

## **Adult Attachment Styles: Emotion Regulation and Depressive Symptoms: A Comparison between Postpartum and Non-Postpartum Women in Turkiye**

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**Abstract:** It is known that pregnancy and postpartum are difficult periods in which women may have important changes and be exposed to some anxiety evoking stimulus. Stress elements during this period may increase the risk of postpartum depression for women with an insecure attachment style. In this study, the relations between attachment styles, affect regulation, and postpartum depression (PPD) is examined in postpartum women as compared to non-postpartum women. 215 Turkish women were recruited from pediatric units of hospitals, of whom 128 were in the postpartum period. Participants completed the Beck Depression Inventory, the Difficulty of Emotion Regulation Scale, and the Close Relationship Scale-II. It was found that compared to the non-postpartum group, the postpartum group has shown effects of high levels of regulation difficulties in both anxious and avoidant attachment styles and depressive symptoms. However, anxious mothers were more likely to be associated with emotional dysregulation than avoidant mothers in both groups. Affect dysregulation between unsecured attachment and depression only has a partial mediator effect on the postpartum group, and no meaningful mediator effect has been observed in the comparison group. Overall, the results highlight some of the risk factors behind mothers' postpartum depression symptoms.

**Keywords:** Attachment styles, emotion regulation, and postpartum depression

In the postpartum period, the new mother can face some important difficulties and also some developmental and physical responsibilities (Koc & Ergol, 2018). Pregnancy and childbirth can turn into a complex psychological process in which certain conflicts and vulnerabilities related to the early stages of development are reactivated due to exposure to many stimuli, as well as a process in which significant changes in physical, social, and psychological domains are experienced in a woman's life (Aber et al., 2013; Olalowo, 2020). During the postpartum (pregnancy and postpartum) period, the mother has a risk of encountering many factors that cause anxiety and stress. High anxiety levels may prevent a person from realizing his potential and may cause some mental disorders (Tomaszek et al., 2020). One of these concerns may be existential anxiety, and this anxiety has been associated with trauma and general psychological symptoms (Weems et al., 2004). Being able to confront existential concerns will be protective and strengthen one's psychological health (Cömertbay & Durak, 2024.).

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Postpartum depression (PPD) is defined as an episode of major depression that occurs during pregnancy or within the first four weeks after birth (American Psychiatric Association, 2013). Symptoms of a classic depressive episode are seen in PPD. However, thoughts often manifest as guilt about not being a good mother, unrealistic beliefs about the health of the baby, or obsessive thoughts about harming the baby, and believing that she cannot give the newborn enough warmth (Dağlar et al., 2015; Nur et al., 2004; Parry, 1995; Shrestha & Malik, 2023). Although sleep disorder, libido changes, fatigue, and anxiety are the symptoms of PPD, it can also be seen in the normal postpartum period (Karamustafalıoğlu & Tomruk, 2000). In this table, it has also been seen as important to distinguish maternity blues from PPD, which passes with milder symptoms in mood and ends on the first day after birth without the need for treatment, hours or days later (Gülseren, 2009).

Although there are many studies that show the risk factors such as a history of depression, anxiety, unsecured attachment styles, and emotion regulation difficulties are predictors of PPD, few studies examine the experiences of mothers regarding mental health in the postpartum period (Happel-Parkins et al., 2024; Chojenta et al., 2016). If postpartum depression is left untreated, it can cause risks for infants to develop symptoms of depression and anxiety in later life (Patel et al., 2012). Some other risk factors cause depressive symptoms by interacting with some psychological variables mediating effects of emotion regulation (Rugancı, 2008; Tasca et al., 2009; Wei et al., 2005).

### **Attachment Styles and Depression**

Attachment theory is based on a biological basis. With attachment behavior, the closeness between the child and the mother increases. This increases the probability of survival. Meeting the needs of the baby causes the baby to feel calm, trust, and love. On the other hand, disconnections in the relationship with the caregiver and the anxious interventions of the caregiver cause anxiety and sometimes anger or sadness in the baby. Based on all these positive and negative interactions, it has been suggested that attachment, according to Bowlby, is an emotional bond (Hazan & Shaver, 1994).

The individual's repetitive and different experiences with the attachment figure and the emergence of individual differences depending on the way the attachment system works are called "Internal working models." This includes expectations of one's own worth in relations with significant others and that the attachment figure can be ready and responsive for oneself, determining the individual's thought processes, emotional experiences, and behaviors in close relationships (Bowlby, 1973). According to working models, children predict the behavior of the attachment figure and adjust their response accordingly. According to Ainsworth (1970) the child's attachment style: secure, insecure-avoidant, and insecure-ambivalent attachment style, are shaped by the caregiver's behavior. Over time, some additions and explanations were made in attachment styles (Main & Solomon, 1990; Bartholomew & Horowitz, 1991) Finally, adult attachment styles are defined in two basic dimensions: anxious and avoidant attachment (Brennan et al., 1998). People with low scores in both dimensions of attachment were accepted as securely attached (Brennan et al., 1998).

