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Knowledge of Epidural Analgesia for Labour Pain among Healthcare Workers: A Hospital-based Cross-sectional Study

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ABSTRACT

Introduction: Childbirth is one of the most painful experiences of a woman's life. Epidural analgesia is a gold-standard technique to alleviate labour pain. However, its use is 1.3% in developing countries. The main aim of this study was to assess the knowledge of epidural analgesia for labour pain among healthcare workers of Nepal Medical College Teaching Hospital.

Methods: A hospital-based cross-sectional study was conducted among 422 healthcare workers. All healthcare workers fulfilling the inclusion criteria were included. Data collection was done via a self-administered questionnaire. Descriptive analysis was done using IBM SPSS version 20.

Results: Among the participants, 94.3% perceived labour pain to be severe. 97.9% had an idea on labour analgesia. 81.3% percent of the participants believed epidural analgesia to be the best modality of pain relief. 58.3% of the participants believed that epidural analgesia leads to an increased risk of caesarean section and 15.2% believed there would be an increased risk to the baby.

Conclusions: Most healthcare workers have knowledge about labor analgesia and think that it should be available to all patients in labour. However, this study shows that there is still some misconception about the risks and complications of epidural analgesia. Adequate knowledge should be provided to all healthcare workers for efficient services.

Key words: *Epidural analgesia; Healthcare workers; Labour.*

INTRODUCTION

Childbirth is one of the most painful experiences of a woman's life.[1] Effective pain relief in labour has vast physiological and psychological benefits for both the mother and the baby.[2] The maternal request is a sufficient indication for offering pain relief during labour.[3]

Epidural analgesia is one of the most effective strategies known to alleviate labour pain,[4] and is said to provide adequate pain relief in 90-95% of the cases. Studies have shown that barriers contributing to optimal treatment of labour pain and utilisation of labour analgesia include health professional, health system, and patient-related barriers.[6]

Labour epidural analgesia is considered a gold standard procedure in most of the developed countries however, the use of epidural analgesia is 1.3% in developing countries.[7] The objective of this study was to assess knowledge of epidural analgesia among health workers in Nepal Medical College Teaching Hospital.

METHODS

A hospital-based cross-sectional study was conducted following approval from Nepal Medical College Teaching Hospital (NMCTH) Institutional Review Committee. Data was collected along the course of 3 months.

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The sample size was calculated using Cochran's formula:

Sample size (n) = Z^2 pq/d^2

= $(1.96)^2$ ×0.5 × 0.5 / $(0.05)^2$

= 384

Where,

Prevalence (p) = 50%= 0.50 (Assuming 50% prevalence of knowledge, practice and attitude of epidural analgesia among health workers)

q= 1-p = 1-0.50 = 0.50

Confidence Interval (CI) =95%, Z= 1.96

Margin of error (d) = 5% = 0.05

Adding 10% non-response rate, our calculated sample size will be 422.

All staff members who fulfilled the inclusion criteria were included in the study. The inclusion criteria were age between 20-45 years and female. Males and staff of age less than 20 or more than 45 years were excluded. Ethical consideration was taken and only healthcare workers who gave consent were included and their identities were kept confidential.

After taking informed consent, they were asked to fill a self-administered questionnaire. The first section consisted of demographic details (age, education level and parity), the second section consisted of questions to assess knowledge of labour pain, labour analgesia, and source of information (idea on the intensity of labour pain, labour analgesia, best method for labour analgesia) and the last section of the study was related to epidural analgesia, willingness to receive /provide labour analgesia (education on labour analgesia, risk of having Caesarean section with epidural analgesia, risk for baby). Each question was formed to examine a single idea (no question contained "and") and no question was phrased in a negative form. Answers were in yes/ no/neutral and pain was described as no pain, mild, moderate and severe pain.

After the data collection, statistical analysis was done by IBM SPSS version 20. A descriptive analysis was done.

RESULTS

About 94% of the participants perceived the intensity of pain during labor to be severe. 97.9% of the participants said that they had an idea of labour analgesia. 98.8% of the participants thought that pain in labour should be relieved. About 81.3% of the participants believed epidural analgesia to be the best modality of pain relief in labour, 10.4% believed massage to be the best method for pain relief, and 8.1% believed breathing exercise to be the best method for pain relief during labour. About 79.4% of the participants had received education on epidural analgesia previously. 58.3% of the participants believed that epidural analgesia leads to an increased risk of caesarean section, 84.8% believed it to be safe for the baby. About 98% of the participants thought that epidural analgesia should be an option during labour.

