



ORIGINAL ARTICLE

Medicine Science 2022;11(2):805-9

The relationship between preoperative anxiety levels and posttraumatic stress disorder in women having curettage: A prospective study

Didem Simsek Kucukkelepce¹, Hacer Unver², Ceyda Basogul³

¹Lokman Hekim University, Faculty of Health Sciences, Department of Midwifery, Ankara Turkey

²Inonu University, Faculty of Health Sciences, Department of Midwifery, Malatya, Turkey

³Adiyaman University Faculty of Health Sciences, Department of Psychiatric Nursing, Adiyaman, Turkey

Received 23 December 2021; Accepted 22 February 2022

Available online 27.03.2022 with doi: 10.5455/medscience.2021.12.407

Copyright@Author(s) - Available online at www.medicinescience.org

Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.



Abstract

Curettage can affect women's mental health. Studying this issue is important for the protection and improvement of women's health. This study was conducted to examine the relationship between anxiety levels and posttraumatic stress disorder in women having curettage. The sample of this prospective study included 115 women who visited the obstetrics and gynecology clinics of a research and training hospital located in eastern Turkey to terminate their pregnancies. The data were collected by using a Participant Information Form, the State Anxiety Inventory, and the Posttraumatic Stress Disorder Checklist - Civilian Version. In the study, it was determined that there was a risk of posttraumatic stress disorder (PTSD) in 99.1% of the women (n=114) (PTSD≥23). It was identified that the state anxiety levels of the women who had curettage had a statistical significance in explaining posttraumatic stress disorder ($p<0.05$), and the state anxiety levels explained posttraumatic stress disorder by 15%. According to the findings obtained in this study, it was determined that high anxiety levels before curettage constituted a high risk in terms of posttraumatic stress disorder.

Keywords: Anxiety, curettage, post-traumatic stress disorders, Turkey, pregnancy

Introduction

Posttraumatic stress disorder is a mental disorder that develops in the individual following a greatly traumatic event, and it involves feelings of intense fear and helplessness that threaten the individual's own or others' physical integrity [1,2]. While PTSD is influenced by many factors, its prevalence varies in the range of 3.9-48.7% [3-5]. Studies have determined that PTSD affects both sexes, but women are more under risk of PTSD than men [6]. It was reported that this situation is because women experience significant events such as pregnancy, birth, postpartum period and menopause [7]. Similarly, it is thought that fetal loss experienced in pregnancy and termination of the pregnancy as a result of this may lead to stress and PTSD in the woman [8,9]. A study conducted in Turkey observed that approximately one in every five women had at least one spontaneous miscarriage, and 14% willingly had miscarriage

at least once [10]. Abortus usually takes place due to reasons such as unwanted/unplanned pregnancies, economic problems, health problems, age and not feeling prepared for parenthood [11,12]. Regardless of its reason and form, termination of pregnancy is a situation that affects the physical and psychological health of the woman negatively [11,13-15]. While women physically encounter complications like pain, infection and hemorrhage in termination of pregnancy by curettage, psychologically, they may encounter psychological problems such as fear, anxiety, undecidedness, guilt, regret, depression, substance abuse and self-harm [11,14,16,17]. One of the psychological effects of termination of pregnancy is seen in the form of reduction in self-respect and doubts about the capacity to reproduce and parenting adequacy [8]. It has been observed that, with the fetal loss that is experienced, after an abortion, women experience traumatic psychological problems like depression, anxiety, substance addiction and self-harm [11,12,18]. PTSD symptoms may start a few days or sometimes a month after the trauma based on the traumatic event and personality traits, and these symptoms may last for a few weeks or up to a year [19]. In the light of this information and considering that approximately one in every ten pregnancies in Turkey is terminated, this study was conducted for the purpose of investigating the relationship between anxiety levels and posttraumatic stress disorder in women who have curettage.

