

## Original Research Article

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# Status of birth preparedness and complication readiness among pregnant women in rural areas

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## ABSTRACT

**Background:** World Health Organization (WHO) estimated that 529,000 women die annually from maternal causes. Ninety-nine percent of these deaths occur in the less developed countries. Every seven minutes - an Indian woman dies from complication related to pregnancy and child birth. For every woman who dies, 30 more women suffer injuries, infection and disability. Birth-Preparedness and Complication-Readiness (BP/CR) is a package to empower women, her family and the community to promote maternal and neonatal survival. It has been recognized as a standard component of the programs designed to make pregnancy safer.

**Methods:** A cross sectional study was conducted among pregnant women who attended antenatal clinics between May 2014-August 2014 at Rural Health Training Centre (RHTC). A total 274 pregnant women who had given consent for the study have been included in the study. Data was collected by interview in local language and a predesigned and pretested questionnaire. Socio-economic status was assessed according to Modified Kuppuswamy's classification (as per June 2015 CPI index. BP/CR was calculated by a set of seven indicators which has been developed by the John Hopkin Bloomberg School of Public Health.

**Results:** A total of 274 pregnant women have participated in the study. Only half of pregnant women (54.0) were well prepared by fulfilling atleast four indicators of BPCR. Pregnant women in the age group of >30 years, educational status of pregnant women Occupational status of both pregnant women and their husbands and regular antenatal checks ups and their husbands and joint family have significant associations for well birth preparedness and complication readiness ( $p<0.0005$ ).

**Conclusions:** Pregnant women in the age group of >30 years, educational status of pregnant women and their husbands and joint family have significant associations for well birth preparedness and complication readiness.

**Keywords:** Birth preparedness, Complications readiness, Socioeconomic status, Danger signs, JSY, BPCR

## INTRODUCTION

The birth of a baby is a major reason for celebration around the world. Societies expect women to bear children and honor women for their role as mothers. Yet in most of the world, pregnancy and childbirth is a

perilous journey World Health Organization (WHO) estimated that 529,000 women die annually from maternal causes.<sup>1</sup> Ninety-nine percent of these deaths occur in the less developed countries. Every 7 minutes - an Indian woman dies from complication related to pregnancy and child birth. For every woman who dies =

30 more women suffer injuries, infection and disability.<sup>2</sup> The situation is most dire for women in Sub-Saharan Africa, where one of every 16 women dies of pregnancy related causes during her lifetime, compared with only 1 in 2,800 women in developed regions.<sup>3</sup> Most maternal deaths are in resource poor countries. They are attributed to the three delays; delay to make a decision to seek care, delay to reach place of care and delay in receiving appropriate and adequate care.<sup>4</sup> Women should be made aware of danger signs of obstetric complications during pregnancy, delivery and the postpartum.<sup>5</sup> Facilities with skilled attendants and functional emergency obstetric care services are in most low-income countries located in urban centers whereas the majority of the population lives in rural areas. The knowledge will ultimately empower them and their families to make prompt decisions. In order to achieve Millennium Development Goal-5, several interventions were undertaken under National Rural Health Mission to ensure access to skilled care at birth, emergency obstetric care for complications, financial assistance for availing antenatal and intranatal care including referral transport.<sup>6</sup> Besides this, the demand by women and the community for utilization of resources is equally important. Thaddeus and Maine have documented 'three delays' in seeking, reaching and obtaining appropriate care as the crucial factors for maternal mortality.<sup>4</sup> Knowledge of obstetric danger signs and birth preparedness are strategies aimed at enhancing the utilization of skilled care during low-risk births and emergency obstetric care in complicated cases in low income countries.<sup>7,8</sup> The presence of skilled attendants at births and availability of emergency obstetric care have been shown to greatly reduce maternal deaths due to obstetric complications.<sup>9-11</sup> The above-mentioned success, however, depends on a functional referral system from rural communities to health facilities.<sup>12</sup> Birth-Preparedness and Complication-Readiness (BP/CR) is a package to empower women, her family and the community to promote maternal and neonatal survival. It has been recognized as a standard component of the programs designed to make pregnancy safer.<sup>13</sup> Every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant. Pregnancy related complications cannot be reliably predicted.<sup>14</sup> Hence, it is necessary to employ strategies to overcome such problems as they arise.

## METHODS

### *Study design*

A cross sectional study was conducted among pregnant women who attended antenatal clinics between May 2014 –Aug 2014 at rural health and training center.

A total 274 pregnant women who had given consent for the study have been included in the study. Data was collected by interview in local language and a predesigned and pretested questionnaire was used which include socio demographic profile, parity, ANC visits,

gravid, knowledge regarding danger signs during pregnancy, postpartum period.

