

Original Research Article

A STUDY ON ANALYSIS OF VARIOUS FACTORS AFFECTING MATERNAL MORTALITY IN A TERTIARY CARE CENTRE

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ABSTRACT

Background: Maternal health is important for the development of any country in terms of increasing equity and reducing poverty and is important in their own right and is central to solving economic, social and developmental challenges. Hence, maternal mortality is the key indicator of health and socio economic status and development of a community and the whole national system. **Aims and objectives:** To study the factors responsible for maternal mortality and to analyse the causes and trends in maternal mortality.

Materials and Methods: A retrospective study on maternal deaths that occurred in the maternity ward of Government General Hospital, Siddhartha Medical College, Vijayawada during the period of One year from January 2022 to December 2022. Covid related deaths excluded.

Results: Total 56 maternal deaths occurred during the study period. 52 maternal deaths (92.90%) were unbooked cases, 4 (07.10%) were booked cases. 24 women (42.93%) were primiparous, 32 (57.07%) were multiparous. 38 women (67.90%) were of 20-24 years age, 8 women (14.33%) were of 25-29 years age, 10 women were (17.80%) were of 30-34 years age. Maternal deaths due to direct causes were 38 (66.92%) and due to indirect causes were 18 (33.08%) Hypertensive disorders complicating pregnancy was the leading cause of death followed by hemorrhage in pregnancy. 39 (69.64%) maternal deaths occurred after delivery, 8 deaths (14.21%) during 3rd trimester of gestation. Type 1 delay (20.74%), type 2 delay (57.7%) type 3 (21.48%) delays contributed to the maternal deaths.

Conclusion: Health education regarding adolescent health, pregnancy, abortion and contraception. Regular antenatal checkup, early identification of risk factors, awareness, timely intervention and referral to higher institute, proper intra natal and post-natal care, multispecialty team management in high risk cases are needed to reduce the maternal mortality.

Keywords: Maternal Mortality, Hemorrhage, Complicating Pregnancy, Health Education, Antenatal Check-up.

INTRODUCTION

According to WHO International classification of diseases 10th revision, "Maternal death" is defined as death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy from any cause related to or aggravated by pregnancy or its

management, but not from accidental or incidental causes. Maternal mortality ratio is the number of maternal deaths during a given period per 1 lakh live births. It is issued as a measure of quality of health care system. Maternal mortality rate [MMR] in India was reduced from 130 per 1 lakh live births in 2014-16 to 113 per 1 lakh live births in 2016-18. About 23,800 maternal deaths occurred in

India in 2020 with MMR of 99 per 1 lakh live births. Assam has highest MMR of 215 and least in Kerala 43. Andhra Pradesh has MMR of 65 per 1 lakh live births as per SRS 2016-18 by Register General of India. Most of these deaths are preventable and depend on social factors, economic status, literacy, patient care, hospital infrastructure facilities and referral system.

Aims and Objectives

To analyse the causes of maternal mortality in Government maternity hospital, Vijayawada. To identify the factors responsible for maternal mortality. To identify the lacunae in the management of preventable deaths.

MATERIAL AND METHODS

Study method: Retrospective study

Study setting: Department of Obstetrics and Gynaecology, Government maternity hospital, Siddhartha Medical college, Vijayawada

Study period: 01-01-2022 to 31-12-2022

Study population: Maternal deaths recorded during the year of 2022 among total number of deliveries of 13036 in the study period, in which 12836 were live births. COVID-19 positive deliveries and deaths were excluded from this study.

RESULTS

A Total of 12836 deliveries were conducted during study period of 1 year from 01-01-2022 to 31-12-2022, resulting in 12836 live births and 56 maternal deaths with MMR of 291 per 1 lakh live births. Among 56 maternal deaths, 4 were booked cases and 52 were unbooked cases. MOST OF THE DEATHS [85.7%] occurred 24 hours after admission into hospital.

