

Prevalence of maternal mortality in Khartoum state Public Hospitals (2014-2015)



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ABSTRACT

This is a descriptive prospective cross sectional facility based study, conducted in Khartoum State of SUDAN Public Hospitals during the period of 2013-2015. The aims of the study were determine the prevalence of maternal death and it is associated risk factors. Information on 120 cases was collected from relatives deceased using adapted verbal autopsy questionnaire 2012, interviewing with the health visitors, and focus group discussion, then the data was analyzed using the SPSS software. The Results revealed that maternal mortality ratio was 108/100000 live birth, also it was noted that the hemorrhage sepsis, eclampsia, poor antenatal care services, poor nutritional status and poverty were the major risk factor associated with maternal mortality. The study recommended farther quantitative and qualitative research along with community and political sensitization to improve the accessibility and utilization of MCH services.

Keywords:

Maternal Mortality
Khartoum Hospitals

I. INTRODUCTION

WHO defines maternal death as the "Maternal death is 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⁽¹⁾.

About 830 women die from pregnancy or childbirth-related complications around the world every day. It was estimated that in 2015, roughly 303 000 women died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and most could have been prevented⁽²⁾

Women die from a wide range of complications in pregnancy, childbirth or the postpartum period. Most of these complications develop because of their pregnant status and some because pregnancy aggravated an existing disease. The four major killers are: severe bleeding, infection, hypertensive disorders in pregnancy (eclampsia) and obstructed labour. Complications after unsafe abortion cause 13% of maternal deaths. Globally about 80% of maternal deaths are due to these causes⁽²⁾.

Among the indirect causes (20%) of maternal death are diseases that complicate pregnancy or are aggravated by pregnancy, such as malaria, anemia and HIV⁽³⁾. Women also die because of poor health at conception and lack of adequate care needed for the healthy outcome of the pregnancy for themselves and their babies⁽²⁾.

Maternal mortality is considered one of the major global health concerns especially in developing countries. Maternal death is considered the 3rd common cause of death among women in Africa. It is also one of the top 5 causes of deaths in general population as it contributes to 14% of total deaths, it affects not only women but also their families and communities. The risk of an infant dying increases significantly with the mother's death⁽⁴⁾.

The death of a woman of reproductive age brings significant economic losses and set backs to community development⁽⁶⁾

In many low income countries, deaths from maternal causes represent the leading cause of death among women of reproductive age. Since child survival is related to breast feeding, maternal deaths are a disadvantage to child survival and have an impact that rebounds across generations.

The United Nations (5th Millennium Development Goal) report asserts that in sub-Saharan Africa, the risk of a woman dying from such complications in the course of her lifetime is 1 in 16 compared to 1 in 3800 in the developed world. This ultimately means that 99% of maternal deaths occur in the low income countries⁽⁷⁾.

In 2015Sudanmaternalmortalityratewas 311/100,000 live births estimated by world fact book⁽⁸⁾.

The most recent maternal death review in Sudan (2010-2012)estimated MMR in Khartoum statein2010 (184/100000LB), in 2011(149 /100000LB), in 2012 (165/100000 LB)⁽⁹⁾. However, the results of SHHS2 showed a marked reduction in MMR from 638 in 2006 to 216 deaths per 100000 live births in 2010⁽¹⁰⁾.Although not fully explained by the health authorities, this reduction might be attributed partially to the recent health policies and the other health interventions implemented by the government⁽¹¹⁾.

Sudan household health survey and most research showed only the maternal mortality indicator and causes, trend, without considering risk factors.

Study maternal mortality over time are critical in that they help in planning of reproductive health programs to reduce mortality.

II. METHODS

This is prospective descriptive hospital-based study of maternal death at public hospitals in Khartoum state of SUDAN during 2013-2015. In Khartoum state there were 22 governmental hospitals, 137 health centers and 183 dispensaries that covered all states. The total health visitors were 41 and Assistant health visitors were 110 and midwives are 1527. The total deliveries were93801 live births in hospitals in 2013⁽¹³⁾.

