

An Analytical Study on Maternal Mortality in a Rural Medical College

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ABSTRACT

Background: Maternal mortality is called when the death of a woman occurs while pregnant or within 42 days of termination of pregnancy. Worldwide wide about 2,87,000 maternal deaths occurred in 2014. Globally more than 87% of maternal deaths are from sub-Saharan Africa, 63%, from Southeast Asia, occurred in 2014. In India, nearly 52000 deaths occurred. Maternal Mortality is a major problem in developing countries only. The Maternal Mortality ratio strongly reflects the overall effectiveness of the health system, which in many low-income developing countries suffer from weak administrative-technical, and logistical capacity and inadequate financial investment. The social factors which influence Maternal Mortality are 1) Women's age 2) Birth Interval 3) Parities

Aim of the Study: To study the various causes and prevalence of Maternal Mortality in a Rural Medical College in South India.

Materials and Methods: We have conducted this study for 1 year from July 2016 to December 2018 in a Fathima medical college in the department of Gynecology and Obstetrics. We have included 870 pregnant women of different age groups in this study.

Results: We have included 870 pregnant women of different age groups from 20yr to 36years in this study.

Conclusion: Maternal Mortality is very high in developing countries only. In India, the maximum number of deaths are in Madhya Pradesh, Rajasthan states. It is related to the age of the mother and most of the cases are from rural and tribal areas where home deliveries are common. And most Maternal deaths can be prevented by providing good health care facilities.

Key Words: Pregnancy, Complications, Mortality, Haemorrhage.

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INTRODUCTION

Maternal Mortality is called when the death of a woman occurs while pregnant or within 42 days of the terminator of pregnancy. Maternal Mortality is a major health problem in pregnant women more than 85% of cases occur in African and Asian countries only. The international classification of diseases has divided maternal deaths into 2 groups. 1) Is Direct obstetric deaths 2) Indirect obstetric deaths.

Worldwide 287,000 Maternal deaths occurred during 2014. In India, nearly 52000 deaths occurred during 2014. Maternal Mortality rate MMR is defined as the number of maternal deaths in a given period per 100,000 live births during the same period, MMR is very high, 510 Maternal deaths per lacks live births in African Countries while Eastern Asia had the lowest in developing regions at 33 Maternal deaths per 1 lac live births.²

A woman is most vulnerable during the postpartum period. About 50-75% of Maternal deaths occur in the Postpartum Period. And of which 45% of deaths occur in the first 24 hours after delivery.

Maternal deaths mostly occur from the 3rd trimester to the 1st week after birth.³

The decline in maternal mortality ratio MMR among Asia and North African countries was only 2.3% per year between 1990 to 2015. Maternal health inequalities are not only between countries but within countries and between poor and rich women living in slum areas, rural areas, agency areas, and urban areas.⁴ Biomedical causes and health system conditions that lead to maternal deaths are well recognized and those studies have contributed to reducing maternal deaths that occur due to complications during and following pregnancy. The three delays model (delay with in-home on the way to health facility and within the health facility) in receiving maternal case that is available in literature do not provide. A holistic view of social causes that lead to the death of pregnant women in developing countries.⁵ Of the estimated 207 million pregnancies which occur every year about 41 million end in induced abortion of which only approximately

58% are carried out under safe conditions. Around 7.9% of maternal deaths occur as a result of prolonged or obstructed labor. The causes of maternal deaths include severe bleeding 24.5%, Indirect causes 20%, Infections 15%, Unsafe abortion 13%, Eclampsia 12%, Obstructed labor 8%. And other direct causes are 8%.⁶

MATERIALS AND METHODS

This study has been conducted in the department of gynecology for 1.5 years from July 2016 to Dec 2018. We have included 870 pregnant women. The common age group involved is 20 years to 36 years. 28 Maternal deaths occurred during the study period. The maximum number of deaths 15 occurred in the age group of 30 years. Most of the pregnant women are from rural and tribal areas only. Informed consent has been obtained from all the participants. After taking history we have examined all the pregnant women in detail and Advised Investigators like complete blood picture, urine analysis, blood sugar, blood grouping, and Rh typing blood urea and creatinine, LFT and Ultrasound Abdomen, etc. After collection of data completed systematically by using MS Office. Pregnant women who were attending antenatal -> outpatients departments were included in this study. The previous number of pregnancies and delivery have occurred (Institutional or Home) and any complications that occur during previous pregnancies are also noted.

Table I: Maternal mortality according to age.

Age in yrs	No. of deaths (28)	Parity	%
20 – 24 yrs	6	Primi	21.42%
25 – 28 yrs	7	Multipara	23.35%
29 – 32 yrs	9	Multipara	33.14%
Above 32 yrs	6	Multipara	21.42%

Table II: Different Demographic and economic status

Living areas	No. of Pregnant	Deaths	%
Slums areas	295	8	2.75%
Tribal areas	311	11	3.95%
Rural areas	140	6	3.85%
Urban areas	124	3	2.20%

Table III: Different literacy group

Qualification	No. of Pregnancy total (820)	No. of Deaths	%
Below 10 th standard	425	15	3.52%
Above 12 th standard	347	12	3.47%
Graduation	98	2	2.04%

Table IV: Different Causes of maternal mortality worldwide

Different Causes	Percentage of Cases
Severe Bleeding	25%
Indirect Causes	20%
Infections	15%
Un Safe abortion	13%
Eclampsia & others	20%

