

## Is knowledge and attitude on epidural analgesia during labour satisfactory among pregnant women attending antenatal clinics in Colombo District?

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Labour pain management is a major challenge in maternity care. Epidural analgesia provides safe and effective pain relief during labour. The objective was to assess the knowledge, attitudes and associated factors towards epidural analgesia during labour among pregnant women in Colombo region, Sri Lanka.

This was a descriptive study conducted at two selected hospitals in Colombo Sri Lanka. The sample size was 260 and those below 18yrs were excluded. Participants were provided with a pre-tested questionnaire. Ethical approval was obtained from Faculty of Medical Sciences, University of Sri Jayawardenapura. Both knowledge and attitude were given separate scores and were categorized as 'good' or 'poor' based on their mean.

Within the study population, 41.9% had heard of labour analgesia. Among them, only 6.7% had good knowledge and 15.6% had a positive attitude towards labour epidural analgesia. The patients with good knowledge about labour epidural analgesia had good attitude towards the procedure ( $p < 0.05$ ) and there was a positive association between those who had heard of analgesia and their sources of information.

However, as the total level of knowledge and attitudes towards labour epidural analgesia was poor, it is recommended that the health care workers issue pamphlets carrying necessary information following discussions with the pregnant women. After admission they should be given clear information about risks and benefits of the procedure and a post-partum feedback would help in quality improvement.

**Keywords:** Knowledge; attitude; epidural analgesia; labour pain; maternal care

### Introduction

Even though the intensity of labour pain felt during natural delivery is different from one woman to another,<sup>1</sup> it is said to be extreme and difficult to cope with where some mothers go on to describe it as the 'worst imaginable pain' they have ever undergone during their lifetime.<sup>2</sup> This pain can have

detrimental effects; specially psychological, on both the mother and the fetus.<sup>3</sup>

The American College of Obstetricians and Gynecologists states that anaesthetic services must be available in all hospitals at all times for any mother undergoing labour who desires it.<sup>4</sup>

Due to this, management of labour pain has become one of the main goals of maternity care worldwide<sup>5</sup> and a considerable amount of research has been done on the subject at international level up to date. Both pharmacological and non-pharmacological methods have been developed to relieve the mothers of labour pain or to help them cope with it better. The non-pharmacological methods including patient education, continuous support during labour, massage therapy, hydrotherapy etc. seem to be 'non-invasive and safer' but there is not

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Received: 28/07/2018

Accepted: 24/10/2018

DOI: <http://doi.org/10.4038/slja.v27i1.8364>



much research evidence available on their effectiveness.<sup>1, 6, 7</sup>

The pharmacological methods of labour pain relief include inhalational analgesics such as nitrous oxide and opioids in addition to the regional techniques such as epidural, spinal and combined spinal- epidural block.<sup>6,7</sup> Of them the epidural is the most commonly used and recommended since it has been shown to be significantly better in pain management than the rest.<sup>8</sup> Epidural analgesia has also undergone further improvement to reduce the side effects over the recent years with the advancements in the field of medicine.<sup>9</sup> During epidural analgesia, mothers are not sedated and they will retain both the ability to walk during the first stage of labour and to push effectively during the second.<sup>6, 7</sup> Due to its hypotensive effect it prevents further increase in maternal blood pressure and helps in the management of pre-existing medical conditions such as preeclampsia.<sup>7, 9</sup>

While studies have shown that epidural analgesia during labour can give rise to several adverse reactions including increased duration of the second stage of labour, increased need for instrumental delivery, urine retention and maternal pyrexia etc., some of the research findings are ambiguous, mainly because the effects of epidural analgesia cannot be isolated during a delivery.<sup>1, 8, 10-13</sup>

### **Methodology**

Upon obtaining ethical approval from the Ethics Review Committee of the Faculty of Medical Sciences, University of Sri Jayewardenepura (OTHER 3/17) and Castle Street Hospital for Women (Teaching) (ERC/180/01/2017), Colombo a cross-sectional descriptive study was conducted at the antenatal clinics of Castle Street Hospital for Women and De Soysa Hospital for Women between June-August 2017.

Mothers were requested to complete the self-administered questionnaire after obtaining their informed consent. Gestational women who were below 18 years and those who refused to participate were excluded. The pre-tested questionnaires initially developed in English, were later translated to Sinhala and Tamil for the easy understanding of the participants.