It is seen that interpersonal relations among the risk factors of depression stand out as an important factor. Attachment theory, on the other hand, emphasizes the role of interpersonal relationships in people's mental health. It was found that depressive symptoms were highest among individuals with anxious attachment, second highest in individuals with avoidant attachment, and lowest in individuals with secure attachment (Cooper et al., 1998). Similarly, people with high anxious and avoidant attachment scores were found to be more inclined to score high on depression measures (Mickelson et al., 1997). In both insecure attachment styles, making negative evaluations about self or others coincides with negative self-perception seen

in depression and having a negative perception about others making the person more prone to depression.

### **Emotion Regulation, Attachment Style and Postpartum Depression**

Emotion has been defined as a set of coordinated responses developed against internal or external events that have a certain importance for the organism (Berkin & Whitley, 2014). It is the basic condition of mental health (Gross & Munoz, 1995). In adults, capacity and tendency of emotion regulation were associated with well-being (Moreira et al., 2022). On the other hand, emotional dysregulation is associated with mental disorders such as depression (Hong et al., 2019; Zheng et al., 2020), anxiety (O'Toole et al., 2019; Read et al., 2018), borderline personality disorder (Daros & Williams, 2019) and it is also related to psychological inflexibility (Cobos-Sánchez et al., 2020).

Two basic strategies, called reappraisal and suppression have been mentioned in emotion regulation (Gross & John, 2002). Using emotion regulation strategies such as reappraisal and suppression measures individual differences in one's functionality, life satisfaction, well-being, and depression (Gross & John, 2002). Mothers' referral to cognitive reassessment negatively correlated with depressive symptoms (Kristine et al., 2014). The indicators of being able to regulate emotion, having an understanding and awareness, acceptance of emotions, being able to control impulses while experiencing negative emotions, behaving in accordance with desired goals, and accessing emotion regulation strategies that are compatible with the situation. The absence of one or all of these skills may be an indicator of difficulty in emotion regulation or inability to regulate emotions (Gratz & Roemer, 2004). It was stated that the indicators of difficulty in regulating emotions, such as rumination, self-reproach, and frequent use of catastrophizing were highly matched with the symptoms of postpartum depression (Haga et al., 2012).

Mikulincer et al. (2003) underlined that people use one of two basic emotion regulation strategies: hyperactivating strategies and deactivating strategies. The imbalance between hyperactivation and de-activation of the insecure attachment system reflects a correspondent imbalance in the use of emotion regulation strategies, with attachment anxiety and attachment avoidance (Messina et al., 2023). People with avoidant attachment deactivate their attachment needs and tendencies by blocking the attachment system, which leads to their emotions being suppressed (Mikulincer & Shaver, 2019). Besides that, anxiously attached individuals expressed their emotions excessively to attract the attention of the caregiver in order to calm their emotions. They put forward reasons that their need for care was not met, and accordingly, developed a negative self-model. On the other hand, a secure attachment style is a predictor of psychological well-being, and emotional regulation than insecure attachment (Machado et al., 2019; Marrero-Quevedo et al., 2019; Moreira et al., 2021). Secure-attached individuals do not associate the strategies that constitute emotion regulation with the self by making positive and negative attributions; on the contrary, the self-confidence and optimistic perspectives of these people help them to make an assessment appropriate to their self (Mikulincer, 1998). Mutual understanding is said to bring cooperation and equality (Durak et al., 2024).

The aim of this study is to expand the framework of previous research on attachment by focusing on postpartum depression and comparing depression in postpartum and non-postpartum women. More specifically, it aimed to examine the mediator roles of emotion regulation between attachment styles and postpartum depression symptoms. It was worth examining to see which one plays a more active role in the interaction of these mechanisms with each other so that clinicians can take the necessary precautions and make appropriate interventions. According to this:

*H<sub>1</sub>*: It is expected that there will be a negative relationship between emotion regulation skills and depression in mothers with insecure attachment styles in *the postpartum*

*period* compared to mothers with insecure attachment styles in *the non- postpartum period*.

*H*<sub>2</sub>: Subdimensions of emotion regulation difficulties will explain the relationship between insecure attachment and postpartum depression.

*H*<sub>3</sub>: Emotion regulation will mediate the relation between unsecured attachment (anxious) and depressive symptoms

*H*<sub>4</sub>: The mediating effect of emotion regulation in the relationship between anxious attachment and depression will be greater in the postpartum group than in the non-postpartum group.

*H*<sub>5</sub>: For highly dismissing attached mothers, any mediating effects of both postpartum groups will not be seen.

## **Method**

### **Research Model (Pattern)**

In the study, a comparative screening model (Karasar, 2015) was used since a comparison was made between mothers who were in the peripartum-postpartum period and those who were not in this period to examine the relationships of certain variables.

