Universidade do Minho
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Strengthening Motherhood: Exploring Maternal Self-Efficacy in the Postpartum Period through Emotional Regulation and Perceived Experiences

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Dissertação de Mestrado
em Psicologia da Educação

Trabalho efetuado sob a orientação do
Professor Doutor Pedro Rosário
e da **Doutora Cátia Silva**

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Agradecimentos

"It is our choices, that show what we truly are, far more than our abilities."

J.K. Rowling, em "*Harry Potter and the Chamber of Secrets*"

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A todos, muito obrigada!

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

Universidade do Minho, 7 de junho 2024

Maria Pires Rodrigues

(Maria Pires Rodrigues)

Fortalecimento da maternidade: Exploração da Auto-Eficácia Materna no Período Pós-Parto através da Regulação Emocional e das Experiências Percebidas

Resumo

O período pós-parto é uma altura desafiadora para as mães. Durante este período, um fator protetor que tem sido frequentemente identificado é a autoeficácia materna. Assim, torna-se importante estudar as características maternas (e.g., estado emocional ou número de filhos), que podem influenciar o desenvolvimento da autoeficácia materna. Assim, os objetivos deste estudo foram 1) analisar o potencial papel mediador das dificuldades de regulação emocional na relação entre as variáveis relacionadas com a mulher e a autoeficácia materna e 2) estudar o papel que as perceções maternas sobre a experiência pós-parto poderão ter na relação entre as dificuldades de regulação emocional e a autoeficácia materna. Participaram 300 mulheres que estavam nos primeiros 12 meses após o parto. Para o efeito, foi realizada uma análise de caminhos. Os resultados mostraram um impacto direto de determinadas características maternas, como o número de filhos e a educação materna, na autoeficácia materna; e que as dificuldades na regulação emocional influenciam indiretamente a autoeficácia materna através das perceções maternas da experiência pós-parto. Acredita-se que, adotando uma abordagem holística, englobando o apoio psicológico, o desenvolvimento de competências e a validação das experiências maternas será possível melhorar a autoeficácia materna das mães.

Palavras-chave: autoeficácia materna, dificuldades de regulação emocional, perceções maternas da experiência pós-parto, período pós-parto

Strengthening Motherhood: Exploring Maternal Self-Efficacy in the Postpartum Period through Emotional Regulation and Perceived Experiences

Abstract

The postpartum period is a challenging time for mothers. During this period, maternal self-efficacy has often been identified as a protective factor. Therefore, it is important to examine maternal characteristics (e.g., emotional state or number of children) that may influence the development of maternal self-efficacy. Therefore, this study aims were 1) to examine the potential mediating role of difficulties in emotional regulation in the relationship between variables related to women and maternal self-efficacy and 2) to examine the role that maternal perceptions of the postpartum experience may play in the relationship between difficulties in emotional regulation and maternal self-efficacy. Participants were 300 women in the first 12 months after giving birth. A path analysis was carried out using a mediation model. Results showed a direct effect of maternal characteristics, such as the number of children and maternal education, on maternal self-efficacy; moreover, difficulties in emotional regulation indirectly influenced maternal self-efficacy through maternal perceptions of the postpartum experience. It is suggested that a holistic approach, including psychological support, skills development, and validation of maternal experiences, may improve mothers' maternal self-efficacy.

Keywords: difficulties in emotional regulation, maternal perceptions of the postpartum experience, maternal self-efficacy, postpartum period

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Strengthening Motherhood: Exploring Maternal Self-Efficacy in the Postpartum Period through Emotional Regulation and Perceived Experiences

Motherhood in the early postpartum (i.e., 12 months after the baby's birth) is a significant developmental milestone in a woman's life (Bentley & Zamir, 2021; Foster et al., 2008). This phase is typically characterized by positive emotions such as joy and happiness along with increased life satisfaction and a sense of meaning in life (Bassi et al., 2017; Brandel et al., 2018; Dyrdal & Lucas, 2013; Forster et al., 2008; Nelson et al., 2012). However, it is also a challenging time for mothers, as they must acquire new knowledge, adapt to changes in family dynamics, accept their maternal role, and fulfill their expectations as mothers (Salonen et al., 2011). Additionally, women experience physical changes during this period (e.g., physical recovery, hormonal fluctuations, and disruptions in sleep patterns), often leading to stress, depressive symptoms, and emotional difficulties (Caçador & Moreira, 2021; Law et al., 2019; Teti & Gelfand, 1991; Tully et al., 2017). For example, prior research indicates that psychological distress can persist for an average of 12 months following childbirth (Gavin et al., 2005; Osuna et al., 2023; Pellowski et al., 2019; Tokumitsu et al., 2020).

