Knowledge of Community Members on Risk Factors Influencing Maternal Mortality in Ede South Local Government Area, Osun State, Nigeria

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Article

Knowledge of Community Members on Risk Factors Influencing Maternal Mortality in Ede South Local Government Area, Osun State, Nigeria

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Abstract: Background: Maternal mortality remains dire in Nigeria, claiming 40,000 lives yearly due to pregnancy complications. Factors like limited healthcare access, poverty, and early marriage worsen the crisis. Despite efforts to improve skilled birth attendance, Nigeria struggles to meet MDG targets, underscoring the urgent need for more effective interventions. **Objectives:** The objective of the study is to assess and understand the knowledge of community members regarding the risk factors influencing maternal mortality in the Ede South Local Government Area of Osun State, Nigeria. **Methodology:** A descriptive cross-sectional study was conducted. The study methodology involves employing the Leslie Kish formula to select 185 participants from the Ede South Local Government Area in Osun State, Nigeria. The selection process involved the use of a systematic sampling technique to ensure a representative sample based on population demographics and characteristics, ensuring a balanced and accurate selection process. Quantitative data was collected through a self-administered questionnaire and analysed using SPSS version 21. **Results:** The study encompassed 185 participants. 64.9% females with a mean age of 27.3 ± 8.3 years. Among them, 60.5% were single, 46.6% being students, 55.7% held a BSc degree, 64.9% were Yoruba and 61.1% identified as Christian. 91.4% were aware about maternal mortality, 74.6% recognized maternal deaths in reproductive-aged women. Participants identified that maternal deaths mostly occur during labour (91.4%). Direct causes, such as bleeding (88.1%), unsafe abortion (88.6%), infection (49.2%), and hypertension (64.9%), were recognized. Results indicated substantial awareness concerning specific risk factors: lack of education (98.9%), poverty (91.6%), poor health care services in facilities (94.0%), alcohol consumption (87.6%) and poor transportation (78.4%). **Conclusion:** Findings revealed good awareness of maternal deaths and critical factors such as ANC impact and direct causes of maternal mortality like bleeding and unsafe abortion. However, gaps persisted in SDG awareness, suggesting the need for targeted interventions to enhance overall understanding and address identified knowledge gaps.

Keywords: knowledge; community members; risk factors; maternal mortality

Introduction

Maternal mortality, identified as a significant cause of death among women of reproductive age, remains a critical public health concern worldwide, especially in developing nations (WHO, 2007). It is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy due to pregnancy-related causes (WHO, 2012), maternal mortality persists as a major challenge, notably in many developing countries. Despite considerable progress in maternal health, global maternal mortality ratio (MMR) decreased by 45% between 1990-2013, reaching 210 deaths per 100,000 live births (WHO, 2014).

However, despite advancements, the progress remains insufficient, significantly falling short of the MDG 5 target aiming to reduce MMR by 75% by 2015 (UN, 2012). The disparity in maternal mortality between developed and developing nations is vast, and the burden primarily affects Sub-Saharan Africa, contributing to 62% of global maternal deaths (WHO, 2014). In Sub-Saharan Africa, the adult lifetime risk of death from maternal causes is estimated at 1 in 38, a stark contrast to the

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significantly lower risk among women in developed countries, which stands at 1 in 3700 (WHO, 2014).

Maternal deaths can be direct or indirect. Direct maternal deaths result from obstetric complications during pregnancy, labour, or puerperium, while indirect deaths stem from pre-existing diseases aggravated by pregnancy, such as anaemia, HIV/AIDS, heart disease, and diabetes (WHO). In Nigeria, a staggering 40,000 women lose their lives annually due to pregnancy-related complications, contributing to one of the world's highest maternal mortality rates of 630 deaths per 100,000 live births (Collender, 2012). Egbulem (2010) reported an alarming death rate of 144 women per day in Nigeria due to childbirth-related conditions. The lifetime risk of a woman dying during pregnancy in Nigeria is estimated at 1 in 18, significantly higher compared to developed countries like Sweden, where the risk is 1 in 4500 (Egbulem, 2012).

