Lins Taiane (Orcid ID: 0000-0001-6411-8620)

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Maternal depressive symptoms and child internalizing problems: The mediation of emotion socialization

Taiane Lins[1] | Patrícia Alvarenga[1] | Sophie Havighurst[2] | Antonio Carlos Santos da Silva[1]

[1] Instituto de Psicologia, Universidade Federal da Bahia, Salvador, Brazil

[2] Mindful: Centre for Training and Research in Developmental Health, The University of Melbourne, Melbourne, Australia

Correspondence

Taiane Lins, Instituto de Psicologia, Universidade Federal da Bahia, 197 Aristides Novis Street, Estrada de São Lázaro, Salvador/BA, Brazil, 40210 630.

Email: lins.taiane@gmail.com

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Author note

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Abstract

Objective: This study examined the mediation of maternal emotion socialization practices in the relation between mothers' depressive symptoms and children's internalizing problems in a Brazilian community sample.

Background: Maternal depression and maternal emotion socialization practices contribute to children's internalizing problems, but the mechanisms through which these variables interact remain unclear.

Method: Participants were 153 mothers of children between 3 and 8 years old. The Coping with Children's Negative Emotions Scale (CCNES) evaluated emotion socialization practices, the Child Behavior Checklist (CBCL) assessed children's internalizing behaviors, and the Beck Depression Inventory I (BDI-I) measured maternal depressive symptoms.

Results: Maternal non-supportive emotion socialization practices partially mediated the relation between maternal depressive symptoms and children's internalizing problems. There were no effects of maternal depressive symptoms on maternal supportive emotion socialization practices and child internalizing problems.

Conclusion: Early psychosocial interventions that reduce non-supportive reactions to children's emotions may be an important way of assisting children in understanding and managing their negative emotions.

KEYWORDS

childhood, emotion socialization practices, internalizing problems, maternal depressive symptoms, mediation

Internalizing problems reflect a child's difficulty in dealing with negative emotions (Aldao et al., 2010; Eisenberg et al., 2001), which is at the core of most internalizing complaints, such as anxiety, depression, excessive fears, and worries (Achenbach & Rescorla, 2000). High rates of internalizing problems in childhood are associated with other impairments, including the development of mental disorders (Borsa & Nunes, 2011; Hastings, 2015). The role of genetics and environment in children's internalizing problems is well documented (Benke et al., 2014; Haberstick et al., 2005); above all, the influence of parental psychopathology, and particularly, maternal depression (e.g., Ahmadzadeh et al., 2021; Davis & Qi, 2022; Goodman et al., 2011; Pietikäinen et al., 2020; Xerxa et al., 2021). Nevertheless, as biological parents contribute to genetics and environmental factors, it is not yet known whether there is an overlap between the two or whether one of these factors would be more preponderant (Hannigan et al., 2018). Several studies have investigated the effects of maternal depression on children's internalizing symptoms, including depression and anxiety (Goodman et al., 2011). However, the specific mechanisms by which depression in the mother may jeopardize the child's socioemotional development are not fully understood (Goodman & Gotlib, 1999; Goodman et al., 2011). Literature shows that different dimensions of depressed mothers' behavior can influence children's internalizing problems, such as difficulties in interaction or stimulation (Alvarenga & Palma, 2013; Bolsoni-Silva & Loureiro, 2020), negative affect (Coyne & Thompson, 2011), and psychological control (e.g., criticism, overprotection; Silk et al., 2009). Among those different dimensions, maternal emotion socialization practices may be particularly relevant because they directly address child emotional regulation skills, which may be hindered in children who have internalizing

issues (Crespo et al., 2017; Daniel et al., 2020). Despite these findings, it is crucial to recognize that most studies on emotional socialization have been performed with White, middle-class, and Western families, making it difficult to generalize the conclusions to other contexts (Chaplin et al., 2010). In addition to the need for research to address families in different settings and cultures, it is essential to investigate how low-income families teach their children to describe, deal with, and express negative emotions. The current study investigated the interactions between maternal depressive symptoms, emotion socialization practices, and children's internalizing problems in a low-income Brazilian community sample.

Maternal depression and internalizing problems: Transmission mechanisms

Goodman and Gotlib (1999) proposed four transmission mechanisms through which maternal depression may be a risk factor for children's socioemotional development: heredity; neuroregulation; exposure to maternal cognitions, affects, and risky behaviors; and stressful environment. The authors also pointed out that these mechanisms may be moderated by factors such as the father's mental health and availability in childcare activities, the timing of maternal depression in the child's life, and the child's characteristics, such as temperament, sex, and sociocognitive skills.

Regarding maternal affect and behavior, from the first years of the child's life, the mother's reactions to the child's emotions, named emotion socialization practices, are shown to affect early emotional development (Eisenberg et al., 1998; Eisenberg, 2020). Emotion socialization practices that do not support children's emotional experiences are characterized by avoidance, criticism, punishment, neglect, or irritability and have been found to contribute to the development and maintenance of children's internalizing problems (Hooper et al., 2018; Silk et al., 2011). Specifically, high levels of criticism, overcontrol, and difficulty in dealing with the child's negative emotions are related to internalizing profiles (Aldao et al.,

2010; Eisenberg et al., 2001; Havighurst & Kehoe, 2017). Non-supportive practices may contribute to the inhibition or suppression of children's emotional expression, reducing their opportunities to learn how to manage and overcome negative emotions (Lins & Alvarenga, 2018). Using these practices, parents may also communicate to the child that negative emotions are not appropriate because they cause discomfort in the family and, thus, should be avoided (Silk et al., 2011).

On the other hand, practices that support children's negative emotional expression, such as encouraging children to express feelings or helping them deal with the situation that caused the emotion, predict lower internalizing scores (Hooper et al., 2018), although, some studies did not corroborate those findings (e.g., Seddon et al., 2020; Silk et al., 2011). Reactions that support and validate children's emotional expression will likely reinforce their behavioral repertoire for dealing with negative emotions. Consequently, children become progressively more skillful at facing and managing emotionally demanding situations (Lins & Alvarenga, 2018).

Several depressive symptoms could explain why mothers with this condition may often display non-supportive emotion socialization practices when dealing with their children's emotional expressions. First, mothers with depressive symptoms are already challenged with managing their own emotions and tend to have greater irritability (Coyne & Thompson, 2011; Silk et al., 2011). Second, negative affect and attentional impairment can make it difficult for a mother to detect changes in her child's emotional states, presenting a greater chance of adversely impacting the dyad's relationship (Goodman & Gotlib, 1999; Goodman et al., 2011). Those impairments may be particularly troublesome for young children, who still rely on emotional coregulation for emotional balance and self-regulatory skill development.

