Original Research Article

TO EVALUATE SOCIO-DEMOGRAPHIC FACTORS RESPONSIBLE OR RELATED TO MATERNAL MORTALITY IN OBGY DEPT.

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Abstract

Background & Methods: The aim of the study is to evaluate socio-demographic factors responsible or related to maternal mortality. 200 cases of maternal mortality were retrospectively studied.

Results: In our study we found maximum cases in age group of 21-30 i.e. 63.5%. The chi-square statistic is 19.1301. The p-value is .000012. The result is significant at $p < .05$. 57% Maternal Death occurred from Rural Area Patients out of 200 cases of Maternal Death.

Conclusion: High Maternal Mortality reflects not only inadequacy of health care services for mothers, but also a low standard of living and socio economic status of community. In the world as a whole the problem of maternal mortality is principally one of applying existing obstetric knowledge through antenatal, intra natal and post natal services rather than developing new skills. Rural –Urban Ratio is 57% Rural and 43% Urban. Booked/Emergency – 90.5% cases were Emergency and 9.5% cases were booked.

Keywords: socio-demographic, maternal & mortality.
Study Design: Retrospective Study.

1. Introduction

Maternal Mortality Ratio is the ratio of the number of maternal deaths per 100,000 live births. The MMR is used as a measure of the quality of a health care system[1]. Sierra Leone has the highest maternal death rate at 2,000, and Afghanistan has the second highest maternal death rate at 1900 maternal deaths per 100,000 live births, reported by the UN based on 2000 figures. According to the Central Asia Health Review, Afghanistan's maternal mortality rate was 1,600 in 2007. Lowest rates included Ireland at 0 per 100,000 and Austria at 4 per 100,000. In the United States, the maternal death rate was 11 maternal deaths per 100,000 live births in 2005. This rose to 13.3 per 100,000 in 2006. "Lifetime risk of maternal death" accounts for number of pregnancies and risk[2]. In sub-Saharan Africa the lifetime risk of maternal death is 1 in 16, for developed nations only 1 in 2,800.

The historical level of maternal deaths is probably around 1 in 100 births. Mortality rates reached very high levels in maternity institutions in the 1800s, sometimes climbing to 40 percent of birth giving women. At the beginning of the 1900s, maternal death rates were around 1 in 100 for live births[3]. The number in 2005 in the United States is 11 in 100,000, a decline by two orders of magnitude, although that figure has begun to rise in recent years, having nearly tripled over the past decade in California. For the United States, 11 in 100,000 is one of the lowest estimates. Maternal deaths in the United States range up to 17 per 100,000 live births[4].

The decline in maternal deaths has been due largely to improved asepsis, fluid management and blood transfusion, prevention of unintended pregnancy, and better prenatal care. Recommendations for reducing maternal mortality include access to health care, access to family planning services, and emergency obstetric care, funding and intrapartum care[5-6].

2. Material and Methods

Present study was performed in Department of Obstetrics & Gynaecology, Gandhi Medical College (Sultania Zanana Hospital), Bhopal, M.P. on 200 Maternal Mortalities for 02 Years. All the 200 cases of maternal mortality were retrospective studied, causes of these maternal mortalities were evaluated, various socio-demographic factors associated with the maternal death analyzed, and changing trends in maternal mortality analyzed. Following are the details of condition investigated and their definition in the study:

1. **Postpartum hemorrhage:** Any amount of bleeding from or into genital tract following birth of the baby up to the end of puerperium which adversely affects the general condition of the patient evidenced by rise in pulse rate and falling in blood pressure.
2. **Severe Preeclampsia and Eclampsia:** Blood pressure 170/100 mmHg on 2 occasions 4 hours apart or > 170/100 mmHg once plus >0.3 gms in 24 hours proteinuria or >2+on dipstick or diastolic blood pressure >90 mmHg plus proteinuria on one occasion plus one of the following signs or symptoms - Oliguria <30 ml/hours for 2 hours, visual disturbances (flashing light or blurred vision) epigastric pain or tenderness, thrombocytopenia < 100 x 109/L, pulmonary edema.
3. **Sepsis: unsafe abortion,** Dengue, HIV, Toxemia, seems to the most common cause of maternal death.
4. **Anemia:** Severe anemia including APH, other causes are also plays important role indirectly in maternal death.
5. Lack of access to quality maternal health care services.
6. Socioeconomic factors such as poverty, lack of education, and limited access to healthcare facilities.
7. Cultural practices that may hinder timely access to maternal healthcare.
8. Inadequate nutrition and pre-existing health conditions.
9. Lack of skilled births attendants and emergency obstetric care.
10. Geographic barriers and distance to healthcare facilities.

