Knowledge of danger signals of pregnancy among clients of maternal health services in tertiary care teaching hospital, Pune

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ABSTRACT

Background: India is among countries with a high maternal mortality rate. Every pregnant woman is at risk of developing pregnancy-related complication. It is not understood if and how the information and education on danger signals of pregnancy; translates into appropriate actions when a woman experiences a danger signal. Knowledge and recognition of danger signals during pregnancy would result in timely emergency obstetric care. **Aims and Objectives:** This study aims to determine the knowledge of key danger signals of pregnancy and its associated factors among the clients of maternal health services in tertiary care teaching hospital, Pune. **Materials and Methods:** This was a cross-sectional study conducted in obs. and gyne. dept. of tertiary care hospital for a period of 1 month that enrolled 55 eligible women who attended ANC and PNC clinic within study period. Ethical approval for the study was obtained from the IEC. The women were interviewed using a pre-tested questionnaire. All the women attending ANC and PNC clinic with a minimum of four ANC visits qualified the women for the inclusion in the study. Data analysis was performed using SPSS Version 20. The analyzed data were presented in suitable tabular format. **Results:** Out of 55 mothers, 43.6% know about four or more danger signals whereas 56.4% have knowledge of <4. The most recalled danger signals by the clients was labor pain before 8 months (70.9%), while no one is aware about the danger signal failure of placenta to come out (0%). **Conclusion:** This study indicated that the knowledge level of women regarding danger signals of pregnancy was low and affected by education level. Therefore, the identified deficiencies in awareness should be addressed through maternal and child health services.

Key words: Knowledge; Danger signals; Pregnancy

INTRODUCTION

At the country level, India accounts for 15% of all global maternal death.[1] The major causes of maternal death in India include hemorrhage, (25%), infections (15%), unsafe abortion (13%), eclampsia (12%), obstructed labor (8%), other direct causes (7%), and indirect causes (20%).[2] Most of these causes are preventable especially if women with such complications seek help early. Delay to access to obstetrics care has been categorized into four and they include delay in recognizing the danger signals, delay in deciding to seek care, delay in reaching the health facility, and delay in receiving care at the health facilities.[3]

Awareness of the danger signals of pregnancy is thus the first step to seeking appropriate and timely referral to emergency obstetrics care and this reduces the first and second delays.[3,4] Danger signals of pregnancy though not the actual obstetrics complications are symptoms that are easily recognized by women, her family, and members of the community and include any vaginal bleeding during pregnancy, heavy vaginal bleeding during and following

delivery, especially if the woman is feeling weak and faint, severe headache/blurring of vision, convulsions or loss of consciousness, labor pains lasting more than 12 h, labor pains before 8 months or 32–36 weeks of pregnancy, premature rupture of the bag of waters or leakage of water from uterus membranes, leaking, etc., failure of the placenta to come out within 30 min after delivery, and baby stops kicking inside the womb.[5]

Awareness of the danger signals of pregnancy by the women and their families will enable them to seek care promptly with effect that maternal morbidity and mortality could be reduced and this has implications in the realization of the Sustainable Development Goal number 3 which has as one of the target indicators, the reduction of global maternal mortality ratio to <70/100,000 live births by 2030.[6] The aim of the study was to determine the knowledge of key danger signals of pregnancy and its associated factors among the clients of maternal health services in tertiary care teaching hospital, Pune.

MATERIALS AND METHODS

The current study was a cross-sectional study and was conducted in obs. and gyne. dept. of tertiary care teaching hospital for a period of 1 month. The study population consisted of women who attended antenatal and also postnatal care in the obs. and gyne dept. of the same hospital. Sample size included all the women attending ANC and PNC in obs. and gyne dept. of tertiary care teaching hospital within study period. A minimum of four ANC visits qualified the women for the inclusion in the study. Ethical approval for the study was obtained from the IEC before start of the study. Permission from concerned hospital authorities was obtained for the conduction of study. Participation in the study was voluntary and participants were assured that there would be no victimization of clients who refused to participate or who decided to withdraw from the study after giving consent. The study instrument was a pre-tested questionnaire. The women were interviewed using a pre-tested questionnaire.