These theoretical hypotheses and the findings that support them provide a bottom line for future research, since literature is still unclear on the relations between emotion socialization, parental depression, and children's internalizing problems (Tompson et al., 2010; van der Pol et al., 2016). For Silk et al. (2009) and Tompson et al. (2010), the understanding of the relations between these variables requires studies to evaluate whether (a) maternal depression has a direct effect on internalizing problems; (b) the way mothers handle their children's emotions mediates relations between maternal depression and internalizing problems; and (c) maternal depression is a moderating variable that interacts with a mother's reactions to her child's emotions, thereby increasing the latter's risk of internalizing disorders. *Mediation* is a theoretical and methodological framework that may help researchers unravel the relationship between maternal depression and child internalizing behaviors beyond genetics. The mediation hypothesis assumes that maternal depression, as an antecedent variable, may modulate maternal emotions, attitudes, and behaviors, which would affect the outcome variable: child behavior or development (MacKinnon et al., 2007). Thus, mediation is a useful way of exploring the relations between these different aspects of parent and child functioning (Tompson et al., 2010; van der Pol et al., 2016).

A small number of studies have examined the mediating role of emotion socialization practices in the relation between maternal depressive symptoms and child internalizing problems. Seddon et al. (2020) investigated relations between parental anxiety, depression, somatization, emotional dysregulation, and emotional socialization practices, and children's emotional dysregulation and internalizing problems. The sample was Canadian and comprised children between 8 and 12 years old. The findings showed that non-supportive emotion socialization practices mediated the relation between parental internalizing problems and children's emotional dysregulation. Similarly, Arikan and Kumru (2021) analyzed whether maternal cognition and non-supportive emotion socialization practices would be

mediating variables in the relationship between maternal depression, anxiety, and hostility, and children's internalizing problems. The study, carried out in Turkey, included 537 mothers of children between 10 and 44 months. Depression, anxiety, and hostility were predictors of non-supportive practices, which, in turn, were mediators in the relationship between maternal symptoms and children's internalizing problems. Additional evidence to support the mediation hypothesis is provided by studies that found that maternal emotion self-regulation deficits (Ip et al., 2021) and authoritarian parenting practices (e.g., physical punishment; Calzada et al., 2019) mediated the relationship between maternal depressive symptoms and children's internalizing problems.

The prevalence of depressive symptoms has increased worldwide, and Brazil is among the most affected countries (World Health Organization [WHO], 2017). In addition, depression is more common in women compared to men (Bromet et al., 2011; WHO, 2017), and maternal depressive symptoms have been found to uniquely explain children's internalizing problems, while paternal depressive symptoms have not been found to have the same explanatory power (Pietikäinen et al., 2020).

Literature suggests that children whose parents have mental health problems, especially maternal depression, are more prone to internalizing issues due to genetic factors and the interactions established with the caregiver in this condition (Goodman et al., 2011; Seddon et al., 2020; van der Pol et al., 2016). Maternal depression may influence child socioemotional development through different mechanisms (Tompson et al., 2010; van der Pol et al., 2016). The mediation of maternal emotion socialization practices is relevant because of its central role in children's emotional self-regulatory skills, which may be at the core of internalizing problems (Crespo et al., 2017; Daniel et al., 2020). Evidence corroborates this hypothesis, but the studies published so far have not specifically examined the effects of maternal depression (Arikan & Kumru, 2021; Calzada et al., 2019; Ip et al.,

2021; Seddon et al., 2020). In addition, research must examine these issues in populations other than North American or European middle-class families (Chaplin et al., 2010).

Current study

The current study investigated the mediation of maternal emotion socialization practices in the relation between mothers' depressive symptoms and their children's internalizing problems in a Brazilian community sample. We tested three hypotheses: (1) mothers' depressive symptoms have a direct effect on children's internalizing problems; (2) the relation between maternal depression and internalizing problems is mediated by maternal non-supportive practices of emotion socialization (distress reactions, punitive reactions, minimization reactions, and ignoring reactions); and (3) the relation between maternal depressive symptoms and child internalizing problems is mediated by maternal supportive practices (expressive encouragement, emotion-focused reactions, problem-focused reactions) problems.

METHOD

Participants

Participants were 153 mothers of children (45.1% girls) with a mean age of 54.75 months (*SD* = 12.0 months). Recruitment took place in eight private schools in Salvador, Brazil. The schools had monthly fees of up to 545.00 Reais, equivalent to US$140.83, and were in poor and middle-class neighborhoods of the city. To participate in the study, mothers had to be living with their child. Table 1 shows the sociodemographic characteristics of the sample. Mothers' mean age was 33.2 years (*SD* = 6.7 years) and their mean education level was 11.94 (*SD* = 2.5; *Mdn* = 11.00) years. Slightly more than half of the sample (61%) worked outside of the home and one mother was not working because of health problems. The average

monthly household income was R$2,905.99 (*SD* = 2,150.32; *Mdn* = 2,000.00), equivalent to US$750.90, which was low for this area. Only one mother did not report family income.

Although Brazil's Human Development Index (HDI) is considered high (0.78; Atlas Brasil, 2022), there are enormous social inequalities. Official data from 2018, 1 year after data collection for the present study, showed that 52.5 million people (approximately a quarter of the population) lived in either poverty or extreme poverty (Instituto Brasileiro de Geografia e Estatística [IBGE; Brazilian Institute of Geography and Statistics], 2019). Regarding Salvador city, where this study was carried out, the official website of the Brazilian government shows that, according to the most recent data from 2010, Salvador was the third most populous city, with 2,675,656 inhabitants. In 2019, the mean monthly income in Salvador was R$3,393.20 (equivalent to US$929.64), and the proportion of employed people concerning the total population of the city was 28.7% (IBGE, 2019). Thus, the current study's sample had a lower income than the city's average income.

Procedure

Invitations to take part in the study were sent to mothers through their children's daily notebook and posters about the study were placed on school noticeboards. The first author also participated in school meetings for parents to explain the research and invite mothers to participate. Mothers who answered yes to the invitation received a call to schedule the day and time for the data collection. Following the Brazilian legislation for carrying out studies with human participants (Resolution n. 466/2012 of the National Health Council), women had no financial or material incentive to participate in the study. The data collection was performed individually in a room reserved for this purpose in the child's school. Mothers who agreed to participate signed an informed consent form, provided sociodemographic information, and completed the questionnaires. Under the rules established by Resolution n. 466/2012, the current national legislation on human studies, this study obtained approval

from the Research Ethics Committee of the School of Nursing of Universidade Federal da Bahia (report n. 1.399.808).

