

The Interplay Between Maternal and Paternal Senses of Efficacy Moderates the Link Between Perinatal Parental Stress and Family Alliance at 3 Months

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SYNOPSIS

Objective. Both parents may report high levels of stress during the perinatal period with possible negative consequences for parental well-being and child development. Parental sense of efficacy moderates the effect of stress. To date, no studies have assessed links between parental stress and mother-father-infant interactions in terms of family alliance and the extent to which each parent's sense of efficacy moderates these links. **Design.** In this study, 65 dual-parent families answered a questionnaire about parental stress between 36 and 38 weeks of pregnancy and at 3 months after birth. Families were also observed while playing with their 3-month-old infant in the Lausanne Trilogue Play, and they completed a questionnaire about parental efficacy. **Results.** Structural equation modeling analyses showed that higher maternal or paternal postnatal stress has a direct link with higher family alliance and the links between stress and family alliance are moderated by complex interaction effects between maternal and paternal senses of efficacy. **Conclusions.** This study shows the necessity of considering the interaction between the senses of self-efficacy of both parents as moderators of parenting stress.

INTRODUCTION

Parenting stress relates to difficulties to adapt to the demands of parenthood (Abidin, 1995; Deater-Deckard, 2004). Highly stressed parents are at risk of multiple negative consequences, at both individual and interpersonal levels (Glover et al., 2018). One parental characteristic that moderates the effect of stress is parental sense of efficacy (Crnic & Ross, 2017), which refers to the sense a parent has of being able to positively influence the behavior and development of his or her children (Schuengel & Oosterman, 2019).

To date, no study has assessed the consequences of the interplay between parental stress and parental efficacy in triadic, that is mother-father-infant, interactions, during which the mother and father have to coordinate with each other. It has long been known, however, that stress may alter family relationships (Buehler, 2020). Conversely, parental sense

of efficacy and parents' report of the quality of their relationship are positively interrelated (Campbell, 2023). Of particular interest is the assessment of how each parent's sense of efficacy interacts to temper or aggravate the effect of parenting stress, that is the extent to which there is a "crossover of efficacy" in the parental dyad, according to a process such as that described for the contagion of stress in work-family conflict (e.g., Vahedi et al., 2019). Family interactions may be characterized in terms of family alliance (FA), which refers to the family's ability to coordinate to successfully complete a task, be it to play together, have a meal, or participate in a family activity (Fivaz-Depeursinge & Corboz-Warnery, 1999).

The aim of this study was to explore links between perinatal parental stress and FA after the birth of the child and to assess the extent to which the senses of efficacy of both parents interact to moderate this link.

METHOD

Participants

The participants were a sample of 65 dual-parent families. The study included two measurement points: between 36 and 38 weeks of pregnancy (T1) and 3 months postpartum (T2). The infants were 33 boys and 32 girls. At T1, fetus gestational age was M 37.2 weeks ($SD = 2.9$). At T2, children's M age was 3.7 months ($SD = 0.5$). At T1, mothers' M age was 33.8 years ($SD = 3.9$) and fathers' was 36.0 years ($SD = 5.7$). Most mothers had achieved a high school degree or more (83.1%), and 83.1% were employed prior to maternity leave. Among fathers, 81.5% had achieved a high school degree or more, and 92.3% were employed. 46.2% of the couples were married, and 53.8% were cohabitants.

Procedures

At T1, parents were recruited by a midwife at the maternity department of the Geneva University Hospital. At T2, families were received in the laboratory at the University of Geneva where they were invited to play while being filmed. Links were provided to parents at both measurement points to complete online questionnaires.

Questionnaires

Antenatal Perceived Stress Inventory (APSI) – at T1. Twelve items assess antenatal stress along a 5-point Likert scale: 1 (*not at all*), 2 (*a little*), 3 (*fairly*),

4 (*very*), and 5 (*extremely*). A total score is computed by summing the item scores ($\alpha = .82$ for mothers and $.87$ for fathers); the higher the score, the more stressed the parent (Razurel et al., 2013a).

PostNatal Perceived Stress Inventory (PNPSI) – at T2. Nineteen items assess postnatal stress along a 5-point Likert scale: 1 (*not at all*), 2 (*a little*), 3 (*moderately*), 4 (*very*), and 5 (*extremely*). A total score is computed by summing the item scores ($\alpha = .76$ for mothers and $.79$ for fathers); the higher the score, the more stressed the parent (Razurel et al., 2013b).

