DETERMINATION OF MOBILITY STATUS AND AFFECTING FACTORS OF WOMEN WITH CESAREAN SECTION

SEZARYEN İLE DOĞUM YAPAN KADINLARIN HAREKETLİLİK DURUMLARI VE ETKİLEYEN FAKTÖRLERİN BELİRLENMESİ

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ABSTRACT

Aim: Cesarean section is among the most common major surgical interventions performed in the world, and in recent years, the prevalence of cesarean sections has been on the rise. This study aims to determine the movement levels of women who gave birth by cesarean section after the first mobilization and factors affecting their mobility levels.

Methods: This descriptive cross-sectional study was conducted at a maternity hospital located in eastern Anatolia Region in Turkey. The data were collected through face-to-face interviews and observation at the patients' rooms by a member of the research team. A questionnaire form, the Patient Mobility Scale, and the Observer Mobility Scale were used during the collecting the data. Data collection process took approximately 15-20 minutes for each participant. The data were analyzed using SPSS (version 18.0) software.

Results: It was found that the women's Patient Mobility Scale mean scores were 77.78±18.48 and their Observer Mobility Scale mean scores were 12.01±0.61. It was found statistically significant difference between their education level, social support providers, the type of anesthesia and their Patient Mobility Scale and Observer Mobility Scale mean scores (p<0.05).

Conclusions: It has found that the women experienced more pain and difficulties when turning from one side to the other in the bed and when standing up on the bedside. And also, the women who had general anesthesia during cesarean section, low educational level, and high body mass index, whose primary social support was provided by their husband, and who did not desire the pregnancy had been lower mobility levels after cesarean section than the others.

Keywords: Cesarean delivery, Mobility, Puerperants, Woman giving birth.

ÖZET

Amaç: Sezaryen dünyada en sık uygulanan majör cerrahi girişimlerden biridir ve son yıllarda sezaryen prevalansı artmaktadır. Bu çalışma, sezaryen ile doğum yapan kadınların ilk mobilizasyondan sonraki hareket düzeylerini ve etkileyen faktörlerin belirlenmesini amaçlamaktadır.

Yöntem: Bu tanımlayıcı kesitsel çalışma, Türkiye'de Doğu Anadolu Bölgesi'nde bulunan bir doğum hastanesinde yapılmıştır. Veriler, araştırma ekibinin bir üyesi tarafından hasta odalarında yüz yüze görüşme ve gözlem yoluyla toplanmıştır. Veri toplama sürecinde bir anket formu, Hasta Hareketlilik Ölçeği ve Gözlemci Hareketlilik Ölçeği kullanılmıştır. Veri toplama süreci her bir katılımcı için yaklaşık 15-20 dakika sürmüştür. Veriler SPSS (versiyon 18.0) yazılımı kullanılarak analiz edildi.

Bulgular: Kadınların Hasta Hareketliliği Ölçeği ortalama puanlarının 77,78±18,48 ve Gözlemci Hareketlilik Ölçeği ortalama puanlarının 12,01±0,61 olduğu belirlendi. Eğitim düzeyleri, sosyal destek sağlayıcıları, anestezi türü ile Hasta Hareketlilik Ölçeği ve Gözlemci Hareketlilik Ölçeği puan ortalamaları arasında istatistiksel olarak anlamlı fark bulundu (p<0,05).

Sonuç: Kadınların yatakta sağa sola dönerken ve yatak başında ayağa kalkarken daha fazla ağrı ve zorluk yaşadıkları saptanmıştır. Ayrıca sezaryen sırasında genel anestezi uygulanan, eğitim düzeyi düşük, vücut kitle indeksi yüksek, sosyal desteğini birincil olarak eşinden sağlayan, gebelik istemeyen kadınların diğerlerine göre sezaryen sonrası hareketlilik düzeyleri daha düşük bulunmuştur.

Anahtar Kelimeler: Doğum yapan kadın, Hareketlilik, Lohusalar, Sezaryen doğum.