Measures

Coping with Children's Negative Emotions Scale (CCNES)

The scale was created by Fabes et al. (1990) and adapted by Lins and colleagues (Lins et al., 2017; Lins et al., 2022) for Brazilian mothers and fathers. It is composed of 12 hypothetical situations reporting a range of events that might induce negative emotions in children. Each situation is followed by seven sentences about different parental reactions, each of which aligns to one of seven subscales evaluating non-supportive practices (distress reactions, punitive reactions, minimization reactions, and ignoring reactions) and supportive practices (expressive encouragement, emotion-focused reactions, problem-focused reactions). Parents respond to the likelihood of reacting as described in each item, based on a 5-point scale ranging from *never* (1) to *certainly* (5). The subscale ignoring reactions, was added in a recent study (Mirabile, 2015). The scoring for each subscale was calculated by dividing the sum of the marked values by the number of items in the subscale. The Brazilian version of the CCNES has shown a satisfactory internal consistency level (0.85 for non-supportive emotion socialization practices and 0.80 for supportive emotion socialization practices; Lins et al., 2017). However, the factorial structure of the Brazilian version revealed three factors for preschoolers (non-supportive reactions; emotion-focused reactions and problem-focused reactions; expressive encouragement), and two factors for schoolchildren (non-supportive reactions and supportive reactions; Lins et al., 2022). Thus, only the broader categories of non-supportive and supportive emotion socialization practices were used in the current analysis.

Child Behavior Checklist (CBCL)

In the current study, the Brazilian versions (Bordin et al., 2010; Silvares et al., 2010) of the CBCL (Achenbach & Rescorla, 2000) were used to evaluate children's internalizing problems. Children's behaviors are evaluated by mothers using a rating scale ranging from 0 to 2 points (0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*). In the measure for children aged 18 months to 5 years there are 100 items grouped into seven syndrome subscales assessing internalizing problems (emotional reactivity, anxiety/depression, somatic complaints, and withdrawal), externalizing problems (attention problems and aggressive behavior) and other problems. In the measure for children aged 6 to 18 years there are 118 items grouped into five syndrome subscales examining internalizing problems (anxiety/depression, withdrawal/depression, and somatic complaints), externalizing problems (rule-breaking behavior and aggressive behavior), as well as other problems. Items from the original version of the CBCL have high internal consistency for all scales. Cronbach's alpha was .96 for externalizing scores, .89 for internalizing scores, and .97 for total of behavior problems scores. The CBCL is not validated in Brazil, but studies have informed satisfactory internal consistency (e.g., Amorim, 2020; Rocha et al., 2013). For the two versions of the CBCL, scores between 60 and 63 and above 64 in the internalizing, externalizing, and total behavior scales characterize borderline and clinical samples. Scores below 60 are considered nonclinical. For syndromes, scores up to 64 are considered nonclinical; between 65 and 69, borderline; and from 70 on, scores are considered clinical.

Beck Depression Inventory I (BDI-I)

The Brazilian version (Cunha, 2001) of the BDI (Beck & Steer, 1993) was used to investigate indicators of maternal depressive symptoms. The BDI consists of 21 items assessing different levels of depression severity by examining how a person has felt in the 7 days prior to data collection. The sum of scores on the items gives a total score, ranging from 0 to 63, which can be classified as minimal (up to 11 points), mild (from 12 to 19 points), moderate (from 20

to 35 points), or severe (above 36 points) depression. The Brazilian version of BDI showed internal consistency of 0.84 (Cunha, 2001).

Data analysis procedures

The Statistical Package for the Social Sciences (SPSS-22) was used to conduct all analyses. First, Pearson's correlations were examined to verify the preliminary connections between maternal depressive symptoms, maternal practices of emotions socialization, and child internalizing problems. The three hypotheses were tested using the PROCESS 3.4 macro for SPSS (Hayes, 2018). PROCESS examined mediation through an indirect effect analysis using a bias-corrected bootstrap with 20,000 resamples. The three hypotheses were assessed by PROCESS Multiple Mediation Model 4 for parallel multiple mediation analysis (Figure 1).

RESULTS

Preliminary analysis

Descriptive statistics showed that non-supportive practices (M = 8.44, SD = 1.72) were less frequent than supportive practices (M = 12.31, SD = 1.05). The average depressive symptoms score (M = 13.26, SD = 7.35) showed that mothers were mildly depressive, and the CBCL average score indicated that children's internalizing problems (M = 58.06, SD = 8.68) were not clinical. Pearson's test was conducted to verify links between the studied variables. According to these results, maternal depressive symptoms were positively correlated with maternal non-supportive practices and child internalizing problems. Regarding maternal supportive practices, there were no correlations with maternal depressive symptoms and child internalizing problems. Table 2 shows means, standard deviations, and values of r and p of Pearson's test.

Effects of maternal depressive symptoms on child internalizing problems, mediated by maternal practices of emotions socialization

Figure 2 shows *B* and *p* values of mediation analysis using PROCESS Multiple Mediation Model 4 for parallel multiple mediation analysis (Hayes, 2018), which explained 16.4% of the variance in child internalizing problems, $F(3, 149) = 9.77$, $p < .001$, $R^2 = .164$. We found a direct positive effect of maternal depressive symptoms on child internalizing problems (*B* = 0.36, 95% confidence interval [CI] [0.18, 0.54]), supporting the first hypothesis. Supporting the second hypothesis, a bootstrap confidence interval for the indirect effect on the basis of 20,000 bootstrap samples did not cross 0, indicating that maternal non-supportive practices of emotions socialization was a significant mediator between maternal depressive symptoms and child internalizing problems (*B* = 0.05, CI [0.01, 0.11]). The specified path indicated that maternal depressive symptoms were associated with higher levels of maternal non-supportive practices of emotions socialization (*B* = 0.05, CI [0.01, 0.08]), which in turn were linked to higher internalizing problems in children (*B* = 1.04, CI [0.28, 1.80]). Finally, the third hypothesis was not supported. A bootstrap confidence interval for the indirect effect on the basis of 20,000 bootstrap samples crossed 0, indicating no mediation of maternal supportive practices of emotions socialization (*B* = 0.003, CI [–0.02, 0.03]). There were no effects of maternal depressive symptoms on maternal supportive practices of emotions socialization (*B* = –0.02, CI [–0.04, 0.01]), and this variable did not affect child internalizing problems (*B* = –0.18, CI [–1.41, 1.06]). Taken together, as the significant effects of maternal depressive symptoms on internalizing problems were direct and indirect, these findings indicate a significant partial mediation of maternal non-supportive practices of emotions socialization on the relations between maternal depressive symptoms and child internalizing problems.

