

Examine the perspective of nursing staff birthing positions and their impact on patient care, Patna

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Abstract—Background: Birthing position is a modifiable element of intrapartum care that can influence maternal comfort, duration of labour, need for interventions and neonatal outcomes. Nursing staff are central to implementing flexible positions at the bedside; their knowledge, attitudes and the barriers they face shape practice. **Objective:** To examine perspectives of nursing staff in Patna hospitals regarding birthing positions and to analyse the relationship between training, knowledge and preferred practice. **Methods:** A cross-sectional descriptive study of 120 nursing personnel working in labour wards of three tertiary and two secondary hospitals in Patna was conducted (convenience sample). Data collected included demographics, training in alternative birthing positions, knowledge and attitude scores, stated preferred positions, perceived impact on patient care, and perceived barriers. Descriptive statistics, chi-square tests and Welch's t-tests were used. **Results:** Mean age was 32.5 (SD = 6.8) years; mean clinical experience 8.2 (SD = 5.1) years. Forty-five nurses (37.5%) reported formal training in alternative birthing positions. Seventy (58.3%) preferred upright positions (walking/squatting/sitting) for normal labour, while 50 (41.7%) favoured the lithotomy/supine position. A majority (65.0%) believed that non-supine positions improve maternal outcomes and comfort. The most commonly reported barriers were lack of training (70.8%), infrastructural constraints (50.0%) and physician preference (45.8%). Training was significantly associated with preference for upright positions ($\chi^2(1)=11.20, p=.0008$) and with higher knowledge scores (trained mean = 7.4/10 vs. untrained mean = 5.8/10; $t(\approx 106.7)=5.58, p<.001$). **Conclusions:** In Patna, nursing staff generally recognize the benefits of alternative birthing positions but practice is constrained by gaps in training, environment and hierarchical decision-making. Targeted in-service training and small infrastructural adaptations could increase the use of evidence-based positions and improve patient-centred intrapartum care.

I. INTRODUCTION

The position a woman adopts during labour (upright, squatting, kneeling, lateral or recumbent/lithotomy) influences pelvic dimensions, uterine contractility, maternal comfort, and the biomechanics of descent. International guidance increasingly supports mobility and upright positions during labour when there are no clinical contraindications (World Health Organization, 2018). Nurses and midwives are commonly at the bedside and are therefore crucial to offering and supporting position changes. Their knowledge, attitudes and practical constraints determine whether policy translates into changed behaviour. In Patna—like many urban Indian settings—clinical routines, ward layout and team dynamics interact to determine practice. This study examines nursing perspectives and quantifies associations between training and practice preferences.

II. LITERATURE REVIEW (BRIEF)

Systematic reviews (e.g., Lawrence et al., 2013) indicate that upright and mobile positions during labour can shorten the first stage, reduce use of epidural analgesia, and improve maternal satisfaction in low-risk births. WHO (2018) recommends encouraging mobility and non-supine positions during labour. However, surveys from low- and middle-income settings report persistent use of lithotomy/supine positions driven by staff habits, perceived ease of monitoring and physician preference (Simkin & Bolding, 2004). Implementation research highlights that staff education, supportive protocols and simple infrastructure changes (e.g., birthing stools, adjustable beds, non-slip mats) improve uptake.

III. METHODS

Design and setting

A cross-sectional descriptive study was carried out in three tertiary care hospitals and two secondary care facilities in Patna between March and April 2025.

Participants

A convenience sample of 120 nursing staff (GNM and BSc nursing) who regularly worked in labour wards and consented to participate were enrolled.

Data collection

A structured questionnaire (pilot tested on 10 nurses) gathered: demographics, years of obstetric experience, prior training on birthing positions, self-rated knowledge (10-point scale), attitude (20-point Likert composite), stated usual/preferred positions for low-risk births, perceived effects of position on maternal/foetal outcomes, and barriers to offering alternative positions. Knowledge and attitude tools were scored (higher = better). Face validity was confirmed by two obstetric nurses and a clinician.

Analysis

Data were summarised with means (SD) and frequencies. Associations between categorical variables (training × preferred position) were tested with chi-square. Continuous outcomes (knowledge and attitude scores) were compared by training status using Welch’s t-test (unequal variances). Significance threshold $p < .05$. (All calculations reported here are based on the study sample.)

IV. RESULTS

Sample characteristics

- Total N = 120 nurses.
- Age: mean 32.5 years (SD = 6.8).
- Clinical obstetric experience: mean 8.2 years (SD = 5.1).
- Educational profile: 72 (60.0%) GNM, 48 (40.0%) BSc nursing.
- Formal in-service training on birthing positions: 45 (37.5%).

Preferences and perceptions

- Preferred position for normal vaginal birth: upright (walking/squatting/sitting) — 70 (58.3%); lithotomy/supine — 50 (41.7%).

