ORIGINAL ARTICLE

The relationship of prenatal attachment level to traumatic childbirth perception and posttraumatic stress in pregnancy

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Abstract

Objective: This study aimed to investigate the relationship between the extent of prenatal attachment and traumatic childbirth perception (TCP) and posttraumatic stress.

Methods: A total of 308 pregnant women admitted to the Obstetrics and Gynecology Department during a period of 6 months were applied a Personal Information Form, the Prenatal Attachment Inventory, the Traumatic Childbirth Perception Scale, and the Posttraumatic Diagnostic Scale, Self-Report version.

Results: There was a negative correlation between TCP and posttraumatic stress disorder (PTSD). Traumatic stress decreased with increasing prenatal attachment.

Conclusion: Consequently, a negative correlation was found between prenatal attachment and PTSD.

KEYWORDS
posttraumatic stress, pregnancy, prenatal attachment, traumatic childbirth perception

1 | INTRODUCTION

Pregnancy requires adaptation to physiological, psychological, and social changes in the life of a woman. It is a natural process where women prepare for motherhood with complex changes taking place.[1] Healthy prenatal attachment in pregnant women ensures developing a healthy role as a mother. Prenatal attachment is the emotional bond between parents and their unborn child. It is also a unique and emotional process that develops between the mother and the baby. A woman's mental health in the prenatal period is related to her attachment to her baby.[2] Awareness of own emotional tendencies is important for a pregnant woman in terms of prenatal attachment. This attachment helps activate the mother's care system and protects the fetus by avoiding losses.[3] Women who are positively attached to the fetus in the prenatal period are observed to be more responsive to the child's needs in the postpartum period and develop a more sensitive care behavior. Furthermore, it is clearly stated that these mothers have more active participation in their interaction with the newborn.[3,4] On the other hand, low prenatal attachment is associated with inadequate prenatal care on the part of the mother, both for herself and her baby, which in turn might lead to possible complications and risks during pregnancy and childbirth.[5] Complications developing around childbirth may unfold in life-threatening events with stillbirth, bleeding, or surgical intervention.[6] Furthermore, even

without such complications, some women may yet be traumatized due to the discomfort of frequent vaginal examinations, fear of losing their baby, or miscommunication with the healthcare staff.[7,8] In some pregnancies, the mother experiences physical and psychosocial health problems that endanger the life and health of the mother, the fetus, and the newborn, increasing the risks of disease and death. These factors may cause posttraumatic stress disorder (PTSD) during pregnancy and in the postpartum period. Women with serious complications during pregnancy or childbirth and those with high-risk events such as preterm labor, emergency C-section, or stillbirth display a higher prevalence of PTSD.[9,10] The mean prevalence of PTSD during pregnancy is 3.3% in the public and 18% in high-risk patients.[10] PTSD in pregnancy increases the risk of pregnancy outcomes such as an ectopic pregnancy, miscarriage, premature birth, and low birth weight even when demographic factors are kept under control.[11] Furthermore, maternal pregnancy stress, trauma, and PTSD negatively affect the functional and structural brain development of the fetus.[12] Prenatal events may have serious repercussions in terms of changes that may occur in the future. These changes may occur in more than one area (including physical, cognitive, emotional, and social areas).[13] A low prenatal attachment level and a high PTSD level may affect child development negatively. Even at the earliest stages of life, cognitive and behavioral impairment of the mother may have a negative effect on fetal development.[14] There is

increasing evidence that suggests that postpartum PTSD may affect the infant's behavior and cognitive development, in addition to the mother–infant relationship.[13] Women diagnosed with PTSD experience health problems such as depression, insufficient prenatal care, insufficient prenatal attachment, failure in breastfeeding, and psychological symptoms later in life.[13,15]

