

Assessment of Birth Preparedness and Complication Readiness among Antenatal Mothers in a Tertiary Care Centre.

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Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Introduction: Every year, worldwide, approximately 8 million women suffer from pregnancy-related complications and over half million die. Birth preparedness and complication readiness (BPCR) is one of the most conceptually compelling and logical means of addressing the “three delays” causing the pregnancy complications.

Aims & Objectives: To assess the awareness and practices regarding Birth Preparedness and Complication Readiness among pregnant women

Methodology: This is a cross sectional study conducted in the department of obstetrics and gynecology on all consecutive antenatal mothers. After taking informed consent, socio-demographic information was collected. Perception and practices regarding BPCR of study subjects was assessed with a pilot-tested, Semi-structured questionnaire.

Results: Out of the 230 women sampled 220 subjects completed the questionnaire giving a response rate of 95.6%. The mean age of the study population was 25.89± 4 years. 76 (34.5%) were under low BPCR Score,

116(52.7%) were under moderate BPCR Score and 28(12.8%) were under high BPCR Score.

Conclusion: Preparedness in health system, ensuring competence, and motivations of health workers are needed for promoting BPCR among the study population.

Key words: Birth preparedness, Complication readiness, Antenatal mother, Pregnancy.

Introduction

Worldwide approximately 8 million women suffer from pregnancy-related complications every year and over half million die¹. The incidence of pregnancy related complications in India is as high as 44%. In India, several initiatives were undertaken under the National Rural Health Mission to ensure access to skilled care at birth and emergency obstetric care for complications.² It also included financial benefit for availing antenatal and intra natal care including free referral transport² Thaddeus and Maine have documented “three delays” in seeking, reaching, and obtaining appropriate care as the crucial factors for maternal mortality³ When pregnancy related complications arise, the unprepared family wastes important time in recognizing the problem, getting organized, and reaching the appropriate referral facility.

Birth preparedness and complication readiness (BPCR) is one of the most conceptually compelling and logical means of addressing these delays .BPCR is a strategy for care of mother and the newborn during pregnancy, childbirth, and postpartum period; includes preparation for taking action in emergencies and building an enabling environment for maternal and newborn survival. The present study was conducted to evaluate the awareness and practices regarding Birth Preparedness and Complication readiness among pregnant women in a tertiary care center.

Materials & Methods

This is a cross sectional study conducted in antenatal clinic in the department of Obstetrics and Gynaecology in a tertiary care center, Puducherry for a period of 6 months from October 2018 to March 2019. The study subjects comprised of consecutive pregnant women in their first and second trimester during their antenatal checkup. Antenatal mothers who were seriously ill or unable to communicate were excluded. The patients were enrolled for our study after getting their informed consent.

A semi structured questionnaire containing socio-demographic information like age in completed years, caste, religion, duration of formal education, occupation, total family income, parity, below poverty line (BPL) card holding, distance from nearest delivery hub (24 × 7), place of recent birth and other factors like knowledge about danger signs in pregnancy government financial scheme, government transport, skilled birth attendant, arrangement of blood donor, awareness about BPCR and whether saved money for pregnancy, were given to all participants in their local language. The indicators for individual level were quantifiable and expressed in percentage of women having specific characteristics. Such 14 indicators were chosen in the present study to construct BPCR index,

which will un weight the average of those indicators and will be expressed as a score out of hundred.

Considering the estimated prevalence of 50% based upon literature, the minimum sample size was 190. Hence a final sample size was taken as 230 for our study. Out of the 230 women sampled, 220 subjects completed the questionnaire giving a response rate of 95.6%.

Data entry and statistical analysis

Data were entered in Epi Data version 3.1 and was analysed using SPSS v20. Frequencies and percentages were used to summarize .Odds ratios (ORs) with 95% CIs was used to describe associations between groups. p value < 0.05 was considered as statistically significant

Operational Definition

Well-Preparedness. A mother was considered as “well prepared” if she made at least three from the four key items of BPCR during her last pregnancy (identified skilled provider, saved money, identified plan for the place of delivery, identified the mode of transportation) before the onset of labour ^[4].

