Master Thesis

Postpartum Depressive Symptoms Through a Self-Determination Theory Perspective: Basic Needs, Maladaptive Perfectionism and Partners' Interpersonal Style

Utrecht University

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Master Clinical Psychology

2018-2019

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Date: 09/07/2019

Abstract

Using a Self-Determination Theory perspective, this study examined the role of maladaptive perfectionism and partners' interpersonal style (i.e., partners' autonomy support and psychological control) in both paternal and maternal postpartum depressive symptoms (PDS). Also, the mediating effect of need frustration on the relation between maladaptive perfectionism and PDS was investigated. Five self-report questionnaires were completed by a total of 251 Dutch parents (fathers 37.5%, mothers 62.5%) of 1- to 8-months old children. A hierarchical multiple regression analysis showed maladaptive perfectionism and need frustration to be independent positive predictors of PDS. Additionally, mediation analyses showed need frustration to mediate the relation between maladaptive perfectionism and PDS, with full mediation in fathers and partial mediation in mothers. Possible explanations and conclusions based on our findings are discussed, underscoring the need to include fathers in research into PDS.

Keywords: postpartum depression, self-determination theory, maladaptive perfectionism, autonomy support, psychological control, need frustration

Introduction

The postpartum period is a challenging and potentially stressful life transition for both parents, characterized by biological, physical, social and emotional changes requiring adjustment (Cowan & Cowan, 2000; Laurin, Laniel, Cournoyer, Huppé, & Perrier, 2019; Rai, Pathak, & Sharma, 2015). Therefore, the postpartum period, especially during the first months after childbirth, goes along with increased emotional vulnerability and even psychological disturbances in parents (Cohen & Nonacs, 2005; Cowan & Cowan, 2000; O'Hara & McCabe, 2013). The most common psychological disorder is postpartum depression, often starting within four weeks after childbirth (Cooper & Murray, 1998). Symptoms include persistent sadness, anxiety, emotional lability, fatigue, and social withdrawing. Also, difficulty in bonding with the child and thoughts of harming oneself or the child are common in postpartum depression (Miller, 2002; Wisner et al., 2013).

Postpartum depression affects approximately 10 to 15% of mothers and 8 to 13% of fathers (Cameron, Sedov, & Tomfohr-Madsen, 2016; Miller, 2002). However, much more postpartum mothers (15 to 30%), and probably also fathers, report non-clinical levels of postpartum depressive symptoms (PDS; Goodman, 2004). Both clinical and non-clinical PDS can have deleterious effects on the parents themselves, the child and the family (Cummings, Keller, & Davies, 2005). For instance, PDS is associated with continuous depression of the parent, marital discord, insensitive and unresponsive parenting, stressful parent-child relationships and later adverse emotional and behavioural outcomes in children and adolescents (e.g., Feinberg, Kan, & Goslin, 2009; Field, 2010, 2018; Gauthier, Guay, Senécal, & Pierce, 2010; Goodman & Brand, 2008; O'Hara & McCabe, 2013).

Research into PDS is lacking two important components. First, paternal PDS has received little attention, which is striking because adverse effects of paternal PDS on children remained significant after controlling for maternal PDS and later paternal depression (Ramchandani, Stein, Evans, & O'Connor, 2005). Moreover, children's emotional problems appear to decrease when maternal PDS is treated, but not when paternal PDS is treated (Field, 2018), underscoring the need to include fathers in research. Second, although past research identified several contributing factors in developing PDS, including biological and psychosocial factors such as genetics, hormones, previous depression, stressful life events and low self-esteem (e.g., Robertson, Grace, Wallington, & Stewart, 2004; Skalkidou, Hellgren, Comasco, Syvén, & Sundström-Poromaa, 2012), it has made little use of profound theoretical models supporting underlying mechanisms in developing PDS.

Therefore, the purpose of the current study is to fill in the gap in research in particularly paternal PDS, simultaneously offering a strong theoretical bedding provided by SDT. Research into these areas is important to explore processes involved in developing PDS, improving interventions for both paternal and maternal PDS. Improved interventions

may prevent or reduce adverse effects of PDS on the parent, the child and the family, and may reduce the high costs of PDS for society, especially through reduced medical costs and work absence (e.g., Dagher, McGovern, Dowd, & Gjerdingen, 2012; Edoka, Petrou, & Ramchandani, 2011).

