5 %)	387 (100.0%)
Do you have access to transportation when seeking maternal healthcare?	298 (77.0%)	89 (23.0%)	387 (100.0%)
Has your work or financial status affected your ability to seek healthcare during pregnancy?	146 (37.7%)	241 (62.3%)	387 (100.0%)
Did you have difficulty purchasing prescribed medications during pregnancy?	204 (52.7%)	183 (47.3%)	387 (100.0%)
Have you ever used healthcare facilities for maternal health services?	346 (89.4%)	41 (10.6%)	387 (100.0%)
Were you satisfied with the quality of care provided?	281 (72.6%)	106 (27.4%)	387 (100.0%)
Did you encounter delays in receiving medical attention during pregnancy or childbirth?	197 (50.9%)	190 (49.1%)	387 (100.0%)
Were there enough healthcare professionals available during delivery?	283 (73.1%)	104 (26.9%)	387 (100.0%)
Were you referred to another facility due to lack of equipment or personnel?	141 (36.4%)	246 (63.6%)	387 (100.0%)
Did you get any supportive care from spouse and others?	370 (95.6%)	17 (44.4%)	387 (100.0%)
Did you make necessary preparation for delivery?	338 (87.3%)	49 (12.7%)	387 (100.0%)

Table 6b: Responses to Participants to Posed Questions

Questions	Response Yes	Response No	Total
Did cultural beliefs influence your decision to seek maternal healthcare?	180 (46.5%)	207 (53.5%)	387 (100.0%)
Were you encouraged to deliver at home instead of a health facility?	161 (41.6%)	226 (58.4%)	387 (100.0%)
Have you heard of or experienced harmful traditional practices related to pregnancy?	236 (61.0%)	151 (39.0%)	387 (100.0%)
Are there traditional birth attendants in your community?	319 (82.4%)	68 (17.6%)	387 (100.0%)
Do traditional birth attendants provide safe and hygienic care?	232 (59.9%)	155 (40.1%)	387 (100.0%)

Questions	Response		Total
	Yes	No	
Do religious or traditional practices discourage pregnant women from seeking medical attention?	137 (35.4%)	250 (64.6%)	387 (100.0%)
Were you regularly eating balanced diets during pregnancy?	330 (85.3%)	57 (14.7%)	387 (100.0%)
Did you have adequate rest during pregnancy?	332 (83.2%)	65 (16.8%)	387 (100.0%)
Did you comply or adhere to ANC instructions?	354 (91.5%)	33 (8.5%)	387 (100.0%)
Did you attend antenatal care services during pregnancy?	371 (95.9%)	16 (4.1%)	387 (100.0%)
Were you informed about pregnancy-related complications during antenatal care?	347 (89.7%)	40 (10.3%)	387 (100.0%)
Were you aware of government programs providing free maternal healthcare services?	237 (61.2%)	150 (38.8%)	387 (100.0%)
Did you receive health education on postnatal care?	297 (76.7%)	90 (23.3%)	387 (100.0%)
Have you ever refused maternal health services due to lack of information or fear?	106 (27.4%)	281 (72.6%)	387 (100.0%)
Do you believe community sensitization programs could improve maternal healthcare utilization?	323 (83.5%)	64 (16.5%)	387 (100.0%)

Table 7: Distance of Nearest Healthcare Facility of your Residence

How far is the nearest healthcare facility from your residence?	Frequency	Percentage
Less than 2km	183	47.3
2 - 5km	80	20.7
5 - 10km	83	21.4
More than 10km	41	10.6
Total	387	100.0

Table 8: Type of Facility Visited for Maternal Care

What type of facility did you visit for maternal care	Frequency	Percentage
Primary Healthcare center	166	42.9
General hospital	140	36.2
Private hospital	73	18.9
Traditional hospital attendant	8	2.1
Total	387	100.0

Table 9: Number of Antenatal visits

How many antenatal visits did you attend?	Frequency	Percentage
1 – 3	189	48.8
4 – 6	88	22.7
7 – 10	110	28.4
Total	387	100.0

DISCUSSION

The evaluation of the factors promoting maternal mortality in Wukari LGA is a means of identifying and addressing those factors.

The concentration of respondents in the 25 - 44 age range highlighted the need for targeted interventions for women in their prime reproductive years (Table 1). Amoo and Ajayi (2019) reported that most pregnant women in Abeokuta South, Nigeria were between 31-40 years of age, which agrees with the findings of this report. Early marriage and prolonged exposure to pregnancy risks increase maternal mortality, particularly among adolescents and women with limited education (National Population Commission, 2024). In Northern Nigeria, early marriages are prone to childbearing and pregnancy complications, thereby increasing the risk of maternal death. This issue is further aggravated by cultural practices in the regions that discourage pregnant women from seeking medical care or openly expressing distress related to pregnancy (Meh *et al,* 2019).

