

PERCEIVED ENVIRONMENTAL STRESSORS AND PAIN PERCEPTION DURING LABOUR AMONG PRIMIPAROUS AND MULTIPAROUS WOMEN

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ABSTRACT:

Background: Pain experienced during labour is probably the most painful event in the lives of women. The environment itself influences a mother's experience of pain. Tension and stress resulting from pregnancy crisis and labour increase when the mother is hospitalised, which is concomitant with stressful situations and factors that affect pain perception during labour. The purpose of this study was to explore selected aspects of labour stress and specifically study the relationship between environmental factors and pain perception among parturient women. **Materials and Methods:** This descriptive-comparative study was carried out in North India in 8 hospitals, 75 primiparous and 75 multiparous women who were candidates for vaginal delivery, were randomly selected and interviewed. The data were collected using a questionnaire, and the intensity of pain was assessed using the Visual Analogue Scale (VAS). **Results:** The data indicate that a high percentage of both groups experienced severe pain, with primiparas having a slightly higher concentration of reported pain at level 8 (21.3% vs 17.3%), while multiparas had a higher frequency of maximum pain (level 10: 9.3% vs 3.3%). Stress Distribution of moderate tension/stress (80 primiparas vs. 89 multiparas, mild stress (51) compared to multiparas (38) and (23) reported severe stress than primiparas (19). **Conclusion:** Psychological factors may increase perceived pain during labour. Many of these factors are attributes of the labouring women, and others are components of their relationships with others and the environment. Therefore, it is suggested that for a better understanding of pain perception in labour and birth, psychological factors that have different meanings to different women should be the focus of future studies. Further investigations pertaining to labour stress are warranted due to the limited studies in this area of research.

Keywords: Environmental factors, Stress, Labour pain, Pain Perception, Primiparous, Multiparous.

INTRODUCTION

The perception of labour pain is said to be the interpretation of the noxious sensory stimuli transmitted during the childbirth process [1]. The interpretation varies based on personal experience with both emotional and physical distress components. The pain that occurs during labour is largely physiological, arising from the uterine contraction and the accompanying cervical dilatation [2]. This is different from the other types of pain that may be due to injuries or pathological processes occurring in the affected organs. Labour pain is rated as

one of the most severe forms of pain, often necessitating the administration of pain-relieving medications. The majority of the parturient globally rate labour pain as being severe; however, a few women consider it to be normal [3, 4]. Despite the intensity of the pain, studies have shown that there is poor request for analgesia in labour by parturients and this has been attributed to several reasons, ranging from ignorance, cultural practices, fear of side effects, cost and so on [5, 6].

Labour pain is regarded as the most intense pain among women of reproductive age, and the degree of pain experienced during labour affects labour progress as well as maternal and newborn well-being [7]. Although labour is a physiological process, the severity of labour pain varies among women. The perception of labour pain can range from agonising to enjoyable depending on the individual's perspective, which may arise from an interplay of several factors, including previous experiences, antenatal education, religion, place of delivery, family and caregiver support, and sociocultural contexts [8]. Despite the intensity of labour pain, the memories and unpleasant experiences fade over time for the majority of women [9]. Women experience varying degrees of pain during labour, ranging from minimal pain to extreme and distressing levels of pain [10]. This demonstrates how perceived pain is influenced by the intricate and subjective interaction of multiple physiological and psychosocial factors related to a woman's individual construction of labour stimuli. [11,12] For this reason, the World Health Organisation (WHO) has provided recommendations for high-quality pain management during childbirth. [13,14] Labour pain perception in North India is deeply influenced by sociocultural, educational, and traditional factors, with a high prevalence of viewing it as a mandatory, unavoidable, and often unbearable experience. Studies indicate that a significant proportion of women (over 85% in some studies) perceive labour pain as severe or intolerable.[15] Although some levels of anxiety are considered normal during labour, excessive anxiety is an emotional factor that results in severe pain due to a decrease in pelvic blood flow and increased muscle tension, as a result of an increase in the secretion of catecholamines [16]. Hodnett ([17]) found that physical birth environment, immobility and medical intervention influence women's evaluation of their childbirth experiences and can affect pain experience. In addition, some studies have reported that anxiety may be precipitated during the course of labour through the environmental factors such as noise and unfamiliarity [16]

OBJECTIVES

- To determine the awareness of the scheme among the urban and rural women.
- To assess the availability of the benefits of the scheme among the targeted population.
- To find a comparison of the number of beneficiaries of the scheme at the urban and rural levels
- To find the loopholes in the implementation of the scheme
- To find traces of domestic violence and preventive measures.

