# **Original Research Article**

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# Assessment of birth preparedness and complication readiness among pregnant women in rural area of Chhattisgarh: a community based cross-sectional study

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### **ABSTRACT**

**Background:** Neonatal and maternal mortality are the major concerns in the country mainly due to the "three delays" in seeking, reaching, and obtaining appropriate care. Birth preparedness and complication readiness (BPACR) is one of the most important tools to assess these delays. BPACR is the process of planning for normal birth and anticipating the actions needed in case of an emergency. The current study was undertaken to assess the status of BPACR among pregnant women in rural area of Kharsiya block in Raigarh district.

**Methods:** A community-based, cross-sectional study was conducted among 110 pregnant women in rural area of Kharsiya during January-June 2017. All the pregnant females were interviewed using a pretested and structured questionnaire. Knowledge about danger signs, planning for transport, place and delivery by skilled birth attendant, financial management were assessed. BPACR index was also calculated.

**Results:** The BPACR index was found to be very low (27.79%). About 73.65% women identified a skilled birth attendant for delivery but, only 10% women saved money and only 2.7% women had identified a blood donor for emergency. Nearly 74.54% women had no knowledge about danger or warning signs during pregnancy while 89.09% were unaware of complications during labour and 97.27% women did not know about puerperal complications.

**Conclusions:** BPACR index in this rural area was very low. Vast majority of women were not knowledgeable about birth preparedness and complication readiness.

**Keywords:** Birth preparedness, Complication readiness, Skilled birth attendant

# INTRODUCTION

In India, several initiatives are undertaken under the National Rural Health Mission to ensure access to skilled care at birth and emergency obstetric care including financial benefits for availing antenatal and intra-natal care with free referral transport. Still, the neonatal and maternal mortality rates are the major concern in the country mainly due to the "three delays" in seeking, reaching, and obtaining appropriate care. Birth

preparedness and complication readiness (BPACR) is one of the most important tools to assess these delays. BPACR is the process of planning for normal birth and anticipating the actions needed in case of an emergency. It is also a strategy to promote the timely use of skilled maternal care, especially during childbirth, based on the theory that preparing for childbirth reduces delays in obtaining this care.<sup>2</sup>

According to the data of 2014-16, maternal mortality ratio of Chhattisgarh is 173. Though it has reduced

drastically by 48 points since 2011-13, it is still higher than the national average of 130.<sup>3</sup> While the medical causes of maternal deaths like post -partum haemorrhage, sepsis, anaemia, abortion, etc. are well-known, there is a need to identify the systemic gaps that contribute to maternal deaths.

### Aims and objectives

To assess the status of birth preparedness and complication readiness (BPACR) among pregnant women in rural area of Kharsiya block of Raigarh district.

### **METHODS**

Study type: Community based cross-sectional study.

Study population: Pregnant women.

Study area: Rural area of five sub centre under Kharsiya block.

Study period: January 2017 to June 2017.

In the month of December 2016, three maternal deaths were reported in Kharsiya and Dharamjaigarh blocks of Raigarh district Chattisgarh.<sup>4</sup> The present study was carried out in the rural area of the Kharsiya block. This block consists of 136 villages with a total population of 18939 catered by 41 sub centres. The five sub centres were selected for study which includes the two sub centres reported with maternal death in December 2016 and remaining three were selected randomly.

A list of currently pregnant females was obtained from these five sub centres and a visit to their homes was given along with a social worker. The pregnant female was then interviewed preferably in presence of her husband using a pretested and structured questionnaire after taking a written informed consent. Knowledge about danger signs, planning for transport, place, and delivery by skilled birth attendant, financial management, were assessed. After the interview the pregnant female and the members of the family who were present at that time were educated and made aware of danger signs of pregnancy, delivery and Puerperium. The social worker also educated them regarding various government schemes and facilities stressing the importance of institutional delivery.

Total 120 pregnant females were registered but three families shifted permanently to some other village and seven pregnant females went to their maternal house for delivery. Thus, 110 pregnant females were interviewed. If due to some reason the pregnant female was not available at home when the visit was given, a second visit was made to the same house. Birth preparedness and complication readiness index (BPACR) was also calculated. BPACR index has been developed by the Johns Hopkin Bloomberg School of Public Health and has been used in many studies conducted worldwide

including India.<sup>5,6</sup> The study was approved by institutional ethical committee.