Socio-economic status was assessed according to Modified Kuppuswamy's classification (as per June 2015 CPI index).<sup>15</sup> BP/CR was calculated by a set of seven indicators which has been developed by the John Hopkin Bloomberg School of Public Health. These are quantifiable and expressed in percentage of women having specific characteristics.<sup>13</sup>

BP/CR was calculated from the following indicators:

- 1) Percentage of women who knew at least 8 key danger signs during Pregnancy, Labor & during postpartum period.
- 2) Percentage of women who attended 1st antenatal visit with a skilled person during 1st trimester.
- 3) Percentage of women who plan to give birth with a skilled provider.
- 4) Percentage of women who plan to identify a mode of transport to the place of delivery.
- 5) Percentage of women who plan to save money for child birth.
- 6) Percentage of women who knew about the financial assistance under Janani Suraksha Yojana.
- 7) Percentage of women who knew about the transport assistance under Janani Suraksha Yojana.

The mothers who fulfilled at least four BP/CR practices were considered as 'Well prepared' and the rest of them were 'less prepared', similar to a previous study conducted.<sup>17</sup>

Study was conducted in rural field practice areas under Rural Health Training Centre (RHTC), KAMSRC.

### *Study population*

Pregnant women attending ANC clinic.

### *Ethical clearance*

Taken from the institutional ethical committee.

### *Consent*

Study subjects have been explained about the purpose of the study in local language and oral consent has been taken.

### *Inclusion criteria*

Study subjects who have given consent and are willing to participate in the study.

### *Exclusion criteria*

Study subjects who have not given consent.

### Data collection

All the data collected was entered and analyzed with MS excel software 2007 and Epi info 3.5.3. All tests were considered significant at  $p < 0.05$  level.

Health education and awareness about pregnancy related complication and early signs to foresee the complications were explained to all the pregnant women in RHTC by one of the faculty member, after the data was collected.

### RESULTS

A total of 274 pregnant women have participated in the study. Majority of them were in the age group of 21-30 years of age group (113). 56% of them were Hindus, followed by Muslims (24.8) and Christian (19%). Nuclear families were found to be 39.8% and 60.2% were joint families.

Majority of pregnant women (43.4%) and their husbands (35.4%) have completed primary education. 43.4% of pregnant women were working as unskilled workers, followed by semiskilled workers (30.3%). 36.5% of study

population belongs to lower socioeconomic class followed by 25.5% upper lower class, 23.0 belongs to lower middle and 15.0 belongs to upper middle class (Table 1).

Pregnant women were sensitized about danger signs by health worker and medical officer.

None of the subjects have knowledge reading danger signs during pregnancy, labour and postpartum period. 81.4% of them knew only one danger sign. Less than 30% of them have mention only two danger signs. 77.4% saved money for delivery. 75.9% of the study population are aware about JSY and 68.2% knew about transport facility under JSY.

Only half of pregnant women (54.0) were well prepared by fulfilling at least four indicators of BPCR (Table 2).

Pregnant women in the age group of  $>30$  years, educational status of pregnant women and their husbands and joint family have significant associations for well birth preparedness and complication readiness ( $p < 0.0005$ ).

**Table 1: Socio demographic factors associated with birth preparedness and complication readiness among the study population (n=274).**

Variables	Preparedness			P value
	Well prepared (203) (%)	Less prepared (71) (%)	Total (274) (%)	
<b>Age (in years)</b>				
<20	40 (53.3)	35 (46.7)	75 (100.0)	
21-30	84 (74.3)	29 (25.7)	113 (100.0)	0.000
>30	79 (91.9)	07 (8.1)	86 (100.0)	
<b>Type of family</b>				
Nuclear family	70 (64.2)	39 (35.8)	109 (100.0)	
Joint family	133 (80.6)	32 (19.4)	165 (100.0)	0.002
<b>Educational status of pregnant women</b>				
Illiterate	31 (41.9)	4358.1	74 (100.0)	
Primary schooling	101 (84.9)	18 (15.1)	119 (100.0)	
Middle schooling	53 (85.5)	9 (14.5)	62 (100.0)	
Intermediate	18 (94.7)	1 (5.3)	19 (100.0)	0.001
<b>Educational status of the husband</b>				
Illiterate	13 (31.7)	28 (68.3)	41 (100.0)	
Primary schooling	62 (63.9)	35 (36.1)	97 (100.0)	
Middle schooling	85 (93.4)	6 (6.6)	91 (100.0)	
Intermediate	43 (95.6)	2 (4.4)	45 (100.0)	0.000
<b>Occupation of the pregnant women</b>				
Housewife	46 (63.9)	26 (36.1)	72 (100.0)	
Unskilled	83 (69.7)	36 (30.3)	119 (100.0)	0.002
Semiskilled	74 (89.2)	9 (10.8)	83 (100.0)	
<b>Occupation of the husband</b>				
Unskilled	69 (55.2)	56 (44.8)	125 (100.0)	
Semiskilled	82 (85.4)	14 (14.6)	96 (100.0)	
Skilled	52 (98.1)	01 (1.9)	53 (100.0)	0.000
<b>Antenatal check visits to health care facility</b>				
Regular	187 (85.8)	31 (14.2)	218 (100.0)	
Irregular	16 (28.6)	40 (71.4)	56 (100.0)	0.000

