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Research Paper

The emotional pathway to parenthood: Parental mentalizing mediates the association between alexithymia and parental emotion regulation in the transition to parenthood

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ABSTRACT

Becoming a parent is perhaps one of the most profound processes in the lives of individuals, and it entails significant psychological, neurobiological, and hormonal changes designed to facilitate successful caretaking. It is considered a highly challenging emotional transitional experience for most parents both as individuals and couples, accompanied with elevated levels of role overload and stress. Therefore, parents' self emotion-regulation within the parenting context plays an important role in the transition to parenthood. Unfortunately, parents' own self-regulation within the context of parenting is largely overlooked. The aim of the current investigation was to explore whether parental self emotion-regulation at six months can be predicted from a prenatally measured trait-like capacity for emotional awareness and labeling—alexithymia. Moreover, this study examined the mediation role parental mentalizing may play in this longitudinal association, while accounting for situational emotional functioning in the form of parental depression. Importantly, this mediation model was tested using an APIM model, considering he mutual influences of both partners on the other. The sample involved 104 community-based couples in the transition to parenthood (prenatally and at six-months). Results showed adults' alexithymia, assessed prenatally, predicted parental mentalizing, which, in turn, predicted the parent's ability to regulate one own self in challenging times of parental distress, above and beyond postnatal depression. Moreover, this study revealed important dyadic associations between both parents, highlighting the importance of examining parental capacities and functioning within a systemic framework. The empirical and clinical implications of these findings are discussed.

1. Introduction

Becoming a parent is arguably one of the most profound journeys in the lives of individuals, encompassing substantial psychological, neurobiological, and hormonal shifts intended to support effective caregiving (Feldman, 2007; Leckman et al., 2004; Rutherford and Mayes, 2011; Swain, 2011). It is considered a challenging transitional experience for many parents both as individuals and couples (Feinberg et al., 2016) and is accompanied by elevated levels of role overload and stress, potentially leading to the emergence of psychopathology (Lipman and Boyle, 2008; Weissman et al., 1993; Yonkers et al., 2011).

One of the most significant factors associated with postnatal mental health difficulties is emotional dysregulation, which compromise the ability to adaptively cope with challenging emotions (see Berking and Wupperman, 2012 for a review). Regrettably, Rutherford et al. (2015) identified that the precise mechanisms that underlie parents' emotional wellbeing in the transition to parenthood remain poorly understood. Given the importance of parents' ability to regulate their emotions in the transition to parenthood, the aim of the current longitudinal study was to investigate the underlying mechanisms involved in parental emotion regulation. Specifically, the current study examined the extent to which parents' preexisting alexithymia, which refers to difficulty in identifying and labeling emotions, predicts the various ways in which they regulate their own emotions while facing the inherent challenges of early

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parenthood with their six-month-old child. The second aim of this study was to further decipher possible mechanisms involved in the potential associations between prenatal alexithymia and postnatal parental emotion regulation, by specifically focusing on the potential role of parental mentalizing.

1.1. Emotion regulation

Emotion regulation (ER) refers to the ability to influence which emotions we have, when we have them, and the ways we choose to express them (Gross, 2001; Gross and Thompson, 2007). ER has been shown to play a meaningful part in determining the wellbeing and successful functioning in both childhood and adulthood, including resilience to demanding life events (Eisenberg and Spinrad, 2004; Gross and John, 2003; Hopp et al., 2011; Koole, 2009; Lunkenheimer et al., 2011).

When considering the different strategies parents may use to regulate themselves, it is worth returning to Gross's (1998) classic "process model" of ER, as a comprehensive framework to investigate the use of ER strategies. According to this model, specific strategies can be identified and differentiated along the timeline of the unfolding emotional response (Gross, 1998). The Gross and Thompson model (2007) identifies five sets of emotion regulatory processes: situation selection, situation modification, attentional deployment, cognitive change, and response modulation. These processes are conceptualized as occurring at different temporal points in the emotion generation process. At the broadest level, there is a distinction between antecedent-focused and response-focused ER strategies. Antecedent-focused strategies (e.g., reappraisal) refer to things we do before response tendencies have become fully activated and have changed our behavior and physiological responses. Response-focused strategies (e.g., suppression) refer to things we do once an emotion is already under way, after response tendencies have been generated (Gross, 2013). Over the years, this model has been examined extensively and has been shown to be empirically sound, revealing links between use of ER strategies and depressive symptoms, memory for emotional interactions, and psychopathology (Aldao et al. 2010; Drabant et al., 2009; Gross, 2013; Gross and John, 2003; Nezlek and Kuppens, 2008; Richards and Gross, 2000).

In this regard, the transition to parenthood is perhaps one of the most challenging life events activating ER strategies. This juncture entails managing a complex and often colliding set of pressing needs of the self, the partner, and the newborn, and renegotiating one's own identity – all within a highly intensive environment of caring for a young baby. The question that arises, then, is how do parents regulate their emotions when facing emotionally challenging situations in their everyday parenting practice?

There is considerable research on both parental and children's ER, as well on parental self-regulation in the form of executive functioning and effortful control (e.g., Bridgett et al., 2011; Bridgett et al., 2015; Cuevas et al., 2014). In contrast, parents' use of strategies to regulate their *own* emotions during parenting encounters is surprisingly understudied (Edwards et al., 2017). Even when parental ER is investigated (e.g., Edwards et al., 2017; Remmes and Ehrenreich-May, 2014; Rutherford et al., 2015; Schultheis et al., 2019) it is scarcely considered or treated as a domain-specific capacity, namely, how the parent regulates *herself* in challenging *parenting* situations—but rather as a general, trait-like capacity to self-regulate.

Hence, it is important to articulate that for the purposes of the current work, parental ER refers to a parent's capacity to impact the experience and expression of his or her *own* emotions in the specific context of *caregiving* (Rutherford et al., 2015). In their everyday experiences, parents commonly need to maintain their own regulated state when caring for their distressed and dysregulated child, while at the same time facilitating their child's ER abilities.

A substantial effort to examine parental self emotion-regulation has been made by Lorber and colleagues (2017), who examined whether parents use additional regulatory strategies to manage their own emotional parenting experiences. Specifically, Lorber et al. (2017) have developed and validated the Parental Emotion Regulation Inventory 2 (PERI2), a self-report questionnaire that assesses parents' tendency to use suppression and reappraisal alongside two additional situation modification response-focused ER strategies during disciplinary practices, namely, escape (walk away) and capitulation (give in). Lorber and Slep (2005) suggested that one possible way for parents to manage their own emotion during a difficult parental situation is to select behaviors that reduce aversive input, and consequently, the parents' negative emotion. An overwhelmed parent might capitulate to reduce his or her own aversive emotional experience. For example, a parent may initially say "no" to a child' s request for a candy bar at the supermarket, but then acquiesce after the child tantrums, with the parent's negative emotion subsiding after the child "wins" and the tantrum stops. Parents may also sometimes walk away (i.e., escape) to self-soothe during a conflictual discipline encounter without enforcing a contingency or requiring child compliance. In their study, Lorber et al. (2017) found that suppression, capitulation, and escape were distinct but interrelated emotion regulatory behaviors that were associated with factors such as harsh parenting, lax discipline, parental maladjustment, and child physical aggression. Note that in this important study, which included 232 mothers, the four ER strategies were examined with two-year old toddlers in the disciplinary context. Expanding on Lorber et al.'s (2017) work, the current study was designed to capture how both fathers and mothers of infants use ER strategies under everyday situations, when the infant is crying insolubly and without an apparent reason.

Given the importance of parental ER for parents' functioning, and ultimately to the child's outcomes, there is merit in illuminating what might facilitate or hinder parental ER. Specifically, it is possible that parents' emotion processing capabilities are involved in shaping the degree to which they can manage their own emotions when facing negatively charged emotional instances in early parenting.

