

KNOWLEDGE, ATTITUDE, AND PRACTICE OF LABOR ANALGESIA IN ANTENATAL WOMEN IN AMALAPURAM: A CROSS-SECTIONAL OBSERVATIONAL STUDY.

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ABSTRACT

Background

Labor analgesia is crucial for managing labor pain, yet its awareness and acceptance remain low in many developing regions. This study aims to assess the knowledge, attitude, and practice regarding labor analgesia among antenatal women in Amalapuram, a rural area in India.

Methods

An observational cross-sectional study was conducted with 150 antenatal women aged 18-40 years attending the antenatal clinic at a tertiary care hospital. Data were collected using a structured questionnaire that assessed demographics, knowledge, attitude, and practice regarding labor analgesia. Statistical analysis was performed using Microsoft Excel 2016.

Results

Of the 150 women surveyed, 25% were aware of labor analgesia. The majority (62%) of the 112 unaware respondents expressed interest in learning more, primarily preferring to receive information during obstetric consultations (55%). Concerns regarding labor analgesia were mainly centered around safety (85.3%) and its potential impact on the baby (56%). Regarding attitudes, 76% of participants feared labor analgesia, and 92.6% believed healthcare providers should offer it. Only 30% expressed interest in opting for labor analgesia in future pregnancies, with 70% preferring a natural birth. Knowledge dissemination was largely limited to family and social media sources.

Conclusion

The study reveals a low awareness of labor analgesia among antenatal women in Amalapuram, with significant interest in learning more about it. Healthcare providers, especially obstetricians, should be proactive in educating women during the antenatal period to increase acceptance of pain relief methods, which could improve maternal comfort and birth outcomes.

Recommendations

To improve awareness and acceptance of labor analgesia, healthcare providers, particularly obstetricians, should actively educate antenatal women during early pregnancy visits. Addressing misconceptions, enhancing communication, and providing clear, accurate information about pain relief options can help increase utilization. Further studies should explore cultural factors influencing pain relief choices in diverse populations.

Keywords: Labor analgesia, Antenatal women, Awareness, Attitude, Pain relief, Obstetrics, India

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INTRODUCTION

Pain during childbirth is a profoundly intense experience influenced by a complex interplay of physiological, psychological, social, and cultural

dimensions [1,2]. Despite advancements in obstetric care, managing labor pain continues to be a key concern for expectant mothers across the globe. While effective pain relief options such as epidural and spinal analgesia are widely practiced in high-

income nations [3], their awareness and acceptance remain significantly lower in resource-constrained settings like India [4].

Barriers such as limited access to specialized services, socioeconomic challenges, and entrenched traditional beliefs contribute to this disparity [5]. Misconceptions about the safety, cost, and possible effects of labor analgesia on the birthing process further reduce its acceptance [6]. Studies conducted across different regions have emphasized the need for proactive engagement by healthcare professionals, especially obstetricians, in disseminating accurate information and addressing fears related to labor pain relief [7, 8]. This study focuses on Amalapuram, a semi-urban area in Andhra Pradesh, India, where data on awareness and attitudes toward labor analgesia among pregnant women are scarce.

This study aims to assess the knowledge, attitude, and practice regarding labor analgesia among antenatal women in Amalapuram, a rural area in India. By understanding the awareness levels and attitudes toward pain relief during labor, the study aims to highlight the information gaps and propose strategies for improving the provision and acceptance of labor analgesia. Addressing these gaps can contribute to better maternal care and improve the overall childbirth experience for women in this region.

METHODOLOGY

Study Design and Setting

This cross-sectional observational study was conducted at the Konaseema Institute of Medical Sciences and Research Foundation (KIMS&RF), a tertiary care teaching hospital located in Amalapuram, Andhra Pradesh, India. KIMS&RF provides comprehensive healthcare services to the surrounding rural and semi-urban communities and serves as a referral center for maternal and child health. The antenatal clinic at KIMS&RF sees a high volume of expectant mothers, making it a suitable setting for assessing awareness and attitudes related to labor analgesia. The study was carried out over six months, from August 2024 to February 2025.

