

## Original Research Article

# BIRTH PREPAREDNESS AND COMPLICATION READINESS AMONG POSTNATAL WOMEN IN A MEDICAL COLLEGE HOSPITAL IN SOUTH TAMIL NADU- A CROSS-SECTIONAL STUDY

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### ABSTRACT

**Background:** Birth Preparedness & Complication Readiness (BPCR) is an efficient and economical way of preventing Maternal Mortality and Morbidity in a developing country like India. Understanding and practising this strategy will enable the antenatal period as well as delivery and postnatal period with less complications for a woman. The study aims to measure the level of awareness about BPCR among Postnatal women.

**Material and Methods:** The study was conducted as a Hospital based cross sectional study among Postnatal women delivered in Govt Thoothukudi Medical College Hospital. Data was collected from the post-natal mothers by interview method using pretested, prevalidated, semi-structured questionnaire comprising of socio demographic details and components of Birth Preparedness & Complication Readiness.

**Results:** Of the 217 Postnatal women who participated in the study, 54% were well prepared. Awareness of danger signs of pregnancy was 69.5% while awareness on danger signs on labour and postpartum period were 59.45% and 57.1% respectively.

**Conclusion:** The study suggests that increasing awareness of BPCR through health education campaigns can significantly contribute to ensuring safer outcomes during and after pregnancy.

**Key Words:** Birth Preparedness, Complication Readiness, Postnatal Women.

## INTRODUCTION

Pregnancy and delivery are considered most important phase in a woman's life. The journey through out that phase has a lot of complications which can result in Maternal & neonatal mortality and Morbidity. Approximately 800 women worldwide lose their lives each day due to complications related to pregnancy or childbirth. In 2010, the number of women who died during or after pregnancy and childbirth was 287,000. Almost all of these deaths occurred in low-resource settings, and most could have been prevented.<sup>[1]</sup> In 1994, Thaddeus and Maine introduced the "Three Delays"

framework to explain factors contributing to pregnancy-related mortality. The model highlights delays in, (1) deciding to seek appropriate medical help during an obstetric emergency, (2) reaching an appropriate healthcare facility, and (3) receiving adequate care once the facility is reached.<sup>[2]</sup> It begins from the woman and extends to her family members further to the community. The level of awareness amongst Antenatal mothers directly relates to seeking care at the earliest. Delay, therefore becomes an important contributing factor as it mitigates preventable morbidity and mortality. Maternal mortalities can be reduced with help of healthcare facilities and infrastructure if availed at right time.<sup>[3]</sup> Key factors contributing to maternal mortality in

developing countries include limited access to institutional deliveries, insufficient birth preparedness, inadequate skills among healthcare providers, gaps in emergency obstetric care at healthcare facilities, and fragile referral systems. BPCR involves two key components: planning for a normal birth and being prepared for any potential obstetric complications. BPCR not only advocates utilizing services provided for safe maternal and neonatal care but also reduces the risk of complications arising out of improper utilization. This strategy has been approved globally as an essential component of safe motherhood program.<sup>[4]</sup> Complication readiness ensures that antenatal women are informed about all potential obstetric complications including dangers signs of pregnancy, Labor & Postpartum period. So that, the women will be able to recognize the complication at the earliest and seek care from qualified health care providers at the facility.<sup>[5]</sup>

Many women are unaware of the warning signs of complications, leading to delays in seeking timely intervention, including saving money in prior, arranging transportation, and reaching the referral center.<sup>[6]</sup> In spite of Tamil Nadu having 98.9% institutional births, only 81% of antenatal women have had at least 4 antenatal checkups, 71% were protected against neonatal Tetanus and only 74% received Postnatal care.<sup>[7]</sup> Improving Birth Preparedness and complication readiness would be a simple way of improving pregnancy outcomes. There is limited number of comprehensive studies to assess the knowledge of Postnatal mothers on birth preparedness and complication readiness in the southern part of India. The present study was conducted to assess the Awareness of birth preparedness and complication readiness among postnatal women, as well as the determine the sociodemographic factors of the postnatal women influencing their Knowledge on BPCR.