Maternal Self-efficacy (MSE) has often been identified as a protective factor for women during the postpartum period (Law et al., 2019). This concept refers to a woman's belief in her ability to adequately meet her child's needs and organize and perform tasks related to the education and care of her child successfully (Copeland & Harbaugh, 2019; Leahy-Warren & McCarthy, 2011; Leerkes & Crockenerg, 2002; Leerkes & Burney, 2007; Teti & Gelfand, 1991). Throughout the years, research has consistently shown that MSE is a reliable predictor of the provision of sensitive and responsive care in mothers (Brazeau et al., 2017). On the one hand, high MSE is related to the mother's feelings of closeness with her baby, such as warmth and responsiveness to crying (Stifter & Bono, 1998; Teti & Gelfand, 1991); on the other hand, low MSE is associated with psychological challenges, such as feelings of anxiety and depression, and a restricted ability to identify and respond to their baby's needs (Dol et al., 2021; Zheng et al., 2018). MSE can facilitate the transition to motherhood by enhancing improved mental health, strengthening the bond between mother and child, promoting positive parenting practices, enabling more effective utilization of support resources, and fostering resilience in the face of challenges (McCarthy et al., 2021). This is particularly true for primiparous women (i.e., those becoming mothers for the first time). Indeed, women experiencing motherhood for the first time tend to report lower levels of MSE than women with previous childbirth experience(s), presumably because they have not yet had the experience of adjusting to motherhood (Gameiro et al., 2009; Law et al., 2019; Leahy-Warren et al., 2011; Samdan

et al., 2022; Shorey et al., 2014). Indeed, previous childcare experiences offer a spectrum of practical insights that foster the increase of MSE (Bandura, 1997).

All considered, constructing MSE is crucial in mothering development (Bandura, 1997). Therefore, examining factors that influence the development of MSE is essential for promoting it (Azmoude et al., 2015; Leahy-Warren & McCarthy, 2011; Samdan et al., 2022; Yap et al., 2019). In addition to parity (i.e., the number of children), several other factors seem to affect MSE; for example i) maternal characteristics (e.g., age, emotional state, educational level, ethnicity); ii) family factors (e.g., family income, parents' educational level); iii) infant characteristics (e.g., infant health status, child age, child temperament), and iv) environmental factors (e.g., marital satisfaction) (Leahy-Warren & McCarthy, 2011; Shorey et al., 2014; Teti & Gelfand, 1991; Yap et al., 2019). Several recent studies have examined these predictors of MSE and its overall relations, specifically in primiparous women (Abuhammad, 2020; Azmoude et al., 2015; Shorey et al., 2014; Wang et al., 2021; Zheng et al., 2018). For instance, a study by Shorey and colleagues (2014) showed that mothers with higher family income or old age exhibited higher social support, which consequently led to a higher MSE when compared with other groups of mothers (e.g., younger mothers). Furthermore, Samdan and colleagues (2022) conducted a longitudinal study design to investigate the development of MSE in the transition phase to motherhood. Their findings indicated that previous childbirth experience, being born abroad, and higher levels of formal and informal social support during pregnancy were indicators of higher levels of MSE three months after childbirth. In addition, these authors found that maternal educational level is a robust predictor of MSE. Nevertheless, the results regarding these factors are not consistent across the literature. For example, Azmoude and colleagues (2015) study showed no significant correlation between maternal age and self-efficacy. In addition, Farkas & Valdés (2010) reported that, in comparison to a previous study involving a similar population, there were no significant differences in the levels of MSE observed between a different group of samples with high, medium, and low socioeconomic status and a heterogeneous sample (with all type of socioeconomic status).

According to Bandura (1995, 1997), a mother's psychological and emotional states may also significantly influence MSE. Previous research has shown that maternal psychological distress and difficulties in emotional regulation are negatively related to MSE during the postpartum period (Law et al., 2019; Leahy-Warren & McCarthy, 2011). Concerning emotional regulation - defined as a set of strategies that modulate the occurrence, magnitude, duration, and expression of an emotional response in a specific context (Gross, 1998; Gross & John, 2003) - it is well-established that women who experience greater difficulties in regulating their emotions during this early period of motherhood are at higher risk of

developing postpartum depression, increased stress, anxious symptoms, and poor mental health (Caçador & Moreira, 2021; Cardoso & Fonseca, 2022; Coo et al., 2022; Field, 2017; Marques et al., 2018). Furthermore, mothers experiencing difficulties in emotional regulation may also doubt their competence to cope with the demands of motherhood. This lack of confidence can erode MSE (Teti et al., 1995). Overall, these results underline the importance of a mother's emotion regulation processes during the postpartum period. These processes are key not only for regulating their infant's emotional state but also for influencing their own maternal experience. Nonetheless, research exploring the role of these difficulties as predictors of MSE over time is scarce, particularly during the early months after birth. Therefore, further research is required to explore these relations.

