PSIHOLOGIJA, 2023, Vol. 56(2), 145–162

UDC: 159.942.072:159.97(498)
616.895.4-083:618.7(498)
DOI: https://doi.org/10.2298/PSI220422002A

Self-Criticism and Self-Compassion as Mediators of the Relationship between Alexithymia and Postpartum Depressive Symptoms*

Ana-Maria Andrei[1], Rebecca Webb[2], & Violeta Enea[1]**

[1] Department of Psychology, Alexandru Ioan Cuza University, Iași, Romania
[2] Centre for Maternal and Child Health, School of Health Sciences, City, University of London, United Kingdom

Postpartum depression (PPD) is common after birth and can have a profound effect on women and their families. It is therefore important to understand the conditions and factors that lead to the occurrence and maintenance of PPD. The first aim of the current study was to identify whether there is a relationship between alexithymia and postpartum depressive symptoms (PPDS) in a sample of Romanian mothers. The second aim was to explore whether self-criticism and self-compassion mediate the relationship between alexithymia and PPDS. The current cross-sectional study included 307 mothers with babies aged between four weeks and one year. The results show that alexithymia, self-compassion, self-criticism, PPDS all correlated with one another, and self-criticism, self-compassion and alexithymia are significant predictors of PPDS. Moreover, self-criticism and self-compassion mediated the relationship between alexithymia and PPDS. A psychological therapy that increases self-compassion and reduces alexithymia and self-criticism may be beneficial for preventing symptoms of PPD.

Keywords: alexithymia, self-criticism, self-compassion, postpartum depressive symptoms

Highlights:

- The frequency of mothers with postpartum depressive symptoms was 73.6%.

Correspoding author: violeta.enea@uaic.ro

Author contributions. Ana-Maria Andrei: Conceptualization, Formal analysis, Investigation, Writing-Original draft; Rebecca Webb: Validation, Resources, Writing-Review & Editing, Visualization; Violeta Enea: Conceptualization, Project administration, Writing-Review & Editing, Supervision.

* Please cite as: Andrei, A-M., Webb, R., & Enea, V. (2023). Self-Criticism and Self-Compassion as Mediators of the Relationship between Alexithymia and Postpartum Depressive Symptoms. *Psihologija, 56*(2), 145–162. https://doi.org/10.2298/PSI220422002A

** https://orcid.org/0000-0003-3789-2017

- Self-criticism, low self-compassion, and alexithymia were significant predictors of PPDS.
- Self-criticism and self-compassion mediated the relationship between alexithymia and PPDS.

After childbirth, it is estimated that between 12–17% of mothers develop postpartum depression (PPD; Shorey et al., 2018). However, this prevalence varies across countries (Halbreich & Karkun, 2006), and it is estimated to be between 1.9% and 82.1% in developed countries, and between 5.2% and 74% in developing countries (Norhayati et al., 2015). Given this high prevalence, it is essential to understand the conditions and factors that lead to the occurrence and maintenance of PPD.

Self-Criticism and Self-Compassion in Postpartum Depression

Research shows that high levels of self-criticism play an important role in the development and maintenance of depression (Ehret et al., 2014; Lerman et al., 2012). Self-criticism refers to a judgemental attitude towards oneself (Neff, 2003), which lacks empathy and self-kindness. It implies intensive rumination, causing intensive psychological harm (Zhang et al., 2017). On the other hand, self-compassion is considered protective against depression (Ehret et al., 2014; Lerman et al., 2012), canceling out the effects self-criticism has on depressive symptomatology (Zhang et al., 2017). Self-compassion is about having a positive attitude towards oneself, full of warmth, empathy, and understanding during times of pain or failure. It means accepting one's experiences as part of the broader human experiences, thus avoiding over-identification with them (Neff, 2003).

These two dimensions are also relevant in the context of PPD since there is a positive correlation between self-criticism and PPD and a negative one between self-compassion and PPD (Pedro et al., 2019). For example, self-compassion is a protective factor against depressive symptomatology for mothers facing breastfeeding difficulties (Rosenbaum et al., 2020). Acceptance and kindness towards oneself are highly relevant during the postpartum period (Monteiro et al., 2011) as they can help women face unrealistic ideas of being a perfect mother (Gelabert et al., 2012).

Studies show that during the postpartum period women experience an intensification of self-criticism-related thoughts, thus raising their vulnerability to develop depression (Brassel et al., 2019). Mothers who score high on self-criticism tend to misinterpret their baby's signals (Norhayati et al., 2015). It has been suggested that this may be due to mothers being over-preoccupied with their feelings of inadequacy, therefore failing to recognize the emotional and physiological signs of their infants. This increases the risk of difficulties in the development of the mother-baby bond (Kaminer et al., 2007), as well as having

an adverse impact on child development and emotional attachment (Brassel et al., 2019).

Alexithymia and Postpartum Depression

Another factor found to be related to depression is alexithymia (Honkalampi et al., 2000; Suslow & Donges, 2017). Alexithymia refers to the difficulty to verbalize emotions (Apfel & Sifneos, 1979). It comprises four constructs: (a) difficulty in identifying emotions and distinguishing between emotions and physical sensations which result from emotional arousal; (b) difficulty in describing and communicating emotions to others; (c) limited imaginative processes and (d) externally-oriented thinking pattern (Le et al., 2007). The last two constructs represent an essential component of alexithymia called operatory thinking (Bagby et al., 2020), which refers to a practical concrete thinking style and difficulty with emotional regulation. It is also linked to a specific way of processing emotions, implying a lack of emotional awareness and confusion when it comes to identifying one's own feelings (Taylor et al., 1997). More recent studies broaden the definition of alexithymia, referring to it as a subclinical personality construct which denotes not only a failure of affective interroception (i.e. inability to recognize their own emotions), but also a more general one (inability to discern between feelings and non-affective states, such as pain, tiredness or arousal; Brewer et al., 2016). Characterized by an externally oriented thinking style (Taylor et al., 1997), it also reflects difficulties in correlating external cues of emotions to internal feelings, resulting in low emotional empathy (Lyvers et al., 2018). Alexithymia is correlated with reduced general daydreaming frequency and vividness, and the emotions associated are negatively charged (Preece et al., 2020). It therefore causes psychological distress, can negatively affect the quality of life (Akram & Arshad, 2022) and predicts higher levels of depression, anxiety and stress (Osimo et al., 2021).