*Corresponding Author: Didem Simsek Kucukkelepce, Lokman Hekim University, Faculty of Health Sciences, Department of Midwifery, Ankara Turkey
E-mail: didemkucukkelepce@gmail.com

Materials and Methods

Study Design

This prospective study was conducted between December 2019 and March 2020 with women who visited the obstetrics and gynecology clinics of a hospital located in eastern Turkey to terminate their pregnancies.

Population and Sample

The population of the study consisted of women visiting obstetrics and gynecology clinics for terminating their pregnancy for any reason. The sample size was calculated using G*Power [20] with a power (1- β) of 0.95, a medium effect size of 0.30, and probability of alpha error of 0.05 to perform a correlation model. Minimum sample size was 115.

Inclusion criteria

Not having experienced a situation that would create acute stress (a serious accident/natural disaster, sexual/non-sexual assault, being in an area of conflict or war, unexpected death of a close person, experiencing a serious disease, exposure to violence) in the last 4-6 weeks

Data Collection Instruments

In the study, the data were collected by the researchers with the face-to-face interview method using a Participant Information Form created by the researchers, the State Anxiety Inventory (STAI-I) and the Posttraumatic Stress Disorder Checklist - Civilian Version.

Participant Information Form

The form that was prepared in line with the literature consisted of 22 questions on the sociodemographic characteristics and pregnancy- and curettage-related information of the participants.

State Anxiety Inventory

To determine the anxiety experienced before curettage in the women, STAI-I was used. The scale was developed in 1970 as the first part of the State-Trait Anxiety Inventory by Spielberger et al., and its validity and reliability in Turkey were tested by Öner and Le Compte (1982) [21]. It is a four-point Likert-type scale scored between "Not at all" and "Very much so" which was developed to determine how a person feels in a certain moment and under certain conditions. While scoring the scale, 10 items (1,2,5,8,10,11,15,16,19 and 20) are inversely scored. While calculating the score of the scale, after finding the sums of the direct and reversed statements separately, the sum obtained from the reversed statements is subtracted from the sum obtained from the direct statements, and the constant value of 50, which is predetermined for STAI-I, is added to the result. The final outcome is the anxiety score of the individual [22]. Scores of 0-19 in the inventory indicate "no anxiety", 20-39 points indicate "mild", 40-59 points indicate "moderate", 60-79 points indicate "severe" anxiety, and it is stated that individuals with a score of 60 or higher require professional help [23]. While Öner and Le Compte (1983)

determined the Cronbach's alpha coefficient of the inventory as 0.83, this coefficient was calculated as 0.90 in our study.

Posttraumatic Stress Disorder Checklist - Civilian Version

PTSDC-CV, which was developed for the first time by Weathers et al. (1993) [24], was developed to investigate PTSD criteria based on DSM-IV measurements in both public screenings and examined patients. In the study by Adkins et al. (2008) [25] which investigated the psychometric properties of PTSDC-CV, which is accepted as a diagnostic scale where all symptoms of PTSD included in DSM-IV can be questioned, the test-retest reliability coefficient of the scale was determined as 0.87, while its Cronbach's alpha (internal consistency) coefficient was found as 0.91. PTSDC-CV is a scale where the person assesses themselves, and it consists of a total of 17 items including three sets of symptoms. Among these items, the first 7 are related to avoidance, the next 5 are related to hyper-arousal, and the last 5 are related to re-experiencing. In the avoidance dimension, the thoughts and emotions caused by the traumatic event and behaviors of avoiding this event, the environment where this event took place or people involved are questioned. In the hyper-arousal dimension, the emotional state of the person, their relationship with other people and their interest in activities are questioned. In the re-experiencing dimension, the characteristics of reactions given to stimuli, anger, status of restlessness, attention deficit and sleep problems are questioned. It is a five-point Likert-type scale scored in the range of 1-5 for each item. The total score of the scale is the arithmetic sum of the responses to all items, and the minimum and maximum possible scores are respectively 17 and 85 [26]. Kocabaşoğlu et al. (2005) conducted the Turkish validity and reliability study of the scale and reported that the Turkish form had sufficient validity and reliability levels in a sample from the normal society (Cronbach's alpha=0.92). It was seen that both its sensitivity and specificity were higher than 70% when the cutoff value was taken in the range of 22-24. In our study, the Cronbach's alpha coefficient of the scale was found as 0.89.