DISCUSSION

We examined the mediation of maternal emotion socialization practices in the relation between mothers' depressive symptoms and children's internalizing problems in Brazilian families, who are not typically investigated in developmental research. Results showed a direct positive effect of maternal depressive symptoms on child internalizing problems, confirming our first hypothesis. These finds also supported our second hypothesis, indicating that maternal non-supportive emotion socialization practices mediated the relation between maternal depressive symptoms and children's internalizing problems. This mediation was not full, but partial, because the direct effect of maternal depressive symptoms on child internalizing problems remained significant. On the other hand, supportive emotion socialization practices did not mediate the relation between maternal depressive symptoms and child internalizing problems, refuting our third hypothesis.

Regarding the direct effect of maternal depression on child internalizing problems, the literature suggests that genetic mechanisms predispose children of depressed mothers to the risk of developing psychopathology such as depression and anxiety (Goodman & Gotlib, 1999; Rice et al., 2002; Seddon et al., 2020). Empirical support for this hypothesis is still scarce, perhaps due to difficulties in sorting out genetic from environmental influences (Natsuaki et al., 2014), and because the role of genetic factors in psychopathology might be more prominent in adolescence than in childhood (Harold et al., 2011). By any means, these inherited risk factors may then interact with the non-supportive emotion socialization practices mothers display when children express negative emotions (Seddon et al., 2020). Excessive irritability and tiredness (WHO, 2008) and greater difficulty regulating one's emotions (Coyne & Thompson, 2011) are common symptoms of depression. Depressed mothers are also more critical and hostile, express less affect, and are less available or engaged in caring for their children, in addition to being less sensitive to their children's emotions (Coyne & Thompson, 2011; Jackson & Arlegui-Prieto, 2016). Those symptoms

may hinder mother–child interaction, particularly in situations that trigger challenging emotional states such as anger, fear, and sadness. On such occasions, depressed mothers may experience greater difficulties in regulating their own emotions. These self-regulation issues may increase the chance that a mother displays non-supportive practices like punishing, dismissing, or showing discomfort in the face of her child's emotional expression (Rutherford et al., 2015). It is also likely that observable displays of the mother's self-regulatory deficits could serve as behavioral models for the child, reinforcing dysfunctional strategies to deal with emotions and resulting in internalizing problems (Coyne & Thompson, 2011; Eisenberg et al., 1998; Seddon et al., 2020).

Because young children are still learning to deal with negative emotions, non-supportive emotion socialization strategies may be particularly detrimental (Goodman et al., 2011). Children who are punished or ignored when expressing their feelings may experience stronger emotional arousal (Silk et al., 2011) and feel helpless due to the lack of ability to deal with negative emotions. Coping with the mother's discomfort or punishment when facing fear, anger, and sadness is another source of distress. Non-supportive maternal reactions communicate to the child that expressing negative emotions is inappropriate and should be avoided because it causes the mother distress. Instead, emotional suppression may be regarded as necessary to maintain the mother's emotional stability. As a result, there may be insufficient opportunities for the child to express negative emotions and learn how to deal with them, hindering self-regulation development and intensifying the risk of internalizing problems (Seddon et al., 2020).

Supportive emotion socialization practices did not mediate the relation between maternal depressive symptoms and child internalizing problems. Previous studies have found similar outcomes. Despite having identified a significant and negative relationship between maternal depressive symptoms and supportive emotional socialization practices, Silk et al.

(2011) did not identify significant relationships between supportive practices and children's internalizing problems. Seddon et al. (2020) emphasized that the literature has already shown that supportive and non-supportive practices are independent. The authors have shown that the increase in non-supportive emotion socialization practices had a greater impact on child development than the decrease in the supportive practices. As a result, Seddon et al. (2020) highlighted that intervention to benefit mother–child interaction, especially in cases of maternal depression, can produce better results if they aim to reduce non-supportive practices rather than increase supportive practices.

The child's age is also crucial. Mirabile et al. (2018) analyzed 81 children between 3 and 6 years old in preschools in Maryland, United States, and their caregivers and showed that problem-centered reactions and emotion-centered reactions were negatively related to internalizing problems only in younger children. There were no significant relationships between supportive emotional socialization practices and internalizing problems for older children. Likely, supportive emotion socialization practices may not have mediated the relation between maternal depressive symptoms and children's internalizing problems in the current study because the sample was mostly comprised of children older than 5. Thus, future studies must analyze the role of supportive practices in different age groups.

Implications

This study represents an initial effort to understand the relationship between maternal depressive symptoms, emotional socialization practices, and children's internalizing problems in Brazil, where the prevalence of depressive disorders is high (Bromet et al., 2011; WHO, 2017). Given the association between internalizing problems and the development of mental disorders, our results suggest that policy makers must invest in strategies to detect maternal depression during prenatal care and prioritize these families in early intervention programs that promote sensitive parenting and emotion socialization. Pregnant women and

mothers with mild depression may also benefit from early intervention programs that help them cope with their own emotional self-regulation.

Limitations

This study is not without limitations. First, we included only maternal reports of the three variables under consideration. Second, the measure of emotion socialization practices, the CCNES, might not accurately reflect what mothers do in terms of supportive reactions. The three subscales assessing supportive reactions indicated very high scores or ceiling effects, suggesting that mothers may have answered the items adhering to an expectancy bias of how they "should" respond rather than how they "would" respond. Likely, adapted versions of the CCNES, such as the one used in this study, may not present culturally representative situations. Thus, using complementary research strategies, such as interviews and observations, may provide greater cultural accuracy and is recommended for future studies. Finally, as highlighted above, Brazil is strongly marked by social and economic inequalities. Thus, caution is necessary to generalize the results obtained in the current study to other samples, even within the country.

Conclusion

The current study's results confirmed that maternal depressive symptoms directly affect children's internalizing problems. They also have an indirect effect through the mediation of non-supportive emotion socialization practices. Early psychosocial interventions must target families with young children whose mothers have depressive symptoms. Notably, mothers should be encouraged in dealing with their symptoms of depression and guided in not reacting unsupportively to the negative emotions expressed by their children.