Knowledgeable on Danger Sign during Pregnancy.

A mother was considered to be knowledgeable on danger sign during pregnancy if she spontaneously mentions two or more of the three key danger signs (severe vaginal bleeding, swollen hands/face, and blurred vision).

Knowledgeable on Danger Sign during Labour.

A mother was considered to be knowledgeable on danger sign during labor if she spontaneously mentions two or more of the four key danger signs (severe vaginal bleeding, prolonged labour (> 12hours), convulsions, and being retained).

Results

Out of the 230 women sampled 220 subjects completed the questionnaire giving a response rate of 95.6%. Table 1 shows socio-demographic variables of respondents. The mean age of the study population was 25.89± 4 years.

Majority of study subjects belonged to the age group of 20-25 years. Regarding the educational status of the study subjects, 30(13.6%) of them were illiterate. Based on modified BJ Prasad's classification most of the women

belonged to class II [78 women (35.5%)] and class III [76 women (34.5%)]. Literate pregnant women had significantly high BPCR score ($p < 0.05$) compared to the illiterate.

Table 1: Socio-demographic variables of respondents.

Variable	Categories	Frequency	Percent
Age of the mother	20-25	114	51.8
	26-30	74	33.6
	31-35	32	14.6
	Total	220	100
Education	Primary	12	5.5
	Secondary	66	30
	Tertiary	112	50.9
	Not educated	30	13.6
	Total	220	100
Socio economic status	Class 1	34	15.5
	Class 2	78	35.5
	Class 3	76	34.5
	Class 4	32	14.5
	Total	220	100
Religion	Hindu	200	90
	Muslim	20	10
	Others	0	0
	Total	220	100

Table 2: knowledge of various indices of BPCR of study participants

Variable	Categories	Frequency	Percent
Danger signs those endangers the life of pregnant women	Yes	64	29.1
	No	156	70.9
	Total	226	100
Danger signs during labour that can endanger the life of pregnant women	Yes	58;	26.4
	No	162	73.6
	Total	226	100
Heard about BPCR	Yes	34	15.4
	No	186	84.6
	Total	226	100
Awarded of government finance benefits	Yes	74	33.6
	No	146	66.4
	Total	226	100
Identified mean transport to place of delivery	Yes	122	55.5
	No	98	44.5
	Total	226	100
Identified blood donor	Yes	80	36.4
	No	140	63.6
	Total	226	100
Aware of Basic care of the new-born	Yes	162	73.6
	No	58	26.4
	Total	226	100

Table 2 depicts the knowledge of various indices of BPCR of study participants. A greater number of patients have registered themselves in any health care facility 196 (89.10%). Almost 216 (98%) patients opted for

institutional deliveries. Half of the patients (46.4%) have saved money for delivery

Table 3: Practices of various components of BPCR of study participants

Variable	Categories	Frequency	Percent
Registration	Done	196	89.1
	Not done	24	10.9
	Total	226	100
Identified place for recent birth	Yes	216	98
	No	4	2
	Total	226	100
Identified skilled birth attendant	Yes	216	98
	No	4	2
	Total	226	100
Saved money	Yes	102	46.4
	No	118	53.6
	Total	226	100

Table 3 demonstrates the practices of various components of BPCR of study participants. 61 (27.7%) were aware of the danger signs in pregnancy. 34(15.4%) had Knowledge about BPCR. 74(33.6%) had knowledge about finance provided by government for antenatal care and delivery. Regarding the transport facility for emergency services 84(38.2%) patients knew about the availability of ambulance services.140 (63.6%) has not yet arranged blood donor for their delivery and were not aware about the need for blood.

Table 4: BPCR score among respondents

BPCR Score	Number Of Study Participants(N= 220)	
	Frequency	Percentage
Low	76	34.5
Moderate	116	52.7
High	28	12.8

Table 4 expresses BPCR score among respondents. Based on the 14 variables used in the questionnaire a scoring

system was formed. Those who fell under score (0-5) were categorised as low BPCR score, and those who fell under (6-10) were moderate BPCR score, and score of 11-14 were high BPCR score. Accordingly in our study 76(34.5%) were under low BPCR Score, 116(52.7%) were under moderate BPCR Score and 28(12.8%) were under high BPCR Score.