Data Collection

In the study, the data were collected in two steps.

In the first step, on the women who applied for terminating their pregnancies and would receive curettage, the Participant Information Form and pre-curettage State Anxiety Inventory were applied. The women were informed that they would be contacted after a month, and their contact information was collected.

In the second step, one month after the curettage procedure, using the previously collected contact information, the women were contacted by telephone, and the data for the Posttraumatic Stress Disorder Checklist - Civilian Version were collected.

Ethical aspect

For the study to be conducted, ethical approval with the number of 2019/44 was obtained from the Health Sciences Scientific Research and Publication Ethics Board of the relevant university. Additionally, before starting the research, the women were read the minimally informed consent form, and their verbal consent was received.

Data Analysis

The data of the study were analyzed using IBM SPSS V21 software program. Normality of the data was tested using Kolmogorov-Smirnov and Shapiro-Wilk tests. Participants' characteristics and scale mean scores were analyzed using descriptive analysis (percentages, means and standard deviations). Since the data met the parametric test assumptions, the relationship between State Anxiety Level and post-Traumatic Stress Disorder was performed using Pearson Correlation analysis and linear regression analysis. Statistical significance value was accepted as $p < 0.05$ for all analyzes.

Results

It was determined in the study that the mean age of the participants was 30.53 ± 5.11 years, 35.7% received high-school-level education, the income and expense of 59.1% were equivalent, and their mean duration of marriage was 7.70 ± 5.26 years (Table 1).

Table 1. Distribution of the descriptive characteristics of the women (N=115)

Descriptive Characteristics	N	%
Age (years)	X±SD 30.53±5.11 (min:18 maks:42)	
Education status		
Literate – primary school	32	27.8
Secondary school	24	20.9
High school	41	35.7
University	18	15.7
Income status		
Income more than expense	15	13.0
Income and expense equivalent	68	59.1
Income less than expense	32	27.8
Duration of marriage (years) X±SD 7.70 ±5.26 (min:1 maks:26)		

The women had a mean number of pregnancies of 3.13 ± 1.60 , they had 1.85 ± 1.45 living children, and 49.6% had curettage by their own choice (Table 2).

Table 2. Distribution of the obstetric characteristics of the women (N=115)

Obstetric Characteristics		
Number of pregnancies (each) X±SD	3.13±1.60 (min:1 maks:10)	
Number of living children X±SD	1.85±1.45 (min:0 maks:6)	
Reason for curettage	n	%
Abortus	51	44.3
Own choice	51	49.6
Getting anomaly diagnosis	7	6.1

Among the women who participated in the study, the mean total score in STAI-I was 43.41 ± 8.86 , while the mean total score in PTSDC-CV was 38.84 ± 11.16 (Table 3). Moreover, when the cutoff point of PTSDC-CV was taken as 23, it was determined that 99.1% of the women who participated in the study experienced PTSD.

Table 3. Distribution of the mean scores of the women from STAI-I and PTSDC-CV (N=115)

Scales	Minimum-Maximum Scores	X±SD
State Anxiety Inventory Total	29-69	43.41±8.86
Posttraumatic Stress Disorder Checklist Dimensions		
Avoidance	7-33	15.52±5.70
Hyper-arousal	5-19	10.86±3.55
Re-experiencing	5-21	12.46±3.99
Posttraumatic Stress Disorder Checklist Total	22-69	38.84±11.16
	Frequency	%
PTSD Present (23 points and higher)	114	99.1
PTSD Absent (22 points and lower)	1	0.9
Total	115	100

In the study, the state anxiety levels of the women who had curettage had statistical significance in explaining their posttraumatic stress disorder ($p < 0.05$). The state anxiety levels explained posttraumatic stress disorder by 15%. There was also a statistically significant, positive and strong relationship between state anxiety and posttraumatic stress disorder ($p < 0.05$, Table 4).

