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ASSESSMENT OF KNOWLEDGE AND ATTITUDE TOWARD VARIOUS METHODS OF LABOR PAIN RELIEF AMONG FEMALES IN HAIL, SAUDI ARABIA.

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ABSTRACT

Background: Labor pain is a physiological process when the fetus is forced out of the uterus. It's a painful experience due to multiple factors. Labor pain relief methods are divided into pharmacological and non-pharmacological. The aim of our study is to assess the knowledge and attitude of child-bearing-aged women toward the methods of pain relief.

Materials and Methods: A cross-sectional study was conducted to assess the knowledge and attitude of child-bearing-aged women toward the multiple methods of labor pain relief. An online questionnaire was distributed to the targeted population, which included three sections with 27 questions. Data is entered through a Microsoft Excel sheet. Thereafter analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0. The independent test, one-way ANOVA, and chi-square were conducted.

Results: Out of 559 women who participated in the survey, 331(59.2%) did not know the types of labor pain relief, confirmed by a mean score (5.70 ± 2.65), and the mean score for non-pharmacological pain relief was (1.61 ± 1.13), and for pharmacological pain relief was (4.10 ± 1.13) which are very low. Also, there was an association between pharmacological pain relief, parity, and previous experience of normal vaginal delivery.

Conclusion: The study showed a significant association between previous NVD and the use of pharmacological pain relief, an association between pharmacological pain relief and parity NVD, and very low levels of awareness and knowledge about types of labor pain relief.

Keywords: labor pain relief, knowledge, attitude, pharmacological, non-pharmacological

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INTRODUCTION

Labor pain is a physiological process when the fetus is forced out from the uterus and gestation is done. It's considered a painful experience [1]. Discomfort and pain are caused by labor in which the uterine contracts and the fetus descend [2]. Labor pain arises from uterine contractions, which are in two forms that, include visceral pain that is supplied by the nerve from T10 to L1. On the other hand, somatic pain is caused by entering the fetus through the birth canal, which is supplied by the pudendal nerve [2]. Different labor stages lead to physiological changes in the uterus, cervix, and vagina. Regarding labor pain, maternal age and parity have important roles. Uterine contraction and pain are experienced more in nulliparous women than in multiparous women [2].

Pharmacological and non-pharmacological approaches are considered types of pain relief methods in labor. Therefore, they should be safe and effective in the management of labor and fetus [3]. Oral tablets (acetaminophen and codeine), inhalation analgesia (Nitrogen Gas), intravenous and intramuscular opioids (Meperidine), and different types of local (para-cervical or pudendal block) are different routes of pharmacological intervention [3,4]

Family members can give emotional support, and it falls under the non-pharmacological type of relief. Also, other factors that play a role in relieving labor pain include breathing exercises, water birth, massage, and exercise during pregnancy [4]. In addition, intradermal water injection and transcutaneous electrical nerve stimulation (TENS) are some pain relief choices. One of the methods to prepare the pregnant woman for labor is to educate her about labor pain

and provide antenatal education [1]. To our knowledge, no studies of methods of labor pain relief have been conducted in the Hail region. The aim of this study is to assess the level of knowledge of and attitude to the various methods of labor pain relief among females in Hail, Saudi Arabia, and then to educate the population about those various labor pain relief methods.

METHODS

1. Study design and study sample

A cross-sectional study was conducted from June 2020 to September 2020 to assess community knowledge and attitude toward the various methods of labor pain relief. An online questionnaire was designed and distributed to all reproductive age women in Hail, Saudi Arabia, through social media platforms. The sample size was 559, including all the various age groups.

2. Data collection

It involved both open-ended and closed-ended questions. The questionnaire consisted of 27 questions, including three sections: the first section included variables of demographic data such as age, nationality, educational state, parity, history of normal vaginal delivery, etc. The second section consisted of non-pharmacological pain relief methods such as spousal or family support, hypnosis techniques, exercise, and water birth. The third section comprised pharmacological pain relief methods like inhalation agents, injections, oral tablets, epidural analgesia, and wrong beliefs about epidural analgesia.