### **Universe and Sample**

Participants of this study were recruited from pediatric units of hospitals in Ankara and Istanbul, Turkey. They were divided into two groups: a postpartum group of mothers who had delivered a child within 30 months ( $N=128$ ) and a non-postpartum group of mothers who had not delivered a child in 30 months prior to the study ( $N=87$ ). Both groups were mostly equal for demographic variables except for the mother's age ( $p=0,001$ ;  $p<0,01$ ). Surveys have been fulfilled by two hundred and fifty mother participants in this study; however, 35 were excluded as a result of missing data (e.g., skipping at least one item in a scale or entire scale), so in total, there are 215 surveys were obtained. The demographic characteristics of the postpartum group and comparison group are presented in Table 1. Both groups were matched for most demographic variables except for the mother's age.

**Table 1**  
*Demographic Features of Postpartum and Nonpostpartum Group*

		Nonpostpartum (n=87)	Postpartum (n=128)	
		<i>n (%)</i>	<i>n (%)</i>	<i>p</i>
Age	Age 18-22	0 (0)	5 (100)	<sup>b</sup> 0,001**
	Age 23-27	11 (22,9)	37 (77,1)	
	Age 28-32	19 (29,2)	46 (70,8)	
	Age 33-37	31 (51,7)	29 (48,3)	
	Age 38-42	14 (56,0)	11 (44)	
	43 ≥ Age	12 (100)	0 (0)	
Currently employed	Working	34 (40)	51 (60)	<sup>a</sup> 1,000
	Housewife	53 (40,8)	77 (59,2)	
Education level	Primary school	14 (51,8)	13 (48,2)	<sup>a</sup> 0,346
	Middle school	12 (52,2)	11 (47,8)	
	High school	14 (35)	26 (65)	
	University	43 (39,1)	67 (60,9)	
	Graduate school	4 (26,7)	11 (73,3)	
Family income	10000-20000 TL	22 (42,3)	30 (57,7)	<sup>a</sup> 0,473
	21000-30000 TL	24 (41,4)	34 (58,6)	
	31000-40000 TL	22 (45,8)	26 (54,2)	
	41000-60000 TL	9 (32,1)	19 (67,9)	
	61000-80000 TL	7 (50)	7 (50)	
	81000 ≥ TL	3 (20)	12 (80)	
Number of children	1 child	31 (36)	55 (64)	<sup>f</sup> 0,093
	2 child	40 (44,4)	50 (55,6)	
	3 child	11 (33,3)	22 (66,7)	
	4 child	5 (83,3)	1 (16,7)	

Note.<sup>a</sup>Pearson Chi-Square Test <sup>b</sup>Fisher-Freeman-Halton Test \*\**p*<0,01

## Procedures

The sample of the study consisted of women who applied to the pediatric unit of two hospitals in Ankara and Istanbul. One clinical psychologist and trained nurse informed the purpose of the study, confidentiality issues, and provided the inform consent to each mother who agreed to participate. Participants completed demographic information, the Beck Depression Inventory (BDI), the Close Relationship Scale-II (CRS-II), the Difficulty of Emotion Regulation Scale (DERS).

## Measures

### *Depressive Symptoms*

Beck Depression Inventory (BDI) was used to measure depression symptoms in mothers. The scale consists of a total of 21 items. Each item receives a score between 0-3, and the total score varies between 0-63. It was stated that the cut-off score on the scale is 17. In the reliability study of the scale adapted to Turkish by Hisli (1989), the Cronbach alpha coefficient was 0.08; The split-half reliability was determined as *r* = 0.74. (Hisli, 1989).

### ***Adult Attachment Style***

To assess mothers' insecure attachment style, the ECR-R developed by Fraley, Waller and Brennan (2000) was used. The scale consisted of 36 items, which included 18 anxiety and 18 avoidant dimensions. Each item in the scale to must be rated a degree on a 7-point- scale (1= *Never agree*, 7 = *almost agree*). Anxiety and avoidant attachment scores were obtained as a result of adding the scores of both subscales separately. This study used the Turkish version of the ECR-R. The reliability and validity of the scale of Turkish culture were developed by Selçuk et al. (2005). Cronbach's alpha = .90 and .86; test-retest reliability coefficient for anxiety dimension = .82 and for avoidant dimension= .81 (Selçuk et al., 2005).

### **Emotion Regulation**

The DERS which have been developed by Gratz and Roemer (2004) include 6 subscales: (1) lack of awareness of emotional responses (Awareness), (2) lack of clarity of emotional responses (Clarity), (3) nonacceptance of emotional responses (Nonacceptance), (4) limited access to effective strategies (Strategies), (5) difficulties in controlling impulses when experiencing negative affect (Impulse), and (6) difficulties in engaging goal-directed behavior when experiencing negative affect (Goals). The Scale is composed of 36 items, which are rated on a Likert type, from 1 (almost never) to 5 (almost always). On the scale based on self-report, higher scores have indicated emotion regulation difficulty. As a reliability score, it is reported that Cronbach Alpha was at .93 for the total scale, and alpha coefficients ranged from .80 to .89 for each subscale. Test-retest reliability also was reported as .88 ( $p < .01$ ,  $N=21$ ; (Gratz & Roemer, 2004).

