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Original Paper

Knowledge, Misconceptions and Attitudes towards Labor Regional Analgesia in a University Hospital: A Cross-Sectional Study

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Abstract

Background: *Pain relief in labor is considered an important concern in the management of pregnant females in childbirth. The aim of this study is to assess the knowledge and attitudes of Jordanian females towards various regional analgesic techniques.*

Methods: *We conducted a cross-sectional survey on 652 Jordanian women with a mean age of 32.9 (±8.17). Data collection took place at the gynecological and obstetrics clinics between December, 2017 and September, 2018.*

Results: *Subjects with higher educational levels tend to have better knowledge about regional analgesia (p-value = 0.003), are less likely to ask for general anesthesia (GA) ($p < 0.001$), and have more previous regional analgesia 47.9% ($p < 0.001$). Moreover, multiparous women had better knowledge about regional analgesia and higher tendency to ask for it as an efficacious analgesic method during delivery ($p < 0.05$).*

Conclusions: *In conclusion, even though higher educational levels and multiparty were significantly associated with better knowledge and acceptance rate of regional analgesia, sources of information about regional analgesia plays an important role, emphasizing on the significant role of anesthesiologists and obstetricians in increasing the awareness levels in our society.*

Keywords

Regional analgesia, awareness, obstetrics, multiparous

1. Introduction

Childbirth is considered as one of the most painful processes women experience in their life (Nabukenya, Kintu, Wabule, Muyingo, & Kwizera, 2015). Pain relief in labor is of significant concern in the management of pregnant women during the process of childbirth (To, 2007).

There are various regional analgesic techniques used for pain management during labor and delivery, including spinal analgesia, epidural analgesia, as well as combined spinal epidural analgesia (Meneghetti et al., 2017). Epidural analgesia is broadly used as an effective method of relieving labor pain, and it can provide almost complete labor pain relief if administered appropriately and in a well-timed manner (Minhas, Kamal, Afshan, & Raheel, 2005). Spinal analgesia is also considered a reliable method for providing analgesia and anesthesia in obstetrics population (Palmer, 2010). Since various analgesic procedures are available with different advantages and potential adverse events, effective communication between the triad of anesthesiologists, obstetricians and patients must be achieved (Shidhaye, Galande, Bangal, Smita, & Shidhaye, 2019).

Patient satisfaction is considered an important indicator of the quality of anesthesia, and therefore it is a principal measurement of the efficiency of provided medical care (Wu, Snyder, Clancy, & Steinwachs, 2010). Most previous studies of regional anesthesia reported high levels of satisfaction (Rhee, Chung, Lim, Lee, & Lee, 2010), highlighting the importance of effective preoperative counseling and good anesthetist-patient relationship in order to increase patients' preferences for RA, which will ultimately lead to higher satisfaction rates (Bheemanna, Channaiah, Gowda, Shanmugham, & Chanappa, 2017).

Several studies have been conducted globally to investigate the influence of socioeconomic, cultural, availability of medical care, educational and obstetric factors on patient's knowledge and acceptance of labor analgesia in different parts of the world (Audu et al., 2009; Nabukenya et al., 2015; Naithani, Bharwal, Chauhan, Kumar, & Gupta, 2011; Ochroch, Troxel, Frogel, & Farrar, 2007; Olayemi, Aimakhu, & Udoh, 2003). The aim of this study is to assess the knowledge and attitudes of Jordanian females towards various analgesic techniques, identifying the main reasons of refusal, the level of satisfaction, as well as recognizing the sources of information that are considered key influences on the knowledge of Jordanian females about these analgesic techniques and their complications.

2. Method

2.1 Study Design

A cross-sectional survey was conducted at Jordan University Hospital, which is a tertiary hospital located in Amman, the capital of the Hashemite Kingdom of Jordan. From December 2017 to September 2018, 652 Jordanian female in childbearing age were surveyed at the gynecological and obstetrics clinics.