3. Data analysis

Data was entered through a Microsoft Excel sheet and thereafter analyzed using the

Statistical Package for Social Sciences (SPSS) version 23.0.

The frequencies, percentage, mean, and standard deviation were computed for the research variables and demographic information. A One-way ANOVA independent test was conducted to test the differences in knowledge and awareness about labor pain relief (pharmacological and non-pharmacological) in terms of previous NVD, parity, and education factors. Chi-square was conducted to test the difference in each statement. A p-value less than 0.05 was considered statistically significant.

4. *Ethics and consent to participate*

This study was reviewed and approved by the Research Ethics Committee (REC) at the University of Hail (Nr. 1792/5/42). Furthermore, a consent form was required for voluntary participation in this study, including the study's aim, voluntary participation, and data privacy.

RESULTS

In our current study, 559 women participated, including 551(98.6%) Saudis and 8 (1.4%) non-Saudis. Age was classified into three groups, 30 (5.4%) for the age less than 20, then 265 (47.4%) for the age group 20-35 years old, then 264 (47.2%) for the age group greater than 35 years old. 442 (79.1%) held bachelor's degrees, then 80 (14.3%) had completed high school. 356 (63.7%) were married, and 178(31.8%) were single.

Regarding medical history, about 354 (67%) of participants reported that they had no medical condition, 74 people (1.14%) had anemia, 43 (8.2%) people had hypothyroidism, 35 people (6.7%) had diabetes mellitus, 6 (1.1%) people had

hypertension, and 3(0.6%) had deep vein thrombosis.

204 (36.5%) of our participants were nulliparous, while 209 (37%) were para 1-4, and 146 (26.1%) were para 5+ ($p<0.001$). 285(51%) had been delivered by normal vaginal delivery at least once. 176 (31.5%) reported undergoing cesarean section (C/S) at least once ($p<0.001$). 453(81%) reported that they had no previous experience with labor pain relief ($p<0.001$). 32 (5.7%) were pregnant at the time of data collection.

Knowledge and attitudes about labor pain relief (pharmacological and non-pharmacological) reported in Table1 showed 422 (75.5%) reported that they had knowledge about the availability of labor pain relief ($p<0.001$), while 40.8% of participants knew about various types of labor pain relief ($p<0.001$).

Knowledge and attitudes (*Table 1*) were measured by 14 items using the categories "yes" and "no". The statements were classified into "correct" and "wrong", which is weighted by one star in the table, so the possible score for the total ranged between zero (the least relevant) and 14 (the most relevant). For non-pharmacological pain relief, the possible score for the total ranged between zero (the least relevant) and 4 (the most relevant), and for non-pharmacological pain relief, the possible score for the total ranged between zero (the least relevant) and 10 (the most relevant). The results confirmed that the participants had a very low level of awareness and knowledge, with a mean score of (5.70 ± 2.65) out of 14, and the mean score

Table 1. The descriptive analysis of the Knowledge and Awareness about the Labor Pain Relief (pharmacological and non-pharmacological): (N=559)

