

Estimation of Birth Preparedness and Complication Readiness among Recently Delivered Women in Rural Field Practice AreaUma Shankar Shukla¹, Asif Ahmed Quraishi², Priyanka Saini³, Vinod Kumar⁴, Khushboo Patel⁵, Mayank Jain⁵¹Assistant Professor Cum Statistician, Department of Community Medicine, Jhalawar Medical College, Jhalawar, Rajasthan.²Assistant Professor, Department of Community Medicine, Jhalawar Medical College, Jhalawar, Rajasthan.³Research Scientist, VRDL, Department of Microbiology, Jhalawar Medical College, Jhalawar, Rajasthan.⁴Professor, Department of Community Medicine, Jhalawar Medical College, Jhalawar, Rajasthan.⁵Post Graduate Student, Department of Community Medicine, Jhalawar Medical College, Jhalawar, Rajasthan.

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Abstract:

Background: During pregnancy and child birth every women faces risk of sudden, unpredictable complications that result in death or severe condition to herself or to her newborn. Birth Preparedness and Complication Readiness is a strategy which promotes timely use of skilled maternal and neonatal care especially during child birth, based on theory that preparing for child birth and being ready for any complication reduces delays in obtaining this care. Promotion of maternal health should be an approach comprising of the awareness regarding maternal and child health. Adequate planning of pregnancy should be encouraged and promotion of service utilization.

Objectives: The aim of this study is to determine birth preparedness and complication readiness (BPCR) among recently delivered women and to assess the factors related to it.

Materials and Methods: This cross sectional study was conducted on 210 recently delivered women residing in rural field practice area. Institutional ethical clearance was obtained before the commencement of the study. All the women were interviewed after their informed consent using the appropriately modified BPCR tool developed with respect to the rural setup. Chi square analysis was carried out to determine the various associated factors with BPCR.

Results: The BPCR index was found to be 55.28% and 67.14% women were well prepared for birth. Women had poor knowledge regarding danger signs and requirement of blood donor. Study found that women who received first ANC check-up during first trimester, received 4 or more ANC Visits, presence of husband during ANC visits (at least 2) and home visits by health care providers (at least 2), women who aware of at least 2 danger signs each during pregnancy, delivery and new born were significantly associated with birth preparedness and complication readiness.

Conclusion: There is a need to encourage knowledge regarding danger signs and birth preparedness plan as an essential component of their safe motherhood activities.

Keywords: Birth Preparedness, Complication, Danger Signs, Women.

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Introduction

Pregnancy is a cheerful moment for all mothers who hope of a safe pregnancy and a healthy baby. Every women have right to access safe motherhood care during pregnancy. Quality maternal health services are the responsibility of the state welfare. Despite of 59% decrease in the maternal deaths during the last decade, India contributes to 19% of the global maternal deaths [1]. During pregnancy and child birth every women faces risk of sudden,

unpredictable complications that result in death or severe condition to herself or to her newborn. [2] Most of maternal death occurs at the time of delivery and within 24-hour postpartum with nearly one-third of neonatal deaths occurring on the 1st day of life. Apart from medical causes, there are many other interrelated biosocial factors which delay care seeking and lead to maternal and neonatal deaths. [3] Birth Preparedness and

Complication Readiness is a strategy which promotes timely use of skilled maternal and neonatal care especially during child birth, based on theory that preparing for child birth and being ready for any complication reduces delays in obtaining this care [4,5]. Birth-Preparedness and Complication-Readiness (BP/CR) package empower women, her family and the community to promote maternal and neonatal survival. It has been considered as a standard component of the programs designed to make pregnancy safer. To be able to prepare for birth and possible complications to each and every women, families and communities need to know about signs of onset of labour as well danger signs during pregnancy, birth and after birth. [6] Various study shown that promoting BP/CR improves preventive behaviors, improves knowledge of mothers about danger-signs, and leads to improvement in health seeking during obstetric emergency. [7,8] The aim of this study is to assess the status of birth preparedness and complication readiness to tackle the obstetric complications. This study was conducted from rural health training centre. The information in this study may be valuable to state health policy makers and programme implementers who wish to lower the prevailing high maternal mortality in the country.

Objectives of the Study: 1. To determine the status of birth preparedness among pregnant

and recently delivered women. 2. To find out the association of birth preparedness with selected demographic variables.

