

Regulation between Daily Exhaustion and Support in Parenting: A
Dyadic Perspective

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Abstract

The current paper serves a dual purpose: to highlight the overlooked and recent concept of parenting-related exhaustion and to propose a specific methodology to test concurrent variations of the parent's exhaustion with the partner's exhaustion and her or his perceived and given support. Questionnaire data were collected from 97 mother-father couples over the course of five consecutive days. Results from multi-level model analyses revealed day-to-day dyadic variations as well as day-to-day regulation occurring in parental couples. The dyadic variations were shown by the fact that over the week, on the days when one parent felt more exhausted, the other parent's exhaustion was also high. Dyadic regulation meant that greater exhaustion felt by one parent was associated with greater support from her or his or his partner. Partner's extra support was both perceived by the exhausted parent and reported by the support provider (i.e., the partner).

Keywords: parental burnout, parental stress, intensive longitudinal design, social support, couple

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Parenting is considered one of the most rewarding roles in adult life. Parenthood provides individuals with personal satisfaction as well as a sense of purpose and meaning in life. These feelings promote emotional and mental well-being (Menaghan, 1989; Sieber, 1974; Thoits, 1983). Yet parenting is not just about happiness and fulfillment. Adequately meeting the child's needs (Salonen et al., 2011) and one's own expectations about parenting (Mikolajczak, Raes, Avalosse, & Roskam, 2017) is also a challenge. Parenting has been shown to be a both complex and stressful activity (Abidin, 1990; Crnic & Low, 2002; Deater-Deckard, 2014). Parents may even suffer from exhaustion when stress related to parenting lasts too long and is not compensated by enough resources (Mikolajczak et al., 2017). In the range of resources, partner parental support (i.e., support that partners offer each other in the specific area of parenthood) is of particular importance (Parfitt & Ayers, 2014). The current study tested the variations between daily exhaustion and daily support in parenting, using an intra-individual, inter-individual and dyadic approach to the relations between the two variables.

Parenting-Related Exhaustion

Emotional exhaustion is the first and main symptom of the parental burnout syndrome (Mikolajczak, Gross, & Roskam, 2019; Roskam, Brianda, & Mikolajczak, 2018; Roskam, Raes, & Mikolajczak, 2017). Parenting-related exhaustion is defined as extreme fatigue related to the parental role. Parents feel that parenting requires too much involvement and energy and they feel tired when they get up in the morning and have to begin a new day with their family. Being a parent every day requires a great deal of effort and children represent an important source of stress.

Stress related to parenting can be defined as experience of discomfort that results from demands associated with the role of parenting (Hayes & Watson, 2013). Parenting stress can be either subjective (i.e., the intensity of stress perceived, felt and evaluated by the parent) or

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objective (i.e., the evaluation of stressful events experienced by the parent) (Leung, Skitmore, & Chan, 2007). Parenting-related exhaustion arises when parents undergo too much stress over an excessively long period with a lack of compensating resources. In other words, parenting-related exhaustion develops when parental resources are insufficient to meet parental demands (whatever they are) over a long period of time. Parenting-related exhaustion can thus be situated on a continuum between parenting stress and depression (Hakanen, Schaufeli, & Ahola, 2008; Mikolajczak & Roskam, 2018). A recent study highlighted that factors that could increase parenting stress and/or diminish parenting resources are numerous and can be categorized into five types: socio-demographic factors (e.g., having a higher number of children multiplies tasks and responsibilities and reduces the amount of time the parent can devote to personal leisure or to the couple), specific characteristics of the child (e.g., a child who has difficulty falling asleep increases parental demands and reduces the parent's leisure time or sleep hours), stable traits of the parent (e.g., perfectionism increases the difficulty for the parent of meeting her or his own expectations about parenting and reduces her or his willingness to seek support), and family functioning (e.g., lack of partner parental support increases the parent's workload and reduces the possibility of delegating certain tasks or responsibilities) (Mikolajczak et al., 2017).

Partner Parental Support

Resources to compensate for parenting stress are essential to prevent parenting-related exhaustion and to favor the parent's well-being and fulfillment in her or his role. Among common resources, partner parental support (i.e., the support that partners offer each other in the specific area of parenthood) (AUTHOR'S PUBLICATION) seems to be an important factor in maintaining a parent's equilibrium (Parfitt & Ayers, 2014; Séjourné, Vaslot, Beaumé, Goutaudier, & Chabrol, 2012). The importance of this support can be explained by the fact that it is an immediate resource in the sense that the partner is the person whose physical presence

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is likely to be the most frequent and close at hand within the family home. Partner parental support is also a subjectively important resource because of strong expectations about parenting within the couple's relationship (e.g., egalitarian sharing of parental tasks or similar parental involvement is expected in most contemporary families). A third reason why the partner's parental support is an important resource is that it is reciprocal in nature, as parents tend to function as a dyadic team (Galdiolo & Roskam, 2017), with each offering the other parental support as and when they experience parenting stress. Partner parental support can then be considered as either perceived or given. Perceived parental support is the support that the parent perceives from her or his partner while given parental support is the support that the partner reports giving to the other parent (AUTHOR'S PUBLICATION).

Partner parental support encompasses three dimensions (AUTHOR'S PUBLICATION). First, an emotional dimension defined as empathy, love and trust but also encouragement, active listening, reflection and comfort in the context of parenthood (Dale, Williams, & Bowyer, 2012). Second, the dimension of concrete support, consisting of assisting the other parent in problem-solving with concrete help and/or information (Cohen & Wills, 1985). Third, the dimension of role approval, consisting of affirming the other parent's parenting skills, respecting her or his contribution and supporting her or his authority and parenting decisions (Belsky, Woodworth, & Crnic, 1996).

