

## AWARENESS AND ACCEPTANCE OF EPIDURAL LABOR ANALGESIA AMONG PREGNANT WOMEN AT A TERTIARY CARE HOSPITAL

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### ABSTRACT

**Background:** Childbirth is widely acknowledged as one of the most intense experiences in a woman's life. The importance of labor analgesia is often overlooked and its adoption rates remain low in many developing nations. This study aimed to assess the awareness and acceptance of epidural labor analgesia, and to identify any association between demographic variables.

**Methods:** After ethical clearance from Institutional Review Committee, the present cross-sectional study was conducted at Paropakar Maternity and Women's Hospital from July to September 2023. Two hundred and twenty-seven consecutive pregnant women visiting the Antenatal clinic in hospital were enrolled in the study. Data was collected using paper based structured questionnaires and analyzed by using descriptive and inferential statistical tools in Statistical Package for Social Sciences (SPSS version 24).

**Results:** Of the 227 participants, only 18 (7.9%) were aware of labor analgesia. After the participants were given information about labor epidural analgesia, 173 (76.2%) participants had acceptance for labor epidural analgesia for their current or future pregnancies. Higher education level had significant association with both awareness and acceptance of labor analgesia.

**Conclusions:** Awareness towards labor analgesia although very low, when given information a majority of participants had favorable reception towards it.

### INTRODUCTION

Pain during labor is an universal experience for women, often described as one of the most intense and challenging aspects of childbirth.<sup>1</sup> The understanding that labor pain can be effectively controlled without compromising the safety of the mother and baby, has led to a significant shift in attitudes towards pain relief during childbirth.<sup>2</sup>

Epidural labor analgesia is a safe and widely used method for pain management during normal vaginal delivery, offering significant relief to parturients and improving their overall birthing experience.<sup>2,3</sup> By reducing the intensity of pain, labor analgesia allows women to conserve energy, remain relaxed, and actively participate in the birthing process. It can help alleviate the physical and emotional stress associated with labor, promoting a more positive and empowering birth experience.<sup>4</sup> Despite its benefits, the awareness and acceptance of epidural labor analgesia among parturients can vary, influenced by factors such as cultural beliefs, knowledge gaps, and individual preferences.<sup>5,6</sup>

Understanding the level of awareness and acceptance of epidural labor analgesia is crucial for healthcare of parturients. The present study was aimed to explore the awareness and acceptance of epidural labor analgesia and any possible association to demographic variables, among pregnant women at a tertiary care hospital in Nepal.

### METHODS

The present Cross-sectional observational study was conducted at Paropakar Maternity and Women's Hospital, Thapathali, Kathmandu, Nepal from July 2023 to September 2023. Study participants included adult pregnant women in their 2<sup>nd</sup> and 3<sup>rd</sup> trimester coming for routine Prenatal visit. Pregnant women with previous cesarean section or in active labor were excluded from the study. Sample size for the study was calculated to be 227 based on the previous study where proportion of patient that were aware of labor analgesia was 16%,<sup>7</sup> using the formula  $N = Z^2 * P(1-P) / D^2$  where N= sample size, Z is the standard normal variation (for 95% confidence interval, Z= 1.96), P is the expected proportion of the population that has the characteristic of interest and

D is absolute precision or alpha error of 5%. Ten percent was added in the calculated sample size for drop outs.

### Operational definitions

Parity: women who had not delivered before was termed Nulliparous, who delivered once was termed Primiparous, and who had delivered more than once was termed Multiparous.<sup>8</sup>

Had awareness: women who said yes when asked if they had prior information about labor analgesia.<sup>8,9</sup>

Acceptance: women who said yes when asked if they would opt labor analgesia in their current/ future deliveries.<sup>9</sup>

After clearance from the Institutional Review Committee, 227 consecutive pregnant women meeting the study criteria, visiting the Antenatal clinic in hospital for routine antenatal checkup were approached and information regarding the study was given. Consenting women were selected and were then enrolled in the study.

Data was collected using a paper-based structured questionnaire administered by anesthesiologists. The interview was conducted at a separate station where privacy of the interview was secured. To mitigate interviewer bias, the principal investigator provided one-day training sessions to the selected data collectors. This training covered the study's objectives, methods for engaging study participants, questionnaire utilization, and data collection techniques.