Study Population

A total of 150 antenatal women aged 18–40 years attending the antenatal outpatient clinic during the study period were included using consecutive sampling. Participants were briefed about the study and informed that written consent was obtained before enrollment. The sample size of 150 antenatal women was determined based on previous similar studies assessing awareness of labor analgesia,

assuming an estimated awareness rate of 25%, with a 95% confidence level and 7% margin of error. This sample size ensures adequate representation for statistical analysis within the study setting.

Inclusion Criteria

- Antenatal women aged between 18 and 40 years.
- Women who provided informed consent to participate in the study.

Exclusion Criteria

- Women with medical or obstetric complications are contraindicated for labor analgesia.
- Women are scheduled for elective cesarean section.
- Women who were unable to comprehend the questionnaire due to language barriers or cognitive impairment.

Data Collection

A structured questionnaire was developed to collect data, which consisted of two sections. The first section recorded demographic information such as age, education level, occupation, parity, and previous delivery history. The second section contained questions designed to assess participants' knowledge, attitudes, and practices regarding labor analgesia. The questionnaire was administered by a single interviewer, fluent in the local language, to minimize interviewer bias.

Data Analysis

Data were analyzed using Microsoft Excel 2016. Ordinal and nominal data were presented as numbers and percentages. Bar diagrams and pie charts were used for the graphical representation of the findings. Statistical analysis was performed to explore the relationships between various demographic factors and the knowledge, attitude, and practice of labor analgesia.

Bias

To minimize bias, a single trained interviewer administered the questionnaire in the local language to ensure consistency. Consecutive sampling was used to reduce selection bias, and responses were anonymized to encourage honest and unbiased participant feedback.

Ethical Considerations

The study was approved by the Institutional Ethical Committee of the Konaseema Institute of Medical Sciences and Research Foundation (IEC/KIMS/21/2024). Informed consent was obtained from all participants, and the confidentiality of their responses was maintained throughout the study.

RESULTS

A total of 150 antenatal women participated in the study, with 30 women excluded due to non-consent, age greater than 40 years, or incomplete survey responses. Demographic characteristics of the participants are summarized in Table 1.

Table 1: Demographic Characteristics of the Participants

Demographic Variable	n (%)
Age	
<20 years	15 (10%)
20-30 years	115 (76%)
30-40 years	20 (13.3%)
Religion	
Hindu	100 (66%)
Christian	35 (23%)
Muslim	15 (10%)
Education	
No formal education	8 (5.3%)
Matriculation	27 (18%)
Secondary	64 (42.6%)
Undergraduate	36 (24%)
Postgraduate	15 (10%)
Occupation	
Homemaker	128 (85%)
Business	6 (4%)
Professional	12 (8%)
Student	4 (2%)
Parity	
Primiparous	51 (34%)
Multiparous	99 (66%)
Previous Cesarean Section	
Yes	54 (36%)
No	96 (64%)
Native Place	
Rural	41 (27%)
Urban	109 (72%)

Among the participants, 76% were in the age group of 20-30 years, and the majority were homemakers (85%). The predominant religious group was Hindu (66%), and most participants had secondary education (42%).

Knowledge of Labor Analgesia

Out of 150 participants, 38 (25%) were aware of labor analgesia. Of the 112 participants who were

unaware of labor analgesia, 93 (62%) expressed interest in learning more about it. The majority (55%) preferred receiving information during obstetric consultations, while 11% believed the most appropriate time to discuss labor analgesia would be at or after the onset of labor pain (Table 2). Concerns about labor analgesia predominantly focused on the safety of the procedure for both mother and baby.

Table 2: Knowledge of Antenatal Women towards Labor Analgesia

Knowledge Query	Yes (%)	No (%)
Do you know that vaginal delivery is possible without pain?	30 (26.6%)	120 (73%)
Have you heard about labor analgesia?	38 (25%)	112 (74%)
Do you know about the availability of labor analgesia in your attending hospital?	15 (10%)	135 (90%)
Do you think labor analgesia is available only in corporate hospitals?	109 (72.6%)	41 (27.3%)
Do you think labor pain relief methods may have additional costs?	97 (64.6%)	53 (35.3%)
Do you think labor pain relief is provided free in government hospitals?	64 (42.6%)	86 (57%)

Attitude Towards Labor Analgesia

Regarding attitudes, 76% of participants reported having fears related to labor analgesia, with the primary concerns being potential harm to the baby (85.3%) and an increase in the likelihood of cesarean sections (56%). Despite these fears, a

significant majority (92.6%) believed that healthcare providers should offer labor analgesia. Furthermore, 85.3% of women felt that enduring labor pain makes women stronger, and 90% supported the idea of encouraging natural birth over medical pain relief methods. A majority (61.3%) desired more information on pain relief methods before delivery (Table 3).