120 maternal deaths (total coverage during study period) were investigated along with 41 health visitors and48 pregnant women.

Information on maternal deaths risk factors was collected by using Standard Adapted verbal autopsy questionnaire (WHO, 2012)

Information of deceased was collected from relatives after getting their consent by trained data collectors. The questionnaires of contributing factors were constructed including socio-demographic ,antenatal visit, utilization health services.

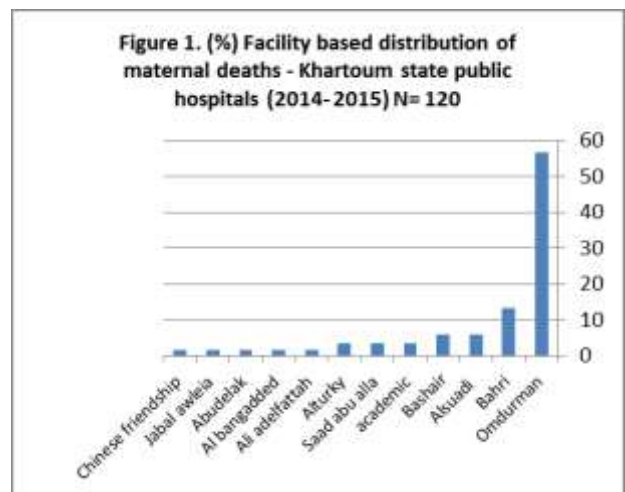
Structured interview check lists were administered to health visitors working in reproductive health unit about their experience, knowledge and role in providing antenatal services.

Focus group discussions also were carried out with two groups in each hospital with 8 participants in each. The discussion was carried in separate office and took approximately 30 minutes.