1.2. Emotion regulation and alexithymia

Alexithymia is a consistent deficit in the cognitive processing of emotional experiences, characterized by a relatively stable difficulty in identifying and describing subjective feelings, a limited fantasy life, as well as an externally oriented thinking style (Luminet et al., 2001; Luminet et al. 2007; Taylor and Bagby, 2013; Senior et al., 2020; Sifneos, 1973). Alexithymia includes two central components relevant in the context of the current work: the dimension of *identifying emotions*, which addresses the individual's ability to recognize emotional states within oneself, and the dimension of *describing emotions*, which refers to one's ability to articulate experienced feelings into words that in turn can be communicated to others (Frawley and Smith, 2001; Kennedy--Moore and Watson, 1999; Luminet et al., 1999). Alexithymia has been amply exemplified as a vulnerability factor in the context of psychiatric disorders, as well as in the general population (e.g., Cameron et al., 2014; Grabe et al., 2004; Sőndergaard and Theorell, 2004).

In terms of associations between alexithymia and ER, there is some evidence showing that individuals scoring high on alexithymia have limited access to ER strategies in both clinical and non-clinical samples (da Silva et al., 2017), and when they do employ ER strategies, they tend to use less efficient strategies, such as suppression, than individuals low on alexithymia (Swart et al., 2009). Moreover, it has been suggested that the effect alexithymia has on impairments in ER can be better understood when considering additional components of emotional processing (Luminet et al., 2004; da Silva et al., 2017). The question that arises, then, is what mechanisms may explain the hypothesized link between alexithymia and parental ER strategies? Here we propose—and put to test—that parental mentalizing could illuminate the longitudinal influence of trait-like alexithymia on one's behavior within the specific context of parenting.

1.3. Parental mentalizing

Parental mentalizing refers to parents' ability to adopt their child's perspective and treat him or her as a psychological agent whose actions are motivated by mental states, as well as to think about their own mental states and how these may influence behaviors (Shai and Belsky, 2011; Sharp and Fonagy, 2008; Slade, 2002). Parents' capacity to mentalize is hypothesized to play a central role in parenting (Fonagy et al., 1991; Luyten et al., 2017), by allowing them to "create a world for the child in which he may experience himself as a feeling, wanting, thinking being" (Target and Fonagy, 1996, p. 461). Studies have indeed demonstrated that parental mentalizing plays an important role in the quality of caregiving, as well as in promoting the child's healthy socio-emotional development (for review, see Camoirano, 2017).

The two central components of alexithymia—identifying emotions and describing emotions—appear to be crucial to the ability to link between behaviors and mental states and consider the infant as a psychological agent (i.e., parental mentalizing; Slade, 2003). While the relation between alexithymia and mentalizing has been previously addressed theoretically (Fonagy et al., 2011) and empirically (Calaresi and Barberis, 2019), only one study has examined this association in the context of parenthood. Accordingly, a negative association was found between fathers and mothers parental alexithymia and parental reflective functioning (mentalizing), both measured cross-sectionally six months postpartum (Ahrnberg et al., 2020). Nevertheless, as discussed by the authors of this study, a longitudinal investigation is still needed to establish a better understanding of the nature of this association.

While alexithymia may be a precursor of parental mentalizing difficulties, poor parental mentalizing, in turn, may predict ER difficulties in parenting contexts. Indeed, a recent cross-sectional study showed that parental mentalizing was associated with mothers' ER with infants younger than two-years old (Schultheis et al., 2019). However, as earlier discussed herein, ER was assessed as a general, trait-like capacity to self-regulate, rather than as the parent's specific capacity to regulate oneself in *parenting* situations. Also, this association was not exemplified while controlling for the potential contribution of parental psychopathology, and was examined among mothers only, limitations that are addressed in the current investigation.

Tying these threads together, it is plausible that parents experiencing difficulty recognizing what they are feeling in times of distress (i.e., parents high on alexithymia) will, in turn, feel so overwhelmed by their internal state during emotionally taxing moments that they will be unable to keep their child's mind in mind (i.e., display poor parental mentalizing), and as a result, will tend to resort to less adaptive ER strategies within the parental context. This process was examined in the current study.

1.4. The current study

Attempting to further illuminate the emotional path to parenthood and identify possible protective factors aiding in this transformative life event, the current study was designed to address two aims. The first aim was to examine how a well-documented clinical trait-like construct—alexithymia (Fonagy et al., 2011; Senior et al., 2020), measured before individuals become parents—can predict the way in which new fathers and mothers cope and manage their emotions in a high arousal state specifically within the parenting context.

The second aim was to test a possible parental mentalizing mechanism that would mediate the association between prenatal alexithymia and postnatal use of parental ER strategies. Importantly, to investigate whether the observed effects are uniquely related to parental mentalizing, we controlled for the potential confounding effects of postnatal depression (six months), as increased levels of depression have previously been associated with alexithymia, deficits in mentalizing, and difficulties in ER (e.g., Edwards et al., 2017; Riva Crugnola et al., 2016). For this purpose, six-month postpartum depression was defined in our model as an additional mediator parallel to parental mentalizing, such that the effects of parental mentalizing on parental ER strategies were computed over and above postpartum depression.

The novelty of the current work is fourfold: first, it is integrative in that it examines within one study three interdisciplinary constructs that have not been investigated collectively in the past. It integrates between conceptual, empirical, and clinical worlds, and offers an important and integrative approach to investigating central social phenomena. Second, this is a longitudinal investigation that allows to explore predictive models. Third, this study involves both mothers and fathers, with the latter often neglected from parenting studies. Moreover, this sample allows for the exploratory investigation of partner effects (effects of one parent on the other), and a systems approach to the examination of parenting. Finally, this is one of the only studies that directly focuses on the parent's ability to regulate oneself within the parenting context. By doing so, this study offers a potentially important contribution to the multifaceted conceptual and empirical inquiry of ER.

1.5. Hypotheses

Parental prenatal alexithymia will predict emotion regulation such that parents with lower alexithymia ratings will be more likely to use adaptive ER strategies (i.e., reappraisal) in times of high parental stress and arousal.

The association between alexithymia and parental ER will be mediated by parental mentalizing, such that parents with higher alexithymia ratings will also exhibit more difficulties in mentalizing their child, which in turn will lead to less adaptive emotion regulation strategies (suppression, capitulation, or escape) in times of high parental stress and arousal. This association is hypothesized to remain significant when controlling for the potential confounding effects of postnatal depression.

In addition to these hypotheses, we will examine possible partner effects between one parent's predictors and the other parent's outcomes.

2. Method

2.1. Transparency and openness

As this longitudinal study is ongoing, data has yet to be made publicly available. Nonetheless, all data, analysis syntax, and research materials are available upon request from the first author. Data were analyzed using SPSS AMOS, version 25. This study's design and analysis are not pre-registered.

2.2. Participants

The study was drawn from a larger project focusing on the impact of parenting on children's socio-emotional development [Masked Review]. The current study reports on 104 community-based families who participated in this longitudinal study of co-living heterosexual couples expecting their first child. Initial sample size was determined based on power calculations to allow at least 80% power to detect medium partial effects ($r = .30$). All mothers were in their third trimester at the time of recruitment ($M = 29.7$ weeks, $SD = 2.55$ range= 22.27-37.08 weeks; T1). This time frame was chosen as the pregnancy and the fetus in the third trimester are experienced as "real", and the parenting role is actively being formed, physically, emotionally, and mentally (e.g., Feng et al., 2021; de Jong-Pleij et al., (2013). Families were recruited through internet advertisements, flyers, and medical centers. The research team spoke over the phone with any interested potential participant to ensure that they understand the study's design and framework, and that they consent to it. In these phone conversations it was also established that they meet the inclusion criteria and do not meet the exclusion criteria. Inclusion criteria included primiparous co-living heterosexual expectant parents, fluent in speaking, reading, and writing [masked review]. Exclusion criteria included high risk pregnancies (including twins), or

women who underwent extensive fertility treatments. All families received 250 [masked review] for each phase of completed participation. All parents were fluent in writing and speaking [masked review], middle to upper class, and living in [masked review]. Mothers' mean age was 30.82 ($SD = 3.63$, range = 23-42) and fathers' mean age was 32.41 ($SD = 4.01$, range = 23-42). None of the parents reported at-risk pregnancy or known neurological or psychological disorders. Mean years of education was 15.36 years ($SD = 2.41$) for fathers and 16.3 years ($SD = 2.10$) for mothers. In the postnatal phase of the study (T2), data was fully collected from 101 couples, infants mean age was 27.98 weeks (range = 20.78-42.76, $SD = 6.71$), and 55 of which were boys (55.75%). This sampling time of six moths is a prevelant time chosen in developmental studies, as it is an important developmental time for infants, as they demonstrate in this time a developmental leap in their motor, cognitive, and mental capacities.