2.2 Questionnaire Design

The questionnaire was designed as an electronic questionnaire, containing both questions in the multiple-choice format and open-ended questions to accomplish in-depth analysis of the women's perspectives without prompting. The questionnaire involved demographic information, questions related to their knowledge and understanding of regional (epidural/spinal) analgesia and their possible complications, if they would undergo regional anesthesia for their delivery, the reasons behind refusing or accepting the procedure (e.g., previous experience, encouraged or discouraged by family/friends), and questions to women who had regional anesthesia during delivery about their own experiences, satisfaction, and complications they encountered, and whether they are willing to go through the same experience again or not.

2.3 Ethical Approval

The study was approved by the Institutional Review Board for Human Research at Jordan University Hospital. The data collection was carried out by four sixth year medical students after explaining the aim of this study and obtaining verbal informed consent. No identifying information was obtained from the patients, and the collected data was used solely for the analysis.

2.4 Statistical Analysis

We used SPSS version 21.0 (Chicago, USA) in our analysis. We used mean (± standard deviation) to describe continuous variables (i.e., age). We used count (frequency) to describe other nominal variables (e.g., gender). We used chi-square test to analyze the difference in educational level and the parity with our questions. All underlying assumptions were met, unless otherwise indicated. We adopted a p value of 0.05 as a significant threshold.

3. Result

We included a total of 653 women in this study with a mean age of 32.9 (±8.17). 237 (36.3%) of the included sample had a high school education as their maximum educational level, 80 (12.3%) had diploma, and 336 (51.5%) had bachelor degree. Upon analyzing the parity of the included women, 97 (14.9%) were nulliparous and 556 (85.1%) were multiparous. Table 1 details the characteristics of the included sample, in addition to their general attitudes towards regional analgesia.

Table 1. Characteristics of Included Patients and Their Attitudes towards Regional Analgesia

Characteristic		Number (frequency) n (%)	
Educational level	High school	237 (36.3)	
	Diploma	80 (12.3)	
	Bachelor	336 (51.4)	
Parity	Nulliparous	97 (14.9)	
	Multiparous	556 (85.1)	
Would request efficacious analgesic methods during delivery	Yes	531 (81.3)	
	No	93 (14.2)	
	Maybe	29 (4.4)	
Heard previously about regional anesthesia		633 (96.9)	
Know the difference between spinal and epidural anesthesia		54 (8.3)	
Would ask for general anesthesia rather than spinal analgesia during cesarean delivery		383 (58.7)	
Heard that someone got paralyzed due to epidural or spinal analgesia		60 (9.2)	
Would undergo regional anesthesia for their delivery		351 (53.8)	
Had a previous epidural/spinal analgesia		270 (41.3)	
Would undergo spinal/ epidural analgesia again (n= 265)		No	51 (19.2)
		Yes	214 (80.8)
Changed their thoughts regarding regional anesthesia after experiencing it (n= 268)		No	72 (26.9)
		Yes	196 (73.1)
Would recommend epidural/ spinal for delivery (n= 270)		No	51 (18.9)
		Yes	219 (81.1)

We analyzed the difference in parity with questions about the anesthesia (Table 2), which showed significant difference in the knowledge about regional analgesia, previous experience, and in the tendency to ask for efficacious analgesic methods during delivery ($p < 0.05$), since all of the aforementioned characteristics were significantly higher among multiparous females.

Table 2. Comparison between Nulliparous and Multiparous Females in the Knowledge and Attitudes towards Regional Analgesia

		Parity		
		Nulliparous (n= 97)	**Multiparous (n= 556)**	
		Number (frequency) n (%)	**Number (frequency) n (%)**	**P value**
Educational level	High school	20 (20.6)	217 (39.0)	0.41
	Diploma	9(9.3)	71 (12.8)	
	Bachelor	68 (70.1)	268 (48.2)	
Heard about regional anesthesia	No	2 (2.1)	18 (3.2)	**<0.001***
	Yes	95 (97.9)	538 (96.8)	
Had a previous epidural/spinal analgesia	No	87 (89.7)	296 (53.2)	**0.008***
	Yes	10 (10.3)	260 (46.8)	
Know the difference between spinal and epidural anesthesia	No	82 (84.5)	517 (93.0)	0.07
	Yes	15 (15.5)	39 (7.0)	
Would ask for efficacious analgesic methods during delivery	No	7 (7.2)	86 (15.5)	**0.018***
	Yes	84 (86.6)	447 (80.4)	
	Maybe	6 (6.2)	23 (4.1)	
Would ask for GA rather than spinal analgesia during CS	No	50 (51.5)	220 (39.6)	0.55
	Yes	47 (48.5)	336 (60.4)	
Heard that someone got paralyzed due to epidural or spinal analgesia	No	88 (90.7)	505 (90.8)	0.118
	Yes	9 (9.3)	51 (9.2)	
Would undergo regional anesthesia for their delivery	No	39 (40.2)	263 (47.3)	0.301
	Yes	58 (59.8)	293 (52.7)	

