

Maternal Mortality in Ninawa Governorate 2018 - A descriptive Study

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ABSTRACT

Background: Maternal mortality death of the mother during pregnancy or delivery or within 42 days after delivery due to direct, indirect but not accidental causes. Predisposing factors are not a cause of death in themselves but increase the likelihood of maternal death during pregnancy or childbirth

Aim: To describe maternal death in Ninawa governorate during 2018.

Methods: A Biometry study design was adopted with review of records of 22 deceased mothers over the last years using standardized maternal mortality inquiry forms contain valuable details and information about each maternal death.

Result: The study revealed that total registered and documented deceased women 22 during 2018, 12(55%) in age group 20-35 years, 41% had four and more child, and 50% from urban area, 73% delivered in health institution, and 90% dead after labour with 77% a life baby, direct cause of death constitute 96% due to haemorrhage, embolism, PET, and sepsis 52%, 24%, 14%, 10% respectively according to hospital registration and 77% of death can be prevented.

Conclusion: Most maternal death in Ninawa 2018 was among multi para with young age group, occur in health institution due to direct causes and more than three fourth can be prevented.

Recommendation: presence of highly specialized blood banks, intensive care units with highly qualified personnel and equipment can minimize and even prevent maternal death.

Key word: Maternal mortality, women death, deceased women.

INTRODUCTION

Mothers are the cornerstone of society in view of their role in creating the foundation of the family the structural unit of society.^[1] Although pregnancy and labor are normal physiological process in women life but remain the leading cause of death in many developing countries.^[2]

WHO defines maternal mortality as the death of the mother during pregnancy or delivery or within 42 days after delivery, regardless of gestational age, location of pregnancy (normal or ectopic), and whether the death occurs due to direct or indirect causes or due to any health situation that is complicated by the pregnancy or delivery or as a result of treatment of complications or any medical interventions.^[3]

Causes of maternal deaths are categorized in three main groups: Direct related to delivery, indirect related to pregnancy and its impact on the health situation of the woman, and accidental not related to pregnancy.^[4] Predisposing factors are not a cause of death in themselves but increase the likelihood of maternal death during pregnancy or childbirth. These factors cause a delay on three levels: First delay in making the decision to seek health services when needed. Second delay in accessing health services. Third delay in utilizing health services.^[5] In Iraq, as in other developing countries, maternal mortality was usually underestimated.^[2] Maternal mortality in Iraq 1990, was 117 per 100,000 live births,

reduced to 84 in 2007 and to 36.1 in 2016.^[6] This is higher than the average worldwide reduction of 1.3% and lower than the target reduction (5.5%).^[5] Maternal mortality is widely used as a general indicator of the overall health of a population. High maternal mortality ratios are thus markers of wider problems of health status, gender inequalities, and health services in a country.^[7]

The health status of Mosul population has suffered major blows due to decades of war and economic sanctions. The population access to basic health services has become increasingly impaired. The health sectors faces , therefore, considerable and complex challenges, such as less access to quality health care, shortage of essential medicine and lack of equipment, in availability of diagnostics test, and ect.,. all above factors and others affect women health and increase morbidity and mortality.^[8]

The aim of present study to describe maternal death in Ninawa governorate during 2018

SUBJECTS AND METHODS

Prior to data collection ethical and scientific approval was received from Ninawa Health Directorate in Mosul, Iraq after taking the agreement of the public health department/ maternity and child unite.

A Biometry study design was adopted with review of records of 22 deceased mothers over the last years. The study period extended for month during 2019, to study the registered maternal mortality. All maternal mortality information received by the maternal and child health section in Mosul, using standardized maternal mortality inquiry forms that adapted by Ministry of Health since 2000 that contain valuable details and information about each maternal death. The maternal mortality part contains demographic and personal data about the deceased woman and information on her obstetric history, antenatal care, and the history of last pregnancy, in addition to questions about place of delivery, history and complications that occurred during delivery, referral, transportation, as well as on the cause of death (direct, indirect) and predisposing factors. Information is to be taken from interviews with: parents, providers of care during delivery and the postpartum period. Part of the information is to be taken from the death certificate, hospital, and medical record. At the end of each review, the committee gave a general assessment as to whether it was possible to prevent the death of the woman or not. Data were tabulated, categorized, and analyzed using SPSS (version 23) software program. Simple percentage were used and put in suitable tables and figures.

