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Original Research Article

Birth preparedness and complication readiness for a safe motherhood among antenatal women attending an urban health centre, Pudupet

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ABSTRACT

Background: Maternal and neonatal mortality is a significant medical issue in creating nations. Birth preparedness and complication readiness (BPCR) is a technique to urge pregnant ladies to settle on brief choices to look for care from talented birth orderlies. Most investigations of BPCR have been led in creating nations, BPCR status and related factors in Pudupet are at present obscure. Objectives were to evaluate BPCR for a sheltered parenthood among antenatal (AN) moms going to an urban health center, Pudupet and to recognize the factors affecting BPCR.
Methods: The examination was directed among 104 pregnant women in a community based cross sectional study conducted in urban health training centre (UHTC) was conducted among 104 pregnant women as per inclusion criteria by simple random sampling. A predesigned semi structured questionnaire by interview method after taking informed consent was used to calculate socio demographic details and antenatal care. Data were entered and analysed in Epi-info software.
Results: Overall BPCR score was 96.15% of women scored 3 and above. But awareness about blood donor (13.5%) was less among antenatal mothers. Money savings either cash or insurance was kept ready by 49 (47.1%). Articles kept ready by 42 (40.4%) AN mothers. Among 104, 71(68.3%) had awareness over birth control measures. Significance seen under statistical analysis among sociodemographic factors like age, education, socioeconomic status, husband's education and type of family had statistically significant associations with BPCR components.
Conclusions: Birth preparedness and difficulty status is fundamental and viable methodology that supports mother, family and network to design a protected conveyance.

Keywords: Antenatal care, Multivariate logistic regression, Sociodemographic, Birth preparedness, Complication readiness

INTRODUCTION

Pregnancy is an ordinary physiological cycle for a woman that makes joy and expectation in her just as the family and the network. It needs readiness, arranging, care, passionate and social help for the inviting of the new life into the world. Anyway the result of pregnancy is eccentric and a lady can experience troubles during antenatal (AN), intrapartum and postnatal period which can prompt maternal morbidity, mortality and furthermore influence the youngster wellbeing.[1]

Reduction of mortality of women is an area of concern for the Governments across the globe. The International conference on population and development in 1994 had recommended reduction in maternal mortality by at least 50 percent of the 1990 levels by the year 2000 and further one half by the year 2015.[2] The current maternal mortality ratio (MMR) of India is 130.[3] Care-seeking is

compromised because of the delay in deciding to seek care, identifying danger signs, reaching a health facility, receiving adequate and appropriate treatment at the health facility and many more. It is due to inadequate facilities, inappropriate care, lack of emergency preparedness and referral service which are key component of safe delivery. Other common reason are high illiteracy among female, early marriage, ignorance, malnutrition, and social factors.[4]

Delays can occur at 3 levels: delay in the decision to seek care; delay in the arrival at a health facility; and delay in the provision of adequate care.

Safe motherhood initiatives, a worldwide effect were launched by World Health Organization (WHO) which aimed to reduce the number of death associated with pregnancy and childbirth. Appropriate AN care is one of the pillar of initiatives.[5] One such international tool is birth preparedness and complication readiness (BPCR) designed by the maternal and neonatal health program of John Hopkin's program for international education in gynaecology and obstretics. It is a list of skills that addresses factor causing delay at various level such as individual family, community, health care provider to effectively plan the delivery and make pregnancy and postpartum safe for mother and baby.[6] There are several strategies adopted globally such as safe motherhood programmes, strategies toward ending preventable maternal mortality and in India reproductive and child health (RCH II) and Janani Suraksha Yojana, which aim to lower maternal mortality. As a result of such programmes, MMR has reduced by 44% (annual reduction of 2.3%) during millennium development goals (MDG) era. According to sustainable development goal (SDG), the average global target is an MMR of less than 70 per lakh live births by 2030 and the supplementary national target is that no country should have an MMR greater than 140 per lakh live births. This requires annual reduction rate of 7.3%.[7]

BPCR matrix explains the roles of policymakers, facility managers, health care providers, communities, families and women in ensuring that women and new-borns receive timely skilled maternal and neonatal care supported the speculation that preparing for childbirth and being ready for complications reduce delays in seeking and obtaining appropriate care.[8] A report from Ethiopia showed that BPCR had a major effect on skilled care use.[9] Moreover, there's clear evidence from a meta-analysis of 14 randomized studies showing that BPCR interventions, with adequate population coverage, are effective in reducing maternal and death rate in low-resources setting.[10]

BPCR includes the following components: knowledge of danger signs, plan for where to give birth, plan for a skilled birth attendant, plan for transportation, a birth companion, identification of compatible blood donors in case of emergency and saving money for expenses.[10]

The objective of our study was to assess the status of BPCR among pregnant women and to study the socio-demographic factors affecting BPCR.