Self-Determination Theory: Basic Psychological Needs

A potentially helpful theoretical framework for PDS is the Self-Determination Theory, a macro-theory of motivation, needs and psychological well-being (SDT; Deci & Ryan, 2000; Ryan & Deci, 2017). SDT comprises six sub-theories, among which the *basic psychological needs theory* being most relevant for our research. This sub-theory posits all humans having three universal, innate basic psychological needs, which are regarded as essential nutrients that must be satisfied for positive psychological outcomes. These basic needs include the need for autonomy (experiences of volition and self-endorsement of one's activity), the need for relatedness (experiences of reciprocal care and concern for each other) and the need for competence (experiences of a sense of effectiveness in interacting with one's environment; e.g., Vansteenkiste, Niemiec, & Soenens, 2010). The universal character of basic needs highlights the need for autonomy, relatedness and competence, and their effects on psychological health, to be qualitatively the same in all humans, regardless of demographic characteristics such as culture, gender and age (Chen et al., 2015; Deci & Ryan, 2000; Ryan & Deci, 2017).

Recently, there is a tendency in research to distinguish between (low) *need satisfaction*, when basic needs are (little) satisfied, and *need frustration*, when basic needs are more actively thwarted within social contexts (Vansteenkiste & Ryan, 2013). While a postpartum mother may experience low relatedness having less quality time with her partner (low need satisfaction), she may also experience low relatedness feeling rejected by her partner (need frustration). In general, low need satisfaction can undermine healthy development, but especially need frustration can elicit malfunctioning and psychopathology such as PDS (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011a). In other words, frustrated needs may be more strongly related to ill-being in comparison to unfulfilled needs (Vansteenkiste & Ryan, 2013).

Research robustly showed need frustration to relate to several types of psychopathology, including depressive symptoms (Chen et al., 2015; Lu, Uysal, & Teo, 2011; Ryan, Deci, Grolnick, & La Guardia, 2006; Vansteenkiste & Ryan, 2013; Wei, Shaffer, Young, & Zakalik, 2005). However, to our knowledge, only three studies examined basic needs in the context of prenatal and/or postpartum depressive symptoms. First, a cross-sectional study showed prenatal need satisfaction to relate negatively to maternal prenatal depressive symptoms (Brenning, Soenens, & Vansteenkiste, 2015). Second, Gauthier et al. (2010) showed PDS to be longitudinally predicted by anxious attachment to the partner

(need for relatedness), but not by parental autonomous motivations to have a child (need for autonomy) and parental self-efficacy (need for competence). Last, a longitudinal study reported maternal prenatal need frustration, but not need satisfaction, to relate positively to PDS (Brenning & Soenens, 2017). None of these three studies included fathers and only one study made the distinction between need satisfaction and frustration. Therefore, our study includes fathers and examines both need satisfaction and frustration.

In research, need satisfaction and frustration are mostly investigated as underlying mediating mechanisms in developing psychopathology. In case of PDS, several predictive factors such as personality and interpersonal factors might influence experiences of need frustration, in turn affecting PDS. On personality level, maladaptive perfectionism, and on interpersonal level, partners' interpersonal style, might account for significant variance in need satisfaction and frustration.

Maladaptive Self-Critical Perfectionism

Research suggested maladaptive perfectionism, especially maladaptive self-critical perfectionism (MSC perfectionism), to be a robust personality factor in developing depressive symptoms (e.g., Bardone-Cone et al., 2007; Dunkley, Sanislow, Grilo, & McGlashan, 2009; Limburg, Watson, Hagger, & Egan, 2017; Sherry, Gautreau, Mushquash, Sherry, & Allen, 2014). MSC perfectionism is characterized by setting and adhering to unattainable and inflexibly high standards, black and white thinking, a sense of self-worth dependent on performance, fears of failure and self-blame (e.g., Enns & Cox, 2002; Enns, Cox, & Clara, 2002; Vansteenkiste & Ryan, 2013). It is also indicated that MSC perfectionism is positively related to maternal PDS (Maia et al., 2012; Mazzeo et al., 2006).

Luyten and Blatt (2016) proposed that effects of MSC perfectionism on psychological well-being are mediated by need-related experiences. Indeed, Campbell, Boone, Vansteenkiste and Soenens (2018) showed the relation between MSC perfectionism and depressive symptoms to be mediated by need frustration. Maybe, when a parent's MSC perfectionistic standards are not achieved, even by small failures, intense feelings of inferiority can be experienced, leading to more need frustration (Boone, Vansteenkiste, Van der Kaap-Deeder, Soenens, & Verstuyf, 2014; Brenning & Soenens, 2017), in turn contributing to PDS.