2.3. Procedures and measures

Upon completing an informed consent form to participate in the study, parents were directed to an online survey, both prenatally and at approximately six months of age. In the prenatal phase, they completed the alexithymia measure, and postnatally, they completed the parental mentalizing and the parental self ER measures.

Alexithymia was measured using the Toronto Alexithymia Scale-20 (TAS-20; Bagby et al., 1994). The TAS-20 consists of three subscales: *difficulties in identifying feelings* (DIF; e.g., "I have feelings that I cannot quite identify"); difficulty in describing feelings (DDF; e.g., "It is difficult for me to find the right words for my feelings"; and concrete externally oriented thinking or preoccupation with details of external events (EOT; e.g., "I prefer to just let things happen rather than to understand why they turned out that way"). Items are rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating higher levels of alexithymia. Considering a critical literature review as well as a psychometric study conducted among both students and psychiatric outpatients, Kooimana, Spinhoven, and Trijsburg (2002) have attested to the lack of sufficient reliability of the *externally oriented thinking* subscale. Adopting the authors' recommendations, the *externally oriented thinking* subscale was excluded from the current study. In the current study, the correlation between the DIF and the DDF was high ($r = .75$) and therefore a global alexithymia scale was created. The internal consistency of the alexithymia scale was .90 for expectant fathers and .85 for expectant mothers.

To assess parental ER, parents completed a modified version of the Parental Emotion Regulation Inventory-2 (PERI-2; Lorber et al., 2017; modified in consultation with Lorber; personal communication, October 18th, 2014). The PERI-2 is a 23-item self-report measuring a parent's use of emotion regulation strategies while the child is exhibiting a behavior the parent finds difficult to manage. Parents are asked to rate how often they use each strategy during discipline encounters using a 7-point scale ranging from 1 (*I never do this*) to 7 (*I very often do this*). The parental ER strategies examined are: *reappraisal* (e.g., "I change how I'm thinking about my child's behavior to feel less negative emotion"); *suppression* of negative emotion ("I try not to show my negative emotions"); *escape* (e.g., "I try to get away from my child to calm myself down on the inside"); *capitulation* (e.g., "I give in to my child so that I can keep from showing how upset I am"). The internal consistencies of the parental ER subscales were $\alpha = .93$ on the Reappraisal subscale for both mothers and fathers; on the suppression subscale, $\alpha = .78$ and .67 for fathers and mothers respectively; escape subscale $\alpha = .92$ for both father and mothers; and on the capitulation subscale, $\alpha = .85$ and .86 for fathers and mothers respectively.

Parental mentalizing was assessed using the Parental Reflective Functioning Questionnaire (PRFQ; Luyten et al., 2017). The PRFQ is an 18-item questionnaire consisting of three subscales that asks participants to rate a series of statements assessing parental interest and curiosity in mental states, certainty in mental states, and failure or refusal to acknowledge mental states and their influence on behavior (pre--mentalizing). Each item is rated on a 7-point Likert scale, from 1 (*strongly disagree*) to 7 (*strongly agree*).

For the purposes of the current inquiry, the pre-mentalizing subscale was selected as the assessment for parental mentalizing. The subscale consists of items such as "My child sometimes gets sick to keep me from doing what I want to do" or "When my child is fussy, he or she does that just to annoy me". This choice is consistent with previous work on parental mentalizing showing that pre-mentalizing emerges as a particularly robust subscale associated with parenting difficulties (e.g., Burkhart et al. 2017; Rutherford et al., 2015). The internal consistency of the pre-mentalizing scale was .62 for fathers and .65 for mothers, not unlike previous studies (e.g., Krink et al. 2018; Nijssens et al. 2018; Schultheis et al., 2019).

The Edinburgh Postnatal Depression scale (EPDS; Cox et al., 1987) was used to measure parents' six-months postnatal depression. The EPDS is a self-report measure consisting of 10 statements. Parents are asked to rate on a scale from 0 (*a lot*) to 3 (*not at all*) how much each statement corresponds to how they have been feeling during the past week, with higher scores indicating higher levels of postnatal depression. Examples or items are: "I have been able to laugh and see the funny side of things"; "I have felt sad or miserable". The internal consistency of the Edinburgh postnatal depression scale was .81 for fathers and .86 for mothers.

3. Results

3.1. Data analysis

We analyzed the data using an actor–partner interdependence (APIM) approach (Kenny et al., 2006). The APIM permits the simultaneous testing of actor effects (whether the predictor score of an individual affects his/her outcomes) and partner effects (whether the predictor score of an individual affects his/her partner's outcomes) while modeling the interdependence between dyad members. We performed two types of analyses. First, we conducted a series of multivariate regressions to examine whether alexithymia is related to parental ER at the multivariate level, and whether this relation might be mediated by pre-mentalizing and postpartum depression. Second, we examined the direct and indirect effects of alexithymia on specific parental ER strategies by testing a saturated structural equation modeling (SEM) path model that included fathers and mothers' alexithymia scores as independent variables, mothers and fathers' pre-mentalizing and postpartum depression scores as parallel mediators, and fathers and mothers' specific parental ER strategies as dependent variables (see Fig. 1). Because the model was saturated ($DF = 0$), model fit was not an issue. Using SEM afforded us three distinct advantages: It allowed us to (a) examine all our dependent variables simultaneously, (b) estimate unbiased regression parameters in the presence of missing data using full information maximum likelihood (FIML), and (c) construct confidence intervals for indirect effects.

4. Descriptive statistics

Descriptive statistics and zero-order correlations for all study variables are presented in Table 1. As anticipated, alexithymia was related to more pre-mentalizing and postpartum depression in both fathers and mothers, and to some parental emotion regulation strategies.

5. Multivariate regressions

To examine whether alexithymia explains significance variance in parental emotion regulation strategies we conducted two multivariate regressions. Expectant mothers and fathers' alexithymia scores were entered as simultaneous predictors, and either mothers or fathers' four PERI subscale scores were entered as dependent variables. As predicted,

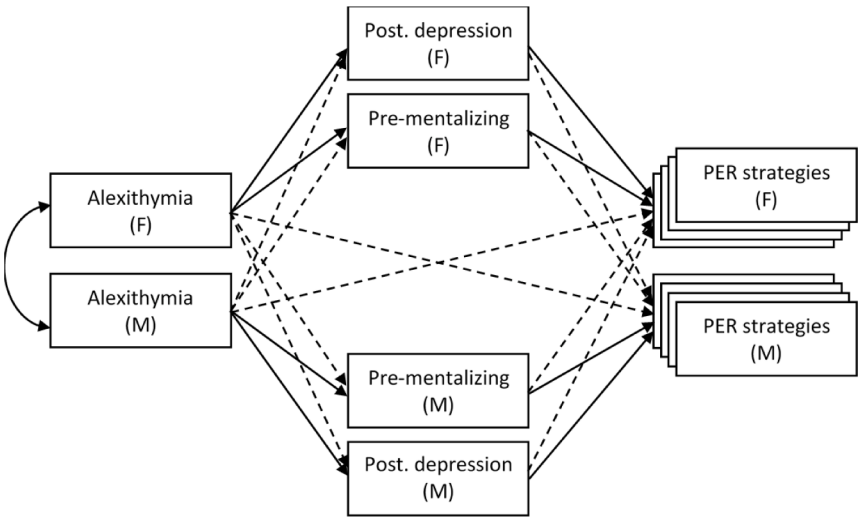

Fig. 1. APIM mediation path model.
Note. F = fathers' variables; M = mothers' variables. PER = parental emotion regulation. Full paths are actor effects. Dashed paths are partner effects. Errors terms are free to correlate between mediators and between dependent variables.