RESULTS

Table (1): Deceased mothers by their characteristics

Category	No.*	%
Age group in years		
< 20	2	9
20-34	12	55
≥ 35	8	36
Residence		
Rural	9	41
Urban	11	50
unknown	2	9

*Total No. 22

(Table1) demonstrate socio demographic characters of deceased women as more than fifty (55%) were in age group 20-34 years and 36% older than 35 years, with no difference in residence whether rural or urban.

Table (2): Deceased mothers by parity, midwife intervention, place of delivery, type of delivery, and pregnancy outcome

Parity	No.	%
No child	6	27
< 4	7	32
≥ 4	9	41
Midwife intervention		
yes	3	14
No	16	72
Unknown	3	14
Place of delivery		
Health institution	16	73

House	4	18
Road	2	9
Type of delivery		
Normal vaginal delivery	11	50
Cesarean section	10	45
No labor	1	5
pregnancy outcome		
A life	17	77
Dead	3	14
others	2	9

Distribution of cases according to reproductive history was seen in (Table 2) as (9)41% had four and more child, (16) 72 % had no mid wife intervention and half of dead mothers delivered normally, and 77% of deceased women had a life baby.

Table (3a): Time of death in relation to delivery

death in relation to delivery	No.	%
Before labor	1	5
During labor	1	5
After labor	20	90

Table (3b): Time of death in relation to purperum

death in relation to purperum*	No.	%
In the 1 st 24 hrs. of purperum	15	75
After 24 hrs. of purperum	5	25

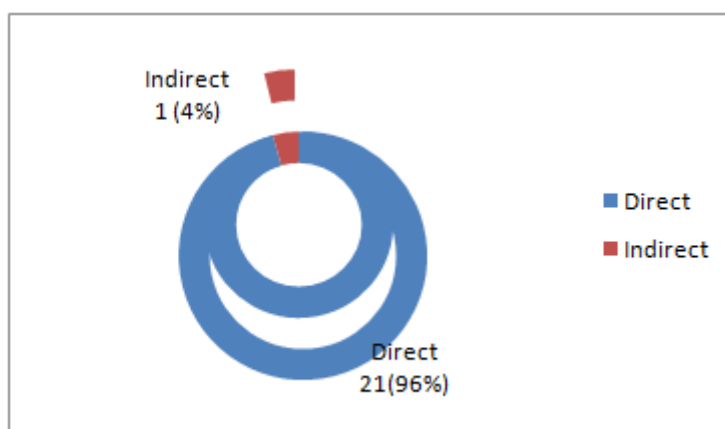
* Total 20

(Table 3:a) and (3:b), revealed that90% of death occur after labor, 15(75%) in 1st 24 hrs and 5(25%) of after 24 hrs of purperum.

Table (4): Deceased mothers by place of death

Place of death	No.	%
Home	4	18
Health Institution	16	73
Roads	2	9

Three forth(73%) of death occur in health institution, 18% in home, and only 9% dead in road, this is shown in (Table 4).