According to DSM 5, PTSD needs to be investigated after a trauma. There are studies on PTSD in the wake of childbirth.[15–17] The presence of traumatic stress and traumatic birth perception is important during pregnancy. Childbirth is a critical role transition in women's lives. Women undergo physical, psychological, and sociocultural changes during pregnancy, childbirth, and the postpartum period that may affect their own health and wellbeing, as well as the baby's health and wellbeing.[18] PTSD constitutes an important health issue placing women diagnosed with it at risk of such negative outcomes as depression, poor prenatal care, prematurity, decreased maternal–infant attachment, lack of breastfeeding in the postpartum period, and psychological symptoms later in life.[19–21] If women's perceptions of traumatic stress and traumatic birth are detected in the prenatal period, this will contribute to a positive mother–infant relationship by preventing traumatic births. While the cognitive model of PTSD proposed by Ehlers and Clark emphasizes anxiety because of the assessment of an impending threat, the problem with PTSD is that it has to do with the memory of an event that has already been experienced.[22] However, circumstances such as an upcoming childbirth may involve a potential threat as long as the individual's subjective perception regarding the impact of the event is threatening. Therefore, the expecting woman's perception of childbirth contributes to the development of pre-traumatic stress and a traumatic birth.[15] Traumatic stress symptoms may develop before a threatening or feared event.[13] Knowledge of the perception of traumatic childbirth and the symptoms of traumatic stress during pregnancy may help to foresee the course of labor and childbirth from the perspective of the mother. Traumatic childbirth and PTSD may be prevented through various methods to increase prenatal attachment.

There are a few studies in the literature that investigate the role of risk factors in the development of PTSD in the prenatal period,[10,13,16] while we have fewer studies at our disposal on the relationship of PTSD and traumatic childbirth perception (TCP) with perinatal attachment.[23] However, the relationship between prenatal attachment and PTSD and TCP during pregnancy may provide an important basic mechanism for the understanding of neonatal health, as well as perinatal health, birth complications, and birth outcomes. Given the importance of perinatal psychiatric conditions in terms of both the mother's and the child's health, effective treatment becomes essential in this period. It is assumed that the presence of traumatic birth perception and posttraumatic stress might affect prenatal attachment posing a risk factor. This study aimed to investigate the relationship of the extent of prenatal attachment with traumatic birth perception and posttraumatic stress. Ensuring wellbeing through mother and child attachment during pregnancy with positive feelings may prevent mental problems in the postpartum period. No studies were found in the literature on this topic. Therefore, it is our hope that the results of this study may complement the field literature and highlight the role of healthcare professionals in prenatal attachment, TCP, and PTSD in pregnant women.

2 | METHODS

2.1 | Design and participants

This is a cross-sectional descriptive study aimed at investigating the relationship of the extent of prenatal attachment with traumatic birth perception and posttraumatic stress. The population of the study consisted of all pregnant women who were admitted at the Obstetrics and Gynecology Department of a public hospital in southern Turkey in June–December 2019 and agreed to participate in the study. Women of at least 18 years of age, at Weeks 28–41 of gestation with no communication difficulty or mental disability were included in the study with their consent. Permissions were obtained from the board of ethics and the institution. A total of 308 pregnant women admitted to the Obstetrics and Gynecology Department during a period of 6 months were applied a Personal Information Form, the Prenatal Attachment Inventory (PAI), the Traumatic Childbirth Perception Scale (TCPS), and the Posttraumatic Diagnostic Scale, Self-Report (PDS-SR) version.

2.2 | Measurements

2.2.1 | Personal Information Form

This form was prepared by the researcher based on information from the field literature, and it included questions to evaluate the socio-demographic characteristics (age, education, social security, and marital status) and obstetric history (age at first pregnancy, pregnancy, childbirth, miscarriage-abortion, stillbirth, and number of children) of the pregnant women.

2.2.2 | Prenatal Attachment Inventory

The PAI, consisting of 21 items and created by Muller in 1993, was developed to determine the thoughts and feelings experienced during pregnancy, to explain conditions during pregnancy, and to measure the level of attachment in the antenatal period.[24] PAI scores can range from 21 to 84. Higher scores indicate higher levels of attachment. PAI has previously been adapted into Turkish by Yilmaz and Beji,[25] and the Turkish version has a reliability coefficient (Cronbach's alpha) of 0.84, item-total score correlation coefficients between 0.36 and 0.68, and a test–retest correlation coefficient of 0.81. As such, the Turkish version of PAI is valid and reliable. In this study, the Cronbach's alpha coefficient of PAI was found to be 0.70.