Table 1
Means, standard deviations, reliabilities, and zero-order correlations between study variables.

		Fathers							Mothers						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mothers															
1.	Alexithymia														
2.	Pre-mentalizing	.35***													
3.	Post. depression	.40***	.17												
4.	Escape	.07	.24*	.21*											
5.	Capitulation	.27**	.37***	.22*	.32***										
6.	Reappraisal	-.13	.15	.06	.23*	.37***									
7.	Suppression	.08	.10	.10	.06	.31**	.64***								
Fathers															
8.	Alexithymia	.04	-.01	-.06	.10	-.002	-.01	-.07							
9.	Pre-mentalizing	.01	.03	.16	.01	-.03	-.10	-.13	.33**						
10.	Post. depression	.18	.15	.09	.14	.06	.04	.07	.33**	.29**					
11.	Escape	-.17	.19	-.12	.21*	-.09	.09	.01	.27**	.45***	.26*				
12.	Capitulation	.13	.29**	-.12	.09	.01	.02	.05	.47***	.36***	.14	.45***			
13.	Reappraisal	-.003	.13	-.001	-.04	-.05	.08	.08	.09	.23*	.07	.39***	.31**		
14.	Suppression	.08	.18	.06	.01	.01	.14	.13	.16	.24*	.09	.29**	.41***	.65***	
M		42.72	1.58	5.90	2.42	2.56	3.59	3.57	45.06	1.85	4.49	1.78	2.48	3.11	3.49

expectant mothers' alexithymia had a significant multivariate effect on mothers' parental emotion regulation [$F(4, 94) = 4.80$, $p = .001$, partial $\eta^2 = .17$], whereas expectant fathers' alexithymia had a significant multivariate effect on men's parental ER [$F(4, 87) = 6.42$, $p < .001$, partial $\eta^2 = .23$]. There was also a marginally significant multivariate partner effect of expectant mothers' alexithymia on men's parental ER [$F(4, 87) = 2.06$, $p = .093$, partial $\eta^2 = .09$].

Next, we examined whether pre-mentalizing and postpartum depression explain significant variance in parental ER strategies above and beyond alexithymia. Thus, mothers and fathers' pre-mentalizing and postnatal depression scores were added as simultaneous predictors to the abovementioned multivariate regressions. As predicted, mothers' pre-mentalizing had a significant multivariate effect on their parental ER [$F(4, 84) = 6.02$, $p < .001$, partial $\eta^2 = .22$], whereas men's pre-mentalizing had a significant multivariate effect on their parental ER [$F(4, 83) = 4.76$, $p = .002$, partial $\eta^2 = .19$]. There was also a significant multivariate partner effect of mothers' pre-mentalizing on fathers' parental ER [$F(4, 83) = 3.36$, $p = .013$, partial $\eta^2 = .14$]. Fathers and mothers' postpartum depression, however, did not have significant actor or partner effects on parental ER above and beyond alexithymia and pre-mentalizing.

Even after entering pre-mentalizing and postpartum depression to the equation, fathers and mothers' alexithymia still had significant actor multivariate effects on fathers and mothers' parental emotion regulation [$F(4, 84) = 3.60$, $p = .009$, partial $\eta^2 = .15$ and $F(4, 83) = 4.39$, $p = .003$, partial $\eta^2 = .17$, respectively]. Together, these results suggest that actor pre-mentalizing partially mediates the actor effect of alexithymia on parental emotion regulation in fathers and mothers, and possibly the partner effect of expectant mothers' alexithymia on fathers' parental ER.

6. Path analysis

The goal of the path analysis was to examine the direct and indirect effects of alexithymia on specific parental emotion regulation strategies (see Fig. 1). Structural coefficients (maximum likelihood estimates) for the model are presented in Table 2.

Actor effects. Alexithymia had significant actor effects on pre-mentalizing in both fathers and mothers. In turn, actor pre-mentalizing had significant effects on three of the four parental ER strategies in fathers and mothers, namely, escape, capitulation, and reappraisal. Monte Carlo confidence intervals for the resulting indirect effects indicated that expectant mothers' alexithymia is indirectly associated through their pre-mentalizing with their use of the escape ($\beta = .08$; 95% CI [.002, .20]) and capitulation ($\beta = .11$; 95% CI [.02, .22])

Table 2
Structural coefficients (standardized regression betas) of the path model.

			Actor Effects			Partner Effects		
			β	*t*	*p*	*B*	*t*	*P*
Mothers								
Alexithymia	→	Pre-mentalizing	.35	3.67	<.001	-.04	-0.42	.675
	→	Post. depression	.39	4.20	<.001	.17	1.82	.069
	→	Escape	-.13	-1.22	.223	-.24	-2.44	.015
	→	Capitulation	.09	0.85	.395	.13	1.43	.152
	→	Reappraisal	-.29	-2.60	.009	-.02	-0.14	.889
	→	Suppression	-.03	-0.29	.776	.04	0.31	.755
Pre-mentalizing	→	Escape	.24	2.39	.017	.28	3.15	.002
	→	Capitulation	.31	3.21	.001	.32	3.67	<.001
	→	Reappraisal	.22	2.12	.034	.15	1.39	.165
	→	Suppression	.08	0.73	.468	.19	1.78	.075
Post. depression	→	Escape	.24	2.28	.022	-.13	-1.45	.148
	→	Capitulation	.16	1.54	.123	-.23	-2.53	.011
	→	Reappraisal	.16	1.52	.128	-.06	-0.50	.618
	→	Suppression	.12	1.15	.250	-.004	-0.04	.969
Fathers								
Alexithymia	→	Pre-mentalizing	.33	3.43	<.001	-.03	-0.28	.783
	→	Post. depression	.31	3.26	.001	-.08	-0.87	.387
	→	Escape	.10	1.06	.290	.12	1.18	.239
	→	Capitulation	.37	4.17	<.001	.04	0.39	.695
	→	Reappraisal	.01	0.12	.904	.06	0.60	.552
	→	Suppression	.09	0.84	.399	-.02	-0.21	.832
Pre-mentalizing	→	Escape	.38	4.07	<.001	-.10	-0.96	.337
	→	Capitulation	.29	3.19	.001	-.11	-1.06	.289
	→	Reappraisal	.23	2.04	.041	-.22	-2.00	.046
	→	Suppression	.20	1.80	.072	-.21	-1.95	.052
Post. depression	→	Escape	.14	1.53	.127	.09	0.88	.379
	→	Capitulation	-.11	-1.24	.215	.01	0.07	.944
	→	Reappraisal	-.003	-0.03	.977	.09	0.83	.408
	→	Suppression	-.02	-0.16	.874	.12	1.11	.264

strategies, but the indirect effect for reappraisal did not reach significance ($\beta = .07$; 95% CI [-.01, .18]). A similar pattern emerged for men, with men's alexithymia indirectly associated through their pre-mentalizing with their use of the escape ($\beta = .13$; 95% CI [.04, .24]) and capitulation ($\beta = .10$; 95% CI [.02, 20]) strategies, and the effect for reappraisal failing to reach significance ($\beta = .08$; 95% CI [-.01, 18]). Notably, men's alexithymia also has a direct positive effect on their use of the capitulation strategy, while expectant mothers' alexithymia has a direct negative effect on their use of the reappraisal strategy.