Material and Methods

A community-based, cross-sectional study was conducted after obtaining ethical permission during July, 2019 to July, 2020 in rural field practice area of department of Community Medicine, Jhalawar Medical College, Jhalawar. Study subjects were comprised of women, who deliver within last one year living permanently in the study area. In our state, sufficient data regarding birth preparedness and complication readiness among antenatal women are not available, therefore by considering 50% pregnant women prepared for birth and complication readiness, at 95% confidence level and 15% allowable error, we calculated a sample size of 178 using formula $N=4PQ/L^2$ and adding non-response rate of 15%, we obtained total sample size as 204. With rounding off, total 210 women recently delivered were included as study participants. Complete list of all recently delivered women was prepared with help of anganwadi worker and ASHA. Participants were selected by simple random sampling. Women that severely ill, unable to communicate, not given consent and out of home during the study were excluded from study. Participants who willing to participate in

study was interviewed till the desirable sample size obtained. The participants were informed about the study and written consent was obtained. A pre-designed and pre-tested proforma was used to collect the socio demographic profile like the age, education, religion, occupation, type of family and socio economic status, knowledge about danger signs of pregnancy, childbirth and newborn. Severe vaginal bleeding, swollen face or hands and blurred vision were considered as key danger signs of pregnancy. Convulsions, Prolonged labor, Severe vaginal bleeding and retained placenta were considered as key danger signs of labor. Severe vaginal bleeding, high grade fever and foul smelling vaginal discharge during first 7 days after childbirth were considered as key danger signs of postpartum period. Key danger signs of neonates were convulsion, lethargy/unconsciousness, difficult/fast breathing, very low birth weight and unable to suck/drink during first 7 days of life. [4] Detail information of birth preparedness and postpartum care was taken as par Birth Preparedness Complication Readiness (BPCR) index. BP/CR was calculated by using a set of 10 indicators. It was adopted and modified from a safe motherhood questionnaire developed by the maternal neonatal program of JHPIEGO and other studies. [4,9,10,11]

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. 8) Percentage of women identified birth companion. 9) Percentage of women arranged blood donors in case of emergency. 10) Percentage of women identified the nearest health facility in case of emergency.

The participant who fulfilled at least six BP/CR practices were considered as 'Well prepared' and less than six were considered as 'less prepared'.

Statistical analysis: Data entry was done in Microsoft excel. Data was analyzed in percentages and proportions. Association with variables was tested using appropriate statistical test.

Results

This study was carried out on 210 recently delivered women (within one year) to assess their status of birth preparedness and complication readiness. The mean age of the study participants

was 25.4 ± 3.8 years, with age ranging from 17 years to 39 years of age.

Out of 210 participant women, majority of women 69.05% were between age of 21-30 years. Out of total only 19.52% participant were illiterate. Most of women 57.62% were housewives. Remaining 42.38% women were presently involved in deferent type of work. Majority of participants 61.43% were belongs to joint family. Most of participant belongs to Hindu religion (79.05%).

In present study it was observed that majority 43.33% of the respondents had pregnancy order second, 30.95% had first pregnancy and 25.71 %

had third or more pregnancy order. Majority of women participant 70.48% had registered their current pregnancy at a health facility during first trimester and 57.62% received four or more antenatal checkups.

The majority of the participants (90.95%) had received required one/two doses of TT injections and half of participant (50.95%) received 100 iron and folic acid tablets (IFA). 62.38% Participant had necessary investigation (Blood sugar, Urine examination and Hb measurement) and 55.71 % had blood pressure measurement at least 4 or more times.

Table 1: Utilization of Antenatal care during pregnancy.

Factors	Total	
	N=210	%
Registration in first trimester	148	70.48
TT1/TT2 immunization coverage	191	90.95
At least 4 or more ANC visits	121	57.62
100 IFA tablets consumption	107	50.95
Undergone necessary investigation (Blood sugar, Urine examination and Hb measurement)	131	62.38
Blood pressure measurement at least 4 or more times	117	55.71

Table 2: Status of birth preparedness.