Lastly, women's perceptions of their experience as mothers have been identified as psychological factors that can impact their well-being, emotional adjustment, and MSE. Maternal perceptions of the postpartum experience encompass a wide range of emotions, thoughts, and attitudes that women have about themselves and their role as mothers following childbirth (Hamzallari et al., 2023; Troutman et al., 2012). In this regard, a recent review conducted by McCarthy and colleagues (2021) identified that one of the factors influencing experiences of perinatal anxiety and stress is socially constructed ideas about motherhood, as well as the unrealistic expectations of pregnancy and motherhood. These factors can lead to anxiety and stress when women's experiences do not match their expectations (McCarthy et al., 2021). In a meta-synthesis, Staneva et al. (2015) provided a deep understanding of women's unrealistic and romantic expectations about motherhood and pregnancy and how these expectations shape their experiences. Ultimately, these expectations result in feelings of inadequacy, defeat, and isolation due to the realization of a new, more limited function. Nevertheless, as far as we know, little is known about the impact of these perceptions on MSE in the first months after birth. Instead, research has focused on how specific maternal experiences (e.g., the experience of childbirth, healthcare, or the experience of losing a child) affect mothers' well-being and task-related self-efficacy. For instance, Coo and collaborators (2023) examined the relationship between maternal perceptions of hospital childbirth experiences and their mental health at six months postpartum (Coo et al., 2023; Johnson et al., 2022; Kirui & Lister, 2021; McCarthy et al., 2021; Simkin, 1991). The quality of care provided by health professionals during childbirth influenced the mother's assessment of the childbirth experience and postpartum mental health (Coo et al., 2023). Similarly, it was found that a more positive experience and satisfaction with childbirth were associated with high scores in MSE (Azmoude et al., 2015; Sánchez-Cunqueiro et al., 2018). Furthermore, Hankel and colleagues (2019) found that high breastfeeding self-efficacy was associated with a more positive breastfeeding experience (Hankel et al., 2019). Another study showed

that negative breastfeeding experiences in the first week postpartum are crucial for maternal breastfeeding self-efficacy one week following birth (Nilsson et al., 2020). Still, few studies seek to understand the role of maternal perceptions of the postpartum experience in a non-task-focused approach to self-efficacy. Therefore, it seems necessary to reinforce the investigation into this topic by understanding the perceptions built up by women about their experiences and feelings in the postpartum period and how these can relate to mothers' emotional states and, consequently, MSE.

In sum, considering the importance of MSE in postpartum period and the gaps and discrepancies reported in previous research regarding its determinants, the current study goals are twofold: (i) to analyze the potential mediating role of difficulties in emotional regulation in the relationship between maternal-related variables (i.e., family income, maternal education, mother's age and number of previous children) and MSE; and (ii) examining the role maternal perceptions of the postpartum experience may play in the relationship between difficulties in emotional regulation and MSE. Based on previous research data, we expect difficulties in emotional regulation to play a mediation role in the relationship between maternal-related variables and MSE. This means that the effect of the aforementioned variables on MSE will occur through the variable difficulties in emotional regulation rather than through other pathways. Regarding the role of maternal perceptions of the postpartum experience in the relationship between difficulties in emotional regulation and MSE, a partial mediation of this relationship is hypothesized. Specifically, it is expected that the greater the difficulties mothers experience in their emotional regulation, the more negative their perceptions of the postpartum experience, and the lower the MSE. We believe that understanding these relationships can provide the basis for interventions focused on supporting maternal mental health and well-being and promoting positive parenting outcomes. By addressing difficulties in emotional regulation to promote MSE, health professionals can empower women to face the challenges of the postpartum period with resilience and confidence. This, in turn, can promote healthy mother-child relationships and optimal child development. Therefore, further research into the role of emotion regulation, MSE, and maternal perceptions of the postpartum experience is essential to develop effective strategies to support maternal well-being and promote positive parenting outcomes.

Methods

Design and Participants

This study followed a cross-sectional design. The inclusion criteria were being a woman over the age of 18 and in the first 12 months after giving birth. A total of 572 responses were received during the data collection period. However, only 300 mothers were included in the study, as some reports were

incomplete or did not meet the inclusion criteria. The mean age of the sample was 32.05 years old (*SD* = 4.68).

