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Perception of traumatic childbirth of women and its relationship with postpartum depression

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ABSTRACT

Traumatic birth has various effects on women, and postpartum depression is one of them. The present study had two aims: 1) to determine the level of traumatic childbirth perception and postpartum depression in women and the factors affecting them and 2) to reveal the relationship between traumatic childbirth perception and postpartum depression. Five hundred fifty women, recruited between March 2018 and February 2019, completed the following form and scales one month after delivery: the general and obstetric information form, the Perception of Traumatic Childbirth Scale (PTCS), and the Edinburgh Postnatal Depression Scale (EPDS). The mean PTCS scores of the women included in the study were 63.45 ± 28.116 with a median value of 65, and the prevalence of traumatic childbirth was 33.8%. The risk of postpartum depression was determined in 25.3% of the women. There was a significant relationship between the participants' traumatic childbirth perception and their EPDS scores ($p < .05$). It was determined that the probability of experiencing postpartum depression increased four to five times in women with a high or very high level of traumatic childbirth perception (OR = 4.31; CI 95% 1.912 to 9.701; $p = .000$)(OR = 5.57; CI 95% 2.090 to 14.818; $p = .001$). The findings revealed that one-third of the participant women had traumatic childbirth perception, and the risk of postpartum depression increased as the level of traumatic birth perception increased.

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Childbirth pain; fear of childbirth; midwifery; postpartum depression; traumatic childbirth

Introduction

Traumatic birth is when a woman perceives the birth as a threat of death or injury for herself or her baby (İsbir and İnci 2014; Yalnız et al. 2016). The woman who gives birth may experience intense fear, helplessness, loss of control, and hate and may feel that her reputation has been damaged (Anderson 2017). The scales used in PTC measurement are examined under headings, such as the *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV)* criteria, fear of childbirth, childbirth expectation, and satisfaction. The rates vary according to these measurement tools (19.6–34%) (Barut and Uçar 2018; Boorman et al. 2014; Güleç et al. 2014; Körükçü et al. 2017; Şahin, Dinç, and Dişsiz 2009; Soet, Brack, and Dilorio 2003). The Perception of Traumatic Childbirth Scale (PTCS) developed by Yalnız et al. (2016) is used to evaluate PTC in women. Studies conducted on the PTCS in Turkey in recent years have reported the PTC rates in women as 23.6% (Aktaş 2018) and 21% (Türkmen, Dilcen, and Özçoban 2020).

Childbirth trauma is a subjective experience. Thus, it may be difficult to identify. To understand the traumatic childbirth experience, it is important to discuss factors that affect and create a woman's

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perception of the childbirth experience as a whole (Simpson and Catling 2016). The main reasons may be the previous negative traumatic process, negative childbirth experience, mode of delivery, sexual abuse, sociodemographic–obstetric factors, negative attitudes and behaviors of midwives and doctors assisting childbirth, medical interventions during childbirth, labor complications, technical facilities of the place of childbirth, and the lack of social support (Aktaş 2018). Moreover, obstetric emergencies can be defined as emergency cesarean delivery or operative delivery, labor induction-augmentation or newborn complications, and negative or traumatic experience (Molgora, Fenaroli, and Saita 2020). The difference between positive and negative childbirth experiences may also result from problems caused by childbirth settings and personal characteristics. Qualitative studies explaining women's traumatic childbirth experiences define their interactions with midwives in childbirth settings as more important factors than medical intervention or modes of delivery (Reed, Sharman, and Inglis 2017).

Emergency symptoms may be observed in a woman after an actual or perceived traumatic childbirth. This acute stress reaction was suggested to be the woman's efforts to mentally process the event to avoid feeling sorry. These reactions may disappear within hours or days. However, they can also be observed as acute (4 weeks to 3 months), chronic (after 3 months), or delayed (6 months) (Anderson 2017).

It may have a strong effect on the lives of mothers, fathers, children, families, and friends when childbirth is experienced as a traumatic experience (Greenfield, Jomeen, and Glover 2016). It is indicated that it may lead to problems related to noninvolvement in infant care, the inability to establish attachment, motherhood role, close relationship with the husband, or future pregnancy in women perceiving childbirth as traumatic (Aydın and Yıldız 2018; Greenfield, Jomeen, and Glover 2016). Women with PTC may also exhibit the behaviors of protection from the trauma of vaginal delivery, such as avoiding another pregnancy or preferring cesarean section (Anderson 2017).

Undergoing traumatic childbirth was considered among the risk factors for postpartum depression (Battaloğlu, Aydemir, and Hatipoğlu 2012). Postpartum depression is included under the title of "Mood Disorders" in the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-V)*, one of the psychiatric diagnosis systems, and the "Postpartum-Onset Specifier" is defined as the onset of the episode within four weeks postpartum (Koçak and Duman 2016). Postpartum depression symptoms may be accompanied by suicidal ideation by becoming more severe, depending on "maternity blues" (Marakoğlu, Özdemir, and Çivi 2009). The prevalence of postpartum depression in the world is estimated to be between 7% and 30% (Biaggi et al. 2016).

