

# Awareness of Labor Analgesia among Antenatal Women in Women Attending Tertiary Care Hospital

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**Abstract:** *Background:* Women's experience of pain during delivery varies greatly. Various pharmacological and nonpharmacological methods of labour analgesia are available. In spite of availability of various methods, even now women deliver with severe pain without adequate pain relief. The aim of the study was to determine the awareness of pregnant women about labour analgesia. *Methods:* This cross sectional study was done among 256 pregnant women attending antenatal out-patient in obstetrics and gynecology department. Antenatal women who were planned for elective cesarean section were excluded from the study. *Results:* Out of 256 women 89.8% had no idea about usage of pain relief in labour. Only 10.2% had some idea about pain relief in labour. In previous delivery, 38.9% experienced severe pain, 58.4% experienced moderate pain and only 2.7% experienced mild pain. Some form of analgesia was administered to 89.9% of women. In spite of analgesia being given for majority, more number of women experienced moderate and severe pain (97.3%). On analyzing various factors, order of pregnancy, income and occupational status had statistically significant influence on knowledge about labour analgesia. *Conclusion:* There is a lack of knowledge among pregnant women about pain relief. Due to hectic work in labour room setting in India, it may be difficult to provide one to one care. Non-pharmacological methods should be popularized for pain relief. Usage of some form of pain relief will help in improving quality of care during labour and better outcome of mother and baby.

**Keywords:** Labour analgesia, Pharmacological method, Non-pharmacological method

## 1. Introduction

Pain is described as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (International Association for the Study of Pain, IASP). Labour can be defined as spontaneous painful repetitive uterine contractions associated with the effacement and dilatation of the cervix and the descent of the foetus. Labour is reported to be one of the most painful experiences in a woman's life. Delivery is a natural phenomenon accompanied with pain. Women's experience of pain during labour varies greatly. Some women feel little pain while others feel extremely distressing pain during labour. A woman's position in labour, mobility, fear and anxiety may have an influence on severity of pain. Pain originates from different sites during first and second stage of labour. In the first stage, pain due to cervical dilatation is transmitted via spinal nerves T10-L1. Labour pain can be referred to the abdominal wall, low back, buttock and thighs. In second stage of labour, pain occurs from distension of the vagina, perineum, and pelvic floor. Pain is transmitted via the pudendal nerves, entering the spinal cord via nerve roots S2-S4. Woman also experiences rectal pressure and an urge to push during second stage. Various pharmacological methods of labour analgesia include epidural analgesia, injections and inhalational agents<sup>1</sup>

Alternative non-pharmacological approaches are transcutaneous electrical nerve stimulation, hydrotherapy, acupuncture, massage, aromatherapy and psychoprophylactic methods (hypnosis, biofeedback, yoga, and music therapy). In spite of availability of various

methods, even now women deliver with severe pain without adequate pain relief. Lack of awareness among pregnant women is an important reason for non-utilization of analgesic techniques. Aim of our study was to determine the awareness of pregnant women about labour analgesia

### Aims and Objectives:

To determine the awareness of pregnant women about Labor analgesia.

## 2. Methodology

**Study design:** Cross-sectional study

**Study Location:** Department of Obstetrics and Gynaecology, PES Institute of medical sciences and research, Kuppam

**Study duration:** April 2022 to May 2022

**Sample size:** 256.

**Inclusion criteria:** Antenatal women attending opd

**Exclusion criteria:** Women who were planned for elective caesarean were excluded from the study

Pregnant women attending antenatal outpatient department were included in the study. Women who were planned for elective caesarean were excluded from the study. After getting consent from the pregnant women, they were personally interviewed using structured questionnaire. Proforma consisted of socio demographic characteristics,

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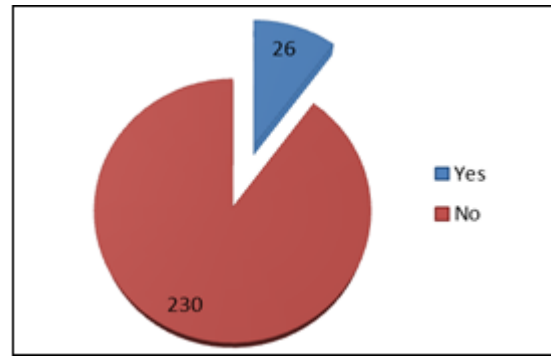
opinion about intensity of labour pain, knowledge about methods of pain relief and source of information about pain relief. In case of multi gravida, time duration for last delivery, the amount of pain experienced in previous delivery, usage of any pain relief during labour were collected. Other factors such as their preferred method of labour analgesia and reason for not opting for labour analgesia were also collected. Delivery factors such as amount of pain expected in present delivery, amount of pain experienced in previous delivery, time duration of previous delivery were also analyzed for influence on acquiring knowledge on labour analgesia