Parenting-Related Exhaustion and Partner Parental Support

The literature about parenting-related exhaustion is recent and still sparse, and the relations between partner parental support and parenting-related exhaustion have not been yet investigated. A recent study of 2017 is the only one so far to address the links between parental burnout and couple variables (Mikolajczak et al., 2017). The authors highlighted a significant and negative association between parenting-related exhaustion and the level of marital satisfaction and the quality of the coparenting relationship. The lower the level of marital

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satisfaction and the quality of the coparenting relationship, the higher the level of parental burnout (Mikolajczak et al., 2017). More studies have tested the relations between parenting stress and partner support. For example, a positive association was found between dissatisfaction with partner support and perceived parenting stress in mothers during the postpartum period (Thorp, Krause, Cukrowicz, & Lynch, 2004). Other authors have shed light on a negative relation between emotional, appraisal and concrete support from the partner and parenting stress in mothers at one year postpartum (Sampson, Villarreal, & Padilla, 2015). A recent study reported greater parenting stress in mothers and fathers when partner support was low (Thullen & Bonsall, 2017). Apart these cross-sectional studies, a small number of studies have reported longitudinal associations between partner support and parenting stress. For example, a negative association was found between supportive coparenting, which is a form of support between partners, and paternal stress at child's birth and 12 months later (Bronte-Tinkew, Horowitz, & Carrano, 2010). Another study highlighted that fathers' cooperative coparenting was negatively related to parenting stress in mothers when the child was 1, 3 and 5 years old (Nomaguchi, Brown, & Leyman, 2017).

The Current Study

Previous research studying the association between parenting-related exhaustion and support in parenting has adopted an inter-individual and/or a cross-sectional approach. Less is known about the relations between these two variables at the intra-individual and dyadic levels. Moreover, very little research has taken into account the support exchanged by the two partners in the specific context of parenthood. Most often, partner support has been appraised as general couple or marital support. Actually, parents may need specific support related to parenthood, such as emotional support (the partner listens to the parent's emotions as a parent) or concrete support (the partner gives advice about parenthood to the parent), rather than general couple support of the kind considered in previous studies. For example, just

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because a woman receives couple support, she does not necessarily receive support in the specific area of parenting and the parent-child relationship. Support specific to parenthood may be necessary to sustain the parent's sense of self-fulfillment, and this sense of self-fulfillment may be essential for her or his psychological well-being.

The current study highlights the overlooked and recent concept of parenting-related exhaustion and proposes a specific methodology to test the concurrent variations of the parent's exhaustion with the partner's exhaustion and her or his perceived and given support. In other words, we investigated if the level of a parent's exhaustion is related to the level of her or his partner's exhaustion and support day by day. To do this, it was necessary (i) to estimate within-day variations, (ii) to disentangle intra- from inter-individual variations, and (iii) to consider couples by adding a dyadic level in the model. Based on the literature review, day-to-day variations and regulation between the two partners were hypothesized. In particular, on the days when the partner felt more exhausted, it was expected that the parent's exhaustion would also be high, because mothers and fathers have been found to exert an influence on each other and tend to function as a dyad (Galdiolo & Roskam, 2014; Paulson & Bazemore, 2010). Also, on the days when one parent felt more exhausted, it was expected that he/she would get higher parental support from her or his partner. For the inter-individual level, the change in a parent's exhaustion over five consecutive days was hypothesized to be related to the average level of her or his partner's exhaustion. Change in a parent's exhaustion was also expected to be related to the average level of partner parental support he/she got. Finally, at a dyadic level, we tested the effect of the couple's characteristics (i.e., number of children) on the rate of change in parenting-related exhaustion.

Method

Participants

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Ninety-seven heterosexual couples ($N = 194$) consisting of the biological mother and the biological father of a child aged between 10 and 36 months participated in the study. These parents came from a community sample in the XXX-speaking part of XXX. The data were collected between June 2017 and June 2018. The parents' mean age was 33.47 years ($SD = 4.82$), ranging from 21 to 49. The mean number of children per parent was 1.97 ($SD = 2.33$), ranging from 1 to 5. Ninety-four parents in the sample (48.45%) were married. The others ($n = 90$; 46.40%) lived with their partner without being married. Information about the marital status was missing for 10 parents (5.15%). In terms of educational level, 133 parents (72.3%) had a higher education qualification (university or other tertiary degree) and 51 (27.7%) had a secondary school diploma. The net monthly income of the couple to which each parent belonged was established: for 5 parents (2.7%) it was between €1 and €1500, for 31 (16.8%) it was between €1500 and €2500, for 84 (45.7%) it was between €2500 and €3500, for 50 (27.2%) it was between €3500 and €4500 and for 14 (7.6%) it was higher than €4500. One hundred and twenty-four parents (67.4%) worked full-time, 44 (24%) worked part-time, and 16 (8.7%) did not work (unemployment, work incapacity, parental leave or stay-at-home parent).

Procedure

Intensive Longitudinal Methods (ILMs) involve collecting repeated measurements from an individual over a short period of time. Other longitudinal methods collect data once a month or once a quarter, whereas ILMs collect data every hour or day during a shorter time frame. This method is particularly interesting for measuring individual states such as mood, which vary and fluctuate hugely compared to other factors like socio-economic status or personality (Henrie, Bodily, Manwaring, & Graham, 2015). Parenting-related exhaustion and support, like mood, are sensitive to daily variations. Consequently, ILMs appear useful for studying the intra-individual and inter-individual variations of daily exhaustion and support in parenting.

