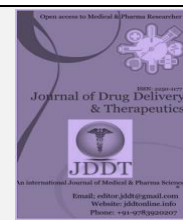
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Research Article

Knowledge Awareness and Attitude of Women toward Epidural Anesthesia during Labor

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ABSTRACT

Background: Epidural analgesia is a central nerve block technique achieved by injection of a local anesthetic close to the nerves that transmit pain, and is widely used as a form of pain relief in labor. However, it is likely that epidural blocks lengthen labor and result in increased rates of operative vaginal delivery. Although, questions have been raised about its side effects.

Objectives: The aims of this research study are; to predict the common use of epidural analgesia in Palestinian women, to assess its effectiveness on pain relief, and to determine its adverse effects. However, the study designed to measure the knowledge awareness, and attitude of Palestinian women toward epidural anesthesia during labor.

Methods: A cross-sectional study was conducted using an online questionnaire. The study included females (age < 20 - > 40 years old) from all governorates in Palestine. The survey was designed to measure the knowledge awareness and attitude of Palestinian women toward epidural anesthesia during labor. A total of 2685 females participated in the study. SPSS version 22 was used to analyze the data collected.

Results: About 893 women (33%) participated in the research study didn't use the epidural analgesia and 1792 (67%) women used it, out of 2685 women completed the questionnaire. The research study included Palestinian women in different Governorates in Palestine. 43.2 % (800) of women who participated in this research study mentioned that the epidural injection is painless, 29.3% (543) said that it is painful and others filled it may be painful. In women used epidural injection, the expending of uterus was 1-2 cm in 355 women (20.5%), 2-3 cm in 325 women (18.7%), 3-4 cm in 482 women (27.8 %), 4-5 cm in 355 women (20.5%) and more than 5 cm in 218 women (12.6 %). The percentage of birth pain which anesthetized by epidural analgesia; 621 women (35%) mentioned that the epidural injection anesthetized about 80-100% , 24.5% (434) is 60-80% ,13% (230) is 40-60% , 9.4 (166) is 20-40% and 18.2% (322) is 0-20% . While 795 women (45.9%) didn't have any difficulty pushing the fetus during delivery but 38.2% has a difficult push, and 15.9% said maybe they have. The most signs and symptoms mentioned are headache, backache, nausea, allergy at the site of injection, high body temperature, high blood sugar which a risk factor of diabetes, hypotension or hypertension in others, vomiting, tremor, itching, pain, and numbness in one or both legs, feeling cold, and absents of senses in the lower part for 12 hours after birth. Other results analysis such as; the frequency of uses epidural analgesia, the effects of child, and in which birth number they used it is included.

Conclusion: Epidural analgesia appears to be common in use in Palestinian women and effective in reducing pain during labor. The side effects of epidural analgesia on mother and child were found to be minor, but further research may be needed to evaluate rare but potentially severe adverse effects of epidural analgesia on women in labor and long-term neonatal outcomes. To the best of our knowledge, this is the first study about epidural analgesia in Palestinian women.

Keywords: Epidural Anesthesia; Labor, Delivery; Epidural analgesia; Local anesthetic

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INTRODUCTION

The experience of labor is complex and subjective. Several factors affect a woman's perception of labor making each experience unique. However, as a consistent finding, labor pain is ranked high on the pain rating scale when compared to other painful life experiences¹. The memory of this pain however is short-lived. The parturients who experienced severe pain in labor, 90% found the experience satisfactory three months later². Women who

seem to experience more intense pain during the pelvic phase of labor may as a result of sudden stimulation of nociceptors surrounding the vaginal vault, vulva, and perineum³, and rapid descent of the foetus^{4,5}. Labour pain is a huge pain in mothers that any mothers can wish to remove and be easy.

Pain relief is an important issue for women in labor. The level of pain experienced and the effectiveness of pain relief may influence a woman's satisfaction with labor and

birth. This also may have immediate and long-term emotional and psychological effects⁶. Several methods have been advocated to ease labor pain and different coping strategies, from limited intervention such as breathing exercises to medical techniques such as epidural analgesia. Epidural analgesia is a central nerve blockade technique, which involves the injection of a local anesthetic with or without an adjunct such as the opioid fentanyl, into the epidural space of the lower region of the spine close to the nerves that transmit painful stimuli from the contracting uterus and birth canal. Protocols for the care of women using epidural analgesia vary among hospitals. Epidural solutions are administered either by bolus, continuous infusion, or patient-controlled pump. An intermittent technique involves injections of local anesthetic through a catheter positioned in the epidural space. Boluses of higher concentrations, as used in the earlier years, have been associated with a dense motor block resulting in reduced mobility, decreased pelvic tone, and loss of the bearing-down sensations usually experienced in the second stage of labour⁷.

Women with epidural also have been described to experience more hypotension, motor blockade, fever, and urinary retention as demonstrated with overwhelming and good quality evidence ^{8,9}. A relationship has not been found between epidural analgesia use and an increase in neonatal morbidity, usually expressed using low Apgar scores and pH values of umbilical artery⁸. The aims from this research study are; to show how many Palestinian women use epidural analgesia including the frequency of using it, the reasons why they don't use it, determine the adverse effects from using it, is there is any affects in fetes when epidural analgesia used and if the mother willing to use it again or/ and advise any women to use it.

METHODS

A cross-sectional study was conducted using an online questionnaire. The study included females (age < 20 - > 40 years old) from all governorates in Palestine. The survey

was designed to measure the knowledge awareness and attitude of Palestinian women toward epidural anesthesia during labor. A total of **2685** females participated in the study. 1515 women only completed the questionnaire and answered all the questions. Thus, the valid percentage was calculated in the analysis. SPSS version 22 was used to analyze the data collected.

RESULTS

About 893 women (33%) who participated in the research study didn't use the epidural analgesia and 1792 (67%) women used it, out of 2685 women completed the questionnaire. The research study included Palestinian women in different Governorates in Palestine. 43.2 % (800) of women who participated in this research study mentioned that the epidural injection is painless, 29.3% (543) said that it is painful and others filled it may be painful. In women used epidural injection, the expending of uterus was 1-2 cm in 355 women (20.5%), 2-3 cm in 325 women (18.7%), 3-4 cm in 482 women (27.8 %), 4-5 cm in 355 women (20.5%) and more than 5 cm in 218 women (12.6 %). The percentage of birth pain which anesthetized by epidural analgesia; 621 women (35%) mentioned that the epidural injection anesthetized about 80-100% , 24.5% (434) is 60-80% ,13% (230) is 40-60% , 9.4 (166) is 20-40% and 18.2% (322) is 0-20% . While 795 women (45.9%) didn't have any difficulty pushing the fetus during delivery but 38.2% has a difficult push, and 15.9% said maybe they have. The most signs and symptoms mentioned are headache, backache, nausea, allergy at the site of injection, high body temperature, high blood sugar which a risk factor of diabetes, hypotension or hypertension in others, vomiting, tremor, itching, pain, and numbness in one or both legs, feeling cold, and absents of senses in the lower part for 12 hours after birth. Other results analysis such as; the frequency of uses epidural analgesia, the effects of child, and in which birth number they used it is included. The following tables and figures summarized the results of all the research study:

Table 1: Distribution of participated women according to their governorate

Governorate	Frequency	%	Valid %	Cumulative Percent
Jericho	40	1.5	1.5	1.5
Hebron	730	27.2	27.2	28.7
Jerusalem	546	20.3	20.3	49.0
Bethlehem	165	6.1	6.1	55.2
Jenin	176	6.6	6.6	61.7
Ramallah	356	13.3	13.3	75.0
Tulkarm	138	5.1	5.1	80.1
Gaza	139	5.2	5.2	85.3
Qalqila	44	1.6	1.6	86.9
Nablus	351	13.1	13.1	100.0
Total	2685	100.0	100.0	