METHODOLOGY

The present descriptive-comparative study was carried out on 75 primiparous and multiparous 75 women, who had vaginal deliveries in North India. The inclusion criteria included having gestational ages of 37-42 weeks; absence of any verbal communication limitations; no history of psychological problems before or during pregnancy; vaginal delivery candidacy; and absence of fast or prolonged (difficult) delivery. The data was collected by two questionnaires. The demographic questionnaire consisted of 40 questions on personal, social and obstetric particulars that had been tailored for the study after an extensive review of the literature. To assess labour stress in physical dimensions, an environmental factor questionnaire was used. The questionnaire was composed of 20 Likert-type (four-point scale) items that ranged from none (0) to high (3). High scores on the environmental factor questionnaire (>17) indicate more tension from the aforementioned factors and hence depict more stress. The data were analysed by WIN/SPSS 13 statistical software. Descriptive statistics such as frequency, mean, and standard deviation were used to analyse the data. In addition, a sample t-test was used to compare the means. To determine the association between environmental factors and pain, Pearson's correlation was used.

RESULTS AND INTERPRETATION

Table 1. Cross-tabulation between the reported pain level and the parity of the sample

(N=150)

<i>Pain level</i>	<i>Primiparas n (%)</i>	<i>Multiparas n (%)</i>
6	1 (0.6%)	3 (2%)
7	21 (14 %)	19 (12.6%)
8	32 (21.3%)	26 (17.3 %)
9	16 (10.6%)	13(8.6%)
10	5 (3.3%)	14 (9.3 %)
Total 75	Total 75 (100)	75(50%)

Scores of pain (0-5) were not reported in the present study

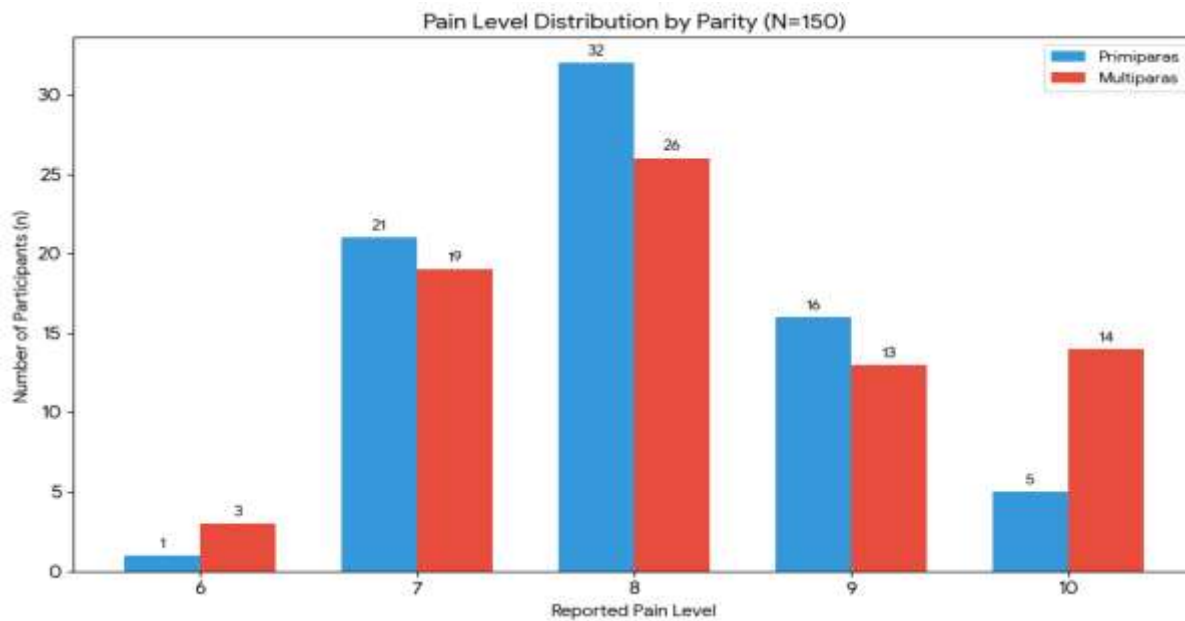
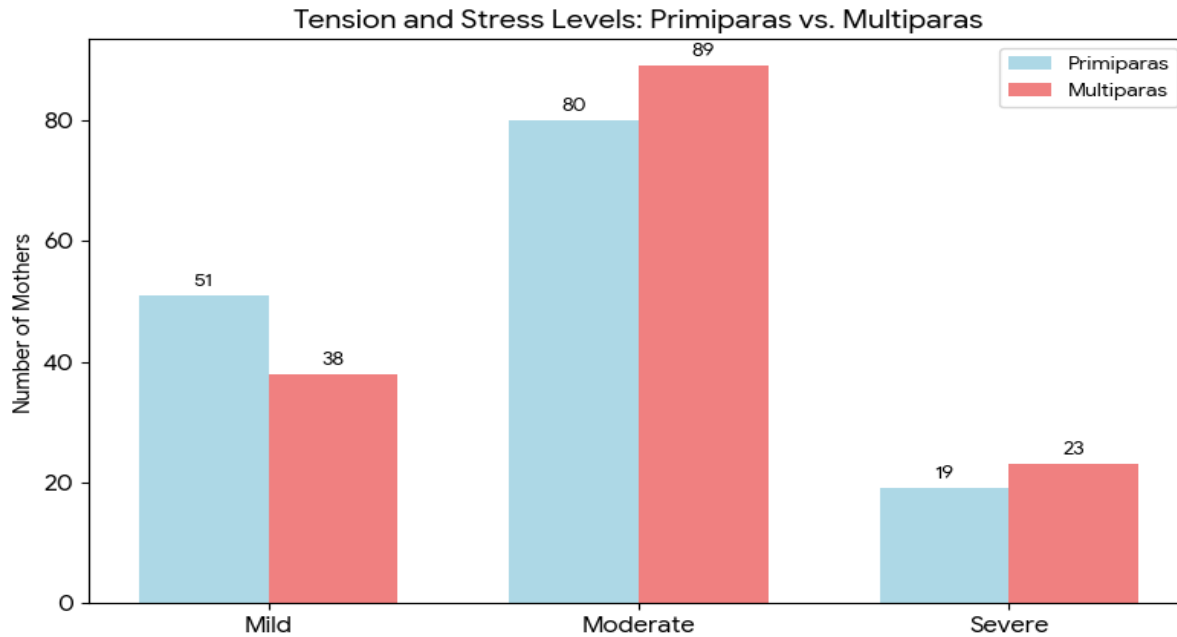