In this study, the Turkish version of DERS, which has been adapted to Turkish culture by Rugancı (2008), was used. The 10th item of the scale was removed because it had a very low correlation with the whole scale ( $r = .06$ ), and another item with the same content was added instead. Thus, construct validity was ensured by preserving the number and structure of factors. Cronbach Alpha internal consistency was found to be .94, the internal consistency range of the subscales was found to be .90 to .75. and test-retest reliability was found to be .83. The Gutmann split-half reliability coefficient of the scale is .95 (Rugancı, 2008).

### **Statistical Analysis**

Number Crunch Statistical System (NCSS, 2007) and Power Analysis and Sample Size (PASS, 2008) Statistical Software (NCSS, LLC Utah, USA) program was used for statistical analysis. While evaluating the study data, student's t test was used for intergroup comparisons of normally distributed parameters as well as descriptive statistical methods (mean, standard deviation, median, frequency, ratio). Mann Whitney U test was used for intergroup comparisons of parameters that did not show normal distribution. In determining the relationships between variables, Pearson correlation analysis was used for variables with normal distribution, and Spearman correlation analysis was used for cases with non-normal distribution. Pearson Chi-square test was used to compare qualitative data. Finally, hierarchical regression analyses were used to examine a mediational effect where the mother's emotion regulation and self-esteem mediated the relation between the mother's insecure attachment styles and postpartum depression. In addition, it examined the significance of this mediational effect using Sobel's test. Then, it is further examined whether the mediational effect would differ between postpartum and non-postpartum groups. Logistic regression analysis was applied to examine the factors affecting the Beck depression score in the groups. Statistical significance was evaluated at  $p < 0.05$  level.

## Results

### Preliminary Analysis

**Table 2**

*Means, Standard Deviations and Distributions of Main Variables for Postpartum Group and Nonpostpartum Group*

		Non postpartum group (n=87)	Postpartum group (n=128)	<sup>c</sup> p
Beck depression score	<i>Mean±SD</i>	8,24±6,82	11,18±8,71	0,008**
	<i>Min-Max (Mean)</i>	0-33 (7)	0-44 (10)	
n (%)	<i>There is depression</i>	9 (10,3)	29 (22,7)	0,020*
	<i>No depression</i>	78 (89,7)	99 (77,3)	
DERS total score	<i>Mean±SD</i>	86,40±24,69	90,45±26,51	0,260
	<i>Min-Max (Mean)</i>	46-154 (80)	41-170 (91)	
Avoidant attachment	<i>Mean±SD</i>	3,23±1,21	2,88±1,05	0,028*
	<i>Min-Max (Mean)</i>	1-5,61 (3,22)	1-5,44 (2,83)	
Anxious attachment	<i>Mean±SD</i>	3,29±0,90	3,48±1,15	0,162
	<i>Min-Max (Mean)</i>	1,78-5,94 (3,33)	1,50-6,17 (3,50)	

Note. <sup>c</sup>Mann Whitney U Test      \*\*p<0,01      <sup>c</sup>Student-t Test \*p≤0,05

Beck depression score was statistically significantly higher in the postpartum group ( $p=0.008$ ;  $p<0.01$ ). Depression rates of participants in the postpartum period (22.7%) were found to be significantly higher ( $p<0.05$ ) than those not in this period (10.3%). According to DERS total scores, no statistically significant difference ( $p>0.05$ ) was detected between the postpartum groups. For attachment styles, avoidant attachment scores were found to be statistically significantly lower in the postpartum group ( $p=0.028$ ;  $p<0.05$ ). According to the anxious attachment sub-scores, no statistically significant difference ( $p>0.05$ ) was found between the groups (Table 2).

### Relationships Between Scale Scores

**Table 3**

*The Relationship Between Attachment Styles and Depression in Groups*

		Nonpostpartum group	Postpartum group
<i>ECR-R – Beck Depresyon</i>			
Avoidant attachment - Beck	<sup>†</sup> r	0,162	0,404
	p	0,134	<0,001***
Anxious attachment - Beck	<sup>†</sup> r	0,236	0,547
	p	0,028*	<0,001***

Note. <sup>†</sup>r: Spearman Correlation Coefficient \*p<0,05      \*\*p<0,01      \*\*\*p<0, 001

In the non-postpartum period, a significant positive correlation was found only between anxious attachment and depression at the level of 23.6% ( $r=0.236$ ;  $p<0.05$ ). In the postpartum period, a statistically significant positive correlation of 40.4% was found between the avoidant attachment score and the depression score ( $r=0.404$ ;  $p<0.01$ ), and it was also found between anxious attachment and depression at the level of 54.7% ( $r=0.547$ ;  $p<0.01$ ) (Table 3).

