

Causes of maternal deaths in a tertiary care hospital in Larkana, Pakistan

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Objective: Evaluation of causes of maternal deaths in a tertiary care hospital in Pakistan.

Methodology: All maternal deaths of woman aged 15-45 that occurred during a one year period during 2011 at Sheikh Zayaid Women Hospital, Larkana were reviewed and stratified by age, socioeconomic status, availability and utilization of health care services during pregnancy and at time of delivery.

Results: An Maternal Mortality Rate (MMR) of 14.9 was calculated. 82% of the mothers were in mid twenties to mid thirties, 44% were grand multipara, and 22% primigravida. 60% did not receive any antenatal care. The most common

direct causes (64%) of death were PPH 20%, Pre-eclampsia 18%, and APH 12%, while peripartum cardiomyopathy 14%, hepatic encephalopathy 12%, and pulmonary embolism 6%. Only 30% women have received medical treatment for their illness.

Conclusion: Nearly 15% women died and majority were young. PPH, APH and eclampsia were the commonest causes of death. Only one third women received medical treatment. (Rawal Med J 2013;38:271-274).

Keywords: Maternal mortality, MMR, eclampsia, postpartum hemorrhage.

INTRODUCTION

The unacceptably high level of maternal deaths has led to the launch of the WHO's fifth Millennium Development Goal (MDG5), which aims to reduce the burden of maternal death by 75% globally before 2015.¹ And estimated number of maternal deaths worldwide in year 2000 was 529,000,¹ and these were almost equally divided between Africa and Asia, and only less than 1% occurred in the more developed regions of the world.¹ Globally, the number declined to 287,000 in 2010,² and in terms of MMR to 210 maternal deaths per 100 000 livebirths.³ Pakistan experienced a decline in MMR too, from 415 per 100,000 Live Births (LB) in 2000 to 376 per 100,000 LB in 2008, but the pace of progress towards MDG5 is dawdling, and Pakistan is now ranked 3rd in MMR after India and Nigeria.⁴ In order to precisely estimate national progress towards this target, and to develop policy and plan resource allocation to address this problem, a comprehensive analysis of the burden of obstetric mortality, demography, both direct and indirect causes of deaths, and availability and utilization of health care resources is required. This study aims to provide an insight into maternal mortality at our

tertiary care hospital.

METHODOLOGY

The data regarding all maternal deaths of woman aged 15-45 that occurred during 2011 at Sheikh Zayaid Women Hospital, Larkana, Pakistan was collected and included detailed information about demography, age at presentation, gestational age, parity, socioeconomic and educational status, availability of healthcare during pregnancy and/or at time of delivery, timing of delivery, the referral status, the three delays, and both direct and indirect causes of maternal deaths. The following definition of Maternal death given by the the Tenth Revision of the International Classification of Diseases (ICD-10)⁴ was adopted "the death of a woman while pregnant or within 42 days of the termination of a pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes."

The information collected was used to estimate maternal mortality ratio (MMR), defined here as the total number of pregnancy-related deaths divided by the total number of live births. Percentages were

calculated for both direct and indirect causes of maternal deaths, 3 delays, time from admission to death, and for preventability.

RESULTS

There were a total of 4391 admissions and 3352 live births, and 50 maternal deaths. An MMR of 14.9 was calculated. 82% of the mothers were in mid twenties to mid thirties, and 16% were in their teens and early twenties, and 6% between 36-45 years of age. 44% were grand multipara, 32% multipara, and 22% primigravida. 96% women were of lower socioeconomic class, and 78% illiterate. Demography is shown in table 1.

Table 1: Demographic characteristics of study population

Characteristics	Number	Percentage
AGE		
• 15-25 years	6	12
• 26-35 years	41	82
• 36-45 years	3	6
PARITY		
• Primigravida	12	24
• 2-4	16	32
• 5 or more	22	44
GESTATIONAL AGE AT PRESENTATION		
• Preterm (Less than 37 wks)	20	40
• Term (37 to 42 wks)	30	60
SOCIOECONOMIC STATUS		
• Poor	48	96
• Middle class	2	4
EDUCATIONAL STATUS		
• Illiterate	39	78
• Primary	6	12
• Secondary	4	8
• College	1	2

Majority of these women were grandmultipara of poor socioeconomic class, and were deprived of health care facilities, during pregnancy and at time of delivery. Table 2 depicts the utilization of health care facilities. 60% of these women did not receive any antenatal care and 44% were delivered by Dais.

Table 2: status of health care facilities utilization.

Characteristics	Number	Percentage
ANC received during pregnancy		
• Not received	30	60
• Primary & Secondary health care level	8	16
• Tertiary care level	7	14
• Private Clinics	5	10
Presence of Birth Attendant at time of delivery		
• Dai	22	44
• Doctors	8	16
• Midwives	4	8

64% mothers had direct cause of death, and 36% had indirect causes. The most common direct causes of death were PPH 20% most common indirect causes of death were peripartum cardiomyopathy and hepatic encephalopathy (Fig 1). Only 30% women have received medical treatment for them.

Fig 1. Causes of maternal deaths.

