Maternal Near-Miss Obstetric Events and Maternal Mortality

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ABSTRACT

Aim: To know about the prevalence, characteristic and nature of near miss events and to relate the nature of near miss events with that of maternal mortality.

Study design: Descriptive cross sectional study

Place and duration of study: Department of Obstetrics & Gynecology Unit IV, LUMHS Jamshoro from 1st January 2020 to 31st December 2020

Methodology: Pregnancy outcomes segregated into maternal death, near-miss event, or live birth categories. Age, level of education, religion, and residence were socio demographic variables. Obstetrics characteristics and nature of maternal near-miss events also studied.

Result: The prevalence of maternal near-miss event was 5.6%, and the maternal near-miss events were seen more in multigravida, pregnant women with the lack of antenatal care in referral cases. Live birth as fetal outcome was 75%. The maternal death to near-miss ratio in this study was 1:5. 44 (42.3%) postpartum haemorrhage and 28 (26.9%), hypertensive disorders cases were leading cause of maternal near-miss events.

Conclusion: Every fifth women who survived life-threatening complications, one died. Maternal near-miss should be adopted as an indicator for evaluating maternal health services.

Keywords: Maternal near-miss (MNM), Maternal mortality, Life-threatening complication

INTRODUCTION

Demise of a mother during labor hits the foundation of the family.¹ The discouraging actuality behind this figure is that the majority of the maternal expiries can be prevented.² Maternal mortality is a significant pointer for the estimation of maternal wellbeing.³ Pregnant ladies' wellbeing status isn't reflected by death markers only. Subsequently, the idea MNM is adept for the current health giving framework.^{4,5} Maternal near-miss (MNM) case is described as "a woman who nearly died but survived a complication that occurred during pregnancy, childbirth, or within 42 days of termination of pregnancy".⁶ Investigation of MNM cases assists with recognizing what turns out badly in pregnancy related care.⁷⁻¹⁰ It features the nature of obstetrics care and gives significant data in distinguishing the elements that lead to maternal passing.¹¹⁻¹⁴

Near-miss/SAMM cases are of extensive interest to obstetricians and medical services chiefs as it help assess the inadequacies in ladies medical care offices and recognize the potential zones.¹⁵ Maternal near-miss helps in coming to an obvious conclusion of the course of occasions which at last finished in maternal demise. This idea likewise permits inception of mindfulness based preventive projects to upgrade the nature of maternal medical care. Examination of maternal mortality with these cases helps in inspecting individual, social, monetary, and underlying indicators of maternal mortality.¹⁶ Compelling execution of the MNM idea will help examine the high-

hazard bunch, plan applicable intercessions for managing obstetric crises, and build up the whole medical services arrangement for empowering good result.¹⁷ Burden of MNM events is high and these need to be identified and managed at the earliest.³

We get an enormous number of referred cases from a large portion of the provincial hospitals of whole Sindh what's more, which here and there land up in mortality so we arranged this study to discover the recurrence of maternal MNM occasions and compare at the idea of MNM events with maternal demise. What's more, as indicated by WHO measures, exact insights are most certainly not accessible from these moms. Thinking about this hole and need for total data for strategy and choice making on decreasing maternal horribleness and mortalities, the motivation behind this study was to determine the prevalence, characteristic and nature of MNM events, socio demographic and obstetric determinant factors associated with these, to compare the nature of MNM events with that of maternal mortality.

MATERIALS AND METHODS

This cross sectional descriptive study conducted in the Department of Obstetrics & Gynecology, LUMHS Jamshoro from 1st January 2020 to 31st December 2020. Women who had a spontaneous abortion or other pregnancy loss excluded from the study. Pregnancy outcomes segregated into maternal death, near-miss event, or live birth categories. Age, level of education, religion, and residence were socio demographic variables. Obstetrics characteristics and nature of MNM events also studied. All data entered into SPSS-24.

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RESULTS

The socio demographic detail of the present study indicates that 75% of the women were in the age group of 20 to 30 years. 63% of the women residing in the rural areas while 36.5% from urban areas. The women with no formal education were more than twice those of primary and secondary educated women. 89.4% were Muslim women while 10.6% were non-Muslim. 75.9% of the patients were in third trimester at the gestational age of more than 32 weeks. Whereas 15.4% were postnatal and 8.7% were less than 32 weeks (Table 1).

Table 1: Demographic information of the women (n=104)

Variable	No.	%
Age (years)		
< 20	9	08.6
20-30	78	75.0
> 30	17	16.3
Residence		
Urban	38	36.5
Rural	66	63.5
Education		
No formal education	72	69.2
Primary	25	24.0
Secondary education	7	06.7
Religion		
Muslim	93	89.4
Non-Muslim	11	10.6
Gestational age (weeks)		
28 – 32	9	8.7
> 32	79	75.9
Postnatal	16	15.4

Table 2: Prevalence and attributes of MNM events

Variable	No.	%
Referral status		
Self-referred	37	35.6
Referred from primary health facility	49	47.1
During Hospitalization	18	17.3
Booking status		
Booked	36	34.6
Un-booked	68	65.4
Hospital stay		
HDU	26	25.0
ICU	13	12.5
Ward admission	65	62.5
Fetal outcome		
Live birth	78	75.0
Still birth	10	9.6
Early neonatal death	16	15.4
Antenatal care		
Yes	23	22.1
No	61	58.6
Gravidity		
Prime gravid	46	44.1
Multigravida	54	51.9
Maternal death		
Maternal death to MNM ratio	1:5	