### 3. Results

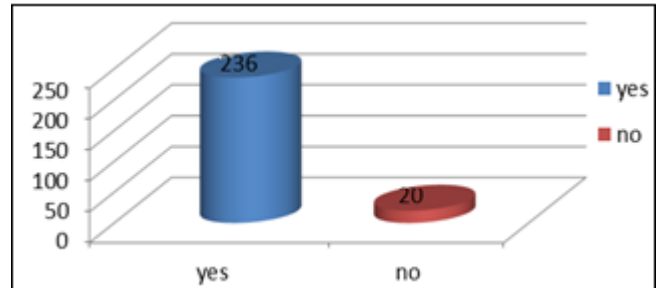
Out of 256 women 89.8% had no idea about usage of pain relief in labour. Only 10.2% had some idea about pain relief in labour (Figure 1) out of 256 women 236 women were willing for labour analgesia and 20 were not willing (Figure 2) out of 20 women, Some did not believe that they cause pain relief (8 out of 20) and other women wanted to experience natural child birth (5 out of 20) (Figure 3) In previous delivery, out of 149 women, 89.9% of women were given some form of analgesia during labour (Figure 4). Only 10.1% stated that they were not given any method of analgesia. But, 38.9% experienced severe pain, 58.4% experienced moderate pain and only 2.7% experienced mild pain during previous delivery (Figure 5) In spite of labour analgesia being given in majority of women, more number of women experienced moderate and severe pain (97.3%) during labour

**Table 1:** Demographic Characteristics of study population

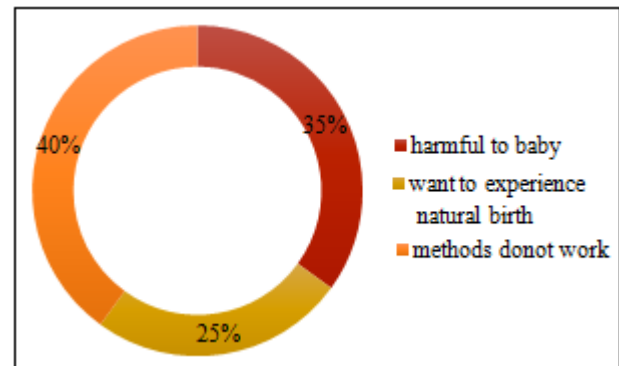
Demographic Characteristics	N=256	%
Age		
<20 years	12	4.7%
20-30 years	214	83.6%
>30 years	30	11.7%
Educational status		
Uneducated	16	6.3%
Schooling	157	61.3%
College	83	32.4%
Gravid		
Primi	107	41.8 %
Multi	149	58.2%
Income		
<10000	227	88.7%
10, 000-50000	26	10.2%
>50000	3	1.1%
Occupation		
Housewife	240	93.8%
Employed	16	6.2%



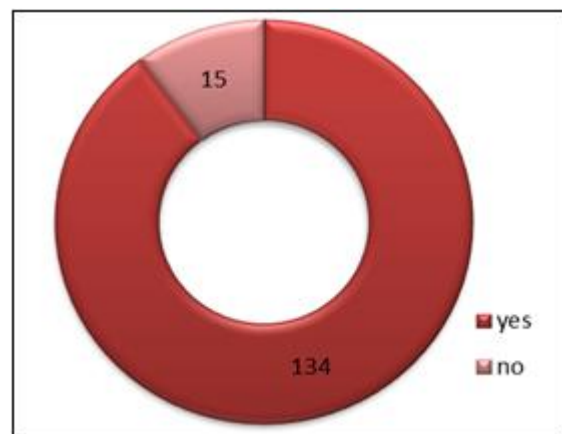
**Figure 1:** Knowledge about labor analgesia among women in study group