Discussion

Globally an estimated 211 million pregnancies and 136 million births occur every year. Among those pregnancies 529,000 deaths occur worldwide⁽⁵⁾. Although the maternal mortality ratio is declining, it is very far away from sustainable development goal of reducing the global maternal mortality ratio to less than 70 per 100,000live births between 2016 and 2030⁽⁶⁾. In India there is a reported 15 % of life threatening pregnancy related complication and MMR of 174 per 100,000 live births^(7, 8). Pregnancy related complications cannot be predicted completely and unexpected complications may arise at any time during her antenatal period and could end in mortality and morbidity⁽⁹⁾. Birth Preparedness and

Complication Readiness can reduce the maternal morbidity. This promotes active preparation and assists in decision making for healthcare seeking in case of complication.

This present study was conducted in a tertiary care centre to assess the knowledge and practice of birth preparedness and complication readiness factors among all group of population in our state. The response rate of our study was 95.6%, which is comparable to other similar studies by Akpan et al (94.33%)⁽¹⁰⁾ & Begashaw et al (98.7%)⁽⁵⁾. The mean age of the present study is 25.89 ±4 years which is similar to Chala et al (27.4± 4 years)¹¹. The majority of the patient belongs to 20-25 years which is the common childbearing age group in India.

In our study, Maternal education has significant effect on BPCR. This result is in line with the studies conducted in other parts of Ghana, Eritria, Robe, Nigeria^{9,12,13,14}. Literacy rate and BPCR score were found to be statistically significant in our study (p = 0.036). Affinpinguh et al studied 211 women and found out two-thirds (57.58%) of the women saved money for incurring cost of delivery and obstetric emergencies, if needed¹⁵. In our study around 46.4% of the study subjects had saved money for pregnancy and related ailments.

Mukhopadhyay et al in 2014 in West Bengal stated that proportion of women who were aware of at least one key danger sign in pregnancy, labour, puerperium & new born care were 14.5%, 17.10%, 12.8%, 58.3% respectively¹⁶. Among our study participants it was 29.10% in pregnancy, 26.4% in labour, 25.5% in puerperium, and 73.6% in new born care. In our study 80(36.4%) respondents had arranged blood donor for obstetric emergency and 216 (98%) had identified skilled assistant. Esan et al found that among 206 respondents 114 (62%) had identified skilled birth attendant and 30 (16.3%) had made arrangement for blood donor in case of emergency¹².

In this present study 122 (55.5%) had knowledge about government transport services available for antenatal mothers. Dimtsu et al studied 220 women and found that 22(14.3%) were aware of government transport services¹⁷ Shukla et al found that in 323 women almost half (49.2%) of the study participants belongs to upper lower socioeconomic status followed by 38.5% in lower socioeconomic group⁽¹⁸⁾. In our study most of them 75% belonged to class II and class III.

Chala et al 2018 in Ethiopia found that in their study population, majority of them had heard about BPCR 266 (98.5%)¹¹. Joyce et al studied 157 mothers and found out that 63.1% were aware of BPCR¹⁹. This present study revealed that only 34(15.4%) were aware of BPCR similar to a study done by Tsegaw et al which was found to be 45.2%⁽²⁰⁾. However in study done by Dimtsu et al 165 out of 220 pregnant women 165(75%) have had about BPCR¹⁷.

Conclusion

The magnitude of birth preparedness and complication readiness was moderate in our study area. The performance regarding BPCR was not up to the standard. Preparedness in health system, ensuring competence, and motivations of health workers are needed for promoting BPCR among the study population. Therefore health personnel at all levels must come forward to impart appropriate high quality services thus reducing maternal mortality or complications.

Acknowledgements: Authors would like to thank the Dean, the Institutional Research Committee and the management of Aarupadai Veedu Medical College for their motivation and support. The authors would also like to acknowledge Dr. Anand Raj, Department of Community medicine for his guidance.

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