Despite ongoing efforts to address maternal mortality in developing countries, progress remains a challenge. In Rwanda, although there was a reduction in maternal mortality ratio from 750 in 2005 to 383 in 2010, more improvements are needed (UNFPA, 2010). In Nigeria, the country's healthcare sector has experienced transformations since gaining independence in 1960, yet substantial gaps persist. The doctor/population ratio in Nigeria is notably low at 39 per 100,000, significantly lagging behind the World Health Organization's recommended figure of 10 per 10,000 populations (Patton et al., 2009).

Adepoju (2012) highlighted that despite increased antenatal care in several parts of the world, only 46% of women in low-income countries receive skilled care during childbirth, resulting in millions of unassisted births. Factors contributing to maternal deaths in these settings include early child marriage, teenage pregnancies, low contraceptive use, illegal abortions, and poverty (Adepoju, 2012 & Adeyemi OO 2019). It is estimated that nearly 700,000 maternal deaths annually are due to unintended pregnancies (World Bank, 2010).

Despite advancements in developed countries, women in developing nations face persistently high maternal mortality risks. Timely postnatal care is pivotal, as it addresses post-delivery complications, underscoring the need for a check-up within two days post-delivery (NDHS 2006-07). Obstetric complications, far ahead of other diseases among women of childbearing age, indicate a pressing public health concern (WHO, 2005b; Adeyemi OO, 2019).

Rwanda's achievements in reducing maternal mortality, exemplified by declining ratios from 750 to 383 per 100,000 live births and increased deliveries attended by skilled health workers (UNFPA, 2010), signal progress. However, MDG 5 remained unattained in several African countries despite substantial interventions and improved access to skilled attendants during childbirth (MDG Report, 2012).

In Africa, maternal health remains a challenge, with an average maternal mortality ratio of 590 deaths per 100,000 live births in 2008, disproportionately affecting Sub-Saharan Africa with a stark contrast to developed countries (UN, 2012). Nigeria faces alarmingly high maternal mortality ratios, accounting for a significant share of global maternal deaths (Onuzulike, 2006; Clark, 2002). Factors like young maternal age, socioeconomic status, and social isolation significantly impact maternal outcomes (Conde-Agudelo 2004). Unsafe abortions, contributing to preventable maternal deaths globally, demand urgent attention (Haddad et al, 2009).

Notably, developing countries grapple with preventable maternal deaths stemming from haemorrhage, sepsis, and hypertensive disorders, emphasizing the urgency for robust maternal healthcare systems (Khan et al., 2006). Inadequate healthcare resources, anaemia, and eclampsia emerge as prominent risk factors for maternal mortality (Liu et al., 2011; Yakasai & Gaya, 2011). Despite numerous interventions from governments and international agencies, Nigeria's maternal mortality rate remains unacceptably high (Adepoju, 2012). The persistent challenge of maternal mortality calls for urgent and targeted interventions, improved healthcare infrastructure, and concerted efforts to bridge the gap between developed and developing countries in addressing this critical health issue.

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Methods

Study area

The study setting will be at Ede south local government. Ede south is a Local Government Area in Osun State, Nigeria. Its headquarters is situated in Ede town. It has an area of 219km^2 and a population of 76,035 at the 2006 census.

Study population

The study population comprises of all people who are 18 years and above from Ede South Local Government Area in Osun State, Nigeria. Leslie Kish formula ($n = Z^2 \times pq/d^2$) was used for calculating sample size.

Study design and sampling

A descriptive cross-sectional study was conducted. The study methodology involves employing the Leslie Kish formula to select 185 participants from the Ede South Local Government Area in Osun State, Nigeria. The selection process involved the use of a systematic sampling technique to ensure a representative sample based on population demographics and characteristics, ensuring a balanced and accurate selection process.