There were 2024 obstetric admissions, where number of deliveries are 1941. Out of which 1869 were live births and 104 (5.6%) were maternal MNM cases. From the MNM cases, 18 (17.3%) were hospitalized and remaining were referred cases out of which 35.6% were self-referred and

47.1% were referred from primary health facility. 34.6% patients were booked while 65.3% were un-booked. 12.5% women were admitted to ICU with the MNM, 25% were admitted in high dependency unit and 62.5% MNM were in the ward. As for fetal outcome, 75% were live birth, 9.6% were stillbirth and 15.4% were early neonatal death. 58.5% did not take antenatal care whereas 22.1% took the antenatal care. 59.1% of the woman with MNM cases were multigravida whereas 44.2% were prime gravid (Table 2). From the causes of MNM, 14 (13.4%) were sepsis cases, 44 (42.3%) were postpartum haemorrhage, 18 (17.3%) were ruptured uterus and 28 (26.9%) were Hypertensive disorders cases. From total sepsis cases 10 (9.6%) were MNM and 4 (3.8 %) was maternal death. From total Postpartum Haemorrhage cases 36 (34.61%) were MNM and maternal death was 8 (7.69%). From total of Ruptured uterus cases 16 (15.38%) were MNM cases and 2 (1.92%) maternal deaths. From total of Hypertensive disorders cases 25 (24.03%) were MNM with the mortality rate of 3 (2.88%) (Table 3).

Table 3: Nature of MNM (n104)

Nature of MNM	Total	%	MNM	%	Mortality	%
Sepsis	14	13.4	10	9.6	4	3.8
Postpartum haemorrhage	44	42.3	36	34.61	8	7.69
Ruptured uterus	18	17.3	16	15.38	2	1.92
Hypertensive disorders	28	26.9	25	24.03	3	2.88

DISCUSSION

Maternal mortality was utilized to address the nature of obstetric consideration yet better evaluation of obstetrical consideration presently incorporates MNM cases and events to be a valuable apparatus for assessment of maternal mortality. To handle maternal passing, clear comprehension of the pervasiveness and properties in a given setting is vital.

In the current study, the pervasiveness of MNM cases was 5.6%. The maternal demise to approach miss proportion was 1:5. This demonstrates that for each 5 ladies who survived life threatening complications, one passed on. This finding is in accordance with other study demonstrating maternal demise to MNM proportion 1:5.¹⁰ This proportion is characteristic of the norm of obstetrical consideration the unit offers. This is as opposed to what saw in underdeveloped nations of the world. Studies completed in Europe¹⁸ uncovered a proportion of 1:117, though in Nigeria¹⁹ the proportion is 1:11.

Present study has found the hospitalized patients provided with immediate care within the hospital so less MNM event occurred while self-referral and referred from primary health facility care was delayed so high MNM events observed. This finding is in line with the Tigray regional state hospitals with instant care provided for hospitalized patients²⁰ and in line with the morocco study where delayed occurred in providing care to the referral case.²¹ Most referred from other health facilities due to poor infrastructure and/or inability of health personnel in managing the conditions, leading to delay.²² The cases of MNM were less likely for those who were booked. This

finding is similar with the observations made by other authors.²³⁻²⁵

The ICU admission with MNM was 12.5%, which is lower than HDU and ward admission. This finding is in line with the figure observed in other studies.^{26,27} The low rate of ICU admission indicates a shortage of ICU beds as the hospital has a common ICU with a few beds for obstetric patients. As for the fetal outcome, live birth observed to be 75%, stillbirth reported as 9.6% of MNM and early neonatal death identified to be 15.4%. This findings is contrary with WHO multi-country survey where the risk of late fetal deaths and early neonatal mortality to be significantly higher.²⁸

Moms with no ANC were threefold bound to have a maternal MNM event contrasted with moms who got Antenatal consideration. This finding is in accordance with the investigations directed in Ethiopia where they tracked down a comparative connection between Antenatal consideration and maternal MNM cases.^{29,30}

Present investigation found that multigravida moms were at expanded danger of maternal MNM contrasted with primigravida moms. It is validating with the Philippines study.²⁹ Therefore, education and family planning methods should be encouraged.

Around the world, practically all reasons for maternal mortality and MNM are preventable.²² The significant reasons for maternal MNM distinguished in this study; 34.61% were postpartum hemorrhage, 24.03% hypertensive disorders, 15.38% ruptured uterus 9.6% sepsis. This finding is similar to what reported previously in the WHO multi country survey (31) where PPH was the cause of severe maternal morbidity in women from Pakistan.³² Abdollahpour³³ in his systemic review and met analysis of 49 research articles reports the global prevalence of Maternal MNM of 18.67/1000, in his conclusion he tells us about the critical and direct connection among MNM and maternal demise. This implies that vacillations in a single lead to another change. Subsequently, the maternal mortality record can be thought of as the most dependable pointer in the evaluation of maternal wellbeing. In view of this file, nations ought to set up a public medical care framework for increment standard and wellbeing practices of health suppliers

CONCLUSION

The burden of MNM and severe morbidity in our hospital is high. This translates to a significant adverse effect on maternal and foetal outcomes and a burden on health services, so. Strategies should be developed to identify life-threatening conditions early, so that such cases reach the appropriate facility in time to prevent maternal and perinatal mortality and morbidity. Quality antenatal, essential and emergency obstetric care should be made available and accessible to all. Further, the availability of HDO and ICU would be of help to patients of severe MNM because of timely care provided by the facilities.

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