Anxiety disorders, including panic disorder, generalized anxiety disorder, obsessive-compulsive disorder, post-traumatic stress disorder (PTSD), and tocophobia (a severe fear of childbirth), may occur alone or in combination with depression during pregnancy and the postpartum period (National Institute for Health and Care Excellence 2014). Furthermore, it is important to know that most of the women who have PTSD may exhibit postpartum depression symptoms (Anderson 2017). PTSD is especially related to midwifery care because it directly affects women's perinatal lives or may occur due to the childbirth experience. The importance of midwifery is that PTSD can be prevented or reduced by proper midwifery and perinatal mental health care. Treatment-only studies cannot contribute to reducing the prevalence of PTSD. It may be more efficient to focus on preventing or reducing PTSD with changes in midwifery care (Çapik and Durmaz 2018).

The present study has two aims, following the above information: (1) to determine women's perceptions of traumatic childbirth, postpartum depression levels, and the affecting factors and (2) to reveal the relationship between postpartum depression and PTC.

Materials and methods

Participants and procedure

Of quantitative methods, cross-sectional screening focusing on identifying relationships was used (Creswell 2013). The study was conducted between March 1, 2018, and February 1, 2019, in 68 family

health centers located in the central districts of Konya in Turkey. The study period was determined considering the time of the second postpartum hepatitis vaccination. The episode, which is a symptom of postpartum depression, is said to start within four weeks postpartum in the DSM-V (Koçak and Duman 2016). Women in the first postpartum month were included in the study to limit the time factor in terms of postpartum depression symptoms. The dates when women presented to the Family Health Centers for postpartum follow-up and the second dose of the newborn hepatitis B vaccine were selected. Although the districts are located in the center, they have a mixed socio-economic structure.

The study population consisted of 23,185 live births that occurred in Selçuklu, Karatay, and Meram districts of Konya in 2016, according to the data obtained from the Turkish Statistical Institute (TUIK). To reach women in the first postpartum month, 385 family doctors from 68 Family Health Centers in three central districts of Konya province were consulted. Firstly, the number of family doctors to be included in the study (Selçuklu: 52, Meram: 29, Karatay: 30) was determined considering the average number of childbirths in the districts (Selçuklu: 10,783, Meram: 6,120, Karatay: 6.282). In the list of Family Doctors stated according to the sequence number of the Family Health Center for each district, the family doctors coinciding with the numbers in the random numbers table (as many as the family doctors to be included in the study) were included in the study.

Although there are different rates of PTC in the literature, according to the DSM-IV criteria, the highest rate was reported as 34% by Soet, Brack, and Dilorio (2003), and the rates of depression in pregnancy vary between 7 and 30% (Biaggi et al. 2016). Concerning traumatic childbirth and depression, it was determined that a minimum of 494 people should be recruited to reach the largest sample with 30% prevalence, 4% sensitivity, 95% confidence interval, and 80% power. However, due to the possibility of missing and non-parametric data, the sample size was increased by 10% to 550 people. The criteria for inclusion in the sample included being in the first postpartum month, giving birth within the period of 37–42 gestational weeks and having liveborn infants, the absence of anomalies in the infant, no postpartum complications experienced by the mother and the infant, no significant/chronic health problems or psychological disorders experienced during pregnancy, being at the age of 18 and above, having no visual and hearing disorders, agreeing to participate in the study, and speaking Turkish.

Women who presented to a family health center for vaccination and were included in the study and met the study criteria were informed about the subject and purpose of the study. Verbal and written informed consent was obtained from women who agreed to participate in the study. The questionnaires were either administered by one of the researchers (F.B.) or completed by the participants themselves depending on their choice. Ten minutes were given to complete the questionnaires.

Measures

In this study, the data were collected using an information form, PTCS, and the Edinburgh Postnatal Depression Scale (EPDS).

Introductory information form

This questionnaire was prepared by the researchers in light of the literature (Barut and Uçar 2018; Başkaya and Sayıner 2018; Yalnız et al. 2016) and consisted of 25 questions to obtain sociodemographic and obstetric information, which was considered to affect the PTC of the participants.

Perception of Traumatic Childbirth Scale (PTCS)

This scale was developed in 2016 by Yalnız et al. to determine women's level of traumatic perception of the childbirth action. In the internal consistency analysis to determine the scale's reliability, Cronbach's alpha reliability coefficient was calculated as 0.895 by the developer of the scale. The scale consists of 13 items, each rated from 1 to 10, providing a minimum total score of 0 and a maximum of 130. According to the mean scores in the scale, the level of PTC is interpreted as very low for the 0–26 score range, low for 27–52, moderate for 53–78, high for 79–104, and very high for 105–130 (Yalnız et al. 2016). In the

analysis conducted in our study, Cronbach's alpha reliability coefficient was found to be 0.900. The necessary permission was obtained from the authors for using the scale.