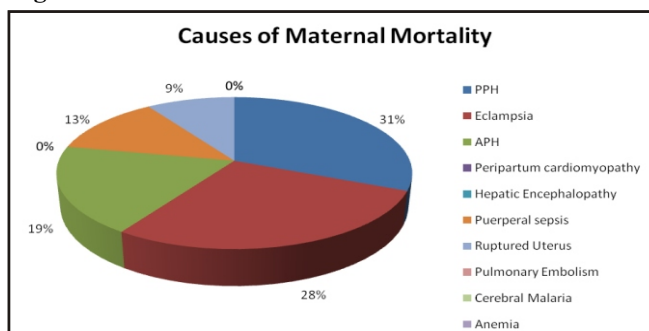


Table 3: Time period from arrival to death and Level of Delays in Presentation.

Time period from arrival to death	Number	Percentage
• DEAD ON ARRIVAL	6	12
• < 1 HRs	12	24
• < 6 HRs	20	40
• 12 -- 24 HRs	6	12
• 24-- 48 HRs	4	8
• > 48 HRs	2	4
Level of Delay in presentation		
• 1st Delay	20	40
• 2nd Delay	22	44
• 3rd Delay	8	16

DISCUSSION

"A pregnant woman has one foot in the grave" is a traditional African saying that highlights the plight of a pregnant woman, particularly in resource poor nations. Each year, 210 million women become pregnant, of whom 350,000-500,000 die from complications during pregnancy or childbirth, translated as 800 women dying per day,⁵ or one woman per minute.⁶ For every woman that dies, 20 more survive severe obstetric complications with potentially disabling injuries and direct social, economic and psychiatric consequence.⁷ But why do these women die? When, where and how? Pregnancy is not a disease but a normal physiological process that women had, have, and will continue to engage in as long as humanity continues to reproduce itself. The principles of disease elimination and eradication cannot be applied, as there is no pathogen to control, and no vector to eradicate, but the consequences are far greater than presumed.⁴ The motherless children are 10 times more likely to die prematurely.^{4,8,9}

The maternal mortality is highest in underdeveloped countries, where early childhood marriages due to socio-cultural and religious prejudices are common practices. According to UNFPA's estimates, 1 in 4 girls become pregnant before the age of 19 years.³ Consistent with world statistics,¹⁰⁻¹⁵ 12% patients in current study were under 25 years of age. 24% were primigravida, 44% grandmultipara, 96% poor, and 78% uneducated, and despite health being a basic human right, majority of these women were deprived of antenatal care during pregnancy.^{3,11} Pregnant women, whether under-aged, or elderly, primigravida, or grandmultipara, in communities like ours are neglected in terms of health. Medical assistance is sought only when all other remedial measures fail, they are subjected to delays in acquisition of healthcare facilities, often due to financial constraints and more often due to social prejudice. These delays classically referred to as the "THREE DELAYS" lead to maternal death in resource-poor nations like ours. The First Delay in seeking medical assistance, occurs at the level of patient, family or community, due to several reasons. The second

delay occurs in reaching the health care facility, as the referral centres/hospitals are usually located far from villages, and transportation facilities are meager. The third delay in obtaining care - one of the most tragic issues in maternal mortality- occurs at the level of healthcare facility, The poorly equipped, fragile referral centers, with lack of staff, technical facilities, and/or operation theatres, cannot provide adequate and timely critical care management to these hemorrhaging, septic or seizing patients, as life threatening complications have already developed in these women by the time they arrive at hospital.

In current study, 40% patients were subjected to first delay, 44% to second delay and 16% to third delay, consistent with local¹⁵ and international statistics.¹⁶ The main "clinical causes" of maternal deaths listed in vital statistic data are haemorrhage, sepsis, eclampsia, obstructed labour and unsafe abortion.^{3,11,12,15,17,18} Similarly, the most common causes of death of mothers reaching our tertiary care centre were hemorrhage, eclampsia, purpurial sepsis and ruptured uterus. But these figures still hide the real reason why these women die, in the backdrop, the hemorrhagic patient or her family may not have recognized bleeding as a life threatening emergency, or she may have been deterred from seeking medical assistance due to inappropriate traditional practices, lack of money or access to transportation, or the quality of medical care she had received earlier may have been poor.

The woman that reach hospital dead or alive, constitute only a fraction of the mothers who die unassisted. The causes of maternal mortality may be multiple, inter-related, complex, medical or social, but are almost always preventable.¹⁸ Since 1990, a worldwide reduction of maternal deaths to 47 % has been achieved, a number of countries in sub Saharan Africa have halved their levels of maternal mortality, and China, Egypt, Ecuador are achieving an accelerated progress.⁶ Where do we stand? For childbirth, skilled birth attendance and Emergency obstetric care (EmOC) for maternal or newborn complications that may arise, postnatal care for mother and baby, however Quality of care is the crucial requirement for all of these.^{14,19,20,21}

CONCLUSIONS

In order to bring about the promising results in each phase of pregnancy and childbirth to reduce our maternal mortality, exquisitely at each primary, secondary, tertiary level of health care, we as a nation must make the MDG5 a priority. Our Government should provide adequate human and financial resources to launch and successfully complete Programs that target all these interventions direly required at each level of healthcare, and take steps to empower and educate our women.

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Conflict of Interest: None declared
 Rec. Date: Apr 07, 2013 Accept Date: May 05, 2013

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