2.2.3 | Traumatic Childbirth Perception Scale

TCPS was developed by Yalnız et al.[26] as a self-report questionnaire comprising 13 items, aimed at determining the TCPs of the respondent by obtaining information on the physical, emotional, and mental trauma of childbirth. The minimum and maximum achievable scores in this scale are 0 and 130 points, respectively. There is a scoring scheme

on a scale of 0–10 for each problem from the strongest to none. The mean total score of the scale represents the level of TCP. The minimum and maximum scores in the scale are 0 and 30, respectively. For the mean total scores of the scale, the range of 0–26 indicates very low, 27–52 indicates low, 53–78 indicates moderate, 79–104 indicates high, and 105–130 indicates very high level of TCP. The Cronbach's alpha reliability coefficient of the scale was reported as 0.895.[26] In this study, the Cronbach's alpha coefficient of TCPS was found to be 0.73.

2.2.4 | Posttraumatic Diagnostic Scale, Self-Report version

The PDS-SR version is a 17-item self-report questionnaire reflecting DSM-IV symptoms of PTSD, which are rated on a 4-point Likert-type scale: 0 = not at all, 1 = a little bit (once a week or less), 2 = somewhat (2–4 times a week) and 3 = almost always (five or more times a week).[27] The scale provides the total severity score, three subscale scores of re-experience, avoidance, and arousal, and demonstrates functional impairment in several areas. Essentially, the initial development of the instrument as the PTSD Symptom Scale-Self Report (PSS-SR) reflected an attempt to measure a DSM-III-R notion of PTSD symptoms in response to trauma exposure. The validation study of the Turkish version of PDS-SR in line with the DSM-IV TR notion of PTSD was performed by Aydin et al.[28] The Cronbach's alpha reliability coefficient of the scale was reported as 0.90.[28] In this study, the Cronbach's alpha coefficient of PDS-SR was found to be 0.83.

2.3 | Ethical disclosure

The required permissions for the study were granted by the Clinical Studies Ethics Committee and the Public Hospitals Union. The written consent of the pregnant women was obtained using a volunteer information form.

2.4 | Statistical analysis

Frequency and mean value analyses were applied to the introductory information. The skewness and kurtosis indices calculated by dividing the skewness and kurtosis coefficients by their standard errors in the normality test being close to 0 within the limits of ±1.5 is considered as evidence for the existence of a normal distribution.[29,30] In the evaluation of the normality of the distribution of the data, the skewness and kurtosis values were evaluated. To examine the effects of sociodemographic and obstetric characteristics on the mean values, Student's t-test and Mann–Whitney U test were used in binary groups, and ANOVA and Kruskal–Wallis test were used in triple groups. Correlation analysis was used to evaluate the relationships between the scales, and linear regression analysis was utilized to evaluate the extent of these relationships.

3 | RESULTS

The mean age of the participants was 26.52 ± 4.60, their mean age of marriage was 30.85 ± 5.36, and their mean age of first birth was 21.43 ± 3.95. It was found that 56.9% of the pregnant women were primary school graduates, 84% were living in a nuclear family, 78.2% were not in the workforce, 80.8% had social security, 89% had an average income level, and 21.1% were related to their husbands. An examination of their obstetric history showed that 29.9% were having their first pregnancy, 34.1% already had a child, and 45.1% had given birth vaginally. In 86.7% of the cases, the pregnancy was planned. Among the participants of the study, 89.9% had no negative previous experience, 81.2% were well-informed about labor and delivery, and 55.2% feared labor, of which 19.8% stated that they dreaded the pain. Furthermore, 45% stated their mothers as their primary source of information on childbirth, and in 30.8%, labor pain was mild in their previous childbirth.