Table 3: Attitude of Antenatal Women Towards Labor Analgesia

Attitude Query	Yes (%)	No (%)
In your opinion, why should a woman undergo labor pain?		
Previous sin	5 (3%)	
A curse on women from god	5 (3%)	
Physiological	110 (73%)	
Don't know	40 (26%)	
Do you have any fears regarding labor analgesia?	114 (76%)	36 (24%)
Are you afraid that the pain relief methods might have harmful effects on the mother or baby?	128 (85.3%)	22 (14.6%)
Should labor be free of pain?	131 (87.3%)	19 (12.6%)
Does this method increase the chance of cesarean section or operative delivery?	84 (56%)	66 (44%)
Do you think labor analgesia is better than painful labor?	23 (15.3%)	127 (84%)
Do you think labor analgesia is better than cesarean section?	37 (24.6%)	113 (75.3%)
Do you think using labor analgesia will decrease the bonding between mother and fetus?	102 (68%)	48 (32%)
Do you think labor analgesia should be provided by healthcare providers?	139 (92.6%)	11 (7.3%)

Do you think experiencing labor pain makes women stronger?	128 (85.3%)	22 (14.6%)
Should natural birth be encouraged more than medical pain relief methods?	136 (90%)	14 (9.3%)
Would you like to receive more information about pain relief methods before delivery?	92 (61.3%)	58 (38.6%)

Practices Related to Labor Analgesia

In terms of practices, 45 women (30%) indicated a willingness to opt for labor analgesia during future pregnancies, while 108 women (72%) would recommend it to their family or friends. The most common reason for refusing labor analgesia was the

desire to experience a natural birth. However, only 25 women (16%) had discussed labor pain relief options with healthcare providers, and 94.6% of women had not been fully informed about the available pain relief methods. Moreover, 145 (96.6%) participants did not personally know anyone who had received labor analgesia (Table 4).

Table 4: Practices of Labor Analgesia in Antenatal Women

Practice Query	Yes (%)	No (%)
Are you interested in knowing about labor analgesia?	93 (62%)	57 (38%)
Do you wish to opt for labor analgesia in your current or future pregnancy?	45 (30%)	105 (70%)
Would you like to recommend labor analgesia to your family or friends?	30 (20%)	120 (80%)
Do you feel that to avoid labor pain, women are preferring cesarean section?	131 (87%)	19 (12.6%)
Have you ever discussed labor pain relief options with healthcare providers?	25 (16%)	125 (83.3%)
Did your healthcare providers inform you about all pain relief methods?	8 (5.3%)	142 (94.6%)
Do you know any women who delivered with labor analgesia?	5 (3.4%)	145 (96.6%)

DISCUSSION

Labor pain is widely acknowledged as one of the most severe physical challenges encountered during childbirth. Although several effective pain relief strategies are available, ranging from pharmacological options like epidurals to non-pharmacological approaches such as breathing techniques and water immersion, their use remains relatively low, particularly in developing nations like India, where awareness is lacking and cultural reservations persist.

This study uncovered a substantial deficiency in knowledge regarding labor analgesia among antenatal women in Amalapuram, with just 25% of participants indicating prior awareness. This limited awareness reflects a systemic shortfall in patient education and antenatal counseling, potentially rooted in insufficient provider communication,

limited emphasis on labor pain relief in rural health programs, and enduring socio-cultural norms [6, 7, 11]. The interpretation of this finding suggests that many women in these settings may be navigating childbirth with incomplete knowledge, potentially compromising their ability to make informed decisions about pain management.