Table 4. Regression analysis of the effect of state anxiety levels on posttraumatic stress disorder and explanation by correlation (N=115)

STAI-I Total Score	PTSDC-CV Total Score									
	Regression					Correlation				
	R	R ²	β	t	p	df1, df2	F	r	0.399**	
Score	0.399	0.15	0.399	4.630	0.00	1,113	21.438	p	0.00	

Discussion

It was reported that approximately 25% of women at reproductive ages experience loss of pregnancy, and this situation leads to physical and psychological results in women [27,28]. This study was conducted to examine the relationship between preoperative anxiety levels and posttraumatic stress disorder in women having curettage. Considering studies conducted on the topic, Terzioğlu et al. (2010) reported that, among women who were applied abortus, the mean pre-abortus anxiety level was higher than the mean post-abortus anxiety level [11]. Other studies also reported that preoperative and postoperative anxiety levels of women were high [29,30]. In our study, it was determined that the women had moderate levels of anxiety before curettage, which was similar to the information in the literature. Likewise, it was reported in studies that the preoperative anxiety that is observed is caused by reasons such as the lithotomy position, procedures related to the operation and lack of respect for privacy [31,32]. In addition to this, in societies like the Turkish society where traditional considerations are dominant, it is thought that this situation is caused by the fact that the fertility of women is highly important for the identity of women in these societies, as well as the examination position that is used and situations like the attitudes of healthcare personnel.

Among studies conducted with women whose pregnancies ended with abortus, it has been reported that women frequently

experience feelings like mourning, restlessness, guilt, loneliness, sorrow and anger after abortus [33,34]. Likewise, studies have determined that depression, anxiety and PTSD levels are high after abortus [28,35]. Furthermore, another study found depression and/or anxiety signs in 41.7% of women who were diagnosed with miscarriage and received surgical treatment (manual vacuum aspiration or dilatation and curettage) [36]. It is thought that this situation is experienced because the curettage procedure creates risks in people such as getting caught unprepared, involving danger of mortality, experiencing loss and deterioration in bodily integrity [37]. In our study, as a result of the interview conducted one month after the curettage procedure, it was determined that almost all included women experienced PTSD after curettage. In a randomized controlled study carried out with women who experienced abortus, while there was no significant difference between during abortus and one month later in the variables of anxiety, depression and fatigue among the women, it was found that PTSD was on a higher level at 1 month after the operation [27]. Studies reported that risk factors for PTSD included events like diagnosis of fetal anomaly[38] or complications experienced in pregnancy [39]. Additionally, Stramrood et al. (2011) also stated that fetal loss may lead to PTSD [40]. Considering the results of these studies alongside these factors, it may be an expected situation for the women to experience PTSD as a result of the fetal loss they experienced and termination of their pregnancy spontaneously or by curettage. Similarly, also as a result of our study, it was determined that there was a statistically significant, positive and strong relationship between the state anxiety experienced before curettage and posttraumatic stress disorder. According to the results of the further analysis that was conducted, the state anxiety levels explained posttraumatic stress disorder by 15%. In experiences inducing severe stress and anxiety/fear, stimuli stimulating the emotion-thought elements of individuals may mobilize experiences related to past events. Therefore, a traumatic situation that is encountered without preparation is perceived as if it had been experienced before by using past experiences, and the same responses are given. This situation increases complexity, and therefore, anxiety. Recording of experiences in this form is considered as the source of symptoms in PTSD [37]. In this context, the findings of this study may be interpreted in the form of the feeling of anxiety before the curettage procedure assuming the role of a source in PTSD symptoms.

Conclusion

It was determined that the state anxiety levels of the women who participated in this study, which for the first time examined anxiety and posttraumatic stress in women receiving curettage, before the curettage procedure were high, and according to the follow-up one month later, there was a positive relationship between the anxiety levels and posttraumatic stress disorder. This result shows that, in order to reduce PTSD experienced after the procedure of curettage, it is greatly important to firstly assess the anxiety in women before the curettage procedure and provide education and care regarding this issue. It is also considered that it is necessary for healthcare professionals to make a complete assessment from the physical, mental and social aspects not only before but also after the procedure of curettage and provide holistic care by improving their care practices in this direction. It is recommended to conduct future studies to examine the factors that affect anxiety

levels before the procedure of curettage and experimental studies to investigate the effectiveness of interventions that may be useful in reducing anxiety.