Edinburgh Postnatal Depression Scale (EPDS)

Cox et al. (1987) developed this scale to determine the risk of postpartum depression, and the Turkish version of this scale was prepared by Engindeniz, Küey, and Kültür (1996). This scale was prepared for screening purposes and is not used for the diagnosis of depression. It is a four-point Likert-type self-report scale consisting of 10 items. The responses are scored from 0 to 3, with the lowest score being 0 and the highest being 30. Items 1, 2, and 4 are scored as 0, 1, 2, and 3, while items 3, 5, 6, 7, 8, 9, and 10 have reverse scoring as 3, 2, 1, and 0. The validity and reliability study conducted by Engindeniz et al. showed that the internal consistency coefficient of this scale was 0.79, the split-half reliability coefficient was 0.80, and the sensitivity, specificity, positive predictive value, and negative predictive value were 0.84, 0.88, 0.69, and 0.94 at the cutoff point of 12/13 (Engindeniz, Küey, and Kültür 1996). In the current study, women with an EPDS score of 13 or more were accepted as the risk group, and the Cronbach's alpha reliability coefficient was calculated as 0.88.

Data analysis

The analysis of the data obtained from the research was performed using IBM SPSS Statistics software package v. 24. The sociodemographic data, obstetric data, and scale distributions were expressed as percentage, mean and standard deviation values. The skewness and kurtosis test was used to examine the suitability of the data for normal distribution. The independent samples t-test, one-way analysis of variance, Kruskal-Wallis H test, Pearson correlation analysis, and logistic regression analysis were used. A p-value of <0.05 was accepted as a criterion for statistical significance.

Ethical considerations

The Ethics Committee of KTO Karatay University Faculty of Medicine on Non-Drug and Non-Medical Device Research approved the study with the decision number 7, dated November 22, 2017. Furthermore, the necessary permission was acquired from the Scientific Research Permit Commission of Konya Provincial Health Directorate with the letter dated February 28, 2018, and numbered 63827352 to conduct the study. Verbal and written consent was obtained from women who volunteered to participate in the study.

Results

Presence of PTCS and postpartum depression according to sociodemographic and obstetric data

The PTCS scores significantly differed according to income, delivery method, whether pregnancy was intended, the person monitoring pregnancy, where the delivery occurred, and whether the participants were provided with any information about the process ($p < .05$ for each parameter). There were statistically significant differences in the EPDS scores according to whether pregnancy was intended, the presence of problems during pregnancy, the person monitoring pregnancy, and whether the participants were provided with any information about the process ($p < .05$ for each parameter) (Table 1).

Prevalence of and the relationship between PTCS and postpartum depression

The mean PTCS score of the women included in the study was 63.45 ± 28.116, and 33.80% had high or very high PTC. Postpartum depression risk was found in 25.3% of the women who scored 13 or above in the EPDS (Table 2).

Table 1. Distribution of the participant women's sociodemographic and obstetric data, their PTCS and EPDS scores, and differences between the groups.

				PTCS		EPDS	
Sociodemographic and obstetric data		n	%	Mean±SD	Test p	Mean±SD	Test p
Income level	Income<Expenses	101	18.40	69.80 ± 28.598	F = 3.226	9.16 ± 6.246	F = 0.665
	Income = Expenses	362	65.80	62.23 ± 27.185	*p* = .040	8.85 ± 6.117	*p* = .515
	Income>Expenses	87	15.80	61.20 ± 30.570		8.16 ± 5.841	
Delivery method	Vaginal delivery	321	58.40	61.21 ± 29.489	t = −2.273	8.56 ± 5.986	t = −1.082
	Cesarean section	229	41.60	66.60 ± 25.807	*p* = .023	9.13 ± 6.241	*p* = .280
Intended pregnancy	Yes	441	80.20	62.03 ± 28.259	t = −2.397	8.40 ± 5.952	t = −3.095
	No	109	19.80	69.21 ± 26.894	*p* = .017	10.40 ± 6.422	*p* = .002
Problems during pregnancy[a]	Yes	111	20.20	66.63 ± 27.406	t = 1.333	10.61 ± 6.725	t = 3.548
	No	439	79.80	62.65 ± 28.267	*p* = .183	8.34 ± 5.844	*p* = .00
Person monitoring pregnancy	Doctor	333	60.50	64.62 ± 28.130	F = 3.887	9.73 ± 6.236	F = 13.188
	OFHP	123	22.40	65.85 ± 27.062	*p* = .021	8.22 ± 5.527	*p* = .00
	Doctor/Midwife	94	17.10	56.21 ± 28.561		6.26 ± 5.503	
Delivery place	Faculty of Medicine	94	17.10	68.13 ± 27.385	Z = 18.962	9.24 ± 6.48	Z = 7.193
	Maternity hospital	190	34.50	66.83 ± 29.276	*p* = .000	8.49 ± 5.631	*p* = .066
	Private hospital	254	46.20	60.54 ± 26.488		9.06 ± 6.303	
	Home	12	2.20	35.08 ± 28.186		4.50 ± 3.873	
Informed about childbirth	Yes	378	68.70	61.46 ± 27.867	t = −2.484	8.37 ± 6.161	t = −2.467
	No	172	31.30	67.85 ± 28.243	*p* = .013	9.74 ± 5.851	*p* = .014
Sufficiency of information if provided	Yes	291	52.90	58.04 ± 28.879	Z = 19.939	7.48 ± 5.624	Z = 22.637
	No	15	2.70	76.53 ± 25.207	*p* = .000	12.80 ± 8.317	*p* = .00
	Partially	72	13.10	72.11 ± 19.509		11.01 ± 6.655	
Total	550	100					