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The study was approved by the ethics committee of the XXX at the XXX in XXX. Couples were recruited with flyers and announcements posted on social networks, in nurseries and at childminders' premises. The parents took part in the study on a voluntary basis and they were compensated for their participation with a gift voucher worth €10. Participants who were willing to engage were invited to complete questionnaires online. Inclusion criteria were as follows: being at least 21 years old, having a child aged between 10 and 36 months, and living with a partner who was the biological parent of this child. The participants of the study were selected with the following question: "Please select the proposal that corresponds to your family situation: (a) I am in a romantic relationship and we are raising one or more children together (b) I am raising my child(ren) alone or (c) I am in a romantic relationship and we have no children". Only those who selected answer (a) were included in the study, so that blended families (i.e., families consisting of a couple and their children from the present and all previous relationships) were included but single parents were excluded.

Selected participants completed the survey on the Qualtrics platform over five successive evenings from Monday to Friday. Every day at 17.00, an email was sent to the participants with the URL of the survey and the following instructions: "Here is the URL of the survey we invite you to complete today. You should complete it by midnight." We did not ask the parents to report the exact time at which they completed the survey, but the timing of the email and the instructions given were designed to ensure completion in the evening. The Qualtrics platform allowed us to check that this was the case. The questionnaire was completed online with the forced choice option, ensuring a dataset without missing data. Mothers and fathers completed the same set of questionnaires, including parenting-related exhaustion and partner parental support. Participants were asked to complete the questionnaires separately. They also signed a written informed consent document in which they were informed about the intensive longitudinal design of the study. Mothers and fathers

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were assured that the data would remain confidential and that they were free to drop out at any moment without giving any reason.

Of the 97 mothers who agreed to participate in the study, 62 (63.9 %) returned the diary questionnaires fully completed from Monday to Friday, 17 (17.5%) fully completed the diary questionnaires four times, 10 (10.3%) fully completed them three times, 5 (5.2%) fully completed them twice and 3 (3.1%) fully completed them only once. Of the 97 fathers who agreed to participate in the study, 59 (60.8 %) returned the diary questionnaires fully completed from Monday to Friday, 17 (17.5%) fully completed the diary questionnaires four times, 9 (9.3%) fully completed them three times, 7 (7.2%) fully completed them twice and 5 (5.2%) fully completed them only once. The major reasons for not completing the diary questionnaires were that the parent did not have time or forgot to do so. Binary logistic regression analyses were performed to explore the predictors of missingness. Predictors of missingness (i.e., age, number of children, educational level, incomes, work arrangement, parenting-related exhaustion and partner parental support on Monday) were entered in logistic regressions with the dropout binary (i.e., complete vs. incomplete data over the five-day period) as the dependent variable. We found only one differential attrition effect among subgroups for fathers. The fathers who dropped out were more exhausted than those who completed the survey fully ($M_{\text{complete data}} = 5.15$; $M_{\text{incomplete data}} = 6.40$), $\beta(1) = 2.01$, $p < .05$. The pattern of missingness cannot be considered as at random, $\chi^2(12) = 21.19$, $p = .048$.

Materials

Parenting-related exhaustion was assessed with four items of the emotional exhaustion subscale of the Parental Burnout Inventory (Roskam, Raes, & Mikolajczak, 2017). The PBIⁱ is a 22-item questionnaire including three self-report scales: emotional distancing, emotional exhaustion, and personal accomplishment. To prevent the questionnaire from being too long,

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4 of the 8 items from the emotional exhaustion subscale most strongly related to the total PBI score and relevant for daily assessment purposes were selected. The respondent indicated the extent to which he/she had experienced each symptom of parenting-related exhaustion (e.g., “Today I felt emotionally drained by my parental role”) during the day using a 6-point frequency scale as follows: 1 (“not at all”), 2 (“once during the day”), 3 (“twice during the day”), 4 (“three times during the day”), 5 (“four times during the day”) or 6 (“more than four times during the day”). In the initial validation study, the PBI displayed strong psychometric properties with good fit measures in the confirmatory factor analysis (CFI = 0.95, RMSEA = 0.06) and a good coefficient alpha of .95 for the emotional exhaustion subscale (Roskam et al., 2017). Cronbach’s alphas in the sample were satisfactory, with average values of .84 (range .70-.90) for fathers and .89 (range .84-.95) for mothers on the between-person level.

Partner parental support was assessed with six items of the Partner Parental Support Questionnaire (AUTHOR’S PUBLICATION). The two versions of the PPSQ were used: the perceived support (i.e., the support that the parent perceives from her or his partner) and the given support (i.e., the support that the partner reports giving to the parent) versions. Thus the PPSQ is sensitive to the fact that one partner in the parental couple may give a lot of support but the other may not perceive it, and conversely that one partner may feel that he or she has received sufficient support even if the other partner has not given much support. The PPSQ is a 15-item questionnaire consisting of three 5-item scales: emotional support (“My partner comforts me as a parent” or “I comfort my partner as a mother/father”), concrete support (“My partner helps me solve the problems I encounter with our child” or “I help my partner to solve the problems she/he encounters with our child”), and role approval (“My partner says positive things about my way of being a parent” or “I say positive things to my partner about her/his way of being a parent”). On each day, the respondent indicated the extent to which he/she had supported her or his spouse during the day (i.e., given support) (e.g., “Today I