Chart I: Age-wise distribution

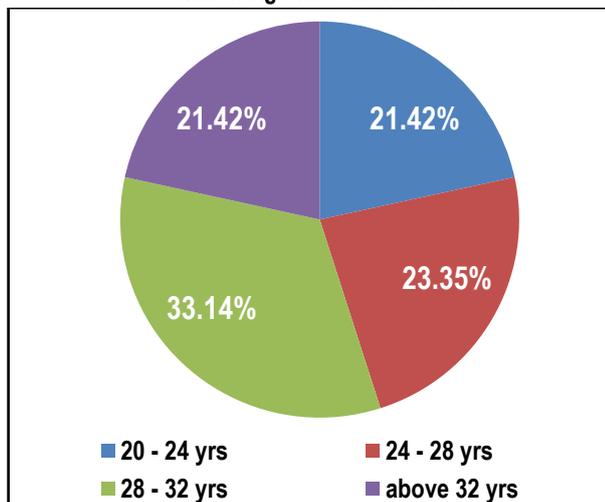
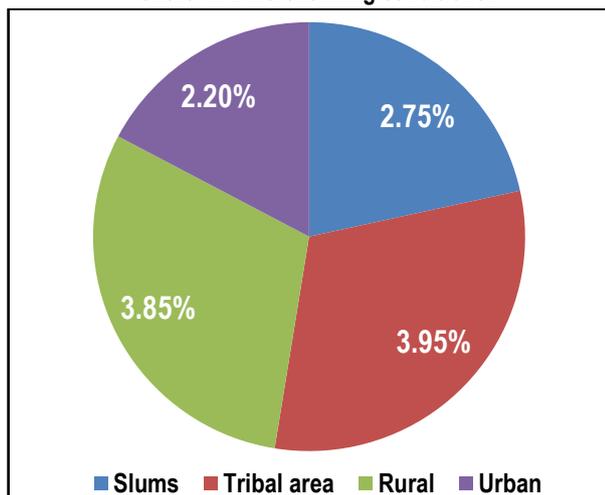


Chart-II: Different living conditions.



RESULTS

The maximum number of pregnant women are in between 20-28 years of age group (593 no). Out of 870 pregnant women, nearly 600 pregnant women are from slum areas and tribal areas. More than 60% of Maternal deaths are from slum areas and rural areas (7). The more age of diseased women was 28 years. More than 50% of deceased women are illiterates. About 63.5% of women died after delivery in the postnatal period (8). 13.5% died at home and 39.75% died in hospital. There was no statistically significant difference in demographic characteristics like age (p=69) and area of living(p=48) between the deceased women where caregivers were contacted(n=67) for this study and those who were not (n=67). 71 pregnant women (81.5%) died due to direct and 9(2.5%) died due to indirect medical causes. According to ICD-10 criteria, the most common direct biological cause of maternal death was postpartum hemorrhage (23.5%) and followed by complications of puerperium (24.9%) like sepsis (6.9%); embolism (9.2%); Eclampsia (5.7%), and complications of labor and delivery (15.25%) and direct medical cause tuberculosis, Renal problems, Jaundice, Malaria, etc. (9). Around 10% of pregnant women did not regularly go for care and they ignored some symptoms like SOB, Edema feet, more than 15% did not register for Antenatal care in a public or private hospital, In our study, we observed that lack of transport facilities also (delay in reaching referral centers) one of the contributing factors.

DISCUSSION

Maternal mortality is a very common problem in pregnant women. It is defined as the death of women while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy or its management but not from accidental or incidental causes.¹⁰ According to an international classification of disease (ICD) maternal death is divided into two subgroups (1) Direct obstetric deaths (2) Indirect obstetric deaths. Direct obstetric deaths are resulting from obstetric complications of the pregnant state which includes pregnancy labor and peripartum. Indirect obstetric deaths resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes.

The different approaches by which maternal mortality is will be measured are (1) Civil registration system (2) Household Survey (3) Sisterhood methods (4) Reproductive age mortality studied (5) Verbal autopsy and (6) Census.

A woman is vulnerable at the post-partum period more than 60% of maternal deaths occur in the post-partum period of which 48% deaths occur in the first 24 hours after delivery and more than two-thirds during the 1st week. Around 12-18% of maternal deaths occur during childbirth itself.¹¹ Maternal deaths mostly occur from III trimesters to 1st week after birth studies show that mortality risk for mothers is particularly elevated within the first 2 days after birth.¹² Multiple causes of deaths of pregnant women and young mother have been reported in the literature including lack of care during pregnancy cause of mortality is postpartum hemorrhage and 32% of deaths occurred due to bleeding. The studies conducted by Mathur et al show 27.5% of deaths are due to hemorrhage.¹³ In our study, the majority of deaths are reported from slum areas and agency areas almost more than 62% of deaths are from those places only. The studies conducted by Golden Berg et al show almost similar results.¹⁴ The medical causes identified by Various other studies and sample registration system bulletin in India. Pregnancy tends to increase with maternal age. In comparison with women aged 20-25yrs. The odd ratio was 3.7 in women aged 26-30 years and 4.2 in these age > 30 yrs. The study conducted by owiredu et al shows nearly similar findings.¹⁵ The complications also increase with subsequent deliveries. Maternal mortality is high in rural areas than in urban areas. The pathophysiology of complications is to convert maternal uterine spiral arteries, which supply the developing placenta. The loss of endothelium and muscular layers within these uterine nasal renders unresponsive to vasomotor stimuli; ischemic placental contributes to endothelial cell dysfunction in the maternal vasculature by inducing alteration in antigenic factor lipid peroxidases, inflammation, cytokines, and anti antibodies also play a major role in preeclampsia.

CONCLUSION

Hypertension in pregnancy is a major disorder that occurs during pregnancy preeclampsia remains a major cause of maternal morbidity as a complication. A high rate of and early treatment can reduce the complications due to hypertension in pregnancy. We noticed that some of the deaths occurred due to delay in the transportation of pregnant women also.

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