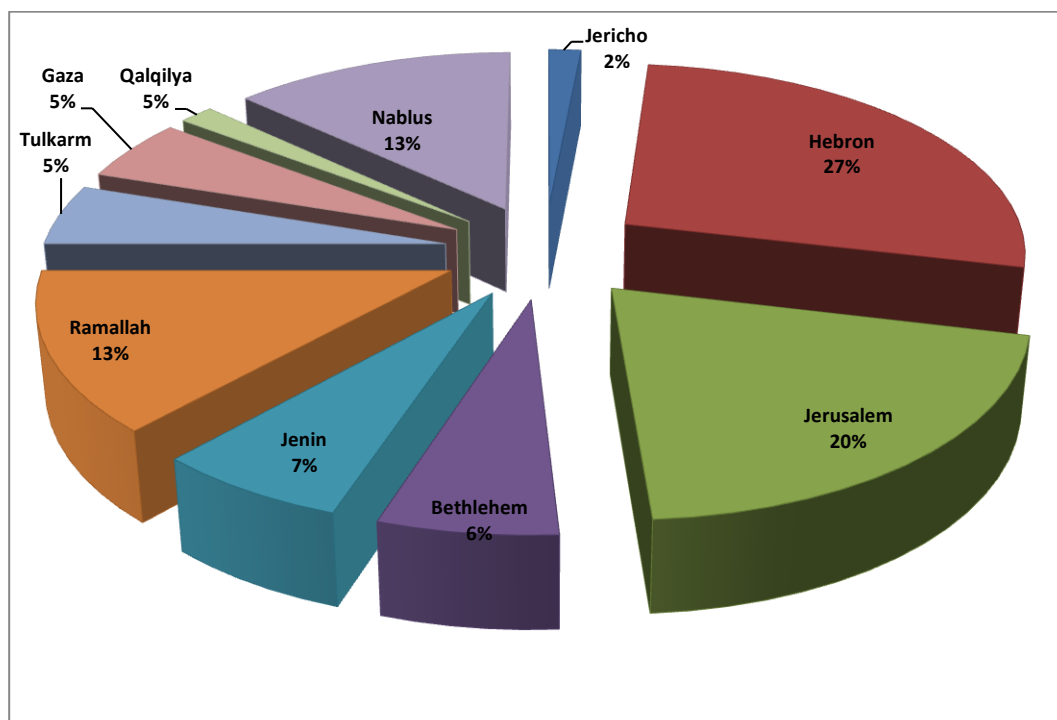


Figure 1: Distribution of participated women according to their governorate

Table 2: The age of the participated women

Age	Frequency	%	Valid %	Cumulative Percent
< 20	138	5.1	5.1	5.1
> 40	16	0.6	0.6	5.7
20-25	994	37.0	37.0	42.8
25-30	1080	40.2	40.2	83.0
30-35	361	13.4	13.4	96.4
35-40	96	3.6	3.6	100.0
Total	2685	100.0	100.0	

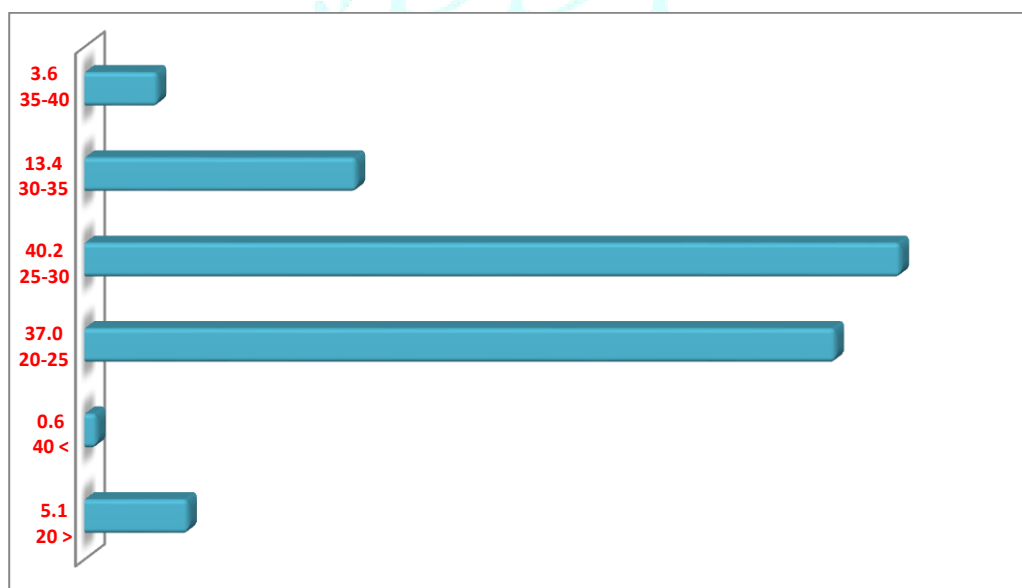
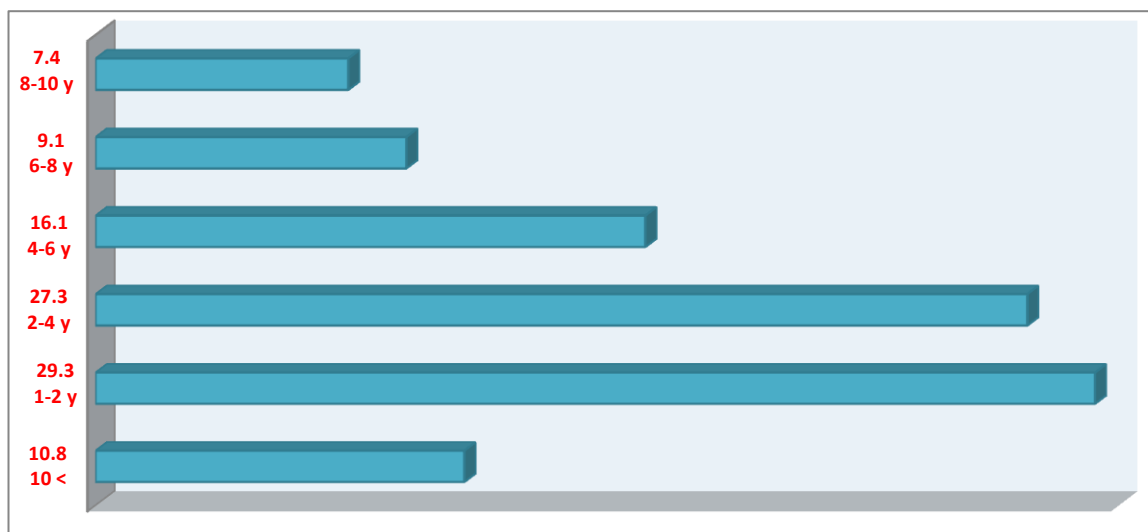


Figure 2: The Age of the Participated Women

Table 3: The duration of marriage of participated women

How long you have been married?	Frequency	%	Valid %	Cumulative Percent
>10 y	291	10.8	10.8	10.8
1-2 y	786	29.3	29.3	40.1
2-4 y	733	27.3	27.3	67.4
4-6 y	432	16.1	16.1	83.5
6-8 y	245	9.1	9.1	92.6
8-10 y	198	7.4	7.4	100.0
Total	2685	100.0	100.0	10.8

**Figure 3:** The duration of marriage of participated women**Table 4:** The use of epidural analgesia at labor

Have you ever used epidural analgesia at labor?	Frequency	%	Valid %	Cumulative Percent
No	893	33.3	33.3	33.3
Yes	1792	66.7	66.7	100.0
Total	2685	100.0	100.0	