Being a Parent (BAP) – at T1. Six items assess efficacy along a 7-point Likert scale ranging from 1 (*completely disagree*) to 7 (*completely agree*); intermediate scores (2 to 6) have no label. An average score is computed ($\alpha = .80$ for mothers and $.75$ for fathers). The higher the score, the higher the sense of efficacy of the parent (Johnston & Mash, 1989).

Family Interactions – at T2

The Lausanne Trilogue Play (LTP). In this situation of observation parents to play with their infant by following a scenario in four parts of 2 min each. In the first part, one parent played with the infant, while the other parent was outside the room. In the second part, the parents switched roles. During the third part, the two parents played together with the infant. In the fourth part, parents had a discussion together with the infant next to them (Fivaz-Depeursinge & Corboz-Warnery, 1999).

Family Alliance Assessment Scales (FAAS). This instrument assesses FA in the LTP by direct observation. It consists of nine 3-point scales that assess triadic interactive behaviors, with scores ranging from 0 (*inappropriate*) to 1 (*partially appropriate*) to 2 (*appropriate*). A total score is computed by adding the scores on these scales ($\alpha = .87$). The higher the score, the higher the FA (Favez et al., 2011).

Coding Strategy. One senior coder coded all the videos; a second coder double coded 45% of the videos (29 of 65). The intraclass correlation coefficient (two-way random, absolute agreement) on the FAAS score was 0.81 (Koo & Li, 2016).

Plan of Analyses

Descriptive statistics were first computed. A moderation model was tested in a structural equation modeling (SEM) framework that allowed testing the direct link between parents' APSI and PNPSI scores as the independent variables (IVs) and the FAAS total score as the dependent variable (DV). Global interaction effects were tested by specifying that parents' BAP efficacy

scores moderated all the regression weights included in the model, that is the links between parents' APSI and PNPSI scores on the one hand and the FAAS total score on the other hand. Exogenous variables (APSI, PNPSI, and BAP efficacy scores) were mean-centered and eight new variables for the interaction terms were computed between the APSI and PNPSI scores of both parents on the one hand and BAP efficacy scores of both parents on the other hand. As the model tested was saturated (0 degrees of freedom and $\chi^2 = 0$), it was perfectly adjusted to the data.

The procedure established by Hayes (2013) was used to interpret the effect of each IV (i.e., stress variables) on the DV (i.e., FA), considering the combination of the effect of the two moderators. The strength of the effect of each IV on the DV was examined at low, medium, and high levels of the two moderators ($M - 1 SD$, M , and $M + 1 SD$, respectively).

Descriptive analyses were conducted using SPSS 27.0; SEM analyses were conducted in *Mplus* 8.3. Maximum likelihood with robust standard errors (MLR) estimator was used to estimate the SEM model.

RESULTS

Descriptive Analyses

Descriptive statistics and correlations between the study variables are provided in Table 1. Comparisons between mothers and fathers showed that there was no difference regarding prenatal stress, postnatal stress, and sense of efficacy (*t*-tests all nonsignificant). There was also no difference regarding these variables according to the child's gender.

The Moderation Model

The model explained a significant proportion of the variance of the FA scores ($R^2 = .462$, $p < .001$) (see Figure 1). Parameter estimates showed, first, that both maternal and paternal postnatal stress were linked to FA, such that higher stress predicted higher FA ($B = 0.187$, $SE = 0.089$, LL , $UL = -0.009$, 0.347 , $p = .035$ and $B = 0.181$, $SE = 0.081$, LL , $UL = 0.04$, 0.35 , p

Table 1. Descriptive statistics and correlations between study variables ($N = 65$).

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Antenatal stress mothers	25.26	8.01	–					
2. Antenatal stress fathers	26.09	8.40	.32**	–				
3. Postnatal stress mothers	38.86	8.40	.41***	.01	–			
4. Postnatal stress fathers	36.82	8.27	.32**	.26*	.23	–		
5. Efficacy mothers	4.69	0.68	.06	.01	–.47***	–.18	–	
6. Efficacy fathers	4.73	0.61	–.14	–.12	–.28*	–.42***	.19	–
7. Family alliance	12.30	3.81	.04	–.04	.19	.27*	.02	.00

* $p < .05$. ** $p < .01$. *** $p < .001$.