*Significant P value < 0.05

Upon analyzing the effect of different educational levels on the knowledge about regional analgesia (Table 3), those who hold bachelor degree and higher educational levels tend to significantly have more previous regional analgesia 47.9% (p value < 0.001), have better knowledge about regional analgesia (p value = 0.003), and are less likely to ask for general anesthesia (GA) rather than spinal analgesia for caesarian sections (p value < 0.001).

Table 3. Effect of Different Educational Levels on the Knowledge about Regional Analgesia

		Educational level			P value
		High school (n=237)	**Diploma (n=80)**	**Bachelor (n=336)**	
		Number (frequency) n (%)	**Number (frequency) n (%)**	**Number (frequency) n (%)**	
Parity	Nulliparous	20 (8.4)	9 (11.3)	68 (20.2)	
	Multiparous	217 (91.6)	71 (88.8)	268 (79.8)	
Heard about regional anesthesia	No	**14 (5.9)**	1 (1.3)	5 (1.5)	
	Yes	**223 (94.1)**	79 (98.8)	331 (98.5)	0.006*
Had a previous epidural/spinal analgesia	No	164 (69.2)	44 (55.0)	**175 (52.1)**	<0.001*
	Yes	73 (30.8)	36 (45.0)	**161 (47.9)**	
Know the difference between spinal and epidural anesthesia	No	229 (96.6)	72 (90.0)	**298 (88.7)**	0.003*
	Yes	8 (3.4)	8 (10.0)	**38 (11.3)**	
Would ask for efficacious analgesic methods during delivery	No	42 (17.7)	12 (15.0)	39 (11.6)	0.202
	Yes	182 (76.8)	66 (82.5)	283 (84.2)	
	Maybe	13 (5.5)	2 (2.5)	14 (4.2)	
Would ask for GA rather than spinal analgesia during CS	No	66 (27.8)	**39 (48.8)**	**165 (49.1)**	<0.001*
	Yes	171 (72.2)	**41 (51.2)**	**171 (50.9)**	
Heard that someone got paralyzed due to epidural or spinal analgesia	No	223 (94.1)	69 (86.3)	301 (89.6)	
	Yes	14 (5.9)	11 (13.8)	35 (10.4)	0.059
Would undergo regional anesthesia for their delivery	No	128 (54.0)	38 (47.5)	136 (40.5)	0.06
	Yes	109 (46.0)	42 (52.5)	200 (59.5)	

*Significant P value < 0.05

The analysis of the source of the information regarding regional anesthesia showed that family members and friends (55.5%) were the most common source of information, followed by physicians (31.5%), and the written information such as books, magazines and internet came third with a percentage of 12.6%. Partner and family members supported regional analgesia in 496 subjects (76.1%), while 156 (23.9%) did not.

The analysis of the awareness of the complications related to regional analgesia in obstetrics patients reflected that back pain (42.8%) is the most considered adverse event, followed by paralysis (40.6%), headache (30.8%), paresthesia (8.9%), lower limb pain (4.4%), and procedure failure (2.6%). Even though paralysis was the second most common adverse event to be considered, only 9.2% heard of females having such a complication. Approximately 11.2% of the studied population stated that they do

not know the complications of regional analgesia. Friends and relatives were the most common source of information regarding these complications (62.3%), followed by previous experience (14.9%), and internet websites (10.9%).