Table 1: No. of maternal deaths based on age distribution

Age in years	No. of maternal deaths	% of maternal deaths
15-19	-	-
20-24	38	67%
25-29	08	14%
30-34	10	19%

Table 2: No. of maternal deaths based on parity

Parity	No. of maternal deaths	% of maternal deaths
Primi	24	42%
Multi (2-4)	32	58%
Grand multi (>4)	-	-

Table 3: No. of maternal deaths based on duration of gestation

Gestational age	No. of maternal deaths	% of maternal deaths
1 st trimester	-	-
2 nd trimester	04	07%
3 rd trimester	08	14%
Post partum	39	60%
Abortion	05	17%

Table 4: Distribution of direct causes of maternal deaths

Direct cause	No. of maternal deaths	% of maternal deaths
Hemorrhage(PPH)	08	14%
Hypertension (Pre-eclampsia)	14	25%
(Eclampsia)	20	36%
Unsafe abortions	04	07%
Sepsis	06	11%
Pulmonary embolism	04	07%

Table 5: Distribution of direct causes of maternal deaths

Indirect causes	No. of maternal deaths	Percentage of maternal deaths
Anemia	12	41%
Jaundice	04	15%
Peripartum cardiomyopathy	02	07%
Dengue	01	03%
Malaria		
Viral fevers	02	07%
Renal failure	01	03%
Epilepsy	06	21%
Diabetic ketoacidosis	01	03%

DISCUSSION

Maternal mortality is an index of reproductive health of society. High incidence of maternal deaths reflects poor quality of maternal services, late referrals and low socioeconomic status of the community. The mean maternal mortality rate in a study period was 291 per 1 lakh live births.^[1] The current maternal mortality ratio(MMR) of India is 113 per 1lakh live births. This study has comparatively high MMR, which could be due to the fact, that our hospital receives a lot of complicated referrals from surrounding rural areas at a very late stage. In this study, 81% of maternal deaths were in age group of 20 to 29 years, as highest numbers of births are reported in this age group. Similarly, 58% of maternal deaths were reported in multiparous patients. More maternal deaths were reported in unbooked patients (92.8%). All the findings were similar to studies by Jain,^[2] Jadhav,^[3] Pal,^[4] Onakewh,^[5] or. In this study, 86% of maternal deaths were due to direct causes: Hemorrhage (14%), Pre-eclampsia (25%), Eclampsia (36%), and sepsis(11%) were the major direct causes of maternal deaths. Anemia (11%) is the most common indirect cause of maternal deaths. Every today large number of maternal deaths is due to classical triad of haemorrhage, sepsis and eclampsia. All these are preventable causes of maternal mortality provided the treatment is

instituted in time. Unfortunately, in many cases, patients were referred very late, in critical condition, unaccompanied by health care worker. Most of these deaths are preventable if patients are given appropriate treatment at periphery and timely referred to higher centres. Training of medical officers and staff nurses working in rural areas by programs like basic emergency obstetric care(BEMOC) and skilled attendant at birth(SAB) training gives an improvement in reducing maternal mortality. Maternal deaths can be prevented by improving the health care facilities in rural areas by ensuring round the clock availability of certain basic drugs like injection magnesium sulphate, tablet misoprostol as most maternal deaths in rural areas are still due to eclampsia and postpartum haemorrhage. Early detection of high risk pregnancies and referring them to a tertiary center at the earliest can reduce the complications of high risk pregnancies. National rural health mission(NRHM) can play a major role in reducing maternal mortality by advocating institutional deliveries and timely referral of high risk cases.

CONCLUSION

Even today most maternal deaths are seen in patients from rural areas, unbooked, illiterate patients and patients from low socioeconomic status. Hemorrhage, eclampsia and sepsis are the major

causes of maternal deaths. Health education regarding maternal health, early registration, regular antenatal checkups, identification and treatment of risk factors, timely intervention and early referral to higher centers are needed to reduce maternal mortality.

Conflict of Interest: None.

REFERENCES

1. Puri A, Yadav I, Jain N. Maternal mortality in an urban Tertiary care hospital of north India. *J Obstet Gynaecol India*. 2011; 61:280–5.
2. Jain M, Maharaj S. Maternal mortality: A retrospective analysis of ten years in a tertiary hospital. *Indian J Prev Soc Med*. 2003; 34:103–11.
3. Jadhav AJ, Rote PG. Maternal mortality—changing trends. *J Obstet Gynaecol India*. 2007; 57:398–400.
4. Pal A, Ray P, Hazra S, Mondal TK. Review of changing trends in maternal mortality in a rural medical college in west Bengal. *J Obstet Gynaecol India*. 2005; 55:521–4.
5. Onakwehor JU, Gharoro EP. Changing trends in maternal mortality in a developing country. *Niger J Clin Pract*. 2008; 11:111–20.