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Research Article

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Pregnant Women's Knowledge and Attitudes toward Epidural Anesthesia in Saudi Arabia

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Abstract: Labor pain is one of the most severe forms of pain a woman can endure throughout her lifetime. Epidural anesthesia (EA) is a widely used and effective method of analgesia for labor pain. If administered timely, EA relives about 90% to 95% of the labor pain. The objective of this study was to evaluate the knowledge and attitudes toward EA in a sample of pregnant women from Jazan region, Saudi Arabia. We conducted a cross-sectional study on a sample of 172 pregnant women using an online survey. Socio demographic data and responses to the questions about knowledge and attitudes toward EA were analyzed using descriptive tests and Chi-square test. The mean age of participants was 27.8 ± 6.3 years. About 46.5% of respondents had a university degree and 39.5% had finished high school. Overall, women showed adequate knowledge about EA and 36.6% had positive attitudes toward the use of EA for labor pain. The factors that were significantly associated with positive attitudes were education ($\chi 2$: 24.98, $P<0.05$), parity ($\chi 2$: 22.93, $P<0.05$), past experience with EA ($\chi 2$: 32.24, $P<0.001$), and source of knowledge ($\chi 2$: 19.61, $P<0.05$). This study revealed adequate knowledge about EA among pregnant women. More than one-third (36.6%) showed positive attitudes toward using EA. Significant factors affecting attitudes toward EA were high education, multiparty, experience with EA, and source of information about EA. Implications and recommendations are discussed.

Keywords: epidural, labor pain, knowledge, attitudes, pregnant

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1. INTRODUCTION

Labor pain is recognized as one of the most excruciating forms of pain a woman can experience throughout her lifetime. Effective management of pain during labor is associated with improved safety for the mother and the baby.[1] Many analgesic methods have been developed and made available to lessen labor pain and make it as tolerable as possible.[2] Epidural anesthesia (EA) is one of the most effective and well-recognized forms of pain relief during labor.[3] By injecting an anesthetic into the epidural space, EA works by numbing nerves responsible for pain sensation as they enter the spinal cord. If administered timely, EA relives about 90% to 95% of the labor pain, depending on type of medication and quantity .[4] Little is known about pregnant women's awareness of EA use during labor.[5,6] Studies from different parts of the world showed gaps in the knowledge and attitudes of pregnant women towards EA.[3,4,7–9] a study from the United Arab Emirates found that almost half (49.2%) of the 254 pregnant women refused to have EA during labor.[10] In a study using a sample of Nigerian women attending antenatal clinics, the authors found that participants with good knowledge about EA represented 43.3%.[11] However, some studies have shown contradicting results depending, possibly, on the study population and design. Recently, Fawaz and Malas conducted a study on 200 Lebanese women in childbearing age and reported adequate knowledge about EA among the study participants.[12] Lack of awareness of EPA among pregnant women could be explained by several factors, including cultural variations, ignorance about the benefits of EA, and inadequate service, among other factors.[4,13–15] Socio Economic issues, personal attitudes, experience, education, and obstetric factors have also been linked to the level of knowledge about EPA among pregnant women.[5,6,16,17] In Saudi Arabia, Gari *et al*. found that older age, prior exposure to EA, attitudes towards EA were significant factors predicting the use of EPA among Saudi pregnant women in Jeddah.[4] Currently, there are no similar studies in Jazan region, Saudi Arabia; therefore, this study aims to evaluate the knowledge and attitudes towards EA in a sample of pregnant women from Jazan, Saudi Arabia.

2. MATERIALS AND METHODS

This is an observational cross-sectional survey targeting pregnant women in Jazan region, Saudi Arabia, to evaluate their knowledge and attitudes toward epidural anesthesia (EA). Non-pregnant women and women who refused to participate were excluded from the study.

2.1 Study Population

The study included a convenience sample of 172 pregnant women, who were invited to participate in an online survey for three months, from August to October 2018. Participant's recruitment was conducted through social media and targeted by age, pregnancy status, and place of residence within Saudi Arabia. The study included only participants from Jazan region, southwest Saudi Arabia.