F: ANOVA, t: Independent samples t-test, Z: Kruskal-Wallis test, PTCS: Perception of Traumatic Childbirth Scale, EPDS: Edinburgh Postnatal Depression Scale, $p < .05$ = statistically significant, OFHP: Other family health personnel, [a] Nausea, vomiting, weakness, preterm labor threat, abortion risk.

There was a weak, statistically significant, linear correlation between the PTCS and EPDS ($p < .05$)

Table 2. Depression risk and traumatic birth perception level according to the "PTCS" and "EPDS" scores.

Scales	Levels	n	%	Mean±SD
PTCS	Very low	63	11.50	14.65 ± 8.194
	Low	130	23.60	40.77 ± 7.584
	Moderate	171	31.10	65.78 ± 7.607
	High	148	26.90	88.99 ± 7.261
	Very high	38	6.90	112.05 ± 4.255
	Total	**550**	**100.0**	**63.45 ± 28.116**
EPDS	No risk	411	74.7	5.96 ± 3.66
	Risk present	139	25.3	17.19 ± 3.621
	Total	**550**	**100**	**8.8 ± 6.094**

PTCS: Perception of Traumatic Childbirth Scale, EPDS: Edinburgh Postnatal Depression Scale.

(Table 3). When the PTCS level of 'very low' was taken as a reference, the probability of postpartum depression increased 4.306 fold (95% confidence interval; 1.912–9.701) for the participants with a high level of PTC and 5.565 fold (95% confidence interval; 2.090–14.818) for those with a very high level of PTC (95% confidence interval; $p < .05$) (Table 4).

Discussion

This study was carried out to determine women's perception of traumatic childbirth, postpartum depression levels and the affecting factors and to reveal the relationship between postpartum

Table 3. Correlation between the PTCS and EPDS scores.

Scales	n/%	Mean±SD	r/p
PTCS	550/100	63.45 ± 28.116	r = 0.361
EPDS	550/100	8.8 ± 6.094	*p* = .000

PTCS: Perception of Traumatic Childbirth Scale, EPDS: Edinburgh Postnatal Depression Scale, r: Pearson's correlation, $p < 0.05$ = statistically significant.

Table 4. Logistic regression analysis of the participants' depression status (EPDS) according to their PTCS level.

		EPDS	
Logistic Regression Analysis		OR (95% CI)	p
PTCS	Very low[a]		0.000
	Low	1.177(0.485–2.857)	0.719
	Moderate	1.964(0.861–4.481)	0.109
	High	**4.306**(1.912–9.701)	0.000
	Very high	**5.565**(2.090–14.818)	0.001

PTCS: Perception of Traumatic Childbirth Scale, EPDS: Edinburgh Postnatal Depression Scale, [a]Reference, OR: Odds Ratio, CI: Confidence Interval.

depression and perception of traumatic childbirth. The results indicate that 33.80% of the women included in the study had the risk of PTC, 25.3% had the risk of postpartum depression, and many factors related to women affect both PTC and postpartum depression. As PTC increases, the postpartum depression risk also increases in women. Especially in women who have a high and very high PTC, the postpartum depression risk increases 4–5 times.

The prevalence of PTC is reported to vary. In the study, the rate of women with "high" and "very high" perception of traumatic childbirth was found to be 33.8%. In the studies performed by Soet, Brack, and Dilorio (2003) and Boorman et al. (2014), 34% and 29.4% of women were reported to meet the criteria of traumatic childbirth, respectively. Aktaş (2018) used the PTCS and found that 23.6% of pregnant women experienced a high level of PTC. This variation in the prevalence of PTC in the literature may be due to the use of different measurement tools. The scale used in this study is relatively new, and it measures all types of trauma related to childbirth.

In our sample, the rate of women at risk of postpartum depression was found to be 25.3%. Varying postpartum depression rates have been reported in other studies conducted with the EPDS: 51.3% by Yıldırım, Hacıhasanoğlu, and Karakurt (2011), 15% by Durukan et al. (2011), 34.8% by Demir et al. (2016), and 30.6% by Battaloğlu, Aydemir, and Hatipoğlu (2012). Postpartum depression rates differ in the literature. The lower postpartum depression rate in our study compared to the literature can be attributed to personal and cultural factors.