Factors	Total	
	N=210	%
Women who knew at least 8 key danger signs during Pregnancy, Labor & during postpartum period.	7	03.33
Identified skilled birth attendant for delivery	156	74.29
ANC in first trimester by skilled provided	102	48.57
Identified mode of transportation	126	60.0
Knowledge about transportation provided through JSSK	198	46.67
Knowledge about financial assistance provided through JSY	157	74.76
Identified birth companion	172	81.90
Saved money for expenses.	142	67.62
Arrangement for blood donors in case of emergency	40	19.05
Identified the nearest health facility in case of emergency	161	76.67
BPCR index		55.28

In present study BPCR index was found to be 55.28% (Table -2).

Table 3: Socio demographic variables associated with the practise of birth preparedness and complication readiness

Socio demographic variables	BPCR status among recently delivered women				Total (210)		Chi square and p value
	Well prepared N=141(67.14%)		Less prepared N=69 (32.86%)		n	%	
	n	%	n	%			
Age							
≤20	15	62.50	9	37.50	24	11.43	4.99 0.082
21-30	104	71.72	41	28.28	145	69.05	
31-40	22	53.66	19	46.34	41	19.52	
Education of women							
Illiterate	20	48.78	21	51.22	41	19.52	11.09 0.011*
Up to primary	34	62.96	20	37.04	54	25.71	
Up to secondary	61	73.49	22	26.51	83	39.52	
Graduation and above	26	81.25	6	18.75	32	15.24	

Occupation of women							
Housewife	90	74.38	31	25.62	121	57.62	7.90 0.095
Unskilled	23	51.11	22	48.89	45	21.43	
Semi-skilled and skilled	18	58.06	13	41.94	31	14.76	
Clerical and shopkeeper	6	75.00	2	25.00	8	3.81	
Semi-professional and professional	4	80.00	1	20.00	5	2.38	
Education of Husband							
Illiterate	10	45.45	12	54.55	22	10.48	8.51 0.036*
Up to primary school	16	55.17	13	44.83	29	13.81	
Up to secondary	75	72.12	29	27.88	104	49.52	
Graduation and above	40	72.73	15	27.27	55	29.19	
Occupation of husband							
Unemployed	9	39.13	14	60.87	23	10.95	11.27 0.023*
Unskilled	53	66.25	27	33.75	80	38.10	
Semi-skilled and skilled	39	72.22	15	27.78	54	25.71	
Clerical and shop owner	25	71.43	10	28.57	35	16.67	
Semiprofessional and professional	15	83.33	3	16.67	18	8.57	
Type of family							
Nuclear	45	55.56	36	44.44	81	38.57	8.02 0.004*
Joint	96	74.42	33	25.58	129	61.43	
Religion							
Hindu	113	68.07	53	31.93	166	79.05	0.31 0.577
Muslim	28	63.64	16	36.36	44	20.95	
Socio economic class							
I&II	16	76.19	5	23.81	21	10.00	10.89 0.012*
III	48	78.69	13	21.31	61	29.05	
IV	61	64.89	33	35.11	94	44.76	
V	16	47.06	18	52.94	34	16.19	

(* significant as p-value less than 0.05)

It was found that about 141(67.14%) women were found to be well prepared and 69 (32.86%) women were less prepared for birth and complications [Table 3]. Table 3 shows Socio demographic variables associated with the of birth preparedness and complication status. Education of women and her husbands, occupation of her husband, type of family and socioeconomic class were found to be statistically significant.

Table 4 shows antenatal care services and obstetric variables associated with the of birth preparedness

and complication status. Study revealed that women who received first ANC check-up during first trimester, received 4 or more ANC Visits, presence of husband during ANC visits (at least 2) and home visits by health care providers(at least 2), women who aware of at least 2 danger signs each during pregnancy, delivery and new born were significantly associated with birth preparedness and complication readiness.