REFERENCES

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms & profiles*. University of Vermont, Research Center for Children, Youth, & Families.

Ahmadzadeh, Y., Schoeler, T., Han, M., Pingault, J. B., Creswell, C., & McAdams, T. A. (2021). Systematic review and meta-analysis of genetically informed research: Associations between parent anxiety and offspring internalizing problems. *Journal of the American Academy of Child & Adolescent Psychiatry*, *60*(7), 823–840. https://doi.org/10.1016/j.jaac.2020.12.037

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*(2), 217–237. https://doi.org/10.1016/j.cpr.2009.11.004

Alvarenga, P., & Palma, E. M. S. (2013). Indicadores de depressão e a interação mãe-criança aos 18 meses de vida [Maternal depression indicators and mother-child interaction at 18 months]. *Psico*, *44*(3), 402–410. https://revistaseletronicas.pucrs.br/ojs/index.php/revistapsico/article/view/12255

Amorim, R. M. (2020). Child Behavior Checklist for ages 6-18 (cbcl/6-18): Estudo exploratório de suas evidências de validade e precisão em uma amostra brasileira [Child Behavior Checklist for ages 6-18 (cbcl/6-18): Exploratory study of its evidence of validity and precision in a Brazilian sample] [Master's thesis, Universidade Federal de Mato Grosso]. https://ri.ufmt.br/bitstream/1/2958/1/DISS_2020_Rosimeire%20de%20Moraes%20Amorim.pdf

Arikan, G., & Kumru, A. (2021). Patterns of associations between maternal symptoms and child problem behaviors: The mediating role of mentalization, negative intentionality, and unsupportive emotion socialization. *Child Psychiatry & Human Development*, *52*, 640–653. https://doi.org/10.1007/s10578-020-01046-w

Atlas Brasil. (2022). *Atlas do desenvolvimento humano no Brasil* [Atlas of human development in Brazil]. http://www.atlasbrasil.org.br/consulta/planilha

Beck, A. T., & Steer, R. A. (1993). *Beck Depression Inventory: Manual*. Psychological Corporation.

Benke, K. S., Nivard, M. G., Velders, F. P., Walters, R. K., Pappa, I., Scheet, P. A., Xiao, X., Ehli, E. A., Palmer, L. J., Whitehouse, A. J. O., Verhulst, F. C., Jaddoe, V. W., Rivadeneira, F., Groen-Blokhuis, M. M., van Beijsterveldt, C. E. M., Davies, G. E., Hudziak, J. J., Lubke, G. H., Boomsma, D. I., . . . Middeldorp, C. M. (2014). A genome-wide association meta-analysis of preschool internalizing problems. *Journal of the American Academy of Child & Adolescent Psychiatry*, *53*(6), 667–676. https://doi.org/10.1016/j.jaac.2013.12.028

Bolsoni-Silva, A. T., & Loureiro, S. R. (2020). Behavioral problems and their relationship to maternal depression, marital relationships, social skills and parenting. *Psicologia: Reflexão e Crítica*, *33*, Article 22. https://doi.org/10.1186/s41155-020-00160-x

Bordin, I. A., Silvares, E. F. M., Rocha, M. M., Teixeira, M. C., & Paula, C. S. (2010). *Inventário de Comportamentos para Crianças e Adolescentes entre 6 e 18 anos (CBCL/6-18): Versão Brasileira do "Child Behavior Checklist for ages 6-18"* [Behavior Inventory for Children and Adolescents between 6 and 18 years old (CBCL/6-18): Brazilian version of "Child Behavior Checklist for ages 6-18"] [Unpublished manuscript].

Borsa, J. C., & Nunes, M. L. T. (2011). Prevalência de problemas de comportamento em uma amostra de crianças em idade escolar da cidade de Porto Alegre [Prevalence of behavior problems in a sample of school age children of Porto Alegre]. *Aletheia*, *34*(1), 32–46. http://www.periodicos.ulbra.br/index.php/aletheia/article/view/3440/2576

Bromet, E., Andrade, L. H., Hwang, I., Sampson, N. A., Alonso, J., de Girolamo, G., de Graaf, R., Demyttenaere, K., Hu, C., Iwata, N., Karam, A. N., Kaur, J., Kostyuchenko, S., Lépine, J.-P., Levinson, D., Matschinger, H., Mora, M. E. M., Browne, M. O., Posada-Villa, J., … Kessler, R. C. (2011). Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine*, *9*, Article 90. https://doi.org/10.1186/1741-7015-9-90

Calzada, E. J., Sales, A., & O'Gara, J. L. (2019). Maternal depression and acculturative stress impacts on Mexican-origin children through authoritarian parenting. *Journal of Applied Developmental Psychology*, *63*, 65–75. https://doi.org/10.1016/j.appdev.2019.05.001

Chaplin, T. M., Casey, J., Sinha, R., & Mayes, L. C. (2010). Gender differences in caregiver emotion socialization of low-income toddlers. *New Directions for Child and Adolescent Development*, *2010*(128), 11–27. https://doi.org/10.1002/cd.266

Coyne, L. W., & Thompson, A. D. (2011). Maternal depression, locus of control, and emotion regulatory strategy as predictors of preschoolers' internalizing problems. *Journal of Child and Family Studies*, *20*(6), 873–883. https://doi.org/10.1007/s10826-011-9455-2

Crespo, L. M., Trentacosta, C. J., Aikins, D., & Wargo-Aikins, J. (2017). Maternal emotion regulation and children's behavior problems: The mediating role of child emotion regulation. *Journal of Child and Family Studies*, *26*(10), 2797–2809. https://doi.org/10.1007/s10826-017-0791-8

Cunha, J. A. (2001). *Manual da Versão em Português das Escalas Beck* [Portuguese Version Manual of Beck Scales]. Casa do Psicólogo.