3. Result

Table 1: Maternal Death age wise

Age Group (Years)	Number of Mortality	% of Total Mortality
15-20	54	27%
21-30	127	63.5%
31-40	19	9.5%
41-50	00	0%

In our study we found maximum cases in age group of 21-30 i.e. 63.5%. The chi-square statistic is 19.1301. The p-value is .000012. The result is significant at $p < .05$.

Table 2: Gravida

Area	Number of Mortality	% of Total Mortality
Primi Gravida	115	57.5
Secondary Gravida	28	14
Third or more Gravida	57	28.5

In our study we found maximum in primi gravida i.e. 57.5%.

Table 3: BMI (Kg/m^2)

BMI (Kg/m^2)	No.	% of Total Mortality
Under Weight (<18.5)	58	29%
Normal Range (18.5-25)	36	18%
Over Weight (25-30)	42	21%
Obese (>30)	64	32%

In our study we found maximum mortality in obese i.e. 32%.

Table 4: Showing Percentage of Maternal Death Area wise (Rural & Urban).

Area	Number of Mortality	% of Total Mortality
Rural	114	57%
Urban	86	43%
Total	200	-

57% Maternal Death occurred from Rural Area Patients out of 200 cases of Maternal Death.

Table 5: Showing Percentage of Maternal Death Status wise (Booked & Emergency).

Status	Number of Mortality	% of Total Mortality
Booked	19	9.5%
Emergency	181	90.5%
Total	200	-

90.5% Maternal Death occurred in Emergency cases out of 200 cases.

anemia, abortion

4. Discussion

The US vital statistics system provides useful information on maternal mortality. However, high and increasing maternal mortality rates for older mothers and among non-specific causes of death suggest possible data problems. Quality improvement efforts need to focus on improving the quality and validity of the pregnancy checkbox data. Periodic validation studies and the implementation of data quality checks at both the state and national level are essential to improving reporting[7]. State and Federal agencies should provide training to persons who complete death certificates, which emphasize the importance of correct reporting of the pregnancy checkbox information. A percentage of records, including 100% of records for women ≥40 or coded to non-specific causes, should be routinely queried back to the certifier to confirm the fact of pregnancy[8]. Given concerns about over-reporting with the pregnancy checkbox, it is illogical to continue to use it as the sole means of identifying maternal deaths. Further identifying and excluding incidental causes of death, as well as changes to coding to decrease the near-exclusive reliance on the checkbox to identify maternal deaths might improve data quality. Finally, the recent growth in state maternal mortality review committees can improve data quality, but only if information from maternal mortality reviews is used to update vital statistics information on the cause and circumstances of death[9].

Most of the cases of maternal death occurred in age group 21-30 years, i.e. 63.5% and 27% occurred in teen age 15-20 yrs. Teen agers more likely to be anaemic, so any type of obstetric hemorrhage gets aggravated. There is increases risk of Hypertensive disorders in pregnancy, PTL, IUGR in babies, thus have greater calorie requirement then older women[10].

Most of the cases of maternal 43% from urban areas that shows persistent lack of medical services and referral facilities.

Out of all cases 85.40% cases reported with ANC and 14.59% cases were PNC. Maternal deaths mostly occurred in primi, of total maternal deaths. Hypertensive disorders CPD and uterine inertia are more common in primi patient.

5. Conclusion

High Maternal Mortality reflects not only inadequacy of health care services for mothers, but also a low standard of living and socio economic status of community. In the world as a whole the problem of maternal mortality is principally one of applying existing obstetric knowledge through antenatal, intra natal and post natal services rather than developing new skills. Rural –Urban Ratio is 57% Rural and 43% Urban. Booked/Emergency – 90.5% cases were Emergency and 9.5% cases were booked.

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