No.	Statement	Category	N	%	P value
1.	Knowledge about labor pain	Yes	422	75.5	<0.001***
		No	137	24.5	
2.	Knowledge about types of labor pain relief	Yes*	228	40.8	<0.001***
		No	331	59.2	
Non pharmacological pain relief :					
1	Do you think spousal/family support will decrease labor pain?	Yes*	290	51.9	<0.001***
		No	98	17.5	
		I don't know	171	30.6	
2	Do you think hypnosis techniques will decrease labor pain?	Yes*	120	21.5	<0.001***
		No	108	19.3	
		I don't know	331	59.2	
3	Do you think doing exercise will decrease labor pain?	Yes*	332	59.4	<0.001***
		No	103	18.4	
		I don't know	124	22.2	
4	Do you think water immersion and water birth is effective for relieving labor pain?	Yes*	160	28.6	<0.001***
		No	82	14.7	
		I don't know	317	56.7	
(None pharmacological pain relief)Mean±SD			1.61±1.13		
Pharmacological pain relief :					
5	Do you know about inhalation agents as labor pain relief?	Yes*	264	47.2	<0.001***
		No	97	<0.001***	
		I don't know	198	<0.001***	
6	Do you know about injections (IV/IM) as labor pain relief?	Yes*	256	<0.001***	<0.001***
		No	123	<0.001***	
		I don't know	180	<0.001***	
7	Do you know about oral tablets as labor pain relief?	Yes*	139	<0.001***	<0.001***
		No	209	37.4	
		I don't know	211	37.7	
8	Do you know about the epidural analgesia as labor pain relief?	Yes*	406	72.6	<0.001***
		No	45	8.1	
		I don't know	108	19.3	
9	Do you think epidural analgesia can cause paraplegia?	Yes	322	57.6	<0.001***
		No*	53	9.5	
		I don't know	184	32.9	
10	Do you think Epidurals make pushing of the baby, during labor, more difficult ?	Yes	292	52.2	<0.001***
		No*	62	11.1	
		I don't know	205	36.7	
11	Do you think Epidurals can cause chronic back pain?	Yes	130	23.3	<0.001***
		No*	110	19.7	
		I don't know	319	57.1	
12	Do you think labor pain relief is effective?	Yes*	260	46.5	<0.001***
		No	83	14.8	
		I don't know	216	38.6	
13	Do you think pregnant women fear childbirth because of labor pain?	Yes*	450	80.5	<0.001***
		No	42	7.5	
		I don't know	67	12.0	
14	Do you think the cesarean section is a good choice to avoid labor pain?	Yes	176	31.5	<0.001***
		No*	286	51.2	
		I don't know	97	17.4	
(Pharmacological pain relief) Mean±SD			4.10±1.13		
Total = Mean±SD			5.70±2.65		
*Correct answer, ***p≤0.001					

for non-pharmacological pain relief was (1.61±1.13) out of 4, which was low. The

mean score for pharmacological pain relief was (4.10±1.13) out of 10, which is very low.

The reasons why pregnant women fear childbirth caused by labor pain are shown in (**Table 2**).

The differences in knowledge of and attitudes to pharmacological and non-pharmacological labor pain relief in terms of previous NVD, parity, and education factors are shown in (**Table 3**). The knowledge of and attitudes to non-pharmacological labor pain relief are not associated with the experience of previous vaginal deliveries, parity, and education ($p>0.05$). However, a significant association existed for pharmacological pain relief methods with previous NVD ($p <0.001$), parity ($p<0.001$), and education ($p <0.05$).

DISCUSSION

One of the most severe forms of pain that pregnant women face during childbirth is labor pain. In the present study, we reviewed knowledge and attitudes among women in Hail regarding the different types of labor pain relief methods, especially epidural analgesia, to discover which types they prefer.

Table 2. Reasons that pregnant women fear childbirth because of labor pain (N=641)

Reasons	N	%
Previous delivery	196	30.6%
Labor pain is severe and she cannot tolerate it	199	31%
Experiences of other women with labor pain	172	26.8%
There is no labor pain relief	74	11.5%
Total	641	100%

In our study, we found that about three out of four of our respondents had knowledge about labor pain and 40.8% were aware of labor pain relief methods. Previously, a study conducted in Saudi Arabia by Alshahrani reported that only 20% of his study population was aware of labor pain relief methods [2], while Hasan et al. reported that 58% of women in Babil Province, Iraq were unaware of labor pain relief methods [5]. In comparison with the populations in those studies, our study population has good knowledge of labor pain relief methods. Although the respondents' ages in those studies were similar to those in ours (aged between 20 – 35 years), this difference might

Table 3. The differences in relief pain in term of previous NVD, parity and education factors (N=559)

