

**Original article:**

## **Etiological study of maternal mortality in B.J. Government Medical College and Sasoon General Hospital , Pune .**

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**Abstract:**

**Introduction:** Extensive efforts have been made since 1987 to describe the extent and etiology of maternal mortality. The data on this subject have been used to persuade policy-makers and donors to adopt safe motherhood as a priority in public health. With this background in mind present study was planned to study of maternal mortality in B.J. Government Medical College and Sasoon General Hospital.

**Material and methods:** The present retrospective study was carried out in Department of obstetrics and Gynaecology at B.J. Government Medical College and Sasoon General Hospital for the duration of last two years. It was a retrospective study of all maternal deaths from January 2012 to June 2014. We collected information from Hospital data .

**Results:** For majority of cases of maternal mortality . pre-eclampsia and eclampsia were the associated factors. Where as anemia was associated with 23.19% cases of maternal mortality also, PPH was responsible for 15.94% of maternal deaths.

**Conclusion:** In our study majority of cases of maternal mortality , pre-eclampsia and eclampsia were the associated factors. Anaemia found second important associated factor.

**Keywords:** Maternal mortality , pre-eclampsia , anaemia.

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**Introduction:**

Extensive efforts have been made since 1987 to describe the extent and etiology of maternal mortality. The data on this subject have been used to persuade policy-makers and donors to adopt safe motherhood as a priority in public health (1–5). On the basis of verbal autopsy data and hospital records it is estimated that approximately 25% of maternal deaths are caused by haemorrhage, 15% by infection, 12% by pregnancy-induced hypertension, and 8% by obstructed labour (6). It is thought that 13% are associated with abortion, while 28% are ascribed to other direct and indirect causes, including malaria and anaemia. This information has also been used to identify potentially effective means of reducing maternal mortality. Emergency obstetric care has

received special attention because the medical conditions to which most maternal mortality is ascribed generally occur in the period around labour and delivery and cannot be accurately predicted (6–7). With this background in mind present study was planned to study of maternal mortality in B.J. Government Medical College and Sasoon General Hospital.

**Material and methods:**

The present retrospective study was carried out in Department of obstetrics and Gynaecology at B.J. Government Medical College and Sasoon General Hospital for the duration of last two years. It was a retrospective study of all maternal deaths from January 2012 to June 2014. We collected information from Hospital data . The sample size was estimated

with the help of experts. The data was purely collected from same duration only. The collected data was analyzed using SPSS AND excel software.

**Observations and Results:**

TABLE 1

YEAR	MATERNAL DEATHS	LIVE BIRTHS	MMR
2012	31	7066	438.7
2013	27	8433	318.2
2014 (June)	11	3804	289.1

Inference: The maternal mortality rate is more as all complicated and highly serious patients from Pune and adjoining districts are referred to Sasoon Hospital for tertiary expertise critical care.

TABLE 2: AGE WISE

AGE (YEARS)	NO. OF MATERNAL DEATHS	PERCENTAGE
<19	4	5.80
19-24	35	50.72
25-29	21	30.43
30-34	7	10.14
>35	2	2.90
TOTAL	69	

Inference: Majority of the patients (81%) were between 19-29 years of age. Of which 50.72% patients were between 19-24 years of age and 30.34% were between 25-29 years of age.

TABLE 3: MATERNAL DEATH ACCORDING TO LOCALITY

LOCALITY	NO. OF DEATHS	PERCENTAGE
RURAL	36	52.17
URBAN	33	47.83
TOTAL	69	

Inference: It can be seen that 52.17% patients were from rural areas and 47.83% patients were from urban areas.

TABLE 4: SOCIO-ECONOMIC STATUS OF THE PATIENT

SOCIO ECONOMIC STATUS	NO. OF PATIENTS	PERCENTAGE
POOR	47	68.12
AVERAGE/GOOD	22	31.88
TOTAL	69	

Inference: It can be seen that 68.12 % patients were from poor socio-economic status and 31.88% patients were from average or good socio economic status.

TABLE 5: EDUCATIONAL STATUS OF PATIENT

EDUCATION	NO. OF PATIENTS	PERCENTAGE
ILLITERATE	37	53.62
PRIMARY EDUCATION	20	28.99
SECONDARY EDUCATION	10	14.49
HIGHER SECONDARY EDUCATION	2	2.90
TOTAL	69	

Inference: It can be seen that majority of patients (53.62%) were illiterate.

Table 6: ANC REGISTRATION

ANC REGISTRATION STATUS	NO. OF PATIENTS	PERCENTAGE
REGISTERED	60	86.96
NON-REGISTERED	9	13.04
TOTAL	69	

Inference: Majority of patients (86.96%) were registered at some PHC, sub center, RH private or Sasoon General Hospital, so majority was registered with government or private institutes.

TABLE 7: ADMISSION DEATH INTERVAL

ADMISSION DEATH INTERVAL (HOURS)	NO. OF PATIENTS	PERCENTAGE
<24	29	42.03
25-48	6	8.70
49-72	11	15.94
>72	23	33.33
TOTAL	69	

Inference: 42.03% patients either were or became critical and died within 24 hours of admission, where as 33.33% of patients died after 72 hours during treatment period.

