

Cross Sectional Survey of Obstetric Cases Admitted to El Mahalla General Hospital in 2010

Thesis

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Introduction

Maternal mortality is an important measure of women's health and indicative of the performance of health care systems (*AbouZahr & Wardlaw, 2001*). According to the International Classification of Diseases (ICD) made by the World Health Organization (WHO) Maternal mortality 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 (*WHO, 1992*).

In developing countries over 500,000 women die every year as a result of complications arising from pregnancy and childbirth. Most of these complications could be avoided if preventive measures were taken and adequate care was available (*Hunyibo et al., 2008*).

The estimated global maternal deaths in 2005 was 536000/100.000 live births slight decreased compared to maternal deaths in 1990 which was 576.000/100.000 live births with an annual decline of less than 1%. **99%** of these deaths occurred in developing countries (*Yadamsuren et al., 2010*) .

MMR has dropped from 174/100,000 in 1992 to

84/100,000 in 2000 according to report of Egyptian National Maternal Mortality Study 2000 (**Hamza, 2005**).

Over the last decade, identification of severe maternal morbidity has emerged as a complement or alternative to investigation of maternal deaths (**Ronsmans and Fillipi, 2004; Antonio et al., 2009**).

Severe maternal morbidity may be a better indicator of the quality and effectiveness of obstetric care than mortality alone. It also has been shown to identify priorities in maternal care more rapidly (**Baskett and Sternadel, 1998**).

However, there are no uniform criteria for identification of possible cases of maternal morbidity, identification is complex: some studies use disease-specific definitions, some suggest management specific-criteria e.g. hysterectomy or admission to ICU and some describe organ system dysfunction or failure-based criteria (**Say et al., 2004**). There were an improvement in survival and morbidity of women in UK since the late 1930s with the introduction of antibiotics, safe blood transfusions for hemorrhage and improved surgical techniques for caesarean section, other European countries including Sweden, had been shown an improvements a bit earlier around 1900 with increasing the number of births attended by professional'

midwives, coupled with strong political will to tackle the problem (*Drife, 2002*).

This study of obstetric cases admitted to EL-Mahalla General Hospital over 12 months as a sample will be taken to evaluate the magnitude of obstetric problems in the area served by this hospital and to evaluate the various complications and methods of management.

Aim of the Work

The aim of this study is to estimate and analyze all obstetric cases admitted to El mahalla General Hospital in 2010 and to discuss complications and management offered for each group of patients.

Chapter (1)

Maternal Mortality and Morbidity

The scope of the Problem

Globally, every minute of each day 380 women got pregnant and 190 of these are unplanned pregnancies; 110 women experience pregnancy related complications; 40 women face an unsafe abortion and at least one woman dies due to complicated child births (*Kausar et al., 2006*).

Maternal mortality is a major global problem that affects families and society as a whole. Obstetrical complications are the leading cause of death for a woman of reproductive age in developing countries today. The tragedy is that these women die not from disease but during normal life-enhancing process of procreation (*Holtz, 2007; Abdella, 2010*).

For every women who die, there is 20 or more women suffer severe morbidity (injury, infection or disease), morbidity related to pregnancy and childbirth reaches more than 10 million women annually (*Barate and Temmerman, 2009; Nanda et al., 2005*).

In most of developing countries, maternal deaths are the tips of iceberg, which signal every day tragedies of women's lives and reflect how worlds' poverty has been feminized (**Kaur et al., 2007**).

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The World Health Organization defined maternal morbidity as morbidity in a women who has been pregnant (regardless of the site or duration of pregnancy) from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (**WHO, 1989**).

Severe acute maternal morbidity is known as 'near miss', it is defined as sever ill pregnant or recently delivered woman who would have died but had not been due to luck and good care was on her side (**Mantel et al., 1998; Prual et al, 2000; Baskett, 2008**).

The birth period before, during and after is the time of which mortality and morbidity risks are highest for both mother and child (**Barate and Temmerman, 2010**).

There was much variability between countries in 2008, with a maternal mortality ratio of 290 deaths (per 100 000 live births) in developing regions as compared to 14 deaths (per 100 000 live births) in developed regions (**Wilmoth et al., 2010**)

High maternal mortality burden in developing countries is due to limited availability of health facilities with basic emergency obstetric care capacity, low staffing level of birth attendants and lack of reliable data. The lack of reliable data is particularly due to non-existing or largely incomplete registration of births and deaths makes it difficult to document the magnitude of the problem and differentials across socio-economic and geographic groups (**Ziraba et al., 2009**).