Encouragingly, 62% of the women who were unaware of labor analgesia expressed a desire to know more. This demonstrates a clear readiness among pregnant women to be educated, presenting an actionable opportunity for healthcare professionals to address this gap. Aligning with previous research, introducing pain relief education during antenatal visits, particularly in the second trimester, may increase acceptance and improve maternal confidence in using such interventions [7]. However, fear remains a major deterrent. A large portion of participants reported anxiety regarding

labor analgesia, with 85.3% concerned about maternal or neonatal safety and 56% fearing increased risks of cesarean delivery. These fears appear to be fueled by widespread misinformation and traditional beliefs, which have been well-documented in Indian studies [6, 8, 9]. From an interpretative lens, this suggests that myths around analgesia are deeply entrenched and may significantly impact decision-making unless addressed through clear, consistent health messaging.

Interestingly, 92.6% of participants still believed that healthcare providers should offer labor analgesia, and 61.3% expressed interest in receiving more information. This indicates a paradoxical trust—despite apprehensions, most women believe in provider-led decision-making. This provides a strong foundation upon which to build structured patient counseling initiatives aimed at demystifying labor analgesia [6, 12].

In terms of practice, only 30% of women were willing to use labor analgesia themselves, yet 72% would recommend it to others. This contrast may point to an internal conflict—while women intellectually recognize the benefits of pain relief, emotionally or culturally, they may still feel obligated to endure labor pain. This duality is consistent with other Indian studies that show women support modern interventions for others but are hesitant to use them personally due to normative expectations or fear of stigma [6, 7].

Moreover, 94.6% of participants had not been informed about labor pain relief by their healthcare providers, and 96.6% did not know anyone who had received it. This suggests that labor analgesia is not only underused but also socially invisible in this setting. The absence of personal testimonies or community narratives further reduces its visibility, reinforcing the cycle of low awareness and underutilization [8, 11]. Interpretation of this finding indicates that the lack of community-level exposure and insufficient provider engagement both contribute to maintaining labor pain as an unavoidable norm.

Overall, the study highlights multiple barriers to the adoption of labor analgesia in Amalapuram, including limited awareness, cultural misconceptions, provider silence, and the absence of role models. Yet, the expressed willingness to learn more underscores a promising opportunity for health systems to implement focused antenatal educational interventions. By strengthening communication, building trust, and normalizing pain relief in childbirth, maternal comfort and birth satisfaction can be significantly improved in similar contexts [6, 12].

GENERALIZABILITY

The findings of this study are primarily generalizable to antenatal women in rural and semi-urban settings in South India with similar socio-cultural and healthcare contexts. However, caution is advised when extrapolating results to urban or diverse populations.

CONCLUSION

While awareness and acceptance of labor analgesia remain low among antenatal women in Amalapuram, there is a clear interest in receiving more information and a willingness to consider it in future pregnancies. Addressing misconceptions, improving communication between healthcare providers and patients, and offering education about labor analgesia during the early stages of pregnancy can help increase the acceptance and utilization of labor analgesia. Enhanced awareness and understanding can ultimately improve the childbirth experience and maternal well-being.

LIMITATIONS

This study's limitations include its observational cross-sectional design, which does not establish causality. The sample was limited to antenatal women attending a single tertiary care hospital in Amalapuram, limiting generalizability. Additionally, the data collection relied on self-reported responses, which could introduce response bias. Further research with larger, more diverse samples is needed.

RECOMMENDATIONS

To improve awareness and acceptance of labor analgesia, healthcare providers, particularly obstetricians, should actively educate antenatal women during early pregnancy visits. Addressing misconceptions, enhancing communication, and providing clear, accurate information about pain relief options can help increase utilization. Further studies should explore cultural factors influencing pain relief choices in diverse populations.

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LIST OF ABBREVIATIONS

KAP –	Knowledge, Attitude, and Practice
KIMS & RF –	Konaseema Institute of Medical Sciences and Research Foundation
SD –	Standard Deviation
SPSS –	Statistical Package for the Social Sciences
OPD –	Outpatient Department
ANC –	Antenatal Care
IEC–	Institutional Ethics Committee

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The study had no funding.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

VAH- Concept and design of the study, results interpretation, review of the literature, and preparation of the first draft of the manuscript. Statistical analysis and interpretation, revision of the manuscript.

MSS-Concept and design of the study, results interpretation, review of the literature, and preparing the first draft of the manuscript, revision of the manuscript.

KVB- Concept and design of the study, results interpretation, review of the literature, and preparing the first draft of the manuscript. Statistical analysis and interpretation, revision of the manuscript.

DATA AVAILABILITY

Data is Available

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