Data collection methods

Semi-structured, self-administered questionnaire that was developed by the researcher. It entailed three sections that investigated socio-demographic characteristics of the respondents, their awareness and knowledge of maternal mortality, its causative factors and preventive measures and the risk factors of maternal mortality.

Data analysis

Quantitative data was collected through a self-administered questionnaire and analysed using SPSS version 21.

Inclusion and Exclusion Criteria

Inclusion Criteria**:** Community members within the ages 18 years and above.
Exclusion Criteria: Community members below 18 years

Ethical consideration

Ethical consideration: Verbal consent was sought from respondents. Only willing respondents was interviewed. The study was of no harm to the respondents, confidentiality was assured throughout the study.

Results

Table 1. Socio – Demographic Characteristics of the respondents (n=185).

Age (years)	Frequency	Percentage (%)
18-23 years	82	44.3
24-28 years	32	17.3
29-33 years	32	17.3
34-38 years	19	10.3
39 and above	20	10.8
Total	**185**	**100.00**

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Mean age = 27.3 ± 8.3		
Sex		
Females	120	64.9
Males	65	35.1
Total	**185**	**100.0**
Marital status		
Single	112	60.5
Married	67	36.2
Widowed	4	2.2
Divorced	2	1.1
Total	**185**	**100.0**
Occupation		
Trading	24	13.0
Health worker	31	16.8
Civil servant	31	16.8
Unemployed	5	2.7
Student	86	46.6
Others	8	4.3
Total	**185**	**100.0**
Qualifications		
OND	21	11.4
HND	26	14.1
BSC	103	55.7
MSC	14	7.6
PHD	3	1.6
Others	18	9.7
Total	**185**	**100.0**
Ethnicity		
Yoruba	120	64.9
Igbo	47	25.4
Hausa	8	9.7
Total	**185**	**100.0**
Religion		
Christian	113	61.1
Islam	68	36.8
Traditional	4	2.2
Total	**185**	**100.0**

Table 2. Awareness and Knowledge of Maternal Mortality (n = 185).

Awareness of maternal mortality	**Yes**	**No**	**Don't know**
Have you heard about maternal mortality?	169(91.4%)	13(7.0%)	3(1.6%)
Knowledge of maternal mortality	**Yes**	**No**	**Don't know**

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Do maternal deaths occur mainly in women of reproductive age?	138(74.6%)	30(16.2%)	17(9.2%)
Does ANC attendance affect the outcome of pregnancy	117(63.2%)	27(14.6%)	41(22.2%)
Can early marriage cause maternal mortality?	131(70.8%)	33(17.8%)	21(11.4%)
Most maternal death occur during:			
(a) Antenatal period	65(34.1%)	95(51.4%)	27(14.6%)
(b) Labour	169(91.4%)	10(5.4%)	6(3.2%)
(c) Birth	166(89.7%)	11(5.9%)	8(4.3%)
(d) Breast feeding	35(18.9%)	117(63.2%)	33(17.8%)
Direct causes of pregnancy-related death			
(a) Bleeding	163(88.1%)	18(9.7%)	4(2.2%)
(b) Unsafe abortion	164(88.6%)	14(7.6%)	7(3.8%)
(c) Headache	29(15.7%)	145(78.4%)	11(5.9%)
(d) Infection	91(49.2%)	55(29.7%)	39(21.1%)
(e) Cancer	67(36.2%)	78(42.2%)	40(21.6%)
(f) Hypertension	120(64.9%)	41(22.2%)	24(13.0%)
Can death occur from pregnancy-related problems	168(90.8%)	10(5.4%)	7(3.8%)
One of the SDG goals calls for reduction in MMR to 70 deaths per 100,000 live births by 2030.	90(48.6%)	10(5.4%)	85(45.9%)
The current maternal mortality ratio in Nigeria is 814deaths per live births.	85(45.9%)	11(5.9%)	89(48.1%)
Women are at the risk of death when they have malaria during pregnancy.	129(69.7%)	27(14.6%)	29(15.7%)
A "skilled birth attendant" at birth may include all of the following:			
(a) A nurse/midwife	181(97.8%)	2(1.1%)	2(1.1%)
(b) A doctor	176(95.1%)	9(4.9%)	0 (0.0%)
(c) A trained traditional birth attendant	86(46.5%)	93(50.3%)	6(3.2%)
(d) Herbalist	23(12.4%)	153(82.7%)	9(4.9%)
(e) Auxiliary nurse	53(28.6%)	114(61.6%)	18(9.7%)
Prevention of MM include.			
(a) Antenatal care	171(92.4%)	5(2.7%)	9(9.7%)
(b) Tuberculosis services	62(33.5%)	94(50.8%)	29(15.7%)
(c) Family planning	163(88.1%)	16(8.6%)	6(3.2%)
(d) Post abortion care	143(77.3%)	25(13.5%)	17(9.2%)
(e) Cancer screening	71(38.4%)	89(48.1%)	25(13.5%)
(f) HIV counseling and testing	76(41.1%)	90(48.6%)	19(10.3%)
(g) Well supervised delivery care	172(93.0%)	11(5.9%)	2(1.1%)
(h) Breastfeeding	63(34.1%)	108(58.4%)	14(7.6%)
(i) Public health education	178(96.2%)	4(2.2%)	3(1.6%)

