MATERNAL MORTALITY IN SOUTH-SOUTH NIGERIA: ARE WE GETTING IT RIGHT?

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ABSTRACT

Background: Maternal mortality is a global public health challenge. Most studies in Nigeria on this topic are conducted in tertiary health centres. This study was thus designed to ascertain the maternal mortality ratio, the types and socio-demographic characteristics of the maternal deaths in a secondary health care facility in south-south Nigeria.

Methodology: In this retrospective study, medical records of all maternal deaths that occurred in the obstetric unit of the health facility from January 2005 to December 2010 were extracted and reviewed.

Results: During the study period, there were 3,068 deliveries and 12 maternal deaths giving an overall maternal mortality ratio of 391 per 100,000 births. The age distribution showed that 50.0% of the deaths occurred in the 26 to 30 year old group. Most (41.7%) of the women were unemployed, 25.0% had no formal education with 58.0% having low level of education. Those of parity 3 and 4 constituted 66.7%, as were the unbooked cases. Majority (75.0%) had spontaneous vertex delivery. All deaths were due to direct obstetric causes with 66.7% resulting from Primary post partum haemorrhage, while 16.7% were due to severe Pre-eclampsia/ Eclampsia and puerperal sepsis respectively.

Conclusion: The MMR observed in the study was 391 per 100,000 births. All maternal deaths were due to direct obstetric causes with haemorrhage, puerperal sepsis and severe Pre-eclampsia/ Eclampsia being the leading causes. Female education, poverty reduction, utilization of antenatal care services, availability of Comprehensive Emergency Obstetric Care as well as family planning services for child spacing and family size limitation are recommended.

Keywords: Maternal Mortality, Haemorrhage, Southern Nigeria.

INTRODUCTION

Maternal mortality is a global public health challenge [1]. It is reported that over 500,000 maternal deaths occur worldwide, with about 99% of them occurring in developing countries[2,3,4]. Maternal deaths per 1000 births are reported to be 6.4, 4.2, and 2.7 in Africa, Asia, and Latin America respectively [3]. It is said to be 0.3 for all developed countries and less than 0.1 in the middle and northern Europe [3,5].

A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. Nigeria contributes 2% of the world's population but 10% of maternal deaths[6]. Maternal mortality ratio is defined as maternal deaths per 100,000 births [1,7].

The direct causes of maternal deaths result from complications of pregnancy, labour and puerperium. The indirect causes of maternal deaths sometimes described as fortuitous deaths are those occurring within a specified period of conception upto six weeks postpartum and which do not fall into the category of direct causes of maternal deaths. Direct causes occur more in developing countries while the indirect causes are mostly observed in developed countries [1,3].

Mortality levels and trends are strongly influenced by the level of socio-economic development of a nation [8]. Maternal health indices in a developing nation like Nigeria are very poor. This is because there is a high level of poverty, illiteracy, ignorance, inadequate as well as in-equitable distribution of health facilities manned by trained health personnel. This study was thus designed to ascertain the maternal mortality ratio, the types of maternal deaths as well as the socio-demographic characteristics of those maternal deaths in a mission

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hospital in south-south Nigeria with the aim of suggesting solutions to some of the problems that may be identified.

METHODOLOGY

STUDY AREA

The study was carried out at the Holy Family Hospital, Ikom, Cross-River State, Nigeria. This 252 bedded secondary health care facility offers caters for the communities of the North- Central senatorial zone of the state and the neighboring Cameroun Republic [9]. The hospital is equipped with an operating theatre, ultrasound and laboratory facilities. The obstetric unit records approximately 500 deliveries annually.

STUDY DESIGN

This was a retrospective study in which medical records of all maternal deaths that occurred in the maternity unit of the facility from January 2005 to December 2010 were extracted and reviewed.

METHOD

The medical records of patients were retrieved from the admission and medical records of the maternity unit. The deaths were reviewed in relation to age, educational level, occupation, parity, booking status, clinical impression of cause of death and duration of hospital stay before demise. Post mortem examination was not acceptable to relations of the deceased and as such was not done in any of the cases reviewed.

DATA ANALYSIS

Data was entered into EPI INFO version 3.2.2 statistical software (CDC, Atlanta, Georgia USA). Data was presented as simple percentages in tabular format.