Although alexithymia also had significant actor effects on postpartum depression in both fathers and mothers, the actor effects of postpartum depression on specific emotion regulation strategies were largely nonsignificant. This is consistent with the multivariate regressions, which suggested that postpartum depression does not mediate the effect of alexithymia on parental emotion regulation. Thus, although mothers' postpartum depression was positively associated with their use of the escape strategy and negatively associated with their spouses' use of the capitulation strategy, we did not explore these effects any further.

Partner effects. Mothers' pre-mentalizing was not only associated with their own use of escape and capitulation strategies, but also their partners' (see Table 2). Thus, mothers' alexithymia may be indirectly associated through their pre-mentalizing with their spouses' use of these strategies. Indeed, the indirect effects from expectant mothers' alexithymia through their pre-mentalizing to fathers' escape and capitulation were both significant, ($\beta = .10$; 95% CI [.02, .20] and $\beta = .11$; 95% CI [.02, .23], respectively). Interestingly, expectant mothers' alexithymia also had a direct negative effect on fathers' subsequent use of the escape strategy.

The partner effects of fathers were distinctly different than those of the mothers. Men's pre-mentalizing was associated with their spouses using less reappraisal strategies, and marginally less suppression strategies (see Table 2). However, the indirect effects of men's alexithymia through their pre-mentalizing on their spouses' reappraisal and suppression did not reach significance ($\beta = -.07$; 95% CI [-.18, .01] and $\beta = -.07$; 95% CI [-.18, .02], respectively).

7. Discussion

The aim of this study was to explore various pathways in which a trait-like emotional capacity (i.e., alexithymia) predicts the use of parental emotional regulation strategies. This has been examined in the context of the reciprocal influence of both parents. A mediational model examining the role of mentalizing capacities in the association between prenatal alexithymia and prospective postnatal parental emotional regulation strategies was tested via a longitudinal design among first-time expecting parents, using dyadic APIM analysis.

This theoretical mediational model was supported for some ER strategies. First, as hypothesized for both fathers and mothers, prenatal alexithymia had a significant multivariate effect on the prospective use of parental ER strategies at six months. Second, as hypothesized, the associations between both fathers and mothers' alexithymia and their use of the escape and capitulation parental ER strategies were mediated by deficits in their own parental mentalizing capacities, above and beyond levels of postpartum depression. This is the first study, to the best of our knowledge, that demonstrated longitudinal predictive associations between alexithymia and parental mentalizing and ER in the same empirical investigation, while also controlling for potential situational influences, namely, parental postpartum depression. These findings add to the mounting evidence signifying the association between alexithymia and ER (e.g., da Silva et al., 2017), while exemplifying this association in the important context of emerging parenthood.

Importantly, this work adds to previous work in that we have focused on how parents manage their own emotions within the specific context of parenting – how one regulates their own emotions when facing a dysregulating parenting situation. The measure used in the current investigation for parental ER is the first time, as far as we know, that parental ER in infancy is measured specifically within the parental domain–how the parent regulates him or herself within a parental context. Specifically, in the current work, we have asked parents to reflect on their behavioral and cognitive strategies when their baby is crying inconsolably without an apparent reason. Indeed, research shows

that infant cry is a powerful dysregulating stimulus for parents, presumably designed to effectively elicit parental response and care when faced with infant vocal distress (e.g., Bornstein et al., 2017; Lummaa et al., 1998).

Previous work, in contrast, assessed parents' ER as a general tendency, examined outside the context of parenting (e.g., Edwards et al., 2017; Remmes, and Ehrenreich-May, 2014; Rutherford et al., 2015; Schultheis et al., 2019). In other words, we maintain it is conceptually and empirically pivotal to distinguish between parents' ER and parental ER, with the latter uniquely examined in the current work. Namely, and expanding on Lorber et al.'s (2017) work, the current study was designed to capture how parents to *infants* use emotion regulation strategies under everyday situations, when the infant is crying insolubly and without an apparent reason. Parents facing an inconsolable infant is a unique and novel experience, constituting and reflecting an important facet of early parenting. Indeed, the ability to regulate oneself within the parental role and context may very well be unique, or at least distinct from, other life challenges demanding the use of ER strategies. Clearly, this is speculative, and future research would benefit from investigating the nature of relationship between general ER strategies (i.e., parents' ER) and parental ER.

Interestingly, we have found that when controlling for postnatal depression, these response modulation behavioral strategies of escape and capitulation, in contrast to the cognitive strategies, namely reappraisal and suppression, were associated with parents' alexithymia and parental mentalizing. When parents of young infants who are challenged in their emotional capacities (reflected in high alexithymia scores and low mentalizing capacities) face a salient arousing situation of the infant crying inconsolably without the parent knowing the reason, they become overloaded and overwhelmed by this dysregulating stimulus. In such cases, they resort to situation modification behavioral strategies that allow them to swiftly terminate the dysregulating stimulus. It appears that since the cognitive resources (having an emotional vocabulary and being able to reflect on themselves and their infant) are not robust enough, these parents cannot afford to stay in the dysregulating situation and use cognitive regulating strategies either be involved in cognitive change (i.e., reappraisal), or even response modulation (i.e., suppression). In other words, parents who are challenged in utilizing mental processes pertaining to emotions appear to be more likely than those more capable using emotional thinking, to resort to behavioral, less adaptive, ER strategies, attempting to omit the child's emotional distress rather than coping with it. These findings corroborate Lorber and Slep's (2005) argument that during tensions parent-child situation, parents may attempt to manage their own emotion by using behaviors that reduce aversive input, and not "reach" more advanced cognitive ER strategies proposed by Gross and Thompson (2007).

The addition of postpartum depression in the current investigation is important as this is a considerable risk factor for both fathers and mothers and can impact as many as 19% of mothers (Hutchens, and Kearney, 2020) and 8.64% of fathers (Rao et al., 2020). It has been shown to place parents at risk of compromising their parenting practices, and as a result, child developmental trajectories. For example, maternal depression was found to mediate the association between parental ER strategies and infant negative affect (Edwards et al., 2017). Controlling for postpartum parental depression in the current investigation allowed us to extrapolate the longitudinal associations between parental capacities, namely alexithymia, mentalizing, and parental ER beyond the parent's current emotional state, namely depressive tendencies.

These findings are in line with the work of Calaresi and Barberis (2019) that indicated associations between alexithymia and ER, as well as the recent work of (Schultheis et al., 2019)) and Rutherford et al. (2015) that demonstrated links between pre-mentalizing modes of thinking and deficits in ER. The results of the current work also correspond with the findings showing that healthy individuals with high alexithymia scores are impaired in mentalizing and show reduced brain activation of medial frontal areas during mentalizing, leading them to exhibit difficulty to adopt the perspective of others (Moriguchi et al., 2006; Swart et al., 2009). The contribution of the current work is in showing that higher levels of alexithymia not only impair parents' capacity to take the perspective of their child, but that this difficulty in parental mentalizing is further associated with compromised parental emotion regulation. It is not surprising that alexithymia is associated with one's parental mentalizing. Indeed, difficulty in identifying and labeling one's emotions is translated over time to the difficulty in recognizing and being curious about the emotions of another, namely, the infant. Noteworthy is the importance of future research taking these findings one step further and examining if and how this parental emotional pathway predicts the child's socio-emotional and cognitive developmental trajectory.

Importantly, adopting a systems model, this study also aimed to include both fathers and mothers in the investigation of parental emotion regulation strategies, and test the interrelations between fathers and mothers' use of these coping strategies. Findings revealed that mothers' difficulties in mentalizing were not only associated with their own use of the escape and capitulation strategies, but also their partners', such that men with spouses with low mentalizing were more likely to use escape and capitulation that those with higher mentalizing partners. Moreover, mothers' mentalizing capacities mediated the association between mothers' alexithymia and their partners' tendency to relay on escape and capitulation when trying to regulate themselves with their crying infant. Corresponding with to partner effects among fathers, fathers' higher mentalizing predicted mothers' lower reliance on the use of reappraisal and, marginally, suppression.