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comforted my partner as a parent”) and the extent to which her or his spouse had supported him/her during the day (i.e., perceived support) (e.g., “Today my partner comforted me as a parent”) using a 6-point frequency scale as follows: 1 (“at no time during the day”), 2 (“once during the day”), 3 (“twice during the day”), 4 (“three times during the day”), 5 (“four times during the day”) or 6 (“more than four times during the day”). To prevent the questionnaire from being too long, the 6 items most strongly related to the total score for PPSQ perceived and given support versions and relevant for daily assessment were selected (AUTHOR’S PUBLICATION). In the initial validation study, the PPSQ displayed strong psychometric properties, with good fit measures in the confirmatory factor analysis (CFI = 0.95, SRMR = 0.04 for the perceived support version; CFI = 0.91, SRMR = 0.06 for the given support version) and good coefficients alpha of .96 for the perceived support version and .95 for the given support version (AUTHOR’S PUBLICATION). For the perceived support version, Cronbach’s alphas in the sample were on average .86 (range .79-.95) for fathers and .90 (range .83-.93) for mothers on the between-person level. For the given support version, Cronbach’s alphas in the sample were on .88 (range .82-.93) for fathers and .91 (range .84-.95) for mothers on the between-person level.

Analysis Strategy

Prior to analyzing change in parenting-related exhaustion and partner parental support, several preliminary analyses were conducted. First, descriptive statistics were calculated concerning parenting-related exhaustion, perceived partner parental support and given partner parental support. Second, three sets of Pearson correlation coefficients and the corresponding confidence intervals were calculated to (1) examine the stability of parenting-related exhaustion and partner parental support over time among mothers and fathers separately, (2) examine the bivariate associations between the three constructs (i.e., parenting-related exhaustion, the parents’ perceived parental support from their partner, and the parental

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support the partner reported giving to the parent) among mothers and fathers separately, and (3) test the association between parenting-related exhaustion and perceived and given partner parental support between mothers and fathers.

The main analyses examined the association between parenting-related exhaustion and partner parental support over five consecutive days. These analyses were conducted using a multilevel modeling (MLM) framework with HLM 7 software (Raudenbush, Bryk, Cheong, Congdon Jr, & Toit, 2011). Our model included three levels of analysis: a couple level (level 3), an inter-individual level (level 2) and an intra-individual level (level 1), with parenting-related exhaustion slope as the outcome. Because attrition is common in longitudinal design, MLM estimates are based on all the available data at level 1 but without imputing data (McCartney, Bub, & Burchinal, 2006). HLM uses maximum likelihood estimation, which does not require the assumption of missingness completely at random (Little, 1988). This method was chosen because it allowed parents to be included who did not participate at each measurement point in the study.

MLM allows both time-varying and time-invariant predictors to be included in the models. As a result, we were able to predict changes in parenting-related exhaustion over the five days from changes in the partner's exhaustion, changes in perceived partner parental support, and changes in given partner parental support over the five days. We were also able to predict changes in parenting-related exhaustion over the five days from time-invariant predictors (e.g., gender, number of children). The time-varying predictors were added to the level 1 equation, and the time-invariant predictors to the level 2 and level 3 equations.

One recommended method for taking full account of the pure effect of change in time-varying predictors at level 1 (for example, the extent to which a parent's exhaustion is related to or predicted by a change in her or his partner's exhaustion) is to compute the average level

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of each time-varying predictor (i.e. over the five days in the current study), and to enter it at level 2. In this way, the interindividual variations of the time-varying predictors are controlled for (at level 2), and the results at level 1 can be interpreted as the pure effect of change (intra-individual variations) (Hoffman & Stawski, 2009). At level 1, the time-varying predictors were within-person-centered and were constrained to have fixed effects (Raudenbush & Bryk, 2002). Their average levels over the five days were calculated and added as time-invariant predictors of the slope coefficient at level 2. Note that the average levels of partner's exhaustion and parental support at level 2 were computed with the MEAN function in SPSS 23 (IBM, 2015), which returns the arithmetic mean of its arguments that have valid, nonmissing values, allowing us to work on all available data. Information at both levels 2 and 3 was thus completed for all the participants in our sample.

As well as the conditional model, the unconditional model where time is the only predictor was also computed in order to estimate the pseudo R^2 , the analog of the R-square change in OLS regression, allowing us to calculate the proportion of explained variance in the random effect by the predictors entered in the conditional model (Kwok et al., 2008). Pseudo R^2 provides an easy to use and understandable measure of effect size that was computed based on the following equations for τ_{00} and τ_{11} respectively:

$$Pseudo_R^2_{\tau_{00}} = \frac{\tau_{00_Unconditional} - \tau_{00_Conditional}}{\tau_{00_Unconditional}} \quad \text{and} \quad Pseudo_R^2_{\tau_{11}} = \frac{\tau_{11_Unconditional} - \tau_{11_Conditional}}{\tau_{11_Unconditional}},$$

where $\tau_{00_Unconditional}$ and $\tau_{11_Unconditional}$ are the variances of the random effects for the model without the predictors, whereas $\tau_{00_Conditional}$ and $\tau_{11_Conditional}$ are the variances of the random effects for the model with the predictors.

In order to ensure comparability between the variables entered in the model and the readability of the MLM coefficients, proportion of maximum score (POM) was applied (Little, 2013). This method consists of dividing individuals' scores on each day by the

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maximum score. Given the widely different distributions of the variables (see Table 1), we used the observed maximum score rather than the total possible maximum score as the denominator (Velásquez, 2010). For example, parental exhaustion at time 1 (i.e., Monday) had an observed maximum score of 18 for fathers. Fathers' Monday exhaustion scores were divided by 18, and finally multiplied by 100 for interpretability so that all POM scores had the same range (0-100). MLM coefficients could then be understood as follows: "when a predictor increases by one percent, the dependent variable increases by X percent".