Evaluation based on the age variable showed that the mean score of TCPS was higher in the participants older than 31, and the mean score of PDS-SR was higher in those under the age of 24. While a highly significant difference was found in the TCPS and PDS-SR scores on the basis of the age variable, there was no statistically significant difference in the scores of PAI ($p > 0.05$).

On the basis of the education variable, a highly significant difference was found in the illiterate subjects in terms of their TCPS and PDS-SR scores. As for the family variable, it was found that the TCPS mean score was significantly higher in those with a nuclear family. The mean TCPS score was higher in the subjects who dreaded childbirth, and the mean PAI score was higher in those who did not. A significant relationship was found between the fear of birth variable and the PAI and TCPS scores. The mean PDS-SR score was found to be higher in those who experienced more than two pregnancies. It was found that the degree of PAI was higher in those who were having their first pregnancies. There was a significant relationship between the number of pregnancies and the PDS-SR and PAI scores ($p < 0.05$). The participants with a pregnancy loss scored significantly higher both in PAI and PDS-SR. The mean TCPS score was found significantly higher in the participants who thought of labor pain as unbearable. Those who considered labor pain disturbing and unbearable scored significantly higher than the other groups ($p < 0.05$). The participants with a planned pregnancy had significantly higher scores in PAI. Those who had previously given birth with C-section scored higher in TCPS and PDS-SR, while those who had not given birth before scored significantly higher in PAI (Table 1).

An examination of the mean values for PAI, TCPS, and PDS-SR and their subgroups in pregnancy showed that the PAI score (62.62 ± 5.91) was above-average, and the TCPS score (61.22 ± 14.55) was moderate. A score of 25 or above in the 17 items of the scale indicates that PDS-SR is likely. It is seen that the PDS-SR score was low because the total PDS-SR score was 10.74 ± 7.16. It might be that a moderate TCPS score during pregnancy is responsible for a low PDS-SR score (Table 2).

While there was a negative correlation between PAI and TCPS, the relationship was not significant. However, since the coefficients were obtained as negative, the independent variable indicated that when x

TABLE 1 Examining the effects of socio-demographic and obstetric characteristics on traumatic birth perception, posttraumatic stress disorder, and prenatal attachment

	n	%	TCPS Mean ± SD (median)	PDS-SR Mean ± SD (Median)	PAI Mean ± SD (Median)
Age status[a]					
≤24	119	38.6	58.88 ± 6.58	12.58 ± 5.95	61.94 ± 6.58
25–30	127	41.2	61.53 ± 5.34	9.37 ± 7.40	62.97 ± 5.34
≥31	62	20.1	65.09 ± 5.64	10.00 ± 8.07	63.17 ± 5.64
p			**0.023**	**<0.001**	0.282
Education status[b]					
İlliterate	23	8.1	71.69 ± 15.46 (71)	16.17 ± 9.92 (14)	61.56 ± 6.59 (63)
Primary education	174	56.9	59.87 ± 13.81 (60)	10.54 ± 6.94 (10)	62.65 ± 5.70 (64)
High school	58	18.4	59.77 ± 15.85 (64)	11.20 ± 6.75 (11)	62.87 ± 5.71 (63)
University and above	53	16.6	62.71 ± 13.40 (59)	8.52 ± 5.70 (09)	62.67 ± 6.60 (63)
p			**0.004**	**0.002**	0.838
Family type[a]					
Nuclear family	260	84.4	61.93 ± 14.45	10.51 ± 7.18	62.70 ± 5.56
Extended family	48	15.6	57.41 ± 14.66	11.95 ± 7.00	62.16 ± 7.59
p			0.048	0.197	0.564
Fear of childbirth[a]					
Yes	170	55.2	62.93 ± 12.83	10.64 ± 6.87	61.75 ± 6.59
No	138	44.8	59.12 ± 16.23	10.86 ± 7.53	63.68 ± 4.76
p			**0.025**	0.796	**0.004**
Number of pregnancy[a]					
1	92	29.9	59.33 ± 14.79	9.05 ± 6.02	64.29 ± 6.33
≥2	216	70.1	62.03 ± 14.41	11.46 ± 7.49	61.90 ± 5.59
p			0.137	**0.003**	**<0.001**
Abortus status[a]					
0	255	82.8	60.00 ± 14.55	10.14 ± 6.63	62.54 ± 6.05
≥1	53	17.2	67.13 ± 13.14	13.60 ± 8.81	62.96 ± 5.23
p			**<0.001**	**<0.001**	0.613
Think about the pain of birth[d]					
Light	95	30.8	59.78 ± 10.93	10.27 ± 6.37	62.88 ± 5.99
Disturbing	48	15.6	60.06 ± 15.43	7.47 ± 6.61	63.50 ± 4.72
Severe	71	23.1	58.59 ± 16.10	10.95 ± 7.12	62.36 ± 5.61
Very violent	54	17.5	63.96 ± 17.12	14.50 ± 8.21	60.98 ± 7.72
Unbearable	40	13.0	67.02 ± 12.80	10.32 ± 6.06	63.60 ± 4.29
p			**0.018**	0.157	**<0.001**
Planned pregnancy[c]					
Yes	267	77.5	60.51 ± 14.41 (60)	10.61 ± 7.27 (10)	62.98 ± 5.75 (64)