## MATERIALS AND METHODS

A hospital based cross sectional study was conducted in Govt. Thoothukudi Medical College Hospital among Postnatal mothers who delivered there. The study was conducted after obtaining Clearance from the Institutional Ethical Committee between march 2023 to June 2023. The Sample size is based on 85% of awareness of danger signs of pregnancy in a study conducted at Western Maharashtra, with an Absolute precision 5 %, with 10 % non response rate, derived using the formula  $Z^2pq/d^2$  and a sample size of 217 was arrived at. A Convenient(Inclusive) sampling was used to include the participants. All postnatal mothers who delivered at the hospital irrespective of parity were included in the study after getting informed consent.

Data was collected from the post-natal mothers by interview method using pretested, prevalidated, semi-structured questionnaire comprising of socio

demographic details and components of birth preparedness & complication readiness which was adopted from "Monitoring Birth Preparedness and Complication Readiness, Tools and Indicators for Maternal and Newborn Health (JHPIEGO)".<sup>[8]</sup>

### Operational definition

BPCR score was based on awareness on 12 components including Regular Antenatal Visits, Immunization, Place of delivery, saving money, arranging transport, finalizing a place for delivery. The average of the 11 components were taken and a score of less than 7 was considered to be less prepared and a score of 8 and above was considered to be well prepared.

### Statistical Analysis

The data collected from the study was entered in MS Excel and will be analyzed using SPSS Version 16. Appropriate Descriptive & Inferential statistics was used to analyze the data.

## RESULTS

In this study a total of 217 postnatal women were included. It was observed (Table 1) that more than 60% of the participants were in the age group 15-24, most postnatal women and their husbands (42%) were educated up to 8th standard. Nearly 91% of postnatal women were financially dependent on their husband. [Table 1]

### based on Religion

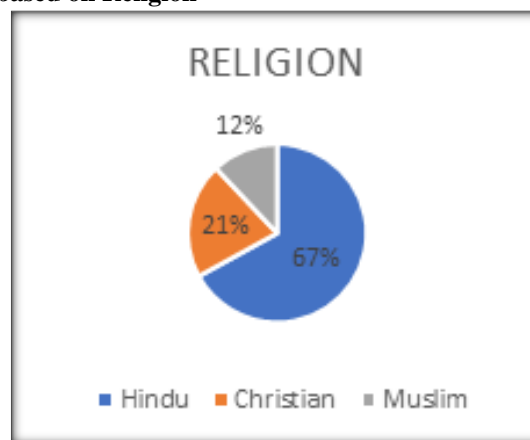


Figure 1: Distribution of Study Participants

### based on Parity

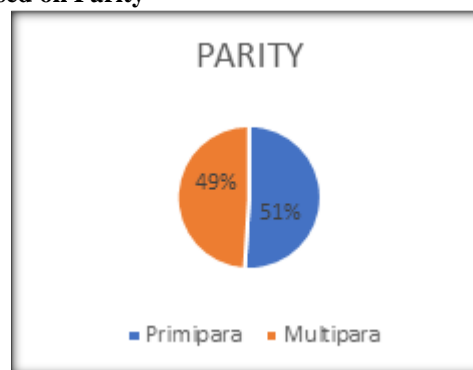
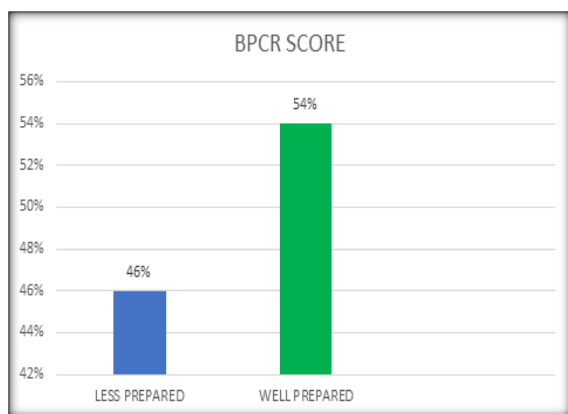


Figure 2: Distribution of Study Participants



**Figure 3: Distribution of Study Participants based on BPCR Score**

From figures 1,2 & 3, it was observed that most study participants belong to Hindu Religion, almost half were Primipara & half were Multipara. Out of the 217 postnatal women, 54% were well prepared with a BPCR score of 8-11.

