

Original Research Article

Labour analgesia: awareness and barriers among healthcare providers at a tertiary care centre

Kalyani S. D. L. Sangineni^{1*}, Sushmitha Salian¹, Anish Waghray², Sandeep Garre¹,
Rama Krishna Prasad Chikkala¹, Syama Sundar Ayya¹

¹Department of Anaesthesiology, AIIMS Bibinagar, Hyderabad, Telangana, India

²Department of Anaesthesiology, Amista Hospital and Clinics, Banjara Hills, Hyderabad, Telangana, India

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*Correspondence:

Dr. Kalyani S. D. L. Sangineni,
E-mail: sksdhanalakshmi@gmail.com

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ABSTRACT

Background: Labour analgesia has evolved from use of ether to modern regional techniques, significantly improving maternal and neonatal outcomes. Despite advancements and increasing awareness utilization remains limited among parturients in India. The aim of the study was to assess knowledge, perceptions of healthcare providers regarding labour analgesia and to identify barriers to its wider implementation.

Methods: Mixed-method cross-sectional survey was conducted among 303 healthcare providers at our institute using a validated questionnaire. Both qualitative and quantitative data were collected. Internal consistency and face validity were established during pilot testing. Descriptive and inferential analysis were performed.

Results: Of 303 respondents, 60.7% (185) were female and 46.2% (139) were doctors. Although 95% (285) were aware of the term labour analgesia, only 52.8% (161) had witnessed its administration. Approximately one quarter of respondents believed it prolongs the duration of labour. Barriers to utilization of labour analgesia included lack of availability of anaesthesiologist (14.2%, n=42) and not being offered services (17.8%, n=55). A majority (68.3%, n=207) endorsed antenatal education, and 56.1% (n=170) supported its inclusion in government hospitals.

Conclusions: Despite high awareness of labour analgesia, its utilization remains limited due to systemic barriers. Increased training and practice of labour analgesia in teaching institutes may help build trust and enhance its utilization.

Keywords: Labour analgesia, Tertiary care, Pregnant women, Questionnaire, Antenatal education

INTRODUCTION

Labour pain significantly impacts both mother and baby, making effective pain relief a key component of safe childbirth.¹ Epidural analgesia has consistently demonstrated greatest efficiency and has been endorsed by WHO as an integral part of quality maternity services although several other methods of pain relief both pharmacological and non-pharmacological are available.² However, the utilization of pain-relief methods remains low in many low- and middle-income countries when

compared with high-income countries, possibly owing to inadequate awareness and limited access.³⁻⁶

The primary objective of this study was to evaluate healthcare providers' awareness, attitudes, and perceptions regarding labour analgesia. The secondary objective was to identify the barriers to its implementation in clinical practice.

The study hypothesised that, despite reasonable awareness among healthcare providers, the implementation of labour

analgesia remains limited due to prevailing myths and misconceptions.

METHODS

Study design

This was a cross-sectional, questionnaire-based study conducted at AIIMS, Bibinagar from December 2024-January 2025. It incorporated both qualitative and quantitative components thereby adopting a mixed-method approach. Ethical approval was obtained from Institutional Ethics Committee and CTRI registration. A pilot survey with 20 participants established feasibility and identified ambiguities. Face validity was established by a panel of three senior experts in obstetric anaesthesia, who reviewed the questionnaire for clarity and relevance. Following their feedback, the final questionnaire was revised and validated prior to use in the main study.

The survey was administered via an online platform. A structured Google Form containing the questionnaire was distributed to all healthcare personnel (doctors and nursing officers) at our institution through electronic mail. Submission of the completed questionnaire was considered as implied consent to participate. Responses were automatically recorded in Microsoft Excel for analysis.

Data collection and analysis

Electronic invitations were sent to 555 healthcare workers, inviting participation in the survey. Data was collected over a period of two months. All healthcare personnel (doctors and nursing) who submitted the completed questionnaire were included. Those who declined to participate were excluded. The questionnaire covered demographics, awareness, perceptions, and barriers related to labour analgesia. Both closed ended (quantitative) and open ended (qualitative) were included to ensure a comprehensive assessment of awareness and attitudes.

Statistical analysis

Data were analyzed using SPSS version 23.0 and jamovi 2.0.

Principal component analysis (PCA) was employed to identify patterns within the dataset and reduce dimensionality, thereby grouping related items into underlying components.