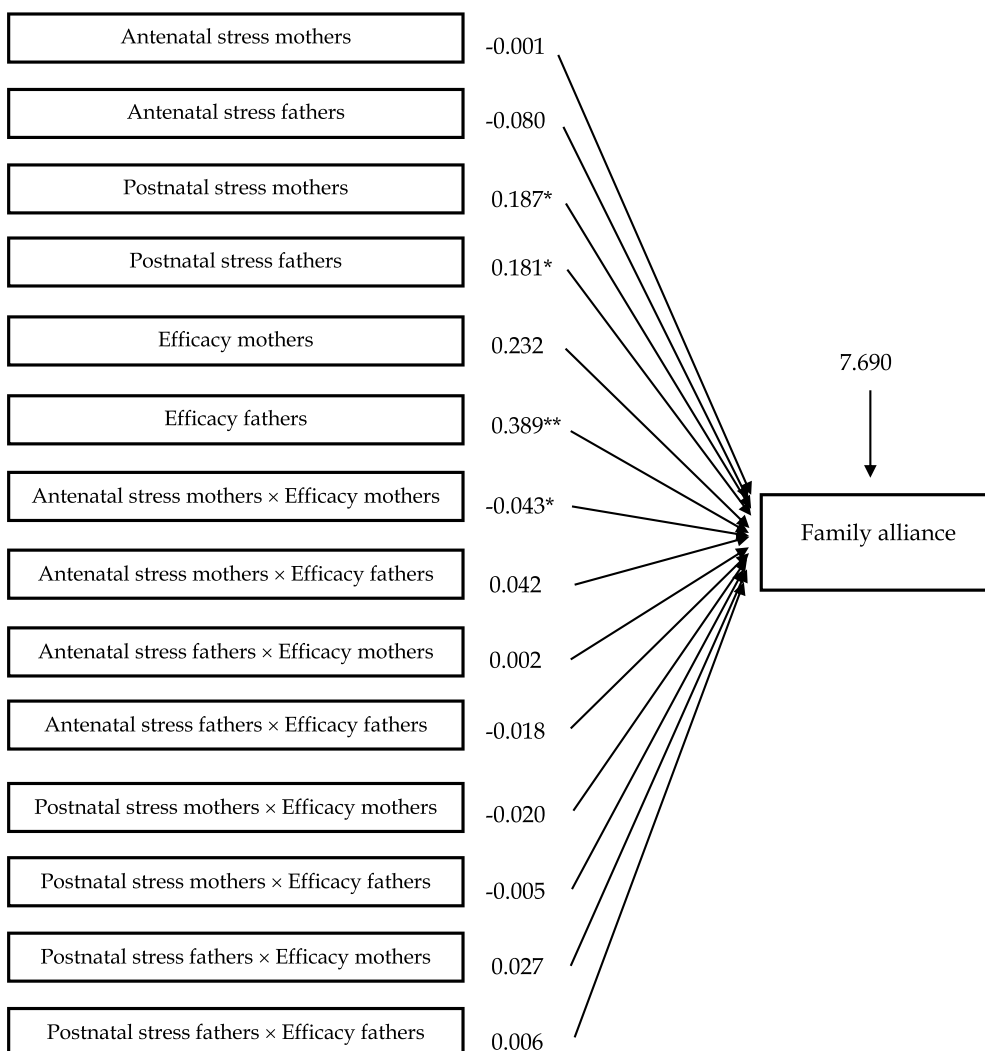


Figure 1. Moderation model. *Note.* The model includes the covariances between all variables; the arrows representing these links have not been drawn for the sake of readability. * $p < .05$. ** $p < .01$.

= .026, respectively), and, second, that among global interaction effects, one was significant: The product of maternal prenatal stress and maternal sense of efficacy was a negative predictor of FA ($B = -0.043$, $SE = 0.018$, LL , $UL = -0.08$, -0.01 , $p = .016$).