2.2 Study Questionnaire

A link to the online survey was sent to the participants through different social media websites and applications. Emails were used to confirm the identity of participants. The survey was adopted from a previous study with comparable objectives [12]. The questionnaire incorporated with questions regarding socio-demographic data such as age, education level, job, and previous experience with EA (Table 1). To assess knowledge about EA, participants were asked to complete 12 questions on a 3-point scale; yes (2), no (1), and not sure (0) (Table 2). Also, participants were asked about the source of their information about EA using an open-ended question, for which responses were categorized as: from past experience, from family members/relatives and friends, from media, from reading, from obstetricians, and from anesthesiologists (Table 3). Finally, one question was used to evaluate the participants' attitudes toward EA: "Would you use EA in any subsequent deliveries?" with possible answers being yes, no, and not sure (Tables 4 and 5).

2.3 Ethical Statement

All participants were asked for their willingness to take part in the study, and the objectives of the study were thoroughly explained to them at the beginning of the survey. Before a participant proceeds to the rest of the survey, he/she was asked to provide written consent to participation. Names and contact details were not included in the survey. The study was approved by the Jazan University's Ethical Committee (Ref. REC61/2-S004).

3. STATISTICAL ANALYSIS

Data were analyzed using the Statistical Package of Social Sciences (SPSS) Version 21 (SPSS Inc., Chicago, IL). Data mining was done to check the completeness of responses and coding errors. Categorical variables were presented as frequency and percentage, and continuous variables were presented as mean and standard deviation (SD). Comparison between categorical variables was performed using Chi-square test. Differences were considered statistically significant if $p < 0.05$.

4. RESULTS

Analysis of the socio-demographic data showed that 37.8% of participants were 18 to 24 years old, 43.0% aged 25 to 34 years, and 19.2% aged 35 years and older. The participants' ages ranged from 18 to 43 years, with a mean age of 27.8 years (SD 6.3). A total of 70.3% were not employed. Regarding education level, 46.5% had a university degree, and 39.5% had finished high school. Regarding parity, 74.4% were multigravida, and 25.6% were primigravida. The experience of having an EA in previous labor was reported by 29.7% of participants (Table 1).

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Table 1. Socio-demographic characteristics of the sample.		
Variables	**n**	**%**
Age		
18–24	65	37.8
25–34	74	43.0
35–45	33	19.2
Education		
Primary	4	2.3
Intermediate	12	7.0
High school	68	39.5
University	80	46.5
Post graduate	8	4.7
Occupation		
Employed	51	29.7
Unemployed	121	70.3
Parity		
Primigravida	44	25.6
Multigravida	128	74.4
Past labor with EA		
Yes	38	29.7
No	90	70.3

As shown in Table 2, participants displayed an adequate level of knowledge on most of the questions. For example, 70.9% had correctly responded to the question about EA definition, 94.2% correctly identified who is supposed to administer EA, 62.8% agreed that EA is the most frequently used and most effective way of relieving labor pain, 79.7% agreed that EA insertion is not more painful than the labor pain itself, and 79.1% thought that EA reduces labor pain and allows the mother to push when needed. Regarding the fact that contractions become weak or stop entirely after administration of EA, only less than half (45.9%) agreed that it is right.

Table 2. Knowledge about epidural anesthesia (EA)						
Items	**Response**					
	Yes		**No**		**Not sure**	
	n	**%**	**n**	**%**	**n**	**%**
EA is an injection of a local anesthesia through a catheter into the epidural space of the spine	122	70.9	28	16.3	22	12.8
Any physician or nurse can administer the EA	8	4.7	162	94.2	2	1.2
Contractions become weak or stop completely after administration of EA	79	45.9	59	34.3	34	19.8
EA is the most frequently used and most effective way of relieving labor pain	108	62.8	53	30.8	11	6.4
EA increase the risk for having C section	14	8.1	102	59.3	56	32.6
The EA insertion is more painful than the labor pain itself	13	7.6	137	79.7	22	12.8
EA reduces labor pain and allows the mother to push when needed	136	79.1	22	12.8	14	8.1
Women should agree and provide a consent for having EA at labor	115	66.9	17	9.9	40	23.3
EA is risky for the baby	26	15.1	101	58.7	45	26.2
EA can cause headache, fever, and lower blood pressure of the mother	105	61.0	34	19.8	33	19.2
EA can cause muscle weakness in the lower limbs of the mother	99	57.6	37	21.5	36	20.9
EA should be an available option for women at delivery	154	89.5	4	2.3	14	8.1