TABLE 1 (Continued)

	n	%	TCPS Mean ± SD (median)	PDS-SR Mean ± SD (Median)	PAI Mean ± SD (Median)
No	41	22.5	65.87 ± 14.79 (66)	11.60 ± 6.41 (12)	60.26 ± 6.50 (62)
p			**0.031**	0.233	**0.008**
Previous form of birth[d]					
No birth	88	28.6	59.02 ± 15.03	9.04 ± 6.05	64.80 ± 5.49
Normal birth	142	46.1	60.03 ± 14.46	10.55 ± 6.89	62.04 ± 5.90
Cesarean birth	78	78	65.88 ± 13.28	13.00 ± 8.22	61.19 ± 5.78
p			**0.004**	**0.002**	**<0.001**

Note: Bold values: Results are significant if $p < 0.05$.

Abbreviations: PAI, Prenatal Attachment Inventory; PDS-SR, Posttraumatic Diagnostic Scale, Self-Report; TCPS, Traumatic Childbirth Perception Scale.

[a]Student's *t*-test.

[b]Kruskal–Wallis test.

[c]Mann–Whitney *U* test.

[d]ANOVA test.

increased, *y* would decrease (negative linear correlation). There was also a negative correlation between PAI and PDS-SR. Traumatic stress decreased when prenatal attachment increased (Table 3).

As a result of the multiple regression analysis, it was found that the two independent variables (TCPS and PDS-SR) accounted for 9.5% of the change in the dependent variable. Durbin–Watson values less than 1 and greater than 3 are indicative of error. As our value of 1.092 in the study did not fall in this range, it seemed there was no error. Our model was found significant ($p < 0.05$). The variance inflation factor (VIF) values are also presented here, indicating no problem with multicollinearity. Therefore, it is possible to argue that the relationship between PAI levels and the variables of TCPS and PDS-SR was significant (Table 4).

The TCPS regression model coefficient was not found significant, with −0.03 ($p = 0.132$, $p > 0.05$), whereas the PDS-SR regression model coefficient was significant at −0.24 ($p = .000$, $p < .005$), hence suggesting a negative linear correlation between TCPS and PDS-SR. The collinearity statistic was found as approximately 1.008. Being less than 5, the

interpretation that there was a correlation between the independent variables, and it would be appropriate to keep both variables in the model, was possible. The model was developed to explore the impact of the variables TCPS and PDS-SR on the degree of PAI, and it was observed that PAI was not related to the variable TCPS but related to PDS-SR (Table 4).