METHODS

A community based cross sectional study was conducted in AN women attending urban health centre field practice area under Pudupet after obtaining institutional ethical clearance. The study duration was from October 2018 to November 2018. The sample size was found to be 104. According to Ravish et al the prevalence of BPCR was 43.98 % and adding 5% non-response calculated sample size $N = Z\alpha^2PQ/L^2$ was 104. The study subject was AN mothers in second and third trimester. Those in first trimester were excluded from the study, the reason being lack of information about components of BPCR and antenatal women whose birth order were 2 and more. AN women those who were not willing to participate were also excluded. The study subjects were selected by simple random sampling.

Data was collected by interview method after taking an informed consent. A pre tested, semi structured questionnaire was used to collect information about socio-demographic profile, parity, husband's details and his participation in antenatal care, care giver's details, etc. A validated BPCR index developed by the Johns Hopkin Bloomberg School of public health was used to assess BPCR.

BPCR 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 the government, percentage of the women who knew about transportation provided by the government, percentage of the women who availed antenatal care in 1st trimester by skilled provider, percentage of the women who identified skilled birth attendant for delivery, percentage of the women who identified mode of transportation, and percentage of the women who saved money to pay for expenses.

Statistical analysis

Collected data was consolidated on Excel sheets and further analysed in Epi-info software 7.1.3.0 version. Multivariate logistic-regression analysis was conducted to analyze factors that were independently associated with having a birth plan.

RESULTS

Majority (20-35 years), n=83 (79.8%) and mean age of the study was 26.01 years. Among 104, 86 (82.7%) were house wife and others were working women which was 17.3%. Hinduism (78%) was found to be most common religion. Among 104 AN mothers, 54 (51.9%) belongs to joint family, 46 (44.2%) to nuclear type and 4 (3.8%) belong to three generation type (Figure 2 A-C).

Table 1: Socio-demographic profile of study participants (N=104).

Parameter	Frequency	Percentage (%)
Age (years)		
<20	10	9.6
21-25	37	35.6
26-30	46	44.2
>30	11	10.6
Family		
Joint	54	51.9
Nuclear	46	44.2
Three generation	04	3.8
Mother's education		
Upto secondary	38	36.5
Higher secondary	31	29.8
Graduation	35	33.7
Mother's occupation		
Housewife	86	82.7
Working	18	17.3
Religion		
Christian	7	6.7
Hindu	81	77.9
Muslim	16	15.4
Husband education		
Upto secondary	51	49.0
Higher secondary	12	11.5
Graduation	41	39.4
Age at marriage (years)		
≤20	33	31.7
21-30	66	63.5
>30	5	4.8
Gravida		
Multi	47	45.2
Primi	57	54.8

In the Table 2, this shows awareness among study participants regarding antenatal care and danger signals during pregnancy. 100% were aware towards immunization against tetanus, iron and folic acid (IFA) tablets. Among 104, 94 (90.4%), AN mothers aware of common danger signals during pregnancy regarding awareness. Only 13.5% had awareness over blood donor. Most of them aware of their transport mode and their visit to UHTC by walk were 51.9% and others 37.5% had own transportation and 10.6% was using public transport. Money savings either cash or insurance was kept ready by 49 (47.1%). Articles kept ready by 42 (40.4%) AN mothers. Among 104, 71 (68.3%) had awareness over birth control measures.

BPACR status

96.15% of women scored 3 and above (Table 3). A total of 100 AN women were aware of BPCR: knowledge of danger sign, plan for where to give birth, plan for skilled birth attendant, plan for transportation, birth companion, money and blood donor.