Results

Preliminary Analyses

The mean, standard deviation, and range for all variables are presented in Table 1.

Table 2 displays the correlation coefficients for the stability over time of the repeated measures for mothers and fathers separately over the five days. As expected, the stability of the constructs was mainly higher between consecutive days and lower between more distal ones.

The average levels of mothers' and fathers' exhaustion over the five days were positively associated with the average levels of perceived partner support ($r = .36$ and $r = .29$ respectively). The correlation coefficients examining the daily associations between the three constructs, namely parenting-related exhaustion, perceived partner parental support (i.e., support perceived by the parent) and given partner parental support (i.e., support the partner reported giving to the parent), are presented in Table 3 separately for mothers and fathers.

A last set of correlations was computed to examine the bivariate associations between the mothers' and fathers' scores in the main constructs. Mothers' and fathers' mean levels of parenting-related exhaustion over the five days were positively associated ($r = .36$). The mean levels of perceived support reported by mothers and fathers over the five days were also

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positively associated ($r = .29$), as were the mean levels of support that mothers and fathers reported giving to their partner over the five days ($r = .36$). Interestingly, from a cross-informant perspective, the level of support that the mothers perceived from their partner (i.e., the father) was positively associated with the level of support that the partners (i.e., the fathers) reported giving to the mothers ($r = .36$), and the level of support that the fathers perceived from their partner (i.e., the mothers) was also positively associated with the level of support that the partners (i.e., the mothers) reported giving to the fathers ($r = .34$). These two last correlations suggest that the two informants agree to some extent about the level of support which is provided, but at the same time, they leave room for discrepancies in the way that the level of support is evaluated. One partner in the parental couple may give a lot of support that the other does not fully perceive, or conversely may feel that he or she has received enough support even if the other partner has given little support.

Insert Tables 1, 2, & 3 about here

Main Analysis

Table 4 depicts the results of the unconditional model where time is the only predictor. Negative slope (i.e. association with linear time) shows that parent's exhaustion decreased by .65 units (i.e. .65%) per day. Table 4 also depicts the conditional models of parenting-related exhaustion as a dependent variable, with partner's exhaustion, perceived (i.e., the support that the parent perceives from her or his partner) and given support (i.e., the support that the partner reports giving to the parent) as independent variables. The results at level 1 indicated that changes in the partner's exhaustion, as well as in perceived partner parental support and in given partner parental support, were related to changes in the parent's parenting-related exhaustion (i.e. the strength of the linear association between time and exhaustion). For every unit (i.e., percentage) increase in the partner's exhaustion over a day, there was an increase of .21 units in the parent's exhaustion within the same day. For every unit (i.e., percentage) increase in

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perceived partner parental support over a day, there was an increase of .18 units in parenting-related exhaustion within the same day, and for every unit (i.e., percentage) increase in given partner parental support over a day, there was an increase of .15 units in parenting-related exhaustion within the same day. In other words, day by day, the more the parent perceived the receipt of support from the partner and the more the partner reported giving him/her more support, the more the parent reported exhaustion.

The results for the level 2 predictors showed that the average level of perceived partner parental support was related to changes in parenting-related exhaustion. In other words, the more one parent perceived the receipt of parental support from the other parent, the greater the exhaustion he/she reported. No significant effect was found for the other parent's average level of exhaustion and the average level of given partner parental support. Moreover, no gender effect was observed, meaning that intra-individual change in parenting-related exhaustion did not differ between mothers and fathers. Finally, the results for the level 3 predictors showed no significant effect of the number of children.

Pseudo R^2 for τ_{00} indicated that the predictors introduced in the conditional model explained 73% of the variations in the parenting-related exhaustion score across the 97 parents at the first time point (i.e., on Monday). Pseudo R^2 for τ_{11} also indicated that the predictors introduced in the conditional model explained 58% of the variations in the daily changes in parenting-related exhaustion score across the parents.

Insert Table 4 about here

Discussion

The current study served a dual purpose: to highlight the overlooked and recent concept of parenting-related exhaustion and to propose a specific methodology using an

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intensive longitudinal method. We wanted to study the concurrent variations of the parent's exhaustion with the partner's exhaustion, perceived and given support. In other words, we wanted to know if day by day, the level of the parent's exhaustion is related to the level of her or his partner's exhaustion and support. The results shed light on the fact that mothers and fathers work as a team rather than as independent individuals. They revealed day-to-day (i.e. within days) variations as well as day-to-day (i.e. within days) regulation occurring in parental couples.

Dyadic Day-To-Day Variations

With regard to the dyadic variations in parenting-related exhaustion, we accumulated several pieces of evidence. First, in line with the expectations arising from the literature review, at an intra-individual level, concurrent variations between the two parents were found. On the days when one parent felt more exhausted, the other parent's exhaustion also increased. Since the parents tend to follow the same developmental trajectory, our findings provide evidence that there is daily tuning between the mother and the father. The way that the two partners covary is in line with previous research reporting a positive association between fathers' and mothers' depressive symptoms (AUTHOR'S PUBLICATION). Other authors have shed light on the fact that couples experience similar levels of parenting stress (Seah & Morawska, 2016).