In the study, PTC varied according to the income status, delivery method, whether pregnancy was intended, the person monitoring pregnancy, where the delivery occurred, and whether the participants were provided with any information about delivery.

In the study, PTC was found to be higher in the group with income less than expenses compared to the groups with income equal to or higher than expenses. Likewise, Güleç et al. (2014) reported that the fear of childbirth was related to income status. In another study, it was determined that income status did not significantly affect the anxiety scale scores during and after childbirth (Üst and Pasinlioğlu 2015). This suggests that income status is not the sole factor since it also brings about other negative situations, such as where delivery occurs, insufficient access to necessary information, and the lack of social support, leading to PTC in women.

In this study, PTC was significantly higher in women who delivered by cesarean section. Elvander, Cnattingius, and Kjerulff (2013) reported that women who underwent an emergency cesarean section and had a fear of childbirth were 12 times more likely to report a negative birth experience than those who underwent through vaginal delivery. The comfort scores of mothers who had vaginal delivery

were found to be higher than those that underwent cesarean section in a previous study (Pınar et al. 2009). In another study, vaginal delivery was found to be more traumatic for women than cesarean section (Aktaş 2018). Thus, there are contradictory reports in the literature concerning the relationship between the fear of childbirth and the delivery method. Our study supported the findings indicating that cesarean causes a more traumatic experience. This may be due to the preference of women fearing childbirth to undergo a cesarean section. Postpartum problems experienced by women undergoing cesarean section can also lead them to evaluate the process in a negative manner.

In the study, it was concluded that PTC was lower in women with intended pregnancy. Aksoy, Ozkan, and Gundogdu (2015) reported that the scale scores of women with intended pregnancy (68.34 ± 11.73) were lower than unintended pregnancy cases (76.52 ± 1.73). Unwanted pregnancies can abruptly change the lives of women, and it may take time to get used to the new situation, or they may never accept it. This can cause psychological and financial problems for both women and their family members. Our finding was considered to be associated with similar reasons.

There are serious problems previously reported regarding the quality and adequacy of antenatal care (Altıparmak and Coşkun 2016). PTC was significantly lower in women who were followed up by midwives and doctors, according to the results of this study. Durduran (2012) stated that 93% of pregnant women in Konya consulted the doctor for antenatal care but suggested that the follow-up of healthy childbirth should be undertaken by family health centers. The high PTC of mothers followed up by other family health personnel might indicate that the information provided during the antenatal period may not be sufficient to eliminate women's childbirth fears. Hence, having a high rate of antenatal follow-up by a doctor may lead to the lack of effective and adequate antenatal care, which may also play an important role in PTC.

When the places where the delivery took place were examined, this study found that the mean PTC scores of women giving birth at home were found to be significantly lower compared to the remaining cases. Of the women included in the study, 12 gave birth at home and had the lowest mean PTC score of 35.08. Martin and Fleming (2011) reported that health personnel disrupted the normal delivery process by trying to control women's thoughts, feelings, and behaviors. Thus, natural delivery cannot be undertaken in hospital, and this is why most women prefer to deliver the baby at home. In this study, the satisfaction of women giving birth at home can be due to the fact that 83.3% have received information about childbirth during the antenatal period, had freedom of movement, and felt they had the support of both the midwife and family.

In the study, PTC was observed to be lower in women who received information/training on childbirth preparation compared to those who did not. In their study, Akın and Turfan (2016) obtained the childbirth satisfaction scale score of the group who received childbirth preparation training higher than the score of those who did not. Obtaining information/receiving training on childbirth is important to encourage women to take control over the process and reduce their concern caused by ignorance, which can also change their perception of childbirth in a positive way. These desired outcomes can only be achieved through preparatory childbirth training provided by midwives who have proven themselves in terms of knowledge and skills.

Not only the quantity in the quality of prenatal care but also the content of care and the availability of adequate knowledge and skills of healthcare personnel are effective (Akın and Turfan 2016). The present research revealed that among women who had been informed about childbirth, those that considered this information insufficient or only partially sufficient had significantly higher PTCS scores. Insufficient and unqualified information provided during the antenatal period and/or the failure to apply the information given to childbirth may have caused the ineffectiveness of childbirth preparation training.

In the study, the postpartum depression risk differs according to whether pregnancy was intended, whether problems occurred during pregnancy, the person monitoring pregnancy, and whether the participants were provided with any information about delivery.

The postpartum depression level in this study was significantly lower in women with planned pregnancy. Unplanned pregnancy impairs postnatal communication between the mother and the

infant and thus increases the risk of depression in the mother that feels that she cannot establish a good relationship with her baby. It was reported in another study that women who had unplanned pregnancy had a 2.5 times higher risk of depression at both evaluation times (during pregnancy and delivery) than those with intended pregnancy (Faisal-Cury et al. 2017). Our findings are consistent with the literature.