INTRODUCTION

Cesarean delivery serves as an alternative, life-saving method aimed at securing the health of the mother and the baby, in cases where there are complications during the pregnancy or labor and vaginal delivery pose a risk (Cunningham et al., 2018; Demirbaş et al., 2017). However, apart from these situations, cesarean delivery constitutes greater risk to the health of the mother and the baby compared to that of vaginal delivery (Başar and Yeşildere Sağlam, 2018). Cesarean delivery rates in Turkey (54.4%) are well above the recommended by WHO ideal range (TDHS, 2018; OECD, 2019).

Women who undergo cesarean sections may remain immobile for either longer or shorter periods of time depending on the postoperative incision site and the amount of pain they experience (Havey et al., 2013). As in all surgical interventions, serious problems (urinary tract infections, respiratory tract infections, pulmonary embolisms, and venous thrombosis) may develop due to being inactive during the course of cesarean delivery (Ghotbi et al., 2014). Long-term inactivity may cause delays in recovery and prolonged hospital stay, as well as loss of strength, mood changes, and adverse effects on comfort levels (Morris, et al., 2010; Ganer Herman et al., 2020a). Being mobile in the early period after undergoing a cesarean section reduces possible complications, supports wound healing and intestinal peristalsis, expedites early discharge from hospital and return to daily life and enables the mother to take responsibility for their own care in a shorter amount of time (Morris et al., 2010; Smeltzer et al., 2010). Therefore, postpartum women should try to stand up as soon as possible after a cesarean delivery (Smeltzer et al., 2010; Yolcu et al., 2016). The Ministry of Health Postpartum Care Management Guide recommends that you ensure and encourage mothers to be mobilized as soon as possible in the postpartum period. Early mobilization is very important in preventing thromboembolic events. (The Ministry of Health, 2018). In cesarean section, the ERAS protocol recommends early postoperative mobilization. Early mobilization improves lung function and tissue oxygenation, insulin resistance, reduces the risk of thromboembolism and reduces hospital stay (Polat, 2018).

By providing quality, evidence-based care to postpartum women after a cesarean section, health care professionals especially midwives and nurses can minimize possible complications (Smeltzer et al., 2010; Kaneda et al., 2007) and can promote early recovery. In addition, early recovery will shorten the hospital stay and thus contribute to the reduction of care costs (Kılıç, Öztunç 2012). Therefore, in preparing training programs, the sensory, mental, physical and functional performance level of the postpartum women should be taken into account, and activities should be planned on an individual basis. As some women may be unwilling to perform certain activities or experience fear of moving, midwives and nurses should first of all create a safe environment and then evaluate the mother's readiness for mobility and situations that limit their ability to move. After evaluating these issues, they should encourage the mother to engage in activities and provide them the opportunity to express their fears and concerns about mobility (Smeltzer et al., 2010; Leong et al., 2017; Ricci et al., 2015).

Evaluation of the level of mobility after cesarean section may contribute to the acceleration of the recovery process of the puerperium, the planned and regular implementation of the activities, the improvement of the quality of care and the relevant literature. A few studies have been found to date on examined mobility after cesarean section (Karaca et al., 2019; Sharpe et al., 2019; Ganer Herman et al., 2020a, 2020b, 2020c). This study aimed to determine the movement levels of women who gave birth by cesarean section and the factors affecting movement levels at the time of first mobilization. The research question was: What was the mobility level of women at the time of early mobilization after cesarean section?

MATERIAL AND METHODS

Study Sample and Design

This study was designed as a descriptive-cross-sectional study. The STROBE reporting guideline checklist for cross-sectional studies was used for reporting in this study. The study was conducted between June and September 2019 with puerperants hospitalized in a maternity hospital located eastern Anatolia Region in Turkey. According to data from the previous year, 1953 pregnant women had a cesarean delivery at the hospital. Based on these data, the sample size was planned with 376 puerperants by applying a sampling method on the known universe. 58 of them could not complete the activities at OMS items because they stated that they felt intense pain and 18 of them of first mobilization time was postponed to after the 8th hours. So, the study was completed with 300 puerperants.

The sample inclusion criteria were being at least 18 years old, having a planned cesarean section, having a stable general condition, being mobile within the first eight hours, not having chronic disease or mental problems and receiving care in the cesarean clinic.