Self-Determination Theory: Partners' Interpersonal Style

The most recent sub-theory within SDT is the *relationships motivation theory*, proposing the interpersonal style of a relational partner to affect the person's psychological health (Ryan & Deci, 2017). According to SDT, relational partners can have an autonomy supportive and a psychologically controlling interpersonal style (e.g., Deci & Ryan, 2014; Soenens & Vansteenkiste, 2010).

Autonomy support of the partner is about caring for, supporting and encouraging the expression of the person's authentic self within the relationship such as self-initiated strivings, and gives the person more of a sense of personal autonomy, relatedness and competence (Adie, Duda, & Ntoumanis, 2008; Deci & Ryan, 2014; Gagné, Ryan, & Bargmann, 2003; Ryan & Deci, 2017). In contrast, partners can be psychologically controlling when they use, consciously or unconsciously, intrusive and manipulative strategies such as love withdrawal, guilt induction and shaming, to make their partner comply with their expectations and desires (Soenens & Vansteenkiste, 2010; Soenens, Vansteenkiste, Goossens, Duriez, & Niemiec, 2008). Partner's psychological control gives the person more of a sense of being controlled, contingently valued or pressured to feel, think and behave in certain ways, rather than a sense of self-determination (Ryan & Deci, 2017). Research showed autonomy support to relate to adaptive outcomes and psychological control to relate to maladaptive outcomes (e.g., Barber, 1996; Pettit, Laird, Dodge, Bates, & Criss, 2001; Ratelle, Simard, & Guay, 2013; Vasquez, Patall, Fong, Corrigan, & Pine, 2016).

Moreover, the *relationships motivation theory* assumes need satisfaction and frustration to mediate the relation between partners' interpersonal style and the person's psychological health (Ryan & Deci, 2017). In this vein, Bartholomew, Ntoumanis, Ryan and Thøgersen-Ntoumani (2011b) showed coaches' autonomy support to relate positively to need satisfaction in athletes, in turn increasing vitality and positive affect. In contrast, coaches' psychological control was positively related to need frustration in athletes, in turn increasing levels of depressive symptoms. Maybe, when postpartum parents experience low autonomy support and particularly high psychological control of the partner, they experience more need frustration, thereby having an increased risk of developing PDS.

Current Study

As illustrated in Figure 1, this study examines the role of MSC perfectionism and partners' interpersonal style in both paternal and maternal PDS, potentially mediated by need satisfaction and frustration. As previous research into PDS paid little attention to fathers, and so to differences between paternal and maternal PDS, this study also investigates the moderating effect of parents' gender on processes involved in PDS.

First, it is hypothesized that higher levels of need frustration, but not need satisfaction, are related to higher levels of PDS. Second, we expect higher levels of PDS to be predicted by (1) higher levels of MSC perfectionism and (2) partners' lower autonomy support and higher psychological control. Third, we hypothesize that the latter relations are mediated by need frustration. Last, it is hypothesized that mediating effects of need frustration are equal for fathers and mothers.

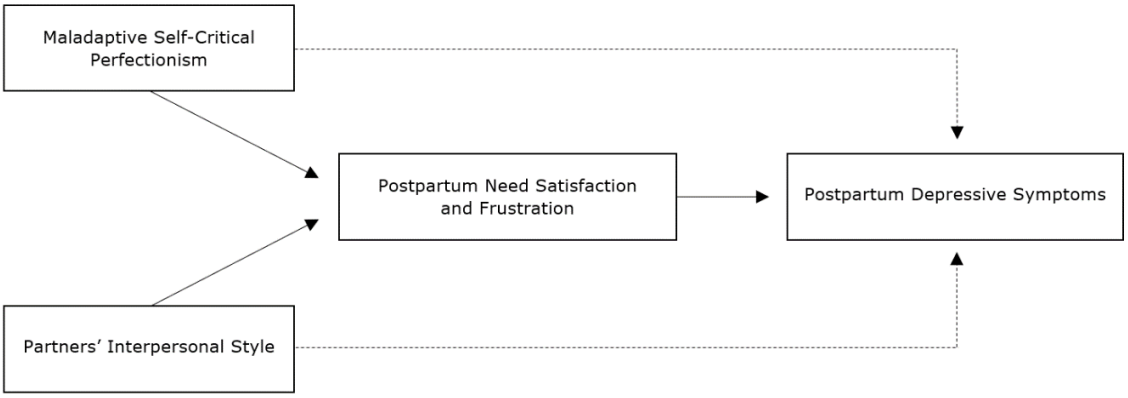

Figure 1. Research model with the mediating role of basic needs.