Study variables
Age
Age was recorded to the nearest completed year.[7]

Education
Study participants were asked about their highest educational standards.[7]

Socioeconomic status
According to modified BG Prasad classification.[8]

Gravidity
The number of times that a woman has been pregnant.[9]

Primigravida
Woman pregnant for the 1st time.[9]

Multigravida
Women pregnant more than 1 time.[9]

Parity
The number of times that she has given birth to a fetus with a gestational age of 24 weeks or more, regardless of whether the child was born alive or was stillborn.[9]

Outcome measure
The outcome measure of the study was client's good knowledge of the key danger signals of pregnancy and it was assessed by the proportion of the client's in the two groups who recalled four or more of the nine key danger signals of pregnancy, that is, adequate and less than 4, that is, not adequate. The nine danger signals included: (i) Any vaginal bleeding during pregnancy, (ii) heavy vaginal bleeding during and following delivery, especially if the woman is feeling weak and faint, (iii) severe headache/blurring of vision, (iv) convulsions or loss of consciousness, (v) labor pains lasting more than 12 h, (vi) labor pains before 8 months or 32–36 weeks of pregnancy, (vii) premature rupture of the bag of waters or leakage of water from uterus membranes, leaking, etc., (viii) failure of the placenta to come out within 30 min after delivery, and (ix) baby stops kicking inside the womb.[5]

Statistical analysis
Data collected were entered into MS Excel. Data analysis was performed using Statistical Package for the Social Sciences (SPSS) Version 20. The analyzed data were presented in suitable tabular format. Qualitative data were expressed using frequency and percentage. $P<0.05$ was considered as statistically significant.

RESULTS

Fifty-five ANC and PNC mother participated in the study. Age ranged between 20 and 35 years. Of them 25 (45.5%) belonged to ≤25 years, 22 (40.0%) belonged to 26–30 years, 06 (10.9%) belonged to 31–35 years, and 02 (03.6%) belonged to >35 years. Among all participants, 37 (67%) belonged to urban and rest, that is, 18 (33%) were from rural origin. Out of 55 participants, 3 (6%) belonged to socioeconomic Class I, 14 (25%) to Class II, 22 (40%) to Class III, 14 (25%) to Class IV, and 2 (4%) to Class V. No significant association was found with age, location, and socioeconomic status when compared with knowledge of danger signals, as shown in Table 1.

Table 1: Knowledge of danger signals amongst clients of maternal health services presented by sociodemographic characteristics (age, location, and socioeconomic status)

Sociodemographic characteristics (Age, location, socioeconomic status)	Score group		Total	Chi-square value/Fisher's exact test (#)	P-value
	Adequate	Not adequate			
Age group (years)					
≤25	12	13	25	3.110	0.366#
26–30	8	14	22		
31–35	4	2	6		
>35	0	2	2		
Location					
Rural	9	9	18	0.441	0.570
Urban	15	22	37		
Socioeconomic status					
Class I	1	2	3	1.270	0.929#
Class II	5	9	14		
Class III	11	11	22		
Class IV	6	8	14		
Class V	1	1	2		

Table 2 describes that out of 55 mothers, only 5 (9.0%) had no formal education, rest all, that is, 50 (91%) respondents had some sort of education varying from primary to postgraduate level. A significant association was found between knowledge of danger signals and education of respondents indicating that higher education leads to more knowledge. No such association was found with education of husbands.

Out of the total participants, 38 (69%) were multigravida and rest 17 (31%) were primigravida, among which 37 (67%) do not have gone through any type of abortion whereas 18 (33%) had a history of some form of abortion. Thirty-two (i.e., 58%) had their last delivery at hospital whereas 4 (7%) had last delivery at home. Rest 19 (i.e., 35%) had not delivered yet, which include study participants with parity as 0. When compared with knowledge of danger signals and gravida, no significant association was found. Similar was the result with abortion, but place of last delivery shows a significant association with knowledge of danger signals (Table 3).

Out of 55 mothers, 24 (43.6%) know about four or more danger signals (i.e. adequate) whereas 31 (56.4%) had knowledge of less than 4 (i.e. not adequate). The most recalled danger signal among the respondents was labor pain 39 (70.9%) before 8 months or 32–36 weeks of pregnancy followed by any vaginal bleeding during pregnancy 35(63.6%). The least recalled danger signal was failure of placenta to come out within 30 min after delivery, that is, 0 (0%), as shown in Table 4.

DISCUSSION

This institutional-based cross-sectional study assessed the knowledge of key danger signals of pregnancy among clients of maternal health services.

Table 2: Knowledge of danger signals amongst clients of maternal health services presented by sociodemographic characteristics (education)

Sociodemographic characteristics (education)	Score group		Total	Fisher's exact test value	P-value
	Adequate	Not adequate			
Education of respondents					
No formal education	2	3	5	11.890	0.014
Primary	5	14	19		
Secondary	6	12	18		
Higher secondary	9	2	11		
Graduate	1	0	1		
Postgraduate	1	0	1		
Education of husband					
No formal education	0	2	2	7.520	0.086
Primary	5	8	13		
Secondary	9	17	26		
Higher secondary	6	1	7		
Graduate	4	3	7		

Table 3: Knowledge of danger signals amongst clients of maternal health services presented by obstetric characteristics

