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A mixed-methods inquiry into childbirth readiness and prenatal experiences of first-time mothers in a tertiary care hospital, Chennai, India

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Abstract:
Childbirth readiness significantly influences maternal and neonatal outcomes, yet primi mothers in low- and middle-income settings often lack adequate preparation. Therefore, it is of interest to assess the readiness and prenatal experiences among 60 primi antenatal mothers (quantitative) and six participants (qualitative) at a Chennai tertiary hospital. The mean readiness score was 68.15 ± 7.03, with 53.33% (n = 32) showing moderate readiness and 46.67% (n = 28) high readiness, predominantly in early stages of behavioural change. Readiness was significantly associated with maternal age, planned pregnancy, childbirth education and miscarriage history, while qualitative themes highlighted emotional duality, social support, cultural practices and perceived medical preparedness. Thus, data shows the need for structured, culturally responsive and partner-inclusive antenatal interventions to enhance childbirth readiness and improve outcomes.

Keywords: Pregnant women, parturition, prenatal care, gravidity, qualitative research, health knowledge, attitudes, practice, social support

Background:
Childbirth marks one of life's most profound transitions, but for primigravidae mothers it arrives charged with unfamiliar physical, psychological and social demands. Globally, childbirth-related complications continue to claim approximately 260,000 maternal lives each year, with obstetric hemorrhage, hypertensive disorders and indirect causes accounting for the majority of preventable deaths **[1]**. India, despite notable gains in antenatal care (ANC) coverage under the National Family Health Survey 5, still shows a clear gap between contact and quality: about 59% of pregnant women complete four or more ANC visits and adequate-quality ANC reaches only just over half of women **[2]**. This gap is most consequential for first-time mothers, whose lack of prior birthing experience translates into measurable shortfalls in birth preparedness and complication readiness (BPCR) **[3]**. A pooled meta-analysis of cross-sectional studies from India estimated that only around 49% of pregnant women are aware of BPCR components, with marked regional variation and persistent under-preparation among primigravidae **[4]**. Childbirth readiness encompasses physical, emotional, informational and behavioural preparation for labour including knowledge, confidence, support systems and acquired coping strategies. Among Chinese primiparas, mean fear of childbirth scores reach 68.86 ± 17.68, with 26.2% meeting clinical criteria for fear; advanced maternal age, comorbidities, severe pain and obstetric interventions emerge as risk factors, while birth accompaniment, social support and higher readiness exert protective effects **[5]**. A prospective longitudinal study identified six distinct fear of childbirth trajectories in third trimester primiparas, with intolerance of uncertainty, low childbirth self-efficacy and lack of birth preference predicting persistent fear **[6]**. Randomized trials of birth ball exercises in the active phase have shown reductions in labour pain, shorter delivery duration and improved birth comfort and satisfaction in primiparous women **[7]**. A nurse-led, web-based birth preparation program combined with motivational interviewing similarly lowered fear of childbirth and improved self-efficacy among primigravida women in a randomized trial **[8]**. The mental health stakes are equally high. In a Chinese cross-sectional study, postpartum depression and post-traumatic stress disorder symptoms occurred in 23.5% and 6.1%, respectively, with low social support a strong, independent risk factor for both conditions **[9]**. A systematic review of postpartum psychosocial outcomes likewise concluded that supportive interventions across family, peer and provider networks consistently buffer mothers against depression, anxiety and impaired quality of life **[10]**. Therefore, it is of interest to assess the childbirth readiness and prenatal experiences among primiparous antenatal mothers.