Procedure

This study was developed as part of a major research focused on the transition to motherhood funded by the *Fundação para a Ciência e Tecnologia* (FCT) (Reference: 2020. 10221.BD). Prior to this investigation, the study and its materials were approved by the Ethics Committee for Social Sciences and Humanities (CEICSH) and the Ethics Committee for Life and Health Sciences (CEICVS) [CEICSH 034/2021]. Subsequently, participants were recruited online (e.g., Instagram, Facebook, and public health websites) and through hospitals and health centers between 2023-2024. In the recruitment phase, all participants provided informed consent and completed a self-report questionnaire, which took approximately 15 minutes.

Instruments

Data regarding participants were evaluated using inquiries intended to collect information on maternal-related variables (i.e., family income, maternal education, mother's age, and number of previous children).

The *Maternal Self-Efficacy Scale* assessed MSE (Teti & Gelfand, 1991; Leerkes & Crockenerg, 2002). The questionnaire includes ten items, using a 4-point *Likert* scale (i.e., one corresponds to "not able," 2 to "not very capable," 3 to "capable," and 4 to "very capable"). Nine items refer to specific behaviors (e.g., feeding, bathing, soothing, etc.); the 10th item is a global evaluation of mothering ability. The scale was designed to measure MSE in mothers of 3- to 13-month-old infants. The alpha of Cronbach's coefficient was .83.

In addition to that, the difficulties in emotional regulation were assessed using the *Difficulties in Emotion Regulation Scale* (DERS) (Gratz & Roemer, 2004). The instrument comprises six scales: Non-Acceptance, Goal Direction, Clarity, Awareness, Regulation Strategies, and Impulse Control. The instrument includes 36 items. This questionnaire uses a *Likert* scale, with responses ranging from 1 (rarely applies to me) to 5 (almost always applies to me). Exploratory factor analysis extracted six factors, which explained 58.24% of the total variance. Cronbach's alpha was .94 (Coutinho et al., 2010).

Finally, to explore mothers' perceptions of their parenting experience during the postpartum period, participants were presented with an open-ended question: "The transition to parenthood and the first 1000 days of your child are periods of extreme adaptation for parents. Therefore, we would like to

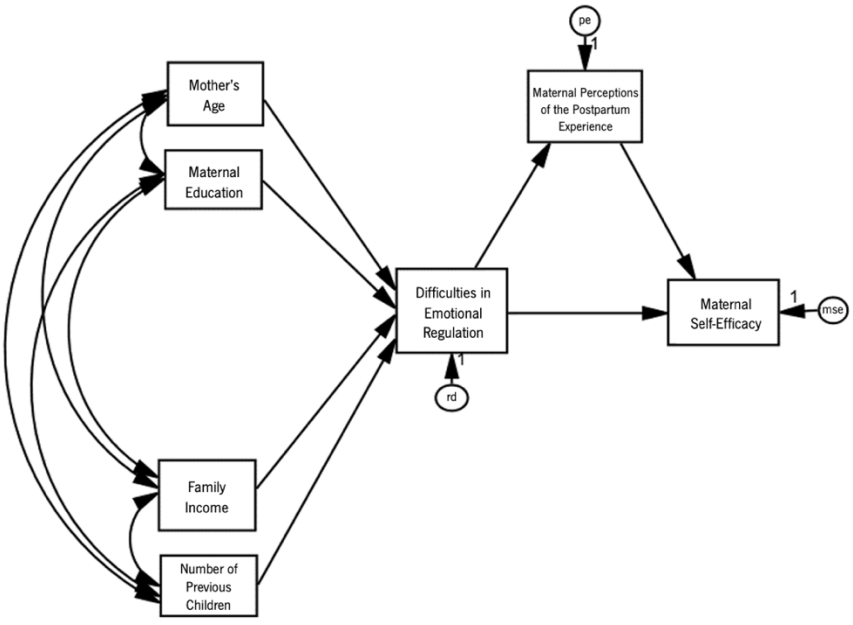
ask you to name four adjectives that characterize the period from the birth of your baby until now". The score of this question will be assigned as follows: 2 - a word with a positive connotation; 0 - a word with a negative connotation; 1 - a word with a neutral connotation. The final score will be calculated by adding the individual scores together.