Daniel, S. K., Abdel-Baki, R., & Hall, G. B. (2020). The protective effect of emotion regulation on child and adolescent wellbeing. *Journal of Child and Family Studies*,

29, 2010–2027. https://doi.org/10.1007/s10826-020-01731-3

Davis, A. N., & Qi, C. H. (2022). Associations between maternal depressive symptoms and child internalizing problems. *Early Child Development and Care*, *192*(5), 697–709. https://doi.org/10.1080/03004430.2020.1794860

Eisenberg, N. (2020). Findings, issues, and new directions for research on emotion socialization. *Developmental Psychology*, *56*(3), 664–670. https://doi.org/10.1037/dev0000906

Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, *9*(4), 241–273. https://doi.org/10.1207/s15327965pli0904_1

Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., Murphy, B. C., Losoya, S. H., & Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development*, *72*(4), 1112–1134. https://doi.org/10.1111/1467-8624.00337

Fabes, R. A., Eisenberg, N., & Bernzweig, J. (1990). *Coping with Children's Negative Emotions Scale (CCNES): Description and scoring.* Arizona State University. https://ccnes.org/

Goodman, S. H., & Gotlib, I. H. (1999). Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmission. *Psychological Review*, *106*(3), 458–490. https://doi.org/10.1037/0033-295X.106.3.458

Goodman, S. H., Rouse, M. H., Connell, A. M., Broth, M. R., Hall, C. M., & Heyward, D. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical Child and Family Psychology Review*, *14*(1), 1–27. https://doi.org/10.1007/s10567-010-0080-1

Haberstick, B., Schmitz, S., Young, S., & Hewitt, J. K. (2005). Contributions of genes and

environments to stability and change in externalizing and internalizing problems during elementary and middle school. *Behavior Genetics*, *35*(4), 381–396. https://doi.org/10.1007/s10519-004-1747-5

Hannigan, L. J., Rijsdijk, F. V, Ganiban, J. M., Reiss, D., Spotts, E. L., Neiderhiser, J. M., Lichtenstein, P., McAdams, T. A., & Eley, T. C. (2018). Shared genetic influences do not explain the association between parent–offspring relationship quality and offspring internalizing problems: Results from a Children-of-Twins study. *Psychological Medicine*, *48*(4), 592–603. http://doi.org/10.1017/S0033291717001908

Harold, G. T., Rice, F., Hay, D. F., Boivin, J., van den Bree, M., & Thapar, A. (2011). Familial transmission of depression and antisocial behavior symptoms: Disentangling the contribution of inherited and environmental factors and testing the mediating role of parenting. *Psychological Medicine*, *41*(6), 1175–1185. https://doi.org/10.1017/S0033291710001753

Hastings, P. D. (2015). Introduction to the Special Section: Biopsychosocial processes in the etiology and development of internalizing problems. *Journal of Abnormal Child Psychology*, *43*(5), 803–805. http://doi.org/10.1007/s10802-015-9992-z

Havighurst, S. S., & Kehoe, C. E. (2017). The role of parental emotion regulation in parent emotion socialization: implications for intervention. In K. Deater-Deckard & R. Panneton (Eds.), *Parental stress and early child development* (pp. 285–307). Springer. http://doi.org/10.1007/978-3-319-55376-4_12

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.

Hooper, E. G., Wu, Q., Ku, S., Gerhardt, M., & Feng, X. (2018). Maternal emotion socialization and child outcomes among African Americans and European Americans. *Journal of Child and Family Studies*, *27*(6), 1870–1880.

https://doi.org/10.1007/s10826-018-1020-9

Instituto Brasileiro de Geografia e Estatística [IBGE; Brazilian Institute of Geography and Statistics]. (2019). *Síntese de indicadores sociais: Extrema pobreza atinge 13,5 milhões de pessoas e chega ao maior nível em 7 anos* [Synthesis of social indicators: Extreme poverty reaches 13.5 million people and reaches the highest level in 7 years]. https://agenciadenoticias.ibge.gov.br/agencia-noticias/2012-agencia-de-noticias/noticias/25882-extrema-pobreza-atinge-13-5-milhoes-de-pessoas-e-chega-ao-maior-nivel-em-7-anos

Ip, K. I., McCrohan, M., Morelen, D., Fitzgerald, K., Muzik, M., & Rosenblum, K. (2021). Maternal emotion regulation difficulties and the intergenerational transmission of risk. *Journal of Child and Family Studies*, *30*, 2367–2378. https://doi.org/10.1007/s10826-021-02019-w

Jackson, M. C., & Arlegui-Prieto, M. (2016). Variation in normal mood state influences sensitivity to dynamic changes in emotional expression. *Emotion*, *16*(2), 145–149. https://doi.org/10.1037/emo0000126

Lins, T. C. S., & Alvarenga, P. (2018). Contribuições da análise do comportamento para a compreensão da socialização emocional infantil [Behavior analysis's contribution to the understanding of childhood emotion socialization]. *Acta Comportamentalia: Revista Latina de Análisis de Comportamiento*, *26*(3),379–392. https://www.redalyc.org/articulo.oa?id=274556550008

Lins, T., Alvarenga, P., Mendes, D. M. L. F., & Pessôa, L. F. (2017). Adaptação Brasileira da Coping with Children's Negative Emotions Scale (CCNES) [Brazilian adaptation of Coping with Children's Negative Emotions Scale (CCNES)]. *Avaliação Psicológica*, *16*(2), 196–204. https://doi.org/10.15689/AP.2017.1602.10

Lins, T., Alvarenga, P., Mendes, D. M. L. F., Pessôa, L. F., & Lima, T. H. (2022*). Evidências*

de validade da Coping with Children's Negative Emotions Scale (CCNES) [Validity evidence of the Coping with Children's negative Emotions Scale (CCNES)] [Manuscript submitted for publication]. Instituto de Psicologia, Universidade Federal da Bahia.

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology*, *58*(1), 593–614. https://doi.org/10.1146/annurev.psych.58.110405.085542

Mirabile, S. P. (2015). Ignoring children's emotions: A novel ignoring subscale for the Coping with Children's Negative Emotions Scale. *European Journal of Developmental Psychology*, *12*(4), 459–471. https://doi.org/10.1080/17405629.2015.1037735

Mirabile, S. P., Oertwig, D., & Halberstadt, A. G. (2018). Parent emotion socialization and children's socioemotional adjustment: When is supportiveness no longer supportive? *Social Development*, *27*(3), 466–481. https://doi.org/10.1111/sode.12226

Natsuaki, M. N., Shaw, D. S., Neiderhiser, J. M., Ganiban, J. M., Harold, G. T., Reiss, D., & Leve, L. D. (2014). Raised by depressed parents: Is it an environmental risk? *Clinical Child and Family Psychology Review*, *17*(4), 357–367. https://doi.org/10.1007/s10567-014-0169-z