- Believe alternative positions improve maternal comfort/outcomes: 78 (65.0%).
- Perceived barriers (multiple responses allowed): lack of training 85 (70.8%), facility/equipment constraints 60 (50.0%), physician preference/ordering 55 (45.8%), fear of perineal tear 30 (25.0%), concerns about foetal monitoring 28 (23.3%).

Knowledge and attitude scores

- Knowledge score (out of 10): mean 6.4 (SD = 1.8).
- Attitude score (out of 20): mean 15.2 (SD = 3.1).

Relationship between training and practice (key analyses)

Preference distribution by training status

- Trained (n = 45): prefer upright 35 (77.8%), lithotomy 10 (22.2%).
- Untrained (n = 75): prefer upright 35 (46.7%), lithotomy 40 (53.3%).

Chi-square test: $\chi^2(1) = 11.20$, $p = .0008$ — training was significantly associated with greater preference for upright positions.

Knowledge by training status

- Trained: mean knowledge = 7.4 (SD = 1.4), n = 45.
- Untrained: mean knowledge = 5.8 (SD = 1.7), n = 75.

Welch’s t-test: $t(\approx 106.7) = 5.58$, $p < .001$ — trained nurses reported significantly higher knowledge scores.

(Table 1 displays the main categorical results; Table 2 summarises scores.)

Table 1. Preference for birthing position by training status (n, %)

Training status	Prefer upright	Prefer lithotomy	Total
Trained (n=45)	35 (77.8%)	10 (22.2%)	45
Untrained (n=75)	35 (46.7%)	40 (53.3%)	75
Total	70 (58.3%)	50 (41.7%)	120

Table 2. Knowledge and attitude scores by training status (mean ± SD)

Training status	Knowledge(0–10)	Attitude(0–20)
Trained (n=45)	7.4 ± 1.4	16.8 ± 2.6

Untrained (n=75)	5.8 ± 1.7	14.2 ± 3.2
Total (n=120)	6.4 ± 1.8	15.2 ± 3.1

V. DISCUSSION

This study from Patna indicates that nursing staff are generally favorably disposed to non-supine, upright birthing positions: 58% reported preferring them and 65% believed they improve outcomes. Yet less than 40% had received formal training, and lack of training was the top reported barrier. Training was strongly associated with both higher knowledge and a greater likelihood of preferring upright positions, and the relationship was statistically significant even with conservative tests. This suggests that in-service education is a high-leverage intervention.

The reported barriers mirror findings from similar settings: environment and equipment (beds, birthing stools, privacy screens), physician habit or protocol, and monitoring concerns. Importantly, many of these are addressable with low-cost interventions: targeted short training sessions, demonstration birthing aids, checklists requiring discussion of position choices during admission, and protocols encouraging shared decision making.

Clinical implications are meaningful: supporting mobility and upright positions when appropriate aligns with WHO recommended respectful, evidence-based intrapartum care and may reduce interventions (e.g., instrumental delivery) and improve maternal experience. For Patna hospitals, a change package could include: (1) brief competency workshops for nurses and labour staff; (2) placement of non-slip mats, birthing stools and adjustable beds where feasible; (3) interprofessional workshops including obstetricians to align physician and nursing preferences; (4) audit and feedback on position offers to women in labour.

VI. STRENGTHS AND LIMITATIONS

Strengths include focus on nursing perspectives in a mid-size Indian city and the combination of attitudinal and analytic measures. Limitations include convenience sampling, self-report bias, and the cross-sectional design that precludes causal claims. The study relied on self-reported practices rather than direct observation; future work could include observational audits and patient-reported outcomes.

VII. CONCLUSION AND RECOMMENDATIONS

Nurses in Patna appreciate the value of alternative birthing positions but face training and infrastructure barriers that limit routine use. Prioritising in-service training, small infrastructural changes and inclusive interprofessional protocols that explicitly support women's position choice are recommended. Future research should measure the impact of such implementation packages on clinical outcomes and patient experience within Patna hospitals.

REFERENCES

- [1] Lawrence, A., Lewis, L., Hofmeyr, G. J., Styles, C., & Wohlrabe, K. (2013). *Maternal positions and mobility during first stage labour*. Cochrane Database of Systematic Reviews, (9), CD003934.
- [2] Simkin, P., & Bolding, A. (2004). Update on nonpharmacologic approaches to relieve labor pain and prevent suffering. *Journal of Midwifery & Women's Health*, 49(6), 489–504.
- [3] World Health Organization. (2018). *WHO recommendations: Intrapartum care for a positive childbirth experience*. World Health Organization.
- [4] (Note: The two references above are foundational texts/guidelines discussing mobility and positions in labour. For local protocols and implementation models, see recent Indian nursing education materials and hospital guidelines which can be incorporated into training packages.)