The study also revealed that nearly 73% of the postnatal women & 96% were aware of regular antenatal visits and Immunisation as a part of Birth Preparedness. With regard to awareness of medical emergency no as 108, 99% women were aware. Around 55% were also aware of arranging a Birth companion. [Table 2]

From Table 4, it is evident that there was a statistically significant association between Parity, and Age with Birth Preparedness. [Table 4]

**Table 1: Sociodemographic profile of the participants**

Parameter	Frequency	Percentage
<b>AGE</b>		
15-24 years	132	61%
25-34 years	81	37.3%
35-44 years	4	1.7%
<b>Mother's Education</b>		
Graduation	59	27%
High school & Higher secondary school	68	31%
Primary & Middle school	90	42%
<b>Husband's Education</b>		
Graduation	63	29%
High school & Higher secondary school	64	30%
Primary & Middle school	90	42%
<b>Financial Dependency on Husband</b>		
Yes	196	90.5%
No	21	9.5%

**Table 2: Awareness on birth preparedness & complication readiness**

I	REGULAR ANTENATAL VISITS		
	Yes	158	72.8%
	No	59	27.2%
2	IMMUNISATION		
	Yes	208	95.8%
	No	9	4.2%
3	PLACE OF DELIVERY		
	Yes	169	73.2%
	No	48	26.8%
4	MEDICAL EMERGENCY NO		
	Yes	215	99%
	No	2	1%
5	BIRTH COMPANION		
	Yes	118	54.3%
	No	99	45.7%
6	BLOOD DONOR ARRANGEENT		
	Yes	78	35.9%
	No	139	64.1%
7	ARRANGING TRANSPORT		
	Yes	133	61.2%
	No	84	38.8%
8	ARRANGING MONEY		
	Yes	158	72.8%
	No	59	27.2%
9	DANGER SIGNS OF PREGNANCY		
	Yes	151	69.5%
	No	66	30.5%
10	DANGER SIGNSO F POSTPARTUM PERIOD		
	Yes	124	57.1%
	No	93	42.9%
11	DANGER SIGNS OF LABOUR		
	Yes	129	59.4%
	No	88	40.6%
12	DANGER SIGNS OF NEWBORN		

Yes	113	52%
No	104	48%

**Table 3: Association of sociodemographic factors & birth preparedness**

	LESS PREPARED	WELL PREPARED	Chi-Square Statistic	p-value
<b>AGE GROUP</b>				
15-24 YEARS	53	79	10.845	<b>0.000**</b>
25-44 YEARS	16	69		
<b>RELIGION</b>				
Hindu	45	102	0.3478	0.84
Christian	15	30		
Muslim	9	16		
<b>PARITY</b>				
Primipara	57	63	30.523	<b>0.000**</b>
Multipara	12	85		
<b>MOTHER'S EDUCATION</b>				
Graduation	15	48	3.3467	0.187
High school & Higher secondary	20	44		
Primary & Middle	34	56		
<b>HUSBAND'S EDUCATION</b>				
Graduation	13	46	4.0873	0.129
High school & Higher secondary	22	46		
Primary & Middle	34	56		

**\*\*Significant (p<0.05)**

## DISCUSSION

The current study was carried out to evaluate the awareness of Birth preparedness and Complication readiness among Postnatal women delivered in Government Medical College Hospital, Thoothukudi and the factors contributing to the awareness.

In the present study 217 post-natal women who delivered at Government medical college, Thoothukudi had participated. The study revealed that 54% of the participants were "well prepared". In Pandey et al<sup>(9)</sup> study 46.4% of the Antenatal women and 45.1% of recently delivered women were well prepared. Indira et al,<sup>[10]</sup> study revealed 48.8% of antenatal women were well prepared. Salroo et al,<sup>[11]</sup> study done in Anantnag also was comparable with present study in which 49.8% were well prepared. In Gowthaman et al,<sup>[13]</sup> study conducted in Karnataka 18.8% of Antenatal women had Good awareness and 42% had moderate awareness. Surprisingly in Kar M et al,<sup>[12]</sup> study done in odissa only 26% of total participants were well prepared.