The results of the procedure that combined the effect of both moderators on the link between each IV and the DV highlighted several significant processes:

- (1) Higher maternal prenatal stress was predictive of lower alliance when maternal sense of efficacy was high and paternal sense of efficacy was low ($E = -.386$, $SE = .143$, $p = .007$) and medium ($E = -.209$, $SE = .094$, $p = .026$). Moreover, higher maternal stress was predictive of higher

- alliance when maternal sense of efficacy was low and paternal sense of efficacy was high ($E = .384$, $SE = .166$, $p = .021$).
- (2) Higher maternal postnatal stress was predictive of higher alliance when maternal sense of efficacy was low and paternal sense of efficacy was low ($E = .306$, $SE = .131$, $p = .019$) or medium ($E = .285$, $SE = .103$, $p = .006$), as well as when maternal sense of efficacy was medium and paternal sense of efficacy was medium ($E = .187$, $SE = .089$, $p = .035$).
 - (3) Higher paternal postnatal stress was linked with higher alliance when maternal sense of efficacy was medium and paternal sense of efficacy was medium ($E = .181$, $SE = .081$, $p = .026$) or high ($E = .204$, $SE = .090$, $p = .024$) as well as when maternal sense of efficacy was high and paternal sense of efficacy was medium ($E = .309$, $SE = .119$, $p = .010$) or high ($E = .332$, $SE = .142$, $p = .019$).

DISCUSSION

Our results show that parental stress has an impact on FA, but for postnatal stress only: The higher the stress in fathers and in mothers, the higher the FA. Higher parental stress may thus encourage collaboration and mutual support in coparental interaction (Crnic & Ross, 2017). Our results also highlight complex interplays between stress and efficacy, depending on the period (prenatal vs. postnatal) and which parent is considered. There are several crossed effects, in that efficacy in both parents interacts to moderate the links between the stress reported by one parent and FA.

Considering first maternal prenatal stress, its effect is negative on FA when maternal sense of efficacy is high and paternal sense of efficacy tends to be low, that is when mothers feel competent and the fathers tend to be insecure about their parenting. In times of stress, a high sense of efficacy in mothers may prevent them from relying on the support of fathers who have a low sense of efficacy, perhaps because they do not trust the father or perhaps because they judge the father as not efficient. The lack of trust in the father is then reflected in low cooperation when interacting with the father and the baby. From the gatekeeping model (Allen & Hawkins, 1999), this process may represent mothers “closing of the gate” to meet social expectations about her maternal role. However, maternal prenatal stress has a positive effect on FA when the imbalance in sense of efficacy is reversed, that is when her sense of efficacy is low and that of the father is high. When the mother feels insecure about her parenting and the father feels competent, she might “open the gate” and FA may be enhanced, as the father may be more engaged while the mother trusts him in his parental role. Similar effects are observed for postnatal stress.

In fathers, a moderation effect appears for postnatal stress only: Higher paternal stress is linked to a higher FA than when the sense of efficacy of the mother tends

to be high. Fathers will thus be more coordinated with the mother when mothers feel competent, which may reflect a pattern of “mothers as a factor of paternal resilience”; that is, the father may rely on the mother once the baby is born. Through the transition to parenthood, roles tend to be gendered in the couple, with the father progressively relying more and more on a confident mother (DeRose et al., 2019).

Several limitations of this exploratory study must be mentioned. First, we had no information on the number of children per family, and stress may be higher with more children. Second, our sample was homogeneous: most families were from upper-middle or upper classes and were heterosexual families living in a traditional arrangement. Our data are thus not generalizable to other types of families. Finally, we did not have the data to consider the contributions of the child to parental stress and efficacy; however, both may be influenced by child characteristics such as a difficult temperament.

IMPLICATIONS FOR PRACTICE

This study has shown the relevance of considering the interaction between the senses of self-efficacy of both parents as moderator factors for parenting stress. Assessing stress and efficacy in the mother alone may not be sufficient for clinicians to know how the family is coping with parental stress.

AFFILIATIONS AND ADDRESSES

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ARTICLE INFORMATION

Conflict of Interest Disclosures

Each author signed a form for disclosure of potential conflicts of interest. No authors reported any financial or other conflicts of interest in relation to the work described.

Ethical Principles

The study and its protocol were approved by the Ethical Committee of the State of Geneva, Switzerland (project number: 2018–00874). The authors affirm having followed professional ethical guidelines in preparing this work. These guidelines include obtaining informed consent from human participants, maintaining ethical treatment and respect for the rights of human participants, and ensuring the privacy of participants and their data, such as ensuring that

individual participants cannot be identified in reported results or from publicly available original or archival data.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author, NF, upon reasonable request.

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