However, at an inter-individual level, change in a parent's exhaustion over five consecutive days was not related to the average level of the other parent's exhaustion. This result confirms the importance of the daily tuning between the mother and the father. Hence it emphasizes that what explains intra-individual change in a parent's exhaustion is not whether the other parent is on average more or less exhausted (compared to other parents in the sample), but the day-by-day variations that he/she displays around her or his own mean level of exhaustion. On a daily basis, when a parent has a higher level of exhaustion than usual, the

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other one must adapt quickly, manage daily life and support her or his partner. Such requirements may lead to an increase in the other parent's exhaustion symptoms. Conversely, living with a partner who is on average more exhausted than other parents (which reflects her or his usual state) does not necessarily require high flexibility. As suggested in previous longitudinal studies (e.g. Deater-Deckard & Scarr, 1996; Hildingsson & Thomas, 2014), daily routines in the parental couple are at work that limit the dyadic contagion of exhaustion.

Dyadic Day-To-Day Regulation

In line with the expectation set out at the end of the literature review, dyadic regulation whereby higher support was associated with higher exhaustion was found especially at an intra-individual level, and to some extent at an inter-individual level. On the days when a parent perceived the receipt of higher parental support from the other parent and the other parent also reported having given him/her higher parental support, the parent reported higher exhaustion. Similarly, at an inter-individual level, the more one parent perceived the receipt of higher parental support from the other parent, the more he/she reported exhaustion feelings. Taken together, the two analytic levels suggest a dyadic regulation whereby higher support from one parent tends to compensate for higher exhaustion in the other parent. Each parent seems to be attentive to the other's variations in exhaustion and tries to immediately restore the balance by providing emotional, instrumental or role approval support. Rather than talking about a mother and a father, we should really talk about the parental team facing parental tasks and day-by-day challenges together.

However, at the inter-individual level of analysis, we also found that change in parenting-related exhaustion was not related to the mean level of given partner parental support. This result may be considered paradoxical. However, it may illustrate the fact that, again, what is essential is the day-by-day variations in each partner's given support. The result suggests that there is a daily regulation within the couple and, every day, each partner adapts

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the amount of support he or she gives depending on the other partner's state of exhaustion. Consequently, giving a higher or lower average level of support (compared to the mean level that other parents in the sample give) does not relate to the intra-individual change in the other parent's exhaustion. What really explains daily increases in parenting-related exhaustion in one parent is the level of support that the other parent gives on that day.

The congruence found in particular at the intra-individual level in cross-informant ratings of partner parental support (i.e., between a parent's perception of parental support (self-report) and what the other parent reported having given as parental support (partner-report)), provides good evidence of daily dyadic regulation. The results found for the relations between exhaustion and support cannot be attributed to shared method variance. Cross-informant ratings offer additional insight into dyadic regulation, since the correlations between perceived (self-report) and given support (partner-report) suggest that to some extent, the support that parents provide each other is adequate. What one parent reports having given to the other one is in fact perceived as emotional, instrumental and role approval support by the other parent.

In sum, it was already established for both parenting stress and parental burnout that parents report lower stress if they receive/perceive higher support from their partner. Thanks to the dyadic daily approach used in the current study, we were able to show that a day-by-day dyadic regulation occurred in parental couples. Higher exhaustion felt by one parent was associated with higher support from the partner. Such higher support was both perceived by the exhausted parent and reported by the support provider (i.e., the partner).

Couple's Characteristics: Number of Children

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Our results show no significant effect of the couple's characteristics (i.e., number of children) on the rate of change in parenting-related exhaustion. Change in parenting-related exhaustion was found to be the same regardless of the number of children. This result seems to be in contradiction with previous literature, in which significant differences between parents of a single child and parents of several children have been found. For example, previous studies have shown that primiparous parents (i.e., first-time parents) have higher levels of parenting stress than multiparous parents (i.e., those with more than one child) (Donate-Bartfield & Passman, 1985). This contradiction can be explained by the fact that the children in our study were aged between 10 and 36 months old. The parents had thus had plenty of time to adapt and make the necessary changes in response to the arrival of a new child. Most previous studies have focused on primiparous parents during the period of transition to parenthood until a few months after the child's birth. Consequently, it may be that after the adjustment period necessary for parents to cope with the arrival of a new child, the differences between primiparous and multiparous couples disappear.

Practical Implications

Our results have practical implications. Professional caregivers should pay particular attention to the bidirectional exchange of support between the parents and the interrelation of their parenting-related exhaustion. Fathers should also be a target for prevention and intervention for parenting-related exhaustion rather than focusing exclusively on the mother-child dyad. As pointed out in a previous study, fathers need to be supported and not just viewed as a source of support for mothers (AUTHOR'S PUBLICATION). Early parenting interventions will need to normalize the ambiguity, frustration, and exhaustion experienced by fathers and to build on their motivation to be a good parent while they cope with the adjustment in their relationship with their partner (Seah & Morawska, 2016). The interrelation of parenting-related exhaustion between the two parents highlights the need for and value of

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therapy for couples for the treatment of exhaustion symptoms. As shown in a recent meta-analysis, couple-based interventions are as effective as individual-based treatments, but have a more significant positive effect on the quality of the relationship and the family life as a whole (Barbato & D'Avanzo, 2008).

Limitations and Recommendations for Future Studies

While interesting in many ways, this study is by no means definitive. Several limitations have to be recognized. First, the sample in the current study was homogenous. The majority of participants were Caucasian, with a high level of education and a high socio-economic status. Homogeneity is a strength in the current study given its sample size, but it limits our ability to generalize the results. Furthermore, the participants in the study were from a community sample and, in addition, the fathers who dropped out were more exhausted than those who completed the survey fully. Consequently, the current data and results could be biased towards lower levels of exhaustion. Replicating the the results in a clinical sample with severely exhausted parents would be interesting.

