



Maternal Mortality and Preventive Measures among Childbearing Mothers in Abia State University Teaching Hospital

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Abstract

The study examined maternal mortality causes and preventive measures among childbearing mothers in Abia state university teaching hospital, Nigeria. Maternal mortality poses a threat to a population as it claims the lives of childbearing women who are wives, mothers, and caregivers amongst so many roles. Unfortunately, they die from preventable causes classified as direct obstetric and indirect obstetric causes. This trend is measured in various populations using the maternal mortality rate (MMR). The paper reviewed causes, risk factors and preventive measures of maternal mortality to modify the knowledge, attitude and practice (KAP) of childbearing women. The search strategy included a variety of key words on PubMed, Sciencedirect and other databases. In testing hypothesis, the results revealed a positive significant relationship of the stated preventive measures to maternal mortality causes. The study therefore recommends among others the need for health education to convince women of the relevance of seeking maternal care at the right time and in government approved health facilities.

Key words: maternal mortality, causes, risk factors and prevention, MMR.

Introduction

Pregnancy and childbirth are joyful periods that marks a transition into womanhood and an existence of a new offspring. It is unfortunate that most women die at this period due to causes that are preventable. Maternal mortality also known as maternal death is a significant global health issue contributing approximately 303,000 deaths annually. In developing countries, the lifetime

probability of a woman dying from complications related to pregnancy or childbirth is 1 in 22 compared to 1 in 4,900 in developed nations. This significant difference highlights the disparity in maternal mortality rates between regions. What accounts for this stark contrast as these deaths result from preventable causes? This could be attributed to the three delays expressed in Thaddeus and Maine's model in the sense that complications that lead to maternal deaths are emergencies, unpredictable but preventable (Ntoimo et al., 2019).

According to World Health Organization, maternal mortality is the death of a woman during pregnancy and childbirth or following childbirth due to complications associated with pregnancy or exacerbated health conditions. It is also the death of a woman during pregnancy or within 42 days of pregnancy termination, from causes related to pregnancy management including deaths from exacerbated underlying conditions within six weeks' post-pregnancy. The later part of this definition was termed late maternal death occurring between forty-two days and one year after pregnancy and childbirth. Interestingly, maternal mortality rates determined by number of maternal deaths divided by 100,000 live births in same population at the same time have diminished over the past few years due to conscientious efforts made by developing nations (Oyston & Baker, 2020).

According to Onambele et al., African nations have been focused on achieving the Millennium Development Goals (MDGs), which aim to reduce maternal mortality rates and has made substantial progress between 1990 and 2015 (Onambele et al., 2023). For instance, North Africa witnessed a 40.8 percent decrease in maternal mortality, dropping from 417 to 247 per 100,000 live births, East Africa saw a 57.1 percent reduction, with figures decreasing from 1,087 to 446 per 100,000 live births. Central Africa experienced a 33.5 percent decline, from 708 to 471 per 100,000 live births, while South Africa had a 23.5 percent reduction, decreasing from 442 to 374 per 100,000 live births. West Africa achieved a notable 53.6 percent reduction, with rates falling from 788 to 366 per 100,000 live births.

Nigeria, a developing nation within Sub-Saharan Africa noted to account for nearly 28.5 percent of these fatalities, second only to India recorded a diminishing rate of maternal deaths from 385 per thousand live births in 1990 to 216 per thousand in 2015 (Ope, 2020). This resulted from the implementation of initiatives such as Safe Motherhood Program and the Midwives Service Scheme that aimed at improving maternal health. However, Ajebile reported that these programs were disproportionately realized in urban settings compared to rural areas, likely due to cultural beliefs and perceptions (Ajebile, 2023).

In an attempt to reduce maternal mortality that has stalled up over the years, many strategies have been adopted and implemented. The roadmap of world health organisation seeks to reduce maternal mortality through research, standards, advocacy and implementation (Weeks, 2024). Unfortunately, despite the efforts made, little improvement has been made due to factors linked to poverty and equity among others. So how much can be achieved to successfully meet the goal of reducing maternal mortality to less than 70 deaths per 100,000 live births by 2030? To fill this gap

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coupled with paucity of studies on what preventive measures can be implemented to curb maternal mortality, the study sought to determine causes and preventive measures of maternal mortality.