**Figure 2:** Willingness for labor analgesia in present pregnancy



**Figure 3:** Reason for not opting labor analgesia



**Figure 4:** No. of women given labor analgesia in previous pregnancy

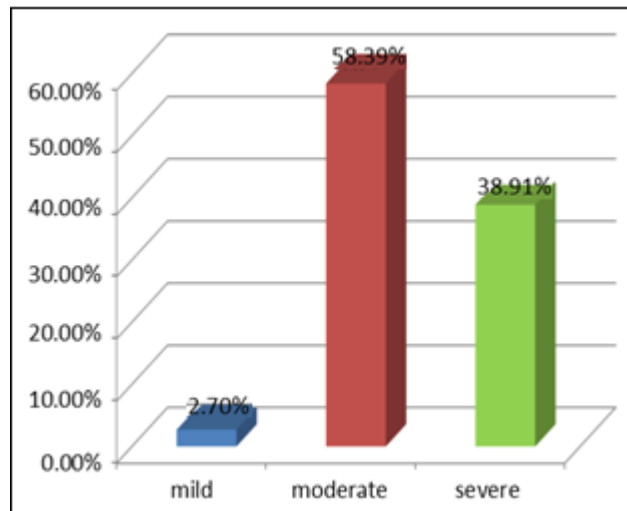


Figure 5: Severity of labor pain perceived in previous pregnancy

Table 2: Socio- demographic factors influencing knowledge on labour analgesia

	Yes N= 26	No N= 230	$\chi^2$	P value
Age				
< 20 years	0	12	1.44	0.487
20 – 30 years	23	191		
>30 years	3	27		
Educational status				
Uneducated	1	15	0.311	0.856
Schooling	16	141		
college	9	74		
Gravid				
Primi	6	101	4.17	0.041*
multi	20	129		
Income				
< 10000	19	208	7.32	0.026*
10000 – 50000	6	20		
>50000	1	2		
Occupation				
Housewife	22	218	4.12	0.042*
Employed	4	12		

On analysing various socio demographic factors, age, religion, educational status of women did not have influence on knowledge about labour analgesia significantly. On analysing order of pregnancy, multigravida had a better knowledge than primigravida ( $\chi^2$  value 4.17; p value

0.041\*). Similarly women with income of > Rs.10000/month had a better knowledge than those with < Rs.10000/month ( $\chi^2$  value 7.32; p value 0.026\*). Similarly employed women had a better knowledge than housewife ( $\chi^2$  value 4.12; p value 0.042\*) (Table 2).

Table 3: Delivery factors influencing Knowledge on labour analgesia

	Yes N= 26	No N= 230	$X^2$	P value
<b>Severity of pain expected in present pregnancy</b>				
Mild	15	174	7.94	0.047*
moderate	8	50		
Severe	1	1		
No idea	2	5		
<b>Severity of pain during previous pregnancy</b>				
	Yes N=23	No N=126	2.01	0.365
Mild	1	3		
Moderate	16	71		
Severe	6	52		
<b>Time required for last delivery</b>				
< 4 hours	6	26	3.86	0.277
4 – 12 hours	2	23		
12 – 24 hours	6	22		

On analysing delivery related factors, women those who expected moderate and severe pain had statistically significant knowledge about labour analgesia than those who expected mild pain in present delivery ( $\chi^2$  value 7.94;  $p$  value 0.047\*). Other factors like duration of labour in previous delivery and severity of pain in previous delivery did not have significant influence on knowledge about labour analgesia (Table 3).

#### 4. Discussion

Delivery is the most painful experience in women's life. McGill pain questionnaire comparing pain scores for women in labour and other painful conditions, shows that labour pain is more severe than cancer pain and it is almost close to the pain experienced due to amputation of digit.<sup>2</sup>

On comparing different types of pain, regardless of the psychophysical method used, cancer pain, myocardial infarction pain, renal colic pain, burn pain, and labour pain were considered as the most intensive pain.<sup>3</sup>

The modern era of labour analgesia began in 1847 when Dr J. Y. Simpson administered ether to a woman during child birth. Since then, usage of labour analgesia made the women to deliver with less pain. This labour pain not only causes distress to the mother, it also has influence on the labour progress and fetal outcome. Acute stress during labour activates the sympathetic nervous system, resulting in an increase in plasma catecholamine levels. This increased catecholamine levels during labour, are associated with decrease in uterine blood flow.<sup>4, 5</sup>

This results in fetal hypoxia. Severe pain, anxiety and increased catecholamine levels are associated with prolonged or dysfunctional labour.<sup>6</sup> In the year 2008, US statistics shows that 61 percent of women delivered vaginally received epidural or spinal anaesthesia.<sup>7</sup> But in India, awareness and usage of adequate analgesia technique was very low compared to western statistics. Our study showed only 10.2% of pregnant women had some idea about pain relief in labour. Many other studies done in India also showed awareness level of < 10%.<sup>8-10</sup> In previous delivery, out of 149 women nearly 97% experienced moderate to severe pain. 89.9% of women were given intramuscular injections during labour.

