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Original Article

Pre-operation and post-operation anxiety in cesarean candidates

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Abstract

Introduction

Women undergoing cesarean section may have some difficulties in self-care and the care of their baby due to post-operative pain as well. If anxiety-inducing factors in the mother are not controlled or treated, they can cause dangerous complications before and after cesarean section. This study aimed to investigate the level of anxiety before and after surgery in the candidates for cesarean section in the hospital.

Methods

In the present descriptive-analytical and cross-sectional epidemiological study, 60 women admitted to the gynecology department of Abadan University of Medical Sciences for elective cesarean section entered the study. Data were collected by Hamilton Anxiety Questionnaire and Demographic Specification Questionnaire. Patients completed the anxiety questionnaire 2-3 hours before entering the operating room and 2-3 hours after the operation. Chi-square tests and t-tests were used to analyze the data in SPSS v.22 .

Results

The mean pre-operative anxiety was 9.95 ±7.99, which reached 1.2 ±0.9 after surgery. The mean scores of women's anxiety before and after surgery were significantly different (P <0.05). Before the operation, 45 (75%) had mild anxiety and 15(25%) had moderate anxiety. The different dimensions of the Hamilton Anxiety Questionnaire surgery were significantly different before and after (P <0.05). Hamilton's Anxiety Questionnaire score did not show significant correlation with employment status but there was a significant positive relationship with age (P <0.05).

Conclusion

The majority of participants had mild anxiety, possibly due to a history of cesarean section. Therefore, it is recommended that nurses consider these safe, non-invasive, cost-effective self-care techniques along with medication.

Introduction

Anxiety is a pervasive, unpleasant, ambiguous condition that is associated with the stimulation of the autonomic nervous system (headache, sweating, and palpitation), chest muscle cramps, indigestion, and agitation. The anxious person who is also agitated, cannot sit or stand for a long period. Anxiety, in addition to the motor (visceral) and visceral effects, also affects a person's thinking, perception, and learning. Not only does anxiety affect the motor and visceral nerves, but

it also affects the patient's thinking, perception and learning can be modified [1]. Some scientists have described two types of anxiety. State anxiety is experienced at a specific moment and is caused by certain stimuli, while trait anxiety does not change over time and is an inherent characteristic of the person. However, researchers believe that evaluation of trait anxiety in the absence of anxiety stimuli, is difficult and exacerbation of stimuli can aggravate and cause anxiety [2]. Various factors can cause pre-operation anxiety. The first identified factor of anxiety is fear of pain after the operation. Other factors include being in an unfamiliar situation, concerns about the operation outcomes, fear of anesthesia, feeling threatened by death, changes in body shape or functions, family concerns, or potential lifestyle changes [3].

The previous cesarean procedure, difficult delivery, fetal distress, and breach screening are the indications for the cesarean operation [4]. It is reported that cesarean prevents approximately 187,000 maternal deaths and 2.9 million infant deaths annually. However, unnecessary cesarean surgery can increase the risks of delivery for mothers and also babies [5]. Therefore, although cesarean was firstly introduced as a way of saving lives, nowadays we are facing the term that is described as "cesarean operation epidemic." The mother's fear of natural delivery, as well as late marriages, decreased parental desire for re-pregnancy, the world's rapid population growth, and the fear of losing the baby during the natural delivery process are the main etiologies for this matter [6]. Based on the latest statistics reported in 1397, Iran has the highest rate of cesarean section in the world, unfortunately. The rate of cesarean surgery varies from approximately 30-50% in general hospitals to over 90% in private ones. On the other hand, in the developed and western countries, this rate has been reported between 20% and even about 10% in some countries [7]. Considering the increasing rate of cesarean section and the necessity to prevent anxiety and its complications.Therefore, this study was carried out with the aim of examine the level of anxiety in mothers who are undergoing a cesarean operation.

Methods

Women hospitalized in the gynecological surgery department of hospitals under the surveillance of Abadan University of Medical Sciences for undergoing elective cesarean section were included in this epidemiological, descriptive-analytical, cross-sectional study. The sample size was estimated at 60 patients using Cochran's formula, but 70 cases were studied instead considering the possibility of sample loss. Hamilton Anxiety Questionnaire and Demographic Characteristics Questionnaire was used for data collection. After obtaining the patients' consent and explaining how to fill out the questionnaire, the questionnaires were completed by the patients, 2-3 hours before entering the operating room as well as 2-3 hours after the operation.

