ISSN 0973-2063 (online) 0973-8894 (print)

Bioinformation 22(10): 6545-6548 (2026)

©Biomedical Informatics (2026)

BIOINFORMATION
Discovery at the interface of physical and biological sciences

BIOMEDICAL INFORMATICS

www.bioinformation.net

Volume 22(10)

Research Article

Received October 1, 2026; Revised October 31, 2026; Accepted October 31, 2026, Published October 31, 2026

DOI: 10.6026/973206300226545

SJIF 2026 (Scientific Journal Impact Factor for 2026) = 8.478
2022 Impact Factor (2023 Clarivate Inc. release) is 1.9

Declaration on Publication Ethics:
The author's state that they adhere with COPE guidelines on publishing ethics as described elsewhere at https://publicationethics.org/. The authors also undertake that they are not associated with any other third party (governmental or non-governmental agencies) linking with any form of unethical issues connecting to this publication. The authors also declare that they are not withholding any information that is misleading to the publisher in regard to this article.

Declaration on official E-mail:
The corresponding author declares that lifetime official e-mail from their institution is not available for all authors

License statement:
This is an Open Access article which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly credited. This is distributed under the terms of the Creative Commons Attribution License

Comments from readers:
Articles published in BIOINFORMATION are open for relevant post publication comments and criticisms, which will be published immediately linking to the original article without open access charges. Comments should be concise, coherent and critical in less than 1000 words.

Disclaimer:
Bioinformation provides a platform for scholarly communication of data and information to create knowledge in the Biological/ Biomedical domain after adequate peer/editorial reviews and editing entertaining revisions where required. The views and opinions expressed are those of the author(s) and do not reflect the views or opinions of Bioinformation and (or) its publisher Biomedical Informatics. Biomedical Informatics remains neutral and allows authors to specify their address and affiliation details including territory where required.

Edited by Ritik Kashwani
E-mail: docritikkashwani@yahoo.com
Citation: Balasubramani *et al*. Bioinformation 22(10): 6545-6548 (2026)

Birth satisfaction and unmet birth expectations among primipara mothers - A mixed-methods study

Agila Balasubramani[1], Sumathi Chandran[2], Shankar Shanmugam Rajendran[3,*], Kannan Kasinathan[4], Anupriya Krishnasamy[1], Geetha Kuppusamy[1] & Kulap John Karim[5]

[1]Department of Obstetrical and Gynecological Nursing, College of Nursing, Madras Medical College, The TN Dr. MGR Medical University, Chennai, Tamil Nadu, India; [2]Department of Obstetrical and Gynecological Nursing, Institute of Obstetrics and Gynecology and Government Hospital for Women and Children, (Madras Medical College) Egmore, Chennai, Tamil Nadu, India; [3]Department of Nursing Research, College of Nursing, Madras Medical College, The TN Dr MGR Medical University, Chennai, Tamil Nadu, India; [4]Department of Child Health Nursing, College of Nursing, Madras Medical College, The TN Dr MGR Medical University, Chennai, Tamil Nadu, India; [5]Department of Community Health Nursing, College of Nursing, Madras Medical College, The TN Dr MGR Medical University, Chennai, Tamil Nadu, India; *Corresponding author

Affiliation:

ISSN 0973-2063 (online) 0973-8894 (print)
Bioinformation 22(10): 6545-6548 (2026)
©Biomedical Informatics (2026)

https://tnmgrmuonline.in/

Author contact:
Agila Balasubramani - E-mail: agimuru81@gmail.com
Sumathi Chandran - E-mail: surendransumathi@yahoo.in
Shankar Shanmugam Rajendran - E-mail: shankarshaki@yahoo.com
Kannan Kasinathan - E-mail: kanmani70@gmail.com
Anupriya Krishnasamy - E-mail: anupriyakrishnasamywin22@gmail.com
Geetha Kuppusamy - E-mail: sengageethu@gmail.com
Kulap John Karim - E-mail: kulapjohn0505@gmail.com

Abstract:
Birth satisfaction is a key indicator of maternity care quality, particularly among primiparous mothers. Therefore, it is of interest to assess the birth satisfaction and unmet birth expectations among 60 postnatal mothers aged 21–35 years in Chennai, India. The mean BSS-R score was 26.38 ± 2.51, with 33.33% reporting low, 56.67% moderate and 10.00% high satisfaction. Satisfaction was significantly associated with maternal age, family type and labour duration, while five qualitative themes highlighted pain management, emotional transition, unmet expectations, support systems and unexpected complications. Thus, data shows that realistic antenatal counselling, continuous labour support and respectful, family-inclusive maternity care is essential to bridge the gap between childbirth expectations and actual experiences.