There are three distinct measures of maternal mortality, maternal mortality ratio, maternal mortality rate and lifetime risk of maternal death (**Menken and Rahman, 2001**)

The most commonly used measure is the maternal mortality ratio that is defined as the number of maternal deaths during a given time period per 100.000 live births during the same time period, while the maternal mortality rate is the number of maternal deaths in a given period per 100.000 woman of reproductive age during the same time period, finally the lifetime risk of maternal death describes the cumulative loss of human life due to maternal death over the female life course (*Abou Zahr et al., 2004; Wilmoth, 2009*).

The ratio reflects well the hazards of pregnancy, while the rate better describes the level of maternal mortality in a given country, since, in addition to pregnancy hazards it accounts for the frequency of exposure to those risks (*Fortney et al., 1988*).

Maternal mortality is not equally distributed among different countries, there is a vast discrepancy between developed and developing countries where 99% of maternal mortality happens in developing countries, in which 85% of the population lives. MMR ranged from 127 to 1289 in the least developed countries and from 2 to 695 in the less developed countries (*Betran et al., 2006; WHO, 2007*). **Figure 1**

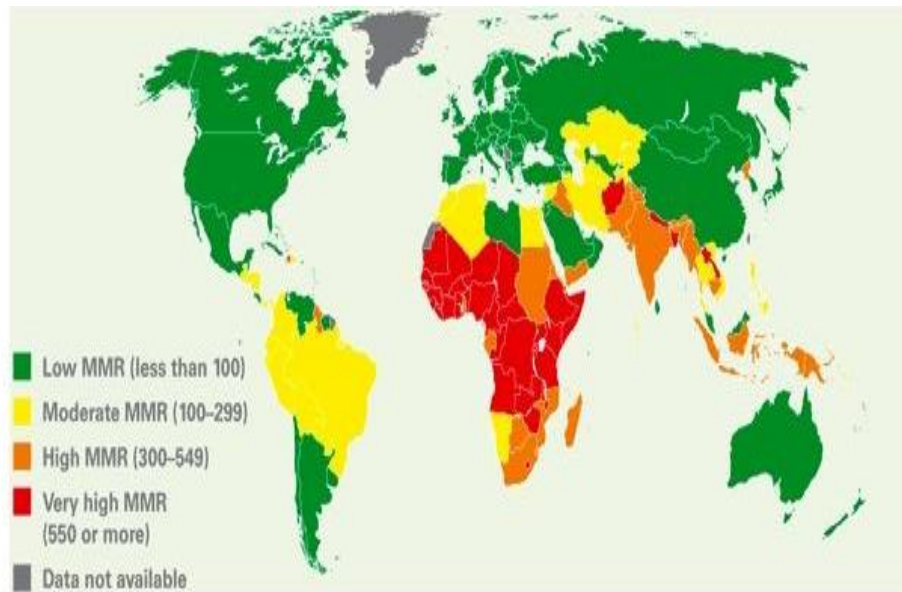


Fig. (1): Maternal mortality ratio by country, 2005 (Estimates by WHO, UNICEF, UNFPA and the world bank. World Health Organization, 2007).

The chance of woman dying from complication of pregnancy, delivery or puerperium is stated in the world, as the followed: Africa: 1/15, Asia: 1/105, Europe: 1/1895, North America: 1/3750 (**Abdoulaye, 2006**).

Table (1): Maternal mortality estimates by United Nations MDG regions, 2000.

Region	Maternal mortality ratio (maternal deaths per 100,000 live births)	Number of maternal deaths	Lifetime risk of maternal death, 1 in:
WORLD TOTAL	400	529,000	74
DEVELOPED REGIONS*	20	2,500	2,800
Europe	24	1,700	2,400
DEVELOPING REGIONS	440	527,000	61
Africa	830	251,000	20
Northern Africa**	130	4,600	210
Sub-Saharan Africa	920	247,000	16
Asia	330	253,000	94
Eastern Asia	55	11,000	840
South-central Asia	520	207,000	46
South-eastern Asia	210	25,000	140
Western Asia	190	9,800	120
Latin America and the Caribbean	190	22,000	160
Oceania	240	530	83

* Includes, in addition to Europe, Canada, the United States of America, Japan, Australia and New Zealand, which are excluded from the regional totals.

** Excludes Sudan, which is included in sub-Saharan Africa.

(Maternal mortality estimates in 2000 by WHO, UNICEF, UNFPA, 2004).