TABLE 8: CAUSES OF MATERNAL DEATH

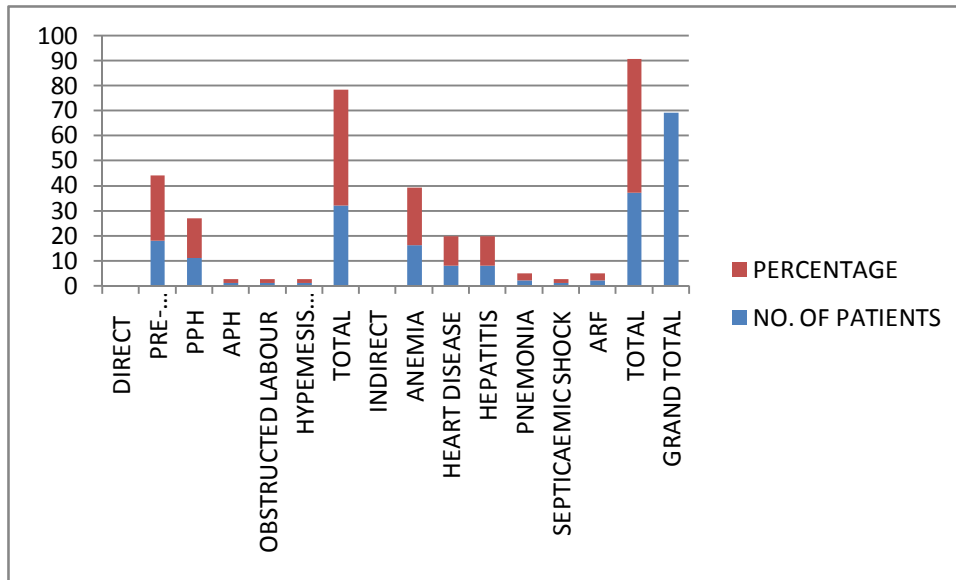
CAUSES OF MATERNAL MORTALITY	NO. OF PATIENTS	PERCENTAGE
DIRECT		
PRE-ECLAMPSIA/ECLAMPSIA	18	26.09
PPH	11	15.94
APH	1	1.45
OBSTRUCTED LABOUR	1	1.45
HYPEMESIS GRAVIDARUM	1	1.45
TOTAL	32	46.38
INDIRECT		
ANEMIA	16	23.19
HEART DISEASE	8	11.59
HEPATITIS	8	11.59
PNEMONIA	2	2.90
SEPTICAEMIC SHOCK	1	1.45
ARF	2	2.90
TOTAL	37	53.62
GRAND TOTAL	69	

Inference: Thus, for majority of cases of maternal mortality . pre-eclampsia and eclampsia were the associated factors. Where as Anaemia was associated with 23.19% cases of maternal mortality also, PPH was responsible for 15.94%of maternal deaths.

Table 09:

CAUSES OF MATERNAL MORTALITY	NO. OF PATIENTS	PERCENTAGE
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TOTAL	37	53.62
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Graph 1 showing correlation between etiology and maternal mortality .

**Discussion:**

In our study majority of cases of maternal mortality , pre-eclampsia and eclampsia were the associated factors. Where as anaemia was associated with 23.19% cases of maternal mortality also, PPH was responsible for 15.94%of maternal deaths. The maternal mortality rate is more as all complicated and highly serious patients from Pune and adjoining districts are referred to Sasoon Hospital for tertiary expertise critical care. Majority of the patients (81%) were between 19-29 years of age. Of which 50.72% patients were between 19-24 years of age and 30.34% were between 25-29 years of age. It can be seen that 52.17% patients were from rural areas and 47.83% patients were from urban areas. It can be seen that

68.12 % patients were from poor socio-economic status and 31.88% patients were from average or good socio economic status. It can be seen that majority of patients (53.62%) were illiterate. Majority of patients (86.96%) were registered at some PHC, sub center, RH private or Sasoon General Hospital, so majority was registered with government or private institutes. 2.03% patients either were or became critical and died within 24 hours of admission, where as 33.33% of patients died after 72 hours during treatment period.

It is commonly acknowledged that the proportion of maternal deaths attributable to abortion is generally underestimated. This is understandable, as many women died in the community and very few were

under observation by physicians from delivery until death, indicating that relatives' reports provided the basis for some portion of the determination of causes of death. Comparatively little is known about the medical etiology of maternal mortality in developing countries, particularly in rural areas. The statement as to cause of death ultimately recorded on death certificates is rarely based on pathological examination or direct observation. Clinicians and laboratory facilities are rarely available to conduct examinations immediately before or after a woman's demise, and formal autopsies are rarely conducted in these settings. Verbal autopsies may provide the only information about the causes of deaths of women who die at home or are travelling to a health facility, but these histories are not dependable. The information on the death certificates of women who survive until they reach such a facility tends to reflect their condition on arrival and the subsequent events. Even data on women who present to a facility in labour and are under medical observation until death are affected by the quality of record-keeping. This varies greatly, depending on the level of training and diagnostic ability of health care providers and on the facility's capacity to conduct diagnostic tests.( 7,8,9)

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The provision of iron supplements to pregnant women is one of the most widely practiced public health measures, yet surprisingly little is known about the benefits of supplemental iron for the mother or her offspring during fetal or postnatal life. The major concern about the adverse effects of anemia on pregnant women is the belief that this population is at greater risk of perinatal mortality and morbidity (5,6). Maternal mortality in selected developing countries ranges from 27 (India) to 194 (Pakistan) deaths per 100000 live births (5, 7). Some data show an association between a higher risk of maternal mortality and severe anemia, although such data were predominantly retrospective observations of an association between maternal hemoglobin concentrations at, or close to, delivery and subsequent mortality.(9)

#### Conclusion:

In our study majority of cases of maternal mortality , pre-eclampsia and eclampsia were the associated factors. Where as anaemia was associated with 23.19% cases of maternal mortality also, PPH was responsible for 15.94%of maternal deaths.

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