4 | DISCUSSION

The aim of this study was to investigate the relationship of prenatal attachment in pregnancy with traumatic birth perception and posttraumatic stress in pregnancy. The results of this cross-sectional descriptive study showed a negative correlation between prenatal attachment and PTSD. As prenatal attachment became stronger, TCP and posttraumatic stress decreased. It was emphasized that no study was conducted to examine the relationship between PTSD during pregnancy and mother–infant bonding.[13] Ponti et al. highlighted the close relationship between a traumatic childbirth experience and bonding between the mother and the newborn. Furthermore, Dekel et al.[17] reported that a traumatic or stressful childbirth experience interferes with the mother's skills to develop a secure attachment.[17] Qualitative studies showed that traumatic childbirth has a profound effect on a

TABLE 2 Mean values for the prenatal attachment inventory, traumatic childbirth perception, and posttraumatic stress disorder scale and subgroups ($N = 308$)

	Minimum–Maximum	Mean ± SD
PAI total score	45.00–76.00	62.62 ± 5.91
TCPS total score	7.00–101.00	61.22 ± 14.55
PTSD total and subscales	0.00–38.00	10.74 ± 7.16
Re-experiencing	0.00–12.00	3.13 ± 2.48
Avoidance	0.00–16.00	4.65 ± 3.40
Hyperarousal	0.00–13.00	2.94 ± 2.81

Abbreviations: PAI, Prenatal Attachment Inventory; PTSD, posttraumatic stress disorder; TCPS, Traumatic Childbirth Perception Scale.

TABLE 3 Examining the relation of prenatal attachment, traumatic childbirth, and posttraumatic stress disorder

	PAI	p
TCPS[a]	−0.109	0.056
PTSD[a]	−0.300	**<0.001**

Note: Bold values: Results are significant if $p < 0.05$.

Abbreviations: PAI, Prenatal Attachment Inventory; PTSD, posttraumatic stress disorder; TCPS, Traumatic Childbirth Perception Scale.

[a]Pearson correlations.

TABLE 4 Multiple regression analysis of variables related to the effect of TCPS and PTSD variables on PAI

Model		Unstandardized coefficients		Standardized coefficients				
		β	SH	β	95% CI	t	p	VIF[a]
Model 1	Constant	67.26	1.43		(64.43 to −70.09)	46.774	**<0.001**	
	TCPS	−0.034	0.02	−0.083	(−0.77 to −0.01)	−1.512	0.132	1.008
	PTSD	−0.241	0.04	−0.292	(−0.33 to 0.15)	−5.347	**<0.001**	1.008
	R: 0.311	R^2: 0.097	Durbin–Watson: 1.096 ($p < .001$)					

Note: Bold values: Results are significant if $p < 0.05$.

Abbreviations: CI, confidence interval; PAI, Prenatal Attachment Inventory; PTSD, posttraumatic stress disorder; TCPS, Traumatic Childbirth Perception Scale.

[a]Variance inflation factors.

woman's relationship with her baby and the father.[31] In the study of Türkmen et al.,[8] a negative relationship was found between PTSD and breastfeeding.[15] Garthus-Niegel et al.[32] found a prospective positive relationship between PTSD symptoms following previous childbirth and prenatal attachment in subsequent pregnancies.[32] In another study on depression, it was found that PTSD symptoms were associated with the bonding of the mother and the baby, but depression fully mediated their effect on the couple's relationship.[33] Therefore, it is not clear at this stage whether the effect of PTSD on mother–infant bonding and the relationship between the parents as a couple depends on the symptoms of PTSD or of accompanying depression.[16]