Participants' sources of their information about EA are listed in Table 3, which shows that 52.3% of information came from obstetricians, 23.3% from reading, 9.9% from anesthesiologists, and 5.8% from past personal experience with EA, 4.7% from the media, and 4.1% from family members, relatives, and friends.

Table 3. Sources of information about EA		
Source	**n**	**%**
Media	8	4.7
Reading	40	23.3
Family members, relatives, and friends	7	4.1
Past experience	10	5.8
Obstetricians	90	52.3
Anesthesiologists	17	9.9

Table 4 shows the factors that significantly affected attitudes toward EA. These factors were: education ($\chi 2$: 24.98, $P<0.05$), parity ($\chi 2$: 22.93, $P<0.001$), experience with EA ($\chi 2$: 32.24, $P<0.001$), and source of knowledge ($\chi 2$: 19.61, $P<0.05$). More specifically, higher education, multiparity, and having an experience with EA were significantly associated with positive attitudes toward EA.

Table 4. Factors associated with attitudes toward EA.								
Variables	Would you use EA in any subsequent deliveries?						χ2	P value
	Yes		No		Not sure			
	n	%	n	%	n	%		
Education								
Primary	0	0.0	2	50.0	2	50.0	24.98	0.002
Intermediate	5	41.7	5	41.7	2	16.7		
High school	12	17.6	41	60.3	15	22.1		
University	42	52.5	23	28.8	15	18.8		
Post graduate	4	50.0	3	37.5	1	12.5		
Parity								
Primigravida	3	6.8	29	65.9	12	27.3	22.93	0.000
Multigravida	60	46.9	45	35.2	23	18.0		
Past labor with EA								
Yes	35	68.6	12	23.5	4	7.8	32.24	0.000
No	28	23.1	62	51.2	31	25.6		
Source of knowledge								
Media	3	37.5	5	62.5	0	0.0	19.61	0.033
Reading	16	40.0	15	37.5	9	22.5		
Family members, relatives, and friends	3	42.9	4	57.1	0	0.0		
Past experience	7	70.0	0	0.0	3	30.0		
Obstetricians	32	35.6	42	46.7	16	17.8		
Anesthesiologists	2	11.8	8	47.1	7	41.2		
Total	63	36.6	74	43.0	35	20.3		

Table 5 shows the association between knowledge and attitudes toward EA. Positive attitudes were significantly associated with knowing that EA reduces labor pain and allows the mother to push when needed (χ^2: 16.96, P<0.05) and that EA is not risky for the baby (χ^2: 14.66, P<0.05).

Table 5. The link between knowledge and attitudes toward EA								
Variables	Would you use EA in any subsequent deliveries?						χ2	P value
	Yes		No		Not sure			
	n	%	n	%	n	%		
EA reduces labor pain and allows the mother to push when needed	46	33.8	61	44.9	29	21.3	16.96	0.002
EA is risky for the baby	2	7.7	15	57.7	9	34.6	14.66	0.005