Also, although an intensive longitudinal method was used, the research design did not permit direct inferences of causation. We cannot be excluded that the same pattern would occur if the position of the variables was reversed. To test the causal direction between parenting-related exhaustion and partner parental support, another design in which support was manipulated to test its influence on subsequent exhaustion would be needed. It is also possible that the frequency of assessments triggered some measurement reactivity in behavioral self-reports. Moreover, the intensive procedure made it necessary to limit the number of items to be completed at each measurement occasion. The possibility cannot be excluded that the results might have been different if the questionnaires had been administered in their entirety. Another limitation of the study is the absence of data on time

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spent at work and time spent at home with children. Introducing the time spent variable as a control variable within the multi-level model, would be interesting.

Finally, we tested the assumption that missing data were completely at random and found a p-value of .048, just below the threshold point. We also computed significance tests of missingness showing that it was only predicted by fathers' exhaustion. Based on these tests, we could neither fully assert that missing data were completely at random (if MCAR was evident, missingness would be assumed not to matter for the analysis) nor that missingness could be well predicted from observed variables (it was only associated to one independent variable, i.e. fathers' exhaustion) and that multiple imputation (MI) would be appropriate. For these reasons, we used an estimation procedure in HLM that did not require missingness completely at random but allow the inclusion of parents who did not participate at each measurement point in the study. We trust it was a relevant way to handle missing data and to test our hypotheses. But we cannot exclude that the results would have been different with another analysis strategy.

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Table 1

Descriptive statistics

Variables	Mothers			Fathers		
	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
Parenting Exhaustion at T1	6.00	2.67	4.00 to 16.00	5.15	2.77	4.00 to 18.00
Parenting Exhaustion at T2	5.71	2.40	4.00 to 15.00	4.72	1.51	4.00 to 14.00
Parenting Exhaustion at T3	5.87	3.09	4.00 to 20.00	4.98	2.44	4.00 to 18.00
Parenting Exhaustion at T4	5.56	2.70	4.00 to 20.00	4.94	1.78	4.00 to 12.00
Parenting Exhaustion at T5	6.85	4.44	4.00 to 24.00	5.22	3.02	4.00 to 24.00
Perceived Partner Parental Support at T1	12.51	5.73	6.00 to 32.00	10.61	4.66	6.00 to 26.00
Perceived Partner Parental Support at T2	10.40	5.53	6.00 to 36.00	9.67	5.53	6.00 to 36.00
Perceived Partner Parental Support at T3	9.85	5.83	6.00 to 36.00	9.05	3.92	6.00 to 28.00
Perceived Partner Parental Support at T4	9.11	4.77	6.00 to 36.00	8.74	4.04	6.00 to 29.00
Perceived Partner Parental Support at T5	9.96	6.08	6.00 to 36.00	9.74	5.57	6.00 to 35.00
Given Partner Parental Support at T1	10.81	5.03	6.00 to 31.00	10.25	4.62	6.00 to 34.00
Given Partner Parental Support at T2	10.03	6.03	6.00 to 36.00	9.01	3.46	6.00 to 20.00
Given Partner Parental Support at T3	9.59	6.11	6.00 to 36.00	8.93	3.17	6.00 to 19.00
Given Partner Parental Support at T4	8.90	4.78	6.00 to 36.00	8.67	4.43	6.00 to 32.00
Given Partner Parental Support at T5	10.04	6.65	6.00 to 36.00	9.20	4.83	6.00 to 36.00

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Table 2

Correlation coefficients for the stability of parenting exhaustion, perceived parental support and given parental support over time

	Parenting Exhaustion					Perceived Partner Parental Support					Given Partner Parental Support				
	T1	T2	T3	T4	T5	T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
T1	-	.19 (-.01 to .41)	.24* (.02 to .46)	.15 (-.08 to .39)	.30* (.06 to .53)	-	.66** (.51 to .82)	.53** (.36 to .73)	.51** (.33 to .74)	.48** (.28 to .73)	-	.62** (.45 to .79)	.60** (.44 to .79)	.53** (.35 to .76)	.45** (.25 to .71)
T2	.51** (.33 to .71)	-	.09 (-.12 to .31)	.12 (-.11 to .36)	.07 (-.18 to .33)	.52** (.34 to .70)	-	.81** (.69 to .95)	.68** (.53 to .89)	.60** (.44 to .87)	.53** (.36 to .73)	-	.88** (.79 to .99)	.81** (.71 to .99)	.69** (.55 to .95)
T3	.31** (.09 to .51)	.23* (.01 to .43)	-	.41** (.20 to .63)	.36** (.13 to .57)	.22 (.33 to .69)	.79** (.66 to .93)	-	.78** (.66 to .96)	.67** (.52 to .92)	.55** (.37 to .76)	.71** (.54 to .85)	-	.83** (.73 to .99)	.73** (.61 to .97)
T4	.22 (-.01 to .51)	.08 (-.21 to .41)	.27* (.04 to .48)	-	.41** (.16 to .55)	.22 (-.006 to .44)	.32** (.09 to .57)	.47** (.26 to .69)	-	.65** (.46 to .86)	.24* (.01 to .47)	.37** (.14 to .56)	.63** (.40 to .73)	-	.66** (.49 to .88)
T5	.06 (-.21 to .36)	.06 (-.23 to .39)	.03 (-.20 to .26)	.51** (.28 to .71)	-	.20 (-.04 to .45)	.24* (.004 to .52)	.29* (.05 to .55)	.27* (.02 to .53)	-	.30* (.06 to .55)	.24* (.003 to .48)	.26* (.02 to .50)	.18 (-.07 to .45)	-

Note. Coefficients above the diagonal are for mothers; coefficients below the diagonal are for fathers. * $p < .05$. ** $p < .01$. 95% confidence intervals are in parentheses.

