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A Study to Assess the Knowledge of Couples Regarding Birth Preparedness and Complication Readiness (BPCR) and its Association with Selected Socio-Demographic Variables Among Antenatal Couples Attending Selected Health Centers, Greater Noida, UP

Nandni Kumari Shriwstva[1]; Mamta Chaudhary[1]; Lamnunnem Haokip[2*]

[1]Sharda School of Nursing Science and Research, Sharda University
[2]Nursing Lecturer Sharda School of Nursing Science and Research, Sharda University

Corresponding Author: Lamnunnem Haokip[2*]

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Abstract:

- ***Background:***

Birth Preparedness and Complication Readiness (BPCR) is an important component of safe motherhood. Advance planning for skilled birth attendance, place of delivery, transportation, financial resources, emergency care and recognition of danger signs can help families respond more appropriately when complications occur. Because decisions during pregnancy and emergencies may involve both partners, assessing couples provides a family-level perspective on preparedness.

- ***Objectives:***

To assess the level of knowledge regarding BPCR among antenatal couples attending selected health centers in Greater Noida, Uttar Pradesh; to identify areas of knowledge gaps; and to determine the association between BPCR knowledge and selected socio-demographic variables.

- ***Methods:***

A quantitative research approach with a descriptive cross-sectional design was used. The study included 100 antenatal couples selected according to the predetermined criteria. Data were collected using a structured socio-demographic pro-forma and a 30-item structured BPCR knowledge questionnaire. Descriptive statistics were used to summarize the data, and the Chi-square test was used to examine associations between knowledge level and selected socio-demographic variables.

- ***Results:***

Among the 100 couples, 61 (61%) had good BPCR knowledge and 39 (39%) had moderate knowledge; none had poor knowledge. Educational status was significantly associated with BPCR knowledge (χ^2=20.910, df=4, p=0.000330). No statistically significant association was found with age of the antenatal mother, age of the husband, religion, occupation, monthly family income, type of family, place of residence or gravida.

- ***Conclusion:***

The study indicates that most participants had good overall BPCR knowledge, although important gaps remained in emergency-related components. Couple-centered antenatal education, particularly on danger signs, emergency transportation, financial preparedness, blood-donor identification and timely referral, should be strengthened.

Keywords: *Birth Preparedness; Complication Readiness.*

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I. INTRODUCTION

Pregnancy and childbirth are important events for women and families, but complications may develop unexpectedly during pregnancy, labour, delivery or the postpartum period. Birth Preparedness and Complication Readiness (BPCR) provides a practical framework for anticipating normal childbirth and preparing for possible emergencies[1]. The thesis describes BPCR as including advance decisions about the place of delivery, skilled birth attendance, transportation, financial resources, emergency care, support and blood availability when required. The need for preparedness is closely related to timely recognition and response to maternal and newborn danger signs[2]. The thesis identifies severe vaginal bleeding, severe headache, blurred vision, convulsions, fever, severe abdominal pain, breathing difficulty and other warning signs as situations that require prompt professional attention. Inadequate knowledge may contribute to delay in recognizing the seriousness of a complication and seeking care.

Evidence reviewed in the thesis shows that BPCR awareness varies across settings and across individual preparedness components[3]. A 2024 systematic review of Indian studies reported limited overall awareness and particularly inadequate knowledge of maternal and newborn danger signs. Studies from Uttar Pradesh and other Indian settings similarly identified gaps in transportation planning, emergency funds, blood-donor identification and recognition of danger signs. The thesis also highlights the role of husbands or partners because they may participate in decisions about transportation, finances, place of delivery and referral. Antenatal care offers an opportunity for nurses and other health professionals to provide repeated, understandable education to both partners[4].

Couple-centered counseling can reinforce recognition of danger signs and help families make practical arrangements before labour begins. The present study was therefore undertaken to assess BPCR knowledge among antenatal couples in Greater Noida and to examine its association with selected socio-demographic variables. Pregnancy and childbirth are important stages in the life of a woman and her family. Although pregnancy is generally considered a natural process, complications may develop unexpectedly during pregnancy, labour, delivery, or the postpartum period[5]. Some of these complications can become serious within a short period of time and may require immediate medical attention. For this reason, preparing the woman and her family in advance is an important part of promoting safe motherhood[6]. Birth Preparedness and Complication Readiness (BPCR) provides a practical approach through which pregnant women and their families can prepare for normal childbirth as well as possible emergencies.