BPACR index was calculated from the following indicators:

- Percentage of the women who knew about > 8 danger signs of pregnancy.
- Percentage of the women who knew about financial assistance provided by government in Janani Suraksh Yojana (JSY).
- Percentage of the women who knew about transportation provided by government in JSY.
- Percentage of the women who availed antenatal care (ANC) in 1<sup>st</sup> trimester by skilled provider.
- Percentage of the women who identified skilled birth attendant for delivery.
- Percentage of the women who identified mode of transportation.
- Percentage of the women who saved money to pay for expenses.

$$BPACR = \frac{Summation of percentage of all Indicators}{7}$$

Statistical analysis: Collected data was compiled on Microsoft Office Excel Worksheet 2010 and analysed using frequency, mean, standard deviation, simple proportion and percentages

# **RESULTS**

A total of 110 pregnant females participated in the study. Mean age of respondents was 25 years (SD- 3.63 years; range-17-35 years). About 47 (42.72%) respondents were primi and in case of 63 multipara, 26 respondents (41.3%) reported a previous home delivery.

About 79 (71.81%) females had registered their pregnancy within 12 weeks. As can be observed in Table 1, about 66.36% females were either illiterate or had only primary level education and 73% females belonged to lower socioeconomic class. Almost 91% were housewives.

Awareness regarding antenatal care components like registration during first trimester, four ANC visits was observed to be more than two doses of TT immunization and consumption of 100 iron and folic acid tablets (Table 2).

Table 3 shows the level of awareness regarding the danger signs of pregnancy among study participants. Maximum i.e., 74.54% women had no knowledge about danger or warning signs during pregnancy.

As observed in Table 4, awareness regarding some danger signals during labour was present in less than 7% pregnant females. Also, awareness regarding danger signals of complications occurring immediate postpartum

was assessed and it was observed that only three females out of 110 (2.73%), were aware about fever and urinary tract infection. Not even a single female reported having awareness about other danger signals immediate postpartum like red lochia for more than four days, breast engorgement or inflammation, persistent headache or blurring of vision. Thus, 89.09% were unaware of complications during labour and 97.27% women did not know about puerperal complications.

Table 1: Distribution of respondents according to their sociodemographic characteristics (n=110).

Sociodemographic variable	Number	%
Age group (in years)		
≤20	11	10.00
21-24	43	39.09
25-28	33	30.00
29-32	22	20.00
≥33	1	0.91
Education		
Illiterate	45	40.91
Primary	28	25.45
Secondary	18	16.36
Higher secondary	10	9.09
Up to 12th	3	2.73
Graduate	3	2.73
Post graduate	3	2.73
Occupation		
Housewife	100	90.91
Labourer	6	5.45
Teacher	4	3.64
Socio-economic status (modif	fied BG Pra	sad scale)
Upper	0	0.00
Upper middle	6	5.45
Lower middle	24	21.82
Upper lower	34	30.91
Lower	46	41.82

Table 2: Awareness regarding antenatal care (n=110).

Antenatal care component	Number	%
Registration during first trimester	78	70.91
4 ANC visits	70	63.64
2 doses of TT immunization	50	45.45
100 IFA tablets	35	31.82

Table 3: Awareness of danger signs of pregnancy in pregnant women (n=110).

Danger signs of pregnancy	Number	%
Vaginal bleeding	13	11.82
Convulsions	13	11.82
Severe headache with blurred vision	2	1.82
Fever	13	11.82
Severe abdominal pain	18	16.36
Difficulty in breathing	0	0.00
Swelling of fingers, face, legs	7	6.36

Table 4: Awareness in pregnant women regarding danger signals during labour (n=110).

Danger signals during labour	Number	%
Prolonged labour	7	6.36
Abruptio placentae	0	0.00
Fever	1	0.91
Obstructed labour	3	2.73
Foetal distress (baby passing meconium)	0	0.00
Seizure	5	4.55

Table 5: Birth preparedness and complication readiness Index of the study subjects (n=110).