The study findings revealed that the depression level was significantly higher in women who had any health problems during pregnancy. Durukan et al. (2011) reported that the presence of any medical problem during pregnancy increased the risk of postpartum depression, which is consistent with our study. Battaloğlu, Aydemir, and Hatipoğlu (2012) did not find a relationship between health status during pregnancy and the Edinburgh Postnatal Depression Scale (EPDS) scores. Due to the problems during pregnancy, the woman's anxiety may cause an increase in the risk of postpartum depression.

The depression levels in this study were found to be significantly lower in women who were followed up by a doctor or midwife during pregnancy. It was reported in another study examining the follow-up of pregnant women in Konya that the rate of presentation to a hospital for pregnancy follow-up was higher than the number of visits to family health centers (Durduran 2012). Women who received both physician and midwife care in the postpartum period constituted the group that caused a statistical difference according to the findings of our study, suggesting that the quality of follow-up was better.

It has been reported in the literature that pregnant women receiving preparatory childbirth training have low cesarean rates, are more active during the birth, and have increased satisfaction with the process, increased self-confidence, and reduced postpartum depression (Altıparmak and Coşkun 2016). The postpartum depression level found in this study was significantly lower in women receiving information/training about childbirth. In this study, we observed that the risk of postpartum depression was significantly higher in women considering that the information they had received was insufficient or only partially sufficient compared to those who believed to have been sufficiently informed. Given that being informed about childbirth affects PTCS, it may also have an effect on postpartum depression for similar reasons.

A traumatic delivery experience is associated with postpartum mental health problems, including depression and PTSD (Reed, Sharman, and Inglis 2017). Boorman et al. (2014) reported that the EPDS scores were related to traumatic childbirth criteria. Garthus-Niegel et al. (2014) determined that both childbirth pain and general perception of birth affected the development of postnatal PTSD. In a systematic review by Bell and Andersson (2016), the postpartum perspective was reported to be associated with postpartum depression. In agreement with the literature, we found an increased risk of postpartum depression in parallel to the increased level of PTCS. Furthermore, women's level of PTC increased their likelihood of experiencing postpartum depression. According to the PTCS, while women with a low or moderate level of PTC were not likely to experience postpartum depression, the probability of developing postpartum depression was approximately four times higher for women with a high level of PTC and five times for those with a very high level of PTC. The psychological changes caused by PTC can further increase the risk of depression when combined with psychological, physiological, and sociological changes in the postpartum period.

Conclusion

The results of the study suggest that PTC may occur in one-third of women giving birth. The probability of depression increases in the postpartum period. Therefore, factors affecting PTC should be well analyzed, and the necessary precautions should be taken.

Since women who have low income, gave birth through cesarian delivery and had unwanted pregnancy may constitute a risky group, they should be provided with more support and care by midwives if they get pregnant. It is necessary to determine their opinions about pregnancy during antenatal monitoring, to detect problems early and to take precautions. To prevent PTC and reduce the fear of childbirth, midwifery care and monitoring should be adequately provided during the

antenatal period, and it should be ensured that all pregnant women access childbirth preparation training. Studies should also be conducted on different groups of women in different periods using the PTCS.

Limitations of the study

Although the inclusion of puerperants, who presented to Family Doctors in the Family Health Centers, in the study sample facilitated the access to the sample, it may limit representability and thus prevent the generalization of these findings to the general population. The high number of the Family Health Centers specified in the study and their presence on a wide geography made the data collection difficult. The reliability of the study is limited to the responses given by the participants. Different samples and longer follow-ups are considered useful for future studies.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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References

Akın B., and Turfan E. Ç. 2016. Doğuma hazırlık eğitimi alan ve almayan gebelerin doğumdan memnuniyetlerinin değerlendirilmesi [The effect of the childbirth education on birth experience and satisfaction from birth]. International Referred. *Journal of Gynaecological Diseases and Maternal and Child Health* 8(1–1). doi:10.17367/jacsd.2016823639.

Aksoy, A. N., H. Ozkan, and G. Gundogdu. 2015. Fear of childbirth in women with normal pregnancy evolution. *Clinical Obstetrics and Gynecology* 42:179–83.

Aktaş, S. 2018. Multigravidas' perceptions of traumatic childbirth: Its relation to some factors, the effect of previous type of birth and experience. *Medicine Science* 7:203–09. doi:10.5455/medscience.2017.06.8728.

Altıparmak, S., and A. M. Coşkun. 2016. Effect of prenatal training on information and satisfaction level of a pregnant woman [Doğum öncesi verilen eğitimin gebenin bilgi düzeyi ile memnuniyet durumuna etkisi]. *Journal of Human Sciences* 13 (2):2610. doi:10.14687/jhs.v13i2.3744.