The need for BPCR is particularly relevant in settings where families may experience difficulties in reaching healthcare facilities. Greater Noida and its surrounding communities include populations with varying levels of education, economic circumstances and access to healthcare[7]. Understanding the existing knowledge of antenatal couples in this setting can help identify areas where additional education may be required. Research evidence supports the need to improve BPCR knowledge. The 2024 systematic review of Indian studies found that only about half of pregnant and recently delivered women were aware of BPCR components, highlighting a continuing knowledge gap[8].

II. MATERIAL AND METHODS

- *Research Design:*

A quantitative research approach and descriptive cross-sectional research design were adopted. The design was used to describe the existing level of BPCR knowledge at a particular point in time without introducing an intervention.

- *Setting:*

The study was conducted among antenatal couples attending Sharda Hospital, Greater Noida, Uttar Pradesh, as described in the thesis.

- *Population and Sample:*

The study population comprised antenatal couples meeting the predetermined eligibility criteria. A total of 100 antenatal couples were included in the study.

- *Variables:*

The dependent variable was the level of knowledge regarding BPCR. Selected socio-demographic characteristics—including age of the antenatal mother, age of the husband, religion, educational status, occupation, monthly family income, type of family, place of residence and gravida—were examined as independent variables.

- *Data Collection Instrument:*

Data were collected using two sections: a socio-demographic data proforma and a structured 30-item multiple-choice questionnaire assessing BPCR knowledge. The questionnaire covered areas such as skilled birth attendance, place of delivery, danger signs, emergency transportation, financial preparedness, blood-donor arrangement, decision-making and timely help-seeking.

- *Scoring:*

Knowledge scores were classified as good (21–30), moderate (11–20) and poor (0–10). The thesis reports a mean BPCR knowledge score of 20.48, with scores ranging from 11 to 30.

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➢ *Data Analysis:*

Frequency and percentage were used to describe participant characteristics and knowledge levels. Item-wise analysis was used to identify comparatively stronger and weaker areas of knowledge. The Chi-square test was applied to determine associations between knowledge level and selected socio-demographic variables; $p<0.05$ was considered statistically significant.

➢ *Ethical Considerations:*

Permission for data collection was obtained from the relevant institution. Participants were informed about the study, participation was voluntary, confidentiality was maintained, and informed consent was obtained before data collection.

III. RESULTS

All 100 participants completed the assessment. The results are presented as demographic characteristics, overall BPCR knowledge level, and associations between knowledge level and selected socio-demographic variables.

Table 1. Socio-Demographic Characteristics of Participants (N=100)

Variable	Category	n	%
Age of antenatal mother	19–24 years	40	40%
	25–29 years	33	33%
	30–35 years	27	27%
Age of husband	21–30 years	38	38%
	31–40 years	55	55%
	41–45 years	7	7%
Religion	Hindu	79	79%
	Muslim	10	10%
	Christian	10	10%
	Other	1	1%
Educational status	Illiterate	4	4%
	Primary	5	5%
	Secondary	25	25%
	Higher Secondary	36	36%
	Graduate+	30	30%
Occupation	Housewife	51	51%
	Government	9	9%
	Private/Salaried	20	20%
	Self-employed	15	15%
	Other	5	5%
Monthly family income	<₹10,000	19	19%
	₹10,000–20,000	36	36%
	₹20,001–30,000	29	29%
	>₹30,000	16	16%
Type of family	Nuclear	70	70%
	Joint	30	30%
Place of residence	Rural	53	53%
	Urban	47	47%
Gravida	Primigravida	40	40%
	Multigravida	60	60%

Table 1 describes that, in the original ungrouped distribution, the largest proportion of antenatal mothers was aged 23 years, while the grouped data showed 40% aged 19–24 years. Most husbands were 31–40 years (55%). Hindu participants comprised 79%. Higher Secondary education was the most common educational category (36%), followed by Graduate or above (30%). More than half of the participants were housewives (51%). The largest income group was ₹10,000–20,000 (36%). Seventy percent belonged to nuclear families, 53% lived in rural areas, and 60% were multigravida.