(Fig 1:a) Distribution of deceased mothers by cause of death

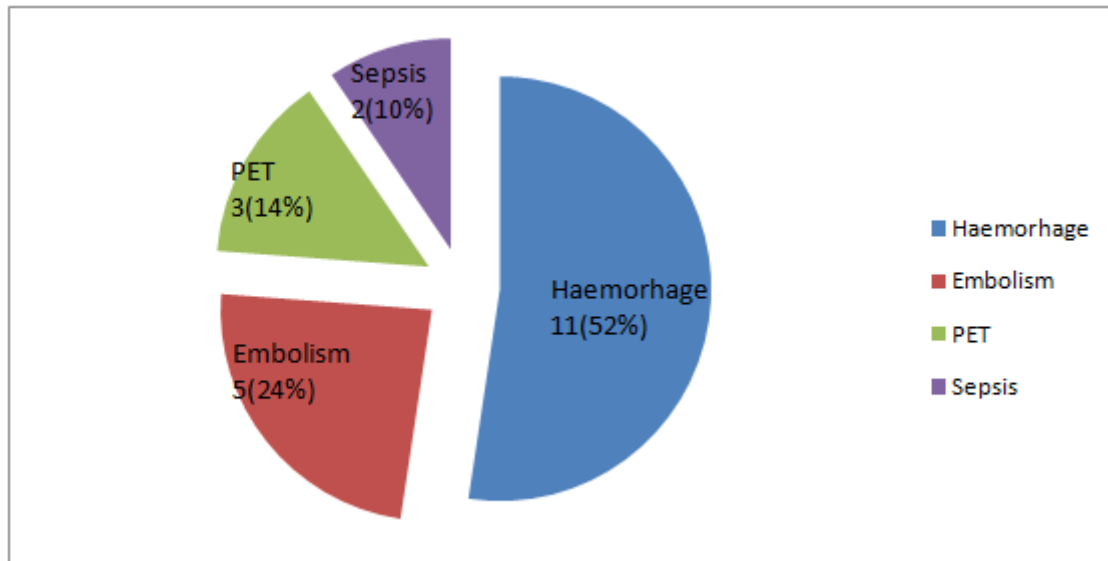


Fig (1:b) Distribution of deceased mothers by type of direct cause of death according to hospital medical record*

* Total No. of deceased mothers with direct cause was 21

Direct cause of death among deceased women was 21(96%) and an indirect cause of death among deceased women 1(4%). The most common direct cause of death was hemorrhage, embolism, PET. The percentage was 52, 24, 14 respectively. This shown in (Fig1:a) and (Fig1:b).

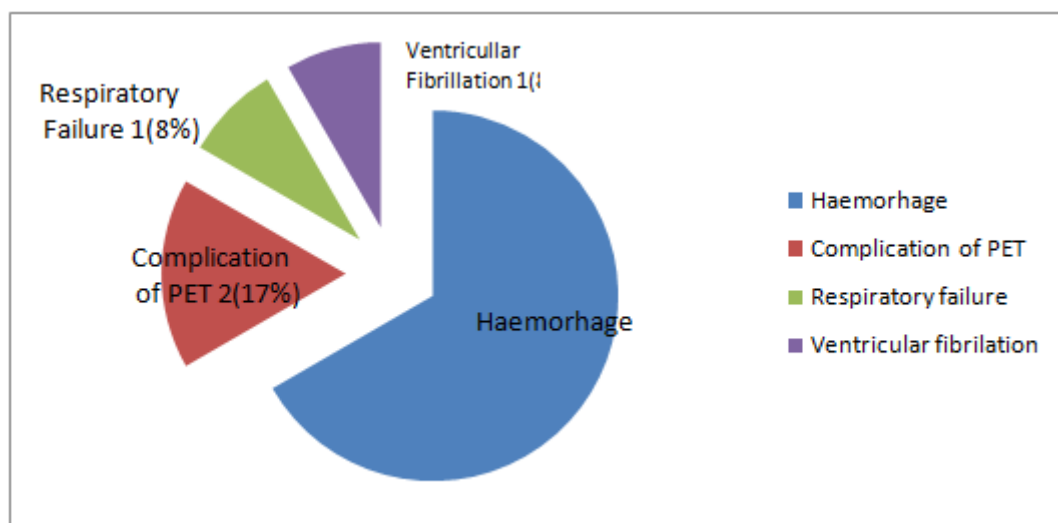
Table (5): Prevention of death

Can be prevented	No.	%
Yes	17	77
No	5	23

More than three fourth of death can be prevented and 23% cannot be prevented as shown in (Table 5).

Table (6): Deceased Mothers by referral to postmortem examination and result

Sending for postmortem Examination	No.	%
Yes	12	55
No	6	27
Relative Refuse referral	4	18



*Total No. 12

Fig.(2): Result of postmortem examination of deceased mothers according to cause of death*

(Table 6) and (Fig 2) revealed that more than half of cases (55%) were sent to forensic medicine to know the actual cause of death and result revealed that 8(67%) and 2(17%) were due to hemorrhage and PET respectively. 27% don't sent and 18% decided to send but the relative refuse.