Methods

Procedure and Participants

Participants include Dutch fathers and mothers, not necessarily couples, of 1- to 8-months old children. Participants were recruited by using advertisements via social media such as Facebook communities for parents, and via obstetrician practices and baby courses in various provinces. Inclusion criteria were a minimum age of 18 years, being the biological parent of the child, the child being 1 to 8 months old and living in the Netherlands. Beforehand, participants were asked to give digital informed consent. Participation was completely voluntary and anonymous, and participants were free to quit the questionnaire any time.

After excluding 4 parents because they failed on both control questions[1] and/or skipped too many questions, the final study sample consisted of N = 251 parents, among which 94 fathers (37.5%) and 157 mothers (62.5%). The mean age of parents was M = 31.0 years, with a range of 19 to 44 years. The mean age of children was M = 4.2 months, with a range of 1 to 8 months. Furthermore, 94.8% was living together with the spouse/partner and 38.2% of the parents was multiparous. Last, of all parents 12.4% had no degree or only a high school degree, 34.7% an associate degree, 51.0% a bachelor's or master's degree and 2% a doctoral degree.

Measures

Postpartum depressive symptoms. To assess PDS, we administered the validated Dutch version of the *Edinburgh Postnatal Depression Scale* (EPDS; Brouwers, Van Baar, & Pop, 2001; Cox, Holden, & Sagovsky, 1987). There is sufficient evidence to support the validity and reliability of this self-report questionnaire (McBride, Wiens, McDonald, Cox, & Chan, 2014), in both fathers and mothers (e.g., Matthey, Barnett, Kavanagh, & Howie, 2001). The EPDS consists of ten items (e.g., *'Things have been getting*

[1] Two control questions (e.g., *'Please select 'totally true''*) were included to test whether participants participated seriously and attentively.

on top of me'), rated on a 4-point Likert scale, with varying types of answers per item (e.g., 1 = *'Yes, most of the time I haven't been coping as well as usual'* to 4 = *'No, I have been coping as well as ever'*). For each respondent, a total PDS score was calculated by taking the mean of the responses. In this study, Cronbach's alpha of the EPDS was .89 (good, George & Mallery, 2003).

Postpartum basic psychological needs. Postpartum need satisfaction and frustration were measured with the Dutch mother and child interaction version of the well-validated *Basic Psychological Need Satisfaction and Frustration Scale* (BPNSFS; Brenning, Soenens, Mabbe, & Vansteenkiste, 2018; Chen et al., 2015). This self-report questionnaire measures need satisfaction and frustration in interaction with the child, consisting of three domains (Autonomy, Relatedness and Competence) and two two-item subscales per domain (Need Satisfaction and Need Frustration, e.g., *'I experienced a sense of distance between myself and my child'* for relatedness frustration). Items are rated on a 5-point Likert scale (1 = *'Completely untrue'* to 5 = *'Completely true'*). For each respondent, total need satisfaction and total need frustration scores were calculated by taking the means of the six relevant responses. In the current study, Cronbach's alphas were .79 (adequate) for Need Satisfaction and .81 (good) for Need Frustration.

Maladaptive self-critical perfectionism. MSC perfectionism was assessed through two subscales of the *Multidimensional Perfectionism Scale* (MPS; Frost, Marten, Lahart, & Rosenblate, 1990; Shafran & Mansell, 2001): The nine-item subscale Concern Over Mistakes (e.g., *'People will probably think less of me if I make a mistake'*) and the four-item subscale Doubts About Actions (e.g., *'Even when I do something very carefully, I often feel that it is not quite right'*). Items are rated on a 5-point Likert scale (1 = *'Strongly disagree'* to 5 = *'Strongly agree'*). For each respondent, a total MSC perfectionism score was calculated by taking the mean of the responses on both subscales. In the current study, Cronbach's alpha was .93 (excellent).

Partners' autonomy support and psychological control[2]. Partners' autonomy support was measured with the validated Dutch version of the seven-item *Autonomy Support Scale of the Perceptions of Parents Scale* (POPS; Grolnick, Ryan, & Deci, 1991; Vansteenkiste, Zhou, Lens, & Soenens, 2005). Partners' psychological control was assessed through the validated Dutch version of the eight-item *Psychological Control Scale-Youth Self-Report* (PCS-YSR; Barber, 1996; Soenens, Vansteenkiste, Luyckx, & Goossens,

[2] Investigating recent recommendations to assess autonomy support and psychological control separately and not as a continuum (e.g., Vansteenkiste & Ryan, 2013), we executed a principal component analysis (PCA) to examine whether partners' autonomy support (14 items) and psychological control (8 items) should be approached as a continuum (one factor) or as two separate factors. The Kaiser-Meyer-Olkin test was .91 (very good, Hutcheson & Sofroniou, 1999), meaning there is an adequate sample to perform a PCA. Kaiser's criterion of eigenvalues greater than 1 was used. The PCA with varimax rotation, indeed, favored two separate factors (R^2=46.3%) over a single continuum (R^2=36.9%).