Data collection tools

The Hamilton Anxiety Questionnaire is currently one of the most well-known anxiety tests. The rating scale of this questionnaire includes 14 items, each of them related to particular symptoms of anxiety. This test is scored by the therapist and each item has 5 ratings, which are scored from zero to 4 based on the severity of the symptoms. Zero is used for the absence of the symptoms and 4 indicates the severity of the same symptoms in the patient. The Hamilton Anxiety Scale covers a wide range of symptoms that are commonly diagnosed as the symptoms of state anxiety. These symptoms include anxiety, tension, fear, insomnia, and difficulty in concentration. The validity and reliability of the mentioned questionnaire were proved in a study on the Iranian population conducted by Kaviani [8].

Data analysis

Mean and standard deviation in quantitative variables as well as the frequency and percentage in qualitative variables were used in order to describe the collected data. The Kolmogorov-Smirnov test was used to assess the normality of the quantitative variables. Chi-square tests and t-tests were used to analyze the data. Data analysis was conducted by SPSS software version 22. A P-value less than 0.05 was considered statistically significant.

Results

The current study evaluated the level of anxiety before and after the cesarean surgery on 60 pregnant women hospitalized for elective cesarean section in the gynecology ward of hospitals under the surveillance of Abadan University of Medical Sciences. The Hamilton Anxiety questionnaire was filled out by the patients 2-3 hours before and after entering the operation room, the mean age of the participants was 28.60 ± 5.87 (ranging from 16 to 41 years old).

Four patients (6.7%) were employed and 56 (93.3%) were housewives. All participants had a history of previous cesarean operations. 29 cases (48.3%) were high school dropouts, 23 (38.3%) had a high school diploma and 8 women (13.3%) had a higher academic degree (Table 1).

Table 1. Frequency distribution of demographic characteristics of the participants

Characteristics	State	Frequency (Percentage)
occupation	Employed	4(6.7%)
	Housewife	56(93.3%)
	Total	60(100%)
Education	high school dropout	29(48.3%)
	Diploma	23(38.3%)
	Above diploma	8(13.3%)
	Total	60(100%)
History of cesarean section	Yes	0(0%)
	No	60(100%)
	Total	60(100%)

According to Table 2, the scores of different dimensions of the Hamilton Anxiety Questionnaire were significantly different before and after the surgery ($P < 0.05$).

Based on Table 3 and the results of the t-test, the score of the Hamilton Anxiety Questionnaire before and after the operation was not significantly different in the housewives and employed women. In addition, the one-way analysis of variance

Table 2. Mean and standard deviation of Hamilton Anxiety Questionnaire Scale in in the participants before and after the operation

Dimensions	Pre-operation (Mean ± SD)	Post-operation (Mean ± SD)	P
Anxious mood	1.76± 1.33	0.18± 0.50	<0.01
Tension	1.05± 1.25	0.33± 0.62	<0.01
Fear	0.41± 0.80	0.13± 0.43	<0.01
Insomnia	1.43± 1.36	0.36± 0.73	<0.01
Cognitive changes	0.40± 0.86	0.18± 0.50	<0.01
Depression mood	0.65± 1.02	0.30± 0.67	<0.01
Body changes (muscles)	0.50± 0.94	0.11± 0.37	<0.01
Body changes (sensory)	0.46± 0.92	0.08± 0.42	<0.01
Cardiovascular symptoms	0.86± 1.72	0.03± 0.18	<0.01
Respiratory symptoms	0.36± 0.80	0.06± 0.25	<0.01
Gastrointestinal symptoms	0.41± 0.89	0.03± 0.18	<0.01
genitourinary system symptoms	0.36± 0.88	0.06± 0.31	<0.01
autonomic nervous system symptoms	0.35± 0.73	0.03± 0.18	<0.01
Attitude during the interview	0.90± 0.87	0.05± 0.21	<0.01

test also did not find a significant relevance between the level of education and the score of the Hamilton Anxiety Questionnaire before (P = 0.642) and after the operation (p = 0.438).

Table 3. Association of occupation and the dimensions' score of the Hamilton Anxiety Questionnaire in the participants before and after the operation

Variable	State	Pre-operation (Mean ± SD)	Post-operation (Mean ± SD)	P
Occupation	Employed	10.50± 3.69	1.50± 0.57	0.349
	Housewife	9.91± 7029	1.92± 2.51	

Based on Table 4, pre-operative anxiety score had a positive significant relationship with age (P<0.05); however, post-operative anxiety score was not significantly related to age.