Keywords: Patient satisfaction, parity, mothers, obstetric nursing, qualitative research, birth expectations

Background:
Childbirth is one of the most transformative life events for a woman and the way she experiences it leaves lasting effects on her psychological wellbeing, future reproductive choices and the early relationship with her infant. Primiparous (first-time) mothers occupy a particularly vulnerable position. They enter labour with expectations shaped by antenatal counselling, family narratives and increasingly by social media typically anticipating a smooth, predominantly natural birth with minimal medical intervention. When labour deviates from this internal script, the dissonance between expectation and experience can erode satisfaction, undermine maternal confidence and increase the risk of postnatal psychological distress. A systematic review of prospective evidence concluded that a mismatch between birth expectations and actual experience is consistently associated with lower satisfaction and adverse postnatal outcomes **[1]**. Among Iranian primiparas, a multiphase mixed-methods study found that more than one-third reported a traumatic birth and the recommended structured pre-birth preparation as a remedy **[2]**. A population-based cohort on women showed that primipara women in active labour beyond the 90th percentile had 2.39 times the adjusted odds of a negative experience compared with shorter labours **[3]**. The Birth Satisfaction Scale-Revised (BSS-R), a 10-item validated instrument, has been adapted for many cultures including a Hindi-Indian version, supporting its use in the South Asian setting **[4]**. A systematic review focused on primiparas concluded that prenatal education reduces fear and anxiety, enhances self-efficacy and improves pain management during labour **[5]**. Concurrently, the role of respectful maternity care has gained policy momentum: a systematic review showed that disrespectful care contributes to severe maternal morbidity, while compassionate, person centred care improves outcomes **[6]**. A descriptive study reported that respectful maternity care indicators confidentiality, dignity and informed consent were positively associated with maternal satisfaction **[7]**. Therefore, it is of interest to evaluate the level of birth satisfaction among primipara mothers, describe their unmet birth expectations and show the association of birth satisfaction with selected socio-demographic and obstetrical variables in a South Indian tertiary maternity setting.

Materials and Methods:
An explanatory sequential mixed-methods design was used: a quantitative descriptive phase was followed by a qualitative phenomenological phase. The study was conducted in the postnatal wards of the Institute of Obstetrics and Gynaecology and Government Hospital for Women and Children, Chennai, Tamil Nadu. Eligible participants were women aged 21–35 years who had delivered their first live, singleton infant, were medically and psychologically stable, willing to share their experiences and able to communicate in Tamil or English. Mothers with cognitive impairment, psychiatric illness, critical clinical instability or simultaneous enrolment in another study were excluded. The quantitative sample size of 60 was calculated using $n = Z^2 (1-p)/ (p \times e^2)$, where $Z = 1.96$, expected proportion $(p) = 0.611$ from prior literature and relative precision $(e) = 0.21$. Convenience sampling was applied for the quantitative arm. The qualitative sample comprised six purposively selected mothers, in line with phenomenological adequacy. A socio-demographic questionnaire, obstetrical variables and the Birth Satisfaction Scale-Revised (BSS-R) were used to collect data. A semi-structured open ended interview schedule explored the overall birth experience, prenatal expectations, surprises, perceived support, pain management strategies and fulfilment. All instruments underwent content validation by experienced nursing experts. A pilot study involving 10% of the planned sample refined the tools and procedures; pilot participants were

excluded from the main analysis. Trustworthiness in the qualitative phase was ensured through credibility, dependability, confirmability and transferability, supported by data triangulation across sources and verbatim transcription. After Institutional Ethics Committee approval and written informed consent, quantitative data were collected through structured interviews lasting 20–25 minutes. Qualitative interviews were audio-recorded with permission and transcribed verbatim into English. Quantitative data were entered in Microsoft Excel and analysed in SPSS. Descriptive statistics (frequency, percentage, mean, standard deviation) summarised the variables; associations between birth satisfaction levels and selected socio-demographic and obstetrical variables were tested using the chi-square test, with statistical significance set at $p \leq 0.05$. Qualitative transcripts were analysed inductively using thematic content analysis: repeated reading, open coding, category refinement and theme finalisation. Quantitative and qualitative findings were integrated through a joint-display matrix during the interpretation phase. The protocol received approval from the Institutional Ethics Committee of Madras Medical College, Chennai. Written informed consent was obtained from every participant. Confidentiality and anonymity were preserved throughout data collection, storage and reporting; participation was voluntary and women could withdraw at any time without consequence to their clinical care.