2006). Items of both the POPS and PCS-YSR were adjusted from the parent to the partner role, indicating to what extent the statements about their partner apply to them (PCS-YSR, e.g., *'My partner brings up past mistakes when he/she criticizes me'*). If participants are single, they are asked to apply the statements to the person they experienced the most supportive in raising their child. Items are rated on a 5-point Likert scale (1 = *'Totally disagree'* to 5 = *'Totally agree'*). In this study, Cronbach's alphas were .90 (excellent) for Autonomy Support and .78 (adequate) for Psychological Control.

Results

Descriptive Statistics

Descriptive statistics of PDS, MSC perfectionism, partners' interpersonal style and need satisfaction and frustration are shown in Table 1. Independent samples t-tests showed mothers to score higher on PDS than fathers. Also, fathers experienced more psychologically controlling behaviour from their partner than mothers did.

Table 1

Descriptive Statistics of Postpartum Depressive Symptoms, Maladaptive Perfectionism, Partners' Interpersonal Style, Need Satisfaction and Need Frustration

	Fathers (n = 94)	Mothers (n = 157)	
Variables	*M (SD)*	*M (SD)*	*t(251)*
PDS	0.61 (0.48)	0.87 (0.60)	-3.85***
Maladaptive Perfectionism	2.07 (0.86)	2.27 (1.01)	-1.69
Autonomy Support	4.13 (0.65)	4.26 (0.70)	-1.44
Psychological Control	2.06 (0.79)	1.82 (0.66)	2.55*
Need Satisfaction	4.28 (0.64)	4.39 (0.62)	-1.36
Need Frustration	1.77 (0.76)	1.69 (0.75)	0.80

Note. PDS = postpartum depressive symptoms. t-test for independent samples (two-tailed) * $p < .05$, ** $p < .01$, *** $p < .001$.

Preliminary Analyses

Pearson correlations between PDS, MSC perfectionism, partners' interpersonal style and need satisfaction and frustration are shown in Table 2, separately for fathers and mothers. We tested if Pearson correlations significantly differ between fathers and mothers, using the Fisher Z-test (Eid, Gollwitzer, & Schmitt, 2011).

As expected, MSC perfectionism, partners' psychological control and need frustration were positively related to paternal and maternal PDS. Partners' autonomy support and need satisfaction were negatively related to paternal and maternal PDS. Furthermore, MSC perfectionism and partners' psychological control were negatively

related to need satisfaction and positively related to need frustration, in both fathers and mothers. Partners' autonomy support was positively related to need satisfaction and negatively related to need frustration, but only in fathers. Moreover, as indicated in bold in Table 2, various relations were significantly stronger in fathers than in mothers. For example, higher levels of partners' psychological control were more strongly related to higher levels of need frustration in fathers (moderate effect, Cohen, 1988) than in mothers (small effect).

Table 2

Pearson Correlations between Postpartum Depressive Symptoms, Maladaptive Perfectionism, Partners' Interpersonal Style, Need Satisfaction and Need Frustration

Variables	1.	2.	3.	4.	5.	6.
1. PDS	-	.56***	-.22**	.30***	-.65***	.74***
2. Maladaptive Perfectionism	.54***	-	**-.22****	**.37*****	**-.37*****	.52***
3. Autonomy Support	-.40***	**-.48*****	-	-.65***	**.05**	**-.10**
4. Psychological Control	.31**	**.55*****	-.62***	-	**-.15***	**.24****
5. Need Satisfaction	-.57***	**-.61*****	**.44*****	**-.38*****	-	-.83***
6. Need Frustration	.64***	.63***	**-.38*****	**.39*****	-.81***	-

Note. Results below the diagonal are from fathers, results above from mothers. PDS = postpartum depressive symptoms. Pearson correlations are one-tailed tested. Bold results represent correlations that significantly differ between fathers and mothers. * $p < .05$, ** $p < .01$, *** $p < .001$.