4. Discussion

Regional analgesia is considered an admirable pain relief that is used during labor (Bucklin, Hawkins, Anderson, & Ullrich, 2005). This study showed that 96.9% of Jordanian females in childbearing age recognize regional analgesia's utilization for obstetrics interventions, however 11.2% did not have sufficient information regarding the complications of regional analgesia.

The sources of information about regional analgesia is considered a crucial factor in whether they request any regional analgesic techniques during labor (Harkins, Carvalho, Evers, Mehta, & Riley, 2010). This study showed that family members and friends (55.5%) were the most common source of information, whereas physicians were the main source of information in 31.5% of Jordanian females, while read information such as books and internet came third with a percentage of 12.6%. Harkins et al. (2010) also marked the low rates of internet utilization as a source of information regarding regional analgesia. Previous literature shown that variety of available material are prevalent as main sources of information, such as leaflets and the antenatal education classes (Stamer, Messerschmidt, Wulf, & Hoeft, 1999; Stewart, Sodhi, Harper, & Yentis, 2003), friends or relatives and obstetricians (Hasan, Alsaadi, Abbas, & Algoraby, 2016; Minhas et al., 2005), with doctors and nurses being the most preferred source of information among Middle Eastern females (Hasan et al., 2016). However, the role of anesthesiologists in enlightening patients about regional analgesia's benefits and risks have been poorly studied.

Remarkably, our study showed that higher educational levels were significantly associated with higher knowledge and acceptance rate of regional analgesia ($p < 0.05$). These results were comparable to those found in previous literature in that the level of acceptance of significantly associated with their educational level and socioeconomic status (Minhas et al., 2005; Okeke, Merah, Cole, & Osibogun, 2005; Sheiner et al., 2000).

Our results indicate that multiparous has significantly higher levels in the knowledge about regional analgesia, previous experience, and in the tendency to ask for efficacious analgesic methods during delivery ($p < 0.05$) than nulliparous females. Multiparous is considered the strongest influence on maternal choice of analgesia at birth, since they are considered to have better understanding of what birth entailed (Regan, McElroy, & Moore, 2013). On the other hand, parity has not been significantly correlated as a factor to influence the knowledge and acceptance for regional analgesia (Okeke et al., 2005; Olayemi et al., 2003; Shidhaye et al., 2019).

Harkins et al. (2010) found that partner preference was significantly associated with refusal of epidural analgesia. In our study, 17 (2.6%) were discouraged by their family or friends from requesting regional analgesia, while 174 (26.6%) of them were discouraged due to the fear of complications. This

demonstrates the importance of including the partner in the counseling program, in addition to focusing on the advantages and the potential side effects, since the lack of information about epidurals risks and benefits are one of the major factors related to regional analgesia rejection (Edwards & Ansari, 2015; Harkins et al., 2010).

It has been suggested that the acceptance rate for pain relief in labor can be influenced by social factors and ethnic roots (Edwards & Ansari, 2015; Glance et al., 2007; Sheiner, Sheiner, Shoham-Vardi, Mazor, & Katz, 1999). For example, in a study done in the United Arab Emirates (UAE), it has been shown that Bedouin women tend not to vocally express childbirth pain, but instead, they endure it. In addition, they had negative advices regarding regional analgesia from family and friends (Edwards & Ansari, 2015; Sheiner et al., 1999). It has been hypothesized that the discrepancy in the level of awareness and acceptance might be related to the fact that in most of the developing countries in the Middle East, childbirth is still viewed as a physiological process which needs to be managed with little interference (Gari et al., 2017).

The main limitation of our study is that it did not compare between different governorates in Jordan, since different demographic and socioeconomic factors can play a role in the knowledge and acceptance rate of regional analgesia. Moreover, we did not measure the level of confidence in the provided knowledge regarding regional analgesia, for which further studies should be done, taking into consideration the role of anesthesiologists as a source of information.

In conclusion, even though higher educational levels were significantly associated with higher knowledge and acceptance rate of regional analgesia, sources of information about regional analgesia is considered a crucial factor in whether they request any regional analgesic techniques during labor, for which more efforts should be done to increase the awareness regarding the effectiveness of regional analgesia.

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