Data analysis

The data from this study were analyzed in two stages. Firstly, the statistical properties of the variables included in the model (means, standard deviations, asymmetry, and kurtosis) and the correlation matrix and missing values were analyzed. According to the criteria established by Gravetter and Wallnau (2014), the distribution of the variables was considered normal. Conversely, as the percentage of missing values was low (0.73%), these were treated using the multiple imputation procedure. Secondly, the proposed path model was adjusted (see Figure 1). The SPSS program AMOS 22 (Arbuckle, 2013) was employed to fit the model. The fitting results were evaluated according to the criteria: Chi-square, RMR, AGFI, CFI, CFI, and RMSEA. The model exhibited a good fit when the following conditions were met: χ^2 has $p > .05$, RMR <.05, AGFI ≥ .90, CFI ≥ .95, and RMSEA ≤ .06. When the proposed model required re-specification, the optimal model was selected based on the AIC and BIC statistics. The regression coefficients were evaluated using the f^2 criterion ($f^2 \geq 0.02$ small effect; $f^2 \geq 0.15$ medium effect; $f^2 \geq 0.35$ large effect).

Figure 1

Proposed mediational model



Findings

Descriptive analyses

Table 1 presents the Pearson correlation matrix and the descriptive statistics corresponding to the variables in the initial path model. The variables are sufficiently correlated to proceed with subsequent analyses (Bartlett's test of sphericity: $\chi^2_{21} = 213.022$, $p < .001$). As illustrated in the correlation matrix, the independent variables (IV's) (i.e., family income, maternal education, mother's age, and number of previous children) significantly correlate with difficulties in emotional regulation and MSE, but not with maternal perceptions of the postpartum experience.

Table 1.

Pearson's correlation matrix and descriptive statistics

	FI	ME	MA	NCH	MSE	DER	MPPE
FI	—						
ME	.437**	—					
MA	.230**	.284**	—				
NPC	-.020	-.120*	.184**	—			
MSE	-.129*	-.175**	-.102	.197**	—		
DER	-.118*	-.132*	-.118*	-.112	-.325**	—	
MPPE	-.033	-.044	-.088	.086	.197*	-.233**	—
M	3.62	2.15	32.05	0.31	3.48	2.26	3.68
SD	1.131	0.785	4.686	0.538	0.373	0.640	1.427
SKW	-0.267	-0.271	0.230	1.631	-0.756	0.665	0.856
KUR	-0.969	-1.329	0.546	2.492	0.332	0.134	1.131

Note: FI (Family Income), ME (Maternal Education), MA (Mother's Age), NPC (Number of Previous Children), MSE (Maternal Self-Efficacy), DER (Difficulties in Emotional Regulation), MPPE (Maternal Perceptions of the Postpartum Experience).

Initial model fit

The model fit data indicate a significant lack of fit [$\chi^2(8) = 34.343$; $p = .001$; RMR = .156; AGFI = .894; CFI = .864; RMSEA = .105 (.070 - .142); AIC = 74.343; BIC = 148.418]. Upon examination of the residuals and modification indices, we decided to re-specify the model by introducing three additional effects that would be beneficial. These effects included a direct association between maternal education and the number of previous children with MSE, as well as an association of the mother's age with maternal perceptions of the postpartum experience. Given the theoretical plausibility of these direct effects, we proceeded to estimate the model fit by including them one by one. The model fit was assessed using the following statistics: [$\chi^2(5) = 8.584$; $p = .127$; RMR = .038; AGFI = .955; CFI = .982; RMSEA = .049 (.001 - .103); AIC = 54.584; BIC = 139.771]. Consequently, the re-specified model exhibited a markedly enhanced fit: $\Delta_{AIC} = 19.759$, $p < .001$; $\Delta_{BIC} = 8.647$, $p < .001$.

Evaluation of the final model

Tables 2 (direct effects; see also Figure 2) and 3 (indirect effects) provide the statistics for evaluating the hypotheses of this mediation model.

Table 2.

Standardized outcome effects

	Estimate (*b*)	SE	$P_{(b)}$	f^2
Family Income → Difficulties in Emotional Regulation	-.063	.036	.321	
Maternal Education → Difficulties in Emotional Regulation	-.103	.053	.115	
Maternal Education → Maternal Self-efficacy	-.196	.025	**<.001**	
Mother's Age → Difficulties in Emotional Regulation	-.053	.008	.390	
Mother's Age → Maternal Perceptions of the Postpartum Experience	-.118	.017	**.037**	
Number of Previous Children → Difficulties in Emotional Regulation	-.116	.070	**.048**	
Number of Previous Children → Maternal Self-efficacy	.130	.037	**.014**	
Difficulties in Emotional Regulation → Maternal Perceptions of the Postpartum Experience	-.247	.025	<**.001**	
Difficulties in Emotional Regulation → Maternal Self-efficacy	-.312	.032	<**.001**	
Maternal Perceptions of the Postpartum Experience → Maternal Self-efficacy	.104	.014	**.050**	

Note: SRA (Standardized Regression Coefficient), EE (Estimation Error), $p_{(SRA)}$ (probability of SRA), f^2 (Effect size: $f^2 \geq 0.02$ small; $f^2 \geq 0.15$ medium; $f^2 \geq 0.35$ large).