Data Collection Tools

Questionnaire form: The form has seven questions about the socio-demographic, obstetric, general health status and surgery-related characteristics of the participating puerperants.

Patients mobility scale and observer mobility scale: The Patient Mobility Scale (PMS) and Observer Mobility Scale (OMS), were developed by Heye et al. (2002) to measure patient perceptions and to facilitate objective observations regarding mobility after surgery.

PMS This scale is used to evaluate to level of pain and difficulty caused by four activities (turning from one side to the other in the bed, sitting on the bedside, standing up on the bedside, and walking in the patient room) performed after surgery. The scores from each item range from 0 to 15, while the total scale score ranges between 0 and 120. Higher scale scores indicate an increase in pain and difficulty related to an activity (Heye et al., 2002). The Cronbach's alpha of the PMS was 0.90 in the Turkish validity-reliability study (Ayoğlu, 2011). In this study, the Cronbach's alpha was found to be 0.95.

OMS Dependence-independence status/level during the four activities performed after surgery is scored between 1 and 5. Scores associated with turning, sitting, standing and walking are all summed and then divided by the total number to calculate average score (Heye et al., 2002). The Cronbach's alpha of the OMS was 0.73 in the Turkish validity-reliability study (Ayoğlu, 2011). In this study, the Cronbach's alpha was found to be 0.79.

Data Collection and Analysis

The data were collected through face-to-face interviews and observation at the patients' rooms by a member of the research team using by a questionnaire form, the PMS, and the OMS.

During the data collection stage, clinical nurses were consulted whether the women were stable or not before their first mobilization time. For this process, the vital signs of the puerperants were evaluated by the clinical nurses after two minutes of sitting on the bed. The women were included in the study when their vital signs were stable and they were suitable to be capable of mobilization according to clinical nurses' observations.

The women were mobilized after the puerperal pain was taken control within the first eight hours after cesarean section. By the clinical nurses, analgesics drug was used postoperatively according to the physician's order to be controlled pain. The preanesthetic and postoperative medications was similar and anesthetic and surgical technique was induced using the same protocol in all the patients. Therefore, all women in the study had been standard care after cesarean section. As part of simultaneously with the mobilization process, the one of the researcher addressed the items on the PMS to the puerperants whose vital signs were stable and who met the sample criteria in order to evaluate their level of movement and their experiences about the degree of pain and difficulty during the movement. The followed by this evaluation, the mobility levels of the puerperants was determined using by the OMS. Data collection process took approximately 15-20 minutes for each participant.

The data were analyzed using SPSS (version 18.0) software. Mean and standard deviation were used to measure quantitative changes in the study, while number and percentage were used for qualitative variables. One-way ANOVA and independent groups t-test were used for determining the difference between groups; post-hoc analyses were conducted using Bonferroni and Least Significant Difference (LSD).

Ethics Approval

The data were collected after obtaining the approval of the Atatürk University Faculty of Health Sciences Ethics Committee (2019, number:06/02). Before starting data collection, participants and clinical nurses were informed about the design of the study. All steps of the research were carried out in accordance with the Principles of the Declaration of Helsinki.

RESULTS

In Table 1, it was found that the 43% of the puerperant women experienced much pain when turning from one side to the other, 40.3% of them experienced much pain when sitting on the bedside. 47.7% of them experienced much pain when standing up on the side of the bed, 37.0% of them reported feeling

only moderate pain when walking in their patient room. In terms of the levels of difficulty, 40.3% of them found it difficult to turn from one side to the other in the bed, 38.0% found it difficult to sit on the bedside, 42.7% found it a little difficult to stand up on the bedside, and 39.7% found it difficult to walk in their patient room. And also, the puerperants' total mean score was calculated to be 77.78 ± 18.48.