This highlights the importance of accounting for the **family system** when examining the emotional pathway to parenthood and considering the broader emotional functioning of the parents in relation to one another. Indeed, systemic practitioners have begun to link the intra-personal and inter-personal worlds, as challenged mentalizing might compromise the family's capacity to function effectively, since feeling misunderstood can potentially create considerable distress (Asen and Fonagy, 2012; Flaskas, 2002; Fraenkel and Pinsof, 2001). These practitioners argue that the family constellation is a rich context where the personal histories (in this case, alexithymia) interact with the personal parenting capacities (i.e., parental mentalizing), which in turn, are involved in the coping with inherent parenting challenges (that is, self-regulation when facing an inconsolable infant). An implication of these findings is that when trying to assess parental capacities, it is pivotal to also consider the family's functioning, as the partner's capacities or lack thereof clearly impact the parenting practices of the other.

8. Limitations and future studies

The findings of the current investigation should be treated with caution as there are some limitations that are to be considered. First, the relatively small sample size of the current work, alongside it being a community-based sample, prohibits from generalizing these findings to diverse populations. Indeed, it would be important to replicate this study's design with a more diverse, high-risk, and larger sample. Second, in the current study, parental ER was assessed through a self-report. It would be interesting to examine parents' emotion regulation strategies behaviorally, as these unfold in real time. Such assessments could include behavioral and/or physiological assessments. Finally, as abovementioned, future research could benefit from examining how parental tendencies to rely on certain parental emotion regulation strategies might predict the child's emotional functioning and capacities. Lastly, mentalizing and parental ER were measured simultaneously at six months of age, namely, the temporal relations between these variables are unclear. Further studies would benefit from assessing these variables in a cross-lagged design.

9. Clinical implications

Beyond its conceptual and empirical importance, the current work also has clinical significance. Firstly, it highlights that even before the birth of the child, we can identify potential risk factors that will impact the parent's ability to successfully cope with the challenges of parenting (e.g., Hay et al., 2020; Shai, 2019). This can help practitioners develop and offer prevention, rather that treatment, programs. Such programs could prevent subsequent derailment in the development of the family and the child.

Secondly, this investigation highlights the central role of parental mentalizing and its implication regarding parents' ability to cope with inherent stressful parenting situations. This suggests that interventions would benefit from targeting parental mentalizing. Previous work has indeed shown that targeting parental mentalizing in clinical trials has resulted in higher rates of infant secure attachment, enhanced family functioning, and improved parent-infant interactions (Byrne et al., 2020; Lo and Wong, 2020; Slade et al., 2020).

Lastly, the results from this work underscore the importance of considering the entire family system when working with and supporting young families and their infants (Byrne et al., 2020; Carr, 2019).

10. Conclusion

The aims of this study were to examine actor and partner predictive associations between parents' alexithymia and their reliance on certain parental ER strategies when they become parents, and to explore the mediating role of parental mentalizing capacities in these associations. These questions were examined via a longitudinal design among first-time parents transitioning to parenthood. Results showed that parents with greater alexithymia tend to display reduced parental mentalizing capabilities (i.e., are less able to keep their child's mind in mind in the early phases of parenting), which, in turn, predicts their greater use of escape and capitulation as strategies of emotion regulation in challenging times of parental distress. These associations exist above and beyond postnatal depression. This study also revealed important dyadic associations between both parents, highlighting the importance of examining parental capacities and functioning within a systemic framework. These findings have broad empirical and clinical implications.

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Ethical aspects

The research was approved by the Interdisciplinary Center (Israel) institutional review board, Israel, and is complied with APA ethical standards. All participants gave consent of participation for their children and for themselves. The participants were informed that they are free to leave the research at any time, that all their personal information will be kept strictly confidential and that all the data collected will be kept anonymously and will not be used for any other purpose other than the current research. Data was collected omitting participants' names and subject numbers were used instead.

CRediT authorship contribution statement

D. Shai: Conceptualization, Data curation, Methodology, Formal analysis, Writing – original draft. **O. Szepsenwol:** Conceptualization, Formal analysis, Writing – review & editing. **D. Lassri:** Conceptualization, Writing – original draft.

Declaration of Competing Interest

None.

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References

Ahrnberg, H., Pajulo, M., Scheinin, N.M., Karlsson, L., Karlsson, H., Karukivi, M., 2020. Association between parental alexithymic traits and self-reported postnatal reflective functioning in a birth cohort population. Findings from the FinnBrain Birth Cohort Study. Psychiatry Res. 286, 112869 https://doi.org/10.1016/j.psychres.2020.112869.

Aldao, A., Nolen-Hoeksema, S., Schweizer, S., 2010. Emotion-regulation strategies across psychopathology: a meta-analytic review. Clin. Psychol. Rev. 30 (2), 217–237. https://doi.org/10.1016/j.cpr.2009.11.004.

Asen, E.;., Fonagy, P., 2012. Mentalization-based therapeutic interventions for families. J. Fam. Ther. 34 (4), 347–370. https://doi.org/10.1111/j.1467-6427.2011.00552.x.

Bagby, R.M., Parker, J.D., Taylor, G.J., 1994. The twenty-item Toronto Alexithymia Scale—I. Item selection and cross-validation of the factor structure. J. Psychosom. Res. 38 (1), 23–32. https://doi.org/10.1016/0022-3999(94)90005-1.

Berking, M., Wupperman, P., 2012. Emotion regulation and mental health: recent findings, current challenges, and future directions. Curr. Opin. Psychiatry 25 (2), 128–134.

Bornstein, M.H., Putnick, D.L., Rigo, P., Esposito, G., Swain, J.E., Suwalsky, J.T., Venuti, P., 2017. Neurobiology of culturally common maternal responses to infant cry. Proc. Natl. Acad. Sci. 114 (45), E9465–E9473. https://doi.org/10.1073/pnas.1712022114.

Bridgett, D.J., Burt, N.M., Edwards, E.S., Deater-Deckard, K., 2015. Intergenerational transmission of self-regulation: a multidisciplinary review and integrative conceptual framework. Psychol. Bull. 141 (3), 602. https://doi.org/10.1037/a0038662.

... & Bridgett, D.J., Gartstein, M.A., Putnam, S.P., Lance, K.O., Iddins, E., Waits, R., Lee, L., 2011. Emerging effortful control in toddlerhood: the role of infant orienting/regulation, maternal effortful control, and maternal time spent in caregiving activities. Infant Behav. Dev. 34 (1), 189–199. https://doi.org/10.1016/j.infbeh.2010.12.008.

Byrne, G., Murphy, S., Connon, G., 2020. Mentalization-based treatments with children and families: a systematic review of the literature. Clin. Child Psychol. Psychiatry 25 (4), 1022–1048.

Burkhart, M.L., Borelli, J.L., Rasmussen, H.F., Brody, R., Sbarra, D.A., 2017. Parental mentalizing as an 8 indirect link between attachment anxiety and parenting satisfaction. J. Fam. Psychol. 31 (2), 9, 203.

Calaresi, D., Barberis, N., 2019. The relationship between reflective functioning and alexithymia. J. Clin. Dev. Psychol. 1 (2) https://doi.org/10.6092/2612-4033/0110-2107.

Cameron, K., Ogrodniczuk, J., Hadjipavlou, G., 2014. Changes in alexithymia following psychological intervention: a review. Harv. Rev. Psychiatry 22 (3), 162–178. https://doi.org/10.1097/HRP.0000000000000036.

Camoirano, A., 2017. Mentalizing makes parenting work: a review about parental reflective functioning and clinical interventions to improve it. Front. Psychol. 8, 14. https://doi.org/10.3389/fpsyg.2017.00014.

Carr, A., 2019. Family therapy and systemic interventions for child-focused problems: the current evidence base. J. Fam. Ther. 41 (2), 153–213. https://doi.org/10.1111/1467-6427.12226.