Table 2. Distribution of mothers according to Tension and stress levels

(N=150)

<i>Tension and stress levels</i>	<i>Primiparas n (%)</i>	<i>Multiparas n (%)</i>	<i>t-test</i>	<i>P-value</i>
<i>Mild</i>	51	38	5.98	<i>p</i> <0.0005
<i>Moderate</i>	80	89		
<i>Severe</i>	19	23		
<i>Mean±SD</i>	9.9±3.6	11.9±4.3		



SUMMARY:

Based on the provided cross-tabulation analysing pain levels (6-10) in 150 patients (75 Primiparas and 75 Multiparas), the following trends are observed regarding reported pain:

Pain Distribution Summary (N=150)

- **Highest Frequency:** The most common reported pain level in both groups was 8 (32 primiparas, 26 multiparas).
- **Primiparas (n=75):** A higher number of primiparas reported pain levels of 7 (21) and 8 (32) compared to lower levels.
- **Multiparas (n=75):** Multiparas showed a higher concentration in higher pain levels (10) compared to primiparas.
- **Severe Pain:** 81 women (43 primiparas and 38 multiparas) reported a pain score of ≥ 8 .

Based on the provided data, it displays the distribution of tension and stress levels among 150 mothers, divided into Primiparas and Multiparas. The analysis suggests a significant difference in stress levels between the two groups.

- **Sample Size:** The study covers 150 mothers total (80 primiparas and 89 multiparas, though these numbers total 169, suggesting a potential reporting inconsistency in the prompt regarding the total N vs. sum of subgroups, or that "Moderate" was listed twice).
- **Stress Distribution:** Multiparas showed higher occurrences of severe stress (23) compared to primiparas (19).
- **Mean Stress Scores:** Multiparas experienced higher mean tension and stress (11.9 ± 4.3) compared to primiparas (9.9 ± 3.6).
- **Statistical Significance:** The t-test value of 5.98 with a p-value < 0.0005 indicates a highly significant difference in stress levels between primiparas and multiparas.

Based on the data provided in the table, here is an analysis of the environmental factors questionnaire for primiparas (first-time mothers) and multiparas (mothers with previous births) (n=150):

Highest Stressors for Primiparas (First-time mothers)

- Large numbers of patients (1.82±0.43): This was the highest stressor for this group.
- Attendant's restriction (1.40±0.58): A significant environmental stressor.
- Restriction in movement and mobility (1.21±0.58).
- Foetal monitoring (1.10±0.51).