Primary Analyses

Beforehand, a hierarchical regression analysis was performed, regressing PDS onto the control variables, Need Satisfaction and Need Frustration. As expected, only need frustration (β = 0.56, $p < .001$) was a significant predictor of PDS, but not need satisfaction (β = -0.14, $p = .062$). Contrary to our expectations, a second hierarchical regression analysis, regressing PDS onto the control variables, Partners' Autonomy Support and Partners' Psychological Control, showed only partners' psychological control (β = 0.20, $p = .009$) to be a significant predictor of PDS, but not partners' autonomy support (β = -0.11, $p = .167$). Therefore, in the primary analyses need satisfaction and partners' autonomy support were excluded.

Predictors of PDS: A hierarchical multiple regression analysis

A four-step hierarchical multiple regression analysis was performed to examine the role of MSC perfectionism, partners' psychological control and need frustration in PDS. It was also tested if the obtained relationships significantly differ between fathers and mothers, by including interaction variables targeting parents' gender at step 4. Results of the hierarchical multiple regression analysis are shown in Table 3.

At step 1, next to the already observed gender difference in PDS, we found a higher age of the child to relate to higher levels of PDS. At step 2, as expected, we found MSC perfectionism to relate positively to PDS. Contrary to our expectations, controlling for MSC perfectionism, psychological control did not contribute to PDS. At step 3, as expected, controlling for MSC perfectionism and partners' psychological control, we found need frustration to relate positively to PDS. At step 4, when adding interaction variables targeting parents' gender, only need frustration and parents' gender remained significant predictors of PDS, indicating that mothers are at increased risk of PDS in comparison to fathers. Specifically focusing on the interaction variables at step 4, effects of MSC perfectionism, partners' psychological control and need frustration on PDS were not significantly different between fathers and mothers. In other words, there is no moderation effect of parents' gender.

Table 3

Results from the Hierarchical Multiple Regression Analysis Predicting PDS

Variables	Step 1	Step 2	Step 3	Step 4
Gender Parent	.28***	.22***	.26***	.25***
Age Parent	.05	.02	-.00	.01
Age Child	.21**	.15**	.12**	.10*
Maladaptive Perfectionism		.51***	.22***	.21
Psychological Control		.05	.01	-.03
Need Frustration			.55***	.45***
Perfectionism*Gender				.01
Psychological Control*Gender				.08
Need Frustration*Gender				.13
R^2	.10***	.37***	.58***	.59***
ΔR^2	.10***	.27***	.21***	.01

Note. Results represent standardized regression coefficients (β). R^2 = explained variance, ΔR^2 = change of explained variance. * $p < .05$, ** $p < .01$, *** $p < .001$.

Need frustration: A mediation analysis

Because the hierarchical multiple regression analysis showed that partners' psychological control was not a predictor of PDS on top of MSC perfectionism, only the mediation analysis into the mediating role of need frustration in the relation between MSC perfectionism and PDS was performed. This mediation analysis was carried out for the total sample (fathers and mothers) and separately for fathers and mothers, controlling for parents' gender and age and children's age. Results of the mediation analyses are shown in Figure 2.

For the total sample, with need frustration introduced into the model as a mediator, the total effect of MSC perfectionism on the PDS score ($b = 0.31$, $p < .001$) was significantly

reduced into a direct effect (b = 0.13, p < .001). There was, indeed, a significant indirect effect of MSC perfectionism on the PDS score through need frustration as a mediator (b = 0.18, 95% CI [0.13, 0.23]). So, for the total sample, we found MSC perfectionism to partially mediate the relation between MSC perfectionism and PDS.

Focusing on fathers and mothers separately, contrary to our expectations, we found a gender difference in the mediating role of need frustration in the relation between MSC perfectionism and PDS. For fathers, with need frustration included into the model as a mediator, the total effect of MSC perfectionism on the PDS score (b = 0.30, p < .001) was reduced into a non-significant direct effect (b = 0.09, p = .125). The indirect effect of MSC perfectionism as a mediator was, indeed, significant in fathers (b = 0.21, 95% CI [0.11, 0.31]). However, for mothers, with need frustration included into the model as a mediator, the total effect of MSC perfectionism on the PDS score (b = .32, p < .001) was significantly reduced into a direct effect (b = 0.14, p < .001). The indirect effect of MSC perfectionism as a mediator was also significant in mothers (b = 0.18, 95% CI [0.12, 0.24]). Concluding, in the relation between MSC perfectionism and PDS, we found full mediation of need frustration in fathers and partial mediation of need frustration in mothers. So, interestingly, for mothers, on top of the indirect effect of need frustration, MSC perfectionism still contributed to PDS.