The questionnaires had three sections. The first section had socio-demographic data such as age, parity, education level, occupation and religion. The second section had questions related to awareness and perception of labor analgesia. After documenting the responses, participants were given brief information about pros and cons of epidural labor analgesia. Only after that, the third section relating to attitude and acceptance of labor analgesia was asked and documented. Any participant with non-willingness for epidural labor analgesia were asked for their reasons and were noted.

Data were collected and recorded as per proforma. Collected data were analyzed using Statistical Package for Social Sciences (SPSS version 24). Descriptive and demographic data were summarized using frequencies and percentages. The relationship between awareness and acceptance of labor analgesia and demographic variables were analyzed using the Chi-square test,  $P < 0.05$  was considered significant.

## RESULTS

Two hundred and twenty-seven, pregnant women meeting the study criteria were approached and were subjected to structured questionnaire-based interview. There were no drop outs and the response rate was 100%. The mean

age of study participants was 25.89 and the demographic distribution is shown in Table 1.

**Table 1: Demographic characteristics of study participants**

Characteristics (N= 227)	Frequency (%)
<b>Age (years)</b>	
18-24	89 (39.2)
25-34	131 (57.7)
35 and above	7 (3.1)
<b>Parity</b>	
Nulliparous	117 (51.5)
Primiparous	86 (37.9)
Multiparous	24 (10.6)
<b>Education</b>	
Uneducated	8 (3.5)
Literate	54 (23.8)
Secondary level	135 (59.5)
Higher education	30 (13.2)
<b>Occupation</b>	
Housewife	126 (55.5)
Student	27 (11.9)
Working	74 (32.6)
<b>Religion</b>	
Hindu	174 (76.7)
Muslim	7 (3.1)
Buddhist	27 (11.9)
Christian	19 (8.4)

Of the 227 participants, only 18 (7.9%) were aware of labor analgesia and out of the demographic variables only the education level showed significant association with awareness (Table 2). After the participants were given information about labor epidural analgesia, 173 (76.2%) participants had acceptance for labor epidural. Parity and education level showed significant correlation on acceptance (Table 2).

Majority of participants anticipated labor pain in their current pregnancy to be severe and unbearable (63.9%). Out of 110 participants who had previous vaginal delivery, 65 (59.1%) rated their previous experience of labor pain as severe and 43 (39.1%) rated it as moderate, and none received any forms of pharmacological analgesia (Table 3).

Of the 54 participants non-willing for labor epidural analgesia, the most important reason for their refusal is listed in Table 4.

**Table 2: Association of demographic characteristics on awareness and acceptance of epidural labor analgesia**

Characteristics	Had Awareness (Frequency)			Acceptance (Frequency)		
	Yes	No	p value	Yes	No	p value
<b>Parity</b>						
Nulliparous	9	108	0.990	96	21	<b>0.012</b>
Primiparous	7	79		64	22	
Multiparous	2	22		13	11	
<b>Education</b>						
Uneducated/ Primary education	2	60	<0.001	40	22	<b>0.016</b>
Secondary level	6	129		106	29	
Higher education	10	20		27	3	
<b>Occupation</b>						
Housewife	6	120	3.922 (0.141)	95	31	0.306 (0.858)
Student	3	24		20	7	
Working	9	65		58	16	

**Table 3: Anticipation of labor pain and Impact of previous childbirth experience on the acceptance of epidural labor analgesia**

Characteristics	Response	Frequency (%)	Acceptance frequency
Anticipation of labor pain in current pregnancy (n=227)	Severe unbearable pain	145 (63.9%)	122 (84.13%)
	Moderate pain	80 (35.2%)	51 (63.75%)
	Mild pain	2 (0.9%)	0 (0%)
Previous experience of labor pain (n=110)	Severe pain	65 (59.1%)	51 (78.46%)
	Moderate pain	43 (39.1%)	26 (60.46%)
	Mild pain	2 (1.8%)	0 (0%)
Previous experience of labor analgesia (n=110)	Yes	0	
	No	110 (100%)	77 (70%)