Table 4: Antenatal care services and Obstetric variables associated with the practice of birth preparedness and complication readiness

Antenatal care services and Obstetric variables	BPCR status among recently delivered women				Total (210)		Chi square and p value
	Well prepared		Less prepared		n	%	
	N=141	%	N=69	%			
Pregnancy order							
First	44	67.69	21	32.31	65	30.95	2.28 0.318
Second	65	71.43	26	28.57	91	43.33	
Third and above	32	59.26	22	40.74	54	25.71	
First ANC checkup received							
First trimester	115	75.16	38	24.84	153	72.86	19.74 0.000*
Second trimester	22	52.38	20	47.62	42	20.00	
Third trimester	4	26.67	11	73.33	15	7.14	
Number of ANC Visits							
4 or more ANC visits	96	79.34	25	20.66	121	57.62	19.24

Less than 3 ANC visits	45	50.56	44	49.44	89	42.38	000*
Presence of husband during ANC visits(at least 2)							
Yes	55	59.78	37	40.22	92	43.81	4.02
No	86	72.88	32	27.12	118	56.19	.044*
Home visits by health care providers(at least 2)							
Yes	95	73.64	34	26.36	129	61.43	6.41
No	46	56.79	35	43.21	81	38.57	0.011*
History of Abortion							
Yes	5	62.50	3	37.50	8	3.81	0.02
No	136	67.33	66	32.67	202	96.19	0.890
Aware of 2 or more danger signs during pregnancy							
Yes	107	63.31	62	36.69	169	80.48	5.75
No	34	82.92	07	17.08	41	19.52	0.016*
Aware of 2 or more danger signs of delivery							
Yes	117	70.90	48	29.10	165	78.57	4.95
No	24	53.33	21	46.67	45	21.43	0.026*
Aware of 2 or more newborn danger signs							
Yes	113	71.97	44	28.03	157	74.76	6.58
No	28	52.83	25	47.17	53	25.24	0.010*

(* significant as pvalue less than 0.05)

Discussion

Birth preparedness and complication readiness is one of the comprehensive approach to promote timely utilization of skilled maternal and neonatal care based on the premise that childbirth preparation and being ready for complications reduces delay in obtaining care during pregnancy, at the time of delivery and during post-partum periods. This is important as unprepared families would waste valuable time in attempt to recognize the problem, get prepared, to find fund, and to find means of transportation before reaching the appropriate referral facility. Birth preparedness programs can positively change the future health-seeking behavior of the family.

In our study from rural area, BCBR index found to be 55.28% was comparable to other study 59.56 % by Vishwanathan at el [11] and 55.83 % by Patil MS et al [12]. Other study reported low BCBR index by Kam M et al [10] reported 44.6% and Acharya AS at el [13] reported 41%.

In present study only few (3.33%) knew at least 8 key danger signs during Pregnancy, Labor & during postpartum period. Knowledge about danger sign was very low in present study as compared to study by Kushwah SS et al [5]. Knowledge about the danger signs is very useful as it force to pregnant women to seek desirable health check up and access to treatment on time. Hence, awareness activities about the danger signs of pregnancy need to be highlighted in the rural areas. In this study most of women (74.29%) Identified skilled birth

attendant for delivery. Other study conducted by Kushwah SS et al [5] and Chajhlana SPS [9] also found comparable results. ANC in first trimester by skilled provided one of the important aspect of care during pregnancy was found to be 48.57%. Chajhlana SPS [9] and Patil MS et al [12] reported higher result as 79.69% and 79.75% women found skill provider during their first trimester respectively. In present study 60.0% women Identified mode of transportation for delivery. However other study by Gurung J et al [14] found that 100% women found mode transportation for delivery. Financial assistance under JSY is one of the key to increase institutional deliveries. Knowledge about financial assistance provided through JSY was found to be 74.76% in present study. Other study also reported similar results [5, 10, 14]. However a study by Patil MS et al [12] reported that only 46.25% women have knowledge about financial assistance under JSY which was lower than present study. Arrangement for blood donors in case of emergency was one of neglected issue observed in present study as only (21.90%) women Identified blood donor in case of obstetric emergency. A study by Patil MS et al (12) reported comparable results to present study as (29.75%) women identified blood donor in this study. However one study by Gurung J et al [14] observed that only (1%) women were identified blood donor.

Conclusion:

In This study, the Birth preparedness and complication readiness index was found to be

55.28% and 67.14% of women had well prepared. However, awareness of danger signs was very poor among these women during pregnancy, labor, or postnatal period. Socio economic status, Education of both women and her husband was found statistically significant with birth preparedness. Early first ANC visit, residence, history of still birth, and educational status were factors significantly associated with birth preparedness and complication readiness practice. There is a need to encourage knowledge regarding danger signs and birth preparedness plan as an essential component of their safe motherhood activities.

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