Conflict of interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical approval

Ethical approval was obtained from the Health Sciences Scientific Research and Publication Ethics Board (2019/44). Before starting the study, all the participants were informed on the study, and the voluntary ones were included in the study.

References

1. Pitman RK, Rasmusson AM, Koenen KC, et al. Biological studies of post-traumatic stress disorder. *Nat Rev Neurosci.* 2012;13:769–87.
2. Hori H, Kim Y, Inflammation and post-traumatic stress disorder. *Psychiatry Clin Neurosci.* 2019;73:143–53.
3. Schwab W, Marth C, Bergant AM. Post-traumatic stress disorder post partum: The impact of birth on the prevalence of post-traumatic stress disorder (PTSD) in multiparous women. *Geburtshilfe Frauenheilkd.* 2012;72:56–63.
4. Koenen KC, Ratanatharathorn A, Ng L, et al. Posttraumatic stress disorder in the World Mental Health Surveys. *Psychol Med.* 2017;47:2260–74.
5. Richa S, Herdane M, Dwaf A, et al. Trauma exposure and PTSD prevalence among yazidi, christian and muslim asylum seekers and refugees displaced to iraqi kurdistan. *PLoS One.* 2020;15:1–10.
6. Alcorn KL, O'Donovan A, Patrick JC, et al. A prospective longitudinal study of the prevalence of post-traumatic stress disorder resulting from childbirth events. *Psychol Med.* 2010;40:1849–59.
7. Yıldız PD, Ayers S, Phillips L. The prevalence of posttraumatic stress disorder in pregnancy and after birth: A systematic review and meta-analysis. *J Affect Disord.* 2017;208:634–45.
8. Białek K, Malmur M. Risk of post-traumatic stress disorder in women after miscarriage. *Med Stud.* 2020;36:134–41.
9. Köneş MÖ, Yıldız H. The level of grief in women with pregnancy loss: a prospective evaluation of the first three months of perinatal loss. *J Psychosom Obstet Gynecol.* 2021;42:346–55.
10. HUNE Institute, 2013, Turkey Demographic and Health Survey, 2014.
11. F. Terzioğlu, S. Zeyneloğlu, D. Yılmaz, et al. The problems and anxiety levels of women who had elective or therapeutic abortion. *Hacettepe University Faculty of Health Sciences Nursing Journal* 2010;17:18–29.
12. Van Ditzhuijzen J, Ten Have M, De Graaf R, et al. Abortus en het risico op psychische. *Tijdschr Voor Psychiatr.* 2018;60:527–35.
13. Aba YA, Ergün G. Post-Abortion Syndrome and nursing approaches, *Int J Hum Sci.* 2016;13:768.
14. Çoban A, Taşpınar A, Savaş N, et al. The impact of pregnancy loss on women's depression symptom level and quality of life, *Turkiye Klin J Heal Sci* 2016;1:149–56.
15. Yıkılkan H, Dilbaz B, Kestel Z. Assessment of the patients who applied to Family Planning unit for legal abortion. *Smyrna Medical Journal* 2011;10–4.
16. Kavlak O, Atan SU, Saruhan A, et al. Preventing and terminating unwanted pregnancies in Turkey. *J Nurs Scholarsh.* 2006;38:6–10.
17. Dingle K, Alati R, Clavarino A, et al. Pregnancy loss and psychiatric disorders in young women: An Australian birth cohort study, *Br J Psychiatry.* 2008;193:455–60.
18. Budak MŞ, Toğrul C, Balsak D, et al. The evaluation of failed contraception methods and causes in elective pregnancy termination. *J Gyneco - Obstetrics Neonatol.* 2015;12.3:106–9.
19. Akcan G, Post traumatic growth: a review. *Bartın University Journal of Faculty of Letters.* 2018;3:61–70.

20. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behav Res Methods*. 2009;41:1149–60
21. Öner N, Le Compte A, State-trait anxiety inventory., 2nd Edition, Boğaziçi University Press, Istanbul, 1982.
22. Aydemir Ö, Köroğlu E, Scales used in psychiatry., HYB Publishing, Ankara, 2009.
23. Erbil N, Şenkul A, Sağlam Y, Ergül N. Determination of attitudes with gynecologic examination and anxiety of Turkish women before gynecologic examination. *Int J Human Sci*. 2008;5:1–13.
24. Litz BT, Herman DS, Huska JA. The PTSD Checklist: Reliability, validity and diagnostic utility. San Antonio. 1993;362:1-3.
25. AdkinsJW, WeathersFW, McDevitt Murphy M, et al. Psychometric properties of seven self-report measures of posttraumatic stress disorder in college students with mixed civilian trauma exposure. *J Anxiety Disord*. 2008;22:1393–402.
26. Kocabasoglu N, Özdemir AÇ, Yargıç I, et al. The validity and safety of Turkish" PTSD Checklist-Civilian Version"(PCL-C) scale. *New Symp*. 2005;43:126–34.
27. Kong GWS, Lok IH, Yiu AKW, et al. Clinical and psychological impact after surgical, medical or expectant management of first-trimester miscarriage - A randomised controlled trial. *Aust New Zeal J Obstet Gynaecol*. 2013;53:170–7.
28. Lok IH, Neugebauer R. Psychological morbidity following miscarriage. *Best Pract Res Clin Obstet Gynaecol*. 2007;21:229–47.
29. Oltuluoğlu H, Budak F, Küçükkelepçe D, Günay U. Investigation of anxiety situations of women applying abortion. *Ann Health Sci Res*. 2017;6:30–7.
30. Steinberg JR, Tschann JM, Furgerson D, et al. Psychosocial factors and pre-abortion psychological health: The significance of stigma. *Soc Sci Med*. 2016;150:67–75
31. Ulker K, Kivrak Y. The effect of information about gynecological examination on the anxiety level of women applying to gynecology clinics: A prospective, randomized, controlled study. *Iran Red Crescent Med J*. 2016;18:e23864.
32. Roomruangwong C, Tangwongchai S, Chokchainon A. Preoperative Anxiety among Patients Who Were about to Receive Uterine Dilatation and Curettage. 2012;95:1344-50.
33. Evans L, Lloyd D, Considine R, Hancock L. Contrasting views of staff and patients regarding psychosocial care for Australian women who miscarry: A hospital based study. *Aust New Zeal J Obstet Gynaecol*. 2002;42: 155–60.
34. Séjourné N, Callahan S, Chabrol H. Support following miscarriage: what women want. *J Reprod Infant Psychol*. 2010;28:403–411. h
35. Bellhouse C, Temple Smith M, Watson S, Bilardi J. “The loss was traumatic... some healthcare providers added to that”: Women’s experiences of miscarriage. *Women Birth*. 2019;32:137–46.
36. Ambriz López R, Guerrero González G, Rodríguez Valero CG, et al. Evaluation of symptoms of anxiety and depression in patients with a miscarriage. *Med Univ*. 2017;17:7–12.
37. Bolu A, Erdem M, Öznur T. Posttraumatic Stress Disorder. *Anatol J Clin Investig*. 2014;8:98–104.
38. Horsch A, Brooks C, Fletcher H. Maternal coping, appraisals and adjustment following diagnosis of fetal anomaly. *Prenat Diagn*. 2013;33:1137–1145.
39. Forray A, Mayes LC, Magriples U, et al. Prevalence of post-traumatic stress disorder in pregnant women with prior pregnancy complication. *J Matern Neonatal Med*. 2009;22:522–7.
40. Stramrood CAI, Paarlberg KM, Huis EMJ, et al. Posttraumatic stress following childbirth in homelike-and hospital settings. *J Psychosom Obstet Gynecol*. 2011;32: 88–97.