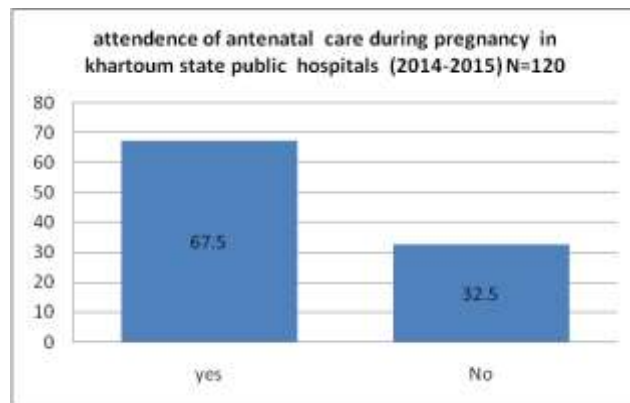
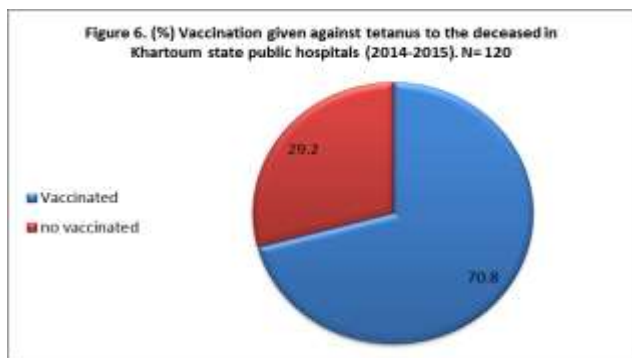
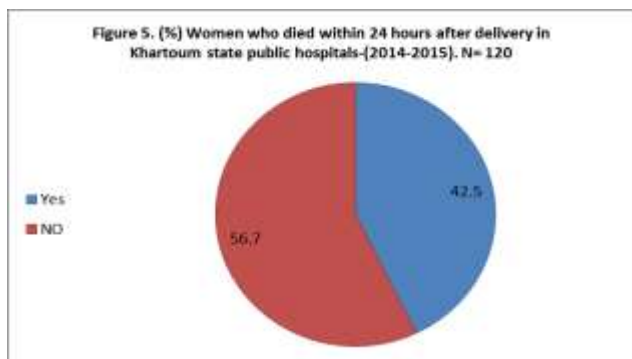
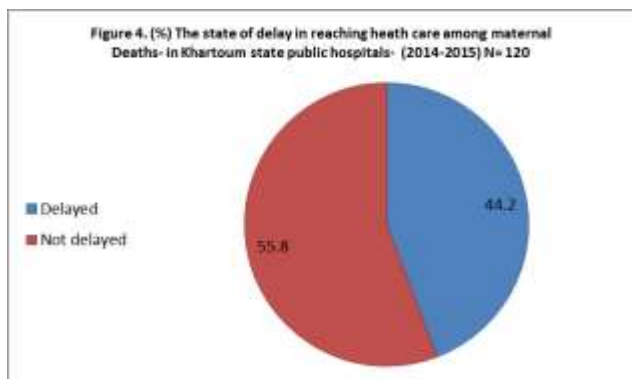
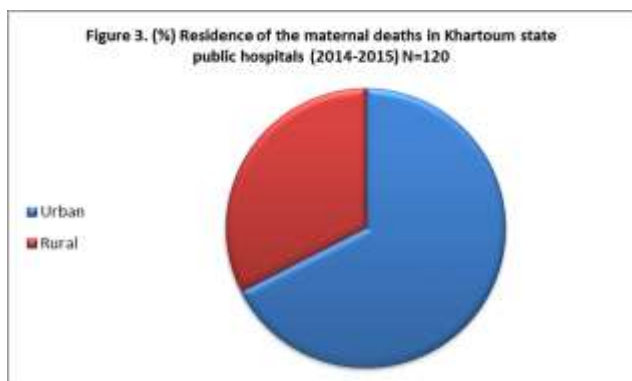
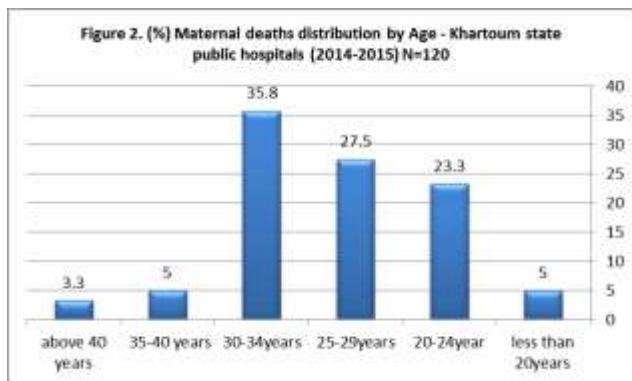
The quantitative data was analyzed using SPSS version 20;the results presented using frequency and proportion.

The study was approved by Shendi University, the consent and permission was obtained from health authority of Khartoum state, and explanation of the study purpose and the benefits were given to participant prior collecting information.

III. RESULTS



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IV. DISCUSSION

120 maternal deaths out of 110662 live births were reported during this study in 12 public hospitals in Khartoum state making very high MMR of 833/100000 even when compared with both WHO cut off point of very high MMR of 108/100000 live birth and ministry of health of 11/100000 live birth, as well as with Surveillance unit report of 72/100000 live birth in the same hospitals during the same period. These huge differences between the various report highlight the problem of reporting accuracy and consistency, this situation emphasized the fact that Sudan has problems in statistical registration⁽¹⁴⁾

Poor understanding of MMR case definition, lack of coordination between surveillance unit and vital statistical registration department, and loss of maternal deaths records were seems to be the major sources of inaccuracy and inconsistency of reports.

The MMR in this study is lower when we compared it with a study conducted in hospitals in Khartoum state during 2007 & 2008 with MMR 124/100000 live births, because this study did not include all public hospitals as the directors of the two Khartoum university hospitals namely Soba and Ibrahim Malik hospital refused to allow collecting our data.