Highest Stressors for Multiparas (Experienced mothers)

- Restriction of fluid intake (1.72±0.68): This was the highest stressor for this group, notably higher than in primiparas.
- Noise (1.49±0.70): Also a major stressor for this group.
- Foetal monitoring (0.97±0.48).
- Attendants restriction (0.88±0.74)
- Higher Stressors for Primiparas: Primiparas felt higher stress from unfamiliar persons, environmental strangeness, restricted attendants, ward overload (different from the trend in item "Large numbers"), large patient numbers, restricted movement, and lack of privacy compared to multiparas.
- Higher Stressors for Multiparas: Multiparas reported higher stress from noise, furniture/equipment, room temperature/lighting, drug injections, maternal position, and particularly, restriction of fluid intake.
- "Lack of privacy" was notably higher for primiparas (0.59 vs 0.11), suggesting they feel more exposed.
- "Ward overload" showed a discrepancy in the data, where multiparas (0.67) reported it higher than primiparas (0.10), despite primiparas reporting higher "Large numbers of patients" (1.82 vs 0.74).

Overall, the shows that environmental stressors differ between the two groups, with primiparas largely focused on social/physical restriction and environmental novelty, while multiparas are more affected by physical factors and strict protocols like fluid restriction and noise.

CONCLUSION

Psychological factors may increase perceived pain during labour. Many of these factors are attributes of the labouring women, and others are components of their relationships with others and the environment. Therefore, it is suggested that for a better understanding of pain perception in labour and birth, psychological factors that have different meanings to different women should be the focus of future studies. Further investigations pertaining to labour stress are warranted due to the limited studies in this area of research.

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Source of support: Nil

Conflicts of interest: None

REFERENCES:

1. Akadri AA, Odelola OI. Labour pain perception: experiences of Nigerian mothers. *Pan African Medical Journal*. 2018;30:288.
2. Ezebialu IU, Ezenyeaku CC, Umeobika J, Ikeako LC, Ubbo GU, et al. Pain perception and desire for painrelief in labour among parturients in a tertiary health facility in Southeastern Nigeria. *Orient Journal of Medicine*. 2018;30(1-2):23-29.
3. Tchounzou R, Innah R, Tatah HN, Ngalame A, Kamdem DS. Awareness of epidural analgesia in labour and its acceptability by parturients in a tertiary hospital in Cameroon. *PAMJ Clinical Medicine*. 2020; 3:175. doi:10.11604/pamj-cm.2020.3.175.23245.
4. Unamba NN, Unamba BC, Fiebai P. Perception of labour pain among parturients at University of Port Harcourt Teaching Hospital, Southern Nigeria. *The Nigerian Health Journal*. 2020;19(1):37-45.
5. Aziato L, Acheampong AK, Umoar KL. Labour pain experiences and perceptions: a qualitative study among post-partum women in Ghana. *BMC Pregnancy and Childbirth*. 2017; 17:73. doi:10.1186/s12884-017-1248-1241.
6. Faponle AF, Kuti O. Perception of labour pain by pregnant women in Southern Nigeria. *Tropical Journal of Obstetrics and Gynaecology*. 2004; 21:153-155.
7. Shrestha I, Pradhan N, Sharma J. Factors influencing perception of labor pain among parturient women at Tribhuvan University Teaching Hospital. *Nepal J Obstet Gynaecol*. 2013;8(1):26–30.
8. Aziato L, Acheampong AK, Umoar KL. Labour pain experiences and perceptions: A qualitative study among post-partum women in Ghana. *BMC Pregnancy Childbirth*. 2017;17(1):73.
9. Takehara K, Noguchi M, Shimane T, Misago C. A longitudinal study of women's memories of their childbirth experiences at five years postpartum. *BMC Pregnancy Childbirth*. 2014;14(1):221.
10. Jones L, Othman M, Dowswell T, et al. Pain management for women in labour: an overview of systematic reviews.
11. *Cochrane Database Syst Rev*. 2012;(3):CD009234. doi: 10.1002/14651858.CD009234.pub2
Deng Y, Li H, Dai Y, et al. Are there differences in pain intensity between two consecutive vaginal
12. *childbirths? A retrospective cohort study. Int J Nurs Stud*. 2020; 105:103549. doi:10.1016/j.ijnurstu.2020.103549
13. Lowe NK. The nature of labor pain. *Am J Obstet Gynecol*. 2002;186(5)(suppl):S16-S24. doi:10.1067/mob.2002.121427 Manual techniques for pain management. In: WHO recommendations: intrapartum care for a positive childbirth

14. experience. *World Health Organization*; 2018:111-114. Accessed June 10, 2021. <https://apps.who.int/iris/bitstream/handle/10665/260178/9789241550215-eng.pdf>
15. <https://journal.jkscience.org/index.php/JKScience/article/view/89#:~:text=About%2086%25%20of%20the%20participants,all%20women%20in%20antenatal%20period.>
16. Lowe NK. *The pain and discomfort of labor and birth. J Obstet Gynecol Neonatal Nurs.* 1996;25(1):82-92. Review.
17. Hodnett ED. *Pain and women's satisfaction with the experience of childbirth: a systematic review. Am J Obstet Gynecol.* 2002;186(5):160-72.

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