Anderson, C. A. 2017. The trauma of birth. *Health Care for Women International* 38 (10):999–1010. doi:10.1080/07399332.2017.1363208.

Aydın, N., and H. Yıldız. 2018. Effects of traumatic birth experience and transmission intergenerational [Travmatik doğum deneyiminin etkileri ve nesiller arası aktarımı]. *Journal of Human Sciences* 15 (1):604. doi:10.14687/jhs.v15i1.5175.

Barut, S., and T. Uçar. 2018. Gebelerde doğum öz yeterlilik algisinin doğum korkusu ile ilişkisi [Relationship between childbirth self-efficacy and fear of childbirth]. *Mersin Univ Saglık Bilim Derg* 11:107–15. doi:10.26559/mersinsbd.331077.

Başkaya, Y., and F. D. Sayıner. 2018. Sezaryen oranini azaltmaya yönelik kanıta dayalı ebelik uygulamaları [Evidence-based midwifery practices to reduce cesarean rat]. *Sağlık Bilimleri Ve Meslekleri Dergisi* 5:113–19. doi:10.17681/hsp.335472.

Battaloğlu, B., N. Aydemir, and S. Hatipoğlu. 2012. Depression screening and risk factors for depression in mothers with 0-1 year old babies who admitted to the healthy baby outpatient clinic. *Medical Journal of Bakirkoy* 8:12–21. doi:10.5350/BTDMJB201208103.

Bell, A. F., and E. Andersson. 2016. The birth experience and women's postnatal depression: A systematic review. *Midwifery* 39:112–23. doi:10.1016/j.midw.2016.04.014.

Biaggi, A., S. Conroy, S. Pawlby, and C. M. Pariante. 2016. Identifying the women at risk of antenatal anxiety and depression: A systematic review. *Journal of Affective Disorders* 191:62–77. doi:10.1016/j.jad.2015.11.014.

Boorman, R. J., G. J. Devilly, J. Gamble, D. K. Creedy, and J. Fenwick. 2014. Childbirth and criteria for traumatic events. *Midwifery* 30 (2):255–61. doi:10.1016/j.midw.2013.03.001.

Çapik, A., and H. Durmaz. 2018. Fear of childbirth, postpartum depression, and birth-related variables as predictors of posttraumatic stress disorder after childbirth. *Worldviews on Evidence-Based Nursing* 15 (6):455–63. doi:10.1111/wvn.12326.

Cox, J., Holden, J., and Sagovsky, R..1987. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. *The British Journal of Psychiatry* 150:782–786.

Creswell, J. W. 2013. *Araştırma deseni: Nitel, nicel ve karma yöntem yaklaşımları*. 2rd ed. Trans. S. B. Demir. Ankara: : Eğiten Kitap.

Demir, S., M. B. Şentürk, Y. Çakmak, and M. Altay. 2016. Kliniğimizde doğum yapan kişilerde postpartum depresyon oranı ve ilişkili faktörler [Postpartum depression and associated factors in patients who admitted to our clinic to make child birth]. *Medical Bulletin of Haseki/Haseki Tip Bulteni* 54 (2):83–89. doi:10.4274/haseki.2856.

Durduran, Y. 2012. Monitoring of pregnant and infants in Konya district before and after transformation in health-care system. *Dicle Medical Journal* 39 (2):227–33. doi:10.5798/diclemedj.0921.2012.02.0132.

Durukan, E., M. N. Ilhan, M. A. Bumin, and S. Aycan. 2011. 2 Hafta-18 aylık bebeği olan annelerde postpartum depresyon sıklığı ve yaşam kalitesi [Postpartum depression frequency and quality of life among a group of mothers having a child aged 2 weeks-18 months]. *Balkan Medical Journal* 28:385–93. doi:10.5174/tutfd.2010.04117.3.

Elvander, C., S. Cnattingius, and K. H. Kjerulff. 2013. Birth experience in women with low, intermediate or high levels of fear: Findings from the first baby study. *Birth* 40 (4):289–96. doi:10.1111/birt.12065.

Engindeniz, A., L. Küey, and S. Kültür. 1996. Edinburgh doğum sonrası depresyon ölçeği Türkçe formu geçerlilik ve güvenilirlik çalışması [Validity and reliability study of Edinburgh postpartum depression scale Turkish form]. *Bahar Sempozyumları* 1:51–52.

Faisal-Cury, A., P. R. Menezes, J. Quayle, and A. Matijasevich. 2017. Unplanned pregnancy and risk of maternal depression: Secondary data analysis from a prospective pregnancy cohort. *Psychology, Health & Medicine* 22 (1):65–74. doi:10.1080/13548506.2016.1153678.

Garthus-Niegel, S., C. Knoph, T. Von Soest, C. S. Nielsen, and M. Eberhard-Gran. 2014. The role of labor pain and overall birth experience in the development of posttraumatic stress symptoms: A longitudinal cohort study. *Birth* 41 (1):108–15. doi:10.1111/birt.12093.