The study revealed that the majority of women died were in the age group of 30-34 years old this agreed with the fact that deaths in the Asian and sub-Saharan African countries are likely to occur in ages between 25-29 followed by ages 30-35⁽¹⁵⁾.

It was noted that more than half of women who died were residents in urban area, (92%) of them were housewives which indicate that certain sections of the society are more prone to maternal mortality.

Regarding educational level, Quarters of deceased mother were secondary education and above and on equarter were illiterate, 44.2% of women who died were in low socio economic status According to Sudan National Baseline Survey, 53% of the households reported that they receiving no income during the year preceding the survey⁽¹³⁾, these are some of problems that face the community especially among women and consequently affect their health.

The study revealed that the main direct cause of maternal mortality was hemorrhage followed by sepsis and eclampsia the same results was indicated by WHO and Sudan maternal report⁽¹⁷⁾. Other indirect causes such as malaria, anemia, and high blood pressure also were observed during this study as these health problem can complicate the situation, it was reported that these health problems are the major indirect causes of maternal death^(18, 19, 20). Other studies in Tanzania 2010 and Kenya 2011, Senegal 1999, showed HIV and tuberculosis as indirect causes of death^(21,22,23,24).

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Our study revealed that nearly half of women who died were delivered by caesarean section, while other women who died were normally delivered. In this study the death in women who delivered by caesarean section were high compared with the women who delivered normally. In similar study conducted in SUDAN 2010 showed planned caesarean section may reduce the risk of prenatal death by approximately 75% compared with attempting vaginal birth⁽²⁵⁾. Also it was found the mode of delivery is significantly associated with maternal mortality^(26,27).

Maternal death review in Sudan 2012 showed that (49.7%) died within the first 24 hours⁽⁶⁾. This study showed that 42.5% of deceased died within 24 hours while 56.7% of women died after 24 hours after delivery, similar results were appear other studies showing 60 percent of the maternal deaths occur during childbirth and 50 percent of these deaths occurring within the first 24 hours of delivery, Inadequate postnatal care was pointed as main contributing factor⁽¹⁴⁾.

In Sudan, two thirds of maternal death cases reviewed, indicate delay in women's decision to seek care and delay in identifying and reaching medical facility. One third of deaths were due to not receiving adequate care once hospitalized⁽²⁸⁾, in our study 22.5 % of women, who died, were delayed in seeking health care, 19.2% in reaching health care, and 2.5 % in receiving treatment, the reasons pointed out by were long distance, bad roads, lack of transport and the rainy season⁽²⁹⁾.

This study observed 70.8% of deceased women were vaccinated against tetanus, which is a similar percentage with the study conducted in Sudan 2013 on neonatal mortality that showed 70% of pregnant women received tetanus vaccine⁽²⁵⁾, Worldwide tetanus kills an estimated 180 000 neonates deaths and 30 000 women⁽³⁰⁾.

Of all mothers who died (67.5%) had attended antenatal care, Global Health Observatory (GHO) data of WHO which observed that the proportion of women receiving antenatal care at least once during pregnancy was 83% for the period 2007–2014⁽³¹⁾.

In Sudan, 75% of pregnant women receive at least one antenatal care visit and 47% of them receive four visits⁽⁹⁾,

In our study and according to health visitors interview, shortages of health services providers and specialist. Khartoum state needs health visitors now more than ever to meet MDG5 target and most maternal death are due to pregnancy complication that can be preventable by antenatal care.

The study concluded that maternal mortality ratio in public hospitals in Khartoum state was 108/100000 live birth, which was very high when compared with national and international rates due to under reporting and poor registration of maternal data in hospitals. hemorrhage sepsis and eclampsia are indirect. Shortage in antenatal care equipment, shortage of health visitors staff, lack of essential drugs, were main problems faced by health visitors during provision of antenatal care service.

The study recommended strengthen maternal health information system, training health providers on importance of maternal death registration and reporting, and upgrading maternity service in rural hospitals by the provision of equipment, medical qualified staff and ambulances.

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