Cox, J.L., Holden, J.M., Sagovsky, R., 1987. Detection of postnatal depression: development of the 10-item edinburgh postnatal depression scale. Br. J. Psychiatry 150 (6), 782–786. https://doi.org/10.1192/bjp.150.6.782.

Cuevas, K., Deater-Deckard, K., Kim-Spoon, J., Watson, A.J., Morasch, K.C., Bell, M.A., 2014. What's mom got to do with it? Contributions of maternal executive function and caregiving to the development of executive function across early childhood. Dev. Sci. 17 (2), 224–238. https://doi.org/10.1111/desc.12073.

Edwards, E.S., Holzman, J.B., Burt, N.M., Rutherford, H.J., Mayes, L.C., Bridgett, D.J., 2017. Maternal emotion regulation strategies, internalizing problems and infant negative affect. J. Appl. Dev. Psychol. 48, 59–68. https://doi.org/10.1016/j.appdev.2016.12.001.

Eisenberg, N., Spinrad, T.L., 2004. Emotion-related regulation: sharpening the definition. Child Dev. 75 (2), 334–339.

Feinberg, M.E., Jones, D.E., Hostetler, M.L., Roettger, M.E., Paul, I.M., Ehrenthal, D.B., 2016. Couple-focused prevention at the transition to parenthood, a randomized trial: effects on coparenting, parenting, family violence, and parent and child adjustment. Prev. Sci. 17, 751–764. https://doi.org/10.1007/s11121-016-0674-z.

