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Research Article

Obstetric emergencies: preparedness among nurses for safe motherhood

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ABSTRACT

Background: Obstetric emergencies may turn catastrophic in women's as well as obstetrician's life. In the event of real emergency, all prior preparations may fall deficient. Every little contribution towards safe confinement brings about large reductions in maternal mortality and morbidity.
Methods: Cross-sectional questionnaire based study carried out on nurses involved in perinatal care of parturient conducted at the Dept of Obstetrics & Gynecology of PCMS & RC, Bhopal.
Results: Total study participants were 36 (100% response rate). Majority (83%) were aware about the two leading causes of maternal mortality (PE, PPH). Twenty four (67%) knew the warning signs of eclampsia and 61% knew the signs of eclampsia but only 17% were aware of $MgSO_4$ toxicity. Only 56% could correctly prepare the loading dose of $MgSO_4$. All were aware about PPH; however only17% knew methergine as the drug for active management. Grossly wrong attitude noted only in 27% for PPH and 27% for severe PE. Overall preparedness for emergency was satisfactory in LR and PNC.
Conclusions: Though the overall awareness for identifying emergencies (PE, PPH) was satisfactory, lacunae in awareness were noted about components of eclampsia, magnesium toxicity and drugs required for initial management of PE and PPH. Preparedness of nurses in labour room and postnatal ward was fairly good. Regular assessment of awareness & preparedness for obstetric emergencies would be desirable to optimize the overall delivery outcomes especially at peripheral rural centres where nurses are primarily involved in the care of labouring women.

Keywords: Preparedness, Labour, Obstetric emergencies

INTRODUCTION

Pregnancy is a normal healthy state that most women aspire to at some point in their life. Emergency obstetric care is a set of critical lifesaving functions commonly called signal functions provided by a health care facility throughout the day and week. Obstetric complications can neither be predicted nor be prevented but can be managed by timely provision of life saving services. Obstetric emergencies may turn catastrophic in women's as well as obstetrician's life. In the event of real emergency, all prior preparations may fall deficient. Maternal death is usually the end result of inadequately or inappropriately managed complications arising during pregnancy and child birth.

Although we have registered a significant fall in maternal mortality ratio from 725 (1982) to 212 (2011) yet to achieve the target of Millennium Development Goal (200 per lakh live births).[7] Postpartum hemorrhage and preeclampsia (PPH and PE) are the leading causes of maternal mortality accounting for about 25% and 12% of maternal deaths respectively.[1,2]

The time of onset of life threatening complications to receive appropriate treatment encounters delay at three

stages: 1) Failure to recognize the significance of problem by the women and her family. 2) Delay in referral due to distances, difficult access or transport facilities. 3) Delay in initiating the treatment once woman reaches the facility. In our study, we are assessing the cause for 3rd delay where gap exists in identification, prompt action or preparedness of emergency unit for such emergencies. Proper knowledge about identification signs, emergency measures to be taken and well equipped obstetric unit can reduce maternal mortality by almost 35-40%.[3] As the nurses form an integral component of our health care system, their awareness and preparedness for obstetric emergencies attains paramount importance.

Current study was undertaken to assess the awareness and preparedness of nurses for Pre-eclampsia and post-partum hemorrhage, the two leading causes of maternal mortality in our country.

METHODS

This was a cross sectional study conducted in the Department of Obstetrics and Gynecology of medical college hospital of central India in the year 2014. The study was approved by the institutional ethics committee. A multiple choice based questionnaire was used for the assessment of preparedness of nursing staff for the obstetrics emergencies. The questionnaire was divided into three sections.

a) Assessed the clinical knowledge of nurses for identification of the two obstetrics emergencies.
b) Assessed the attitude and initial response after identification of emergencies.
c) Audited the overall preparedness of nurses working in labour room and postnatal ward for such emergencies.

All nurses providing obstetric care to the women in labour and post natal period were offered voluntary participation in the study after explaining about the items of questionnaire in detail. The study participants could opt out of the study at any point of time and stage of the study. Written informed consent from all study participants was obtained. The items in questionnaire were graded to assign the scores and overall analysis was done according to the choices made by them.

RESULTS

The questionnaire was administered to 36 (N) nurses of which all agreed to participate in the study (100% response rate). The questionnaires were collected, data was analysed and results were computed. Majority of nurses (92%) had total working experience of less than two years either in a government or a private hospital.