Obstetric characteristics	Score group		Total	Chi-square value	P-value
	Adequate	Not adequate			
Gravida					
Primigravida	9	8	17	0.866	0.391
Multigravida	15	23	38		
Abortion history					
Yes	10	8	18	1.540	0.255
No	14	23	37		
Place of last delivery					
Home	4	0	4	6.390	0.037
Hospital	11	21	32		
NA	9	10	19		

Table 4: Knowledge (question wise) of danger signals of pregnancy by clients of maternal health service

S. No.	Questions	Frequency*	Percentage
Q1.	Any vaginal bleeding during pregnancy	35	63.6
Q2.	Heavy vaginal bleeding during and following delivery	8	14.5
Q3.	Failure of placenta to come out within 30 min after delivery	0	0
Q4.	Premature rupture of the bag of water or leakage of water from uterus membranes	29	52.7
Q5.	Labor pain before 8 months or 32–36 weeks of pregnancy	39	70.9
Q6.	Convulsions or loss of consciousness	24	43.6
Q7.	Severe headache/blurring of vision	10	18.2
Q8.	Labor pains lasting more than 12 h	9	16.4
Q9.	Baby stops kicking inside the womb	32	58.2

*Multiple responses

In our study, among 55 women's, majority, that is, 31 (56.4%) had knowledge of three or less danger signals and rest, that is, 24 (43.6%) knew about four or more danger signals. Ossai and Uzochukwu[10] (2015) in his study found a minor proportion of the respondents, that is, 17% did not recall any of the danger signals. In a study on the knowledge of obstetric danger signs and birth preparedness practices among women in rural Uganda, 19% of the respondents were aware of three or more of the danger signs,[11] and in a community-based study in Kaduna, Nigeria, 18.3% of the respondents were aware of four or more of the danger signs of pregnancy.[12] This might be due to methodology difference, sociodemographic characteristic difference, and health intervention activities in these areas. This difference in proportion of respondents that were aware of, and also recalled the danger signals of pregnancy in this study when compared to that from others, could be attributed to the fact that health education in the form of health talks during antenatal care has become an integral part of services being rendered at the health centers in the study area. The providers of antenatal care were also trained specially for this purpose. The clients proved that they understood the danger signals of pregnancy by the quality of the recalls they made as compared with other findings above.

The most recalled danger signal among the respondents in our study group was labor pain 39 (70.9%) before 8 months or 32–36 weeks of pregnancy followed by any vaginal bleeding during pregnancy 35 (63.6%).

In contrast to our study, Ossai and Uzochukwu[10] (2015) in his study found vaginal bleeding to be the most recalled danger sign among the respondents. Demissie et al.,[13] (2015) in his study in Southwest Ethiopia, also found that vaginal bleeding (66.8%) was most recalled danger sign. Similarly, in a study done by Hailu and Berhe[14] (2013) in Ethiopia the most common spontaneously mentioned danger signs were vaginal bleeding. Bogale and Markos[15] (2015) in Goba district of Ethiopia found that vaginal bleeding was the most recognized obstetric danger sign all during pregnancy.

The reason for difference with our study is may be due to the fact that all above-mentioned studies have been done in West African countries where vaginal bleeding might be most counseled danger sign.

Furthermore, the least recalled danger signal in our study was failure of placenta to come out within 30 min after delivery, that is, 0 (0%). In contrast to our study, Ossai and Uzochukwu[10] (2015) in his studies found swollen hands and feet to be the least recalled danger sign and in a study in rural Tanzania, fever was the least informed and also least recalled key danger sign.[16] This discrepancy might be due to the deference in sociocultural and socioeconomic variations in these study settings.

In our study among all the clients of maternal health services, their education and place of last delivery were the significant factors that affected client's good knowledge of the danger signals of pregnancy. Hailu and Berhe[14] (2013) in Ethiopia found similar results in his study. Ossai and Uzochukwu[10] (2015) also found education as a significant factor affecting respondents' good knowledge in his respective study. Similarly, study done in Indonesia showed that as educational status increases awareness and is believed to be the most powerful influencing factor to increase women's knowledge about danger signals of pregnancy.[17,18]

CONCLUSION

In this study, although majority of the women attended antenatal care and generally had low awareness of danger signals of obstetric complications. Educational status of the respondents and place of last delivery were significantly associated with knowledge of women about danger signals.

Recommendations
We recommend the following to increase awareness of danger signals of obstetrical complications:
- To improve quality of counseling to women on health messages, especially danger signals of obstetric complication, and involving husbands and other family

members in antenatal and postnatal care.
- To have poster of danger signals which can be put outside O.P.D.
- To intensify provision of formal education as emphasized in the second millennium development goal to enable women better understand information given.

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