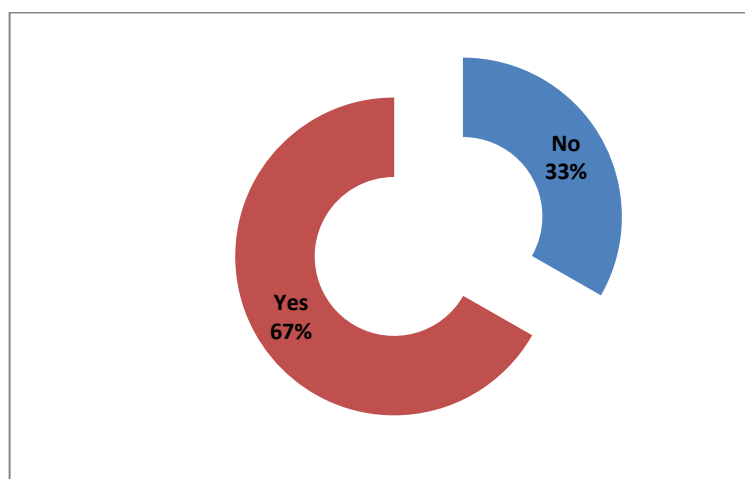
**Figure 4:** The use of epidural analgesia at labor

Table 5: The reason for not using epidural analgesia at labor

Cause	Frequency	%	Valid %	Cumulative Percent
The idea in itself causes me to panic, although I know it is useful and not harmful. Besides, I had an accident and a fracture of the spine; this discouraged me not to use it.	1	0.056	0.113	0.113
Wanted to experience the natural birth	10	0.556	1.13	1.243
Fear of the side effects	380	21.12	42.89	44.133
Wanted to experience a normal birth without other factors	2	0.111	0.226	44.359
During labor, I missed the stage of administration, where the expansion was more than 5 cm	6	0.334	0.677	45.036
Fear of being given in the back, side effects, and in my second pregnancy, I used CLEXANE® Injection (Enoxaparin).	1	0.056	0.113	45.149
I felt that I did not need it, and my birth was facilitated well	14	0.778	1.58	46.729
I wanted the birth to proceed as normal, without any intervention	1	0.056	0.113	46.842
I knew it and I have faith that everything in the hand of God during birth	1	0.056	0.113	46.955
The side effects, fear of the injection, and the high cost	3	0.167	0.339	47.294
I didn't need it as the expansion occurred rapidly	10	0.556	1.13	48.424
My birth was easy and the pain was tolerable	2	0.111	0.226	48.65
The fear of the injection because given in the back	236	13.12	26.64	75.29
The side effects and fear of the injection because given in the back; as it is a sensitive area that any mistake leads to serious illnesses.	3	0.167	0.339	75.629
The desire to feel every moment of childbirth, even if it is painful	1	0.056	0.113	75.742
The Physician didn't recommend it and he said don't need it either.	1	0.056	0.113	75.855
The hospital did not offer to give me the injection	3	0.167	0.339	76.194
Cesarean delivery (either used spinal or complete anesthesia)	41	2.28	4.628	80.822
Childbirth was by cesarean due to preeclampsia	1	0.056	0.113	80.935
The birth was in Government Hospital, and the injection is not available	12	0.667	1.35	82.285
The birth was an emergency due to the detachment of the placenta and was done under general anesthesia	1	0.056	0.113	82.398
First birth	3	0.167	0.339	82.737
They give me CLEXANE® for blood clotting; therefore, it is forbidden to take the injection.	1	0.056	0.113	82.85
In the first birth, I did not know about it, and in the second one when I asked for it the expansion was more than 5 cm; they said you don't need it, and the birth was smooth with tolerable pain	1	0.056	0.113	82.963
The birth was in a hospital where there no injections and delivered by cesarean	1	0.056	0.113	83.076
Premature birth	1	0.056	0.113	83.189
Due to its cost	32	1.78	3.612	86.801
Due to the presence of a slipped lumbar spine	1	0.056	0.113	86.9614
According to the nurse's, I didn't need it even though I wanted to take it	1	0.056	0.113	87.027
I have not given birth yet	8	0.445	0.903	87.93
Distrust of physicians and is given in the back	1	0.056	0.113	88.043
Lack of knowledge about it	91	5.058	10.27	98.313
I don't want to use it	1	0.056	0.113	98.426
Unnecessary (especially with the painkillers provided during labor, and some	2	0.111	0.226	98.652

medical advice and exercise)				
They did not tell us about it	1	0.056	0.113	98.765
Low platelets and no clotting and fear of bleeding, so the physician did not recommend to use	2	0.111	0.226	98.991
I was pregnant with twins and the physician did not recommend to use it for fear that I might not respond to the pushing	1	0.056	0.113	99.104
The cervical condition did not allow to use it	1	0.056	0.113	99.217
It was not familiar when I gave birth	1	0.056	0.113	99.33
It didn't cross my mind	1	0.056	0.113	99.443
The unavailable of Anesthetist when I gave birth	1	0.056	0.113	99.556
Physician prevented giving it due to the slowed heartbeat of the fetus	2	0.111	0.226	99.782
No reason	2	0.111	0.226	100
Total	886*	49.25	100	
Missing (99)	1799			
Total	2685			

**7 women did not give the cause of using the injection; they are not included in the calculations*

Table 6: The reason or the person who advises using the epidural analgesia at labor

Who advises you to use epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
I am a doctor, I know it	5	0.186	0.281	0.281
I wanted to be awake when the fetus came out	3	0.112	0.169	0.45
I'm midwife or nurse	8	0.298	0.450	0.9
Labor pain	18	0.670	1.01	1.91
They gave me the injection without asking me	2	0.074	0.112	2.022
Because I had high blood pressure and preeclampsia	2	0.074	0.112	2.134
It was required to use it in my case	5	0.186	0.281	2.415
Relatives or friends	583	21.71	32.77	35.185
My mother	5	0.186	0.281	35.466
Physician	960	35.75	53.96	89.426
Nurse or midwife	5	0.186	0.281	89.707
Internet or Facebook groups or Social Media	23	0.857	1.29	90.997
The fear of birth	1	0.037	0.056	91.053
Caesarean delivery	29	1.080	1.63	92.683
My Husband	5	0.186	0.281	92.964
I chose that (no one advised me, it was my decision)	37	1.378	2.08	95.044
I work in the obstetrics department	1	0.037	0.056	95.1
Previous experience	81	3.017	4.55	99.65
In order not to use general anesthesia (Less risk than full anesthesia)	3	0.112	0.169	99.819
I was not fasting	3	0.112	0.169	100
Total	1779*	66.25	100	
Missing 99	906			
Total	2685			

**13 women did not answer this question; they are not included in the calculations*

Table 7: In which birth and/or frequency of using the epidural analgesia

In which birth number did you use epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
First	1165	43.39	63.87	63.87
Second	189	7.04	10.36	74.23
Third	113	4.21	6.195	80.425
Fourth	14	0.521	0.768	81.193
Fifth	5	0.186	0.274	81.464
Sixth	3	0.112	0.164	81.628
Seventh	1	0.037	0.055	81.683
More than once	312	11.62	17.11	98.79
Used in operation of varicose veins	1	0.037	0.055	98.848
In the last pregnancy	1	0.037	0.055	98.903
I did not used it	20	0.745	1.096	100
Total	1824*	67.93	100	
Missing 99	861			
Total	2685			

*32 women did not use the injection but they answered the question, they are included in the calculations

Table 8: Frequency of using the epidural analgesia

How many times did you use epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
3<	22	.8	1.2	1.2
3	74	2.8	4.1	5.3
1	1424	53.0	78.4	83.7
2	297	11.1	16.3	100.0
Total	1817	67.7	100.0	
Missing (99)	868	32.3		
Total	2685	100.0		