Female respondents were in the majority 338(87.3 %), reflecting the focus on the study of maternal health as it primarily involved women (Table 2).

Though males have low representation, 49(2.7 %), they often play critical roles in decision making about healthcare access financing.

Of the 387 respondents, 268(68.0%) had tertiary education, which contrasted with national literacy rates and suggested possible sampling bias toward urban or higher-income populations. This may limit generalization of findings to less-educated rural women, who are often at higher risk of maternal mortality. The fact that 24 (6. 2%) had no formal education and 42 (10.9%) had only primary education highlighted pockets of vulnerability where health literacy and antennal child uptake may be lower (Table 3). Poverty and low education levels reduced antenatal care attendance and increased reliance on unskilled birth attendants as noted by (Azuh *et al,* 2017). The association of maternal education with

empowerment and knowledge of safe motherhood practices led to reduction in maternal mortality (Okereke *et al,* 2013).

Income plays a significant role in the well being of individuals. From the study, 150(38.8%) earned less than **N100, 000** annually, a demonstration of widespread poverty which has implications for internal healthcare affordability (Table 5).

Women from low-income household may face challenges in accessing quality maternal healthcare services due to financial constraints, leading to delays in seeking care and inadequate utilization of services (Somorija and Idris, 2023, Ganle 2015). Poverty is prevalent in northern Nigeria, with a high poverty rate reported among several rural household (NBS, 2019). There was a moderate level of awareness and willingness to adopt contraceptive methods, though a significant proportion still resisted it 149(38.5%), (Table 6). The resistance could stem from cultural or religious beliefs, lack of spousal support, or misconceptions about contraceptive. There is need for community-based education campaign to address myths and also involve men in family planning discussions.

Financial constrains, long distance to antenatal care centre, poor quality of care and non-availability of the right infrastructure are militating factors against maternal wellbeing. Up to 204 (52.77%) of the respondents faced challenges affording prescribed medications during pregnancy. Cost could limit pregnant women from seeking maternal health services or having hospital-based deliveries or care even in the face of complications (Azuh *et al,* 2017, Banke Thomas *et al,* 2020).

The hypothetical analyses showed that socio-economic factors, limited access to healthcare facilities and cultural practices contributed to maternal mortality in Wukari LGA ($P<00.5$).

CONCLUSION

The comprehensive mixed-methods approach adopted in this research has revealed the multifaceted factors contributing to maternal mortality in Wukari LGA. Socio-economic barriers, inadequate healthcare infrastructure, persistent cultural practices and low utilization of maternal health services collectively drive high maternal mortality in Wukari. There is urgent need for targeted inventions that address the challenges of poverty, healthcare access, community education initiatives and resolve for culturally sensitive

maternal health services. The study has provided valuable evidence to guide policy makers and healthcare providers in developing effective strategies to reduce maternal mortality in Wukari. The strengthening of healthcare systems and addressing deep-rooted socio-cultural norms that hinder pregnant women access to care are of uttermost importance.

Every problem has a seemly solution. By implementing the aforementioned indicators, there will be likely hood of reduced maternal mortality in Wukari LGA.

REFERENCES

Ajmal, R. (2024). Promoting breastfeeding and complementary feeding practices for optimal maternal and child nutrition. *Pakistan Journal of Public Health, 14*(Special.NI), 168–180. https://doi.org/10.32413/pjph.v14iSpecial.NI.1301

Antsaklis, A., Papamichail, M., & Antsaklis, P. (2020). Maternal mortality: What are women dying from? *Donald School Journal of Ultrasound in Obstetrics and Gynecology, 14*(1), 64–69. https://doi.org/10.5005/jp-journals-10009-1626

Azuh, D. E., Azuh, A. E., Iweala, E. J., Adeloye, D., Akanbi, M., & Mordi, R. C. (2017). Factors influencing maternal mortality among rural communities in southwestern Nigeria. *International Journal of Women's Health, 9*, 179–188. https://doi.org/10.2147/IJWH.S120184

Banke-Thomas, A., Ayomoh, F. I., Abejirinde, I. O., Banke-Thomas, O., Eboreime, E. A., & Ameh, C. A. (2021). Cost of utilising maternal health services in low- and middle-income countries: A systematic review. *International Journal of Health Policy and Management, 10*(9), 564–577. https://doi.org/10.34172/ijhpm.2020.104

Boutayeb, A. (2010). The impact of infectious diseases on the development of Africa. In V. R. Preedy & R. R. Watson (Eds.), *Handbook of disease burdens and quality of life measures* (pp. 1171–1188). Springer. https://doi.org/10.1007/978-0-387-78665-0_66

City Population. (2022). *Wukari: Local Government Area in Nigeria*. https://www.citypopulation.de/en/nigeria/admin/taraba/NGA035014_wukari/