Most research on alexithymia focuses on the general population. However, there is some evidence to suggest this is an appropriate factor to research in relation to PPD. For example, scientific literature shows significant and positive correlations between a mother's alexithymia and depression during pregnancy and early postpartum (Le et al., 2007). Furthermore, alexithymia and PPD are positively associated with one another (Le Donne et al., 2012; Karukivi et al., 2014; Stojanov et al., 2021) and alexithymia is more common in mothers with PPD than mothers without PDD (Diop et al., 2022).

Alexithymia and Self-criticism

Postpartum women, according to the Social Energy Exchange Theory for Postpartum Depression, are continuously seeking a balance between the self (micro-universe) and others (macro-universe) through social energy exchange. Mothers' inner discourse, empathy towards themselves, the management of their emotions, and interactions with others, when dysfunctional, may disrupt

this balance, blocking both intra– and inter-social energy. This may lead to PPD (Posmontier & Waite, 2010). There are positive correlations between alexithymia and self-criticism in literature (Akariya et al., 2021; Gilbert, et al., 2011; Speranza, et al., 2005), suggesting that people with a low ability to explore their own feelings lack compassion and kindness towards themselves (Gilbert et al., 2011). Negative and significant correlations between emotional regulation and awareness, and self-criticism suggest that people with functional, complex and specific strategies to regulate emotions are less likely to report depressogenic self-critical symptoms in comparison to those who enact maladaptive, more general strategies for emotional regulation (Pascual-Leone et al., 2015). Self-criticism is highly correlated with difficulties identifying feelings, which is a feature of alexithymia (Speranza et al., 2005). Facing limitations in regulating their emotions, people who suffer from alexithymia are more likely to adopt maladaptive strategies and experience an inadequate sense of self (Speranza et al., 2005). A causal relationship between alexithymia and self-criticism is suggested by Lumley (2000), who states that a highly self-critical style might explain the tendency of individuals with alexithymia to focus on negative affect and experience difficulties in identifying and describing feelings. Furthermore, research has found that a lack of compassion towards one's self is positively correlated with alexithymia. This suggests that a self-critical thinking style may prevent people from offering themselves the time to ponder over their own feelings and may cause anxiety about how their emotional experiences might be if reflected upon (Gilbert et al., 2011). Difficulties in discerning between feelings and physical states such as hunger or pain is also a feature of alexithymia (Brewer et al., 2016), and this feature might reinforce a feeling of inappropriateness and hidden badness, also strengthened by criticism oriented towards self (Barth, 2015).

Previous studies suggest that self-criticism, self-compassion, and alexithymia are related to the development and maintenance of PPD. However, more research is needed to confirm if this is the case and if these constructs interact with each other in relation to levels of PPD. Therefore, the current study aimed to: 1) investigate the relation between alexithymia and postpartum depressive symptoms (PPDS) in a sample of Romanian mothers, and 2) explore the mediating role of self-criticism and self-compassion in the relationship between alexithymia and PPDS. Based on previous findings (Dennis & Luminet, 2018; Felder et al., 2016; Gilbert et al., 2014; Karukivi et al., 2014; Le et al., 2007; Vliegen & Luyten, 2008; Vliegen et al., 2010), we hypothesized that: 1) alexithymia would be positively associated with PPDS; 2) self-criticism would be positively associated with PPDS, while self-compassion would be negatively associated with PPDS; and 3) alexithymia would be related to a high level of self-criticism, which in turn would positively predict the PPDS. Alexithymia is expected to be related to a low level of self-compassion which in turn would negatively predict the PPDS.

Method

Participants and Procedure

A total of 339 mothers completed the survey, however 32 mothers were removed from analysis due to their infant being too old. This left a total sample size of 307 mothers. The inclusion criteria were: (1) the mother being aged 18 years or older; (2) the mother's infant being aged between 4 weeks–1 year. The survey was carried out using the online Google form platform. Participants were recruited online, and the link to the study was posted on social media websites, such as Facebook groups dedicated to the peripartum period. The first section of the survey provided information about the study, section 2 provided information about informed consent, anonymity and confidentiality, and section 3 contained the depression, alexithymia, self-compassion, and socio-demographic measures. Data was collected between 26th December 2020 to 3rd January 2021. The study obtained ethical approval from the institutional research committee of the Faculty of Psychology and Education Sciences, Alexandru Ioan Cuza University and complied with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Measures

The socio-demographic characteristics part of the survey included self-report questions about: age; marital status; residence, education level, professional status and previous history of depression. Obstetric data were also collected: parity, type of pregnancy, and type of birth. Parity refers to the number of births mothers have experienced: primiparous means they have given birth once, and multiparous means they have given birth twice or more. The type of pregnancy refers to whether the pregnancy was planned (and therefore wanted), unplanned, but wanted, and, lastly, unplanned, and unwanted. When asked about the type of birth, mothers reported whether they had a vaginal birth, an elected caesarean, or an emergency caesarean. Lastly, information about the infant was collected including infant age and whether the infant was being breastfed.

Edinburgh Postnatal Depression Scale (EPDS)

We measured postpartum depressive symptoms using the EPDS. This is a self-report measure and the instrument alone, without a clinical interview, cannot be used to make diagnoses. Therefore, we refer to postnatal depressive symptoms when we mention PPD, rather than diagnoses. The EPDS (Cox et al., 1987) is a widely used 10-item self-report scale which measures PPD by assessing emotional and cognitive symptoms (Boyd et al., 2005). Each item has four responses, 0 (*no, not at all*) to 3 (*yes, very often*), and seven items have reverse coding. The total score ranges from 0 to 30 and scores between 10–12 indicate mild depression, while scores equal to or above 13 indicate moderate to severe depression (Cox et al., 1987). The Cronbach alpha coefficient obtained in the current research was $\alpha = .85$, while the coefficient of the original scale is $\alpha = .92$.

Toronto Alexithymia Scale (TAS-20)

TAS-20 (Bagby et al., 1994) is a 20-item self-report scale with 5-point Likert scale answers, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The measure has 3 subscales: *difficulty identifying feelings, difficulty describing feelings, and externally-oriented thinking*. Based on taxometric investigations, authors of the scale (Bagby et al., 2020) have conceptualised alexithymia as a dimensional construct and, therefore, do not recommend using cut-off scores in order to classify participants as alexithymic or non-alexithymic. The Cronbach alpha coefficient of the original instrument is $\alpha = .81$, while the coefficient of the present study was $\alpha = .88$.