RESULTS

During the study period, there were 3,068 deliveries and 12 maternal deaths giving an overall maternal mortality ratio of 391 per 100,000 births. The age distribution showed that 50.0% of the deaths occurred in the 26 to 30 year old group. Most (41.7%) of the women were unemployed, 25.0% had no formal education while 58.0% had low level of education. Those of parity 3 and 4 constituted 66.7% as did the unbooked cases. (Table 1). Majority (75.0%) had spontaneous vertex delivery, 8.3% had Caesarean section, 8.3% laparatomy for ruptured uterus while 8.3% had vacuum delivery. Distribution of clinical causes of death showed that 66.7% were due to Primary post partum haemorrhage, with 16.7% each for severe Pre-eclampsia/Eclampsia and puerperal sepsis respectively (Table 2). Most (83.3%) patients stayed on admission beyond 24 hours while the remaining 16.7% died within 24hours of admission (Table 3).

Table 1: Socio-demographic characteristics of maternal deaths.

Age group	**N(12)**	**%**
16-20	1	8.3
21-25	2	16.7
26-30	6	50.0
31-35	2	16.7
36-40	1	8.3
Occupation		
Trading	1	8.3
Civil/servants	2	16.7
Farming	4	33.3
Housewives	5	41.7
Educational level		
None	3	25.0
Primary	3	25.0
Secondary	4	33.0
Post-secondary	2	16.0
Booking Status		
Booked	4	33.3
Un-booked	8	66.7

Table 2: Distribution of parity, mode of delivery and causes of mortality.

Parity	**N(12)**	**%**
0	2	16.7
1-2	2	16.7
3-4	8	66.7
MOD		
Caesarean section	1	8.3
Vaccum delivery	1	8.3
Laparatomy	1	8.3
SVD	9	75.0
Leading causes of Mortality		
Puerperal Sepsis	2	16.7
SeverePIH/Eclampsia	2	16.7
Haemorrhage	8	66.7

Key: MOD, Mode of delivery, SVD, Spontaneous vertex delivery, PIH, Pregnancy induced hypertension.

Table 3: Duration on Admission.

Duration on Admission(Days)	F	%
=1	2	16.7
1-7	10	83.3
Total	**12**	**100.0**

DISCUSSION

Maternal health indices in Nigeria have remained poor despite the country's participation in laudable programs such as the Safe Motherhood Initiative and the Millennium Development Goals (MDGs) both of which aim at improving the reproductive health of women worldwide. It appears that maternal health indices have been grossly underreported in our environment.

Maternal mortality ratio (MMR) in the study was 391 per 100,000 births. This is higher than the 165 and 286 per 100,000 births reported for the south-west and south-eastern parts of Nigeria though lower than the national median of 545 per 100,000 births [10]. It is unacceptably high when compared with ratios reported in developed countries such as Sweden 2, Slovakia 3, Denmark 5, United Kingdom 7.5, Singapore 22.9 and Spain 4 per100, 000 births respectively. It is, however, comparable with the ratios obtained from the developing countries like South Africa 340, Uganda 344, Tanzania 308, Namibia 300 and Botswana 480 per 100,000 births [10, 12, 13].

The wide difference in MMR from the south-south part of the country as reported in our study and the ratios in developed countries may be due to the high prevalence of poverty, illiteracy, ignorance and lack of equitably distributed, well equipped and staffed health facilities in Nigeria [14]. Contributing to the high MMR is the absence of Essential Obstetric Care services, underfunding of the health sector, poor health policies as well as lack of political will by the various governments towards implementation of health sector reforms [14, 15].

The difference in the ratio obtained in this study when compared with that documented for the south-west and south-east zones could be as a result of deficiency in the number of available skilled birth attendants at the location of the study. Some of these patients patronize traditional birth attendants (TBAs), maternity homes and spiritual houses for the deliveries [16]. They only present to the hospital in moribund states and as a last resort when any intervention would produce little results. Lack of good transportation as well as poor road and other communication networks in the rural communities of south- south Nigeria could also have contributed to the high MMR [16].

It is possible that the maternal deaths reported in this study could have been fewer than the actual figure for the zone. This is because majority of these patients patronize private health care facilities at the same time as consulting traditional birth attendants, spiritual homes and native doctors. As at the time of the study, there were no fewer than fifteen private hospitals in the area.

Half of the deaths occurred among the age group 26 to 30 years. This is similar to the findings of other studies done in Nepal, Libya and Ilorin in Nigeria [1, 5, 11]. Maternal deaths in this young age group re-emphasize the need for sustained advocacy and enlightenment campaigns aimed at promoting awareness, acceptability and utilization of family planning services as part of measures to lower maternal mortality.