Table 1. Knowledge related to labour and epidural analgesia(n=422)

Variables(n=422)	n(%)
Intensity of pain expected during labour	
Mild	0.2
Moderate	5.2
Severe	94.3
No pain	0.2
Pain in labour should be relieved	
Yes	98.8
No	1.2
Idea on labour analgesia	
Yes	97.9
No	2.1
Best method for labour analgesia	
Breathing Exercise	8.1
Epidural	81.3
Massage	10.4
None	0.2
Previous education on epidural analgesia	
Yes	79.4
No	20.6
Epidural analgesia increases risk of caesarean section	
Yes	41.7
No	58.3
Epidural analgesia poses risk for the baby	
Yes	15.2
No	84.8
Epidural analgesia should be an option during labour	
Yes	97.6
No	2.4

Information related to the participants

In this study the majority of participants were of 26-30 years of age (26.3%). 50% of the participants had bachelor's degree, 48.1% had master's degree and less than 2% accounted for intermediate and school level certificates. 68.7% of the participants were married and 31.3% were single. 39.8% of the participants had no children, 37.9% had one child, 21.1% had two children, and 1.2% had three children.

Table 2. Demographics (n=422)

Variables(n=422)	n(%)
Age	
20-25	24.4
26-30	26.3
31-35	20.9
36-40	14.2
41-45	14.2
Education	
Bachelors	50
Intermediate	1.4
Masters	48.1
SLC	0.5
Marital status	
Single	31.3
Married	68.7
Parity	
0	39.8
1	37.9
2	21.1
3	1.2

DISCUSSION

There are multiple modalities of pain management during labour. The non-pharmacological methods include psychological therapies,[8,9,10] continuous social support,[8,9,10] mind-body intervention.[8,9,10] and the use of TENS.[11,12] Pharmacological analgesia includes non-opioids like ketamine,[8] opioids (pethidine, morphine and fentanyl),[8,13] inhalation agents,[8] regional analgesia (epidural),[14] and combined spinal-epidural analgesia.[14]

A descriptive cross-sectional study conducted in Riyadh by Mohamed et al. found high awareness of epidural analgesia among women, but their future attitudes were unclear due to family advice and desire for natural labour experience.[15] There was a significant moderate correlation between knowledge, parity, income, education, and attitude. A cross-sectional study conducted in Ethiopia by Endalew et al., among final-year undergraduate midwifery students concluded that the majority, 87% of respondents, understood that women feel moderate to severe pain during labour,[6] and the survey also showed that midwifery final-year students lack knowledge and attitude towards pain management in labour.[6]

About 79.4% percent of respondents in this study had received education on epidural analgesia and 41.7% of the respondents felt that epidural analgesia increases the risk of having a caesarean section. Klein et al commented that epidural analgesia given before the active phase of labor more than doubles the probability of receiving a caesarean section but if given in the active phase of labour, epidural analgesia does not increase the rate of caesarean section.[16] This result was comparable to an interventional study done by Deshmukh et al. at Aurangabad, India, which showed no significant difference in the duration of first and second stage of labour in both the study and control groups.[17]

This study showed that 84.8% of the respondents thought that there is no increased risk to the baby. This was different from the results of a cross-sectional descriptive study done by Nabukenya et al. at Uganda which showed that among those who wanted labour analgesia for the next delivery, there were some concerns, mainly that the baby may be affected (54.5 %), the method may not work (23.4 %), among others.[2] This difference may be attributed to the level of education, culture, parity and age of the respondents. In an interventional study done by Deshmukh et al there was a higher number of neonates with APGAR score >8 at 5 minutes (improved) in both the study and control groups. There was no increase in the rate of NICU admissions in both the study and control groups.[17]

Our limitations included the fact that we excluded mothers or women attending the antenatal obstetrics department and the male health workers. The knowledge of the population of the community would probably be more informative if they were also included in the study.

CONCLUSIONS

This study showed that healthcare workers have knowledge about labour pain and are aware of the need of labour analgesia. However, there is still some misconception about the risks and complications of epidural analgesia. Adequate knowledge should be provided to all health care workers so that accurate information and efficient service can be provided to the patients in labour.

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CONFLICT OF INTEREST

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