In the present study, 69.5% of study participants were aware of danger signs of pregnancy which was comparable to Neslin et al,<sup>[14]</sup> study conducted in Chennai where 65% were aware of pregnancy danger signs. Whereas Indira et al<sup>(10)</sup> conducted in sivagangai & Salroo et al,<sup>[11]</sup> study reported awareness of 32.4% and 28.3% respectively. Also 57.1% of study population were aware of Danger signs of Postpartum which was much higher as compared to Neslin et al study,<sup>[14]</sup> where it was 23.5%, Indira et al,<sup>[10]</sup> it was 24.3% and Kar M et al,<sup>[12]</sup> study it was 32.3%.

Out of 217 post-natal women, 35.9% were only aware of arranging a Blood donor as a part of Birth preparedness, which was much less as compared to

Salroo et al,<sup>[11]</sup> where the awareness was 56.9% but higher than Indira et al study where the awareness was 26.6% and Kar M et al,<sup>[12]</sup> where it was only 14.6% of the total participants. Neslin et al,<sup>[14]</sup> study also reported an awareness of 46.9% which was much higher than the present study. This suggests that awareness on arrangement of Blood donors during antenatal period should be more advocated because not identifying a donor in prior could again be a contributory factor for maternal mortality in case of either antepartum or postpartum hemorrhage requiring an emergency Blood transfusion.

Identifying or Choosing a Health care facility for safe delivery is one of the important components of Birth preparedness which helps to avoid delay as mentioned in Thaddeus and Maine model in preventing Maternal mortality. The present study identifies 73.2% of study participants had chosen a place for delivery (near 3/4th) which implies a good awareness on Birth preparedness and comparable to Salroo et al,<sup>[11]</sup> study where it was 77% of study participants. Neslin et al,<sup>[14]</sup> study reported 83.1% of participants had chosen a place for delivery, Pandey et al<sup>(9)</sup> it was much higher (95% of AN women & 99% of recently delivered women)

Arranging transport ahead of time reduces the first and second delays: the delay in seeking services and the delay in reaching services, respectively. The current study reveals that 61.2% were aware of arranging a mode of transport for delivery and any other emergency. Neslin et al,<sup>[14]</sup> and Indira et al study,<sup>[10]</sup> revealed more than 70% of their study participants were aware of arranging transport, while Pandey et al study<sup>(9)</sup> and Kar M et al,<sup>[12]</sup> study revealed less awareness of 21.2% and 26% respectively.

In spite of government schemes like Muthulakshmi Reddy Maternity Benefit scheme <sup>(15)</sup> and Janani Suraksha yojana schemes which offer Financial Assistance during Pregnancy and after Delivery, it is necessary for the women and/or her family to save money for transportation for AN checkup, unforeseen visits to private hospitals and other costs like loss of pay. If the women doesn't save money to balance these costs, she is less likely to go for regular Antenatal checkups and care. In the present study 90.5% of the women were Financially dependent on their husbands which implies that Money should be saved by the family on the whole for the above mentioned reasons. Around 73% of the postnatal women were aware of saving money as a part of Birth preparedness. Similar level of awareness on saving money (76%) was prevalent in Salroo et al study. Pandey et al<sup>9</sup> study revealed an awareness of 57.5%, Kar M et al,<sup>[12]</sup> study an awareness of only 26% which was much less compared to the present study. Indira et al,<sup>[10]</sup> study revealed a much higher awareness of 82% for arranging transport.

## CONCLUSION

The current study revealed that 54% of the study population were well prepared which means nearly half of the study population are less prepared. Awareness of danger signs of pregnancy was nearly 70% which is a good indicator of BPCR but however, the awareness of Danger signs of Labour and Postpartum was only 59.4% and 57.1% respectively.

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