**Table 4***The Relationship Between DERS and Other Scale Scores in the Postpartum Group*

		DERS Awareness	DERS Clarity	DERS Nonacceptance	DERS Strategies	DERS Impulsivity	DERS Goals	DERS Total
BECK Total	† r	0,400	0,549	0,505	0,639	0,571	0,470	0,663
	p	0,001***	0,001** *	0,001***	0,001** *	0,001***	0,001** *	0,001** *
Avoidant attachment	† r	0,387	0,594	0,506	0,412	0,400	0,164	0,518
	p	0,001***	0,001** *	0,001***	0,001** *	0,001***	0,076	0,001** *
Anxious attachment	† r	0,266	0,531	0,543	0,598	0,586	0,466	0,645
	p	0,001***	0,001** *	0,001***	0,001** *	0,001***	0,001** *	0,001** *

Note. †r: Spearman Correlation Coefficient    \* $p < 0,05$     \*\* $p < 0,01$     \*\*\* $p < 0,001$

First, if we look at the relationship between depression and emotion regulation, a statistically significant positive correlation of 40.0% was found between the Beck depression total score and the Difficulty of Emotion Regulation Scale (DERS) awareness score, the clarity factor at a level of 54.9%, the non-acceptance factor at the 50.5% level, the strategies factor at a level of 63.9%, the impulse factor at a level of 57.1%, and the goals factor at the level of 47.0%. A statistically significant positive correlation of 66.3% was found between the depression total score and the DERS total scores ( $r: 0.663$ ;  $p < 0.01$ ). As a result, it was observed that there was a moderate positive relationship between depression and emotion regulation total scores and subscale scores.

When we look at the relationships between attachment styles and emotion regulation, there is a positive, statistically significant relationship between avoidant attachment and the DERS subfactors Awareness, Clarity, non-acceptance, strategies, and impulse sub-factor. A statistically significant positive correlation of 51.8% was found between avoidant attachment and DERS total scores ( $r: 0.518$ ;  $p < 0.01$ ). As a result, while a positive and significant relationship was detected with each of the avoidant attachment style and emotion regulation difficulty subfactors except the goals sub-factor, it was seen that the factor with the highest level of positive relationship was the clarity sub-factor ( $r: 0.594$ ;  $p < 0.01$ ).

In examining Anxious Attachment and DERS sub-factors, there is a positive and significant relationship between anxious attachment and the DERS with awareness, clarity, non-acceptance, strategies, impulse, and goals subfactor. A statistically significant positive correlation of 64.5% was found between anxious attachment and DERS total scores ( $r: 0.645$ ;  $p < 0.01$ ). To put it briefly, the anxious attachment style was found to have the highest level of positive relationship with the strategies sub-factor. Additionally, it was determined that the anxious attachment style had a higher positive relationship with difficulty in emotion regulation compared to the avoidant attachment style (Table 4).

**Table 5**

*The Relationship Between DERS and Other Scale Scores in the Nonpostpartum Group*

		DERS Awareness	DERS Clarity	DERS Nonacceptance	DERS Strategies	DERS Impulsivity	DERS Goals	DERS Total
BECK Total	† r	0,081	0,204	0,185	0,256	0,209	0,359	0,283
	p	0,453	0,059	0,086	0,017*	0,050	0,001** *	0,008** *
Avoidant attachment	† r	0,171	0,469	0,177	0,345	0,332	0,108	0,374
	p	0,113	0,001** *	0,102	0,001** *	0,002***	0,321	0,001** *
Anxious attachment	† r	0,140	0,405	0,263	0,389	0,187	0,332	0,408
	p	0,194	0,001** *	0,014*	0,001** *	0,083	0,002** *	0,001** *

Note. †r: Spearman Correlation Coefficient \* $p < 0,05$  \*\* $p < 0,01$  \*\*\* $p < 0,001$

When looking at the relationship between the sub-factors of depression and difficulty in emotion regulation, There was a positive correlation between depression and the strategies, the impulse, and the goals sub-factor. There is a significant positive correlation of 28.3% between the depression total score and the DERS total score ( $r: 0.283$ ;  $p < 0.01$ ; Table 5). It appears that the depression scores of the non-postpartum group have a much lower positive relationship when compared to the postpartum group.