Table 1. Distribution of the participants' characteristics related to degree of pain and difficulty on the Patient Mobility Scale

The Patient Mobility Scale Items:	Level of Feeling Pain									Level of Experiencing Difficulty								
	A little pain		Moderate pain		Much pain		The worst pain		$\bar{X}\pm SS$	Easy		A little difficult		Difficult		Very difficult		$\bar{X}\pm SS$
	n	%	n	%	n	%	n	%		n	%	n	%	n	%	n	%	
Turning from one side to the other in the bed	32	10.7	88	29.3	129	43.0	51	17.0	3.66±0.88	25	8.3	103	34.3	121	40.3	51	17.0	3.66±0.86
Sitting on the bedside	41	137	94	31.3	121	40.3	44	14.7	3.56±0.90	33	11.0	110	36.7	114	38.0	43	14.3	3.51±0.87
Standing up on the bedside	26	8.7	103	34.3	143	47.7	28	9.3	3.58±0.78	26	8.7	128	42.7	113	37.7	33	11.0	3.55±0.80
Walking in the patient room	54	18.0	111	37.0	109	36.3	26	8.7	3.36±0.87	51	17.0	119	39.7	104	34.7	26	8.7	3.35±0.86
Scale Total Score	**77.78±18.48**																	

Table 2. Distribution of participants' responses to the Observer Mobility Scale items

Observer Mobility Scale Items	Observer Mobility Scale										$\bar{X}\pm SS$
	Ability to do independently		Doing by verbal stimulation Ability to do independently		Ability to do with verbal stimulation and physical help		Ability to do with the help of a nurse		Inability to do despite help		
	n	%	n	%	n	%	n	%	n	%	
Turning from one side to the other in the bed	17	5.7	66	22.0	128	42.7	83	27.7	6	2.0	2.98±0.89
Sitting on the bedside	14	4.7	58	19.3	170	56.7	51	17.0	7	2.3	2.93±0.80
Standing up on the bedside	8	2.6	67	22.3	154	51.3	60	20.0	11	3.7	3.10±1.91
Walking in the patient room	6	2.0	63	21.0	174	58.0	47	15.7	10	3.3	2.99±0.72
Observer Mobility Scale Total Score											**12.01±0.61**

Verbal stimulation and physical assistance were required by 42.7% of the puerperants to turn from one side to the other in the bed, by 56.7% to sit on the bedside, by 51.3% to stand up on the bedside, and by 58.0% to walk in their patient room. The total OMS score of the puerperants was found to be 12.01 ± 0.61. (Table 2).

Table 3. Comparison of the participants' descriptive characteristics and total mean scores on the Patient Mobility Scale and the Observer Mobility Scale (n=300)

Characteristics	n	%	Patient Mobility Scale X±SD	Observer Mobility Scale X±SD
Age				
18-26	105	35.0	78.89±20.83	11.91±2.56
27-35	141	47.0	78.21±18.15	12.21±2.64
36-43	54	18.0	74.50±13.83	11.65±2.54
Test and p value			F=1.08 p=0.34	F=1.03 p=0.36
Level of Educational				
Primary school	70	23.3	80.47±19.20	12.64±2.48
Secondary School	107	35.7	79.00±16.37	12.35±2.63
High school	84	28.0	80.04±18.22	11.63±2.55
University	39	13.0	73.72±18.32	11.61±2.61
Test and p value			F=2.77 **p=0.04**	F=3.26 **p=0.02**
BMI Classification (kg/m²)				
Normal (18.5-24.99)	79	26.3	72.98±18.29	11.84±2.51
Slightly overweight (25-29.99)	191	63.7	78.29±18.02	11.91±2.53
Obese (> 30.0)	30	10.0	87.10±18.35	13.03±2.98
Test and p value			F=6.80 **p<0.001**	F=2.66 p=0.07
Number of cesareans				
1	166	55.3	78.74±19.31	12.08±2.56
2	103	34.3	76.99±17.59	11.86±2.57
3	31	10.3	75.23±16.91	12.09±2.88
Test and p value			F= 0.61 p=0.54	F=0.24 p=0.79
Desired pregnancy				
Yes	246	82.0	76.85±18.77	11.97±2.55
No	54	18.0	81.99±16.61	12.17±2.78
Test and p value			t=-0.50 p=0.64	t=-2.01 p=0.05
Social support provider* **(n=289)**				
Partner	82	28.4	82.42±12.47	12.95±2.18
Mother	107	37.0	71.72±21.33	11.42±2.66
Family	69	23.9	80.13±18.60	11.70±2.55
Friends	31	10.7	81.10±18.21	12.45±2.78
Test and p value			F=6.46 **p<0.001**	F=6.39 **p<0.001**
Anesthesia Type				
General	159	53.0	83.54±15.70	12.73±2.49
Epidural	68	22.7	80.77±16.31	11.81±2.41
Spinal	73	24.3	62.41±17.51	10.61±2.37
Test and p value			F=43.54 **p<0.001**	F=18.89 **p<0.001**
Age Mean ± SS	29.25±6.01		r=-0.101 p=0.08	r=-0.030 p=0.60