**Table 4: Cause of non-willingness for labor epidural analgesia**

**(Total response 54)**

Characteristics	n (%)
Want to experience natural birth	29 (53.7)
May be harmful for mother/baby	13 (24.07)
Do not know about the labor analgesia fully	6 (11.11)
Pain is not severe/ can tolerate so no need	5 (9.25)
Refusal by family	1 (1.85)

## DISCUSSION

Labor pain is often regarded as being severe and excruciating. Along with the joy and anticipation, the pain of labor remains a significant concern for many expectant mothers. Epidural labor analgesia is commonly used for the painless labor and delivery. However, despite its potential benefits, awareness surrounding labor analgesia remains low among pregnant women in developing countries. In this study only 7.9% of the participants were aware of labor analgesia. This finding is similar to other study conducted by Prakash et al.<sup>10</sup> (7.14%) and Naithani et al.<sup>11</sup> (9.5%) and lesser than study conducted by Sharma et al.<sup>7</sup> (16.3%). This represent a very low awareness of labor analgesia in developing countries in comparison to western countries like Finland (83%) and Sweden (85%).<sup>12</sup> This discrepancy may be attributed to inadequate healthcare

infrastructure, cultural beliefs, socioeconomic factors as well as low priority in healthcare policies.

After providing information regarding labor epidural analgesia and its pros and cons, majority of the participants (76.2%) had acceptance towards its use in their current and future pregnancies. This observation is similar to finding of other studies.<sup>13,7</sup> The fact that majority of parturients had acceptance to labor analgesia after information is shared to them clearly outlines the lack of information dissemination as a major cause of lower rate of painless labor. Surprisingly, Yadav et al.<sup>14</sup> observed only 11.24% of nulliparous and 12.86% of multiparous pregnant women were willing for labor analgesia for their current pregnancy. Similar finding was also seen in study done by Prakash et al.<sup>10</sup> where 83% of participants were non-willing for labor analgesia. Such variations in acceptance may

be because of lack of knowledge and fear of adverse maternal and fetal complications. The cause of this hesitancy may also be rooted in cultural beliefs in developing countries where labor pain is considered a natural process and any interventions is viewed as against the norms.

The present study identified a significant association of awareness and acceptance to education level. Participants who completed higher education were more informed and receptive of labor analgesia. Enhanced education levels correlate with greater knowledge and awareness, thereby increasing individuals' propensity to engage with and comprehend media. Similar correlation was also observed by Sharma et al.<sup>7</sup>

Majority of the participant (63.9%) in the current study anticipated the labor pain in their current pregnancy to be severe and unbearable. This observation is shared among several other studies.<sup>78</sup> Hundred and ten participants who had had previous experience of vaginal delivery, when inquired about their past experience, 98.2% responded labor pain as being moderate or severe, and yet none of the participants received any form of pharmacological analgesia for labor pain. This highlights the fact that health care professionals in developing countries either lack adequate knowledge about labor analgesia or considers labor analgesia as a matter of low priority.<sup>11</sup>

Among the 54 participants who were non-willing for labor analgesia for their current and future pregnancies, 53.7% cited the desire to experience natural birth as the main reason for

opting out. Similar findings have been observed especially in developing countries like ours.<sup>11,15</sup> While modern anesthesia and analgesia focus on expanding various choices of labor analgesia, people in developing countries still believe pregnant women should cope with labor pain, leading to increased hesitancy towards labor analgesia.

Although the findings of the present study have good clinical implication, limitation of the study is the fact that it was a single centered study in urban tertiary hospital which may not accurately reflect the socio-economic and demographic variations of the country. Because the number of non-acceptances to the labor epidural was low, the reasons for non-acceptance may not accurately reflect the general population. Large scale multicenter study may effectively overcome these limitations.

## CONCLUSION

Knowledge and awareness regarding labor analgesia is very low among the pregnant women. Majority of the participants anticipate labor pain to be extremely painful and when given information about labor epidural analgesia a vast majority of the participants had a favorable reception to it. Higher education level had a positive correlation with both awareness and acceptance of labor analgesia.

**CONFLICT OF INTEREST:** None

**FINANCIAL DISCLOSURE:** None

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