The purpose of the study specifically is to:

1. Determine predictive relationship between postpartum hemorrhage (PPH) and preventive measures of maternal mortality among childbearing mothers in Abia State, Nigeria.
2. Determine predictive relationship between unsafe abortion and preventive measures of maternal mortality among childbearing mothers in Abia State, Nigeria.
3. Determine predictive relationship between hypertensive disorders in pregnancy and preventive measures of maternal mortality among childbearing mothers in Abia State, Nigeria.
4. Determine predictive relationship between postpartum infections and preventive measures of maternal mortality among childbearing mothers in Abia State, Nigeria.
5. Determine predictive relationship between obstructed labour and preventive measures of maternal mortality among childbearing mothers in Abia State, Nigeria

Research hypothesis

1. There is no significant predictive relationship between postpartum hemorrhage and preventive measures of maternal mortality among childbearing mothers in Abia State
2. There is no significant predictive relationship between unsafe abortion and preventive measures of maternal mortality among childbearing mothers in Abia State
3. There is no significant predictive relationship between hypertensive disorders and preventive measures of maternal mortality among childbearing mothers in Abia State
4. There is no significant predictive relationship between postpartum infections and preventive measures of maternal mortality among childbearing mothers in Abia State
5. There is no predictive relationship between obstructed labour and preventive measures of maternal mortality among childbearing mothers in Abia State

Definition of key Terms.

Maternal mortality: It is the death of a childbearing mother from causes related to pregnancy and childbirth as well as how these states are managed.

Causes of maternal mortality: These are conditions that gives rise to maternal death due to pregnancy and childbirth or their management.

Preventive measures of maternal mortality: These are actions put in place to ensure that deaths resulting from pregnancy and childbirth or their management do not occur.

Childbearing mothers: These are women of reproductive age who are not pregnant, who are pregnant or have had a live or stillbirth.

Literature review

Causes of maternal mortality

The causes of maternal mortality are categorized in World Health Organization, WHO ICD-9 definition of maternal mortality into direct and indirect obstetric causes. The causes regarded as direct causes result from pregnancy, labour, purperium and from interventions, omissions, incorrect treatment or a chain of events. The leading direct obstetric causes of maternal deaths include postpartum hemorrhage(PPH), hypertensive disorders, unsafe abortion, obstructed labour and postpartum infections.

Postpartum haemorrhage is the leading cause of maternal deaths. It occurs when there is blood loss exceeding limits of 500 mm following vaginal delivery and 1000 mm following a cesarean section. It also includes any vaginal bleeding post-delivery that leads to vital sign instability manifested in a 10 percent reduction in hemoglobin from baseline. This can be primary haemorrhage when it occurs within 24 hours or secondary PPH occurring between 24 hours up to 6 weeks Postpartum haemorrhage can arise from inadequate uterine contractions, retained placental tissue, or lacerations in the cervix or vagina. Associated factors of PPH are categorised into four T's: Tone, Thrombosis, Trauma, and Tissue (Zeitlin et al., 2013). Other factors include parity, gravidity, and medical history, as well as uterine atony, retained placenta, genital tract trauma, episiotomy, labor duration and mode of delivery (Muddasetty et al., 2021). Maternal mortality due to PPH are directly related to the duration and amount of blood loss which with timely recognition and interventions could be prevented although not a simple fix for intervention.

Another direct cause of maternal mortality is unsafe abortion considered "unsafe" by World Health Organization due to the procedures being performed by unqualified individuals or in substandard environments and contribute to about 7.9 percent of maternal deaths globally (Makins et al., 2024). Despite healthcare advancements, global estimates of unsafe abortion is prevalent in developing countries where most women are unaware of safe abortion options due to factors such as low socio-economic status, health inequality, and the denial of women's rights especially to their reproductive health contribute to the prevalence of unsafe abortions. Furthermore, unsafe abortion occurs in many regions due to laws that prohibit the access to safe abortion (Willis et al., 2023). And because these pregnancies are specifically termed "unwanted" or "unintended", the at risk women eventually resort to getting induced to terminate the fetus in clandestine ways involving use of oral and injectable substances, vaginal manipulations and physical trauma that leaves the women in pitiable states.

Hypertension in pregnancy comes with devastating outcomes. This complication is identified by an increased systolic blood pressure above 120 mm Hg. Gestational hypertension is

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characterized by sustained systolic blood pressure of 140 mm Hg or higher usually due to impaired blood pressure regulation due to vascular changes associated with the placenta (Robson, 1999). There are four classifications of HDP: preeclampsia, gestational hypertension, superimposed preeclampsia, and chronic hypertension (Magee et al., 2022). Preeclampsia occurs after 20 weeks of gestation, accompanied by proteinuria or organ dysfunction. Gestational hypertension is characterized by elevated blood pressure after 20 weeks, while superimposed preeclampsia features hypertension with organ dysfunction or proteinuria. Chronic hypertension is associated with perinatal mortality which leads to suggested delivery timing at 37 to 38 weeks to balance risks.

Infections that occur in the uterus or other components of the reproductive system following the conclusion of a pregnancy are referred to as postpartum infections. These infections are predominantly bacterial in nature and are characterized by symptoms such as fever, heightened discomfort, and the presence of malodorous discharge. They are usually in-hospital post-discharge infections owing to varied predisposing factors ranging from number of vaginal examinations, hand hygiene, sanitary pad change and perineal care. Thus, infection prevention hinges on hygiene at both antepartum, intrapartum and postpartum stages.

Certain times, the presenting part of the fetus fails to advance through the birth canal, even with strong uterine contractions. This condition is referred to as obstructed labour one of the direct maternal death causes. It is primarily due to cephalo-pelvic disproportion arising from incompatibility between the size of the fetal head and the maternal pelvic brim (Yeshitila et al., 2022). Additional factors include fetal mal-presentation and mal-position, such as shoulder, brow, or occipito-posterior presentations. Deaths from obstructed labour also known as labour dystocia is associated with poor antenatal care follow-up, home birth, teenage pregnancy, poor referral system and low socioeconomic status.

The second classification of causes of maternal mortality is the indirect obstetric causes. These causes stem from pre-existing conditions or illnesses that arise during pregnancy. This implies that the physiological changes associated with pregnancy tend to exacerbate the underlying health condition such as cardiac disorders or renal failure. In other words, indirect obstetric deaths occur as a result of pre-existing health issues that become more severe due to pregnancy or newly emerging health conditions that are not directly linked to pregnancy. The World Health Organization categorizes deaths that may occur during pregnancy but are not directly caused by it as accidental, incidental, or non-obstetrical maternal deaths as indirect obstetric causes. Examples include malaria, anemia, diabetes, hepatitis, HIV/AIDS, and cardiovascular diseases, all of which have the potential to complicate pregnancy and childbirth or be intensified by these stages.

Preventive measures of maternal mortality

The goodnews is that maternal mortality is preventable as there are choices that could help reduce the menace caused by death of a mother. According to Centres for disease prevention and control, a death is preventable if there are at least some chances it could be avoided with a

reasonable change to patient, family, providers, facility, system and community factors. Therefore, prevention should encompass actions aimed at eliminating or reducing, and where not feasible, slowing the progression of a condition to a more severe state. In other words, prevention should involve conscientious efforts aimed at decreasing the probability of occurrence, interrupting causes that contribute to the progression, thereby reducing the severity of condition.

A major prevention is knowing the obstetric danger signs that lead to maternal mortality. This measure is a significant aid to developing various strategies to achieve United Nations' Sustainable Development Goal 3, "Good Health and Well-Being" (Bali Swain & Yang-Wallentin, 2020). Effective contraceptive use, widespread health information, and access to quality care before, during and after childbirth are also essential preventive measures. Prevention of maternal mortality cuts across four levels which include primordial, primary, secondary and tertiary stages (RN, 2018). Each stage comes with interventions based on level of severity of the complication likely to lead maternal death.

For instance, the primordial measures address health hazards that elevate risk factor usually at the earliest stage of conception by modifying beliefs and traditions, increasing awareness through health education regarding sanitation, nutrition, importance of timely access to essential health services and healthy lifestyle choices. At the primary prevention stage, pregnancies are prevented through contraceptive use and complications in at-risk childbearing mothers are managed with comprehensive safe motherhood strategies such as focused antenatal care, prompt referral, active labour management, immediate postpartum care, and access to family planning services can prevent maternal mortality.

In secondary level, early identification and timely management of pathologies are targeted to avert severe maternal outcomes. One of such interventions recommended by World Health Organization is access to contraception and legal abortions for safe pregnancy resolution in cases where a woman whose life is endangered (1). Effective secondary preventive strategies are dependent on the availability of skilled healthcare providers and necessary supplies and equipment. Finally, Tertiary prevention mitigates the negative effect of a complication on function, longevity, and quality of life. It therefore involves rehabilitation which can be in form of nutritional support for anemic women, and allergen protection for asthmatic women.

Research Methods

The study adopted a descriptive cross-sectional study design. The area of study is Abia State University Teaching Hospital (ABSUTH) Aba, Abia State located in Eastern Nigeria. The study population constitute all women of childbearing age in the Obstetrics and Gynecology Unit of Abia State University Teaching Hospital located in Aba-South Local Government Area, Abia State. The study involved 150 women of childbearing age selected using a simple random sampling technique. A structured questionnaire was used to elicit data from participants. With an informed

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consent, the researchers solicited for co-operation and participation. This was followed by a briefing on the study objectives and assurance on confidentiality of their responses. Data collected was analysed using SPSS version.... Regression analysis was done to identify the causes and preventive measures of maternal mortality in the study area with a corresponding 95% confidence level reported as a measure of the strength of relationship with p-values of 0.05 or less. A p-value < 0.05 is considered significant. The results were presented in tables and texts.

Results

Table 1: There is no significant predictive relationship between postpartum hemorrhage (PPH) and preventive measures of maternal mortality among childbearing mothers in Abia State

		Coefficients ^a		Standardized Coefficients	t	Sig.
Model		Unstandardized Coefficients				
		B	Std. Error	Beta		
1	(Constant)	23.146	2.431		9.520	.000
	PPH	.551	.168	.260	3.279	.001

a. Dependent Variable: Preventive

The results in table 1: indicated an R-value of .260. In testing the relationship between postpartum hemorrhage and preventive measures of maternal mortality among childbearing mothers in Abia State, a p-value of .001 was obtained which is less than .05 level of significance leading to a rejection of the null hypothesis. Hence, a significant relationship between postpartum hemorrhage and preventive measures of maternal mortality among childbearing mothers in Abia State.

Table 2: There is no significant predictive relationship between unsafe abortion (USA) and preventive measures of maternal mortality among childbearing mothers in Abia State

		Coefficients ^a		Standardized Coefficients	t	Sig.
Model		Unstandardized Coefficients				
		B	Std. Error	Beta		
1	(Constant)	47.605	2.827		16.842	.000
	USA	-1.069	.180	-.438	-5.926	.000

a. Dependent Variable: Preventive

The results in table 2: indicated an R-value of .438. In testing the relationship between unsafe abortion and preventive measures of maternal mortality among childbearing mothers in Abia State, a p-value of .000 was obtained which is less than .05 level of significance leading to a rejection of the null hypothesis. Hence, a significant relationship between unsafe abortion and preventive measures of maternal mortality among childbearing mothers in Abia State.

Table 3: There is no predictive relationship between obstructed labour (OL) and preventive measures of maternal mortality among childbearing mothers in Abia State

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	23.501	3.825		6.145
	OL	.487	.247	.160	1.974

a. Dependent Variable: Preventive

The results in table 3: indicated an R-value of .160. In testing the relationship between hypertensive disorders and preventive measures of maternal mortality among childbearing mothers in Abia State, a p-value of .050 was obtained which is equal to .05 level of significance leading to a rejection of the null hypothesis. Hence, a significant relationship between hypertensive disorders and preventive measures of maternal mortality among childbearing mothers in Abia State

Table 4: There is no significant predictive relationship between hypertensive disorders (HD) and preventive measures of maternal mortality among childbearing mothers in Abia State

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	23.775	2.468		9.633
	HD	.505	.170	.237	2.971

a. Dependent Variable: Preventive

The results in table 4: indicated an R-value of .237. In testing the relationship between hypertensive disorders and preventive measures of maternal mortality among childbearing mothers in Abia State, a p-value of .003 was obtained which is less than .05 level of significance leading to a rejection of the null hypothesis. Hence, a significant relationship between hypertensive disorders and preventive measures of maternal mortality among childbearing mothers in Abia State

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Table 5: There is no significant predictive relationship between postpartum infections (PI) and preventive measures of maternal mortality among childbearing mothers in Abia State

Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	46.607	2.857		16.312
	PI	-1.006	.183	-.413	-5.510

a. Dependent Variable: Preventive

The results in table 5: indicated an R-value of .413. In testing the relationship between hypertensive disorders and preventive measures of maternal mortality among childbearing mothers in Abia State, a p-value of .000 was obtained which is less than .05 level of significance leading to a rejection of the null hypothesis. Hence, a significant relationship between hypertensive disorders and preventive measures of maternal mortality among childbearing mothers in Abia State

Discussion

Postpartum Hemorrhage and Preventive Measures of Maternal Mortality Among Childbearing Mothers

The results in table 1: indicated an R-value of 0.260 and a p-value of 0.001 for the predictive relationship between postpartum hemorrhage and preventive measures of maternal mortality among childbearing mothers in Abia State. This indicates that there is a significant predictive relationship between postpartum hemorrhage and preventive measures. This implies that the use of preventive measures such as antenatal care attendance and skilled care delivery are effective in reducing postpartum hemorrhage which is the leading cause of maternal mortality. This is attributable to the fact that prompt access to antenatal care services increases exposure to information regarding postpartum haemorrhage and timely recognition and diagnosis of at-risk women. Also, with proper supervision of labour under skilled care, postpartum haemorrhage can be avoided. This finding agrees with Khanna *et al.*, who found institutionalised delivery, antenatal care and better referral services and also, increased awareness through health education as evidence-based interventions for PPH which would be accessible to women in Nigeria (Kontogianni & Alepis, 2020). Also, Chauke *et al.*, supported in their study that health education approach helps in preventing PPH by addressing the delays of recognizing obstetric danger signs, deciding to seek, reaching and getting care (Chauke et al., 2023). Again, a study by Kalu and Chukwurah supported the findings of this study outlining antenatal care as a multidisciplinary approach in providing opportunities for health education and promotion and preventing maternal

mortality causes by PPH through early assessment and diagnosis of the condition and associated risk factors (Kalu & Chukwurah, 2022). A study by Makwe and Okunade further supported this finding indicating that PPH is preventable by prompt identification and management of PPH especially among at risk women during antenatal and intrapartum care as well as active management of labour by some skilled health care personnel (Bhide, 2014).

Unsafe Abortion and Preventive Measures of Maternal Mortality among Childbearing Mothers

The results in table 2: indicated an R-value of 0.438 and a p-value of 0.000 for the predictive relationship between unsafe abortion and preventive measures of maternal mortality among childbearing mothers in Abia State. This indicates that there is a significant predictive relationship between unsafe abortion and preventive measures. This is attributable to the fact that with the implementation of measures such as sexuality education, increased access to contraceptive services and legitimisation of abortion, deaths due to unsafe abortion can be prevented. In most developing nations, most women get pregnant and tend to carry out abortions behind the scene unnoticed but contributory to the maternal mortality rate. Where measures are put in place, such as increased awareness on contraceptive use, women are first saved from unintended pregnancies and opting for abortions. Additionally, it is necessary to understand that restrictions do not prevent abortion rather they make them less safe and the initiation of the unsafe process involves the woman, the personnel and the conditions. Thus the need to legitimise access to abortion care services to increase access to safe and legal procedures by skilled personnel. This finding lends credence to the opinion by World health organisation that included sexuality education to increase awareness, effective contraception and provision of safe and legal abortion as effective measures to reduce unsafe abortion and maternal deaths from this cause. A study by Armo et al., emphasized prevention of unwanted pregnancies through contraceptive use (Konje & Ahmed, 2024). Again, Halder et al., stated that unsafe abortions can be prevented by training of personnel and government relaxing laws that restrict abortion (Halder et al., 2024).

Obstructed Labour (OL) and Preventive Measures of Maternal Mortality among Childbearing Mothers

The results in table ...indicated an R-value of 0.160 and a p-value of 0.050 for the predictive relationship between obstructed labour and preventive measures of maternal mortality among childbearing mothers in Abia State. Thus, there is a significant predictive relationship between obstructed labour and preventive measures. This implies that use of preventive measures is effective in reducing obstructed labour. With measures such as skilled delivery, timely access to maternal care services for timely diagnosis and care can significantly reduce maternal deaths due to obstructed labour. This finding is supported by Cummings et al who stated mortality from obstructed labour requires increased awareness among women and clinicians and access to skilled birth attendants, well equipped facilities capable of delivering emergency obstetric care including caesarean sections (Cummings et al., 2019). Also, Ayenew emphasize prevention through

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adequate utilisation of antenatal care services (Yeshitila et al., 2022). In other words, not having antenatal care may decrease knowledge on pregnancy complications that increase risk of obstructed labour such as large fetal size, multiple pregnancies and other fetal anomalies. Again antenatal care services provide women the awareness on birth preparedness and complication readiness plan. This agrees with another finding that timely access to antenatal care services enables early detection and management, counseling opportunities for mothers regarding nutrition and institutionalised delivery to be able to reduce deaths from obstructed labour (Girma et al., 2022) .

Hypertensive Disorders in Pregnancy and Preventive Measures of Maternal Mortality among Childbearing Mothers

The results in table 4 indicated an R-value of 0.237 and a p-value of 0.003 for the predictive relationship between hypertensive disorders in pregnancy and preventive measures of maternal mortality among childbearing mothers in Abia State. Thus, there is a significant predictive relationship between hypertensive disorders and preventive measures. This implies that deaths from hypertensive disorders in pregnancy are preventable by implementing measures such as early recognition, diagnosis and care made possible by prompt access to available maternal services by trained health providers. This is because when a woman utilizes available maternal health services, she is well-equipped to identify obstetric danger signs that indicates she is at risk of hypertension and properly monitored to prevent severity. Again, she is guided on the factors that may increase complication such as nutrition and physical activities. This finding supported by Centres for Disease Prevention and Control on the position that making healthy lifestyle choice especially with diets prevents maternal death due to hypertensive disorders in pregnancy. Another study by Singh et al. listed some preventive strategies of hypertension in pregnancy to include early diagnosis and management, sensitisation programmes on the importance of antenatal, natal and postnatal care including institutionalised delivery by a skilled birth attendant, as well nutritional counseling (Singh et al., 2020).

Postpartum Infections and Preventive Measures of Maternal Mortality among Childbearing Mothers

The results in table 5 indicated an R-value of 0.413 and a p-value of 0.000 for the predictive relationship between postpartum infections and preventive measures of maternal mortality among childbearing mothers in Abia State. Therefore, there is a significant predictive relationship between postpartum infections and preventive measures. This implies that postpartum infections can be prevented through increased access to antenatal care. This is because most women go into pregnancy without adequate knowledge of the immuno-compromised state of their bodies due to the physiological state of pregnancy. Through antenatal care attendance, women receive health education on hygienic practices and adequate nutrition effective in reducing postpartum infections. Additionally, most women who access antenatal care services are most likely to deliver with a skilled birth attendant under aseptic conditions thereby reducing the in-hospital post-discharge

maternal complication. This agrees with a study by Mohammed et al., which stated that increasing awareness through antenatal health education increases preventive practices (Mohammed Hassan et al., 2021). Also, another study by Nchimbi and Joho revealed that hygienic practices such as hand washing prior sanitary pad change, regular sanitary pad change and perineal care as well as having adequate nutrition and exercise were significant measures taught during antenatal care visits to reduce infections capable of leading to maternal mortality (Nchimbi & Joho, 2022). Again, Bishaw *et al.*, stated that postpartum infections are preventable by skilled birth attendance, eating adequate meal, and maintenance of hygiene during delivery and post-delivery. This implies that addressing the predisposing factors of postpartum infections through increased awareness can reduce maternal mortality due to infections (Bishaw et al., 2023).

Conclusion

Maternal mortality is often attributed to preventable causes. To effectively identify these causes and their associated risk factors for appropriate interventions, it is vital to address several impediments such as healthcare system failures, social determinants, gender norms and inequalities that undermine women's rights to safe, quality, and affordable reproductive health services.

Recommendations

The study recommends the following:

1. There is need to advocate health education for women, men, adolescents, families, and communities addressing the causes of maternal mortality and preventative measures. This is necessary to convince women of the relevance of seeking maternal care at the right time and in government approved health facilities.
2. There should be continuous training of healthcare professionals who can offer satisfactory care to women during pregnancy, at delivery and post-partum stages.
3. Access to contraceptives should be promoted in health facilities to prevent unwanted pregnancies and unsafe abortions in clandestine places.

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