Materials and Methods:
A convergent parallel mixed-methods design integrated a quantitative descriptive arm with a qualitative phenomenological arm; both arms were conducted concurrently and integrated at the interpretation stage. The study was carried out in the antenatal wards of the Institute of Obstetrics and Gynecology and Government Hospital for Women and

Children, Egmore, Tamil Nadu, over a one-week field period. Sixty primiparous antenatal mothers were recruited for the quantitative arm through non-probability convenience sampling. Sample size was calculated using a previously reported BPCR proportion of 32.8% with 5% acceptable error and 95% confidence interval, yielding a minimum of 55 and rounded to 60. For the qualitative arm, six primiparous antenatal mothers were purposively selected to ensure depth across socio-cultural sub-groups. Women aged 21–35 years, gestational age 32–40 weeks, first pregnancy, willing to participate and able to communicate in Tamil or English were included. Mothers with multiple pregnancies, severe medical or high-risk obstetric complications, or cognitive impairment were excluded. Data were collected using socio-demographic forms, obstetrical variables, the Childbirth Stages of Readiness Questionnaire (CSORQ-20) and a researcher-developed semi-structured interview schedule covering emotional, physical, social, healthcare-related, cultural and expectation-versus-reality dimensions of pregnancy. After institutional ethics approval and written informed consent, the principal researcher administered the structured questionnaires individually for the quantitative arm. Qualitative interviews were audio-recorded, transcribed verbatim and translated where required. Quantitative data were analysed in SPSS using descriptive statistics and inferential chi-square tests to associate readiness with selected demographic and obstetric variables; statistical significance was set at $p \leq 0.05$. Qualitative data were analysed thematically through iterative reading, coding, category refinement and theme development. Triangulation, member checking and a pilot study were used to enhance trustworthiness and the two strands were integrated narratively at the interpretation phase.

Results:

Among 60 primiparous mothers, 58.33% were aged 21–25 years, 51.67% had completed higher secondary education, 50% were homemakers and 56.67% earned below ₹15,000 per month. The majority lived in nuclear families (61.67%), in urban areas (83.33%) and identified as Hindu (78.33%). All participants (100%) attended ANC regularly; 60% reported prior exposure to childbirth education and 56.67% described their current pregnancy as planned. Obstetrically, 46.67% were at 32–34 weeks of gestation, 75% reported no prior miscarriage, 53.33% identified the spouse as their primary support person and back pain (48.33%) was the most frequently reported pregnancy symptom **(Table 1).** The total mean CSORQ-20 score was 68.15 ± 7.03. None of the mothers scored in the low-readiness band; 53.33% (n = 32) showed moderate readiness and 46.67% (n = 28) high readiness**.** Subscale-wise, the contemplation stage scored highest (69.92%; mean 17.48 ± 2.57), followed by precontemplation (66.12%; mean 16.53 ± 2.86), preparation (55.28%; mean 13.82 ± 1.64) and action/maintenance (51.92%; mean 12.98 ± 2.99), indicating that most mothers were thinking about rather than actively practising non-pharmacological coping strategies**.** Item-wise, the strongest agreement was with the fear that non-drug methods might not adequately reduce labour pain (88.00%), while the lowest score reflected intent to learn drug-free coping techniques independently (30.60%). Chi-square analyses showed significant associations between childbirth readiness and four variables. Maternal age ($\chi^2 = 8.63$, $p = 0.01$) was significant, with mothers aged 26–30 years showing the highest readiness (83.33% high level). Type of pregnancy ($\chi^2 = 4.65$, $p = 0.05$) was also significant, with planned pregnancies associated with higher readiness (58.82% high vs 30.77% in unplanned pregnancies). Exposure to childbirth education ($\chi^2 = 4.92$, $p = 0.05$) significantly improved preparedness (58.33% high among exposed vs 29.17% among unexposed). Among obstetric variables, previous miscarriage history ($\chi^2 = 8.83$, $p = 0.01$) was significant, with mothers having a miscarriage history showing higher readiness possibly reflecting heightened vigilance. Education level, occupation, income, family type, religion, residence, gestational age, support person and pregnancy-related symptoms showed no statistically significant association. For the qualitative arm, thematic analysis of six interviews yielded five themes**:** (i) Emotional Responses and Psychological Readiness like joy and anticipation alongside anxiety and misalignment with expectations; (ii) Physical Discomforts and Bodily Changes such as vomiting, fatigue, sleep disturbance; (iii) Social Support and Role of Family line support from spouse, in-laws and healthcare providers; (iv) Cultural Practices and Beliefs such as the baby shower ritual and traditional restrictions; and (v) Perception of Medical Readiness like engagement with PHC registration and institutional procedures. Mothers consistently described joy at pregnancy disclosure, followed by physical strain, deep family-centred support and culturally meaningful rituals as core anchors of readiness.