Chapter (2)

Causes and Risk Factors of Maternal Mortality and Morbidity

In most developing countries, women of reproductive age (15 to 49 years) constitute a little more than one-fifth of the total population, these women are exposed repeatedly to the risk of pregnancy and childbearing, and under existing socioeconomic conditions and the inadequacy of medical and health facilities, are at great risk of morbidity and mortality from causes related to pregnancy (*Mekonnen, 2003*).

Maternal mortality is a complex factor, which is influenced by the women's social and economic status, age, parity and by her nutritional status in childhood and adulthood (*Kausar et al., 2006*).

Deaths of women while pregnant or within 42 days of the end of the pregnancy from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. The 42 day limit is an internationally recognized standard (*Lewis, 2011*).

Maternal deaths are routinely classified into a number of categories as direct deaths, indirect deaths, coincidental and late (**Fraser and Cooper, 2009**).

Direct obstetric deaths: Deaths resulting from obstetric complications of the pregnant state (pregnancy, labour or puerperium), from interventions, omissions, incorrect treatment or from a chain of events resulting from any of the above. (**Fraser and Cooper, 2009; Lewis, 2011**).

Indirect obstetric deaths: those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by the physiological effects of pregnancy (**Hoyert, 2007; Lewis, 2011**).

Over 70 % of maternal deaths in developing countries are due to direct maternal causes such as hemorrhage, sepsis, hypertensive disorders, unsafe abortion, and obstructed labor (**Ziraba et al., 2009**). Additionally, indirect causes such as HIV/AIDS, malaria, and anemia account for about 20% of maternal deaths (**Khan et al., 2006**).

Coincidental (fortuitous). Deaths from an unrelated cause which happen to occur in pregnancy or

the purperium, e.g road traffic accidents (**Fraser and Cooper, 2009; Lewis, 2011**).

Late maternal deaths. Deaths of a woman from direct or indirect obstetric causes more than 42 days but less than 1 year after the end of pregnancy (**Hoyert, 2007; Lewis, 2011**).

Maternal mortality is a complex factor, which is influenced by the women's social and economic status, age, and parity and by her nutritional status in childhood and adulthood (**Kausar et al., 2006**).

The majority of maternal health problems occur in low income countries, where there is a strong association between reproductive risk and high fertility, low literacy, poverty, lack of access to services and poor quality of medical care (**Mahler, 1987**).

The outcome of pregnancy is affected by delayed treatment which results of many factors. These delays described as the three phases of delay. **Delay I** lack of information and adequate knowledge about the danger signals during pregnancy and labor. **Delay II** out of reach of health facility; poor road, communication network and community support mechanism. **Delay III** inadequate skilled attendant, poor motivated staff,

inadequate equipment and supplies, and weak referral system (**Abdella, 2010**).

As stated by 2005 WHO report "Make Every Mother and Child Count" the percentages of major direct causes of maternal mortality are: severe bleeding/hemorrhage (25%), infections (13%), unsafe abortion (13%), eclampsia (12%), obstructed labor (8%), other direct causes (8%), and indirect causes (20%) (**Kaur et al., 2007**).

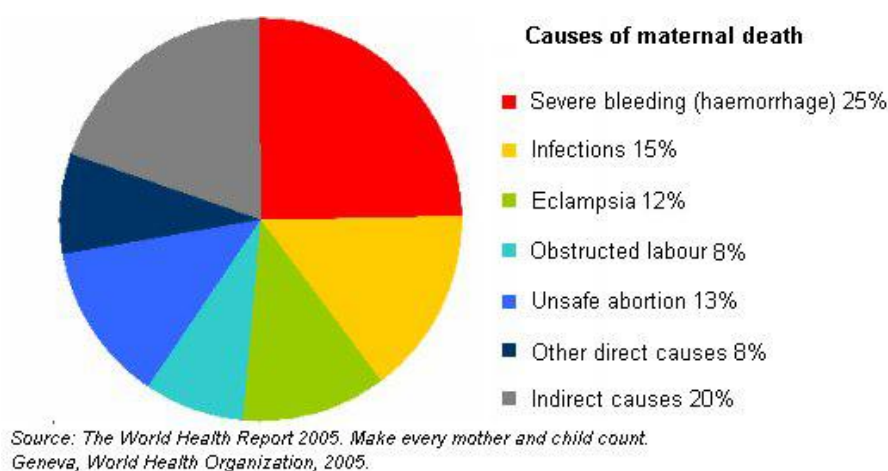


Fig. (2): Causes of maternal mortality (**Kaur et al., 2007**)

From this figure it reveals that the major causes of maternal death are haemorrhage, sepsis eclapmsia, obstructed labour and unsafe abortion. In the developed countries another very important cause is added which is thromboembolic diseases (**The world health report 2005**).