Majority (66.7%) of the women were of parity 3 and 4. This is similar to reports of other studies [5]. Three quarters of the parturients were unbooked for antenatal care. This has been the finding of other researchers in this area of study[1,5,17]. This again brings to fore the need to continually educate our women of the need for good antenatal care and hospital supervised deliveries where they will be attended to by skilled birth attendants [18].

In our study, 25% of the deaths occurred in women who did not have any formal education and 58% of those who were educated had low levels of education. Most of the women (41.7%) were unemployed. Illiteracy, low level of education and unemployment status could have negatively affected the attitude of the women towards utilization of reproductive health services thereby translating to the high MMR seen in the study. There is therefore an urgent need to pursue more vigorously the realization of the MDGs particularly those goals that relate to reproductive health [19, 20].

All maternal deaths in this study were due to direct obstetric causes. The leading cause of death was haemorrhage. This finding is similar to the report of other studies [1, 3, 21]. Deaths due to haemorrhage could be prevented if judicious use of uterotonics to prevent uterine atony, active management of third stage of labour, emergency laparatomy for ruptured uterus and transfusion of blood or blood products

are promptly employed as indicated. There is need to have functional blood transfusion units in all secondary and tertiary health care facilities, as obtains elsewhere. In addition, functional regional blood banking services would also be helpful in meeting the needs of these communities.

Genital sepsis accounted for 16.7% of maternal deaths in this study. In Ireland, Sri Lanka, South Africa, West Africa and Ilorin, Nigeria, it was responsible for 20%, 26%, 13%, 15% and 17.3% of maternal deaths respectively [1]. Delivery in a hygienic environment and appropriate use of antibiotics significantly reduce mortality from puerperal sepsis. Drug and Food regulatory agencies in Nigeria such as NAFDAC would help in this regard by increasing their coverage of rural and semi-urban areas to stamp out the marketing of fake, counterfeit and adulterated drugs including antibiotics to these vulnerable and unsuspecting patients.

Severe Pre-eclampsia/ Eclampsia contributed 16.7% to maternal deaths in the study. In comparison, it accounted for 20%, 6.8% and 28.6% of maternal deaths in Ireland, Ghana and Libya, respectively [5]. Again we advocate early booking as well as regular attendance for antenatal care where blood pressure checks are done as the panacea of practice. A situation where some health centres do not have a blood pressure monitoring apparatus is unacceptable. Lower cadres of health personnel and Traditional Birth Attendants (TBAs) found in our rural communities do not appreciate the urgent need to refer pregnant women with abnormal blood pressure readings to specialists for prompt and appropriate treatment. Public health education on the dangers of Pre-eclampsia/ Eclampsia would go a long way in addressing this problem.

The high MMR observed in this study is worrisome as all the direct causes of maternal deaths seen in the study are preventable. It is possible that some of these deaths may be due to multiple factors [21]. A ruptured uterus, for instance, may be complicated by haemorrhage and sepsis, in which situation, any delay in intervention could prove fatal [21]. Majority (83.3%) of the women died after 24 hours, but before 7 days following hospital admission. This may be due to delay in effective intervention at the health facility itself (Type III delay).

The Society of Gynaecology and Obstetrics of Nigeria (SOGON) rightly observed that lack of 24 hour obstetric services in public health facilities in rural areas has created gaps in service delivery to the people. These gaps have been filled by unskilled birth attendants, quacks, traditional birth attendants, traditional priests, herbalists and prophets. Unfavorable government policies which insist on payment for maternity services at the point of delivery have only served to drive the poor into the hands of these unskilled birth attendants. These same policies have also created bureaucratic bottle necks that cause unnecessary delays in accessing care for those who decide to go to hospital[22].

In conclusion, this study showed that MMR in south-south Nigeria is high. All the maternal deaths were due to direct obstetric causes with haemorrhage, hypertension and sepsis being the commonest finding. Most of the deaths occurred among women who were young, unemployed, multiparous, unbooked, with no formal or low levels of education.

Female education, poverty eradication, utilization of antenatal care as well as family planning services for child spacing and family size limitation are hereby recommended as the panacea for lowering the high maternal mortality ratio in the south- south Nigeria. The government should endeavor to provide well equipped health facilities that are accessible and affordable in the communities. These should be manned by skilled and well motivated health personnel. The provision of both basic and comprehensive essential obstetric care services as well as effective referral systems will all go a long way to reducing the unacceptably high maternal deaths that currently occur in our communities.

LIMITATIONS OF THE STUDY

The total number of maternal deaths might have been under reported as some of these patients might have died at home. Some records within the study period could have been lost thus limiting the available data for analysis. Moribund patients were referred from the health facility to the University of Calabar Teaching Hospital where again they may have died.

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