Feldman, R., 2007. Parent-infant synchrony: biological foundations and developmental outcomes. Curr. Dir. Psychol. Sci. 16 (6), 340–345. https://doi.org/10.1111/j.1467-8721.2007.00532.x.
... & Feng, Y.H., Yue, H.X., Zhan, Y.L., Shi, Y.J., Chen, Y.L., Wang, Y.W., Jiang, Y., 2021. Study on mental health status of pregnant women and its influencing factors in the third trimester. Zhonghua liu Xing Bing xue za zhi= Zhonghua Liuxingbingxue Zazhi 42 (5), 853–858.
Flaskas, C., 2002. Practice experience and theory boundaries: An argument for theory diversity in family therapy. Aust. N. Z. J. Fam. Ther. 23 (4), 184–190. https://doi.org/10.1002/j.1467-8438.2002.tb00515.x.
Fonagy, P., Bateman, A., Bateman, A., 2011. The widening scope of mentalizing: a discussion. psychology and psychotherapy. Theory Res. Pract. 84 (1), 98–110. https://doi.org/10.1111/j.2044-8341.2010.02005.x.
Fonagy, P., Steele, M., Steele, H., Moran, G.S., Higgitt, A.C., 1991. The capacity for understanding mental states: the reflective self in parent and child and its significance for security of attachment. Infant Ment. Health J. 12 (3), 201–218. https://doi.org/10.1002/1097-0355(199123)12:3<201::AID-IMHJ2280120307>3.0.CO;2-7.
Fraenkel, P., Pinsof, W.M., 2001. Teaching family therapy-centered integration: assimilation and beyond. J. Psychother. Integr. 11 (1), 59–85. https://doi.org/10.1023/A:1026629024866.
Frawley, W., Smith, R.N., 2001. A processing theory of alexithymia. Cogn. Syst. Res. 2 (3), 189–206. https://doi.org/10.1016/S1389-0417(01)00029-8.
Grabe, H.J., Spitzer, C., Freyberger, H.J., 2004. Alexithymia and personality in relation to dimensions of psychopathology. Am. J. Psychiatry 161 (7), 1299–1301. https://doi.org/10.1176/appi.ajp.161.7.1299.
Gross, J.J., 1998. The emerging field of emotion regulation: an integrative review. Rev. Gen. Psychol. 2 (3), 27. https://doi.org/10.1037/1089-2680.2.3.271.
Gross, J.J., 2001. Emotion regulation in adulthood: timing is everything. Curr. Dir. Psychol. Sci. 10 (6), 214–219. https://doi.org/10.1111/1467-8721.00152.
Gross, J.J., 2013. Emotion regulation: taking stock and moving forward. Emotion 13 (3), 359. https://doi.org/10.1037/a0032135.
Gross, J.J., John, O.P., 2003. Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. J. Pers. Soc. Psychol. 85 (2), 348. https://doi.org/10.1037/0022-3514.85.2.348.
Gross, J.J., Thompson, R.A., 2007. Emotion regulation: conceptual foundations. J. J. Gross Handbook of Emotion Regulation. The Guilford Press, pp. 3–24.
... & Hay, R.E., Reynolds, J.E., Grohs, M.N., Paniukov, D., Giesbrecht, G.F., Letourneau, N., Lebel, C., 2020. Amygdala-prefrontal structural connectivity mediates the relationship between prenatal depression and behavior in preschool boys. J. Neurosci. 40 (36), 6969–6977. https://doi.org/10.1523/JNEUROSCI.0481-20.2020.
Hopp, H., Troy, A.S., Mauss, I.B., 2011. The unconscious pursuit of emotion regulation: implications for psychological health. Cogn. Emot. 25 (3), 532–545. https://doi.org/10.1080/02699931.2010.532606.
Hutchens, B.F., Kearney, J., 2020. Risk factors for postpartum depression: an umbrella review. J. Midwifery Women's Health 65 (1), 96–108. https://doi.org/10.1111/jmwh.13067.
de Jong-Pleij, E.A.P., Ribbert, L.S.M., Pistorius, L.R., Tromp, E., Mulder, E.J.H., Bilardo, C.M., 2013. Three-dimensional ultrasound and maternal bonding, a third trimester study and a review. Prenat. Diagn. 33 (1), 81–88.
Kennedy-Moore, E., & Watson, J.C. (1999). The myth of emotional venting. Expressing emotion: myths, realities, and therapeutic strategies, 25–61.
Kenny, D.A., Kashy, D.A., & Cook, W.L. (2006). The analysis of dyadic data.
Kooiman, C.G., Spinhoven, P., Trijsburg, R.W., 2002. The assessment of alexithymia: a critical review of the literature and a psychometric study of the Toronto Alexithymia Scale-20. J. Psychosom. Res. 53 (6), 1083–1090. https://doi.org/10.1016/S0022-3999(02)00348-3.
Koole, S.L., 2009. The psychology of emotion regulation: an integrative review. Cogn. Emot. 23 (1), 4–41. https://doi.org/10.1080/02699930802619031.
Krink, S., Muehlhan, C., Luyten, P., Romer, G., Ramsauer, B., 2018. Parental reflective functioning affects sensitivity to distress in mothers with postpartum depression. J. Child Fam. Stud. 27 (5), 1671–1681. https://doi.org/10.1007/s10826-017-1000-5.
Leckman, J., Feldman, R., Swain, J., Eicher, V., Thompson, N., Mayes, L., 2004. Primary parental preoccupation: circuits, genes, and the crucial role of the environment. J. Neural Transm. 111 (7), 753–771.
Lipman, E.L., Boyle, M.H., 2008. Linking Poverty and Mental Health: A Lifespan View. The Provincial Centre of Excellence for Child and Youth Mental Health, Ontario, Canada. http://www.onthepoint.ca/products/product_policypapers.htm.
Lo, C.K., Wong, S.Y., 2020. The effectiveness of parenting programs in regard to improving parental reflective functioning: a meta-analysis. Attach. Hum. Dev. 1–17.
Lorber, M.F., Del Vecchio, T., Feder, M.A., Slep, A.M.S, 2017. A psychometric evaluation of the revised parental emotion regulation inventory. J. Child Fam. Stud. 26, 452–463. https://doi.org/10.1007/s10826-016-0578-3.
Lorber, M.F., Smith Slep, A.M., 2005. Mothers' emotion dynamics and their relations with harsh and lax discipline: Microsocial time series analyses. J. Clin. Child. Adolesc. Psychol. 34 (3), 559–568.
Luminet, O., Bagby, R.M., Wagner, H., Taylor, G.J., Parker, J.D., 1999. Relation between alexithymia and the five-factor model of personality: a facet-level analysis. J. Pers. Assess. 73 (3), 345–358.
Luminet, O., Rime, B., Bagby, R.M., Taylor, G.J., 2004. A multimodal investigation of emotional responding in alexithymia. Cogn. Emot. 18 (5), 741–766. https://doi.org/10.1159/000056263.
Luminet, O., Rokbani, L., Ogez, D., Jadoulle, V., 2007. An evaluation of the absolute and relative stability of alexithymia in women with breast cancer. J. Psychosom. Res. 62 (6), 641–648. https://doi.org/10.1016/j.jpsychores.2007.01.003.
Lummaa, V., Vuorisalo, T., Barr, R.G., Lehtonen, L., 1998. Why cry? Adaptive significance of intensive crying in human infants. Evol. Hum. Behav. 19 (3), 193–202. https://doi.org/10.1016/S1090-5138(98)00014-2.
Lunkenheimer, E.S., Olson, S.L., Hollenstein, T., Sameroff, A.J., Winter, C., 2011. Dyadic flexibility and positive affect in parent–child coregulation and the development of child behavior problems. Dev. Psychopathol. 23 (2), 577–591. https://doi.org/10.1017/S095457941100006X.
Luyten, P., Nijssens, L., Fonagy, P., Mayes, L.C., 2017. Parental reflective functioning: theory, research, and clinical applications. Psychoanal. Study Child 70 (1), 174–199. https://doi.org/10.1080/00797308.2016.1277901.
... & Moriguchi, Y., Ohnishi, T., Lane, R.D., Maeda, M., Mori, T., Nemoto, K., Komaki, G., 2006. Impaired self-awareness and theory of mind: an fMRI study of mentalizing in alexithymia. Neuroimage 32 (3), 1472–1482. https://doi.org/10.1016/j.neuroimage.2006.04.186.
Nezlek, J.B., Kuppens, P., 2008. Regulating positive and negative emotions in daily life. J. Pers. 76 (3), 561–580. https://doi.org/10.1111/j.1467-6494.2008.00496.x.
Nijssens, L., Bleys, D., Casalin, S., Vliegen, N., Luyten, P., 2018. Parental attachment dimensions and parenting stress: the mediating role of parental reflective functioning. J. Child Fam. Stud. 27 (6), 2025–2036. https://doi.org/10.1007/s10826-018-1029-0.
Rao, W.W., Zhu, X.M., Zong, Q.Q., Zhang, Q., Hall, B.J., Ungvari, G.S., Xiang, Y.T., 2020. Prevalence of prenatal and postpartum depression in fathers: A comprehensive meta-analysis of observational surveys. J. Affect. Disord. 263, 491–499. https://doi.org/10.1016/j.jad.2019.10.030.
Remmes, C.S., Ehrenreich-May, J., 2014. Parental emotion regulation strategy use and responses to youth negative affect. J. Cogn. Psychother. 28 (1), 34–47. https://doi.org/10.1891/0889-8391.28.1.34.
Richards, J.M., Gross, J.J., 2000. Emotion regulation and memory: the cognitive costs of keeping one's cool. J. Pers. Soc. Psychol. 79 (3), 410. https://doi.org/10.1037/0022-3514.79.3.410.
Riva Crugnola, C., Ierardi, E., Albizzati, A., Downing, G., 2016. Effectiveness of an attachment-based intervention program in promoting emotion regulation and attachment in adolescent mothers and their infants: a pilot study. Front. Psychol. 7, 195.
Rutherford, H.J.V., Mayes, L.C., 2011. Primary maternal preoccupation: using neuroimaging techniques to explore the parental brain. Psyche 65, 973–988 (Stuttg).
Rutherford, H.J.V., Wallace, N.S., Laurent, H.K., Mayes, L.C., 2015. Emotion regulation in parenthood. Dev. Rev. 36, 1–14. https://doi.org/10.1016/j.dr.2014.12.008.
da Silva, A.N., Vasco, A.B., Watson, J.C., 2017. Alexithymia and emotional processing: a mediation model. J. Clin. Psychol. 73, 1196–1205. https://doi.org/10.1002/jclp.22422.
Schultheis, A.M., Mayes, L.C., Rutherford, H.J.V., 2019. Associations between emotion regulation and parental reflective functioning. J. Child Fam. Stud. 28 (4), 1094–1104. https://doi.org/10.1007/s10826-018-01326-z.
Senior, C., Hassel, S., Waheed, A., Ridout, N., 2020. Naming emotions in motion: alexithymic traits impact the perception of implied motion in facial displays of affect. Emotion 20 (2), 311–316. https://doi.org/10.1037/emo0000546.
Shai, D., 2019. The Inconsolable Doll Task: Prenatal coparenting behavioral dynamics under stress predicting child cognitive development at 18 months. Infant Behav. Dev. 56, 101254.
Shai, D., Belsky, J., 2011. When words just won't do: Introducing parental embodied mentalizing. Child Dev. Perspect. 5 (3), 173–180. https://doi.org/10.1111/j.1750-8606.2011.00181.x.
Sharp, C., Fonagy, P., 2008. The parent's capacity to treat the child as a psychological agent: constructs, measures and implications for developmental psychopathology. Soc. Dev. 17 (3), 737–754. https://doi.org/10.1111/j.1467-9507.2007.00457.x.
Sifneos, P.E., 1973. The prevalence of 'alexithymic' characteristics in psychosomatic patients. Psychother. Psychosom. 22 (2-6), 255–262. https://doi.org/10.1159/000286529.
Slade, A., 2002. Keeping the baby in mind: a critical factor in perinatal mental health. Zero Three 22 (6), 10–16.
... & Slade, A., Holland, M.L., Ordway, M.R., Carlson, E.A., Jeon, S., Close, N., Sadler, L. S., 2020. Minding the Baby®: enhancing parental reflective functioning and infant attachment in an attachment-based, interdisciplinary home visiting program. Dev. Psychopathol. 32 (1), 123–137. https://doi.org/10.1017/S0954579418001463.
Söndergaard, H.P., Theorell, T., 2004. Alexithymia, emotions and PTSD; findings from a longitudinal study of refugees. Nord. J. Psychiatry 58 (3), 185–191. https://doi.org/10.1080/08039480410006214.
Swain, J.E., 2011. The human parental brain: In vivo neuroimaging. Prog. Neuropsychopharmacol. Biol. Psychiatry 35 (5), 1242–1254. https://doi.org/10.1016/j.pnpbp.2010.10.017.
Swart, M., Kortekaas, R., Aleman, A., 2009. Dealing with feelings: characterization of trait alexithymia on emotion regulation strategies and cognitive-emotional processing. PLoS One 4 (6), e5751. https://doi.org/10.1371/journal.pone.0005751.
Target, M., Fonagy, P., 1996. Playing with reality: II. The development of psychic reality from a theoretical perspective. Int. J. Psychoanal. 77, 459–479.

Taylor, G.J., Bagby, R.M., 2013. Psychoanalysis and empirical research: the example of alexithymia. J. Am. Psychoanal. Assoc. 61 (1), 99–133.

Weissman, M.M., Bland, R., Joyce, P.R., Newman, S., Wells, J.E., &Wittchen, H.U, 1993. Sex differences in rates of depression: cross-national perspectives. J. Affect. Disord. 29 (2–3), 77–84. https://doi.org/10.1016/0165-0327(93)90025-F.

Yonkers, K.A., Vigod, S., Ross, L.E., 2011. Diagnosis, pathophysiology, and management of mood disorders in pregnant and postpartum women. Obstet. Gynecol. 118 (3), 708–709. https://doi.org/10.1176/appi.focus.10.1.51.