Journal of Pioneering Medical Sciences
Received: January 13, 2026 | Accepted: April 10, 2026 | Published: April 15, 2026
Volume 15, Issue S01, Pages 184-186

DOI https://doi.org/10.47310/jpms202515S0133

Knowledge on Birth Preparedness and Complication Management Among Final-Year Nursing and Midwifery Students of North Karnataka

Asha Bhat[1*] and Heikham Gineta Chanu[2]
[1-2]Department of OBG Nursing, KLE Institute of Nursing Sciences, Belagavi, Karnataka, India

Author Designation: [1]Associate Professor, [2]Assistant Professor

*Corresponding author: Asha Bhat (e-mail: ashabhat1978@gmail.com).

Abstract: Background: Birth preparedness and complication management (BPCM) is a core component of safe motherhood because it promotes advance planning for delivery and early recognition of maternal and newborn danger signs. Assessing BPCM knowledge in final-year trainees is important because these students are close to entering clinical practice. **Methods:** This descriptive cross-sectional study was conducted among 150 final-year nursing and midwifery students from selected colleges in North Karnataka using purposive sampling. Data were collected between December 2024 and January 2025 through a structured self-administered Google Form based on WHO recommendations and the JHPIEGO Birth Preparedness and Complication Readiness Index. Descriptive statistics and chi-square tests were used for analysis. **Results:** Overall, 54.7% of students had moderate knowledge, 28.0% had adequate knowledge, and 17.3% had inadequate knowledge. The mean knowledge score was 18.27±6.32. Knowledge level showed significant association with academic year or semester (chi-square = 16.615, p = 0.002) and gender (chi-square = 28.901, p = 0.001), while age group and religion were not significantly associated. **Conclusion:** Final-year nursing and midwifery students demonstrated predominantly moderate knowledge of BPCM, indicating the need for stronger competency-focused teaching. Structured simulation, case-based learning, and reinforcement of danger-sign recognition and emergency preparedness should be emphasized before graduation.

Key Words: Birth Preparedness, Complication Management, Nursing Students, Maternal Health, Knowledge Assessment, North Karnataka

INTRODUCTION

Maternal mortality remains a major public-health concern in many low- and middle-income settings, and preventable deaths continue to occur because of delayed recognition of danger signs and delayed access to timely obstetric care [1-3]. Birth Preparedness and Complication Management (BPCM) aims to reduce these delays by encouraging advance planning for place of birth, skilled attendance, transport, emergency funds, supplies, and recognition of maternal and newborn danger signs [4,5].

In educational terms, knowledge of BPCM among final-year nursing and midwifery students is especially important because these learners are close to independent clinical responsibility. Their knowledge base influences how confidently they can identify obstetric emergencies, counsel families, and activate referral pathways during antenatal, intranatal, and postnatal care.

In India, BPCM is taught within maternal health and midwifery training; however, the degree to which final-year students retain and apply this knowledge may vary by academic exposure, clinical postings, and institutional teaching methods [6-9]. Regional data from North Karnataka are limited. This study therefore assessed the knowledge of BPCM among final-year nursing and midwifery students and identified demographic factors associated with knowledge variation.

Objectives

- **Primary Objective:** To assess the level of knowledge on birth preparedness and complication management among final-year nursing and midwifery students of selected colleges in North Karnataka.
- **Secondary Objective:** To identify knowledge gaps and examine associations between knowledge level and selected demographic variables.

METHODS

Study Design and Setting

A descriptive cross-sectional design was adopted. The study was conducted among final-year nursing and midwifery students from selected colleges in North Karnataka.

Sample and Sampling

A total of 150 students were included through purposive sampling. The source manuscript did not provide a formal power calculation; this has been acknowledged as a limitation.

Eligibility

Final-year students who consented to participate were included. The source manuscript did not report additional exclusion criteria beyond non-consent.

Tool and Data Collection

Data were collected from December 2024 to January 2025 using a structured self-administered Google Form derived from WHO recommendations and the JHPIEGO Birth Preparedness and Complication Readiness Index [4,5]. The questionnaire included demographic variables and knowledge items related to danger signs, transport planning, financial preparedness, and emergency decision-making. Because the original dataset did not report detailed psychometric testing, the revised manuscript presents the tool conservatively as structured and guideline-based rather than fully validated.

Statistical Analysis

Frequency, percentage, mean, and standard deviation were used to summarize findings. Chi-square tests were used to assess associations between knowledge level and selected demographic variables. Statistical analysis was performed using Microsoft Excel and SPSS version 23, with $p < 0.05$ considered significant.

Ethics

Institutional ethical clearance was obtained before data collection. Participation was voluntary and responses were collected anonymously through the online form.

RESULTS

Of the 150 respondents, 73.33% were female and 61.33% were aged 22-23 years. Most participants were from the 7th semester or final-year category (Table 1).

More than half of the students demonstrated moderate knowledge (54.7%), whereas 28.0% showed adequate knowledge and 17.3% demonstrated inadequate knowledge.

Knowledge level was significantly associated with academic year or semester and gender. No statistically significant association was observed with age group or religion.

The source dataset did not provide domain-wise scores for antenatal, intranatal, postnatal, or newborn complication management separately. Accordingly, the revised results are limited to the overall knowledge distribution and reported associations.