Table 3.

Standardized indirect effects

	Estimate (*b*)	LO - UP	$P_{(b)}$	f^2
Mother's Age → Maternal Perceptions of the Postpartum Experience	.013	-.013/.040	.372	
Mother's Age → Maternal Self-efficacy	.006	-.034/.056	.638	
Family Income → Maternal Perceptions of the Postpartum Experience	.016	-.004/.055	.175	
Family Income → Maternal Self-efficacy	.021	-.008/.064	.209	
Number of Previous Children → Maternal Perceptions of the Postpartum Experience	.029	.005/.070	.065	
Number of previous children → Maternal Self-efficacy	.039	.005/.082	.077	
Maternal Education → Maternal Perceptions of the Postpartum Experience	.025	-.005/.056	.146	
Maternal Education → Maternal Self-efficacy	.035	-.011/.082	.176	
Difficulties in Emotional Regulation → Maternal Self-efficacy	-.026	-.060/-.004	**.050**	

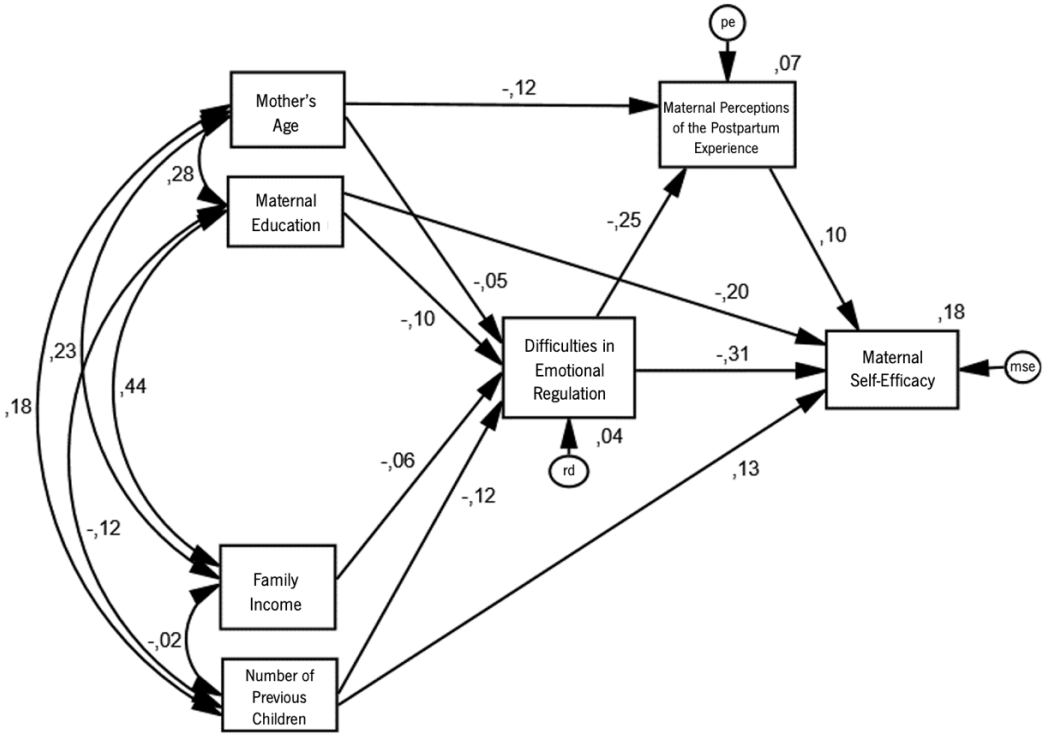
Note: SRA (Standardized Regression Coefficient), EE (Estimation Error), f^2 (Effect size: $f^2 \geq 0.02$ small; $f^2 \geq 0.15$ medium; $f^2 \geq 0.35$ large), LO-UP (Lower-Upper). * $p < .05$, ** $p < .01$, *** $p < .001$.

The data indicated that the IV's were not significantly related to difficulties in emotional regulation, except for the number of previous children, which explained a very low amount of variance explained (4%). In this case, it is observed that the higher the number of previous children, the greater the difficulties in emotional regulation and the higher the MSE. Another noteworthy finding is that a higher maternal education level is associated with lower MSE.