**Table 2: Knowledge about birth preparedness and complication readiness indicators among pregnant women (n=274).**

S. no	Indicators	No (%)
1.	Study subjects who knew at least eight key danger signs during pregnancy, labour & during postpartum period	0 (0)
2.	Study subjects who knew at least one key danger signs during pregnancy, labour & during postpartum period	223 (81.4)
3	Study subjects who knew at least four key danger signs during pregnancy, labour & during postpartum period	148 (54.0)
4	Study subjects who attended 1st antenatal visit with a skilled person during 1st trimester	218 (79.6)
5	Study subjects who plan to give birth with a skilled provider	213 (77.7)
6	Study subjects who planned place of delivery	188 (68.6)
7	Study subjects who plan to identify a mode of transport to the place of delivery	201 (73.4)
8.	Study subjects who plan to save money for child birth	212 (77.4)
9.	Study subjects who knew about the financial assistance under Janani Suraksha Yojana	208 (75.9)
10.	Study subjects who knew about the transport assistance under Janani Suraksha Yojana	187 (68.2)

Occupational status of both pregnant women and their husbands and regular antenatal checks ups were significantly associated with birth preparedness and complication readiness ( $p<0.005$ ) (Table 1).

Parity, trimester and gravida among pregnant women were not found to be associated with BPCR.

## DISCUSSION

A total of 274 pregnant women have participated in the study. Majority of them were in the age group of 21-30 years of age group (113). 56% of them were Hindus, followed by Muslims (24.8) and Christian (19%). Study conducted by Rajesh et al found that majority (75.47%) of them belonged to the age group of 20-30 with mean age of 23.3 years (Standard deviation, SD 3.16).<sup>18</sup>

Nuclear families were found to be 39.8% and 60.2% were joint families.

Majority of pregnant women (43.4%) and their husbands (35.4%) have completed primary education. 43.4% of pregnant women were working as unskilled workers, followed by semiskilled workers (30.3%). 36.5% of study population belongs to lower socioeconomic class followed by 25.5% upper lower class, 23.0 belongs to lower middle and 15.0 belongs to upper middle class. Study shows Most of the pregnant women (45.82%) and their husbands (39.62%) completed high school education.<sup>18</sup> Only 5 (1.35%) participants belonged to class II socio-economic status, 194 (52.29%) class III and 170 (45.82) in class IV.

Majority of respondents (91.1%) had received no education; only 5% of respondents had completed secondary education were found in the study conducted at Sukma District of Chhattisgarh, India.<sup>19</sup>

None of the subjects have knowledge regarding all eight danger signs during pregnancy, labour and postpartum

period. 81.4% of them knew only one danger sign. Less than 30% of them have mention only two danger signs. 21.1% had knowledge of at least three danger signs.<sup>19</sup>

75.9% of the study population were aware about JSY and 68.2% knew about transport facility under JSY. This was evidently shown in the study where 60% of the antenatal women knew about financial assistance and only 36.39% knew about transport assistance.<sup>18</sup> A study conducted by Acharya et al and Mukhopadhyay et al study also observed that proportion of women knowing at least one danger sign ranged from 12.1% to 37.2%.<sup>20,21</sup>

In the present study, 28.03% of women didn't know even a single danger sign and 24.26% mentioned at least one danger sign. Only 23% of the pregnant women were sensitized by the health worker regarding the danger signs

Only half of pregnant women (54.0) were well prepared by fulfilling atleast four indicators of BPCR. Pregnant women were sensitized about danger signs by health worker and medical officer. Study conducted in Indore city reported that only 47.8% were well prepared Less than one third (29.5%) of respondents were well birth prepared.<sup>17,19</sup> In a study out of 371 pregnant mothers, only 133 (35.85%) were well prepared for child birth.<sup>18</sup>

Pregnant women in the age group of >30 years, educational status of pregnant women and their husbands and joint family have significant associations for well birth preparedness and complication readiness ( $p<0.0005$ ).

Occupational status of both pregnant women and their husbands and regular antenatal checks ups were significantly associated with birth preparedness and complication readiness ( $p<0.005$ ). In the present study, parity, trimester and gravida among pregnant women were not found to be associated with BPCR. Study there

was no significant association between BPACR and factors such as age, religion, type of family, socio-economic status and trimester.<sup>18</sup>

Study showed that mother's education, husband's education, parity and child birth within two years were associated with BPACR.<sup>18</sup> Knowledge of at least three danger signs during pregnancy, childbirth and post partum period was found to be significantly associated with education of husband.<sup>19</sup>

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