Self-Compassion Scale (SCS)

SCS (Neff, 2003) is a 26-item self-report scale that measures thoughts, emotions, and behaviours associated with self-compassion (Neff, 2016). It has 6 subscales, three of which relate specifically *to self-compassion*: *self-kindness, common humanity, mindfulness,* and the remaining three relate *to self-criticism*: *self-judgment, isolation*, and *over-identification.* The internal consistency of the original instrument is α = .92, while the current research obtained a Cronbach alpha coefficient of α = .93 for the global scale. We also obtained α = .88 for *self-kindness* subscale, α = .84 for *self-judgment,* α = .75 for *common humanity,* α = .77 for *isolation,* α = .79 for *mindfulness* and α = .74 for *over-identification.*

Statistical Analysis

Statistical Package for Social Sciences (IBM SPSS Statistics 23) software was used for the data analysis. Descriptive analyses were performed for the socio-demographic characteristics (Table 1). The normality of the data distribution was verified using Skewness (value between –2 and 2) and Kurtosis (value between –3 and 3) measures with larger samples (more than 300 participants; Kim, 2013). All data met normality criteria. Pearson correlations were performed in order to examine the associations between the outcome variable (PPDS) and independent variables (alexithymia, self-compassion, and self-criticism). Multiple hierarchical regressions were used in order to identify which variables predicted PPDS. Each set of variables was introduced in a different step of the model, in order to examine the explicative value of the dependent variable (PPDS). We introduced self-criticism and its subdimensions in the first step, then added alexithymia and its subdimensions in the second, and self-compassion and its subdimensions in the last step.

A mediation analysis was also performed using the PROCESS macro in SPSS in order to examine the direct and indirect effects (through the mediators) of the independent variables on PPDS. To ascetain whether there was a mediation effect, we used the bootstrapping procedure; therefore, statistical inference was conducted using the 95% bootstrap confidence intervals.

Results

Socio-Demographic Factors

At the start of the study, the mothers' ages ranged from 19 to 41, with a mean age of 30.6 (*SD* = 4.16). Most mothers were married (92.8%) and were educated to undergraduate university level or above (77.8%) (see Table 1).

Table 1
Socio-demographic and clinical characteristics of the sample

Socio-demographic characteristics	*n* (%)
Age in years (mean, SD)	30.6 ± 4.16
Marital Status	
Married	285 (92.8 %)
Not married	22 (7.2%)
Residence	
Urban Area	266 (86.6%)
Rural Area	41 (13.4%)
Education Level	
Secondary school	2 (0.7%)
Professional school	5 (1.6%)
High school	44 (14.3%)
Post high school	17 (5.5%)
University	160 (52.1%)
Postgraduate Studies	79 (25.7%)
Professional Status	
Pupil	2 (0.7%)
Student	6 (2%)
Housewife	53 (17.3%)
Employed	225 (73.3%)
Other	21 (6.8%)
Breastfeeding	
Yes	280 (91.2%)
No	27 (8.8%)
Depression before birth	
Yes	149 (48.5%)
Before pregnancy	81 (26.4%)
During pregnancy	9 (2.9%)
Before and during pregnancy	6 (2%)
After a previous pregnancy	46 (15%)
During and after a previous pregnancy	1 (0.3%)
Before and after a previous pregnancy	4 (1.3%)
Before, during and after a previous pregnancy	2 (0.7%)
No	158 (51.5%)
Parity	
Primiparous	214 (69.7%)
Multiparous	93 (30.3%)
Type of Pregnancy	
Planned	168 (54.7%)
Unplanned, but wanted	131 (42.7%)
Unplanned and unwanted	8 (2.6%)
Type of birth	
Vaginal birth	136 (44.3%)
C-section, under medical advice	141 (45.9%)
C-section, upon mother request	30 (9.8%)

Note. $N = 307$.

Rates of Postpartum Depressive symptoms, Alexithymia, Self-Compassion, and Self-Criticism

The frequency of mothers with PPDS in the current research was 73.6%, out of which 19.2% had mild depressive symptoms and 54.4% had moderate to severe depressive symptoms. The rate of confirmed and possible alexithymia was 38.7%. Most mothers had moderate self-compassion (43.6%) followed by high self-compassion (30.9%) and then low self-compassion (25.4%). The frequency of mothers with low self-criticism was 45%, while 35.5% had moderate self-criticism and 19.5% had high self-criticism (see Table 2).

Table 2

Descriptive statistics of the study variables

	M	*SD*	*Min*	*Max*	*Skewness*	*Kurtosis*
Postpartum depressive symptoms	13.00	5.30	0.00	28	0.035	-0.258
Alexithymia	48.65	15.04	23	85	0.335	-0.806
Difficulty Identifying Feelings	16.82	7.51	7	35	0.510	-0.763
Difficulty Describing Feelings	12.84	4.99	5	25	0.326	-0.698
Externally Oriented Thinking	18.99	4.63	8	30	0.106	-0.655
Self-Compassion	75.47	20.39	30	127	0.258	-0.424
Self-kindness	14.74	5.23	5	25	0.150	-0.738
Self-judgment	15.93	5.10	5	25	-0.058	-0.864
Common Humanity	12.92	3.96	4	20	-0.053	-0.605
Isolation	12.59	4.21	4	20	-0.318	-0.621
Mindfulness	12.60	3.66	4	20	0.061	-0.430
Over-identification	14.25	3.91	4	20	-0.483	-0.534
Self-Criticism	42.78	11.78	13	65	-0.287	-0.650
Self-Compassion	40.26	11.38	13	65	0.053	-0.425

Note. $N = 307$.

Associations between Variables

All independent variables significantly correlated with one another (see Table 3). PPDS positively and significantly correlated with all three alexithymia subdimensions: *difficulty identifying feelings* ($r = .62$, $p < .001$); *difficulty describing feelings* ($r = .49$, $p < .001$); *externally oriented thinking* ($r = .43$, $p < .001$). PPDS were also negatively correlated with self-compassion ($r = -.64$, $p < .001$), and positively correlated with self-criticism ($r = .60$, $p < .001$). There was a strong negative and significant correlation between alexithymia and self-compassion ($r = -.63$, $p < .001$) and a positive and significant correlation between alexithymia and self-criticism ($r = .61$, $p < .001$).