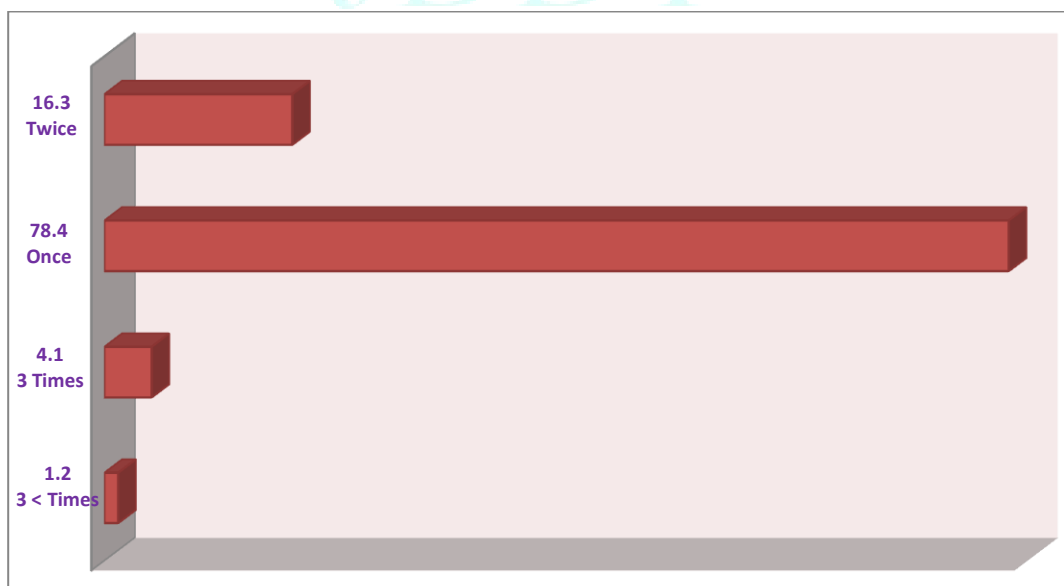
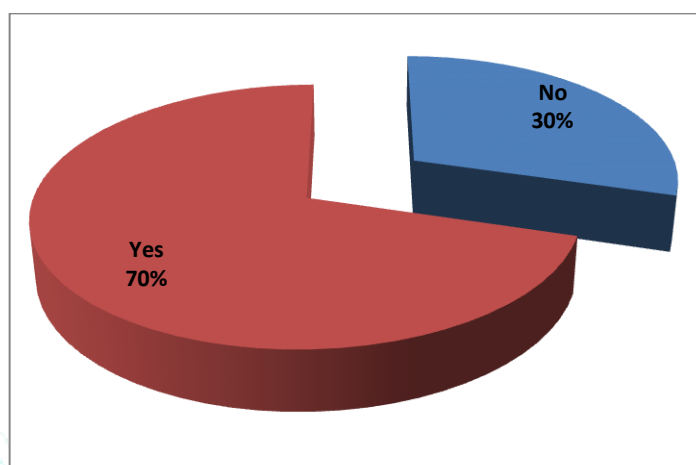
**Figure 5:** Frequency of using the epidural analgesia

Table 8: Knowledge about the side effects of epidural analgesia

Did you have previous knowledge about the side effects of epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
No	619	23.1	29.6	29.6
Yes	1475	54.9	70.4	100.0
Total	2094	78.0	100.0	
Missing (99)	591	22.0		
Total	2685	100.0		

**Figure 6:** knowledge about the side effects of epidural analgesia**Table 9:** The responsibility of the negative effects of epidural analgesia

Did you sign a paper that includes your responsibility if negative effects occur?	Frequency	%	Valid %	Cumulative Percent
No	679	25.3	36.4	36.4
Yes	1186	44.2	63.6	100.0
Total	1865	69.5	100.0	
Missing (99)	820	30.5		
Total	2685	100.0		

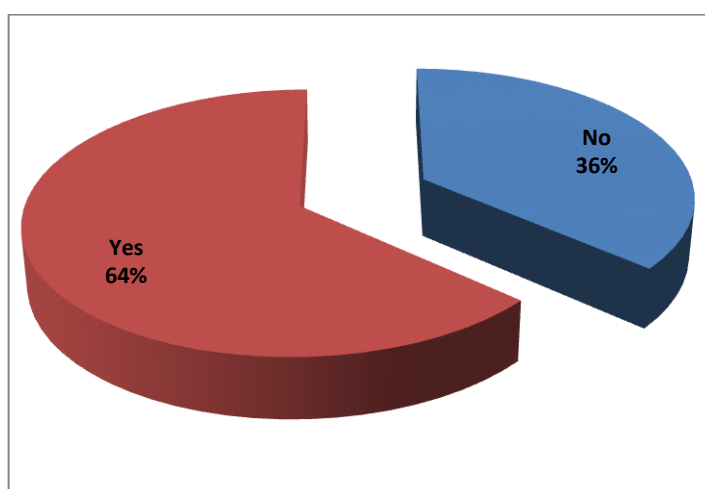
**Figure 7:** The responsibility of the negative effects of epidural analgesia

Table 10: Signs and symptoms appear after birth

After birth, which of these signs and symptoms did you feel?	Frequency	%	Valid %	Cumulative Percent
Didn't feel any symptoms	730	27.19	39.782	39.782
Headache	97	3.613	5.29	45.072
Backache	412	15.344	22.452	67.524
Nausea	45	1.676	2.452	69.976
Allergy at the site of injection	89	3.315	4.85	74.826
High body temperature (Fever)	9	0.335	0.49	75.316
Anorexia	0	0.0	0.0	75.316
High blood sugar that may lead to diabetes	5	0.186	0.272	75.588
Hypersensitivity	19	0.707	1.035	76.623
Backache and fever	17	0.633	0.926	77.549
Anxiety and tension	35	1.30	1.91	79.46
Foot pain	3	0.112	0.163	79.622
Hypotension	3	0.112	0.163	79.785
Backache and Hypersensitivity	11	0.41	0.599	80.384
Shortness of breath	2	0.074	0.109	80.493
Back pain, nausea, hypersensitivity	8	0.298	0.436	80.93
Tingling in the left leg	1	0.037	0.054	80.983
Headache and Backache	272	10.13	14.823	95.806
Pain in the shoulders	3	0.112	0.163	95.969
Hypertension	3	0.112	0.163	96.132
Fainting	1	0.037	0.054	96.186
Pain in the site of the injection	3	0.112	0.163	96.349
Swelling	2	0.074	0.109	96.458
Back pain and nausea	17	0.633	0.926	97.384
Back pain, anxiety, and tension	28	1.043	1.526	98.91
Headache and nausea	20	0.745	1.09	100
Total	1835*	68.34	100	
Missing 99	850			
Total	2685			

**43 women did not use the injection but they answered the question, they are included in the calculations*

Table 11: Consultation of a physician for signs and symptoms appears after birth

If you experience any of the symptoms in the previous question, did you see a doctor?	Frequency	%	Valid %	Cumulative Percent
No	884	32.9	67.9	67.9
Yes	418	15.6	32.1	100.0
Total	1302	48.5	100.0	
Missing (99)	1383	51.5		
Total	2685	100.0		

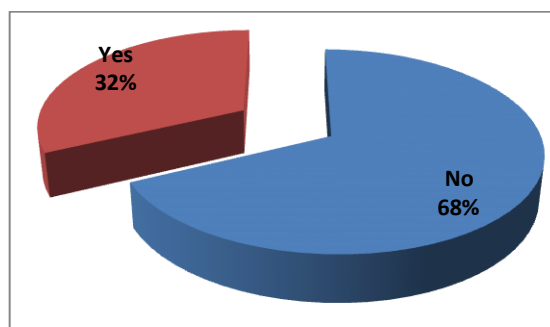


Figure 8: Consultation of a physician for signs and symptoms appears after birth

Table 12: Analysis test before using epidural analgesia

Have you had any tests before epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
No	1305	48.6	71.4	71.4
Yes	524	19.5	28.6	100.0
Total	1829	68.1	100.0	
Missing (99)	856	31.9		
Total	2685	100.0		