In this study, PCA reduced ten items into two principal components: (a) component 1 represented the dominant pattern of grouping, reflecting a core dimension of knowledge or acceptance of labour analgesia; and (b) component 2 represented contrasting beliefs or confusion. Internal consistency reliability was assessed using Cronbach's alpha. The resulting alpha coefficient was 0.658, which falls within the acceptable reliability range.

Cronbach's alpha is a statistical measure of internal consistency, indicating whether a set of items measures a single unidimensional construct. A value greater than 0.9 denotes excellent reliability.⁷

RESULTS

Response rate and demographics

Of the 555 healthcare providers invited to participate, 303 completed the survey over a two-month period, yielding a response rate of 54.6% (Figure 1).

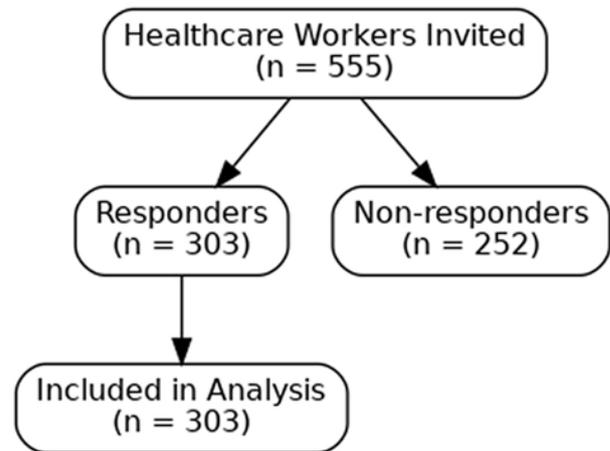


Figure 1: Flow diagram of participant recruitment and inclusion.

Overall, 95.1% (n=285) of participants were aware of the term labour analgesia (painless labour), and 78.6% (n=239) had received basic medical or nursing training. Though 98% (n=299) had witnessed women in labour, only 52.8% (n=161) had observed the administration of any form of labour analgesia.

Regarding perceptions, 23.1% (n=70) believed that epidural labour analgesia (ELA) prolongs labour, 11.6% (n=36) felt that it increases the likelihood of Caesarean delivery, and 18.8% (n=58) feared an increased risk of instrumental delivery. A smaller proportion (6.3%, n=18) believed that ELA could lead to fetal neurological injury or autism.

Acceptance of labour analgesia was high, with 96.4% (n=292) expressing support for its use; however, only 30.4% (n=91) strongly agreed that all women would benefit from pain relief. Awareness of available pain-relief modalities was limited: 48.2% (n=145) identified epidural analgesia, whereas familiarity with intravenous analgesics (9.2%, n=27), water birth (8.6%, n=26), Entonox® gas (3.3%, n=9), and Transcutaneous Electrical Nerve Stimulation (TENS) or acupuncture (1.3%, n=3) was notably low.

Perceived barriers were primarily infrastructural and related to misconceptions. These included unavailability

of an anaesthesiologist (14.2%, n=42), non-availability of labour analgesia services (17.8%, n=55), concerns regarding potential harm to the mother or foetus (14.8%, n=20), the belief that analgesia is unnecessary (11.9%, n=16), and fear of needles (2.2%, n=3).

A large majority (93%, n=282) agreed that labour analgesia should be offered to all women irrespective of socioeconomic status. Support for incorporating labour-analgesia counselling into preconception and antenatal education was strong (95.4%, n=289), and most respondents (91.1%, n=276) endorsed the provision of such services in government hospitals.

Gender-based differences

Female respondents demonstrated slightly stronger support for labour analgesia, with 93% (n=172) favouring universal availability compared with 87.3% (n=104) of male respondents.

DISCUSSION

As per UNICEF in India 25 million babies are born each year representing the volume of patients presenting for delivery either vaginal or abdominal.⁸ While this reflects the overall birth volume, survey of Indian cities showed only about 23 % of labouring women had access to any form of labour analgesia.⁹ While epidural labour analgesia

is widely practiced in high-income countries, its use remains below 15% in most low- and middle-income nations, due to limited resources, knowledge and training.¹⁰⁻¹⁴ There are various pharmacological and non-pharmacological methods of labour analgesia, with epidural analgesia being the most effective. However, it is practiced by only 43.5% of anaesthesiologists.^{3,15,16} As epidural services are more frequently available in private hospitals, inequity in pain management remains a major challenge in public healthcare settings.^{9,17-19} This study was designed to explore awareness, perceptions, attitudes surrounding labour analgesia among healthcare providers and barriers to its implementation at a tertiary government centre in India. With a sample size of 303 respondents-comprising 46.2% doctors (139) and 54% (164) nurses, and a gender distribution of 61% (185) female, 39% male (118)- it offered valuable insights into how both profession and gender influence the understanding and acceptance of labour analgesia.