Table 3
Pearson correlation coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Depressive symptoms	-													
2	Alexithymia	.605**	-												
3	Difficulty Identifying Feelings	.619**	.931**	-											
4	Difficulty Describing Feelings	.493**	.902**	.796**	-										
5	Externally Oriented Thinking	.431**	.765**	.543**	.561**	-									
6	Self-Compassion Total	-.649**	-.629**	-.628**	-.568**	-.413**	-								
7	Self-kindness	-.560**	-.483**	-.457**	-.442**	-.350**	.844**	-							
8	Self-judgment	.485**	.474**	.513**	.426**	.247**	-.779**	-.540**	-						
9	Common Humanity	-.327**	-.339**	-.301**	-.335**	-.250**	.661**	.595**	-.275**	-					
10	Isolation	.543**	.597**	.616**	.505**	.397**	-.791**	-.492**	.654**	-.327**	-				
11	Mindfulness	-.528**	-.458**	-.407**	-.413**	-.382**	.800**	.771**	-.398**	.651**	-.486**	-			
12	Over– identification	.590**	.601**	.641**	.544**	.326**	-.797**	-.504**	.676**	-.315**	.748**	-.503**	-		
13	Self-Criticism	.600**	.618**	.655**	.546**	.357**	-.884**	-.577**	.891**	-.341**	.889**	-.513**	.892**	-	
14	Self-Compassion	-.541**	-.487**	-.446**	-.452**	-.371**	.876**	.915**	-.472**	.831**	-.496**	.902**	-.503**	-.549**	-

Note. ** p <.001.

Predictors of Postpartum Depressive Symptoms

The first model $F(3, 303) = 61.09$, $p < .001$, which contains self-criticism and its subscales, explained 37.1% of the variance in the dependent variable. *Isolation* (β = .19, $p < .005$) and *overidentification* (β = .37, $p < .001$) are both positive and significant predictors of PPDS. The second model, $F(3, 300) = 17.71$, $p < .001$, which added alexithymia and its subscales, explained 46% of the variance in the PPDS. Positive and significant predictors of PPDS in this model were *over-identification* (β = .25, $p < .001$), *difficulty identifying feelings* (β = .35, $p < .001$), and *externally oriented thinking* (β = .15, $p < .005$). Finally, the third model, $F(3, 297) = 11.97$, $p < .001$, added self-compassion with its subscales, and explained 51.3% of the variance in the PPDS (see Table 4). We also found several positive significant predictors: *over-identification* (β = .19, $p < .005$), *difficulty identifying feelings* (β = .37, $p < .001$), and *externally oriented thinking* (β = .10, $p < .05$), *self-kindness* (β = -.21, $p < .005$) and *mindfulness* β = –.15, $p < .05$) were both negative and significant predictors of PPDS.

Table 4
Hierarchical regression for the study variables

Predictor	β			*F*	*Adjusted* R^2	R^2 *change*
	Step 1	Step 2	Step 3			
Model 1:						
Self-Criticism				61.09***	.371	.377***
Self-judgment	.105	.093	.019			
Isolation	.196**	.054	.020			
Over-identification	.372***	.251***	.190**			
Model 2:						
Self-Criticism						
Alexithymia				17.71***	.460	.094***
DIF		.359***	.375***			
DDF		-.085	-.120			
EOT		.157**	.104*			
Model 3:						
Self-Criticism						
Alexithymia						
Self-Compassion				11.97***	.513	.057***
Self-kindness			-.213**			
Common Humanity			.071			
Mindfulness			-.154*			

Note. $N = 307$; β = standardized regression coefficients; *** $p < .001$; ** $p < .01$; * $p < .05$; DIF = difficulty identifying feelings; DDF = difficulty describing feelings; EOT = externally oriented thinking.

Mediating Relationship

Before performing the mediation analysis, we made sure preliminary conditions (such as the existence of significant correlations between variables) were respected. The mediation analysis found a significant partial mediating

effect of both self-criticism and self-compassion on the relationship between alexithymia and PPDS (see Figure 1). Results showed significant indirect effects of alexithymia through self-criticism (.05) since 95% bootstrapping confidence intervals excluded zero [.0301, .0880]. Regarding the effect size of the indirect effect of alexithymia through self-criticism as a mediator, we calculated the proportion mediated by dividing the indirect effect (a_1*b_1 = .05) by the total effect (c = .09) and obtained a mediated result of 59.49%. As far as self-criticism subdimensions are concerned, *isolation* (R^2 = .357, F(1, 305) = 169.29, p < .001) and *over-identification* (R^2 = .361, F(1, 305) = 172.68, p < .001) both mediate the relationship between the independent and the outcome variable. Self-compassion also partially mediated the relationship between alexithymia and PPDS, with significant direct (c' = .11, p < .001) and indirect effects (a_2*b_2 = .04, CI 95% [.0202, .0645]). S*elf-kindness* (R^2 = .23, F(1, 305) = 92.55, p < .001) and *mindfulness* (R^2 = .21, F(1, 305) = 81.08, p < .001), as subdimensions of self-compassion, mediate the relationship between alexithymia and PPDS. In addition, we calculated the effect size for self-compassion as a mediator, and obtained a proportion mediated of 40.60% (a_2*b_2 = .04; c = .09).

Figure 1

Statistical diagram of the mediating effect of self-criticism and self-compassion on the relationship between alexithymia and postpartum depressive symptoms

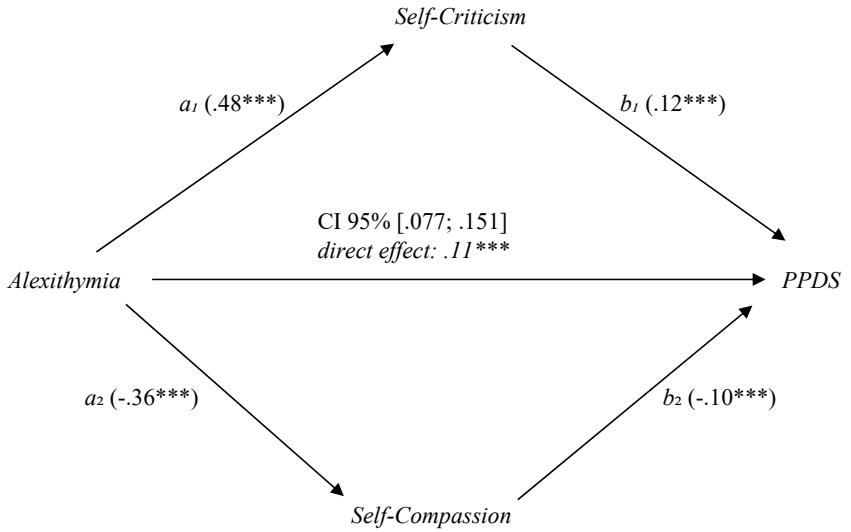

Table 5

Regression coefficients, standard errors, and model summary information for the multiple parallel mediator model depicted in Figure 1