Only 10.1% stated that they were not given any method of analgesia. This shows intramuscular injections given during labour does not produce pain relief in labour. Cochrane analysis shows that up to two-thirds of women who received opioids reported moderate or severe pain following administration of analgesia.<sup>11</sup> In this study, on analyzing various socio demographic factors and delivery related factors, factors such as order of pregnancy, family income, occupational status of women and severity of pain expected in present pregnancy had statistically significant influence on knowledge about labour analgesia than others. Only 26 pregnant women in our study had prior knowledge about labour analgesia. Out of it, 24 got information from friends and relatives. This shows that health care workers do not provide adequate counseling about labour pain and about the options of labour analgesia during routine antenatal

checkups. Because of overwhelming crowd in antenatal outpatient department, it may not be possible to provide counseling about labour analgesia in Indian settings. In this study, 7.8% of women were against labour analgesia. Reason being harmful to the baby, no belief that they cause complete pain relief and some wanted to experience natural child birth. Even educated people believe that delivery cannot occur without pain. Because of this deep-rooted belief that delivery is painful, either patients are unaware of labour analgesia or failed to utilize these pain-relieving methods. Due to ever rising population in India, there is a lack of one-to-one care during deliver resulting in inability to provide optimal labour analgesia. There should be mass media coverage for providing information about labour analgesia, to increase awareness and acceptance of labour analgesia. Women should be informed about options of labour analgesia well in advance in antenatal period by a counselor. House visits by village health nurses may be utilized for providing information about labour analgesia. Leaflets containing details on labour analgesia during antenatal visits can be another option for reducing the burden of counseling. Pregnant women should be given options of various pain reliefs, both about pharmacological and nonpharmacological labour analgesia. Systemic opioids such as pethidine, tramadol, fentanyl, remifentanyl can be used for pain relief in labour. Though they are easy to administer, there are concerns about maternal effects such as sedation, hypoventilation, hypotension, prolonged labour, urine retention, nausea and vomiting. Also, there is a concern about elimination of pethidine, and its metabolite from fetus, which may take even three to six days. It may lead to respiratory depression, decreased alertness and delayed effective breastfeeding in them. Although neonates can completely metabolize tramadol, mothers receiving tramadol had higher pain scores when compared to pethidine.<sup>12</sup>

Among inhalational analgesics, only nitrous oxide (in 50% oxygen) is widely used for analgesia in modern obstetric practice. It has various disadvantages. It is ineffective in up to half of parturient. Occupational exposure to nitrous oxide is a concern among labour room staff, which may lead to loss of fertility, miscarriage and anomalies in them.<sup>13</sup>

Epidural analgesia, produces most effective form of pain relief.<sup>14</sup> Absence of pain during labour allows enjoyment and control of labour. Epidural analgesics have certain disadvantages like requirement of continuous cardiocographic monitoring, requires resident anesthesia, cardio-respiratory facilities and increased rate of instrumental delivery. Pharmacological methods of pain relief may not be possible, because of low doctor patient ratio in India. Atleast non-pharmacological methods should be popularized among pregnant women and should make use of it which may provide pain relief and improvement in labour satisfaction. Among various non-pharmacological interventions tried, methods such as water immersion, massage, acupuncture and relaxation relieved pain and improved labour satisfaction and childbirth experience. There is insufficient evidence to make judgments on whether or not hypnosis, biofeedback, sterile water injection, aromatherapy or transcutaneous electrical nerve stimulation are more effective than placebo or other interventions for



pain management in labour. Studies have shown that continual support throughout the whole labour reduces the length of labour, the use of medication for pain relief, the caesarean rate, and the use of oxytocin.<sup>15, 16</sup> A Cochrane review found that women who had continuous support during labour were more likely to have a shorter labour, spontaneous vaginal birth and less need for analgesia.<sup>17</sup> Fear of labour pain is an important reason for increase in rate of caesarean section at maternal request. Fear of labour pain leading to request for caesarean section in as many as 66.5%, as shown in a study done among Turkish women.<sup>18</sup> If labour analgesia techniques are utilized routinely, it may help in better handling of labour pain. Better pain relief leads to good labour outcome, which may indirectly reduce the rate of caesarean section.

## 5. Conclusion

In spite of the presence of various pain relief techniques, women deliver with moderate to severe pain in labour. This is due to lack of adequate knowledge among pregnant women about pain relief and hectic work in labour room in Indian setting. Awareness is especially lacking among women in semi urban setting. Nonpharmacological methods should be popularized among pregnant women, which may provide pain relief and satisfaction during labour. Creating awareness may help them improve usage of adequate analgesia, which may in turn improve quality of care during labour and better outcome of mother and baby

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