Awareness about pre-eclampsia (PE)

Although all study participants were aware of the two emergencies, only 36% knew them as the leading causes of maternal mortality. Regarding pre-eclampsia, about 61% knew all the components of eclampsia correctly and 67% were aware of warning signs of pre-eclamsia. Although 56% knew the loading dose of $MgSO_4$, only 16.67% were totally aware of $MgSO_4$ toxicity. The Scores were calculated about awareness of PE and it was noted that only 36% nurses could score between 11-15 whereas 8% nurses scored poorly (Table 1, Figure 1).

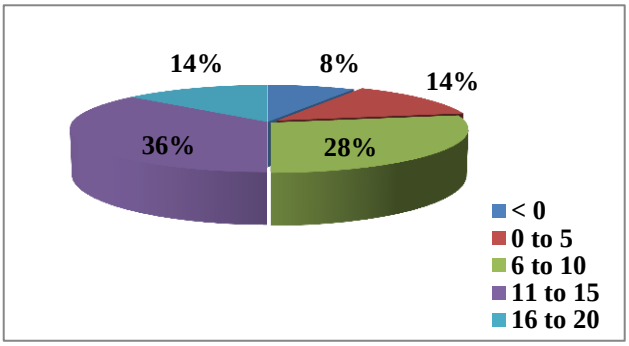

Figure 1: Awareness about preeclampsia in relation to scores.

Awareness about postpartum hemorrhage (PPH)

On similar assessment about PPH, we observed that almost all (100%) were able to define PPH. Majority (90%) knew methargin as the drug of choice for active management. Correct drug content of oxytocin ampoule was known to 61% whereas cautions to be taken while administering prostaglandins was correctly opted by 47% nurses. Overall scores of awareness about PPH ranged between 11-15 among 36% while below 0 among 6% of nurses (Table 2, Figure 2).

Table 1: Awareness about preeclampsia.

Sr. No.	Items related to Pre-eclampsia awareness (scores)	Correct (4)	Partially correct (2)	Incorrect (-2)	Not attempted (0)
1	As a leading causes of maternal mortality	13 (36%)	17 (47%)	6 (17%)	-
2	Components of eclampsia	22 (61%)	4 (11%)	10 (28%)	-
3	Warning signs of pre-eclampsia	24 (67%)	10 (28%)	2 (6%)	-
4	Signs of $MgSO_4$ toxicity	6 (17%)	17 (47%)	13 (36%)	-
5	loading dose of $MgSO_4$	20 (56%)	10 (28%)	6 (17%)	-

Table 2: Awareness about post-partum hemorrhage.

Sr. No.	Awareness about PPH	Correct (4)	Partially correct (2)	Incorrect (-2)	Not attempted (0)
1	Identification of PPH	36 (100%)	-	-	-
2	Drug for active management	6 (17%)	26 (72%)	4 (11%)	-
3	Awareness about oxytocin	22 (61%)	-	11 (31%)	3 (8%)
4	Awareness about prostaglandin PGF2α	17 (47%)	-	19 (53%)	-
5	PPH as cause of Maternal death	24 (67%)	-	12 (33%)	-

Table 3: Attitude towards obstetric emergencies (PE & PPH).

Sr. No.	Attitude in managing clinical conditions related to PE and PPH	Right	Partially right	Negligent	Grossly wrong
1	Eclampsia	20 (56%)	5 (14%)	8 (22%)	3 (8%)
2	PNC with impending eclampsia	21 (58%)	6 (17%)	2 (6%)	7 (19%)
3	Post-partum hemorrhage	20 (56%)	10 (28%)	2 (6%)	4 (11%)
4	APH with shock	22 (61%)	8 (22%)	4 (11%)	2 (6%)
5	PNC with haematoma	16 (44%)	13 (36%)	3 (8%)	4 (11%)

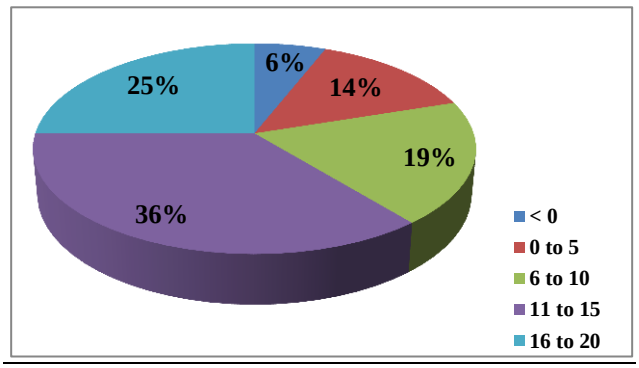

Figure 2: Awareness about post-partum hemorrhage in relation to scores.