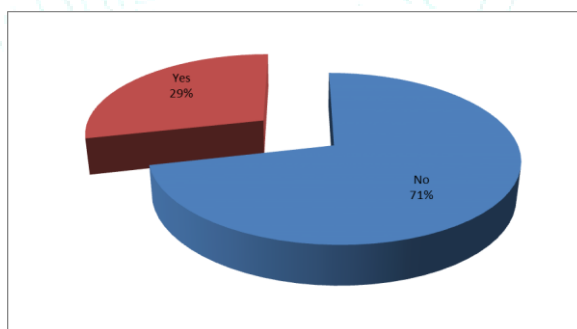


Figure 9: Analysis test before using epidural analgesia

Table 13: Frequency of epidural analgesia if it is painful when injected

Is epidural analgesia painful when injected?	Frequency	%	Valid %	Cumulative Percent
May be	508	18.9	27.44	27.4
No	800	29.8	43.22	70.7
Yes	543	20.2	29.34	100.0
Total	1851	68.9	100	
Missing (99)	834	31.1		
Total	2685	100.0		

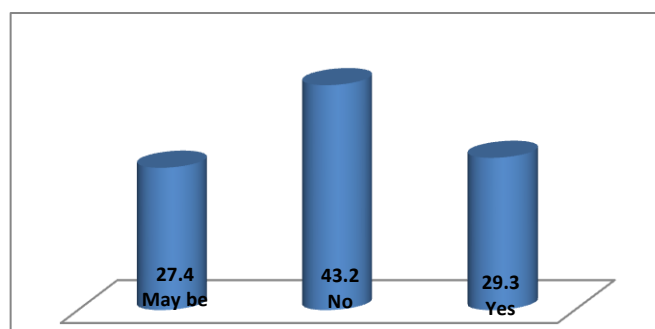
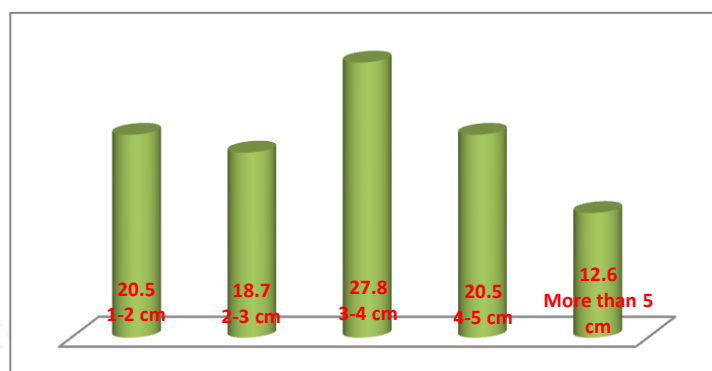


Figure 10: Frequency of epidural analgesia if it is painful when injected

Table 14: The uterus expanding when epidural analgesia is injected

How much your uterus was expanding when epidural analgesia was injected?	Frequency	%	Valid %	Cumulative Percent
1-2 cm	355	13.2	20.5	20.5
2-3 cm	325	12.1	18.7	39.2
3-4 cm	482	18.0	27.8	67.0
4-5 cm	355	13.2	20.5	87.4
More than 5 cm	218	8.1	12.6	100.0
Total	1735	64.6	100.0	
Missing 99	950	35.4		
Total	2685	100		

**Figure 11:** The uterus expanding when epidural analgesia is injected**Table 15:** The effect of epidural analgesia on birth pain

What percentage of birth pain was anesthetized by epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
0-20 %	322	12.0	18.2	18.2
20-40 %	166	6.2	9.4	27.5
40-60 %	230	8.6	13.0	40.5
60-80 %	434	16.2	24.5	65.0
80-100 %	621	23.1	35.0	100.0
Total	1773	66.0	100.0	
Missing 99	912	34.0		
Total	2685	100.0		

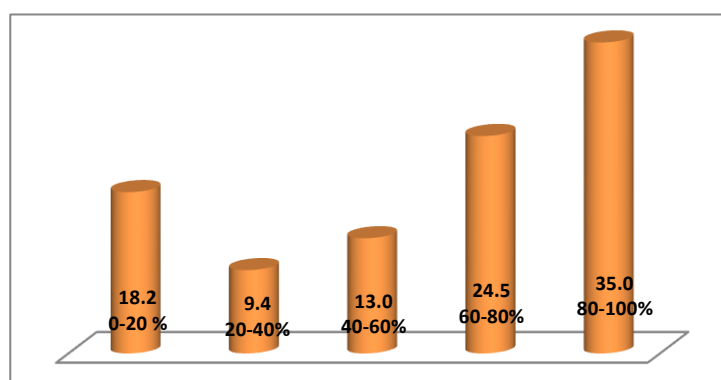
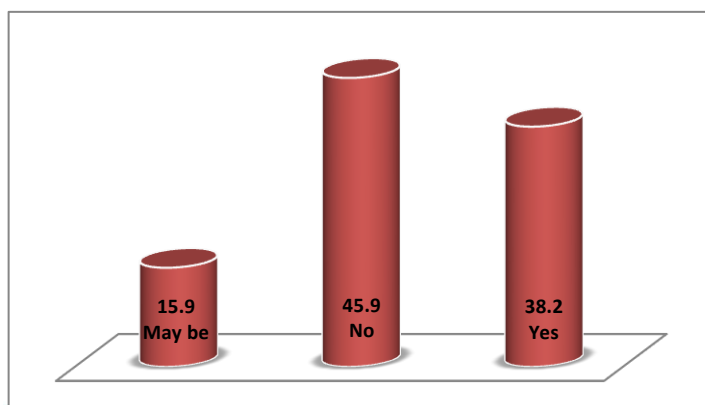
**Figure 12:** Percentage of epidural analgesia effects on birth pain

Table 16: Difficulty of pushing the fetus during delivery

Have you had difficulty pushing the fetus during delivery?	Frequency	%	Valid %	Cumulative Percent
May be	275	10.2	15.9	15.9
No	795	29.6	45.9	61.8
Yes	661	24.6	38.2	100.0
Total	1731	64.5	100.0	
Missing 99	954	35.5		
Total	2685	100.0		

**Figure 13:** Difficulty of pushing the fetus during delivery**Table 17:** Time of return of sensation of the lower body

When the sensation return to the lower body and the effect of anesthesia goes after the epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
After 0-1 h	362	13.5	20.2	20.2
After 1-2 h	449	16.7	25.1	45.4
After. 2-3 h	384	14.3	21.5	66.8
After More than 3 h	593	22.1	33.2	100.0
Total	1788	66.6	100.0	
Missing 99	897	33.4		
Total	2685	100.0		