* participants' own statements

Table 3 shows the comparison of the descriptive characteristics of the puerperants based on the total mean scores of the PMS and OMS after the first mobilization. 35.7% of the puerperants completed secondary school, and when education level and PMS and OMS scores were compared, the difference was statistically significant (p=0.04, p=0.02, respectively). The difference between BMI and mean PMS score was statistically significant (p <0.001) and as a result of further analysis, it was observed that the difference was caused by the obese participants. While there was no statistically significant difference between the desired pregnancy status and the mean PMS score (p>0.05), the difference between this

status and the mean OMS score was statistically significant (p=0.05). When the mean PMS and OMS scores were compared on the basis of the person providing social support after cesarean section, the difference was statistically significant (p<0.001), and results from further analysis showed that the difference stemmed from the mother. When the type of anesthesia and the mean PMS and OMS scores after the first mobilization were compared, the difference was statistically significant (p<0.001). Further analysis showed that the difference was due to the type of spinal anesthesia.

DISCUSSION

The elective use of cesarean section, a surgical intervention, has led to its steep rise as a delivery method. Therefore, it is of great importance that puerperants receive the necessary support after undergoing a cesarean section. This study was conducted to draw more attention to the importance of the subject. The results of this study are discussed in reference to studies examining mobility levels after surgical interventions. In the current study, it was observed that women experienced more pain and difficulty in turning from one side of the bed to the other side of the bed compared to other activities, and that women had experienced very difficult standing up at the bedside (Table 1). While Yolcu et al. (2016) have also reported similar results as this study as Ayoglu (2011) have reported that sitting on the bedside was the most difficult activity (Yolcu et al., 2016; Ayoğlu, 2011). Feeling pain and impaired physical activity is one of the most important problems experienced after cesarean section (Apay and Pasinlioglu, 2014; Nazik and Eryilmaz, 2013). Postoperative pain control has become more important in the postpartum period, as uncontrollable pain can negatively affect the early interaction between mother and baby (Gürsoy et al., 2014). So, puerperants should try to move independently to the greatest tolerable extent possible (Castelino et al., 2016).

In the study, postpartum women's level of feeling pain and experiencing difficulty and the levels of ability to do activities, it can be said that are moderate. On the other hand, Capık et al., (2016) found that most of the puerperant women experienced severe and very severe pain after cesarean section. It was thought that the different results in the studies were due to the characteristics of the sample groups and the level of dependence on pain, difficulty and mobility due to different surgical interventions.

More than half of the puerperants were able to perform the walking activity in their patient room with verbal stimulation and physical assistance, but when the mean OMS item scores were examined, it was found that they were unable to move while standing up from the bed (Table 2). The sequential order of the activities that require assistance after surgical interventions differ by study, which can be attributed to certain characteristics, such as sample groups and type of surgical intervention. A study reported that participants needed more help during the movement of sitting on the bedside (Ayoğlu, 2011), whereas another study found that participants needed more help during the movement of turning from one side to the other in the bed (Yolcu et al., 2016). Puerperant women may be apprehensive about walking due to pain at the incision site after cesarean section. In encouraging the postpartum women to move in the postoperative period, after effectively managing their pain, their adaptation to this process can be improved with various practices such as standing up and walking instead of eating in bed and sitting on a chair while breastfeeding.

