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Original Research Article

What can a mother die of at the Parakou University Hospital Center in Africa?

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ABSTRACT

Background: Maternal mortality is a scourge that severely undermines Benin and affects its development. The fact is that despite the efforts that have been made for decades, the causes remain unchanged. What is the evolution of maternal deaths in the maternity CHUD of the Borgou-Alibori which serves the departments of the Borgou and the Alibori populated by 1,245,264 inhabitants? The objectives of the present study aim to assess the ratio of maternal deaths, profile of deceased women, causes of death.

Methods: This study took place at the maternity CHUD-B and covered a five-year period from January 1, 2010 to December 31, 2014. This is a retrospective, cross-sectional, analytical and descriptive study covering 113 cases of maternal death.

Results: During this period, we noted from 2010 to 2014 an evolution from 953 to 1388 deaths for 100,000 live births. The deceased women were for the most part illiterate, without any profession and married. The main direct causes of maternal deaths in order of frequency are hemorrhage 47.7%, eclampsia 19.5%, infection 9.8%, dystocia 3.5%. Indirect causes account for 19.5% of maternal deaths. The administration of emergency obstetric care has occurred under conditions where the third delay is found in 22.1% of cases with as the dominant factor the non-availability of blood products.

Conclusions: In the face of these circumstances, it is necessary to revise the system of the management of the Gravido-puerperium in the peripheral formations and in the maternity of the CHUD-B and then the conditions of transfer in order to positively influence the reduction of the mortality Maternal.

Keywords: Direct and indirect Causes, Emergency obstetric care, Gravido-puerperium, Maternal mortality, Maternal deaths

INTRODUCTION

A maternal death means the death of a woman who occurred during the pregnancy or within 42 days after her termination, regardless of the duration and location for any cause determined or aggravated by the pregnancy or the care she has Motivated, but not accidental or fortuitous.¹ Direct causes representing 80% of all

maternal deaths are: hemorrhage, infection, abortion and high blood pressure. The indirect causes are for the most part: malaria and HIV on pregnancy. Maternal mortality in sub-saharan Africa remains the highest in the world in 2010, reaching 510 deaths for 100,000 live births.² Beyond this mortality burden, these deaths are the visible part of an important maternal morbidity that is still poorly known.

The economic and social consequences of these deaths are important and are a hindrance to development. The Millennium Development Goals have increased investments and interventions in order to achieve a reduction in the maternal mortality ratio of 45% between 1990 and 2015.³

These interventions focused on improving the quality of prenatal consultation, reducing the delay in the use of care, and promoting qualified assistance during childbirth through the improvement of the quality Emergency Obstetric Care (SOU).

These efforts combined with various parameters of global social development have led to a downward trend in maternal mortality in almost all countries of the world, including Benin. Thus from 1990 to 2010, the mortality ratio decreased from 770 to 350 deaths for 100,000 live births (NV).⁴

However, in 2015, the Millennium Development Goal 5 was not achieved. The mortality ratio remains high with 340 deaths for 100,000 NV in 2013.⁴ In addition, there is an unfairness in the distribution of this maternal mortality burden between the different socio-economic strata and between the urban and rural areas of the country.

The persistence of high maternal mortality despite a proposal for institutional delivery of more than 80% suggests that a significant proportion of deaths occur in the care environment, thus constituting a bottleneck in the significant reduction in maternal mortality in Benin.

This study focuses on these maternal deaths occurring in the care environment in Benin and uses as a study framework the University Hospital of the North Benin region.

Specifically, this article presents the evolution of the ratio of maternal mortality in University Hospital of Parakou in Benin between 2010 and 2014, determines the demographic profile of deceased women, presents the distribution of the causes of Death of maternal deaths and discusses some assumptions about the qualities of the penny in hospitals in Benin.

METHODS

In this study, the operational definition of maternal death used is that based on the tenth International Classification of diseases.

It shall take into account any death of a woman during pregnancy, childbirth or within a period of 42 days after her termination, irrespective of the duration and location of any cause determined or aggravated by pregnancy or care that it has motivated, but neither accidental nor fortuitous.¹

The deaths within the hospital are the deaths corresponding to this definition. They have occurred in the hospital space regardless of the service and regardless of the time between the time of the death of the time of admission. The maternal mortality ratio is the ratio of the number of intra-hospital maternal deaths for one year to the number of live births in the hospital during the corresponding year.

