Original Research Article

A PROSPECTIVE ANALYSIS OF MATERNAL DEATHS IN OBSTETRICS AND GYNAECOLOGY DEPARTMENT OF NETAJI SUBHASH CHANDRA BOSE MEDICAL COLLEGE, JABALPUR

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Abstract
Background: Aim: To study the various demographic and etiological factors that contribute to maternal death. **Materials and Methods:** An observational study was performed where a pre tested proforma was filled based on interview to know the various factors contributing in maternal death. **Results:** A total of 222 maternal deaths occurred during the study period. Out of the total 18% were booked and 82% were unbooked. The cause of maternal deaths was found to be direct that included pregnancy-induced hypertension (40%), anaemia (33%) & antepartum and postpartum haemorrhage (6%) while the indirect causes included cardiac diseases (3%), renal Disorder (4%) and sickle cell diseases/ trait (3%). **Conclusion:** This review sets a framework of all the contributing factors (obstetric, intermediary determinant, structural determinant and health system) that are the determinants of maternal health, maternal morbidity and maternal mortality.

INTRODUCTION

Maternal health forms the backbone of a strong and resilient society. The health of women during antenatal, childbirth and the postnatal period is referred to as maternal health.[1]

A strong and effective maternal health policy programme and setup is needed to decrease maternal death. Maternal death is the worst outcome indicator of maternal health. International classification of Diseases -10 stated maternal death 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. Late Maternal death is defined as death of a woman from direct or indirect causes more than 42 days but less than one year after termination of pregnancy.[2]

Underlying cause of death is defined as the disease or condition that initiated the morbid chain of events leading to death or the circumstances of the accident or violence that produced a fatal injury. The single identified cause of death should be as specific as possible.[3]

In the tenth revision of the ICD, maternal deaths are subdivided into two groups:

Direct obstetric deaths (or direct maternal deaths) are those "resulting from obstetric complications of the pregnant state (pregnancy, labor and puerperium), and from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above."

Indirect obstetric deaths (or indirect maternal deaths) are those maternal deaths "resulting from previous existing disease or a disease that developed during pregnancy and not due to direct obstetric causes but was aggravated by the physiologic effects of pregnancy".[4]

With the changing trends in population demographics and disease burden an analysis pf the cause of maternal death will influence the strategies that countries implement to end preventable maternal deaths.[5]

The aim of the study was to study the various demographic and etiological factors contributing to maternal death.

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MATERIALS AND METHODS

An observational study was done where pre tested proforma was filled based on interviews (where feasible from subjects, attendants and health care provider) and antemortem clinical examination of diseased was done to know the various factors contributing to maternal death.

A total number of 222 maternal deaths were observed during a period of one and half year.

RESULTS

Table 1: Sociodemographic factors contributing to maternal death

Age (Years)	No.	%
15-25	146	65.8
26-35	69	31.1
36-50	7	3.2
Address		
Rural	183	82.4
Urban	39	17.6
Level of education		
Illiterate	60	27.0
Primary	133	59.9
Middle School	19	8.6
Higher Secondary	8	3.6
Graduation	2	.9

Table 2: Antenatal registration status

Registration status		No.	%
Unbooked (182)	Unregistered	54	24.3
	Registered	128	57.7
Booked		40	18.0
Reason for no antenatal visit (Out of 54)			
Lack of awareness		35	64.8
Lack of accessibility		8	14.8
Attendee and family problem		11	20.3

Table 3: Correlation between registration status and hypertension

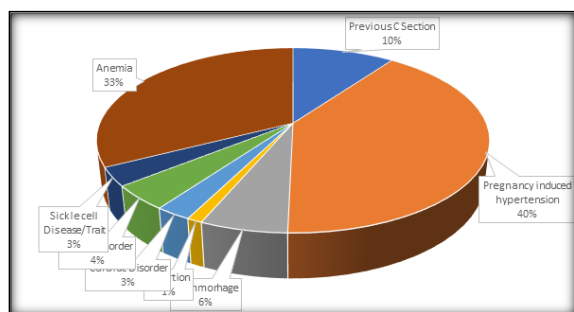|		Registration Status			P VALUE
		Unregistered	Registered	Booked	
Hypertension	Yes (128)	17	83	28	0.003
	No (94)	29	53	12	

Figure 1: Percentage wise distribution of causes of maternal death

Amongst the 222 maternal deaths that occurred during the study period, most of the deaths were among the age group of 15-25 years (146), belonged to rural areas (183) as compared to urban (39). However, more deaths were found in population that had primary level of education (133).

Our study showed that total Unbooked (182) among which unregistered (54) and had no antenatal visits, registered (128) and booked(40).

The major cause of not having any visits despite the various antenatal program was found to be the lack of awareness amongst patient and her family members that was found to be 35(n=54) in our study.

The majority of maternal deaths were found to be due to direct cause that included pregnancy-induced hypertension (113), anaemia (91) & antepartum and postpartum haemorrhage (17) while the indirect causes included cardiac diseases (7), renal Disorder (12) and sickle cell diseases/ Trait (9). The risk factors were more commonly identified in those that were unbooked as compared to those that were booked at health care setting.The relationship between registration status and hypertension had a p value 0.003 which was significant.

DISCUSSION

Most of the deaths were among the age group of 15-25 years (65.8%), belonged to rural areas (82.4%) as compared to urban and were found in population that had primary level of education (59.9%) in our

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study. Similarly low socioeconomic status and low level of education was found to be the cause of maternal death in other study.[6] Our study showed that total unbooked (82%) among which unregistered (23.3%) that had no antenatal visits, registered (57.75%) and booked (18%). Unfortunately, more maternal deaths were found in the population that was not booked during their antenatal period and the result of our study correlates with the various studies. Thus, antenatal care has a long way to go. The major cause of not having any visits despite the various antenatal program was found to be the lack of awareness amongst patient and her family members (64.8%) in our study. Similarly, the population thought that antenatal check-ups were not necessary in other study(60%).[7]

Hypertension was found to be the leading risk factor contributing to maternal death followed by anaemia and antepartum and postpartum haemorrhage. However, haemorrhage and sepsis was found to be the cause of maternal death in other studies.[8]

CONCLUSION

This review sets a framework of all the contributing factors (obstetric, intermediary determinant, structural determinant and health system) that are the determinants of maternal health, maternal morbidity and maternal mortality. Thus, we may postulate that antenatal care can be strengthened by creating awareness amongst mothers, husbands and family members regarding the need for care of pregnant female. The policy and program should be more awareness oriented and should reach the local people. Quality antenatal care should be provided by ANM and ASHA so that the problem can be identified at the grass route level with early detection of raised blood pressure, correction of anaemia and other high risk during pregnancy. While strict vigilance of higher authorities with regular reporting of all antenatal women has to be done so that number of pregnant women should not be lost in follow up.

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