The questionnaire consisted of three sections. The first section was on socio-demographics (age, residence, religion, education level, occupation, parity, previous count of normal deliveries, pain intensity and the complications during last delivery) while the second and third sections assessed their knowledge level and attitudes towards labour epidural analgesia respectively. On average, each survey took about 10-15 min. The questions were developed following a focused discussion by the authors. A pilot study was done on 10 pregnant mothers prior to conducting the research and no problems were encountered regarding the questionnaire. Each question expressed only one idea (i.e., no questions contained “and”) and no questions were phrased in a negative form. Answer types included choosing from a menu of choices or yes/no/don't know. Mothers had the option of writing their own answers to some questions when their answer was not listed.

Total scores were calculated for both knowledge and attitudes sections separately. A score of one was awarded for each correct answer in the knowledge section with a total score of 60. The mean obtained was 12 and based on this value a score  $\geq 12$  was considered as good knowledge and  $< 12$  was considered as poor knowledge. The attitude section carried a total score of 80 and was similarly categorized as good and poor attitude based on the mean (48).

At 5% significance level, assuming 50% on knowledge and attitudes, the sample size was calculated as 384. Assuming a 10% non-response rate, the final sample size was 400. However, since the actual non-response rate was much higher than anticipated (34.67%) the sample size used in the report is 260. The data obtained were analyzed using SPSS version 23. Associations were tested using Chi square, and the level of significance was set at  $< 0.05$ .

### **Results**

A total of 260 completed questionnaires were returned with a non-response rate of 34.67%. The mean age of women was 28.12 years and age ranged from 18 to 43 years. All were Sri Lankan and Sinhalese represented the majority (73.1%). The education level ranged from no formal education to the post graduate level. Women who

have completed up to advanced level (48.5%) represented the majority followed by education up to ordinary level (38.8%). Moreover, the majority of women were unemployed (70.8%), and the rest of them were employed either in medical field or in other professions. Furthermore, majority of respondents had a monthly income lower than 50,000 LKR (58.1%). (Table1)

**Table 1:** Socio- demographic factors

Criteria	Range	Frequency (n=260)	Percentage (%)
Age (years)	18-23	53	20.4
	24-29	111	42.7
	>=30	96	36.9
Ethnicity	Sinhala	190	73.1
	Tamil	34	13.1
	Muslim	35	13.5
	Burgher	1	.4
Religion	Buddhist	161	61.9
	Catholic	38	14.6
	Hindu	24	9.2
	Islamic	35	13.5
	Other	2	.8
Education	No formal education	8	3.1
	Up to ordinary level	101	38.8
	Up to advanced levels	126	48.5
	Post graduate	25	9.6
Occupation	Unemployed/Housewife	184	70.8
	Employed in the medical field	3	1.2
	Employed in other fields	73	28.1
Monthly Income	<50,000	151	58.1
	50,000-100,000	63	24.2
	>100,000	46	17.7

Of the study population, 58.8% belonged to the 3rd trimester while 25% and 16.2% belonged to the 2nd and 3rd trimesters respectively. 58.5% of the pregnant women were planning to have a normal delivery. When considering the previous delivery count, 62.3% were primigravida, 23.5% secundigravida and 14.3% were multigravida. Of those who had undergone at least one previous normal delivery, 37.1% had reported a severe pain and 54.6% a moderate pain during labour but only 36.1% had been administered labour analgesia and of them only 8.6% had been given labour epidural analgesia. (Table 2)

**Table 2:** Pregnancy related factors

Criteria		Frequency (n=260)	Percentage (%)
Gestational period	1-3 months	42	16.2
	4-6 months	65	25.0
	7-9 months	153	58.8
Expected type of delivery	Cesarean	42	16.2
	Normal	152	58.5
	Not sure	66	25.4
Previous normal delivery count	None	162	62.3
	One	61	23.5
	Two	29	11.2
	More than two	8	3.1
*Intensity of labor pain during previous delivery	No pain	1	1
	Mild pain	7	7.2
	Moderate pain	53	54.6
	Severe pain	36	37.1
*Administration of pain relief during previous delivery	Yes	35	36.1
	No	44	45.4
	Don't know	18	18.6
**Administration of LEA during previous delivery	Yes	6	8.6
	No	18	51.4
	Don't know	14	40

*Only considering those who had undergone a previous normal delivery.*

*\*\*Only considering those who had answered 'Yes' for the administration of pain relief during previous delivery.*

From the study population, 41.9% (109 of mothers) had heard about epidural analgesia. 38.8% (101 of mothers) stated that they were not aware of this procedure. (Table 3)