Study Framework

Our study took place in the maternity ward of the CHU of Borgou-Alibori which is a university center in Benin since 2015.

It is organized in 8 functional units, the unit of the Emergency, the unit of the Consultation, the unit of the delivery room which has 4 childbirth tables and an expansion room with 6 beds. The unit of the operating block which consists of two operating rooms, one of which is equipped. The resuscitation unit has 3 rooms with 12 beds.

The hospitalization unit, which has 6 rooms, including 3 categories, offering 34 beds, the vaccination unit and the ultrasound unit.

The medical staff is composed by 6 gynaecologists-obstetricians, 13 state midwives, 10 state nurses, 20 orderlies, 4 maintenance officers, 1 Secretary and 4 anaesthetists. The population of Borgou-Alibori is estimated at 1,124,294 inhabitants in 2013.

Study Type and population

This is a retrospective cross-sectional study with descriptive and analytic aim. It takes into account all the women who died in the maternity ward of the CHU of Borgou-Alibori. Were included in present study all women died for obstetric causes. Are not included all those who died for non-obstetric cases and those with incomplete records.

Data collection, processing and analysis

The method used for data collection is documentary research. The analysis of the content by stripping is the technique used and the data collection tool is the stripping sheet.

Our data were processed using EPI-Info software Version 7.1.4.0 and SPSS 20. The results are presented in the form of tables and figures. Ethical consideration requires us to keep the confidentiality of the contents of the files.

RESULTS

Our results will focus on the evolution of the maternal mortality ratio from 2010 to 2014 at the maternity Hospital of the Borgou-Alibori, the demographic profile

of the deceased women, the number of prenatal counselling, the mode of admission of the deceased women as well as the means of transportation and the

causes of maternal death. The evolution of the maternal mortality ratio from 2010 to 2014 in the maternity ward of the CHU of Borgou-Alibori is represented by Table 1.

Table 1: Distribution of deceased women per year at CHUD of Parakou.

Year	Number	Number of childbirths	Ratio /100000 live childbirths	IC95 %
2010	17	1784	953	500-1400
2011	26	1990	1307	800-1800
2012	22	2215	993	600-1400
2013	22	1844	1193	700-1700
2014	26	1873	1388	800-1800
Total	113	9706	1164	900-1400

The socio-demographic profile of deceased women is shown in the table below.

Table 2: Distribution of deceased women according sociodemographic profile at the CHDU of Parakou.

Variables	No., N=113	Percentage
Age in years		
15-19	15	13.3
20-34	80	70.8
35-45	18	15.9
Education level		
Non educated/Primary	99	87.6
Secondary /university level	14	12.4
Matrimonial status		
Single	21	18.6
Married	92	81.4

Table 3: Distribution of deceased women according number of prenatal counselling performed in the course of pregnancy before death.

	No., N=113	Percentage
0	60	53.1
[1 ; 3]	36	31.9
[4 ; 6]	17	15.0

Table 4: Distribution of deceased women according number of prenatal counselling performed in the course of pregnancy before death.

	No. N=113	Percentage
Admission modus		
Transferred	78	69.0
Free admission	35	31.0
Means of transport		
Medicated ambulance	30	26.5
Non medicated ambulance	83	73.5

Table 3 indicates the deceased women according to the number of prenatal counselling performed in the course

of the pregnancy before death. In Table 4, deceased women are divided according to the mode of admission and the means of transport. In Table 5, the distribution of deceased women according to the causes of maternal death.

Table 5: Distribution of deceased women according to the causes of maternal death at CHUD of Parakou.

Death causes	Number	Percentage
Directes causes		
Hemorrhage of 1 st term	18	15.9
Hemorrhage of 2 nd et 3 rd term	6	5.3
Postpartum hemorrhage	30	26.5
Dystocia	4	3.5
Eclampsia	22	19.5
Infection	11	9.8
Indirect causes		
Anemia	9	8.0
OAP	1	0.9
Insuffisance rénale	1	0.9
Malaria	5	4.3
HIV	2	1.8
Drépanocytose	3	2.7
Diabetes	1	0.9
Total	113	100

DISCUSSION

It will focus on the evolution of the maternal mortality ratio from 2010 to 2014 in the maternity ward of the Borgou-Alibori, the demographic profile of the deceased women, the number of prenatal counselling, the mode of admission of the deceased women and the Means of transport and the causes of maternal death.