		Consequent									
		M_1 (Self-Criticism)				M_2 (Self-Compassion)				Y (PPDS)	
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (Alexithymia)	a_1	.484	.036	< .001	a_2	-.369	.038	< .001	c'	.114	.019	< .001
M_1 (Self-Criticism)		-	-	-		-	-	-	b_1	.122	.025	< .001
M_2 (Self-Compassion)		-	-	-		-	-	-	b_2	.109	.024	< .001
Constant	i_{M1}	19.22	1.79	< .001	i_{M2}	58.20	1.93	< .001	iY	6.65	1.78	< .001
		R^2 = .382				R^2 = .237				R^2 = .485		
		F (1, 305) = 188.77				F (1, 305) = 94.88				F (3, 303) = 95.28		
		p < .001				p < .001				p < .001		

Note. M_1, M_2 = mediators, Y = outcome variable, X = independent variable, i_M, i_Y = regression constants, a_1, a_2, b_1, b_2, c' = regression coefficients. N = 307, bootstrap sample size = 5000.

Table 6

Bootstrapping indirect effect for the mediation model depicted in Figure 1

Path	indirect estimate	*SE*	CI
Alxth ➡ *SCS* ➡ *PPDS*	0.0592	0.015	[0.0301, 0.0880]
Alxth ➡ *SCP* ➡ *PPDS*	0.0404	0.011	[0.0202, 0.0645]

Note. Alth = alexithymia, *SCS* = Self-Criticism, *SCP* = Self-Compassion, *PPDS* = postpartum depressive symptoms

Discussion

The aim of this study was to identify whether alexithymia, self-criticism, and self-compassion predict PPDS in mothers with infants aged 4 weeks to 1 year. We found a prevalence of depressive symptoms of 73.6% in our sample of Romanian mothers. This high rate differs from most previous studies and one explanation could be the fact that data was collected during the COVID-19 pandemic. Recently, Fernandes et al. (2022) found that 79.5% of Portuguese mothers from a sample of 977 reported feeling the pandemic had a negative emotional impact during the postpartum period and exhibited higher levels of PPDS.

Our results bring to light valuable information about the relationship between alexithymia, self-compassion, self-criticism, and PPDS and their potential role in the context of PPD. Firstly, consistent with the initial expectations, data analyses suggest that women who reported higher scores on alexithymia, a low level of self-compassion, and a high score on self-criticism were more likely to report high levels of depressive symptoms. Further, the results found these variables significantly predicted PPDS. These findings are consistent with existing literature on self-compassion (Felder et al., 2016; Pedro

et al., 2019) and self-criticism (Dunkley et al., 2009; Pedro et al., 2019) in the context of PPD symptomatology. Our findings on alexithymia are also in line with existing literature, indicating a positive correlation between alexithymia and depression in the general population (Foran & O'Leary, 2013; Li et al., 2015), and in the peripartum period (Dennis & Luminet, 2017; Karukivi et al., 2015; Le et al., 2007).

Secondly, the significant role of self-criticism (Dunkley et al., 2009), lack of self-compassion (Felder et al., 2016), and alexithymia (Dennis & Luminet, 2017) as predictors of PPDS found in the current research is in agreement with existing studies focusing on the peripartum depressive symptomatology.

To our knowledge, this is the first study examining the mediation effect of self-criticism and self-compassion on the link between alexithymia and PPDS. Our results found that self-criticism and self-compassion both mediated the relationship between alexithymia and PPDS, confirming our hypotheses. Previous research has found that self-criticism plays a mediating role in the relationship between depression and other variables: attachment anxiety (Cantazaro & Wei, 2010), maladaptive perfectionism (Malekpour et al., 2017), emotional (Dunkley et al., 2010), and verbal abuse (Sachs-Ericsson et al., 2006). Therefore, our results are in line with previous research.

Limitations and Future Research Directions

This study is not without limitations. We found quite a high prevalence of PPDS in our sample (73.6%); therefore, results may not be generalizable to other populations. There are several possible explanations for this: first, the questionnaires were promoted online, in groups dedicated to difficulties arising in the peripartum period; second, data were collected during the COVID-19 pandemic which has reportedly increased mental health difficulties in general (Han et al., 2021); third, EPDS is a self-assessment tool, vulnerable to bias and its results were not validated against clinical observations. Related to this, given the nature of the self-assessment tools used and the cross-sectional design of the study, no causal relationships between the study variables can be ascertained. Future studies should include clinical evaluation of mothers, along with screening instruments. Also, most women in our study have university education and are married. Therefore, studies focusing on a more diverse sample from a socio-demographic point of view should be taken into account.

Implications for Practice

Our results regarding the role alexithymia, self-criticism, and self-compassion might have as predictors of PPDS, are of clinical importance. For example, psychological treatment could employ preventive approaches of these dimensions in the early postpartum period which may increase self-acceptance and cognitive and behavioral restructuring. Psychoeducational interventions could be developed for mothers with high levels of alexithymia since there is evidence of its efficacy on different populations (Bakan et al., 2020; Melin et al., 2018). Different forms of psychotherapy also seem to decrease alexithymia:

e.g. short-term (Haji alizadeh et al., 2021) and long-term psychodynamic psychotherapy (Khademi et al., 2019). Given the link between mindfulness and emotional processing and regulation (Hayes & Feldman, 2006), mindfulness techniques may also be helpful in preventing alexithymia (Teixeira & Pereira, 2015). Research has shown that compassionate mental imagery might enhance self-compassion (Tweed, 2019), while positive psychotherapy seems to be effective in decreasing self-criticism (Mashak et al., 2021).