DISCUSSION

Maternal mortality is the tip of iceberg' as it represents the end result of cumulative unpleasant events. In the present study, the age of deceased women more than fifty was (55%) were in age group 20-34 years and 36% older than 35 years, with no difference in residence whether rural or urban and 41% of deceased mothers had four and more child. WHO 2018, reported that women in their twenties tend to have fewer complications during pregnancy than younger or older women. Mothers under the age of 15 have a much greater chance of complications that can lead to death, the risks also go up with advanced maternal age and increases as women become pregnant in their late 30s, or in their 40s and 50s.^[9]

Parity is the number of children a woman has been got. The chances of having problems during childbirth are a little higher in a first pregnancy. The occurrence is less in a second pregnancy. But, after five or more pregnancies the risk grows once again.^[9]

A study of lifetime risk of maternal death by UNICEF, WHO, and UNFPA, shows that the number of pregnancies and parity are directly linked to increased probability of maternal mortality, research indicate that maternal death probability is 1:400 during the first pregnancy, 1:200 during the second and 1:100 during the fourth. Maternal death probability increases to 1:50 during the eighth pregnancy, which means that one out of every 50 women in their eighth pregnancy will die for reasons related to pregnancy.^[10] Unlike the main causes of maternal deaths during childbirth in developed countries are related to medical comorbidity and risk of caesarian section and anesthesia.^[11]

Although of nearly three fourth of deceased women deliver in health institution, but 90 % deceased women dead after labor, 75% in 1st 24 hrs. Half of dead mothers delivered normally. Lack and /or in adequate antenatal care in addition of unpredicted complications may occur during delivery without any prior warning signs. Therefore, delivery should take place in the presence of highly qualified human resources and with access to technical instruments in order to be able to manage obstetric emergencies quickly and effectively.^[4]

Direct cause of death among deceased women were 21(96%) and an indirect cause of death in deceased women 1 (4%), the most common direct causes were hemorrhage 11(52%), embolism 5 (24%), PET 3 (14%), and sepsis 2 (10%) respectively. More than three fourth of causes of death 17(77%) can be prevented and 5(23%) cannot be prevented

A report of maternal mortality in Iraq 2013-2015, revealed that direct causes they constitute about 80% of maternal mortality.^[5] Similar finding was seen in a national study in Egypt, 2005 the study revealed that bleeding was the most common direct cause (43%) and heart disease was the most common indirect cause.^[12] Another study in Egypt 2014, as maternal death attributed to avoidable causes in particular due to the substandard care and lack of supplies necessary for management of life threatening pregnancy-related complications.^[13]

In many developing nations it is possible to prevent or manage most direct causes when appropriate health policies and an integrated health system are in place. Unlike in developed countries, the indirect causes are the highest, due to advancements in technology, anesthesia and medications, in addition to advancements in the use of protocols for management of complications.^[14]

More than half of deceased mothers 12(55%) were sent, 6(27%) don't sent, and 4(18%) the relative refuse to sending to the forensic medicine to know the actual cause of death. This percentage of referral is low because referring deceased women to forensic medicine not accepted due to many causes such as: sociocultural, religious causes. Diagnosis of actual cause of death in hospital depend mainly on clinical sign due absences and / or inefficient of many simple and easiest diagnostic test on our hospital make this variability between hospital and forensic medicine report.

Maternal mortality surveillance and response in Iraq 2010-2012, it revealed that referral to Forensic Medicine Institute was increased from 8% during 2010 to 18% during 2012 but the study did not study the return of result.^[15]

CONCLUSION

The study concluded that more than half of deceased women were in age group 20-35 years and more than one third had four and more child, nearly three fourth had no midwife intervention, with delivery in health institution and most death occurs after labor with a direct cause and more than three fourth of causes of death can be prevented.

Recommendation:

The importance of the presence of protocols that unifies and regulates management and referral issues related to pregnancy, delivery, abortion and puerperium in governmental and private hospitals and clinics, including the presence of highly specialized blood banks, Intensive Care Units with highly qualified personnel and equipment.

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