Table 1: Socio-demographic and obstetric profile of primi antenatal mothers (n = 60)

Variable	Category	n	%
Age (years)	21–25	35	58.33
	26–30	12	20
	31–35	13	21.67
Education	Primary school	5	8.33
	Secondary school	24	40
	Higher secondary	31	51.67
Occupation	Housewife	30	50
	Government employed	10	16.67
	Private employed	8	13.33
	Self-employed	12	20
Monthly income	< ₹15,000	34	56.67
	₹15,000–30,000	11	18.33
	₹30,000–50,000	9	15
	≥ ₹50,000	6	10
Family type	Nuclear	37	61.67
	Joint	18	30
	Extended	5	8.33
Type of pregnancy	Planned	34	56.67
	Unplanned	26	43.33
Religion	Hindu	47	78.33
	Christian	9	15
	Muslim	4	6.67
Residence	Urban	50	83.33

	Semi-urban	8	13.33
	Rural	2	3.33
Childbirth education	Yes	36	60
	No	24	40
Gestational age (wks)	32–34	28	46.67
	35–37	18	30
	38–40	8	13.33
	> 40	6	10
Previous miscarriage	Yes	15	25
	No	45	75
Support person	Spouse	32	53.33
	Family member	28	46.67
Pregnancy symptoms	Back pain	29	48.33
	Nausea/vomiting	17	28.33
	Fatigue	10	16.67
	Swelling of feet/legs	4	6.67

Discussion:

This study found a moderate-to-high level of childbirth readiness among primi antenatal mothers, with no participant scoring low. Subscale data, however, revealed that mothers remained predominantly in early contemplation stages for non-pharmacological labour coping, mirroring patterns documented in cross-sectional research on BPCR in low-resource settings. Shimpuku *et al.*, in urban Tanzania, reported that higher education and shorter distance to health facilities improved birth preparedness scores **[11]**, underscoring how environmental and informational access shape readiness in ways consistent with our finding that childbirth education exposure significantly raised preparedness levels. Quasi-experimental study in India showed that birth-ball exercises during the active phase significantly improved labour outcomes, with 86.7% of the intervention group achieving vaginal delivery versus 53.3% in controls **[12]**. A randomized controlled trial in the latent phase further showed that home based birth ball use is a safe, acceptable strategy that may delay admission and reduce caesarean rates **[13]**. A trial combining birth ball use with squatting positions reported reductions in labour pain and improved satisfaction **[14]** and a meta-analysis of ten RCTs confirmed pooled benefits of birthing-ball exercises on labour pain and caesarean rates **[15]**. These findings reinforce why our cohort's lower preparation and action subscale scores warrant targeted skill-building rather than informational input alone. A phenomenological study described fear, anguish and concern as dominant negative emotions during hospital childbirth, intensified by complications, pain and poor communication **[16, 17]** closely paralleling our anxiety and misalignment subtheme. Tamil Nadu's relatively strong maternity service environment likely shaped our participants' positive accounts of nurse and provider care; a state-level descriptive study reported high adherence to respectful maternity care indicators in Tamil Nadu's public facilities **[18, 19]**. A phenomenological study of primiparas similarly highlighted partner, in-law and informational support as decisive for postnatal adjustment **[20, 21]**, reinforcing how partner-inclusive antenatal counselling could leverage Indian families' culturally embedded support systems. Cultural rituals such as baby shower, which all our participants cherished, appear to function as buffering anchors, warranting respectful integration into nurse-led childbirth education rather than dismissal.

Conclusion:

This convergent mixed-methods study demonstrates moderate to high childbirth readiness, yet remains in early stages for non-pharmacological coping. Nurses are well positioned to deliver structured, partner inclusive, culturally responsive antenatal counseling that translates contemplation into practiced coping for first time mothers.

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