Conclusion

Overall, the aim of this study was to identify whether there is a relationship between alexithymia and PPDS and whether self-criticism and self-compassion mediate the relationship between the two. The results also showed that self-criticism, low self-compassion and alexithymia are significant predictors of PPDS. Moreover, self-criticism and self-compassion mediated the relationship between alexithymia and PPDS. Psychological therapies designed to reduce alexithymia and self-criticism while increasing self-compassion may be beneficial for preventing PPDS.

References

Akariya, O., Anholt, G., & Shahar, G. (2021). Is self-criticism uniquely associated with health anxiety among Jewish and Arab Israeli young adults? *International Journal of Cognitive Therapy*, *15*, 81–93. https://doi.org/10.1007/s41811-021-00121-x.

Akram, A., & Arshad, T. (2022). Alexithymia reduction treatment: A pilot quasi-experimental study for remediation of alexithymia and its consequent effects on the general mental health of university students. *Counselling and Psychotherapy Research, 22* (4), 902–912. https://doi.org/10.1002/capr.12571

Apfel, R., & Sifneos, P. (1979). Alexithymia: Concept and measurement. *Psychotherapy and Psychosomatics, 32*(1–4), 180–190. https://doi.org/10.1159/000287386

Bagby, R., Parker, J., & Taylor, G. (1994). The twenty-item Toronto Alexithymia scale—I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research*, *38*(1), 23–32. https://doi.org/10.1016/0022-3999(94)90005-1

Bagby, R., Parker, J., & Taylor, G. (2020). Twenty-five years with the 20-item Toronto Alexithymia Scale. *Journal of Psychosomatic Research*,, *131*, 109940. https://doi.org/10.1016/j.jpsychores.2020.109940

Bakan, A. B., Aslan, G., & Aka, P. (2020). An investigation of the effect of the psychoeducation program provided to alexithymic and violent adolescents on the level of alexithymia. *Journal of Child and Adolescent Psychiatric Nursing*, *33*(3), 169–179. https://doi.org/10.1111/jcap.12285

Barth, F. D. (2015). Listening to words, hearing feelings: Links between eating disorders and alexithymia. *Clinical Social Work Journal, 44*(1), 38–46. https://doi.org/10.1007/s10615-015-0541-6

Boyd, R., Le, H., & Somberg, R. (2005). Review of screening instruments for postpartum depression. *Arch Women Mental Health*, *8*(3), 141–153. https://doi.org/10.1007/s00737-005-0096-6

Brassel, A., Townsend, M., Pickard, J., & Grenyer, B. (2019). Maternal perinatal mental health: Associations with bonding, mindfulness, and self-criticism at 18 months' postpartum. *Infant Mental Health Journal.41*(1), 69–81. https://doi.org/10.1002/imhj.21827

Brewer, R., Cook, R., & Bird, G. (2016). Alexithymia: A general deficit of interoception. *Royal Society Open Science, 3*(10), 150664. https://doi.org/10.1098/rsos.150664

Cantazaro, A., & Wei, M. (2010). Adult attachment, dependence, self-criticism, and depressive symptoms: A test of a mediational model. *Journal of Personality*, *78*(4), 1135–1162. https://doi.org/10.1111/j.1467–6494.2010.00645.x

Cox, J., Holden, J., & Sagovsky, R. (1987). Detection of postnatal depression. *British Journal of Psychiatry*, *150*(06), 782–786. https://doi.org/10.1192/bjp.150.6.782

Dennis, A., & Luminet, O. (2018). Cognitive factors and post-partum depression: What is the influence of general personality traits, rumination, maternal self-esteem, and alexithymia?. *Clinical Psychology and Psychotherapy*, *25*(2), 359–367. https://doi.org/10.1002/cpp.2168

Diop, S., Turmes, L., Specht, C., Seehagen, S., Juckel, G., & Mavrogiorgou, P. (2022). Capacities for meta-cognition, social cognition, and alexithymia in postpartum depression. *Psychiatry Research*, *309*. 114430. https://doi.org/10.1016/j.psychres.2022.114430

Dunkley, D., Masheb, R., & Grilo, C. (2010). Childhood maltreatment, depressive symptoms, and body dissatisfaction in patients with binge eating disorder: The mediating role of self-criticism. *International Journal of Eating Disorders*, *43*(3), 274–281. https://doi.org/10.1002/eat.20796

Dunkley, D., Sanislow, C., Grilo, C., & McGlashan, T. (2009). Self-criticism versus neuroticism in predicting depression and psychosocial impairment for 4 years in a clinical sample. *Comprehensive Psychiatry*, *50*(4), 335–346. https://doi.org/10.1016/j.comppsych.2008.09.004

Ehret, A., Joorman, J., & Berking, M. (2014). Examining risk and resilience factors for depression: The role of self-criticism and self-compassion. *Cognition and Emotion*, *29*(8), 1496–1504. https://doi.org/10.1080/02699931.2014.992394

Felder, J., Lemon, E., Shea, K., Kripke, K., & Dimidjian, S. (2016). Role of self-compassion in psychological well-being among perinatal women. *Archives of Women's Mental Health*, *19*, 687–690. https://doi.org/10.1007/s00737-016-0628-2

Fernandes, D.V., Canavarro, M.C. & Moreira, H. (2022). Self-compassion and mindful parenting among postpartum mothers during the COVID-19 pandemic: The role of depressive and anxious symptoms. *Current Psychology*, 1–13. https://doi.org/10.1007/s12144–022–02959–6

Foran, H., & O'Leary, K. (2013). The role of relationships in understanding the alexithymia–depression link. *European Journal of Personality*, *27*(5), 470–480. https://doi.org/10.1002%2Fper.1887

Gelabert, E., Subirà, S., García-Esteve, L., Navarro, P., Plaza, A., Cuyàs, E., . . . & Martín-Santos, R. (2012). Perfectionism dimensions in major postpartum depression. *Journal of Affective Disorders*, *136*(1–2), 17–25. https://doi.org/10.1016/j.jad.2011.08.030

Gilbert, P., McEwan, K., Gibbons, L., Chotai, S., Duarte, J., & Matos, M. (2011). Fears of compassion and happiness in relation to alexithymia, mindfulness, and self-criticism. *Psychology and Psychotherapy: Theory, Research and Practice*, *85*(4), 374–390. https://doi.org/10.1111/j.2044–8341.2011.02046.x.