In addition, maternal perceptions of the postpartum experience were related to difficulties in emotional regulation (the greater the difficulties in emotional regulation, the lower the maternal perceptions of the postpartum experience) and MSE (the greater the maternal perceptions of the postpartum experience, the greater the MSE). These two relationships indicate that the impact of the difficulties in emotional regulation on MSE occurs through maternal perceptions of the postpartum experience. Finally, a significant relationship was identified between difficulties in emotional regulation and MSE. The proportion of the total variance in maternal perceptions of the postpartum experience was 6.8%, while that of MSE was 17.8%.

Figure 2

Direct effects on the final model



Discussion

The present study aimed to assess the role of several maternal characteristics (i.e., family income, maternal education, mother's age, and number of previous children) on the MSE in the first 12 months after giving birth, with a particular focus on the relationship between difficulties in emotional regulation, maternal perceptions of the post-partum experience and MSE. In fact, we aimed to understand how maternal perceptions of the post-partum experience impact the relationship between difficulties in emotional regulation and MSE.

The preliminary findings suggest the existence of a set of relations between IV's (i.e., family income, maternal education, mother's age, and number of previous children), difficulties in emotional regulation, maternal perceptions of the post-partum experience and MSE. In particular, we can conclude that there is no total mediation in the first part of the model, but only partial mediation (i.e., for some of the IV's, there is no total mediation). However, when we look at the indirect effects (Table 3), we learn that none of the indirect effects of the IV's are statistically significant, which indicates no mediation of difficulties in emotional regulation on the effect of IV's on MSE. In the second part of the model, we observed partial mediation concerning the mediation of difficulties in emotional regulation on maternal perceptions of the post-partum experience. The indirect effect and a significant direct effect were statistically significant, albeit with a small effect size.

Further analysis highlights the direct impact of specific maternal characteristics, particularly the number of previous children and maternal education on MSE. Specifically, the higher the number of previous children, the higher the MSE. This finding is consistent with previous research reporting that primiparous (i.e., first-time mothers) women report lower MSE (Leahy-Warren & McCarthy, 2011; Samdan et al., 2022; Shorey et al., 2014). For example, a study by Botha et al. (2020) using a sample that is somewhat comparable to our own (i.e., 250 mothers), found that the more parenting experience mothers had, the higher their levels of MSE. Similarly, Bandura (1997) concluded that an experienced mother who has been successful in previous parenting tasks has a more developed sense of self-efficacy. Although studies report that first-time mothers are likely to attend significantly more parental courses or events, they still have lower levels of MSE (Samdan et al., 2022). This finding may be related to these mothers lacking prior mastery and vicarious experience of adjusting to motherhood (Shorey et al., 2014). Being a first-time mother is also associated with higher educational levels (Samdan et al., 2022). This leads to this study's finding: higher maternal education is associated with lower MSE. Previous studies have shown that mothers with higher levels of education may be more aware of the challenges associated with raising a child. Therefore, they may be more likely to express doubts and difficulties (Parks & Smeriglio, 1986).

In addition, they may have higher standards than women with lower education levels (Samdan et al., 2022). However, caution is needed when interpreting our results, as there are studies in the literature that suggest that mothers with a higher level of education tend to have a higher MSE (Gao et al., 2015; Junttila & Vauras, 2014; Zheng et al., 2018; Wang et al., 2021).

In addition to the aforementioned IV's, family income and the mother's age did not yield significant associations contrary to expectations. However, this result is not consistent with the literature. For instance, several studies have demonstrated a positive correlation between higher household incomes and higher levels of MSE (Abuhammad, 2020; Shorey et al., 2014; Tazouti & Jarlégan, 2016; Wang et al., 2021). Concerning maternal age, the studies indicate that older mothers exhibit a higher MSE than younger mothers (Junttila & Vauras, 2014; Ngai et al., 2010; Shorey et al., 2014). One potential explanation for the absence of significant findings in our study regarding these IV's is the relatively limited size of our sample. Consequently, the observed variability among participants may have been insufficient to detect statistically significant differences.

Current data also show that IV's is not significantly related to difficulties in emotional regulation, except for the number of previous children. Given the low explained variance (i.e., 4%), it is prudent to approach this result cautiously and consider potential explanations. To the best of our knowledge, research on difficulties in emotion regulation in different groups (e.g., primiparas vs. multiparas) and without a diagnosis of psychological disorder is scarce. One possible explanation could be that women with more children have developed better emotion regulation skills over time due to the demands of motherhood (Zimmer-Gembeck et al., 2021). Prior research indicates that parents learn to regulate their emotions and respond effectively to their children over time (Bridgett et al., 2015).