On further analysis of those who were aware of the procedure (n=109), 25.7% (n=28) correctly stated the anatomical location (lower back) for administration of LEA and 17.4% were aware of administrative personnel of LEA in medical settings. 9.2% were aware of only one contraindication and 3.7% knew more than one contraindication regarding LEA. The remaining 87.2% did not know any contraindication. (Table 3)

**Table 3:** Knowledge on labour epidural analgesia

Criteria		Frequency (n=260)	Percentage (%)	Mean value	
*Awareness on labor analgesics	Yes	109	41.9	-	
	No	101	38.8		
	Not sure	50	19.2		
*Knowledge on location of LEA administration	Knew	28	25.7	-	
	Didn't know	81	74.3		
*Awareness on LEA administering personnel	Knew	19	17.4	-	
	Didn't know	90	82.6		
*Awareness on contraindications for LEA	Knew	1 answer	10	9.2	0.83(± 2.31)
		2 answers or more	4	3.7	
	Didn't know	95	87.2		
*Awareness on benefits of LEA	Knew	1 answers	26	23.9	1.92(± 3.1)
		2 answers or more	8	7.3	
	Didn't know	75	68.8		
*Awareness on disadvantages of LEA	Knew	1 answers	15	13.8	1.24(± 2.73)
		2 answers or more	6	5.5	
	Didn't know	88	80.7		
*Awareness on neonatal benefits of LEA	Knew	1 answers	23	21.1	1.15(± 2.22)
		2 answers or more	1	0.9	
	Didn't know	85	78		
*Total score on knowledge	Good	10	6.7	12.12(±11.41)	
	Poor	99	93.3		
	Not sure	50	19.2		
	Didn't know	81	74.3		
	Poor	99	93.3		

*\*Considering only those who answered 'Yes' for awareness on labour analgesics. (LEA- Labour Epidural Analgesia)*

Considering the contraindications of LEA, 9.2% of them were only aware of one contraindication, 3.7% knew more than one and the remaining 87.2% did not know any contraindications. 23.9% knew only one benefit, 7.3% knew more than one benefit and the remaining 68.8% did not know any benefits regarding LEA. Regarding the disadvantages of LEA, 13.8% were aware of one disadvantage, 5.5% knew more than one and 80.7% did not know any disadvantages. (Table 3)

Among the women who had poor knowledge on epidural analgesia during labour 71% also had poor attitude and among those who had good knowledge on epidural analgesia during labour, 35% had poor attitude. This difference was found to be statistically significant (p<0.05). (Table 4)

**Table 4:** Association between knowledge and attitudes towards labour epidural analgesia

	Attitude on Labour Epidural Analgesia	Knowledge on Labour Epidural Analgesia		Total (%)	Chi-Square value (df); p value
		Poor (%)	Good (%)		
	Poor (%)	49 (71.01)	14 (35.0)	63 (57.8)	13.465 (1); 0.001
	Good (%)	20 (28.9)	26 (65.0)	46 (42.2)	
Total (%)		69 (100.0)	40 (100.0)	109 (100.0)	

Out of the pregnant women who have heard about labour analgesics, 52.3% had fears in using labour epidural analgesics during their deliveries. Majority of the respondents were confident in their tolerance of pain (22.9%) and 16.5% had fears on the effects of epidural analgesics on the new born. 10.1% of respondents were afraid of using labour epidural analgesics thinking it would cause future back pain while 9.2% of study population strongly believed that labour pain is natural and it should not be treated. 7.3% of study population believed that using labour epidural would cause problems in pushing the baby. 6.4% believed it would cause future headaches. 5.5% stated it would have effects on their health. 3.7% of respondents thought it would cause lower limb weaknesses. (Table 5)

**Table 5:** Attitudes towards labour epidural analgesia

Criteria		Frequency (n=109) *	Percentage (%)
Fears regarding LEA	Yes	57	52.3
	No	11	10.1
	Not sure	41	37.6
Preference for LEA in current delivery	Yes	23	21.1
	No	16	14.7
	Not sure	70	64.2
Awareness on whether LEA is offered in their hospital	Yes	20	18.3
	No	54	49.5
	Not sure	35	32.1
If they would specifically request for LEA if it was available	Yes	31	28.4
	No	21	19.3
	Not sure	57	52.3
If they are willing to bear the expense of LEA	Yes	26	23.9
	No	24	22.0
	Not sure	59	54.1
If they would like to learn more about LEA	Yes	90	82.6
	No	8	7.3
	Not sure	11	10.1
If they would recommend LEA to family & friends	Yes	23	21.1
	No	11	10.1
	Not sure	75	68.8
If they would encourage family or friends to learn about LEA	Yes	62	56.9
	No	8	7.3
	Not sure	39	35.8
Total score on attitude	Good	46	42.2
	Poor	63	57.8