As per our study though awareness and training in labour analgesia were high, only 52.8% (161) had witnessed labour analgesia being administered, indicating a gap between awareness and exposure. Gender-based differences were evident, with female respondents demonstrating greater awareness, training and acceptance than males, suggesting that clinical exposure may positively influence attitudes toward pain relief (Table 1).

Table 1: Questions based on domain with gender wise distribution and p value.

Domain	Question	Percentage (N)		P value (Chi-square)
		Female	Male	
Awareness	Are you aware of the term labour analgesia?	96.3% (177)	90.3% (107)	0.15
	How much pain do you think a woman experiences during labour ("Similar to fracture/more")?	83.8% (154)	80.6% (96)	0.59
	Were you taught about labour pain during basic training?	49.3% (91)	43.5% (52)	0.52
	Have you witnessed labour analgesia being given?	51.5% (95)	59.7% (71)	0.33
Attitude and opinions	Do you believe women in labour would benefit from pain relief during contractions?	97.1% (179)	91.9% (110)	0.16
	Will you recommend labour analgesia to others?	94.9% (175)	91.9% (110)	0.55
	Do you think labour analgesia should be offered to all women?	92.6% (170)	87.1% (104)	0.31
	Do you think labour analgesia is only for rich/high risk patients? (Disagree)	90.4% (166)	82.3% (98)	0.14
	Do you believe preconception/antenatal counselling about labour analgesia is essential?	97.8% (180)	93.5% (111)	0.20
	Should labour analgesia be a part of every government hospital?	93.4% (172)	91.9% (109)	0.76
Barriers	Have you not requested/recommended labour analgesia due to non-availability of anaesthetists?	11.9% (22)	17.6% (21)	0.22
	Do you think labour analgesia is offered only to rich/high-risk/luck patients? (Agree)	9.6% (18)	17.7% (21)	0.14
	Would you select birthing place based on availability of labour analgesia?	83.8% (154)	79.0% (94)	0.49

The subsequent section of the questionnaire was in descriptive format to explore participants' misconceptions and to evaluate the non-pharmacological approaches utilized for labour analgesia.

Studies among obstetricians have highlighted persistent misconceptions that labour analgesia prolongs labour, increases Caesarean and instrumental delivery rates which mirrored in our study participants.^{20,21,23} Low proportion of respondents attributed serious fetal risks to ELA indicating that although some misconceptions persist, most respondents did not associate ELA with major adverse outcomes. It has been observed that healthcare providers in developing countries are either ignorant or consider educating women on pain relief methods during labour as a low priority issue.^{9,20-22} This emphasizes the need for collaborative training between anaesthesiologists and obstetricians.

In 2018, 3.47% reported using non-pharmacological methods, which is comparable to the 1.3% (4) observed in our study.¹⁶ Doctors were more familiar with pharmacological options, while nurses had minimal exposure across techniques, highlighting role-based gaps. Overall, hospitals appear to rely on a single method, with limited familiarity, availability and implementation of multimodal pain relief strategies. Systemic barriers such as shortage of anaesthesiologists, absence of dedicated services, high patient load remain the primary obstacles to implementation of labour analgesia across centres.

Encouragingly, majority preferred including labour analgesia education in routine antenatal counselling and delivery in hospitals with full obstetric, and anaesthetic services. These findings demonstrate a recognition of the importance of comprehensive perinatal care and a willingness to support policy-level changes that could improve maternal comfort and outcomes.

Limitations

This study was conducted at a single tertiary care centre, which may limit the generalizability of the findings. The sample was skewed slightly toward nurses, who may have different exposure and training levels compared to doctors. Additionally, while the questionnaire was validated and pilot-tested, responses are still subject to self-reporting and recall bias.

CONCLUSION

Labour analgesia remains underutilized in India despite high awareness among healthcare providers and growing acceptance of its benefits. Institutional barriers such as lack of dedicated services hinder widespread implementation. Strengthening interdepartmental collaboration, standardizing training, integrating labour analgesia education into antenatal counselling, and ensuring policy-driven support for infrastructure and staffing can bridge the gap from knowledge to practice.

Translating awareness into practice may help establish labour analgesia as an integral component of safe and equitable maternity care.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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