Component of BPACR index	Number	%
Percentage of women who knew about >8 danger signs of pregnancy, labour and immediate postpartum	0	0
Percentage of women who knew about JSY/JSSK	14	12.72
Percentage of the women who knew about transportation provided by government in JSY and JSSK	14	12.72
Percentage of the women who availed antenatal care (ANC) in 1st trimester by skilled provider	79	71.81
Percentage of the women who identified skilled birth attendant for delivery	81	73.65
Percentage of the women who identified mode of transportation	15	13.63
Percentage of the women who saved money to pay for expenses	11	10
Overall BPACR index	27.79 %	

Table 5 shows various components of birth preparedness and complication readiness index, where it was seen that, none of the study participants knew about more than eight danger signs during pregnancy, labour and postpartum. 12.72% females knew about the government schemes like JSY and JSSK and transportation provision under the scheme. 71.81% females availed antenatal care in first trimester by a skilled provider and 73.65%

females could identify skilled birth attendant for delivery but only 10% females saved money to meet expenses for delivery and postpartum. Overall BPACR index was observed to be 27.79%.

### **DISCUSSION**

In India, there are numerous myths and beliefs regarding childbirth. Even talking about or preparing for the new arrival is prohibited in some cultures. The parents and the in-laws of the would be mother dominate and influence the decision making even in trivial matters around the gestation and childbirth. As a result, majority of women and their families remain ignorant about the complications and cannot recognize them if one arises. When a complication arises, such unprepared families waste a great deal of precious time in accessing healthcare.

Birth preparedness and complication readiness is all about preparing for a normal birth and getting prepared for actions needed in case any emergency arises. It is aimed at promoting timely use of skilled maternal and neonatal care. In the current study an attempt is made to identify the status of this indicator in the rural set up.

In the present study, mean age of study subjects was 25±3.63 years and majority (90.91%) were housewives similar to the findings of Acharya et al.<sup>5</sup>

Early registration of pregnancy was observed in 71.81% females which is much more than the findings of the other studies like Acharya et al, Mukhopadhyaya et al.<sup>5,7</sup> Awareness in women regarding early registration of pregnancy, 4 ANC visits, was better than TT immunization and IFA tablet consumption comparable to the findings of Acharya et al and Agarwal et al.<sup>5,8</sup>

Awareness in subjects regarding danger signs during pregnancy, labour and postpartum was very poor comparable to Acharya et al but less than that reported by Agarwal et al.<sup>5,8</sup> And here lies the answer to the high maternal mortality and neonatal mortality observed in this region. People here are unaware of complications related to pregnancy and labour so they do not anticipate any and thus don't feel a necessity to report to a health facility. Moreover, informal discussions with people here revealed that they prefer home delivery and try their level best to get delivered at home which results in delayed reporting to hospital, delayed referral and transportation or maternal and neonatal deaths at home or on the way to health care facility.

Birth preparedness and Complication readiness Index of the study subjects was calculated to be 27.79% which was much lower than those reported by Acharya et al, Mukhopadhyaya et al and Kushwah et al<sup>5,6,7</sup>. Main reason for this finding could be the low education levels of females, their unemployed working status, dependency on family, low socio economic status and ignorance.

Also, high proportion of early registration of pregnancy but low awareness regarding danger signs during pregnancy and labour, less preparedness for birth like not identifying transportation or saving money for the same indicate poor communication between health care workers and the community. It shows that health care workers though complete the targets of registration of pregnancies, but they fail to educate the people. If a pregnant lady and her family is educated about the course of pregnancy and possible complications that could arise and how to get prepared for delivery at her very first visit to the health care facility, birth preparedness and complication readiness would improve and so the pregnancy outcome.

### **CONCLUSION**

BPACR index was very low in this rural area. Majority of women were not knowledgeable about birth preparedness and complication readiness. Efforts should be targeted to increase the awareness regarding components of BPACR among pregnant women and their families at the community level in order to increase utilization of Government facilities provided free of cost which in turn will reduce maternal and neonatal morbidity and mortality.

### Recommendations

- Birth preparedness programs can positively influence knowledge and health outcomes. Such programs can be implemented by government health services and should be comprehensively integrated into the safe motherhood program.
- Husband and in-laws play dominant role in decision making. Antenatal care provides an opportunity for Information education and communication to be provided to the pregnant female and her family. A measure should be adopted for targeting men in information, education and communication (IEC) activities.

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Institutional Ethics Committee

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