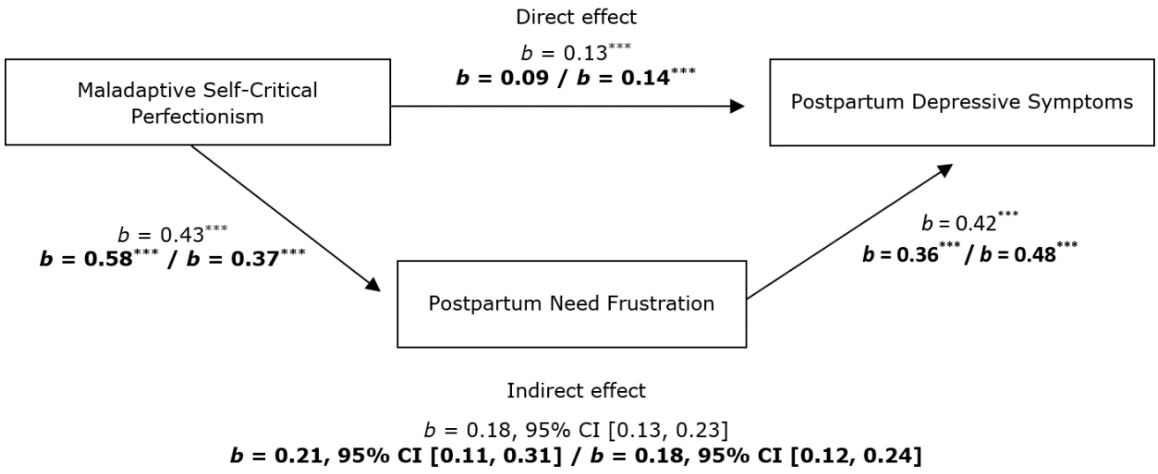

Figure 2. The mediating role of need frustration. Bold results represent results separately for fathers/mothers. b = unstandardized regression coefficients, CI = confidence interval. * p < .05, ** p < .01, *** p < .001.

Discussion

This study examined the role of MSC perfectionism and partners' interpersonal style in both paternal and maternal PDS. Moreover, the moderating effect of parents' gender was assessed, in addition to the potentially mediating role of need frustration in the relation between MSC perfectionism and PDS.

Need Frustration

As expected, the results show need frustration, but not need satisfaction, to relate positively and uniquely to PDS, supporting previous research suggesting that especially need frustration can elicit malfunctioning and psychopathology (Bartholomew et al., 2011a; Vansteenkiste & Ryan, 2013). This finding is also in line with the study of Brenning and Soenens (2017) that found only maternal prenatal need frustration, but not need satisfaction, to contribute to PDS. In other words, when postpartum parents experience a sense of pressure, distance and/or incompetence in the interaction with their young child, they are at increased risk of developing PDS. Additionally, the positive relation between need frustration and PDS was not found to be different between fathers and mothers, underpinning the universal character of basic needs (Chen et al., 2015; Deci & Ryan, 2000; Ryan & Deci, 2017).

Maladaptive Self-Critical Perfectionism

As expected, the results show MSC perfectionism to relate positively to both paternal and maternal PDS, supporting previous research on general depressive symptoms (e.g., Chang, 2013; Egan, Wade, & Shafran, 2011; Shafran & Mansell, 2001). Renewing is our finding that MSC perfectionism is not only related to maternal PDS (see Maia et al., 2012; Mazzeo et al., 2006), but also to paternal PDS. In other words, both fathers and mothers with higher scores on MSC perfectionism appear to be at increased risk of developing PDS. Furthermore, in line with recent findings (e.g., Boone et al., 2014; Campbell et al., 2018; Luyten & Blatt, 2016), we found this relation to be mediated by need frustration. Taken together, when postpartum parents tend to set and adhere to extremely high standards to themselves (e.g., *'I must <u>always successfully</u> sooth my child when he/she starts to cry'*), they are more prone to experience need frustration (e.g., *'My child keeps crying, I am an incompetent parent'*), in turn relating to PDS when their perfectionistic standards are not met. Importantly, no gender differences in effects of MSC perfectionism on PDS were found.

Interestingly, we found a gender difference in the mediating effect of need frustration. Need frustration acted as a full mediator in fathers, and as a partial mediator in mothers, indicating MSC perfectionism to be a stronger personality predictor of maternal PDS than paternal PDS. This difference in robustness might be due to a possibly bigger amount of time mothers generally spend with their young child in comparison to fathers. When mothers spend more time with the child, their extremely high standards may more frequently affect (negative) psychological experiences, thereby increasing the risk of developing PDS in comparison to fathers. In sum, more research is needed to provide clearer insights into gender differences in processes involved in developing PDS, including contextual variables such as the amount of time parents spend with their young child.