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(j) Women empowerment	163(88.1%)	15(8.1%)	7(3.8%)

Table 3. knowledge on the causes of maternal mortality and prevention (n=185).

Knowledge on causes of maternal mortality	**Yes**	**No**	**Don't know**
The following can cause maternal mortality.	163(88.1%)	18(9.7%)	4(2.2%)
(a) Bleeding	164(88.6%)	14(7.6%)	7(3.8%)
(b) Unsafe abortion	29(15.7%)	145(78.4%)	11(5.9%)
(c) Headache	91(49.2%)	55(29.7%)	39(21.1%)
(d) Infection	67(36.2%)	78(42.2%)	40(21.6%)
(e) Cancer	120(64.9%)	41(22.2%)	24(13.0%)
(f) Hypertension			
Knowledge on the prevention of maternal mortality	**Yes**	**No**	**Don't know**
Maternal mortality can be prevented through antenatal care.	171(92.4%)	5(2.7%)	9(9.7%)
(a) Tuberculosis services	62(33.5%)	94(50.8%)	29(15.7%)
(b) Family planning	163(88.1%)	16(8.6%)	6(3.2%)
(c) Post abortion care	143(77.3%)	25(13.5%)	17(9.2%)
(d) Cancer screening	71(38.4%)	89(48.1%)	25(13.5%)
(e) HIV counseling and testing	76(41.1%)	90(48.6%)	19(10.3%)
(f) Well supervised delivery care	172(93.0%)	11(5.9%)	2(1.1%)
(g) Breastfeeding	63(34.1%)	108(58.4%)	14(7.6%)
(h) Public health education	178(96.2%)	4(2.2%)	3(1.6%)
(i) Women empowerment	163(88.1%)	15(8.1%)	7(3.8%)

Table 4. Knowledge about the risk factors of maternal mortality (n=185).

Variables	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
The following are the risk factors for maternal mortality				
Lack of education	132(71.4%)	51(27.6%)	1(0.5%)	1(0.5%)
Unemployment	56(30.3%)	87(47.0%)	34(18.4%)	8(4.3%)
Poor transportation	82(44.3%)	63(34.1%)	35(18.9%)	5(2.7%)
Misinformation of available services in health facilities	93(50.3%)	77(41.6%)	12(6.5%)	3(1.6%)
Alcohol consumption	95(51.4%)	67(36.2%)	19(10.3%)	4(2.4%)
Poverty	157(74.1%)	38(30.8%)	9(4.9%)	1(0.5%)
Socio-economic status	79(42.7%)	70(37.8%)	34(18.4%)	2(1.1%)