\*Considering only those who answered 'Yes' for awareness on labour analgesics. (LEA- Labour Epidural Analgesia)

82.6% of respondents were keen on learning more about epidural analgesics. Even though 56.9% of pregnant women who have heard about labour analgesics stated that they would encourage others to learn further about LEA, 68.8 % weren't sure whether they would recommend it to their relatives and friends. (Table 5)

There were no statistically significant associations between knowledge or attitude and the criteria that were assessed including age, ethnicity, religion, highest educational qualification, occupation or monthly income. (Table 6)

**Table 6:** Association between knowledge and attitudes towards Labour Epidural Analgesia and socio- demographic criteria

Criteria	Knowledge (n=109)			Attitudes (n=109)		
	Good	Poor	P value	Good	Poor	P value
<b>Age (years)</b>						
18-23	2	15	0.067	6	11	0.429
24-29	20	29		24	25	
>= 30	18	25		16	27	
<b>Ethnicity</b>						
Sinhalese	28	48	0.801	31	45	0.562
Tamil	6	13		10	9	
Muslim	6	8		5	9	
<b>Religion</b>						
Buddhist	22	42	0.631	28	36	0.089
Catholic	8	8		3	13	
Hindu	4	10		9	5	
Islamic	6	8		5	9	
Other	0	1		1	0	
<b>Highest educational qualification</b>						
No formal education	1	1	0.250	0	2	0.500
Up to ordinary level	11	30		16	25	
Up to advanced levels	25	30		26	29	
Post graduate	3	8		4	7	
<b>Occupation</b>						
Unemployed/Housewife	21	47	0.201	24	44	0.153
Employed in the medical field	2	1		2	1	
Employed in other fields	17	21		20	18	
<b>Monthly Income</b>						
<50,000	23	41	0.614	23	41	0.257
50,000-100,000	11	14		12	13	
>100,000	6	14		11	9	

**Discussion**

Majority of the respondents were from the urban areas of Sri Lanka and belonged to the low socio-economic status. Even though most had secondary level education or beyond, the results of this study showed that only less than half of the pregnant women had previously heard of labour analgesia and of them, less than 20% were aware about labour epidural analgesia as an option. In comparison to the results obtained in several studies conducted in India and Pakistan which has a similar socio-

economic status to Sri Lanka, the respondents of the study appeared to be equipped with a similar level of overall knowledge level on labour analgesia.<sup>14,15,16</sup>

The medical and non-medical sources had contributed to the knowledge level in almost equal percentages in our study and the commonest source of information was a relative or a friend. This finding resembled the results of other studies conducted in Ireland and India.<sup>17,18</sup> In contrast to the findings from South Africa which reported previous labour experience as a significant contributing factor, awareness was poor within this study population.<sup>19</sup>

Most of the pregnant women had experienced moderate to severe levels of pain during their previous normal deliveries but there was no significant association with the preference for an epidural during the current delivery. Despite their pain perception levels majority of mothers were neither keen on requesting for an epidural analgesic if it wasn't offered by the hospital nor pay for it at their own expense. Confidence in their ability to tolerate pain, harmful effects on the newborn's health and future back pains were among the reasons for rejecting it. A majority had been uncertain about the efficacy of labour epidural analgesia as revealed in a study from Saudi Arabia<sup>20</sup> but the lack of knowledge was the main reason in others.<sup>18,19</sup>

In the Sri Lankan government hospitals setting pregnant women have the opportunity to request for a labour epidural and even though the mothers can request for an epidural in a non-governmental hospital the request rates are low; probably owing to their low levels of knowledge. More than half of the pregnant women from our study had a poor overall attitude but in comparison; India reported an almost 100% positive attitude.<sup>14</sup>

It is therefore recommended that the knowledge and attitudes on labour epidurals should be improved especially at the latter stages of the pregnancy, which would lead to patient's decision making for improved delivery and quality of labour care. Further it is recommended that the Ministry of Health and specifically the Family Health Bureau targets a health education session by the Public Health Midwives at the antenatal clinic on the

above. A cohort study would be justifiable to observe the pregnant women who had been provided this information and how the attitudes and practices are at the delivery point for women with knowledge on labour epidural analgesics.

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