### Mediation Analysis

**Table 6**

*Mediation Effect of Emotion Regulation in Relation Between Insecure Attachment and Depressive Symptoms in Postpartum Group*

	Predictors	F Change	For predictors t Value	sd	Beta ( $\beta$ )	Model R <sup>2</sup> Change	p
Model 1, Dependent variable: PPD							
I.	Attachment	40.176		2,103		0.438	<0.001***
	Avoidant		2.179		0.198		0.032*
	Anxious		5.819		0.528		<0.001***
II.	Emotion regulation	16.427		1,102		0.078	<0.001***
	DERS		4.053		0.408		<0.001***
	Avoidant		1.137		0.100		0.258
	Anxious		2.915		0.297		0.004**
Model 2, Dependent variable: DERS							
I.	Attachment	58.669		2,103		0.533	<0.001***
	Avoidant		2.890		0.239		0.005**
	Anxious		6.827		0.565		<0.001***

Two regression analyses were conducted to examine the mediating effect of DERS. In the first regression analysis, the dependent variable was the postpartum depression score (PPD). In the first stage, there was a positive relationship between avoidant attachment [ $\beta: 0.198$ , t

(105): 2.179,  $p$ : 0.032] and anxious attachment [ $\beta$ : 0.528,  $t(105)$ : 5.819,  $p < 0.001$ ] and PPD. A relationship was found, and it was determined that attachment styles could explain 43.8% of the variance of PPD [ $F(2, 103)$ : 40.176,  $p < 0.001$ ]. In the second stage, the explained variance was found to be 51.6% [ $F(1, 102)$ : 16.427,  $p < 0.001$ ]. A positive relationship was found between DERS [ $\beta$ : 0.408,  $t(105)$ : 4.053,  $p < 0.001$ ] and anxious attachment [ $\beta$ : 0.297,  $t(105)$ : 2.915,  $p$ : 0.004] and PPD. It was observed that avoidant attachment [ $\beta$ : 0.100,  $t(105)$ : 1.137,  $p > 0.05$ ] did not have a statistically significant effect.

According to the Sobel test results, it was found that DERS had a partial mediating effect on the relationship between avoidant attachment style ( $z$ : 2.307,  $p$ : 0.021) and anxious attachment style ( $z$ : 3.458,  $p < 0.001$ ) and PPD. When the results of the second regression analysis were examined, it was determined that there was a positive relationship between avoidant attachment [ $\beta$ : 0.239,  $p$ : 0.005] and anxious attachment [ $\beta$ : 0.565,  $p < 0.001$ ] and DERS. It was determined that attachment styles could explain 53.3% of the variance of DERS [ $F(2, 103)$ : 58.669,  $p < 0.001$ ] (Table 6).

**Table 7**

*Mediation Effect of Emotion Regulation in Relation Between Insecure Attachment and Depressive Symptoms in Non-Postpartum Group*

	Predictors	F Change	For predictors t Value	sd	Beta ( $\beta$ )	Model R <sup>2</sup> Change	p
Model 1, Dependent variable: PPD							
I.	Attachment	3.262		2,11		0.372	0.077
	Avoidant		-0.217		-0.069		0.832
	Anxious		2.051		0.654		0.065
II.	Emotion regulation	0.653		1,10		0.038	0.137
	DERS		0.808		0.318		0.438
	Avoidant		-0.470		-0.162		0.648
	Anxious		1.209		0.475		0.254
Model 2, Dependent variable: DERS							
I.	Attachment	8.938		2,11		0.619	0.005**
	Avoidant		1.171		0.291		0.266
	Anxious		2.269		0.563		0.044*

According to the results of the regression analysis applied to the group not in the postpartum period, it was determined that attachment styles could explain 37.2% of the variance of PPD in the first stage, but the model was not statistically significant [ $F(2, 11)$ :3.262,  $p$ :0.077]. In the second stage, it was determined that attachment styles could explain 41.0% of the variance of PPD, but again, the model was not statistically significant [ $F(1, 10)$ :0.653,  $p$ :0.137]. According to the Sobel test results, no mediating effect of DERS was observed on the relationship between avoidant attachment style ( $z$ : 0.544,  $p$ : 0.586) and anxious attachment style ( $z$ : 0.703,  $p$ : 0.482) and PPD. When the results of the second regression analysis are examined, there is a positive relationship between anxious attachment [ $\beta$ : 0.563,  $t(13)$ :2.269,  $p$ : 0.044] and DERS, and there is no relationship between avoidant attachment [ $\beta$ : 0.291,  $t(13)$ :1.171,  $p > 0.05$ ] and DERS. In addition, it was determined that attachment styles could explain 61.9% of the variance of DERS [ $F(2, 11)$ :8.938,  $p$ :0.005]. (Table 7.)

## Discussion

### Differences Between Attachment Styles and Postpartum Groups in Terms of Depression Symptoms

The finding of a highly positive and significant relationship between insecure attachment style and PPD in this study is supported by previous studies (Hanking et al., 2005; Roberts et al., 1996; Sabuncuoğlu & Berkem, 2006; Simpson et al., 2003; ). In addition, as expected, anxious attachment style was found to be more highly associated with depression than avoidant attachment in both the postpartum and non-postpartum groups. This finding is parallel to the findings of previous studies (Bianciardi et al., 2020; Gentzler et al., 2010; Simpson et al., 2003). Anxiously attached individuals harbor false beliefs, which are expressed as dysfunctional judgments about themselves and others (Lee & Hankin, 2009). Bowlby (1980) also suggested that anxiously attached individuals are more prone to depression when they experience stressful events. Since anxiously attached people have a negative view of themselves and a positive view of others, it is possible that the negative self-perception of these mothers is activated by the effect of an important and stressful transition period in life (childbirth).