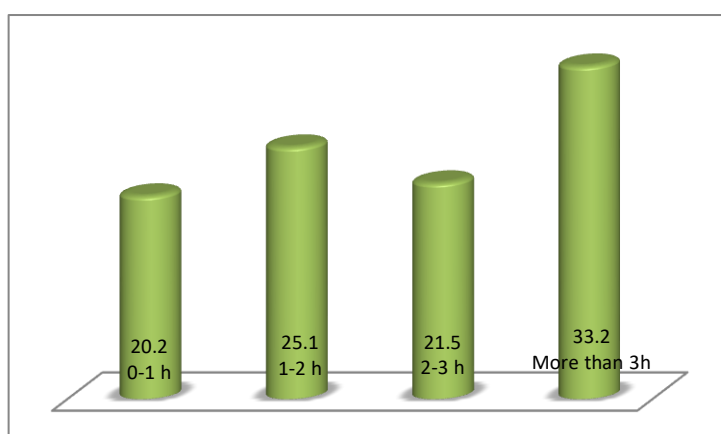
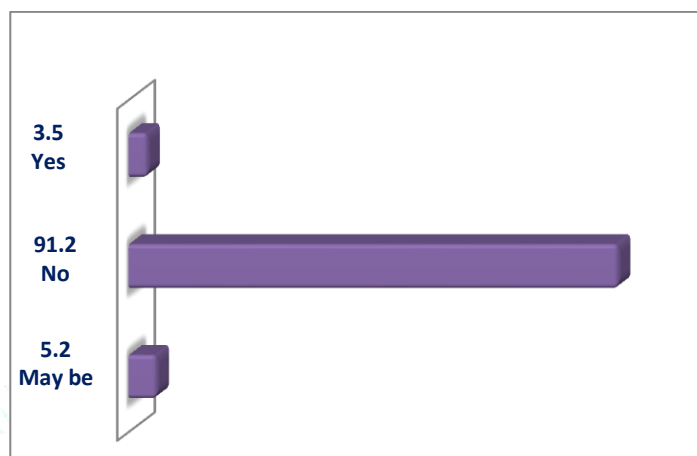
**Figure 14:** Time of return of sensation of the lower body

Table 18: The effect of epidural analgesia on the child

Did your child been affected by the epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
May be	95	3.5	5.2	5.2
No	1657	61.7	91.2	96.5
Yes	64	2.4	3.5	100.0
Total	1816	67.6	100.0	
Missing 99	869	32.4		
Total	2685	100.0		

**Figure 15:** The effect of epidural analgesia on the child**Table 19:** Long-term effect of epidural analgesia

Have you been affected by the epidural analgesia in the long-term and symptoms remain for a long time?	Frequency	%	Valid %	Cumulative Percent
May be	262	9.8	14.4	14.4
No	1139	42.4	62.5	76.9
Yes	420	15.6	23.1	100.0
Total	1821	67.8	100.0	
Missing 99	864	32.2		
Total	2685	100.0		

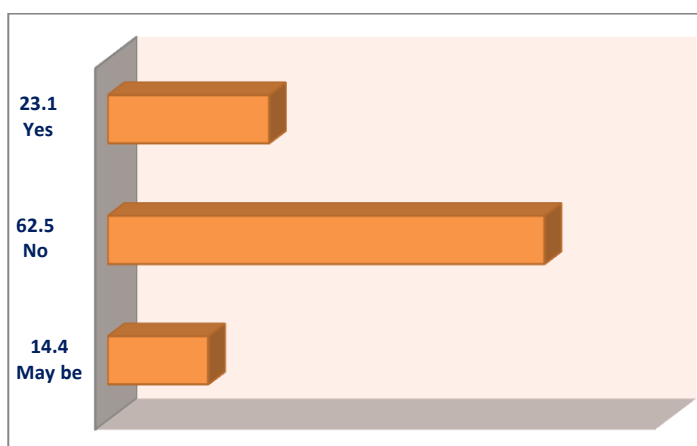
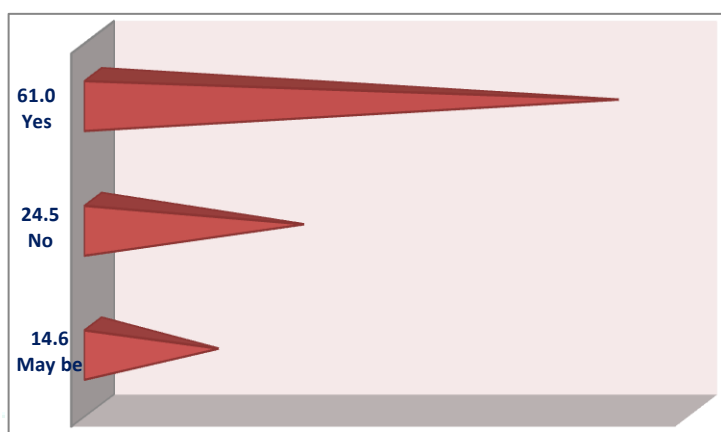
**Figure 16:** Long-term effect of epidural analgesia

Table 20: Use the epidural analgesia in the next pregnancy

Are you thinking about trying the epidural analgesia in the next pregnancy?	Frequency	%	Valid %	Cumulative Percent
May be	291	10.8	14.6	14.6
No	489	18.2	24.5	39.0
Yes	1218	45.4	61.0	100.0
Total	1998	74.4	100.0	
Missing 99	687	25.6		
Total	2685	100.0		

**Figure 17:** Use the epidural analgesia in the next pregnancy**Table 21:** Experience of symptoms by the use of the epidural analgesia more than once

If you use the epidural analgesia more than once, do you experience the same symptoms the first time?	Frequency	%	Valid %	Cumulative Percent
Fewer symptoms than the first time	130	4.8	8.8	8.8
More symptoms than the first time	78	2.9	5.3	14.2
Don't use it more than one time	1068	39.8	72.7	86.9
The same symptoms the first time	193	7.2	13.1	100.0
Total	1469	54.7	100.0	
Missing 99	1216	45.3		
Total	2685	100.0		

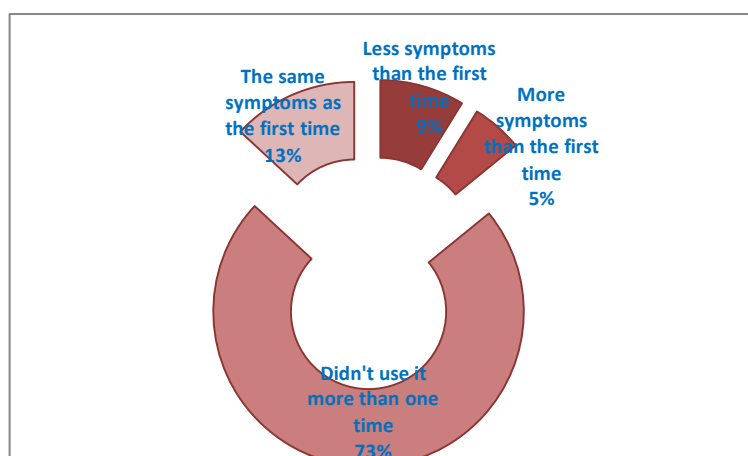
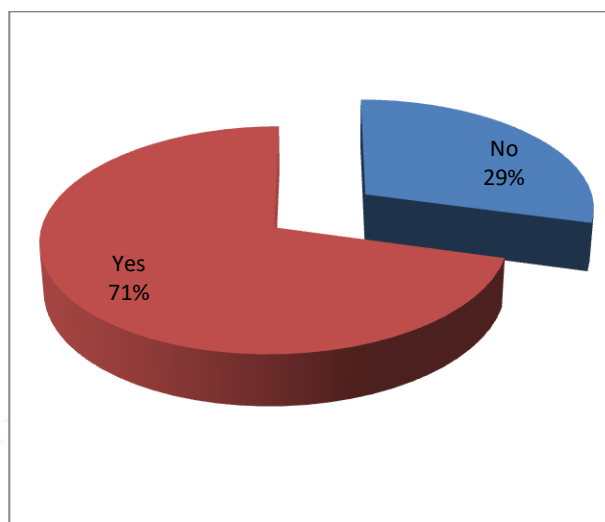
**Figure 18:** Experience of symptoms by the use of the epidural analgesia more than once

Table 22: Support using the epidural analgesia in the first pregnancy

Do you support using the epidural analgesia in the first pregnancy?	Frequency	%	Valid %	Cumulative Percent
No	576	21.5	29.3	29.3
Yes	1393	51.9	70.7	100.0
Total	1969	73.3	100.0	
Missing 99	716	26.7		
Total	2685	100.0		

**Figure 19:** Support using the epidural analgesia in the first pregnancy**Table 23:** Advise other women to use the epidural analgesia