Gilbert, P., McEwan, K., Catarino, F., Baião, R., & Palmeira, L. (2014). Fears of happiness and compassion in relationship with depression, alexithymia, and attachment security in a depressed sample. *British Journal of Clinical Psychology*, *53*(2), 228–244. https://doi.org/10.1111/bjc.12037

Haji alizadeh, K., Haji alizadeh, K., Zarel, E., & Dortaj, F. (2021). Effectiveness of intensive short-term dinamic psychotherapy on alexithymia in rheumatoid arthritis patients. *Journal of Research in Behavioural Sciences*, *16*(4), 1–4. http://dorl.net/dor/20.1001.1.17352029.1400.19.1.4.1

Halbreich, U., & Karkun, S. (2006). Cross-cultural and social diversity of prevalence of postpartum depression and depressive symptoms. *Journal of Affective Disorders*, *91*(2–3), 97–111. https://doi.org/10.1016/j.jad.2005.12.051

Han, Q., Zheng, B., Agostini, M., Belanger, J., Gutzkow, B., Kreienkamp, J., . . . & Leander, N. (2021). Associations of risk perception of COVID-19 with emotion and mental

health during the pandemic. *Journal of Affective Disorders*, *284*, 247–255. https://doi.org/10.1016/j.jad.2021.01.049

Hayes, A., & Feldman, G. (2006). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice*, *11*(3), 255–262. https://doi.org/10.1093/clipsy.bph080

Honkalampi, K., Hintikka, J., Tanskanen, A., Lehtonen, J., & Viinmaki, H. (2000). Depression is strongly associated with alexithymia in the general population. *Journal of Psychosomatic Research*, *48*(1), 99–104. https://doi.org/10.1016/s0022-3999(99)00083-5

Kaminer, T., Kelly, K., & Beebe, B. (2007). Mothers' dependent and self-critical depressive experience is related to speech content with infants. *Journal of Early Childhood and Infant Psychology*, *3*, 163–184.

Karukivi, M., Tolvanen, M., Karlsson, H., & Karlsson, L. (2014). Alexithymia and postpartum anxiety and depression symptoms: A follow-up study in a pregnancy cohort. *Journal of Psychosomatic Obstetrics & Gynecology*, *36*(4), 142–147. https://doi.org/10.3109/01674 82X.2015.1089228

Khademi, M., Hajahmadi, M., & Faramarzi, M. (2019). The role of long-term psychodynamic psychotherapy in improving attachment patterns, defense styles, and alexithymia in patients with depressive/anxiety disorders. *Trends in Psychiatry and Psychotherapy*, *41*(1), 43–50. https://doi.org/10.1590/2237-6089-2017-0144

Kim, H.-Y. (2013). Statistical notes for clinical researchers: assessing normal distribution using skewness and kurtosis. *Restorative Dentistry and Endodontics, 38*(1), 52. https://doi.org/10.5395/rde.2013.38.1.52

Le Donne, M., Settineri, S., & Benvenga, S. (2012). Early pospartum alexithymia and risk for depression: Relationship with serum thyrotropin, free thyroid hormones and thyroid autoantibodies. *Psychoneuroendocrinology*, *37*(4), 519–533. https://doi.org/10.1016/j.psyneuen.2011.08.001

Le, H., Ramos, M., & Munoz, R. (2007). The relationship between alexithymia and perinatal depressive symptomatology. *Journal of Psychosomatic Research*, *62*(2), 215–222. https://doi.org/10.1016/j.jpsychores.2006.09.012

Lerman, S., Shahar, G., & Rudich, Z. (2012). Self-criticism interacts with the affective component of pain to predict depressive symptoms in female patients. *European Journal of Pain*, *16*(1), 115–122. https://doi.org/10.1016/j.ejpain.2011.05.007

Li, S., Zhang, B., Guo, Y., & Zhang, J. (2015). The association between alexithymia as assessed by the 20-item Toronto Alexithymia Scale and depression: A meta-analysis. *Psychiatry Research*, *227*(1), 1–9. https://doi.org/10.1016/j.psychres.2015.02.006

Lumley, M. A. (2000). Alexithymia and negative emotional conditions. *Journal of Psychosomatic Research, 49*(1)*,* 51–54. https://doi.org/10.1016/s0022-3999(00)00161-6

Lyvers, M., McCann, K., Coundouris, S., Edwards, M. S., & Thorberg, F. A. (2018). Alexithymia in relation to alcohol use, emotion recognition, and empathy: The role of externally oriented thinking. *American Journal of Psychology*, *131*(1), 41–51. DOI: https://doi.org/10.5406/amerjpsyc.131.1.0041

Malekpour, F., Mehrabizadeh, M., & Rahimi, M. (2017). The causal relationship of types of self-absorption and maladaptive perfectionism with depression through the mediating role of self-criticism in university students. *Quarterly Journal of Psychological Studies*, *13*(3), 25–42. https://dx.doi.org/10.22051/psy.2017.16342.1456

Mashak, R., Naderi, F., & Chinaveh, M. (2021). The effectiveness of "positive psychotherapy" on self-compassion, self-criticism, perception of suffering and psychological distressing of infertile women. *Journal of Health Promotion Management*, *10*(6), 12–27. http://jhpm.ir/article-1-1353-en.html

Melin, E., Svensson, R., & Thulesius, H. (2018). Psychoeducation against depression, anxiety, alexithymia and fibromyalgia: A pilot study in primary care for patients on sick leave. *Scandinavian Journal of Primary Health Care*, *36*(2), 1–11. https://doi.org/10.1080/0281 3432.2018.1459225

Monteiro, F., Fonseca, A., Pereira, M., Alves, S., & Canvarro, M. (2011). What protects at-risk postpartum women from developing depressive and anxiety symptoms? The role of acceptance-focused processes and self-compassion. *Journal of Affective Disorders*, *246*, 522–529. https://doi.org/10.1016/j.jad.2018.12.124

Neff, K. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity*, *2*(3), 223–250. https://doi.org/10.1080/15298860309027

Neff, K. (2016). The Self-Compassion Scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness*, *7*, 264–274. https://doi.org/10.1007/s12671-015-0479-3

Norhayati, M., Nik Hazlina, N., Asrenee, A., & Wan Emilin, W. (2015). Magnitude and risk factors for postpartum symptoms: A literature review. *Journal of Affective Disorders*, *175*, 34–52. https://doi.org/10.1016/j.jad.2014.12.041

Osimo, S. A., Aiello, M., Gentili, C., Ionta, S., & Cecchetto, C. (2021). The influence of personality, resilience, and alexithymia on mental health during COVID-19 pandemic. *Frontiers in Psychology*, *12*, 630751. https://doi.org/10.3389/fpsyg.2021.630751

Pascual-Leone, A., Gillespie, N. M., Orr, E., & Harrington, S. J. (2015). Measuring subtypes of emotion regulation: From broad behavioural skills to idiosyncratic meaning-making. *Clinical Psychology & Psychotherapy*, *23*(3), 203–216. https://doi.org/10.1002/cpp.1947.