Table 2 Overall Level of BPCR Knowledge (N=100)

Knowledge level	Frequency	Percentage
Good knowledge	61	61%
Moderate knowledge	39	39%
Poor knowledge	0	0%
Total	100	100%

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Table 2: Percentage distribution of respondents according to BPCR knowledge level. The majority of respondents, 61 (61%), had good knowledge, while 39 (39%) had moderate knowledge. No participant was classified as having poor knowledge. The reported mean knowledge score was 20.48, with scores ranging from 11 to 30.

Table 3 Association Between Selected Socio-Demographic Variables and BPCR Knowledge

Variable	χ^2	df	Exact p	Interpretation
Age of antenatal mother	4.572	2	0.101662	Not significant
Age of husband	4.813	2	0.090128	Not significant
Religion	3.677	3	0.298494	Not significant
Educational status	20.910	4	0.000330	Significant
Occupation	2.366	4	0.668777	Not significant
Monthly family income	0.550	3	0.907741	Not significant
Type of family	2.180	1	0.139834	Not significant
Place of residence	0.076	1	0.783142	Not significant
Gravida	1.009	1	0.315184	Not significant

Table 3: Chi-square statistics for selected socio-demographic variables. The dashed reference line represents the 0.05 significance threshold conceptually; exact p-values in Table 3 determine statistical significance.

Educational status was the only selected socio-demographic variable showing a statistically significant association with BPCR knowledge (χ^2=20.910, df=4, p=0.000330). Respondents with higher educational attainment tended to have a higher level of BPCR knowledge. No statistically significant association was observed for the remaining variables.

IV. DISCUSSION

The present study assessed BPCR knowledge among 100 antenatal couples and examined its association with selected socio-demographic variables. The principal finding was that 61% of respondents had good knowledge and 39% had moderate knowledge, with no respondent classified as having poor knowledge. This indicates a generally favourable overall knowledge profile in the study sample, while the presence of a substantial moderate-knowledge group shows that important educational needs remain.

The item-wise findings provide a more detailed picture than the overall score alone. Participants demonstrated comparatively better understanding of basic antenatal care and the importance of skilled care, but gaps remained in emergency-related knowledge. Recognition of danger signs during pregnancy, labour and the postpartum period was identified as an area requiring reinforcement. Similar concerns are described in the literature reviewed in the thesis, where awareness of danger signs and some emergency-preparedness components was lower than awareness of routine birth-preparedness measures.

Educational status showed a statistically significant association with BPCR knowledge. The pattern in the present study suggests that higher educational attainment was accompanied by a greater proportion of good knowledge. This finding is consistent with the thesis literature review, which identifies education as an important factor in BPCR awareness and male involvement in some Indian studies. At the same time, the absence of significant associations with age, occupation, income, family type, residence and gravida indicates that these variables did not show a statistically detectable relationship with knowledge in this particular sample.

The findings also reinforce the importance of involving husbands or partners in antenatal education. BPCR includes practical decisions about transportation, finances, place of delivery, referral and emergency support that may involve both partners. Couple-centred counselling can therefore provide an opportunity to strengthen shared understanding and preparedness rather than directing information only to the pregnant woman.

For nursing practice, the results support regular and structured BPCR education during antenatal visits. Nurses can focus on simple explanations of danger signs, emergency transportation, financial preparation, blood-donor identification, skilled birth attendance and timely referral. Visual aids, demonstrations and repeated reinforcement may help couples retain essential information.

V. CONCLUSION

The study found that most antenatal couples had good overall knowledge regarding Birth Preparedness and Complication Readiness, although 39% had moderate knowledge and several emergency-related areas required reinforcement. Educational status was significantly associated with BPCR knowledge, whereas age, religion, occupation, income, family type, residence and gravida were not statistically associated in the present sample. The findings support strengthening couple-centred antenatal counseling, with particular attention to recognition of maternal danger signs, emergency planning and timely referral. Nurses and other maternal-health professionals have an important role in providing continuous, understandable and practical BPCR education.

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