5. DISCUSSION

Data on pregnant women's knowledge and attitudes toward EA are limited in both local and international literature. We conducted this study for the first time to explore knowledge and attitudes toward EA among pregnant women in Jazan region, Saudi Arabia. One important motive for carrying out this research is to fill the gaps found in the awareness of pregnant women of EA even though it is effective and well-tolerated in relieving labor pain, especially in young and healthy women.[18] The analysis of pregnant women's responses to the knowledge items of this study showed adequate knowledge about EA, which is evident in the finding that more than half of the participants correctly answered 11 out of 12 (91.7%) of the questions about EA. These questions covered essential aspects of knowledge about EA, including definition, mechanism of action, efficacy, and side effects. It is noteworthy that there are still some gaps in the knowledge about EA. more than two thirds (34.3%) disagreed that contractions become weak or stop entirely after administration of EA. These gaps need to be bridged by educating pregnant women about EA on several occasions, particularly in antenatal clinics. A recent study on 81 primigravida women has demonstrated that health education on EA increased participants' desire to request EA.[19] In comparison with previous studies on the subject, similar findings have been reported in a study on pregnant women in Jeddah,[4] Saudi Arabia, and women in childbearing age in Lebanon.[12] Both studies have shown adequate levels of knowledge about EA. However, studies from the United Arab Emirates, [10] Karachi,[6] and Nigeria[3] found generally poor knowledge regarding EA. In a one-month cohort study of new antenatal patients and postnatal in-patients in Hong Kong, women showed poor general awareness of the role of EA in the management of pain during labor, which negatively correlated with patients' utilization of EA.[7] These conflicting results make it difficult to reach a conclusion regarding the current status of awareness of EA among women, and this should be accomplished by systematic review comparing results from different studies. In this study, 36.6% of pregnant women showed positive attitudes toward having EA in subsequent deliveries. We found that attitudes were influenced by several factors, including education level, parity, experience with EA, and source of information about EA. These findings are consistent with what has been found by other authors.[3,6,7,12,19] Women with high education can understand the process of delivery and reach to reliable resources which give appropriate information regarding analgesia in labor. Awareness of the efficacy and safety of EA significantly affected women's attitudes in this study. These findings further support the importance of knowledge in determining attitudes toward EA. Most of the negative

attitudes toward EA can be reasonably attributed to misconceptions related to EA. e in a study from Saudi Arabia; almost half of women were not sure whether EA causes paraplegia.[4] another important issue which possibly affects attitudes toward EA is the source of information about EA. We found that more than half of the participants (52.3%) received information about EA from their obstetricians, which may explain the level of knowledge found in this study. The remaining received information about EA from reading (23.3%), anesthesiologists (9.9%), and gained it from personal experience (5.8%). However, 8.8% of the participants received their information about EA from their family members, relatives, and friends, or from media. Unfortunately, there is no evidence to compare these modes of learning about EA, but we encourage women to rely on information received from health professionals such as obstetricians and anesthesiologists. Some limitations to the study are noteworthy. First, the study was based on a non-proportional sample, which may make the findings generalizable to all women on the level of the region and country. Second, given the nature of online surveys, some individuals may not have the chance to be selected, mainly, those who do not have Internet, illiterate, and those who are not regular participants of social media applications. Due to the factors mentioned above, the knowledge level may not accurately reflect the actual distribution of knowledge among the pregnant population of Jazan, for example, given that a significant proportion of subjects were highly educated, which may not reflect the education level of the whole population. Therefore, future studies should be based on an interview-based survey and use proportional random sampling.

6. CONCLUSION

This study revealed adequate knowledge about EA among pregnant women. More than two thirds (36.6%) showed positive attitudes toward having EA. Significant factors affecting attitudes toward EA were high education, multiparity, experience with EA, and receiving information about EA from obstetricians. Since knowledge has directly and indirectly (through personal experience and multiparity) affected women's attitudes toward the use of EA, efforts should be made to increase knowledge by providing health education and eliminating misconceptions.

7. AUTHORS CONTRIBUTION STATEMENT

ZNZ LMH NSJ, and ZMA conceptualized and gathered the data with regard to this work. FAA, EEO, AMM, and RAA analyzed these data and necessary inputs were given towards the designing of the manuscript. All authors discussed the methodology and results and contributed to the final manuscript.

8. CONFLICT OF INTEREST

Conflict of interest declared none.

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