Do you advise other women to use the epidural analgesia?	Frequency	%	Valid %	Cumulative Percent
No	566	21.1	28.1	28.1
Yes	1449	54.0	71.9	100.0
Total	2015	75.0	100.0	
Missing 99	670	25.0		
Total	2685	100.0		

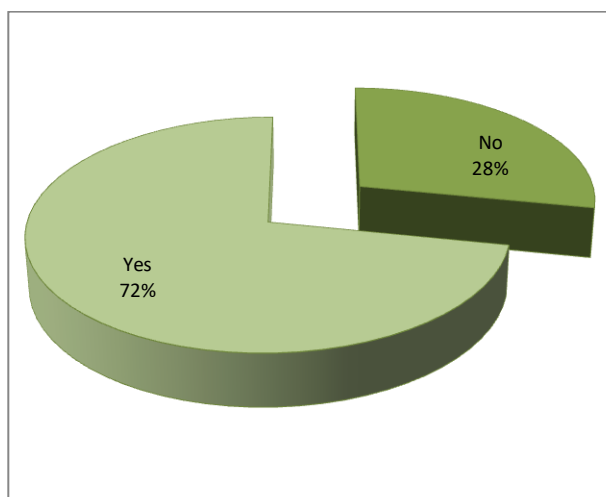
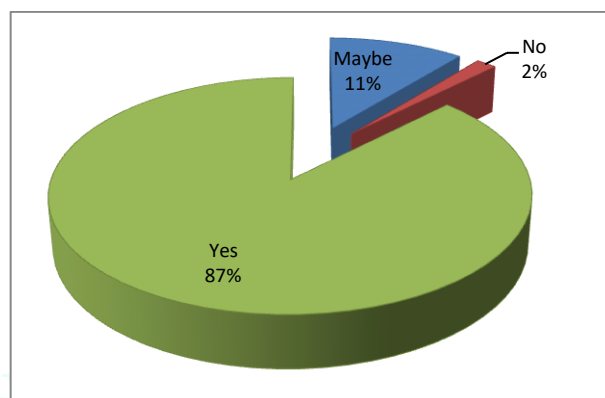
**Figure 20:** Advise other women to use the epidural analgesia

Table 24: Spreading and demand for epidural analgesia

Do you feel that the epidural analgesia is spreading widely in the recent period and has a demand?	Frequency	%	Valid %	Cumulative Percent
May be	232	8.6	10.9	10.9
No	35	1.3	1.6	12.5
Yes	1867	69.5	87.5	100.0
Missing 99	2134	79.5	100.0	
Total	551	20.5		
Total	2685	100.0		

**Figure 21:** Spreading and demand of epidural analgesia

All the Tables and Figures can be summarized and interpretation as the following: The majority of the participated women were from Hebron Governorate (~27%), then Jerusalem (~20%), and Ramallah and Nablus Governorates (~13%) respectively (Table and Figure 1), this might be because Hebron governorate has the highest population density in Palestine. Most women participated in the study; their age is between 25-30 (~40%) then women aged between 20-25 (37%) as shown in Table and Figure 2. About 786 women (29%) completed the questionnaire have been married for 1-2 years, while 733 women their marriage were 2-4 years as shown in Table and Figure 3. About 43% of the women (380) in this study didn't use the epidural analgesia because they are fearing from its side effects; which high, while 236 women (~27%) didn't use it because they fear of the injection. After all, it is given in the back, 41 women (~5) they did not use it because they delivered their babies by cesarean delivery and either used spinal or complete anesthesia, and only 91 women (~10%) didn't use it due to lack of knowledge about it. The cost one of the reasons women didn't use the injection as 32 women due to the cost did not use epidural analgesia and 14 women their birth was facilitated well so they felt that they didn't need it. It is worth mentioning that 10 women only wanted to experience natural birth so they refuse to take it. Other causes were summarized in Table 5.

Table 6 summarized the reason or the person who advise the participated women to use the epidural analgesia at labor; 960 women (~54%) were used it as the physicians advised them to do that, 583 women (~33%) used according to the advice of their relatives or friends, and 81 women from previous experience they have been used the injection. Besides, nobody advised 37 women to use it; they used it by themselves as it was their own decision, and 23 women used it after searching or know about it from the internet or Facebook groups or social media. Only 18 women take the

injection due to the labor pain and 29 women used the epidural analgesia in their cesarean delivery as they believe that it is better and safer than full anesthesia. Other reasons were shown in Table 6 as mentioned.

The majority of women used the epidural analgesia more than one time (312; ~17%) and in first and second birth as 1165 women (~64%) used in first birth and 189 women used it in the second one as shown in Table 7. About 78% of women (1424) used the injection only one time, this may be their delivery is the first one or due to the cost or other reasons, while ~16% (297 women) used it twice as shown in Table 7 and Figure 5. Only 619 women (~30%) who used it didn't know the side effects of epidural analgesia, while most of the women used the injection have (1475 women; ~70%, Table 8 and Figure 6). Most of the participated women used the epidural analgesia (1186 women, ~64%) signed a consent form including the responsibility of any negative effects occurs and ~36% (679 women) of the women didn't sign anything (Table 9 and Figure 7). Nearly 40% (730) of the women used epidural analgesia didn't feel signs and symptoms appear after birth, while 412 women (~22%), it is difficult to conclude if this pain is due to the injection or the birth. Other signs and symptoms women feel both headache and back pain together (272 women; ~15%) or headache alone (97 women, ~5%). It is worth to mention that some women who used the epidural analgesia injection (89) suffer from the allergy at the site of injection. Other signs and symptoms occur in women after they used the injection are shown in Table 10. 1383 women out of 1835 women who experienced signs and symptoms after the use of the injection answered the question if they consult a doctor for the signs and symptoms they faced, only 418 women of them (~32%) have seen a doctor and 884 women (~68%) didn't see any doctor for that (Table 11 and Figure.(

Regarding any analytical test the women had before using the injection, the majority of them did not have any test (1305 women; ~71%), while only 524 women (~29%) had tested before using the epidural analgesia injection (Table 12 and Figure 9). When we asked the women who used the injection if it is painful when injected, 543 women (29.34%) answered, 800 women (~43.22%) answered no; it isn't painful, and 508 women (27.44%) said it is maybe painful (Table 13 and Figure 10). 482 women (~28%) were given the epidural analgesia when their uterus expansion is 3-4 cm, 355 women given the injection when their uterus expansion 1-2 cm, and also 355 women when the expansion of their uterus is 4-5 cm, while when the expansion is more than 5 cm; only 218 women are given the injection and when it is 2-3 cm 325 women is also given the injection as shown in Table 14 and Figure 11. When the women asked what is the percentage of the epidural analgesia reduce the pain as shown in Table 15 and Figure 12, 35% of the women (621) said it reduces the pain by 80-100%, while 434 women said it reduces by 60-80%, and 322 women answered it only reduces the pain by 0-20% and 230 women mentioned it is 40-60% affect the pain. The question about the difficulty of pushing the fetus during delivery after taking the injection, 795 women (~46%) said that they did not face any difficulty, 661 women said yes (~38%), and 275 women (~16%) said may be as shown in Table 16 and Figure 13. In 593 women the sensation of the lower body returned after more than 3 hours, in 449 women after 1-2 hours, in 384 women after 2-3 hours and in 362 it returns after 0-1 hour as shown in Table 17 and Figure 14.