The maternal mortality ratio

At the maternity hospital of the Borgou-Alibori, the maternal mortality ratio in our study is 1164 deaths for 100,000 live births from 2010 to 2014 or 5 years. De

Groof et al. in 1997, in a study on the importance of an indirect demographic method for estimating maternal mortality in Niger found a maternal mortality ratio of 700 deaths for 100,000 live births, which is lower than ours.⁵ Lawson et al. in 1998, in a study on maternal mortality in maternity at the National Hospital Centre in Ouagadougou (Burkina-Faso) found a maternal mortality ratio to 4110 maternal deaths for 100,000 live births.⁶ This ratio is higher than ours. This can be explained by the episodes of strike marked by a decrease in staff in our hospitals for the management of obstetric emergencies.

Demographic profile of deceased women

In our study, the age group of 20-34 years is represented by 70.8%. This figure shows that maternal deaths occur especially among young women.⁷ A study conducted in Nigeria by Harrison showed that the maternal mortality rate was 7 times higher among women 15 years than those aged 20-34 years.

For Thiéba et al. the most represented age group is 20 to 34 years. These results are almost identical to ours.⁸ In our study 87.6% of women who died were non-academic or primary and 62.9% were non-academic. This result is consistent with that of Ouedraogo et al. in Burkina Faso who found that 57.2% of the women who died were uneducated. In fact, a high level of education makes it possible to understand the usefulness of the delivery of prenatal consultations.⁹

The present study reveals that 81.4% of women who have died are married women. On the other hand, Mayi-Tsonga et al. found that 75% of the deceased women were single.¹⁰ This can be explained by early marriages.

Prenatal counselling

In the present study 53% of women who died did not have prenatal follow-up. This lack of EIC can be explained by socio-cultural factors that block the attendance of health centres by pregnant women, among which there is poverty and poor decision-making power of women

The mode of admission

In the present study, 69% of deceased women are referred. This situation was confirmed in a study by Mayi-Tsonga et al. which reported that of the maternal deaths 7 out of 10 cases are women evacuated or referred.¹⁰ This situation can be explained either by a poor organisation of the reference or a lack of communication between the health centres which refer to the maternity of University Hospital of Parakou.

The means of transport

The present study shows that 73.5% of the women who died had received unmedicated transport. This is similar

to that of Horo et al., who noted an unhealthy transfer for most cases of maternal death.¹¹

This is due to the lack of ambulance in our health training.

Causes of maternal death

Direct Obstetric Causes

In the present study, direct causes are: postpartum hemorrhage, eclampsia, risky abortions, infections, dystocia, GEU, placenta previa, HRP, uterine rupture. These direct causes account for 80.5% of maternal deaths. Our results are similar to those of Maria with a rate of 78%. This high rate reflects the magnitude of the mortality problem and shows that direct obstetric causes remain the permanent cause of maternal death whose care must be urgent and systematic.¹²

Indirect obstetric Causes

Anaemia, Pao, renal failure, malaria, sickle cell anemia, diabetes and HIV represent the indirect causes in our study at a rate of 19.5%. Similar to the WHO outcome with 20%.³ This non-negligible rate shows that indirect Causes require early detection, appropriate treatment and strict surveillance.

CONCLUSION

Maternal mortality continues to increase in the maternity ward of the Borgou-Alibori CHU. For the most part, women who have died are uneducated, married and aged 20 to 34 years. Emergency obstetric care is paramount in the management of obstetric emergencies and the causes of maternal deaths remain unchanged, these are direct and indirect obstetric causes.

Obstetric emergencies determine maternal deaths and the resurgence of maternal deaths is due to dysfunction in the non-availability of emergency obstetric care. For this reason, it is essential to strengthen the systems of audits of maternal deaths, to follow up the execution of the decisions of the audits and to make the retro information of the evacuees formal.

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