In their meta-analysis, Cook et al.[13] pointed to the relationship between perinatal PTSD and the mother–infant relationship.[13] It is not clear why PTSD symptoms following childbirth are associated with greater prenatal attachment in a subsequent pregnancy, but there are many possible explanations. PTSD seems likely to be associated with maternal interpretations of the infant's behavior in this critical period of bonding. It makes sense to assume that this may affect the infant's behavior, as well. The critical development in the pregnancy and postpartum period also bears importance with regard to mother–infant bonding and the attachment of the infant. Moreover, PTSD has a great potential effect in this period, and its symptoms may differ from PTSD experiences in any other time of life. The most rigorous quantitative study performed to date found that PTSD symptoms were associated with the infant's negative perceptions and a weaker mother–infant bond.[17] The impact of PTSD on the fetus and the developing infant is particularly interesting due to the growing evidence that stress and anxiety during pregnancy affect the neurological development of the fetus and the infant.[14] A review of the literature resulted in findings that prenatal stress and anxiety were associated with poor emotional and cognitive development in infants, besides an increased risk of infant hyperactivity, anxiety, and delay in speech.[34]

Considering the likelihood of the extensive impact of trauma on traumatized people, it is not surprising that PTSD symptomatology is defined as a specific risk factor for negative psychological and physical outcomes among pregnant women.[17] Studies have shown the role of cognitive, emotional, and situational factors in the degree of prenatal attachment.[3,32]

Experience of traumatic events is quite common in the society. Epidemiological research shows that approximately 80% of people experience a traumatic event at some point in their lives.[35]

The effect of previous PTS in the perinatal period was explored in a recent review, which found that postpartum PTS rates dropped significantly, yet they did not diminish completely, when pre-existing PTS was controlled for.[36] Women with PTSD symptoms during pregnancy may be provided with critical services to facilitate a healthy pregnancy and ensure adequate fetal growth and development.

5 | CONCLUSION

Consequently, a negative correlation was found between prenatal attachment and PTSD. As prenatal attachment became stronger, TCP and posttraumatic stress decreased. It was found that there was no significant relationship between the variables of PAI and TCP, but there was a significant relationship between PAI and PTSD, and the high degree of significance of the model proved this theory. Consequently, it is inevitable that some women have to endure a history of trauma and PTSD during pregnancy. Evidence shows that women with PTSD are at a higher risk of specific pregnancy complications. Previous reproductive trauma or interpersonal trauma history, especially a history of abuse in childhood may increase the risk of recurrence for PTSD symptoms. Therefore, reducing the prevalence, PTSD incidence, or severity of maternal trauma exposure during pregnancy has important public health implications for both the mother and the fetus. Systematic screening for trauma exposure and early detection of PTSD relapse during pregnancy may reduce the risk of recurrence of clinical PTSD diagnosis in the peripartum period, thus reducing the risk of adverse outcomes both for the mother and the infant.

6 | LIMITATIONS

Despite the relevance of the issues examined, the study had its limitations. First, the proposed theoretical models were not complete, and there might have been other variables at play determining posttraumatic stress, TCP, and prenatal attachment quality. Second, the inclusion criteria represented a limitation of the

study, because only women without prior psychopathologies or a risky pregnancy were included. In conclusion, it is of great interest to include other psychological and clinical cases for results with more validity. For example, for a better understanding of the relationships between variables, the study might benefit to a great extent if repeated with women who had a traumatic life experience and a traumatic childbirth. Another limitation of the study was that it was conducted in only one clinical setting in one city in southern Turkey.

7 | IMPLICATIONS FOR NURSING PRACTICE

Nurses and midwives are key health professionals who are often in contact with women in the perinatal period. This is an important opportunity to screen women for prenatal attachment, PTSD, and TCPs, as well as planning implementations of preventive and treatment options. PTSD and traumatic childbirth are increasing in the world. Therefore, early detection and appropriate and timely intervention to prevent or detect PTSD and traumatic childbirth are crucial to the well-being of a woman and her family.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

Study conception and design: Hacer Yalnız Dilcen. *Data collection*: Hacer Yalnız Dilcen. *Data analysis and interpretation*: Hülya Türkmen and Hacer Yalnız Dilcen. *Drafting of the article*: Hacer Yalnız Dilcen, Hülya Türkmen, and Bihter Akin. *Critical revision of the article*: Hacer Yalnız Dilcen, Bihter Akin, and Hülya Türkmen.

DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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