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Types of care seeking behavior during pregnancy	108(58.4%)	62(33.5%)	13(7.0%)	2(1.1%)
Distance to health facilities	106(57.3%)	63(34.1%)	13(7.0%)	3(1.6%)
Poor health care services rendered in health facilities	122(65.9%)	52(28.1%)	8(4.3%)	3(1.6%)
Access to quality maternal care	106(57.3%)	54(29.2%)	15(8.1%)	10(5.4%)
Smoking	84(45.4%)	56(30.3%)	34(18.4%)	11(5.9%)

Discussion

This study highlights community awareness of maternal mortality, revealing that 91.4% of respondents were generally informed about it. However, 8.6% lacked awareness, signalling insufficient local advocacy. Similar findings align with Lawoyin et al. research, where 47.8% knew someone who died during pregnancy or childbirth. Despite good knowledge overall, half of the respondents were unaware of Nigeria's current maternal mortality ratio, paralleling Okonofua et al. (2009) Adeyemi OO (2019). study, where policymakers were also misinformed. Additionally, 30.3% believed malaria during pregnancy posed no risk, indicating a lack of awareness. Furthermore, over half viewed Traditional Birth Attendants (TBAs) as skilled birth attendants, similar to Lawoyin et al. study attributing this to cost and limited health facility access.

The respondents in this study highlighted bleeding (88.1%) as a major cause of maternal mortality, consistent with findings from Okonofua et al. research (2009) where obstetric haemorrhage was commonly cited. Unsafe abortion was identified by 88.6%, but over half did not perceive infection as a direct cause. The majority correctly recognized that headache and cancer do not cause maternal mortality, yet only 64.9% identified hypertension as a significant cause.

Their knowledge on preventing maternal mortality was positive, with 92.4% acknowledging the role of antenatal attendance. Additionally, 88.1%, 93.0%, 96.2%, and 88.1% recognized family planning, supervised delivery, public health education, and women's empowerment, respectively, as preventive measures. Contrary to Shamshiri-Milani et al's study (2003) in Iran, where policymakers disagreed strongly on abortion, here, 77.3% recognized post-abortion care as a preventive measure.

Identified community factors impacting maternal mortality included 71.4% associating lack of education as a risk factor, consistent with Karlsen (2011). Additionally, the location of childbirth and distance to health facilities influenced maternal deaths, aligning with Adeyemi OO (2021), Samuel and Habtamu's research in Ethiopia (2004), revealing higher risks among women distant from hospitals. Similarly, a study in Argentina highlighted how the place of delivery influences maternal death, as observed by Ramos et al. (2007).

Education level significantly influences women's health outcomes, with those attaining secondary education delaying pregnancies, having fewer children, and better access to health information, reducing maternal mortality risk, akin to findings in Ghana (Alida, 2011). Education's impact on reducing maternal mortality risk was also underscored in studies by Okonofau et al. (1992), Adeyemi OO (2021), and Chowdhury et al. (2007).

Furthermore, 74.1% recognized poverty as a risk factor, aligning with Fillipi et al. (2006) and Harding et al. (2008), associating poverty with adverse maternal outcomes due to restricted access to care where complications arise.

Conclusion

Based on the findings, the study involving 185 participants revealed a fair understanding of maternal mortality among respondents, indicating awareness and recognition of critical issues. The majority were aware of maternal deaths in reproductive-aged women and the impact of antenatal care on pregnancy outcomes. Most participants correctly identified direct causes of maternal mortality, such as bleeding, unsafe abortion, infection, and hypertension. Notably, a substantial proportion of participants demonstrated awareness of risk factors like lack of education, poverty, inadequate healthcare services, alcohol consumption, and transportation issues. However, the study highlighted gaps in awareness concerning specific sustainable development goals targeting maternal mortality reduction. Overall, these findings emphasize the importance of targeted education and interventions to bridge knowledge gaps and enhance awareness of maternal health issues among the population.

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