Partners' Interpersonal Style

At first glance, the results indicated that only partners' psychological control (in comparison to autonomy support) was positively related to PDS. However, contrary to our expectations, controlling for MSC perfectionism cancelled this effect. This finding is in contrast with previous research showing psychological control to have unique effects on maladaptive outcomes (Barber, 1996; Barber, Stolz, & Olsen, 2005; Pettit et al., 2001; Ratelle et al., 2013; Soenens & Vansteenkiste, 2005; Vasquez et al., 2016). Interestingly, these studies investigated nonreciprocal relationships (e.g., parent-child, teacher-student), in contrast to our investigated reciprocal relationship (partner-partner). Moreover, they did not control for personality factors such as maladaptive perfectionism, as we did. Based on our results, MSC perfectionism may be such a robust personality factor in PDS that it outperforms the effects of significant others' (e.g., partners', parents', teachers') interpersonal styles. This would underscore the probability of an extensive predictive role of MSC perfectionism in PDS, as was highlighted in several past studies (e.g., Dunkley et al., 2009; Sherry et al., 2014). However, more research into the relation between interpersonal styles, specifically in reciprocal relationships, and PDS is necessary to broaden the support for these findings.

Clinical Implications

Taken together, as need frustration is found to be the most important predictor of PDS and a (partial) mediator in the relation between MSC perfectionism and PDS, our results provide support for the use of an SDT-perspective in clinical contexts. Recently, it has been suggested to stress need-frustrating experiences in intervention programs by targeting need crafting, a relatively new concept within SDT. Interventions targeting need crafting are about actively decreasing the odds of need frustration and maximizing the chances for need satisfaction. For instance, in treatment, parents with PDS may be helped by exploring what parental-related activities they want to do themselves (autonomy need crafting), investing in social relationships such as joining a parental support group (relatedness need crafting), and setting achievable parental-related goals (competence need crafting; Brenning, Vansteenkiste, De Clercq, Soenens, & Antrop, 2019). Obviously, only one study indicated need-satisfying experiences to buffer against high levels of depressive symptoms (Weinstein, Khabbaz, & Legate, 2016), stressing the importance of future research.

Additionally, as maladaptive perfectionism appears to be a robust predictor of PDS, especially in mothers, targeting MSC perfectionism in treatment programs deserves consideration. Maladaptive perfectionism can be effectively treated with cognitive behavioural techniques such as restructuring cognitive biases that maintain maladaptive perfectionism (Beck, 2011; Lloyd, Schmidt, Khondoker, & Tchanturia, 2015).

Strengths, Limitations and Future Research Directions

Our study has several important strengths. First, we used a strong theoretical bedding provided by SDT to explore theoretically supported underlying mechanisms in the development of PDS. This study was also one of the first studies into basic needs in the context of PDS, revealing particularly need frustration to be a strong predictor of PDS. Moreover, contrary to most research into PDS, this study included both fathers and mothers, revealing several interesting differences between maternal and paternal PDS that need further attention. Last, our study sample was relatively large for a master's thesis and diverse in especially educational level, promoting the external validity of the results.

Next to the already mentioned recommendations for future research, some limitations broaden the scope of possible follow-up work. First, because we investigated a non-clinical study sample, mean scores of PDS were relatively low. Perhaps, more and/or stronger relations may be found using clinical samples, leading to more clinical implications. Second, only self-report questionnaires were used, and all data were reported by the same source, which might have caused a response bias through social desirability. Future research should use various measurements such as clinical interviews, and additional informants such as the partner him- or herself and/or the maternity carer. Last, this study is cross-sectional. Longitudinal research is needed to get more insight in the direction of processes involved in paternal and maternal PDS.

Conclusion

This study indicated need frustration and MSC perfectionism to be important predictors of developing paternal and maternal PDS. Also, we found need frustration to mediate the relation between MSC perfectionism and PDS, with full mediation in fathers and partial mediation in mothers. Therefore, our study provides support for the use of an SDT-perspective on PDS, and psychopathology in general, in both research and clinical practice. It is our hope that future research into PDS will continue to include fathers, because, strikingly, research into paternal PDS still is in its infancy. A better understanding of processes involved in the often challenging and stressful postpartum period of both parents, can improve screening, prevention and treatment for paternal and maternal PDS. This may further contribute to more adaptive outcomes in the parent, the child and the family.

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