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Maternal Mortality in A Private Missionary Hospital – A 9 Year Retrospective Review

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Abstract

Background: maternal mortality is one of the major challenges that economically challenged countries are burdened with throughout the world. This study aims to analyse the causes of maternal mortality and to identify the preventable factors leading to it at the facility.

Methods: Data were collected from records of patients who presented to and/or delivered at the Obstetrics & Gynaecology unit of Sacred Heart Hospital, Iantoro between January 2009 and December 2019. Only cases of maternal mortality following ICD-10 were included in this study. In this study, there were 94 maternal deaths.

Results: the leading causes of death were PET/eclampsia 42.6%, followed by sepsis and uterine rupture 10% each. Most of the patients that died were also unbooked and most of the deliveries were also supervised by unskilled birth attendant.

Conclusion: PET/eclampsia, sepsis, and uterine rupture were the leading causes of death at the health facility.

Keywords: maternal mortality, pregnancy, labour, delivery, puerperium

Introduction

Pregnancy, labour, and delivery constitute a major landmark in the life of a woman, her family, and the community in which she resides. These events are supposed to herald joyful moments in her life and family but alas in the resource-challenged countries they constitute an extremely dangerous event that may result in the death of the woman and or the unborn child and if she is lucky to survive may leave her in a state of permanent debility.

Maternal mortality as stated in the 10th edition of the International Classification of Diseases (ICD - 10) is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.¹

Maternal mortality is one of the major challenges that economically challenged countries are burdened with throughout the world.² Quoting Dr Mahoud Fathalla “women are not dying because of diseases we cannot treat; they are dying because societies have yet to make the decisions that their lives are worth saving”. Those that escape death may end up with debilitating complications like vesicovaginal fistula, obstetric palsy, anaemia, and infertility. Several of these complications will lead to isolation and stigmatization.

Maternal deaths are divided into two groups. The first group is the direct obstetric deaths that result from complications during pregnancy and events surrounding labour and delivery. The second group is the indirect deaths that result from pre-existing morbidity that develop during pregnancy and were not due to direct obstetric causes but aggravated by physiologic effects of pregnancy.³

In 2015 it was estimated that 303,000 women die during and following pregnancy and delivery and about 830 women die from pregnancy or delivery related complications around the world everyday transforming to about 69 deaths every hour.⁴ Almost all these deaths occurred in economically challenged regions of the world, most, unfortunately, these deaths were preventable.⁴

Globally the health status of a population is assessed by the rate of maternal mortality, and it is an indicator of the quality of obstetric care in a community directly reflecting the

utilization of health care services available.⁵ World leaders agreed to improve the lives of the world's poor people through the acceptance of the Millennium Development Goals 6 (MDGs),

The Federal Government of Nigeria launched the safe motherhood initiative in September 1990 and at the Millennium Summit in September 2000, but the 5th component of the millennium development goal is yet to be fully realized in the country^{7,8}.

Previous studies to assess maternal mortality in Nigeria were in public health institutions hence this study in a private institution.

Materials and Methods

This is a retrospective study conducted at the obstetrics and gynaecology unit of Sacred Heart Hospital, Iantoro that had a purpose to analyse the causes of maternal mortality between 2009 and 2017 and to identify the preventable factors leading to it at the facility. The hospital is a catholic missionary hospital, the first hospital in Nigeria whose services are accessed by people in the whole of the south-west of the county and even people from the Republic of Benin. It is a 300bedded hospital. The obstetrics and gynaecology unit has a resident consultant obstetrician as well as a visiting consultant obstetrician, resident doctors in family medicine, a medical officer, and a house officer at any point in time. The labour ward is 6 bedded and manned by 16 midwives that run 3 shifts. The department records on average about 2,376 deliveries annually.

All the maternal deaths that occurred within the hospital between January 1st 2009 and December 31st 2017 (9 years) were identified. Maternal death was identified according to the ICD-10 definition which is defined as the death of a woman while pregnant or within six weeks of the end of pregnancy irrespective of the duration or site of the pregnancy, from any cause related to or aggravated by pregnancy and its management. Therefore, any death of a woman that did not meet this definition was excluded. The case files of all these women were retrieved from the Medical Records Department and data extracted into a study proforma focusing on socio-demographic and obstetric characteristics including age, parity, booking status, and social class using olusanya et al¹⁰ methods of classification. Data were entered into a computer database using SPSS version 21 and statistical analysis was performed. Odd's ratio and relative risk were calculated for booking status and socio class as a risk factor for the possibility of death.

Ethical approval was obtained from the Ethical Review Committee of the hospital.

Results

During the period under review which was between January 1st 2009 and December 31st 2017 the obstetrics and gynaecology unit of the hospital recorded a total of 21,385 deliveries with an average of 2,376 deliveries annually. The total number of deaths recorded during the period under review was 94. This makes the maternal mortality ratio to be 440 deaths/100,000 live births. As shown in table 1 out of the deaths recorded 64(68.1%) were unbooked while 14(14.9%) booked at Sacred Heart Hospital and 16(17.0%) booked in other health facilities that included the general hospitals, other private hospitals, and primary health care centres but were referred on account of complications