Pietikäinen, J. T., Kiviruusu, O., Kylliäinen, A., Pölkki, P., Saarenpää-Heikkilä, O., Paunio, T., & Paavonen, E. J. (2020). Maternal and paternal depressive symptoms and children's emotional problems at the age of 2 and 5 years: A longitudinal study. *The Journal of Child Psychology and Psychiatry*, *61*(2), 195–204. https://doi.org/10.1111/jcpp.13126

Rice, F., Harold, G., & Thapar, A. (2002). The genetic aetiology of childhood depression: A review. *The Journal of Child Psychology and Psychiatry*, *43*(1), 65–79.

https://doi.org/10.1111/1469-7610.00004

Rocha, M. M., Rescorla, L. A., Emerich, D. R., Silvares, E. F., Borsa, J. C., Araújo, L. G. S., Bertolla, M. H. S. M., Oliveira, M. S., Perez, N. C. S., Freitas, P. M., & Assis, S. G. (2013). Behavioural/emotional problems in Brazilian children: Findings from parents' reports on the Child Behavior Checklist. *Epidemiology and Psychiatric Sciences*, *22*(4), 329–338. https://doi.org/10.1017/S2045796012000637

Rutherford, H. J. V., Wallace, N. S., Laurent, H. K., & Mayes, L. C. (2015). Emotion regulation in parenthood. *Developmental Review*, *36*(1), 1–14. https://doi.org/10.1016/j.dr.2014.12.008

Seddon, J. A., Abdel-Baki, R., Feige, S., & Thomassin, K. (2020). The cascade effect of parent dysfunction: An emotion socialization transmission framework. *Frontiers in Psychology*, *11*, Article 579519. https://doi.org/10.3389/fpsyg.2020.579519

Silk, J., Shaw, D., Prout, J., O'Rourke, F., Lane, T., & Kovacs, M. (2011). Socialization of emotion and offspring internalizing symptoms in mothers with childhood-onset depression. *Journal of Applied Developmental Psychology*, *32*(3), 127–136. https://doi.org/10.1016/j.appdev.2011.02.001

Silk, J. S., Ziegler, M. L., Whalen, D. J., Dahl, R. E., Ryan, N. D., Dietz, L. J., Birmaher, B., Axelson, D. A., & Williamson, D. E. (2009). Expressed emotion in mothers of currently depressed, remitted, high-risk, and low-risk youth: Links to child depression status and longitudinal course. *Journal of Clinical Child and Adolescent Psychology*, *38*(1), 36–47. https://doi.org/10.1080/15374410802575339

Silvares, E. F. M., Rocha, M. M., & Linhares, M. B. M. (2010). *Inventário de Comportamentos de Crianças entre 1 1/2 - 5 anos (CBCL/1½-5): Versão Brasileira do "Child Behavior Checklist for ages 1 ½ -5"* [Behavior Inventory for Children between 1½ and 5 years old (CBCL/1½-5): Brazilian version of "Child Behavior

Checklist for ages 1½-5"] [Unpublished manuscript].

Tompson, M. C., Pierre, C. B., Boger, K. D., McKowen, J. W., Chan, P. T., & Freed, R. D. (2010). Maternal depression, maternal expressed emotion, and youth psychopathology. *Journal of Abnormal Child Psychology*, *38*(1), 105–117. https://doi.org/10.1007/s10802-009-9349-6

van der Pol, L. D., Groeneveld, M. G., Endendijk, J. J., van Berkel, S. R., Hallers-Haalboom, E. T., Bakermans-Kranenburg, M. J., & Mesman, J. (2016). Associations between fathers' and mothers' psychopathology symptoms, parental emotion socialization, and preschoolers' social-emotional development. *Journal of Child and Family Studies*, *25*(11), 3367–3380. https://doi.org/10.1007/s10826-016-0490-x

World Health Organization. (2008). *Classificação de transtornos mentais e de comportamento da CID-10: Descrições clínicas e diretrizes diagnósticas* [ICD-10 classification of mental and behavioral disorders: Clinical descriptions and diagnostic guidelines]. http://www2.datasus.gov.br/cid10/V2008/cid10.htm

World Health Organization. (2017). *Depression and other common mental disorders: Global health estimates.* https://apps.who.int/iris/bitstream/handle/10665/254610/WHO-MSD-MER-2017.2-eng.pdf

Xerxa, Y., Rescorla, L. A., van der Ende, J., Hillegers, M. H. J., Verhulst, F. C., & Tiemeier, H. (2021). From parent to child to parent: Associations between parent and offspring psychopathology. *Child Development*, *92*(1), 291–307. https://doi.org/10.1111/cdev.13402

TABLE 1 Sociodemographic characteristics of the sample ($N = 153$)

Feature	Mean / Standard deviation / Median / Frequency
Mother's age	$M = 33.16$ ($SD = 6.7$)
Mother's education (years)	$M = 11.88$ ($SD = 2.4$) $Mdn = 11.00$
Mother's employment	62.1% (95)
Mothers with health problems	18.3% (28)
Father's age	$M = 36.51$ ($SD = 8.0$)
Cohabitation of mother and child's father	71.2% (109)
Number of children in family	$M = 3.26$ ($SD = 1.2$)
Family income (Reais)	$M =$2,905.99 (SD = 2,150.32) $Mdn =$ 2,000.00
Child´s gender	
Female	45.1% (69)
Male	54.9% (84)
Child's age (months)	$M = 54.75$ ($SD = 12.0$)