Table 4. Association of age and the dimensions' score of the Hamilton Anxiety Questionnaire in the participants before and after the operation

P: pvalue, R: Pearson Correlation Coefficient

Variable	State	Pre-operation anxiety	Post-operation anxiety
Age	R	0.492	0.117
	P	0.000	0.374

Discussion

This study investigated the pre-operation and post-operation anxiety in women undergoing cesarean surgery in Abadan University of Medical Sciences hospitals, the mean age of the participants was 28.60± 5.87 (ranging from 16 to 41). Four patients (6.7%) were employed and 56 (93.3%) were housewives. All participants had a history of previous cesarean operations. 29 cases (48.3%) were high school dropouts, 23 (38.3%) had a diploma and 8 women (13.3%) had a higher degree than a diploma. Nikooseresht et al. (9) assessed the level of anxiety before and during the operation on 100 patients referred to Fatemieh hospital. The Spielberger Anxiety Questionnaire and Visual Scale were used and it was concluded that a high number of patients belonged to the moderate group in terms of anxiety level.

In the study conducted by Hepp et al. (10) on 45 candidates for cesarean operation, the mean age of the participants was 35.5 years. The mean level of anxiety was measured by the Spielberger State-Trait Anxiety Inventory (STAI), the Visual Analogic Scale (VAS), and the cortisol level. The mean score of anxiety was more severe during the admission (47.35) than during the surgery (33.96) and 2 hours after the operation (31.11). VAS

showed a similar procedure as well. However, the highest concentration of cortisol was observed at the end of the surgery.

Mousavi et al. [11] evaluated the pre-operation level of anxiety in 101 pregnant candidates for cesarean surgery who had been referred to Ammolbanin Hospital in Mashhad. The results of Spielberger Anxiety Inventory observed that 67 patients (66.4%) had moderate pre-operative manifest anxiety and 78 patients (77.2%) suffered from moderate post-operative manifest anxiety. Maheshwari et al. [12] measured the level of anxiety on 154 candidates for elective cesarean section, using the Visual Analogic Scale (VAS). Pre-operative anxiety was observed in 72.7% of the patients. In the study conducted by Ranaei et al. [13] on women referring to Besat Medical, Educational and Treatment Center in Sanandaj for elective cesarean surgery, the mean age of the candidates was 28.2 years.

The current study, Hamilton Anxiety Inventory showed that the mean score of anxiety in women before the cesarean operation was 9.95± 7.09 (ranging from 0 to 56). There was a significant reduction in the scores after the operation and reached 1.90± 2.43. According to the t-test, the level of pre-operation and post-operation anxiety was significantly different in the population of this study. Before the operation, 45 patients (75%) had mild anxiety (scores of 1-14), and 15 patients (25%) also showed moderate anxiety (scores of 15-28). The differences in the study results are due to the diversity in the study populations in terms of demographic variables, type of anesthesia, history of previous cesarean surgery, and also data collection tools (Hamilton Anxiety Questionnaire, VAS, Beck Anxiety Questionnaire and STAI).

Studies have declared that post-operative anxiety can increase the risk of postpartum hemorrhage, infection, nausea, vomiting, immobility, respiratory problems, postpartum depression, and decreased breastfeeding [14]. Therefore, it is crucial to identify the patients with high levels of anxiety in the early stages, for example when receiving the indications for cesarean surgery, and provide the essential care procedures to reduce anxiety and improve maternal and fetal health. In the present study, the patients' age, despite the level of education and occupation, was significantly associated with the level of anxiety.

Ghardashi et al. [15] worked on 100 patients admitted to general surgery and gynecology wards in Mashhad Medical Sciences Hospital. Their results showed that variables such as gender, comfortable sleeping the night before the operation, waiting more than 2 hours, difficulty in hospital payment, having a job and the patient's companion are effective on the level of anxiety on the operation day. Woldegerima et al. [16] in Ethiopia, declared that the level of pre-operative anxiety in the cesarean section was significantly related to the patients' age and economic status. However, Bedaso et al. [17] did not find a significant correlation between the level of pre-

operative anxiety and variables such as age, sex, occupation, level of income and education, as well as the type of dwelling. In addition, Ghanei et al. [18] suggest a significant relationship between the level of pre-operative anxiety and post-operative pain.

Based on the results of this study, the level of pre-operative anxiety was 9.95± 7.09 which decreased to 1.90±2.43 after the operation. Mild and moderate anxiety were observed in 45 (75%) and 15 (%25) of patients, respectively, before the operation. The Hamilton Anxiety Questionnaire found a significant relationship between age and anxiety, despite their occupation status. Pre-operative anxiety can endanger the maternal and fetal health status due to physiological and psychological etiologies, and the crises it can cause. Hence, identifying the factors influencing anxiety and dealing with them can have significant effects on controlling the mother's anxiety, and improving maternal and fetal health status.

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