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Table 3

Pearson correlation coefficients examining bivariate associations between parenting exhaustion, the parents' perceived parental support from their partner, and the parental support the partner reported giving to the parent, among mothers and fathers separately

	Mothers					Fathers				
	EX T1	EX T2	EX T3	EX T4	EX T5	EX T1	EX T2	EX T3	EX T4	EX T5
PS T1	.07 (-.13 to .27)	.03 (-.18 to .24)	.12 (-.09 to .33)	.13 (-.09 to .34)	.27* (.03 to .48)	.14 (-.06 to .34)	-.006 (-.21 to .20)	.05 (-.18 to .28)	.07 (-.16 to .32)	.03 (-.22 to .28)
PS T2	.04 (-.16 to .26)	.11 (-.09 to .32)	.15 (-.06 to .37)	.20 (-.02 to .41)	.25* (.007 to .44)	.17 (-.04 to .38)	.30** (.10 to .50)	.04 (-.17 to .27)	.01 (-.22 to .23)	.01 (-.22 to .25)
PS T3	-.01 (-.23 to .21)	-.02 (-.23 to .20)	.24* (.03 to .44)	.29** (.07 to .50)	.20 (-.03 to .41)	.08 (-.14 to .30)	.19 (-.02 to .43)	.06 (-.16 to .27)	-.01 (-.24 to .22)	-.001 (-.24 to .23)
PS T4	.21 (-.02 to .45)	.07 (-.16 to .31)	.40** (.17 to .57)	.44** (.23 to .65)	.38** (.14 to .58)	.01 (-.19 to .22)	.12 (-.09 to .27)	-.03 (-.27 to .21)	.21 (-.01 to .44)	-.01 (-.26 to .23)
PS T5	.09 (-.14 to .33)	.05 (-.20 to .30)	.30* (.06 to .52)	.39** (.14 to .54)	.61** (.42 to .80)	-.12 (-.32 to .10)	-.06 (-.24 to .15)	-.09 (-.36 to .16)	.27* (.02 to .53)	.51** (.30 to .72)
GS T1	.12 (-.08 to .32)	.10 (-.10 to .31)	.15 (-.06 to .35)	.02 (-.21 to .26)	-.01 (-.25 to .22)	.02 (-.19 to .22)	.07 (-.14 to .28)	-.04 (-.26 to .17)	.04 (-.18 to .26)	.08 (-.15 to .31)
GS T2	.08 (-.10 to .32)	.12 (-.08 to .33)	.21 (.02 to .44)	.12 (-.11 to .35)	.03 (-.21 to .27)	-.07 (-.29 to .13)	.03 (-.18 to .24)	-.08 (-.30 to .13)	-.01 (-.24 to .21)	.02 (-.20 to .25)
GS T3	.17 (-.13 to .31)	.10 (-.09 to .34)	.26* (.10 to .51)	.09 (-.15 to .34)	.08 (-.16 to .33)	-.05 (-.27 to .17)	.001 (-.22 to .22)	.004 (-.21 to .22)	.04 (-.18 to .26)	.003 (-.22 to .23)
GS T4	.19 (-.11 to .36)	.09 (-.15 to .33)	.08 (-.15 to .31)	-.13 (-.32 to .09)	-.14 (-.37 to .11)	-.002 (-.23 to .22)	.09 (-.12 to .28)	-.04 (-.28 to .19)	.05 (-.17 to .29)	.02 (-.22 to .27)
GS T5	-.01 (-.20 to .28)	-.08 (-.18 to .33)	.02 (-.25 to .29)	-.03 (-.26 to .20)	.37** (.13 to .61)	-.07 (-.28 to .15)	.01 (-.18 to .19)	-.09 (-.35 to .16)	.21 (-.04 to .47)	.48** (.25 to .70)

Note. * $p < .05$. ** $p < .01$. EX = Exhaustion; PS = Perceived Support (support perceived by the parent); GS = Given Support (support the partner reported giving to the parent). 95% confidence intervals are in parentheses.

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Table 4

Results of the HLM unconditional and conditional models of the partner's exhaustion, partner support, gender and number of children predicting change in the parent's exhaustion

	Unconditional Model		Conditional Model	
	Estimate	SE	Estimate	SE
Fixed effects				
Intercept	23.03**	1.43	22.26**	1.29
Time	-.65	.42	-.65	.42
Level 1				
Partner's exhaustion (slope)			.21**	.04
Perceived partner parental support (slope)			.17**	.05
Given partner parental support (slope)			.15*	.06
Level 2				
Gender			2.81	4.09
Partner's exhaustion (mean)			.02	0.1
Perceived partner parental support (mean)			.04*	.02
Given partner parental support (mean)			-.01	.01
Level 3				
Number of children			0.35	.19
Random effects (variance components)				
τ_{00}	60.77		16.45	
τ_{01}	4.61		1.92	
σ^2	54.42		46.47	
u_{00}	65.72		80.49	
u_{10}	5.12		3.83	
Deviance	2967.36		2889.24	

Note. * $p < .05$. ** $p < .001$.