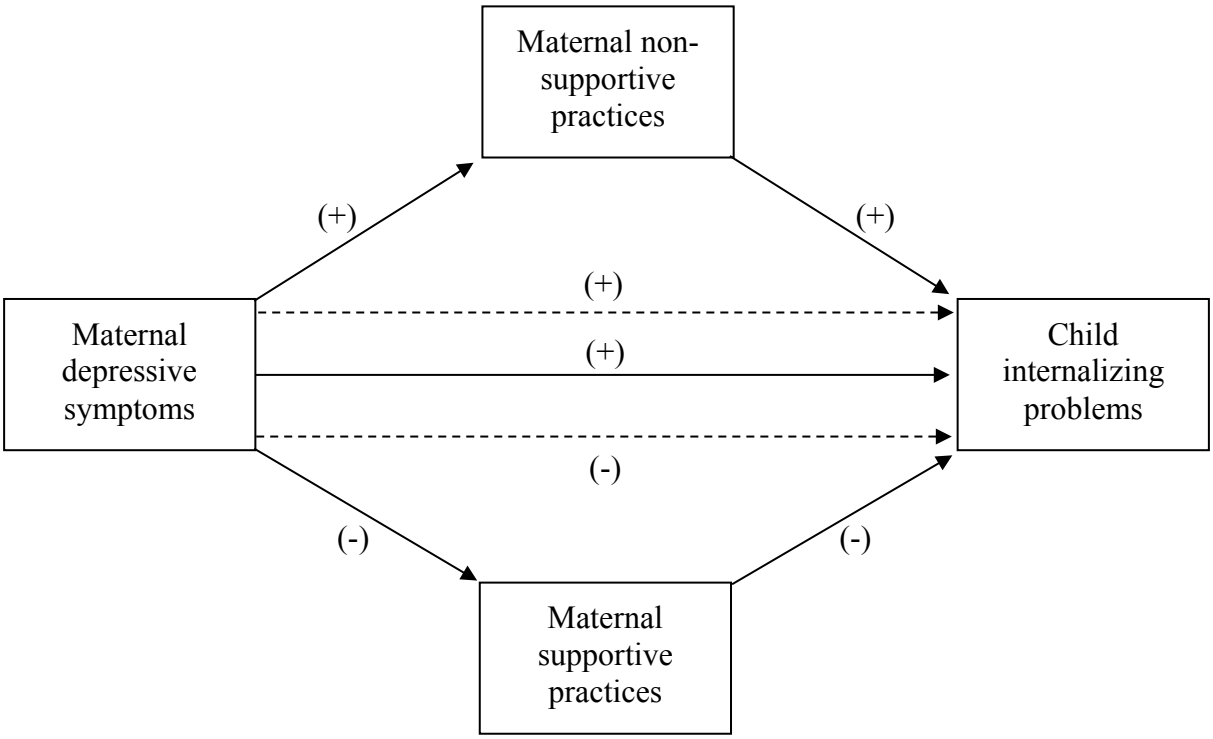
Note. Mdn = median.

TABLE 2 Correlations between maternal depressive symptoms, maternal emotional socialization practices, and child internalizing problems

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Maternal depressive symptoms	13.26	7.35										
2. Total of non-supportive practices	8.44	1.72	.202**									
3. Punitive reactions	2.39	0.64	.230**	.857**								
4. Burst reactions	2.20	0.48	.249**	.565**	.419**							
5. Ignoring reactions	1.59	0.52	.079	.664**	.439**	.214**						
6. Minimizing reactions	2.27	0.74	.061	.787**	.573**	.175*	.361**					
7. Total of supportive practices	12.31	1.05	–.127	–.111	–.086	–.238**	–.173*	.086				
8. Problem-centered reactions	4.45	0.34	–.137*	–.156*	–.081	–.192**	–.238**	–.021	.687**			
9. Emotion-centered reactions	4.56	0.35	–.002	–.069	–.044	–.202**	–.095	.072	.636**	.540**		
10. Encouraging reactions	3.28	0.74	–.138*	–.061	–.071	–.181*	–.092	.102	.842**	.294**	.213**	
11. Child internalizing problems	58.06	8.68	.350**	.271**	.263**	.213**	.192**	.146*	–.083	–.125	.016	–.063

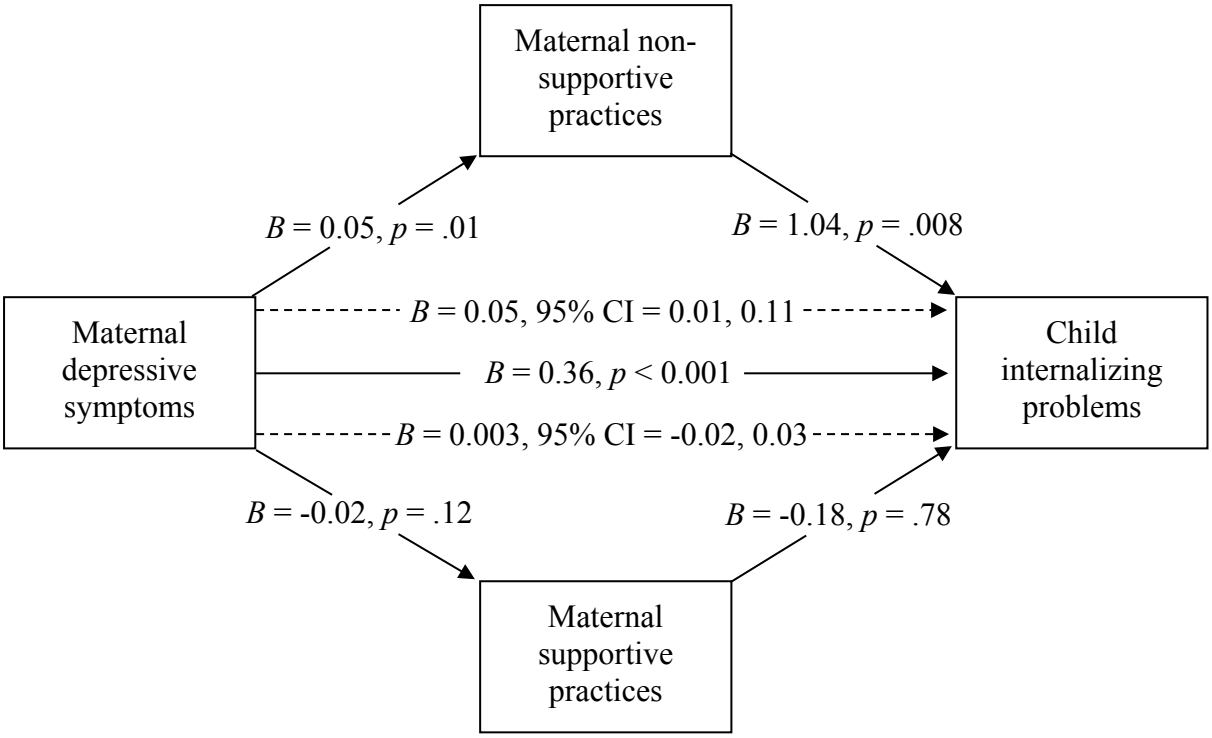
*$p < .05$. **$p < .01$.

FIGURE 1 Hypothesized pathways of the effects of maternal depressive symptoms on child internalizing problems



Note. Solid lines represent direct effects and dashed lines indicate indirect effects.

FIGURE 2 Associations between maternal depression symptoms and children's internalizing problems, mediated by maternal practices of emotion socialization



Note. CI = confidence interval. Solid lines represent direct effects and dashed lines indicate indirect effects.