Table 1: Distribution of Knowledge Levels and Their Association with Demographic Variables

Variable	Category	n (%) / statistic
Knowledge level	Moderate	82 (54.7%)
Knowledge level	Adequate	42 (28.0%)
Knowledge level	Inadequate	26 (17.3%)
Overall score	Mean±SD	18.27±6.32
Significant association	Academic year/semester	Chi-square 16.615; p = 0.002
Significant association	Gender	Chi-square 28.901; p = 0.001
No significant association	Religion	p>0.05
No significant association	Age group	p>0.05

DISCUSSION

The findings indicate that final-year nursing and midwifery students generally possessed moderate rather than high knowledge of BPCM. This suggests that theoretical teaching may be present, but knowledge consolidation may still be incomplete before graduation [1,2,10].

The significant association between academic year or semester and knowledge level is plausible because curricular exposure and clinical postings increase over time. The association with gender should be interpreted cautiously and not over-generalized, particularly because the study did not explore explanatory variables such as learning environment, confidence, or clinical opportunities.

From an educational perspective, knowledge alone is not equivalent to emergency management competence. BPCM also requires practical skills such as danger-sign recognition, prioritization, communication, referral activation, and teamwork. Therefore, moderate knowledge scores should be interpreted as a signal for stronger competency-based reinforcement rather than as proof of readiness for independent obstetric emergency management.

The online self-administered format may have influenced response behavior, and the absence of domain-wise scoring limited identification of the exact complications that were least understood. Even so, the findings support greater use of simulation-based learning, structured case discussions, and repeated formative assessment in maternal-health teaching [4,5].

Strengths and Limitations

Strengths of the study include its focus on final-year students, who are at the threshold of professional practice, and the use of a structured questionnaire grounded in WHO and JHPIEGO guidance [4,5].

Important limitations include purposive sampling, single-region representation, online self-administration, and reliance on knowledge assessment without direct observation of clinical skills. The source manuscript also did not provide detailed scoring cut-offs by knowledge domain, psychometric properties of the questionnaire, or supervised administration conditions. These issues reduce generalizability and limit interpretation of the exact training deficits.

Clinical and Educational Implications

Nursing colleges should strengthen pre-service maternal-health training through simulation-based sessions, case-based learning, and structured review of maternal and newborn danger signs.

Regular objective assessments before graduation, along with supervised clinical exposure and post-assessment feedback, may help ensure that moderate theoretical knowledge is converted into safer practical readiness.

Institutions may also consider focused remediation for students with inadequate scores and reinforce BPCM during antenatal, labor-room, and postnatal postings.

CONCLUSIONS

Final-year nursing and midwifery students in this study demonstrated predominantly moderate knowledge of birth preparedness and complication management, with a smaller but important group showing inadequate knowledge. Educational strengthening should focus on practical danger-sign recognition, emergency preparedness planning, and simulation-based maternal-health training before these students enter clinical service. Because this was a descriptive cross-sectional study with purposive sampling and online self-administration, the findings should be interpreted as baseline educational evidence rather than as a measure of real-life emergency performance.

Ethics, Funding, and Disclosures

Institutional ethical clearance was reported in the source manuscript, and participation was voluntary.

Conflict of Interest

The authors reported no conflicts of interest.

REFERENCES

[1] Singh, T. *et al.* "Examining birth preparedness and complication readiness: a systematic review and meta-analysis of pregnant and recently delivered women in India." *BMC Womens Health* vol. 24, 2024, pp. 119.

[2] Berhe, A.K. *et al.* "Birth preparedness and complication readiness among pregnant women in Ethiopia: a systematic review and meta-analysis." *Reprod Health* vol. 15, no. 1, 2018, pp. 182.

[3] Tura, G. *et al.* "The effect of birth preparedness and complication readiness on skilled care use: a prospective follow-up study in Southwest Ethiopia." *PLoS One* vol. 9, no. 11, 2014, pp. e110428.

[4] JHPIEGO. "Monitoring birth preparedness and complication readiness: tools and indicators for maternal and newborn health." Baltimore: JHPIEGO; 2020.

[5] World Health Organization. "Recommendations on antenatal care for a positive pregnancy experience." Geneva: WHO; 2021.

[6] Viswanathan, V.T. *et al.* "Study to assess birth preparedness and complication readiness to promote safe motherhood among women from a rural area of Western Maharashtra." *Indian J Community Med* vol. 45, no. 4, 2020, pp. 511–515.

[7] Akshaya, K.M. *et al.* "Birth preparedness and complication readiness among the women beneficiaries of selected rural primary health centers of Dakshina Kannada district, Karnataka, India." *PLoS One* vol. 12, no. 8, 2017, pp. e0183739.

[8] Patil, M.S. and Vedpathak, V.L. "Birth preparedness and complication readiness among primigravida women attending tertiary care hospital in a rural area." *Int J Community Med Public Health* vol. 3, no. 8, 2016.

[9] Gowthaman, S. *et al.* "Birth preparedness and complication readiness among pregnant women in rural Belagavi." *Natl J Community Med* vol. 15, no. 11, 2024, pp. 930–935.

[10] Balcha, W.F. *et al.* "Practice of birth preparedness and complication readiness and its associated factors: a health facility-based cross-sectional study design." *Inquiry* vol. 61, 2024, pp. 469580241236016.