Factor		Non-pharmacological pain relief		Pharmacological pain relief	
		M±SD	p	M±SD	p
previous NVD	None	1.65±1.09	0.51	3.67±2.25	***<0.001
	At least once	1.58±1.18		4.49±1.77	
parity	Nulliparous	1.67±1.16	<0.36	3.54±2.30	***<0.001
	1-4	1.64±1.11		4.55±1.79	
	5+	1.50±1.14		4.21±1.89	
education	Elementary school	1.75±0.96	<0.09	2.00±0.82	*<0.05
	Middle school	1.35±1.11		3.00±2.00	
	High school	1.84±1.11		4.50±1.79	
	Bachelor	1.60±1.14		4.05±2.10	
	Postgraduate education	1.06±1.00		4.75±1.88	
* p≤0.05, **p≤0.01, ***p≤0.001					

be attributed to the high education level in our study population, where most of our respondents have bachelor's degrees or higher education (about 82%) We found that 406 (about 72.6%) know about epidural analgesia as a method for labor pain relief, which is significantly higher than the results found in a study conducted in Jeddah [7].

In our study, we found approximately half of the participants 51.9% think that family and spousal support would reduce labor pain. In a study conducted in Al-Mandeel they got similar results which stated that 45.3% prefer having companionship during childbirth.[6]. However, this is lower than the finding in the previously mentioned study by Alshahrani [2], in which about 301 (72.4%) of the respondents believe that the presence of a companion during labor would help decrease labor pain. This difference between the results might be due to the fact that the previously mentioned study covered all Saudi Arabian regions, while ours and Al-Mandeel's cover two cities only (Hail and Riyadh). In India, Naithani reported that 4% had a fear of an increased likelihood of cesarean delivery [8], which was similar to our finding. An important point regarding labor is the fear of labor pain. 80% of our study population believe that pregnant women have a fear of childbirth due to labor pain. The reasoning behind their concerns is the severity of labor pain and the inability to tolerate it (31%), previous delivery experience (30.3%), the experience of other ladies with labor pain (26.8%), and lastly, sufficient pain relief methods during labor (11.5%). Regarding the association between previous NVD and companion support during labor, more than half (51.8%) of women with no history of NVD think that

spousal support will decrease labor pain, almost the same as women with a history of at least one NVD (51.9%). Alshahrani [2], showed that (72.4%) of women believe that spousal support helps in relieving labor pain, and (76.2%) think that

Spousal support reduces labor pain. Again, this difference might be attributed to the wider targeted group.

There are many misconceptions and fears associated with epidural analgesia use. Paraplegia is one of these concerns; more than half of our population study thinks that epidural analgesia can cause weakness in the lower limbs. Another concern is the belief that epidural analgesia is the cause of chronic back pain. While almost half of the women were uncertain of its consequences, (23%) believe that it's true, and 19% believe that it's not. Paraplegia and back pain are not the only concerns regarding epidural analgesia but also the effect on pushing the baby. Nearly half (52.2%) think that it would make pushing the baby during labor more difficult, which might lead to an adverse impact on the newborn's health. Also, more than half of our respondents think that a cesarean section is not an adequate option to prevent labor pain. In our study, there is a significant association between previous NVD and the use of pharmacological pain relief ($t=4.79<0.001$).

Based on the results mentioned above, previous experience with NVD and increased parity of NVD will increase the use of pharmacological pain relief methods. This raises the importance of awareness and medical education of nulliparous women about pharmacological pain relief and how this is associated with and facilitates the labor process by reducing labor pain. On the

contrary, the study held by Mousa showed that 80.8% of their participants had some concerns regarding pharmacological pain relief methods [4]. Some reasons were attributed to availability, safety (for the mother and baby), the labor process, and community awareness.

CONCLUSION

The study showed a significant association between at least one previous delivery experience and the knowledge that pharmacological pain relief methods exist. In addition, an association between pharmacological pain-relieving methods and parity was strong. Educational level was also found to be related to the knowledge of pharmacological pain-relief methods.

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