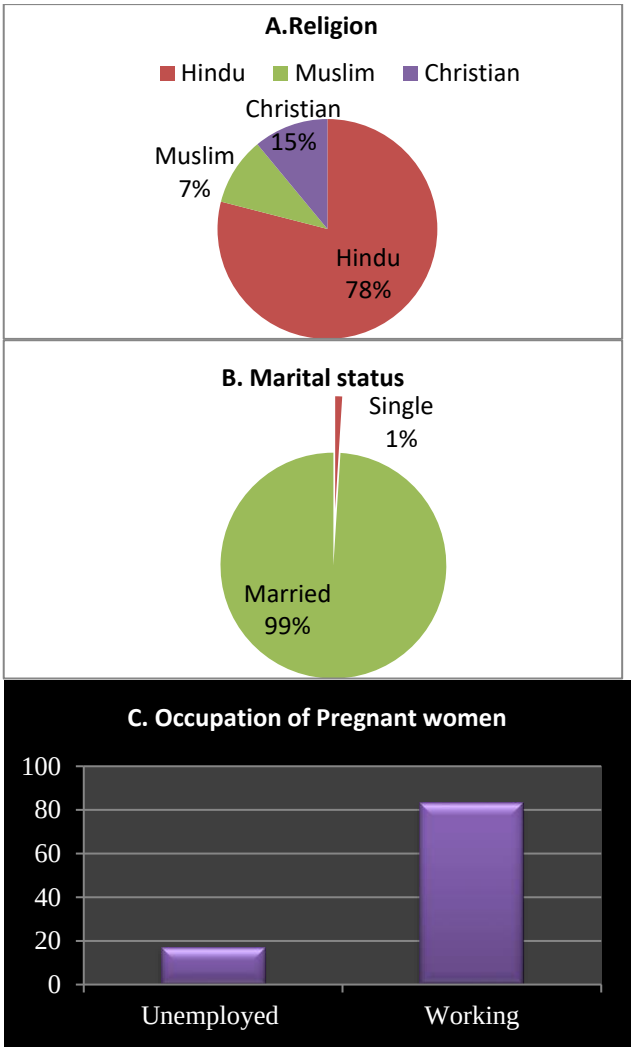

Figure 2: Graphical representation of socio-demographic profile (A) religion, (B) marital status, and (C) occupation of pregnant women

Table: 2 BPCR among antenatal women.

Parameter	Frequency (n=104)	Percentage (%)
Danger sign		
Yes	94	90.4
No	10	9.6
Planned		
Yes	102	98.1
No	2	1.9
Articles		
Yes	42	40.4
No	62	59.6
Blood donors		
Yes	14	13.5
No	90	86.5
Birth control measure		

Parameter	Frequency (n=104)	Percentage (%)
Yes	71	68.3
No	33	31.7
Epi care		
Yes	71	68.3
No	33	31.7
Money		
Yes	49	47.1
No	55	52.9
Drugs		
Yes	16	15.4
No	88	84.6
Preparedness		
Prepared	59	56.7
Not prepared	45	43.3
Near HCF		
Pvt	18	17.3
Govt	59	56.7
PHC	27	26.0
Mode of travel		
Self	39	37.5
Walk	54	51.9
Public transport	11	10.6

Table 3: BPCR among AN women.

BPCR	Frequency	Percentage (%)
2	4	3.85
3	41	39.42
4	27	25.96
5	26	25
6	6	5.77
Total	104	100

Factors associated with BPCR among pregnant women with sociodemographic variables.

Table 4 shows the factors associated with BPCR among pregnant women attending public health centre (PHC). The variables are independently associated with birth plan. Factors like age and religion shows positive association with BPCR. While education shows a positive association. Occupation of study participants shows a negative association with BPCR, similarly husbands who are professionalist showed a positive association.

Table 5 shows multivariate logistic-regression analysis was conducted to analyze factors that were independently associated with having a birth plan. Mother's education was significant (0.004).

Table 4: Association between sociodemographic variables and BPCR components with p value (univariate logistic regression).

Parameters	Preparedness		Odds ratio (95% C.I)	P value
	Prepared n=59, N (%)	Not prepared n=45 (%)		
Age (years)				
≤20	3 (5.1)	7 (15.6)	3.63 (0.83,15.89)	0.087
21-25	23 (39)	14 (31.1)	0.95 (0.39,2.31)	0.904
26-30	28 (47.5)	18 (40)	Ref	
>30	5 (8.5)	6 (13.3)	1.87 (0.5,7.03)	0.356
Family				
Joint	32 (54.2)	26 (57.8)	Ref	
Nuclear	27 (45.8)	19 (42.2)	0.87 (0.4,1.89)	0.719
Mother education				
Upto secondary	20 (33.9)	18 (40)	3.6 (1.27,10.23)	0.016
Higher secondary	11 (18.6)	20 (44.4)	7.27 (2.4,22.02)	<0.001
Graduation	28 (47.5)	7 (15.6)	Ref	
Mother occupation				
Housewife	47 (79.7)	39 (86.7)	Ref	
Working	12 (20.3)	6 (13.3)	0.6 (0.21,1.75)	0.353
Husband education				
Upto secondary	24 (40.7)	27 (60)	2.42 (1.03,5.71)	0.043
Higher secondary	7 (11.9)	5 (11.1)	1.54 (0.41,5.78)	0.523
Graduation	28 (47.5)	13 (28.9)	Ref	
Age at marriage (years)				
≤20	18 (30.5)	15 (33.3)	1.13 (0.49,2.62)	0.774
21-30	38 (64.4)	28 (62.2)	Ref	
>30	3 (5.1)	2 (4.4)	0.9 (0.14,5.78)	0.916

Continued.