Pedro, L., Branquinho, M., Canavarro, M., & Fonseca, A. (2019). Self-criticism, negative automatic thoughts and postpartum depressive symptoms: The buffering effect of self-compassion. *Journal of Reproductive and Infant Psychology*, *37*(5), 539–553; https://doi.org/10.1080/02646838.2019.1597969

Posmontier, B., & Waite, R. (2010). Social Energy Exchange Theory for postpartum depression. *Journal of Transcultural Nursing*, *22*(1), 15–21. https://doi.org/10.1177/1043659610387156

Preece, D. A., Becerra, R., Robinson, K., Allan, A., Boyes, M., Chen, W., ...& Gross, J. J. (2020). What is alexithymia? Using factor analysis to establish its latent structure and relationship with fantasizing and emotional reactivity. *Journal of Personality, 88*(6), 1162–1176. https://doi.org/10.1111/jopy.12563

Rosenbaum, D., Gillen, M., & Markey, C. (2020). Feeling let down: An investigation of breastfeeding expectations, appreciation of body functionality, self compassion, and depression symptoms. *Appettite*, *154,* 104756. https://doi.org/10.1016/j.appet.2020.104756

Sachs-Ericsson, N., Verona, E., Joiner, T., & Preacher, K. (2006). Parental verbal abuse and the mediating role of self-criticism in adult internalizing disorders. *Journal of Affective Disorders*, *93*(1–3), 71–78. https://doi.org/10.1016/j.jad.2006.02.014

Shorey, S., Chee, C., Ng, E., Chan, Y., Tam, W., & Chong, Y. (2018). Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. *Journal of Psychiatric Research*, *104,* 235–248 https://doi.org/10.1016/j.jpsychires.2018.08.001

Speranza, M., Corcos, M., Loas, G., Stephan, P., Guilbaud, O., Perez-Diaz, F., . . . & Jeammet, P. (2005). Depressive personality dimensions and alexithymia in eating disorders. *Psychiatry Research*, *135*(2), 153–163. https://doi.org/10.1016/j.psychres.2005.04.001.

Stojanov, J., Stankovic, M., Zikic, O., & Stojanov, A. (2021). The relationship between alexithymia and risk for postpartum depression. *Psychiatric Annals*, *51*(9), 431–436. https://doi.org/10.3928/00485713–20210806–03

Suslow, T., & Donges, U.-S. (2017). Alexithymia components are differentially related to explicit negative affect but not associated with explicit positive affect or implicit affectivity. *Frontiers in Psychology*, *8*, 1758. https://doi.org/10.3389/fpsyg.2017.01758

Taylor, G., Bagby, R., & Parker, J. (1997). *Disorders of affect regulation: Alexithymia in medical and psychiatric illness.* Cambridge University Press.

Teixeira, R., & Pereira, M. (2015). Examining mindfulness and its relation to self-differentiation and alexithymia. *Mindfulness*, *6*(1), 79–87. https://doi.org/10.1007/s12671-013-0233-7

Tweed, R. (2019). *Cultivating self-compassion and reducing self-criticism in a brief intervention for adolescents.* [Doctoral Thesis, UCL Discovery]. https://discovery.ucl.ac.uk/id/eprint/10082471/

Vliegen, N., & Luyten, P. (2008). The role of dependency and self-criticism in the relationship between postpartum depression and anger. *Personality and Individual Differences*, *45*(1), 34–40. https://doi.org/10.1016/j.paid.2008.02.015

Vliegen, N., Luyten, P., Besser, A., Casalin, S., Kempke, S., & Tang, E. (2010). Stability and change in levels of depression and personality: A follow-up study of postpartum depressed mothers that were hospitalized in a mother-infant unit. *The Journal of Nervous and Mental Disease*, *198*(1), 45–51. https://doi.org/10.1097/NMD.0b013e3181c8aa57

Zhang, H., Watson-Singleton, N., Pollard, S., Pittman, D., Lamis, D., Fischer, N., . . . & Kaslow, N. (2017). Self-criticism and depressive symptoms: Mediating role of self-compassion. *OMEGA—Journal of Death and Dying*, *80*(2), 1–22. https://doi.org/10.1177/0030222817729609

Samokritičnost i samosaosećanje kao medijatori odnosa između aleksitimije i postporođajnih depresivnih simptoma

Ana-Maria Andrei[1], Rebecca Webb[2], & Violeta Enea[1]

[1] Department of Psychology, Alexandru Ioan Cuza University, Iaşi, Romania
[2] Centre for Maternal and Child Health, School of Health Sciences, City, University of London, United Kingdom

Postporođajna depresija (PPD) je česta posle porođaja i može imati velike posledice na žene i njihove porodice. Zato je važno razumeti uslove i faktore koji vode ka pojavi i trajanju PPD-a. Prvi cilj ove studije je da proveri da li postoji veza između aleksitimije i postporođajnih depresivnih simptoma (PPDS) na uzorku majki iz Rumunije. Drugi cilj je da istraži da li samokritičnost i samosaosećanje predstavljaju medijatore veze između aleksitimije i PPDS. U ovoj transverzalnoj studiji je učestvovalo 307 majki sa decom starosti između četiri nedelje i jedne godine. Rezultati pokazuju da aleksitimija, samosaosećanje, samokritičnost i PPDS koreliraju međusobno, kao i da su samokritičnost, samosaosećanje i aleksitimija statistički značajni prediktori PPDS. Sem toga, samokritičnost i samosaosećanje su se pokazali kao medijatori veze između aleksitimije i PPDS. Psihološka terapija koja povećava samosaosećanje i smanjuje aleksitimiju i samokritičnost može biti korisna za prevenciju simptoma postporođajne depresije.

Ključne reči: aleksitimija, samokritičnost, samosaosećanje, postporođajni depresivni simptomi

RECEIVED: 22.04.2022.
REVISION RECEIVED: 13.10.2022.
ACCEPTED: 20.10.2022.