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What happens to the couple relationship when sharing parental leave? A prospective, longitudinal study

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INTRODUCTION

Family relationships are partly influenced by contextual features of the social environment, such as social policy systems and the extent of paid parental leave (Koslowski, Blum, Dobrotić, Macht & Moss, 2019). The mutual transactions between external factors and internal processes in family life are likely to affect the quality of the couple relationship, as emphasized in Bronfenbrenner's (2001) bioecological model of human development. This theoretical framework describes how family processes are influenced by environmental events and that transitions occur throughout the life span and serve as trajectories for developmental change (Bronfenbrenner, 2001). The model addresses multiple factors that can facilitate the understanding of how parents' decisions on parental leave influences both parents' involvement in caregiving through reciprocal transactions between the societal and the individual levels, which might affect parents' interaction and their relationship as a couple.

The present study examines parents' perceived couple relationship quality and how it is influenced by division of parental leave, in a sample of 280 Swedish parents who filled out questionnaires at 6 and 18 months after their child was born. We also examined whether parenting stress or coparenting quality had any bearing on the association between division of parental leave and couple relationship quality. The study contributes new knowledge on how parents of young children perceive their couple relationship in the context of equal division of parental leave, building on our previous studies in which other outcomes were measured.

Parental leave in Sweden

Sweden has a history of implemented welfare reforms to promote gender equality (Oláh & Bernhardt, 2008) and is highly ranked internationally in terms of gender equality (World Economic Forum, 2020). Parental leave rights for both mothers and fathers are regulated in the gender-neutral Parental Leave Act (SFS, 1995), and fathers have been afforded the same rights as mothers

since 1974. Government policy encourages parents to share their parental leave equally, and the parental leave system is designed to stimulate a dual-earner model (Haas & Hwang, 2012). Fathers' total use of benefit days has slowly grown since the introduction of the gender-neutral parental leave system in 1974, and today accounts for approximately 29% of the 480 benefit days afforded the couple for each child (Försäkringskassan, 2019). After a third so called "daddy month" was introduced in 2016, 90 days are today reserved for each parent, and most fathers, 88%, take some parental leave during their child's first seven years, generally starting 13 to 15 months after childbirth (Duvander & Löfgren, 2019). Still, the proportion of parents who divide parental benefit days equally (each parent taking at least 40% of the leave) remains a low 18% (Försäkringskassan, 2019). This study was conducted between 2011 and 2013, before the third daddy month was added. During the study time period, each parent received 60 days, respectively, while the remaining days could be split however the parents wanted.

Parenthood and the couple relationship

The transition to parenthood is a major life event and its effects on the couple relationship are well established. However, the direction of the association is not always consistent. Several studies (Bäckström, Kåreholt, Thorstensson, Golsäter & Mårtensson, 2018; Canário & Figueiredo, 2016; Doss, Rhoades, Stanley & Markman, 2009; Lawrence, Rothman, Cobb, Rothman & Bradbury, 2008; Ngai & Ngu, 2016; Shapiro, Gottman & Carrère, 2000), as well as two meta-analyses (Mitnick, Heyman & Smith Slep, 2009; Twenge, Campbell & Foster, 2003), have shown significantly lower relationship satisfaction after the transition to parenthood, while the opposite, that is, higher relationship satisfaction, also has been shown (Kluwer, 2010). Potential reasons for a lower relationship quality include role conflict and restriction of freedom after the birth of a child (Oláh, Kotowska & Richter, 2018; Twenge et al., 2003), less positive spousal interaction (Houts, Barnett-Walker, Paley & Cox, 2008;

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Kluwer & Johnson, 2007), and the demanding task of combining childcare, household work, and paid work (Kushner, Sopcak, Breitkreuz et al., 2017; Yarwood & Locke, 2016). Experiencing early parenthood as stressful with insufficient communication between partners (Deave, Johnson & Ingram, 2008; Hansson & Ahlborg, 2016; Trillingsgaard, Baucom & Heyman, 2014), or suffering from sleep disruption as new parents (Medina, Lederhos & Lillis, 2009; Nelson, Kushlev & Lyubomirsky, 2014), also might contribute to lower quality of the couple relationship.

Once the transition to parenthood is established, the dynamics in family processes may reflect changes in the couple relationship, as parental roles evolve with influence from ideals, values, norms, and contextual factors on the societal level (Bronfenbrenner, 2001). As the infant grows into toddlerhood, and primary caregiving often shifts from one parent to another when one or both parents return to working life, this time period generally involves the establishment of a new identity as a parent. The new situation often puts considerable strain on the couple relationship, and this time period may be crucial for the couple relationship. There is a paucity of research on how the couple relationship evolves in early parenthood, that is, during the child's first year or two, in relation to different family social policy contexts.

Parenting stress

Childbirth and parenthood can produce cumulative effects of stress on parents (Younger, 1991). Although parenthood can be joyful, parental roles may also be associated with conflicting demands and multiple stressors (Deave et al., 2008; Nelson et al., 2014). Parenting stress can follow from a perceived discrepancy between specific demands associated with parenthood and the parent's personal resources (Östberg, 1999). Parental roles associated with recurring struggles and parenting stress may in itself have consequences for the dyadic interactions in early parent-child relationships (Östberg, Hagekull & