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Factors Responsible for Sustained High Levels of Maternal Mortality in Kaduna, Nigeria

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Abstract

Background; Asserted that Nigeria's maternal mortality rate is among the worst in the world, the situation is much worse within the northern parts of the country, where the MMR is estimated to be over 1000 deaths per 100,000 live births. A mid-year report issued by Kaduna State The variables that influence or partially affects maternal mortality rate includes; Delay in making decision to seek maternal health care; Delay in receiving skilled pregnancy care when the woman gets to the health facility, haemorrhage, anaemia, sepsis, eclampsia, ineffective used of essential drugs despite being provided to government facilities, lack of functional blood banking system due to irregular supply of electricity, Non-functional ambulances, no Manual Vacuum Aspiration(MVA) kits, for the management of incomplete abortions. This paper therefore, seeks to identify and determine factors influencing sustain high level maternal mortality in Kaduna State, Nigeria and the findings from this study provided insight into how these communities could be assisted to reduce the rate of maternal morbidity and mortality.

Keywords

Factors, Responsible, Sustain, maternal, mortality

Introduction

The poor maternal mortality indices in Nigeria have remained a serious public health issue. Asserted that Nigeria's maternal mortality rate is among the worst in the world, Nigeria is also among the top six countries in the world that contribute to more than 50% of all global maternal deaths [1].

Nigeria has a maternal mortality rate (MMR) of 512 deaths per 100,000 live births,4 an estimate which indicates that maternal deaths are responsible for about a third of all deaths among women of reproductive age [2]. The situation is much worse within the northern parts of the country, where the MMR is estimated to be over 1000 deaths per 100,000 live births [2]. Childbirth and its process is one of the most significant events in the life of a woman. The time of birth, as well as postpartum, are the most critical period in a woman´s life especially in the developing world [3]. The choice of place of delivery for a pregnant woman is important to maternal health care. Every day, approximately 1,000 women die globally from preventable causes related to pregnancy and childbirth, of which, 99% of all maternal deaths occur in developing countries [3].

Culture and religion, are so much more inculcated in the lives of the population than newly introduced reproductive freedom and women´s autonomy movements making the former very difficult to overcome. This is particularly true in those areas and societies such as the Hausa´s, where tradition remains important in everyday life [3]. According to Nigerian Demographic Health Survey report (2013), a significant proportion of mothers in developing countries deliver at home, with most births unattended by skilled personnel. About half of mothers in Nigeria received at least four antenatal visits while being pregnant. Only about 38% of births in Nigeria are delivered by a skilled health provider, such as a midwife, doctor or nurse [3, 4]. Every day, approximately 1,000 women die globally from preventable causes related to pregnancy and childbirth, of which, 99% of all maternal deaths occur in developing countries [3].

A mid-year report issued by Kaduna State Maternal Perinatal Deaths Surveillance and Response (MPDRSR) team says 123 pregnant women died in the state between January and July 2018. Also identified four major causes responsible for the deaths: haemorrhage, anaemia, sepsis and eclampsia “The January-June 2018 MPDSR report has recorded a total of l23 maternal deaths across the public secondary/tertiary health facilities in the state. “From the report, 42. 5 per cent of the deaths were caused by haemorrhage, eclampsia, and l6.5 per cent and sepsis l4 per cent [5].

Statement of the problem

Nigeria is second to India in the rating of countries with high pregnancy mortality globally [6]. The country is considered one of the most dangerous places in the world to give birth [7]. 109 women of this figure die daily in Nigeria. Northern Nigeria accounts for the highest maternal mortality rate in Nigeria. Kaduna State for example has a maternal mortality rate of 1025/100,000 live births [6,8]. This indicates the need for in-depth reviews of factors responsible for sustained high level of maternal mortality. This paper therefore, seeks to identify and determine factors influencing sustain high level maternal mortality in Kaduna State, Nigeria and the findings from this study provided insight into how these communities could be assisted to reduce the rate of maternal morbidity and mortality.

Maternal Mortality and Its Causes

Maternal death or mortality is defined as the death of a woman while pregnant or within 42 days of pregnancy, expressed as a ratio to 100,000 live births in the population being studied [1]. According to,10 about 80% of maternal deaths globally are due to four major causes- severe bleeding, infections, hypertensive disorders in pregnancy (eclampsia), and obstructed labour [1]. Hemorrhage, sepsis, toxemia and complications from abortion account for 62% of maternal deaths in Nigeria [9]. Complications from abortion account for 62% of maternal deaths in Nigeria, North West has the highest maternal mortality rate, seconded by North-East. Death from post partum hemorrhage (PPH) ranges between 23% and 44% of total maternal deaths especially in the Northern States. The ratio of women dying from PPH is 1 in 6 in the North East and North West as against 1 in 18 between South West and South East geopolitical zones [9]. The majority of maternal fatalities are caused by the ignorance and indifference of women and society at large. Because they lack sufficient knowledge and information about the warning symptoms of pregnancy and labor, the majority of women delay seeking medical attention and overlook early warning indications. Additionally, there is a deficiency in sufficient emergency planning prior to, during, and following delivery. Individual characteristics of mothers found to influence maternal deaths include maternal age, educational attainment, socio-economic status and antenatal attendance. Poor socio-economic development, weak health care system and socio - cultural barriers to care utilization are also contributory [10].

Early marriage

Early marriage accounts for about 23% of maternal mortality due to severe hemorrhage resulting from obstructed and prolonged labour. The narrow pelvis of these women may also result to fistula and often time still births [9].

Poor family planning practice

Unsafe abortions accounts for at least 13% of all maternal deaths. If people are not aware of good contraceptive methods, there will be a lot of unwanted pregnancies among the young age group. These most often resort to unsafe abortion with its resultant infections, hemorrhage and injuries to the cervix and uterus [9].

Inadequate obstetric and post partum care

About 69% of women still give birth in a traditional setting either at home or in a church. Only 30% of people in the rural areas have access to health care within 4 km distance. The same issue is applicable to people in the urban setting [10].

Educational attainment of women

Female illiteracy adversely affects maternal and child survival rates and is also linked to early pregnancy. The lack of primary education and lack of access to health care contribute significantly to child and maternal mortality statistics. Women who complete secondary education are more likely to delay pregnancy, receive prenatal and post natal care and have their birth attended to by qualified medical personnel.

Child death

This in itself is a risk factor for maternal death in the sense that when a mother loses a child at birth, she would want to get pregnant almost immediately not weighing the risk involved.

Factors Responsible for Maternal Mortality

Apart from the quality of services provided by a health facility, patients' experience and perception of quality care determine the utilization of a health facility [11]. This could be partly responsible for the low antenatal care (ANC) coverage in Nigeria, where six out of ten Nigerian women receive ANC during pregnancy, and majority (two-thirds) never return to deliver their baby at a health in¬stitution [12]. In fact, a woman's perception of 'quality care' might even influence another person's health-seeking be¬haviour [13]. For instance, if a woman's experience of care during a normal delivery was negative, other women whom she might have told of such experience might delay in de¬ciding to seek care (even when standard quality services are provided at the health facility) thereby increasing the like¬lihood of birth complications and maternal death [12, 13].

Current evidence suggests that the high rate of maternal and neonatal mortality in Nigeria is linked to the three forms of maternal delay proposed by Thaddeus and Marine [14]. These barriers include delay in making decision to seek maternal health care; delay in locating and arriving at a medical facility; and delay in receiving skilled preg¬nancy care when the woman gets to the health facility [3, 14, 15].

36 per cent of the hospitals do not have ready to use blood," due to lack of a state-owned blood supply chain system". 77 per cent of the hospitals have" non-functional blood banks due to irregular supply of electricity" while 36 per cent of them have non-functional ambulances and 56 per cent of the hospitals do not have the Manual Vacuum Aspiration (MVA) kit for the management of incomplete abortions [5].

In diverse contexts, individual factors, including maternal age, parity, education and marital status; household factors including family size and household wealth; and community factors including socioeconomic status, community health infrastructure, region, rural/urban residence, available health facilities and distance to health facilities all determine place of delivery and these factors also interact in different ways [3].

Challenges of Maternal Mortality

Widening differences continue to exist in access to and utilization of maternal health services between the developed and the developing countries. Estimates have shown that more than 99% of global maternal deaths occurred in the developing countries. These differences are said to occur between the rich and poor women, between the young and the old women, between the urban and rural women and between the literate and non-literate women. There are many barriers that maternal health systems interventions could address in addition to the low educational status of women, low economic status and religion. These include financial and geographic access, perceived and actual quality of the healthcare as well as the knowledge and attitudes of the people on the importance of maternal health services [16].

The 30 hospitals visited had adequate stock of essential life-saving drugs" which if used effectively could have helped in preventing the deaths", 36 per cent of the hospitals do not have ready to use blood, "due to lack of a state-owned blood supply chain system", 77 per cent of the hospitals have" non-functional blood banks due to irregular supply of electricity" while 36 per cent of them have non-functional ambulances and 56 per cent of the hospitals do not have the Manual Vacuum Aspiration (MVA) kit for the management of incomplete abortions [5]. Current evidence suggests that the high rate of maternal and neonatal mortality in Nigeria is linked to the three forms of maternal delay proposed by Thaddeus and Marine [12, 15]. These barriers include delay in making decision to seek maternal health care; delay in locating and arriving at a medical facility; and delay in receiving skilled preg¬nancy care when the woman gets to the health facility [12,17].

Thus, even if maternal health institutions exist in this region, it might not improve health outcomes because of people's beliefs and culture. Moreover, raising awareness on the existence of a maternal health facility, making it accessible and af¬fordable does not always result to its utilization. For exam¬ple, in Giwa Local Government Area (LGA) of Kaduna State Nigeria, despite living close to a health facility with free maternal health services, majority of the women were not utilizing the facility for child delivery [18].

Monitoring maternal mortality is difficult due to poor reporting and lack of proper methods to measure actual death rates. Estimating the real figure is difficult as only 31% women deliver in health facilities [9].

Statistics and Discussion

A mid-year report issued by Kaduna State Maternal Perinatal Deaths Surveillance and Response (MPDRSR) team says 123 pregnant women died in the state between January and July 2018. During a quarterly interactive forum organised by Kaduna State Maternal Accountability Mechanism (KADMAM) the deaths occurred in 30 government-owned hospitals in the state [5]. The data displays the maternal death rate in Kaduna state for general hospitals (excluding PHC) as well as cases that happened at home and for which no records were kept.

Barriers to Utilization of Maternal Health Care Services

Table 1 depicts the constraints faced in utilization of maternal health care services by rural women in northern Kaduna State, Nigeria [16].

Table 1 Barriers in the Utilization of Maternal Health Care Service by Rural women

Barriers	**Frequency**	**Percentage**	**Ranking**
Inadequate facilities/drugs	94	78.33	1st
Long distance	88	73.33	2nd
Time waste	82	68.33	3rd
Insufficient health workers	78	65.00	4th
Bad attitude of health personnel	72	60.00	5th
High cost of transportation	63	52.50	6th
Bad road	54	45.00	7th
Costly	42	35.00	8th
Dirty environment	36	30.00	9th
Just prefer not to go	21	17.50	10th
Lack of mobility	**15**	**12.50**	**11th**

Source: Field Survey, 2019, *Multiple Response exist

Based on the data provided in the Table, it can be observed that 78.33% of the respondents regarded the lack of facilities and drugs as the primary obstacle to providing rural women with effective maternal care services. At 73.33%, long distance was identified as the second most significant barrier. More than 68.33% of rural women said that using maternal health care services results in significant time waste, most likely because of the man hours squandered waiting in line at such facilities—hours that could have been spent on their farms. It was listed as the third-most significant obstacle. Inadequate health workers (65%), unfavourable attitudes of health workers toward patients (60%)

high transportation costs (52.50%), poor roads (45%), excessive cost (35%), unclean environment (17.50%), desire to avoid going (17.5%), and limited mobility (12.5%) are additional obstacles that rural women in the study area must overcome. The results is in line with [3] the findings In diverse contexts, individual factors, household factors including family size and household wealth; and community factors including socioeconomic status, community health infrastructure, region, rural/urban residence, available health facilities and distance to health facilities most important constraints that stops rural women from use of maternal health care services resulting to sustained high level of maternal mortality.

Table 2 factors influencing the women's choice of delivery

Variable	Frequency	Percentage
Place of delivery used by the women		
At home by skilled professional	34	13.9
at home by unskilled attendant	114	46.5
Traditional birth attendant	09	3.7
Primary health care centre	30	12.2
Teaching hospital	58	23.7
Preferred place of delivery		
Hospital	76	31.0
Home	128	52.2
Teaching hospital	19	7.8
Traditional birth attendants	11	4.5
Primary health centres	11	4.5
Determinant factors		
My husband's decision		
Agree	224	91.4
Undecided	01	0.4
Disagree	20	8.2
my culture does not allow people to go to the hospital		
Agree	165	67.3
Undecided	18	**7.**3
Disagree	62	25.3
my mother in-law assists me with the house chores so that I can attend antenatal clinics and others necessary clinical check-up		
Agree	201	82.0
Undecided	27	11.0
Disagree	17	6.9
I have knowledge about the delivery places		
Agree	185	75.5
Undecided	44	18.0
Disagree	16	6.5
Community health centres are available for deliveries		
Agree	171	69.8
Undecided	48	19.6
Disagree	26	10.6
I have experienced the various options and decided to choose this one		
Agree	127	51.8
Undecided	37	27.3
Disagree	81	20.8
Delivery in the hospital is expensive		
Agree	127	51.8
Undecided	37	15.1
Disagree	81	33.1
My religion is against delivery in the hospital		

Agree	114	46.5
Undecided	27	11.0
Disagree	104	42.4
I don't want to be attended by unfamiliar		
Agree	140	57.1
Undecided	27	11.0
Disagree	78	31.8
I don't want the hospital personnel to impose their hospital policies on me, where i may be delivered by a man		
Agree	172	70.2
Undecided	8	3.3
Disagree	65	26.5

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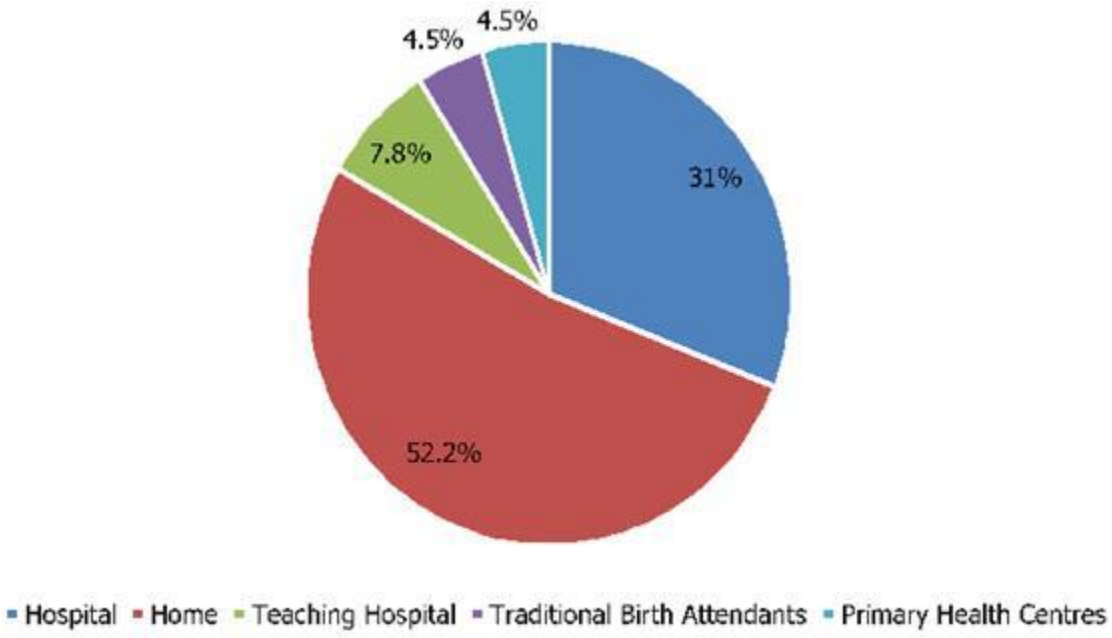

Factors influencing choice of delivery place: as revealed in Table 2, nearly half of the population (46.5%) gave birth to their children at home without the assistance of trained professionals. 52.2 percent of people said they preferred home delivery. The following factors informed their preferences: Nineteen twenty-four (91.4%) of the participants said that their husbands made the delivery location decisions for them. Sixty-five participants, or 67.3 percent, concurred that their culture forbade women from giving birth in a hospital. The influence of culture on the choice of delivery place was further buttressed by one of the interviewees who explained that: "you know that our culture does not accommodate women who are too fragile or lazy. Women who deliver in the hospital are seen as fragile or weak" [3] Eighty-one (82.0%) of them concurred that they had support from others in their lives at home, which allowed them to attend prenatal appointments. Additionally, 117 (69.8%) respondents said that neighborhood health centers are open for deliveries. A total of 117 participants (51.8%) expressed their opinion that hospital deliveries are costly. Fourteen individuals (46.5%) concurred that hospital birth is against their religious beliefs. Of them, one hundred and forty (57.1%) preferred not to have strangers take care of them. Seventy-two (70.2%) of them did not want medical staff to force their policies on them, even though a male would be giving birth to them. This was supported by a response from an interviewee which stated that: "the problem I have with delivering in the hospital is when I always have to lie down, confined to one place. This will increase the pain. At home, I have the freedom to move about and work till the baby is out. Most times I give birth on my knees which will not be allowed in the hospital" [3]

Discussion

Nigeria's low maternal mortality rates continue to be a major public health concern. Claimed that although Nigeria has one of the lowest rates of maternal mortality worldwide, it is also one of the top six nations contributing to over 50% of all maternal deaths worldwide. The choice of place of delivery for a pregnant woman is important to maternal health care. Every day, approximately 1,000 women die globally from preventable causes related to pregnancy and childbirth, of which, 99% of all maternal deaths occur in developing countries. One of the most important moments in a woman's life is giving birth and the process involved. The most crucial times in a woman's life are during her pregnancy and the postpartum phase, particularly in poor nations.

Current evidence suggests that the high rate of maternal mortality in Nigeria is linked to the three forms of maternal delay proposed by Thaddeus and Marine. These barriers include delay in making decision to seek maternal health care; delay in locating and arriving at a medical facility; and delay in receiving skilled preg¬nancy care when the woman gets to the health facility [12-17].

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Therefore, due of people's cultural and religious beliefs, the existence of maternal health facilities in this area may not improve health outcomes. Furthermore, not all maternal health facilities are used even if they are made more widely known about and made more reasonably priced. The experience and perception of patients regarding the quality of treatment they receive influence the use of a health facility, in addition to the caliber of services offered by the institution. For exam¬ple, in Giwa Local Government Area (LGA) of Kaduna State Nigeria, despite living close to a health facility with free maternal health services, majority of the women were not utilizing the facility for child delivery [18]. Maternal mortality is hard to monitor because of incomplete reporting and inadequate techniques to calculate true death rates. Estimating the real figure is difficult as only 31% women deliver in health facilities [9].

Conclusion

Women die globally from preventable causes related to pregnancy and childbirth, of which 99% of all are maternal death, occurs in the developing countries.

The variables that influence or partially affects maternal mortality rate includes; Delay in making decision to seek maternal health care; Delay in receiving skilled pregnancy care when the woman gets to the health facility, haemorrhage, anaemia, sepsis, eclampsia, ineffective used of essential drugs despite being provided to government facilities, lack of functional blood banking system due to irregular supply of electricity, Non-functional ambulances, no Manual Vacuum Aspiration(MVA) kits, for the management of incomplete abortions.

In different contexts, individual factors, such as maternal age, education and marital status, household factors like family size and wealth, community factors such as socioeconomic status, community health infrastructure, urban/rural residence, available health facilities and distance to the facilities. These are factors that interact in different ways resulting to sustain high level of maternal mortality.

Recommendation

Based on the review, the following recommendations were suggested;

- In order to enhance the well-being and productivity of rural women, stakeholders, government agencies, and non-governmental organizations should make sure that these women have more access to education and educational opportunities.
- Increasing the efficiency of maternal health care delivery services requires collaboration between health experts, rural leaders, and their subjects. The appropriate entities tasked with making sure healthcare facilities operate smoothly should provide a clean atmosphere and highly qualified staff.
- In order to enhance the results for mothers and children, heads of families and women in general should receive education regarding the need of using modern contraceptives, improving the use of skilled birth delivery, and selecting appropriate delivery locations.. Mother and child mortality rates will decline with increased education for girls and their mothers. Postsecondary educated women are more likely to postpone getting pregnant, have prenatal and postpartum care, and have their babies attended by licensed medical professionals.
- Use of misoprostol, a proven uterotonic, in the control of post-partum hemorrhage (PPH) which accounts for an estimated 25% of maternal mortality and is a major cause of post-partum disability in sub-Sahara Africa. Misoprostol is an inexpensive tablet, easy to store, stable in field conditions and has an excellent safety profile with multiple routes of administration (orally, rectally, and vaginally). It was initially approved by the US Food and Drug Administration (FDA) in 1988 for oral administration for the prevention and treatment of peptic ulcer (B-Lynch et al., 2006). WHO has recommended that in the absence of active management of third stage of labor (AMTSL), misoprostol should be offered by a health worker trained in its use for PPH prevention [9].
- Health ministry's should work with the leaders of different rural areas to make sure that medications and other amenities are available in the designated health centers. To achieve more effective maternal health care delivery services, collaboration between health experts, rural leaders, and their subjects is vital.
- The government had to initiate efforts to tackle the scarcity of blood in hospitals throughout the state, as well as the issue of energy in hospitals, especially in rural areas.
- A committee should be mandates to advocate for the eradication of unnecessary maternal and perinatal mortality in Kaduna state by using evidence to promote accountability.

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