Parameters	Preparedness		Odds ratio (95% C.I)	P value
	Prepared n=59, N (%)	Not prepared n=45 (%)		
Gravida				
Multi	31 (52.5)	16 (35.6)	Ref	
Primi	28 (47.5)	29 (64.4)	2.01 (0.91,4.45)	0.086

Table 5: Multivariate logistic regression.

Parameters	Odds ratio	95 confidence interval		P value
		Lower	Upper	
Mother education				
Upto secondary	2.77	0.85	9.06	0.092
Higher secondary	5.99	1.78	20.16	0.004
Graduation	Ref			
Husband education				
Upto secondary	1.33	0.48	3.73	0.584
Higher secondary	0.69	0.15	3.11	0.625
Graduation	Ref			
Near HCF				
Pvt	Ref			
Govt	1.08	0.31	3.84	0.902
PHC	2.64	0.64	10.88	0.18

DISCUSSION

Maternal mortality continues to be alarming in India. There are several causes which result in MMR, perinatal and neonatal mortality rate and these causes might be sudden and severe resulting in unpredictable outcomes. There's need for planning the birth and emergency preparedness so as to remember and reduce the delays in seeking healthcare services. BPCR is one such tool and has also been adopted by WHO AN care model and also the integrated management of pregnancy and childbirth. This tool also involves interpersonal communication among the relations to have interaction themselves within the planning of the birth, making the pregnant women and therefore the relations alert and ready to face any complications thus promoting as killed maternal and neonatal care during childbirth. The current study revealed BPCR index of 96.15. This is like Acharya et al study where majority identified skilled birth attendant (SBA) for delivery.[11]

One of the key components of BPCR is assessing knowledge about danger signs of pregnancy. Early and immediate identification of obstetric complications is necessary to seek care and also for timely referral services. 90 were knowledge with danger signs.

This study has shown that education of the women and their husbands, parity, type of family play a vital role in improving the BPCR status. Woman's education (p=0.001) and her spouse's education (p=0.02) up to graduate and above were strong predictors of BPCR which is similar to a study done in rural Uganda where women's education and her spouse's education are significantly associated with BPCR.[12]

Due to better health information educated women have better pregnancy outcome compared with uneducated women, are likely to make better choices, develop and implement a birth plan, and are more socially or financially empowered to make the necessary decisions in case of obstetric emergencies.[13]

In the present study, the components of complication readiness were assessed by actors like identifying blood donors (13.5) and identifying transportation services (82). The latter two components were good but only a few perceived identifying blood donors during obstetric emergency was necessary. The findings with respect to identifying blood donor are consistent with a study by Patil et al (29.75), whereas it was low in a study done by Mukhopadhyay et al (9.6) and Hailu in Southern Ethiopia (2.3).[15-18]

Our findings are in agreement with others that many patients are admitted when they already have life threatening complications.[15-18] This is a reflection of the quality of antenatal care at peripheral units, the quality of obstetric care at the referring units and the efficiency of the referral system. The finding that many of the referrals were in critical condition at admission suggests possible delays in making the decision to refer (possibly due to difficulty in diagnosis), delays in reaching the referral hospital or poor quality of care at the referring health facility. Indeed, diagnostic delays and misdiagnosis are responsible for many of the near-miss mortality and are common among emergency obstetric referrals.[16,17] Women's ability to seek health care or implement lessons is often determined by the household head who usually is the husband who learned

from health education interventions (by developing their own birth plans).[19,20]

CONCLUSION

As the level of awareness regarding BPCR is very high i.e. 96.15 individual women, families and communities need to be empowered to contribute positively to make pregnancy safer. The knowledge and practice of birth preparedness and complication readiness among pregnant women studied was fairly good. The study identified that educational level was not a good predictor of practice of birth preparedness and complication readiness, rather women who registered for ante natal clinic rely heavily on the health education received from the care givers. Therefore, it is important that pregnant women are well educated regarding birth preparedness and complication readiness before birth. Nonetheless, the study showed that majority of the women were well informed and adequately prepared in case of complications during child birth.

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