On the other hand, avoidant-attached mothers still showed positive and significant relationships but showed lower scores than anxious mothers with depression, which may be due to the positive self-model acting as a protective barrier against internalizing problems. It can be thought that avoidant people minimize problems by resorting to defense mechanisms such as suppressing their negative feelings and thoughts in the face of stressful situations, avoiding closeness, and avoiding expressing emotional experiences. This often results in emotional distance (Mikulincer & Shaver, 2007). More specifically, it has been suggested that avoidant mothers begin the transition to parenthood with highly depressive symptoms if they think the new baby will interfere with their romantic relationships and outside activities, such as social life, hobbies, and leisure time (Rohles et al., 2011). As a result, the transition to motherhood triggers the attachment system (Robakis et al., 2020). People with anxious and avoidant attachment have different concerns about their relationships, which causes them to develop different behavioral mechanisms to become depressed.

### Differences Between Postpartum Groups in the Relationship between Emotion Regulation and Depression

As expected, a highly positive and significant relationship was found between the total scores of the depression and emotion regulation difficulties scores of the mothers in the postpartum group and in the comparison group. This result is also consistent with the findings of previous studies (Çankaya & Ataş, 2022; Cardoso & Fonseca, 2023; Dinni & Ardiyanti, 2020). In addition, studies conducted in different cultures have found that emotional regulation difficulties are associated with anxiety and depression. (Coo et al., 2020; Marques et al., 2018).

In the comparison group, there was no significant relationship between the sub-factors of awareness, clarity, non-acceptance, and impulse. Ehring et al. (2010) found that individuals prone to depression (those who have experienced depression at least once in the past) showed more dysfunctional emotion regulation behavior, such as overusing the emotion suppression strategy, compared to the control group (those who had never experienced depression). However, they could not control their emotions if taught. It was determined that they were successful in regulating their emotions functionally, like those in the control group.

## Differences Between Postpartum Groups in the Relationship between Attachment Styles and Emotion Regulation

According to the results of this study, insecure attachment styles were found to have a positive and significant relationship with emotion regulation difficulty in both groups. However, as expected, insecurely attached mothers (anxious and avoidant attachment) in the postpartum group had higher levels of emotion regulation compared to the comparison group. This result is also consistent with the findings of previous studies (Kohn et al., 2012; Mikulincer & Florian, 1988, 1999, as cited in Johns et al., 2014; Rholes et al., 2006). It has been suggested that insecure attachment styles related to parenting are associated with pregnancy and more psychological problems, using less constructive strategies to cope with stressful situations, and the perception that it will be difficult to cope with family responsibilities during the transition to parenthood.

In the current finding, anxious attached mothers had more difficulty regulating their emotions in both groups. These people use maladaptive cognitive strategies because they cannot relieve their intense feelings about the problem (Gillath et al., 2005, p. 844).

In the postpartum group, it was also found that avoidant-attached mothers had relatively less difficulty than anxious-attached mothers in all sub-dimensions of the DERS except the goals sub-dimension. This result may indicate that people with an avoidant attachment style react to problems by using immobilizing strategies such as cutting off their emotions and contact with potential social support providers (Mikulincer et al., 2003). On the other hand, mothers with anxious attachment were found to have significant difficulty in developing goal-oriented behaviors in the "Goals" sub-factor of the DERS. This finding is consistent with Velotti et al.'s (2016) study. According to this, anxious women and avoidant men have difficulty directing and controlling their behavior in line with personal goals when they experience negative emotions. In the non -postpartum group, it was found meaningless or near-meaningless relationships between insecure attachment and DERS subfactors. This draws attention to the effects of stress stimuli accompanying insecure attachment and emotion regulation only in the postpartum period.

In both the postpartum group and the comparison group, it was determined that anxious and avoidant mothers had a significant level of difficulty in *the clarity* sub-dimension of the DERS, but this difficulty was higher in avoidant mothers. Gross and John (2003) talk about *the suppression* strategy, which is the most frequently used defense by people with avoidant attachment. They argued that these people are unaware of negative emotions and do not express these emotions, thus depriving themselves of creating cognitive solutions and receiving social support, which will further increase stress.