Table 18 and Figure 15 shows the answered of women; if the epidural analgesia affects their child, majority of women (1657; ~91%) said the injection didn't affect their Childs and 1139 women (~77%) said their no long-term effect as well (Table 19 and Figure 16). 1218 women (61%) are willing to take the epidural analgesia injection in the next pregnancy as shown in Table 20 and Figure 17. When women who used the injection asked; if they use the epidural analgesia more than once, did they experience the same symptoms the first time? 1068 women answered that they didn't use it more than one time, 193 women answered the symptoms are the same as the first time and 130 women mentioned they experienced fewer symptoms than the first time, while 78 women experienced more symptoms than the first time (Table 21 and Figure 18). 1393 women (~71%) support using the epidural analgesia in the first pregnancy and 576 women (~29%) didn't support (Table 22 and Figure 19). About 72% Of women (1449) willing to advise other women to use the epidural analgesia, while 566 women (~28%) not willing to advise other women of using the injection. 1867 women (~88%) feel that the epidural analgesia is spreading widely in the recent period and has a demand, while only 35 women said it isn't, and 232 women said it maybe is spreading widely in the recent period and has a demand.

DISCUSSION

The research study included 2685 Palestinian women, which they have filled the questionnaire online, that women are divided into two groups. The first group was 893 women (~33%) who didn't use the epidural analgesia, and the second group is 1792 (~67%) women who used the analgesia during labor.

The research study included Palestinian women from different Governorates in Palestine. The participated women are as the following: 27.0% of women from Hebron, 20.0% from Jerusalem, 6% from Bethlehem, 7.0% from Jenin, 13.0% from Ramallah, 5% from Tulkarm, 5% from Gaza, 2% from Qalqilya, 13% from Nablus and 2% from Jericho. The

age of these women is between 25-30 years (40.2%), between 20-25 years (37.0%), between 30-35 years (13.4 %), 3.6% are between 35-40 years, 5.1% is less than 20 years and 0.6 % is more than 40 years old. The period of the marriage of these women filled the questionnaire are 7.4% 8-10 years, 9.1% 6-8 years, 16.1% 4-6 years, 27.3 % 2-4 years, 29.3 1-2 years, and 10.8% more than 10 years. To the best of our knowledge, this is the first study about epidural analgesia in Palestinian women.

For different reasons 893 women didn't use the injection, the majority of women (380, ~43%) didn't use it because they are fearful of the side effects of the epidural analgesia. While 236 women (~27%), didn't take it due to their fears as it is given in the back. ~10% (91 women) have a lack of knowledge about the injection; they didn't know and nobody told them about it, thus they didn't use it. The high cost of the injection also one of the factors why the women didn't use it, as 32 women mentioned due to this reason they even try it. Some women (41) delivered their babies by cesarean and given either spinal or complete anesthesia instead of epidural analgesia. Some women wanted to experience the natural birth or the expansion occurred rapidly so they didn't use or need it. Other women their birth was facilitated well or the injection is not available in the hospital they delivered their babies. It is worth mentioning that the Palestinian Government hospitals do not have the epidural analgesia injection; it is only available in the private hospitals and/or medical centers. All other reasons why women didn't use it are summarized in Table 5.

About 70% of women that used the epidural analgesia found to know the side effects of Epidural analgesia and 30% are not. However, 64% of women who used the epidural analgesia have signed a form of responsibility for any negative effects, and 36 % are not. Most of the women used the Epidural due to the advice from other women or people such as a member of family or friends, physicians, or because they are a member of medical staff (nurses, physicians, etc.). Some women came to know about epidural analgesia from Facebook groups. Other women are hardly reading or hearing about epidural analgesia and severe pain from labor.

The sign and symptoms in women used epidural analgesia are includes headache, backache, nausea, allergy at the site of injection, high body temperature, high blood sugar which may lead to diabetes, hypotension or hypertension, vomiting, tremor, itching, pain, and numbness in one or two legs, feeling cold, didn't feel in their lower part for 12 hours after birth. It is worth mentioning that these or other symptoms didn't appear in all women but they occur in some of them. Other women didn't feel any symptoms at all. 32% of women who suffer from various side effects have visited the physician for treatment from these signs and symptoms, while 68% of women did not visit any physician. Women who experienced the sign and symptoms from Epidural analgesia they mentioned it is not a reason not to use the injection again because they feel it is not too harmful and not a real reason for not using the injection again. However, the sign and symptoms can be classified as mild or moderate symptoms and the effect is not prolonged. Women who used Epidural analgesia 29% of them did medical tests before the use of the injection, while 71% of them did not do any medical tests because they believe it is an extremely effective and popular treatment for labor pain.

In Canada, the epidural rate varies between the provinces from 30% to 69%¹⁰. The use of epidural analgesia in the US has tripled between 1981 and 2001, with 60% of women using this technique in large hospitals ¹¹. In our research study, 67% of women (1792) used Epidural analgesia

injection. 43.2 % (800) of women who participated in this research study mentioned that the epidural injection is painless, 29.3% (543) said that it is painful and others filled it may be painful. In women used epidural injection, the expending of uterus was 1-2 cm in 355 women (20.5%), 2-3 cm in 325 women (18.7%), 3-4 cm in 482 women (27.8 %), 4-5 cm in 355 women (20.5%) and more than 5 cm in 218 women (12.6 %). The percentage of birth pain which anesthetized by epidural analgesia; 621 women (35%) mentioned that the epidural injection anesthetized about 80-100% , 24.5% (434) is 60-80% ,13% (230) is 40-60% , 9.4 (166) is 20-40% and 18.2% (322) is 0-20% . While 795 women (45.9%) didn't have any difficulty pushing the fetus during delivery but 38.2% has a difficult push, and 15.9% said maybe they have. 20.2% of the women sensation return to the lower body and the effect of anesthesia abolish after 0-1 hours, 25.1% is after 1-2 hours, 21.5 is after 2-3 hours, and 33.2% after more than 3 hours.

The effects of epidural injection in Childs, 91.2% of women participated in this research study, and used the epidural injection did not affect their Childs, 3.5 % has affected them and 5.2 % mentioned it may be affecting them. Out of these 62.5 % said that the effect didn't remain for a long period, 23.1% is affected for long period and 14.4% may remain for long period.

Regarding the repeated use of epidural injection, 61.0% of the women used it in this survey thinks of using an epidural injection in the second birth, while 24.5% will not use it again, and 14.6% maybe they will be used again. The frequency of using epidural injection 78.4 % of women used it once, 16.3% used twice, 4.1% used three times and 1.2% used more than three times. About 73% of women didn't use epidural more than one time, 5% of women used it more than once and they mentioned that they have suffered higher symptoms than the first injection, while only about 9% suffered lower symptoms than first use and 13% have filled that they suffered the same symptoms in both times. 71.0% of women supported using the epidural injection in the first pregnancy and 29.0% did not. While 72.0% of used mothers advised other women to use epidural injection during labor and 28% did not advise any woman of using it. 87.0% of women agreed that the epidural injection use in labor have become widely common in the recent years and has a high demand, 2% disagreed in this and 11% mentioned it maybe became common.

In our research study as we mentioned earlier have two groups the first one who didn't use the epidural injection and the second one who used it. The percentage of women that used the epidural injection is 67.0% and who didn't use it is about 33.0%. The main reasons of those who didn't use the epidural injection are panic and fear from the injection because it is given in the back, their knowing that the injection is harmful, a natural birth experience, and a sense of pain, the administration phase exceeded the expansion of more than 5 cm, cesarean births, the injection cost did not

recommend by the physician, unavailable epidural injection in the government hospital, and because they didn't want to try it.

CONCLUSION

Epidural analgesia appears to be common in use in Palestinian women and is a safe and effective way to lower the pain of labor. The study shows that the women who have taken the injection didn't have severe pain and symptoms after birth. The injection didn't affect seriously either mother or/ and fetus, and the high incident about the effect not prolong. Most women in this study recommended other women to use epidural analgesia injection during labor and they will use it again. The epidural analgesia found to be widely common in Palestinian women and the majority of women used it and the women want to use it again. As mentioned, the side effects of epidural analgesia on mother and child were found to be minor, but further research may be needed to evaluate rare but potentially severe adverse effects of epidural analgesia on women in labor and long-term neonatal outcomes. To the best of our knowledge, this is the first study about epidural analgesia in Palestinian women.

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