Results:

The 60 primipara mothers were predominantly aged 21–25 years (46.67%); most had completed higher secondary education (63.33%), were homemakers (65.00%) and lived in joint families (76.67%). Monthly household income for 80.00% ranged between ₹10,000 and ₹30,000. All participants delivered vaginally (100%) and 85.00% had attended more than six antenatal visits. Most delivered at 37–38 weeks of gestation (61.67%), labour lasted 6–12 hours in 58.33% and a first-degree perineal tear occurred in 58.33%; all newborns weighed 2.5–4.0 kg. The mean BSS-R total score was 26.38 ± 2.51 of 40, equivalent to 65.95% of the maximum. Item-level percentages of mean were highest for "I felt well supported by staff" (98.00%), "staff communicated well during labour" (97.00%), "came through childbirth virtually unscathed" (96.75%), "delivery room was clean and hygienic" (93.75%) and "was not distressed at all during labour" (92.00%). Lower scores reflected residual pain and emotional strain: "I felt very anxious during labour and birth" (20.50% of mean), "I thought my labour was excessively long" (21.25%), "I felt out of control during my birth experience" (23.75%) and "I found giving birth a distressing experience" (25.25%). Categorising scores produced a moderate level of satisfaction in 56.67% of women (n = 34), low in 33.33% and high in 10.00%. Chi-square testing identified three statistically significant associations **(Table 1)**: maternal age ($\chi^2 = 6.95$, $p = 0.05$), family type ($\chi^2 = 4.65$, $p = 0.05$) and labour duration ($\chi^2 = 6.31$, $p = 0.05$). Mothers aged 26–30 years reported moderate-to-high satisfaction in 84.00%, compared with 50.00% among those aged 21–25 years; 73.91% of women from joint families reported moderate-to-high satisfaction versus 42.86% from nuclear families. Educational level, occupation, income, religion, residence, partner's education, mode of delivery, antenatal care visits and gestational age at delivery, perineal trauma, infant birth weight and previous pregnancy losses showed no statistically significant association with satisfaction ($p > 0.05$). Thematic analysis of the six in-depth interviews yielded five themes and ten subthemes: Pain perception and management includes intensity and nature of pain, pain-relief strategies; Emotional transition to motherhood like joy and relief after delivery, validation and fulfilment; Expectations versus reality such as pain expectations, gender expectations; Support systems like family involvement, healthcare support and compassion; and Fulfilment and unmet expectations like general fulfilment, unexpected complications. Mothers consistently described pain as more severe than anticipated and labor as longer than imagined, while still reporting overall fulfilment grounded in family presence and compassionate clinical care. Distribution of birth satisfaction levels among primipara mothers (n = 60).

Table 1: Association between birth satisfaction levels and selected sociodemographic and obstetrical variables (n = 60).

Variable	Category	Low n (%)	Mod./High n (%)	χ^2 (p-value)
Maternal age	21–25 years	14 (50.00)	14 (50.00)	**6.95 (0.05)***
	26–30 years	4 (16.00)	21 (84.00)	
	31–35 years	2 (28.57)	5 (71.43)	
Type of family	Nuclear	8 (57.14)	6 (42.86)	**4.65 (0.05)***
	Joint	12 (26.09)	34 (73.91)	
Labour duration	< 6 hours	0 (0.00)	3 (100.00)	**6.31 (0.05)***
	6–12 hours	13 (37.14)	22 (62.86)	
	> 12 hours	7 (31.82)	15 (68.18)	

**Statistically significant at $p \leq 0.05$.*

Discussion:

This explanatory sequential study found that two-thirds of primipara mothers reported only moderate or low birth satisfaction (33.33% low; 56.67% moderate), with a mean BSS-R score of 65.95% of the maximum. The convergence of high scores for staff support, communication and hygiene with low scores for pain, anxiety and perceived control mirrors a qualitative study in which first-time mothers described unmet expectations around pain intensity and intervention even when structural care was rated favourably **[8]**. A four-year prospective cohort similarly showed that primiparas with poor childbirth experience went on to have significantly worse mental health and lower sexual satisfaction, underscoring that the postnatal moment extends well beyond discharge **[9]**. The significant association between joint-family residence and higher satisfaction (73.91% versus 42.86%) supports the framework of continuous social support emphasized in contemporary nursing models, including respectful maternity care guidelines that operationalize dignity, empathy and informed participation in everyday practice **[10]**. The protective effect of family involvement also aligns with longitudinal trajectories in a study, in which prenatal expectations of partner and kin support

strongly predicted postnatal confidence and bonding **[11]**. Labour duration emerged as a clinically actionable correlate; women with the shortest active labour reported uniformly favourable scores. This pattern is consistent with a prospective study using the Childbirth Experience Questionnaire, which reported that prolonged labour and operative interventions were the strongest predictors of negative experience among nulliparous women **[12]**. By contrast, surgical births can be improved through targeted interventions: an integrative review of 17 caesarean studies showed that intraoperative skin-to-skin contact reliably enhanced maternal satisfaction without adverse effects **[13]**. The qualitative themes, particularly the gap between anticipated and actual pain, point to a preventable misalignment in prenatal counselling. Strengthening antenatal preparation with realistic pain-rehearsal techniques, explicit discussion of intervention possibilities, family inclusion in birth-plan conversations and embedding respectful, communication-rich care across the labor pathway are therefore concrete pathways to narrowing the expectation–experience gap **[14-17]**. The relatively small, single-site sample limits generalizability and convenience sampling may have introduced selection bias; multi-center longitudinal studies that capture expectations antenatal and re-measure satisfaction at 6 and 12 months postpartum are warranted.

Conclusion:
Most primipara mothers experienced moderate to low birth satisfaction, with maternal age, family type and labour duration emerging as significant correlates. While clinical care, communication and hygiene were rated highly, pain and anxiety consistently outpaced mothers' prior expectations. Investing in realistic antenatal preparation, continuous labour support and respectful maternity care offers a feasible, scalable strategy to align first-time mothers' expectations with the unpredictable reality of childbirth and to enhance maternal wellbeing.

Conflict of interest:
The authors declare no conflict of interest.

Funding:
This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Acknowledgements:
The authors thank the participating mothers and the staff of the Institute of Obstetrics and Gynaecology and Government Hospital for Women and Children, Chennai, for their co-operation and support.

References:
[1] Webb R *et al. BMC Pregnancy Childbirth.* 2021 **21:**475 [PMID: 34215219]
[2] Ghanbari-Homaie S *et al. Reprod Health.* 2021 **18:**146. [PMID: 34229710]
[3] Carlhäll S *et al. Sci Rep.* 2022 **12:**11930. [PMID: 35831421]
[4] Tiwari SK *et al. J Obstet Gynaecol Res.* 2023 **49:**938 [PMID: 36592949]
[5] Athinaidou AM *et al. Cureus.* 2024 **16:**e64508. [PMID: 39139345]
[6] Cantor AG *et al. Ann Intern Med.* 2024 **177:**50 [PMID: 38163377]
[7] Kc H *et al. JNMA J Nepal Med Assoc.* 2024 **62:**363 [PMID: 39356865]
[8] Davies A *et al. BMC Pregnancy Childbirth.* 2024 **24:**875 [PMID: 39732635]
[9] Nahaee J *et al. Reprod Health.* 2024 **21:**71 [PMID: 38816741]
[10] Hill CM *et al. Nurs Womens Health.* 2024 **28:**50 [PMID: 38228285]
[11] Perez A *et al. BMC Pregnancy Childbirth.* 2025 **25:**709. [PMID: 40610917]
[12] Gaudernack LC *et al. BMC Pregnancy Childbirth.* 2020 **20:**605 [PMID: 33032529]
[13] McCutcheon A *et al. Nurs Rep.* 2025 **15:**28. [PMID: 39852650]
[14] Prosen M & Ličen S. *J Public Health (Berl.).* 2025. [DOI: 10.1007/s10389-025-02591-1]
[15] Kalaranjani S *et al. International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2024 **13**:3291. [DOI: 10.18203/2320-1770.ijrcog20243192]
[16] Sobala AJ & Szablewska AW. *Nutrients*. 2025 **17**:3796. [DOI: 10.3390/nu17233796]
[17] Preis H *et al. Psychology of Women Quarterly*. 2019 43:105. [DOI: 10.1177/0361684318779537]

Caveat Emptor is applicable among the literate community where required and possible. The publisher, its journal, editors and the internal/external reviewers take adequate steps to check, evaluate, correct, edit, revise and improve content where possible and required.