Ganle, J. K. (2015). Why Muslim women in northern Ghana do not use skilled maternal healthcare services at health facilities: A qualitative study. *BMC International Health and Human Rights, 15*, Article 10. https://doi.org/10.1186/s12914-015-0048-9

Gul, R., Zakir, S., Ali, I., Karim, H., & Hussain, R. (2021). The impact of education on business opportunities for women entrepreneurs in public & private television advertisements in Pakistan. *Industrial Engineering & Management Systems, 20*(2), 140–147. https://doi.org/10.7232/iems.2021.20.2.140

Hamal, M., Dieleman, M., De Brouwere, V., & de Cock Buning, T. (2020). Social determinants of maternal health: A scoping review of factors influencing maternal mortality and maternal health service use in India. *Public Health Reviews, 41*, Article 13. https://doi.org/10.1186/s40985-020-00125-6

Lawn, S., Roberts, L., Willis, E., Couzner, L., Mohammadi, L., & Goble, E. (2020). The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: A systematic review of qualitative research. *BMC Psychiatry, 20*, Article 348. https://doi.org/10.1186/s12888-020-02752-4

Meh, C., Thind, A., Ryan, B., & Terry, A. (2019). Levels and determinants of maternal mortality in northern and southern Nigeria. *BMC Pregnancy and Childbirth, 19*, Article 417. https://doi.org/10.1186/s12884-019-2471-8

National Population Commission (NPC) [Nigeria] & ICF International. (2014). *Nigeria Demographic and Health Survey 2013*. NPC and ICF International. https://dhsprogram.com/publications/publication-FR293-DHS-Final-Reports.cfm

Obeagu, E. I., Ubosi, N. I., Obeagu, G. U., Buhari, H. A., & Egba, S. I. (2023). Maternal hemorrhage and blood transfusions: Safeguarding pregnancy health. *International Journal of Current Research in Chemistry and Pharmaceutical Sciences, 10*(11), 26–35. https://ijcrcps.com/pdfcopy/2023/nov2023/ijcrcps3.pdf

Okereke, E., Aradeon, S., Akerele, A., Tanko, M., Yisa, I., & Obonyo, B. (2013). Knowledge of safe motherhood among women in rural communities in northern Nigeria: Implications for maternal mortality reduction. *Reproductive Health, 10*, Article 57. https://doi.org/10.1186/1742-4755-10-57

Okongwu, C. J., & Imoisi, S. E. (2022). Removal of petrol subsidy: Legal implications for the Nigerian economy. *Nnamdi Azikiwe University Journal of International Law and Jurisprudence, 13*(2), 135–139. https://www.ajol.info/index.php/naujilj/article/view/233145

Somorija, F. C., & Idris, Z. U. (2023). Economic factors and maternal morbidity in Taraba State: A review. *Sapientia Global Journal of Arts, Humanities and Development Studies, 6*(4), 119–128. https://www.sgojahds.com/index.php/SGOJAHDS/article/view/536

Starrs, A. M., Ezeh, A. C., Barker, G., Basu, A., Bertrand, J. T., Blum, R., Coll-Seck, A. M., Grover, A., Laski, L., Roa, M., Sathar, Z. A., Say, L., Serour, G. I., Singh, S., Stenberg, K., Temmerman, M., Biddlecom, A., Popinchalk, A., Summers, C., & Ashford, L. S. (2018). Accelerate progress—sexual and reproductive health and rights for all: Report of the Guttmacher–Lancet Commission. *The Lancet, 391*(10140), 2642–2692. https://doi.org/10.1016/S0140-6736(18)30293-9

Walsh, F., & McGoldrick, M. (2023). A family systems perspective on loss, recovery, and resilience. In P. Sutcliffe, G. Tufnell, & U. Cornish (Eds.), *Working with the dying and bereaved: Systemic approaches to therapeutic work* (pp. 1–26). Routledge. https://doi.org/10.4324/9781003416906-1

World Health Organization. (2011a). *Evaluating the quality of care for severe pregnancy complications: The WHO near-miss approach for maternal health*. https://www.who.int/publications/i/item/9789241502221

World Health Organization. (2011b). *Unsafe abortion: Global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008* (6th ed.). https://www.who.int/publications-detail-redirect/global-and-regional-estimates-of-the-incidence-of-unsafe-abortion-and-associated-mortality

World Health Organization. (2023). *Trends in maternal mortality 2000 to 2020: Estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division*. https://www.who.int/publications/i/item/9789240068759

Zhao, C., Wang, F., Zhou, X., Jiang, M., & Hesketh, T. (2018). Impact of parental migration on psychosocial well-being of children left behind: A qualitative study in rural China. *International Journal for Equity in Health, 17*, Article 80. https://doi.org/10.1186/s12939-018-0795-z