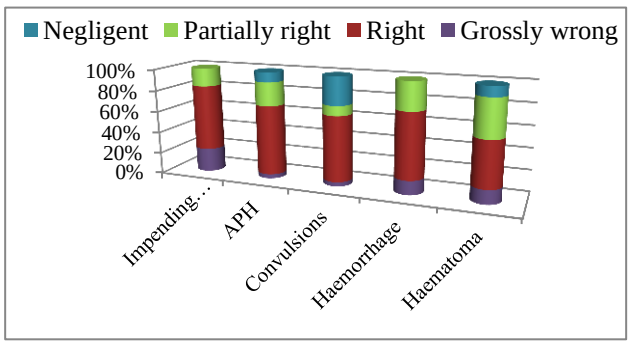

Figure 3: Attitude towards obstetric emergencies (PE & PPH).

Attitude towards obstetric emergencies PE and PPH

The attitude of study participants in different emergency conditions and their promptness to take action was assessed. Overall, 56% correctly responded to conditions of ANC with convulsions and PNC with haemorrhge. Around 8% showed grossly wrong attitude in managing convulsions and 11% in managing haemorrhage in a Post natal case. Almost 58% showed promptness in managing a woman with impending eclampsia. More than 50% were having correct attitude for managing PNC with haematoma (Table 3, Figure 3).

Preparedness for obstetric emergencies among nurses

Overall preparedness among nurses for obstetric emergencies in labour room and postnatal ward was assessed. About 87% were correctly aware about the availability of emergency kit in wards, 93% were aware about the storage place of emergency tray in case of emergency and 70% were aware about the availability of drugs in emergency tray. About 77% were correctly aware about the quantity of emergency medications available and were doing a check of expiry of emergency medications (Table 4).

Table 4: Preparedness for obstetric emergencies among nurses.

Awareness of nurses for	Yes	No
Storage of emergency tray	28 (93%)	2 (7%)
Availability of drugs in emergency tray	21 (70%)	9 (30%)
Quantity & expiry of drugs	23 (77%)	7 (23%)
Emergency kit	26 (87%)	4 (13%)
Functional O_2 supply	29 (97%)	1 (3%)

DISCUSSION

Pregnant women because of their special physical and psychological needs are particularly vulnerable to life altering events during labour and postpartum period. Unfortunately all preparations made in advance can fall

short at the time of real emergency or may have to be drastically altered in the event of true emergency. Adequate preparedness and readiness for managing emergency crisis can significantly alter the survival of women in labour or postpartum. Nursing staff form an integral and important component of maternal health care delivery system and their contribution in the event of complication as a part of team can be of paramount significance. In our country, where we are already facing the challenge of ensuring institutional delivery for all, the role of paramedical and nursing staff further becomes important in curtailing down the MMR.

In the study conducted by Mariyam Sarfraz and Saima Hamid**,** the authors highlighted the gaps between the technical knowledge and clinical skills of community mid wife's resulting in a sub optimally trained health worker, not prepared to work in the resource poor community setting.[4] Quantitative assessments of community midwives and their training schools from several districts of Pakistan revealed that the CMWs began their work with inadequate knowledge and skills. A skill assessment of 106 CMWs from six rural districts showed that trained CMWs lack knowledge of and basic skills relevant to maternal and new-born care.[5] In our study although overall awareness about PE and PPH, the leading "killers" was fairly good yet we observed poor scores in early identification of eclampsia and preeclampsia in about 30% of staff. Similarly, for PPH, awareness about commonly used oxytocics was seen fairly in about two third of staff only.

In a study conducted by Baack S, et al authors revealed that most nurses were not confident in their abilities to respond to major disaster events. The nurses who were confident were more likely to have had actual prior experience in disasters or shelters.[6] In our study, the attitude or initial response of study participants in different emergency situations of PE and PPH was correctly noted in only half (56%) of the staff.

In our study, overall preparedness in wards and labour room for obstetric emergencies was fair in terms of awareness about emergency drugs, their availability, their functional status and expiry. A regular check or audit of preparedness can cut short the response time in wake of real emergency situations.

CONCLUSIONS

Though the overall awareness for identifying emergencies (PE, PPH) was satisfactory, lacunae in awareness were noted about components of eclampsia, magnesium toxicity and drugs required for initial management of PE and PPH. Preparedness of nurses in labour room and postnatal ward was fairly good. Regular assessment of awareness & preparedness for obstetric emergencies would be desirable to optimize the overall delivery outcomes especially at peripheral rural centres where nurses are primarily involved in the care of labouring women.

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