developed at those referring hospitals. Most deaths occurred within the age range of 25-29years constituting 26.6% of the total death, 6.4% were aged 19years and below, and 7.4% of the total deaths occurred amongst 40years and above. 39.4% of the women who died were nullipara, the grandmultipara constituted only 4.3%, the parity of 3.2% was not known either because there were no reliable informants, or the relatives were too grief-stricken to offer any information about the deceased. Using Olusanya et al socioeconomic classification 45(49.9%) were in the middle class while 18(19.1%) were in the lower socioeconomic class, and 33% were in the upper class. Table 2 revealed that PET/Eclampsia was the commonest cause of death among the cases reviewed constituting 42.6%, followed by sepsis and uterine rupture both separately constituting 10.6%; during the period under review one patient died because of ectopic pregnancy and one also from DIC; 9 deaths occurred from indirect causes that included malaria, acute renal failure, and primary liver cell carcinoma. Table 3 shows the odds ratio of the possibility of death because of being unbooked was 4.902{(1.883 – 12.762) CI-99%} with a X^2 0.001. Table 4 shows the places where the patients delivered, 35.1% of the patients delivered at the traditional birth attendants, 12.8% had home delivery, while 20.2% died undelivered. As shown in table5 44.7% had a spontaneous vaginal delivery, 24.5% had a caesarean section, 20.2% died undelivered, and 6.4% had exploratory laparotomy.

Table 1: Socio-demographic characteristics of the subjects.

Age (years)	N = 94	Percentage (%)
≤19	6	6.4
20-24	15	16.0
25-29	25	26.6
30-34	22	23.4
35-39	19	20.2
≥40	7	7.4
Booking status		
Booked	14	14.9
Unbooked	64	68.1
Booked elsewhere	16	17.0
Parity		
0	37	39.4
1	17	18.1
2	11	11.7
3	14	14.9
4	8	8.5
≥5	4	4.3
Unknown	3	3.2
Gestational age		
Postpartum	22	23.4
≤20	7	7.4
20-24	5	5.3
25-29	8	8.5
30-34	11	11.7
35-39	25	26.6
≥40	16	17.0
Social class		
Upper class	31	33
Middle class	45	49.9
Lower class	18	19.1

Table 2: Causes maternal mortality identified.

Causes of MM	N = 94	Percentage (%)
Sepsis	10	10.6
Ectopic pregnancy	1	1.1

PET/Eclampsia	40	42.6
Obstructed labour	8	8.5
Postpartum haemorrhage	6	6.4
Uterine rupture	10	10.6
Abortion complications	5	5.3
Amniotic fluid embolism	4	4.3
DIC	1	1.1
Indirect cause	9	9.6

Table 3: Booking status and the possibility of death compared.

	Possibility of death		X ²	OR
	No	Yes		
Booked	22	8	0.001	4.902
Unbooked	23	41		

Table 4: Place of delivery.

Place of delivery	N = 94	Percentage (%)
TBA	33	35.1
General hospital	4	4.3
SHH	13	13.8
Other PH	10	10.6
Home	12	12.8
Undelivered	19	20.2
Abortion	3	3.2

Table 5: Mode of delivery.

Mode of delivery	N = 94	Percentage (%)
SVD	42	44.7
Caesarean section	23	24.5
Instrumental	4	4.3
Undelivered	19	20.2
Laparotomy	6	6.4

Discussion

It is a known undisputed fact that the developing countries account for 99% of the global maternal mortalities reported in 2010 with sub-Saharan Africa accounting for most of it.³ This study was carried out to find the probable causes of maternal mortality in a private hospital setting; the first of its kind in Nigeria.

The total delivery recorded during the period under review was 21,385 and the total maternal death was 94 this makes the MMR to be 440/100,000 live births, though this is less than the national MMR of 814/100,000 live births it cannot be said to be an improvement since the patient load of a private hospital is nothing comparable to the public institutions combined.

From this study, it was observed that the major causes of death are PET/Eclampsia, uterine rupture, sepsis, postpartum haemorrhage, and obstructed labour. These factors were also observed in the studies done in public institutions in other parts of Nigeria and the world.^{3,5,7-9} It was also observed in this study that most of the deaths occurred in the unbooked patients and those that delivered at the TBA homes where deliveries were supervised by unskilled birth attendants. These findings were consistent with findings by Okonofua et al.⁹ Reasons for being unbooked and choice of delivery by the TBA are not far-fetched, these reasons might include lack of economic empowerment this plays a very vital role in determining health-seeking behaviour aside from the fact that most patients dread the fear of surgery that is falsely associated with a modern hospital, and the mythical aura 'no impossibility' that surrounds the TBAs.

In this study, the following factors stood out in the determinant likelihood of death or survival, booking status,

social class, and choice of place of delivery. Interestingly most of the deaths occurred amongst the middle class that is expected to be financially stable. The questions now are (i) why the choice of delivery by TBAs? (ii) are there things the health facilities or the health workers are doing or not doing that are keeping the patients away only for them to present with life-claiming complications? (iii) what are those things that attract these patients to the TBAs? To tackle these questions awareness of benefits that are derivable from ANC must be whipped up, the TBAs must be trained to know their limit, recognise danger signs, and make a prompt referral to the appropriate health facilities.

Conclusions

Most of the deaths that occurred were due to PET/Eclampsia, sepsis, and uterine rupture, these are preventable causes of maternal death and most of these patients were also unbooked with deliveries being supervised by unskilled birth attendants. These deaths are preventable or reduced to the barest minimum if antenatal care services are made affordable or a health insurance scheme is constituted by the government such that access to health care services by the populace is made possible. Then for those who still wish to patronise the TBAs, the TBAs can be trained to recognise danger signs and make prompt referrals. With some of these interventions in place, we would have shown care while they alive rather than showing care by attending funerals.

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