Greenfield, M., J. Jomeen, and L. Glover. 2016. What is traumatic birth? A concept analysis and literature review. *British Journal of Midwifery* 24 (4):1–29. https://hydra.hull.ac.uk/assets/hull:13111/content .

Güleç, D., R. Öztürk, Ü. Sevil, and M. Kazandı. 2014. Gebelerin algiladiklari doğum korkusu ile algiladiklari sosyal destek arasindaki ilişki [The relationship between fear of birth and perceived social support of pregnant women]. *Journal of Clinical Obstetrics & Gynecology* 24:36–41.

İsbir, G. G., and F. İnci. 2014. Travmatik doğum ve hemşirelik yaklaşımları [Traumatic childbirth and nursing approaches]. *Kadın Sağlığı Hemşireliği Dergisi* 1:29–40.

Koçak, D. Y. and Duman, N. B. 2016. Postpartum Depresyon ve Hemşirelik Yaklaşımı [Postpartum Depression and Nursing Approach]. *Psikiyatri/Nöroloji/Davranış Bilimleri Dergisi Sempozyum* 9:21–26.

Körükçü, Ö., A. Deliktaş, R. Aydın, and K. Kabukcuoglu. 2017. Gebelikte psikososyal sağlık durumu ile doğum korkusu arasındaki ilişkinin incelenmesi [Investigation of the relationship between the psychosocial health status and fear of childbirth in healthy pregnancies]. *Clinical and Experimental Health Sciences* 7 (4):152–58. doi:10.5152/clinexphealthsci.2017.359.

Marakoğlu, K., S. Özdemir, and S. Çivi. 2009. Postpartum depresyon [Postpartum depression: Review]. *Turkiye Klinikleri J Med Sci* 29 (1):206–14.

Martin, C. H., and V. Fleming. 2011. The birth satisfaction scale. *International Journal of Health Care Quality Assurance* 24 (2):124–35. doi:10.1108/09526861111105086.

Molgora, S., V. Fenaroli, and E. Saita. 2020. The association between childbirth experience and mother's parenting stress: The mediating role of anxiety and depressive symptoms. *Women & Health* 60 (3):341–51. doi:10.1080/03630242.2019.1635563.

National Institute for Health and Care Excellence. 2014. Antenatal and postnatal mental health: Clinical management and service guidance. 10.1109/ICPHM.2017.7998331

Pınar, G., N. Doğan, L. Algıer, N. Kaya, and F. Çakmak. 2009. Annelerin doğum sonu konforunu etkileyen faktörler [Factors that affecting mothers' postnatal comfort]. *Dicle Tıp Dergisi* 36 (3):184–90.

Reed, R., R. Sharman, and C. Inglis. 2017. Women's descriptions of childbirth trauma relating to care provider actions and interactions. *BMC Pregnancy and Childbirth* 17 (1):21. doi:10.1186/s12884-016-1197-0.

Şahin, N., H. Dinç, and M. Dişsiz. 2009. Gebelerin doğuma ilişkin korkulari ve etkileyen faktörler [Pregnant women's fear of childbirth and related factors]. *Zeynep Kamil Tıp Bülteni* 40 (2):57–62.

Simpson, M., and C. Catling. 2016. Understanding psychological traumatic birth experiences: A literature review. *Women and Birth* 29 (3):203–07. doi:10.1016/j.wombi.2015.10.009.

Soet, J. E., G. A. Brack, and C. Dilorio. 2003. Prevalence and predictors of women's experience of psychological trauma during childbirth. *Birth* 30 (1):36–46. doi:10.1046/j.1523-536X.2003.00215.x.

Türkmen, H., H. Y. Dilcen, and F. A. Özçoban. 2020. Traumatic childbirth perception during pregnancy and the postpartum period and its postnatal mental health outcomes: A prospective longitudinal study. *Journal of Reproductive and Infant Psychology* 1–13. doi:10.1080/02646838.2020.1792429.

Üst, Z. D., and T. Pasinlioğlu. 2015. Determination of anxieties related to delivery and postpartum period in primiparous and multiparous pregnant women. *Arc Health Sci Res* 2:306–17. doi:10.17681/hsp.96963.

Yalnız, H., F. Canan, R. E. Genç, M. M. Kuloğlu, and Ö. Geçici. 2016. Travmatik Doğum Algısı Ölçeğinin Geliştirilmesi [Development of a scale of traumatic childbirth perception]. *Türk Tıp Derneği Dergisi* 8 (3):81–88. doi:10.5505/ttd.2016.40427.

Yıldırım, A., R. Hacıhasanoğlu, and P. Karakurt. 2011. Postpartum depresyon ile sosyal destek arasındaki ilişki ve etkileyen faktörler [The relationship between postpartum depression and social support and affecting factors]. *Uluslararası İnsan Bilimleri Dergisi* 8 (1):31–46.