In addition, the results showed that maternal perceptions of the postpartum experience were related to difficulties in emotional regulation and MSE. These two relationships suggest an indirect effect of difficulties in emotional regulation on MSE through maternal perceptions of the postpartum experience. This finding is consistent with the literature showing that women with difficulties in emotional regulation tend to doubt their competence to cope with the demands of motherhood (Teti et al., 1995). This suggests that maternal perceptions of the postpartum experience impact the relationship between these two variables. Every maternal perception of the postpartum experience involves a range of emotions and thoughts about herself. Furthermore, this study can inform future interventions that the maternal perceptions of the postpartum experience can influence a woman's sense of MSE.

Current findings have significant implications for the literature, particularly in maternal perceptions of the post-partum experience and MSE. Identifying partial mediation effects between

difficulties in emotion regulation and maternal perceptions of the post-partum experience underscores the significance of subjective perceptions in comprehending MSE. Moreover, the direct impact of maternal characteristics (e.g., number of previous children and maternal education) on the MSE sheds light on the complex dynamics that shape maternal confidence and competence. In particular, the unexpected finding that difficulties in emotion regulation indirectly influence MSE through maternal perceptions of the post-partum experience challenges conventional assumptions and calls for a deeper exploration of the role of subjective experiences in MSE. These findings could further our understanding of the multifaceted nature of postpartum adjustment and offer valuable insights for designing specific interventions to improve maternal well-being and MSE. By recognizing the fundamental role of maternal perceptions of the post-partum experience in shaping MSE, this study paves the way for future research and interventions to support mothers facing motherhood's challenges with confidence and resilience.

Practical implications, limitations, and future research

Hopefully, the results of this study shed light on some possible implications for future educational/preventive interventions. For example, current results can inform the development of health protocols that can support women experiencing postpartum in conditions of high uncertainty (e.g., strikes in the national health system). Furthermore, one of the principal strengths of this work is that it considers the "differentiated" experience of the postpartum period rather than assuming that it is uniform across all women. It is also important to note that the variables with the higher impact in this study can be modified through interventions with women (e.g., psychological or educational). This suggests that the development of interventions with women is more promising, particularly in the context of prevention. Such measures may be made available to women at the earliest stages of contemplating motherhood, even before pregnancy. It is also important to consider that providing support (e.g., institutional support) to women can facilitate a more positive maternal perception of the postpartum period, which can improve the relationship between emotional regulation and the MSE.

Despite our promising results, it is important to consider certain limitations when interpreting results. One such limitation is that a substantial proportion of the data collection was conducted online, which meant that many participants did not complete the questionnaire, reducing the number of anticipated participants. Another limitation was that it was a self-report questionnaire; this data collection mode may have triggered participants' social desirability bias. In addition, our results do not allow us to understand how MSE is formed among individuals from different racial, ethnic, and gender groups (e.g., fathers). Finally, a limitation is that our analyses did not control for child characteristics (e.g., health

status) and environmental factors (e.g., marital satisfaction or support from the baby's father). Future studies could explore these variables' role in maternal perceptions of the postpartum experience. MSE increases significantly during postpartum (Samdan et al., 2022). Nevertheless, the participants in this study were not all at the same point in the postpartum period. Therefore, another suggestion for future research would be to adopt a longitudinal design to bridge this gap and take a more comprehensive approach to the phenomenon. All considered, these results must be interpreted cautiously.

Conclusions

The findings of this study yield several key conclusions that have significant implications for the practice of maternal well-being and motherhood support. Firstly, the study elucidates the intricate dynamics between maternal characteristics, difficulties in emotional regulation, maternal perceptions of the post-partum experience, and MSE in the first 12 months after giving birth. The findings underscore the importance of considering subjective perceptions and emotional regulation in understanding maternal adjustment and MSE. It is noteworthy that the direct impact of specific maternal characteristics, such as the number of previous children and maternal education, on MSE, highlights the necessity for tailored interventions that address individual needs and challenges. Moreover, the unexpected finding that difficulties in emotional regulation indirectly influence MSE through maternal perceptions of the post-partum experience underscores the need for comprehensive support programs that address both psychological factors and subjective experiences in promoting maternal well-being. These findings suggest that interventions to enhance MSE should adopt a holistic approach, encompassing psychological support, skill-building, and validation of maternal experiences. By recognizing the intricate relationship between maternal characteristics, emotional regulation, and perceptions, practitioners can develop more effective interventions to help mothers navigate the complexities of parenting with confidence and resilience.

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