## The Mediating Role of Emotion Regulation Difficulty between Attachment Styles and Depression According to Postpartum Groups

In the postpartum group, difficulty in emotion regulation partially mediated between both sub-dimensions of insecure attachment and depression. This result is consistent with the finding of Marques et al. (2018) and indicates that mothers with an insecure attachment style have a persistent vulnerability that hinders their ability to cope with stressful events (Karney & Bradbury, 1995). As a result of this, they may have shown that they exhibited a less flexible and less constructive attitude in their approach to problems. Especially anxiously attached mothers, if their spouses do not meet their expectations for closeness, support, and positive interaction in this period, and if their anxiety and fears are activated in this chronic way (Wei et al., 2005), it may cause them to use maladaptive emotion regulation strategies and develop depression. On the other hand, the finding that mothers with avoidant attachment start parenting with higher depressive symptoms when the perception that their spouse will not cooperate in

baby care and that the new baby is an obstacle to participating in social activities, romantic relationships, and being free (Rholes et al., 2011) may support our result that maladaptive emotion regulation strategies and depression symptoms seen in mothers with avoidant attachment.

This mediating effect was not observed in the non-postpartum group. According to this result, stress-inducing situations specific to the postpartum period were not present in the comparison group. Thus, it can be explained that control group mothers' insecure attachment styles and use of maladaptive emotion regulation strategies were not triggered like those in the postpartum period.

## Conclusions

According to the findings of the research, a picture has emerged that mothers with insecure attachment styles have difficulties in regulating emotions and show high levels of depressive symptoms when they interact with stress factors during the transition to parenthood. It has been observed that the negative self-model in mothers with an anxious attachment style and the positive self-model in mothers with an avoidant attachment style are both effective in the use of maladaptive emotion regulation strategies, and as a result, symptoms of depression may develop. It is thought that failure to meet the anxiety, attached to the new mother's exaggerated expectation of closeness and support from others may have paved the way for negative interaction with these people, a negative mood, and thus the development of depressive symptoms. In contrast to that, avoidant mothers do not have high expectations of seeking closeness and support. However, the intense care needs of the new baby, increasing responsibilities, losing pleasure activities may pose a threat to the independence of avoidant mothers and may cause them to experience negative emotions. In conclusion, the partial mediation effect of emotion regulation in the relationship between insecure attachment and postpartum depression suggests that other variables affecting the development of maternal depression may also have effects on this relationship.

## Limitations and Recommendations

First, this study is a cross-sectional study. Since the postpartum period covers a period of approximately two years, conducting a longitudinal study covering this two-year period would have been more useful in order to observe the relationships between the variables in question more objectively. Secondly, the findings of our research consist of the results of self-report scales. Especially in the DERS, items containing people's self-definitions, asking for positive definitions with negative expressions, abstract characterizations, etc. This may have caused difficulties in the participants' understanding of the items. Thirdly, in the current study, depression measurements were made using the Beck Depression Scale, which is based on self-reports. Future studies can be conducted using clinical samples. Fourthly, in the current study, all participants were of Turkish ethnicity. Since it has been suggested that the use of emotion regulation strategies may differ across cultures (Leersnyder et al., 2013). It may apply to participants of different ethnic backgrounds. Finally, the comparison group does not include childless women. The stress levels and symptoms of women who are mothers and women who do not have children may be different. Future studies can be conducted by including childless women in the comparison group.

In addition to all these limitations mentioned above, the research also reveals some clinical implications. According to this research, considering that people who are especially prone to depression in the postpartum period do not have the ability to use functional strategies to regulate their emotions, providing training to improve the skills of using functional strategies

in these people may be very effective in preventing the increase of depression symptoms or treating depression.

Using acceptance and commitment therapy (ACT) may be beneficial for peripartum/postpartum women due to its emphasis on cognitive diffusion, mindfulness, and acceptance (Bonacquisti et al., 2017). Giving training to postpartum mothers on mindfulness skills to improve their capacity for emotion regulation, reducing negative feelings when they face stressful situations (e.g., caring for a baby, sleep deprivation, relationship problems; Duncan & Bardacke, 2010; Gershy et al., 2017).

Ehring et al. (2010) mentioned in their study two types of interventions for functional emotion regulation in the literature. The first approach, e.g., focusing on increasing acceptance of negative emotions through acceptance and commitment therapy and helping the client let go of dysfunctional strategies, such as suppressing emotion, avoiding expression, and rumination. The second approach to emotional regulation is to explicitly teach patients to regulate their emotions in adaptive ways and then enable them to apply these taught skills (Berking et al., 2008; Harley, et al., 2008, as cited in Ehring et al., 2010; Hayes et al., 1999). Clinicians can intervene by developing one of the aforementioned interventions or a technique consisting of a mixture of both approaches to improve emotion regulation skills in patients showing symptoms of postpartum depression. However, future studies may examine what other factors are effective between attachment styles and postpartum depression. Dialectical behavioral therapy (DBT) has also been applied to postpartum women and has been suggested to cause significant improvements in the ability to express and manage emotions (Wilson & Donachie, 2018). This method can be used in a clinical setting to help postpartum women improve their emotion regulation skills.

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