The mean PMS and OMS scores of the puerperants who completed primary school were the highest than the others. It was found that the difference between the women's education levels and their mean scores on the PMS-OMS was statistically significant (p=0.04, p=0.02, respectively). It was further found that as the education level increased levels of pain and difficulty during movement decreased and the ability to move increased. Understanding the importance of moving postoperatively and its effect on recovery is closely related to education level. It can be argued that as the level of education increases, the experience of pain and difficulty can be controlled more easily, perceived pain decreases, and the desire and ability to move independently increase.

A great majority of the participating women in the current study were slightly overweight. It was observed that as the BMI of the puerperants increased the level of pain and difficulty they experienced increased, and the ability to move decreased (p<0.001). Obesity is one of the factors that negatively affect mobilization. Studies have shown that as the BMI increases, individuals experience more pain and difficulties during mobilization, grow more afraid of moving due to the anxiety of feeling pain, and need more help (Vincent et al., 2010). For this reason, health professionals, especially midwives and nurses, should encourage overweight women to early mobilization, independent

movement and self-care in order to protect them from inactivity and possible complications such as thromboembolism (Ganer Herman et al., 2020c).

In this study, it was found that the women' who desire pregnancy the mean OMS score of those was lower than that of those who did not. Those who become pregnant voluntarily are willing to take on the role of motherhood, which includes many new activities such as breastfeeding and baby care, and they are careful, energetic and active while fulfilling this role (Gürsoy et al., 2014). In one study has been shown that the women who desire pregnancy to be happier during pregnancy and better able to manage this process (Gençer and Apay, 2020). Even though the postpartum women have limited movement for a while due to the cesarean section, they want to be independent in the basic care of both themselves and their babies. This willing acceptance of women's new roles is thought to enable them to act more independently.

Social support is needed in every period of life, and the importance of social support becomes more paramount in key periods, like pregnancy, birth and postpartum period, all of which hold a special place in women's lives (Mermer et al., 2010). In this study, the source of social support for the majority of the puerperants was their mothers, and it was found that those who received support from their mothers experienced less pain and difficulties after cesarean section and had better mobility (p<0.001). It is thought that both the physical and emotional support provided by the puerperants' mother and their positive outcomes of the own motherhood experience support the postpartum women to adapt to the process faster and act more independently.

In the study, the mean PMS and OMS scores of the puerperants who underwent cesarean section with spinal anesthesia were lower than the scores of those who received epidurals and general anesthesia. The puerperants who received spinal anesthesia, as compared to other groups, experienced less pain and could move better (Table 3). Similarly, Ghaffari et al., (2018) reported that women who received spinal anesthesia did not experience problems with mobility and self-care and did not feel as much pain and discomfort compared to others. In cesarean sections performed under general anesthesia, the woman is unconscious at the time of delivery, and the anesthetic agent affects the whole body (Afolabi and Lesi, 2012). And also, in the postpartum period, considering the side effects of general anesthesia, it is seen that the woman may be more dependent. Spinal anesthesia causes less limitation to early ambulation, thus allowing rapid return to daily activities (Ghaffari et al., 2018). In addition, local anesthesia, compared to general anesthesia, involves less blood loss and less difference between pre-and post-hematocrit levels (Lertakyamanee et al., 1999; Afolabi and Lesi, 2012) which is also important in mobility.

Strengths and limitations
The study only included women were able to be mobilized in the first eight hours after by cesarean section and general health status was stable.

CONCLUSION
Consequently, the puerperants experienced more pain and difficulties when turning from one side to the other in the bed and when standing up on the bedside. The majority of the puerperants could perform the activities with verbal stimulation and physical assistance, and most of them were unable to sufficiently move. Additionally, women's education level, BMI, desire for pregnancy, the person providing social support, and type of anesthesia were factors affecting the mobility level after cesarean section. In line with these results, the readiness for mobilization of women with low education level, high BMI, cesarean section under general anesthesia and unintended pregnancy should be evaluated and mobilization should be encouraged by the health professionals. Moreover, especially midwives and nurses should be preparing an individual activity plan and closely following their mobility. In addition, it is recommended to plan studies to be carried out with different sample groups in which not only the first mobility times of women who gave birth by cesarean section, but also their level of movement during their stay in the hospital, the degree of pain and difficulty they experience are evaluated at regular intervals.

Conflict of Interest
The authors have no conflicts of interest to declare.

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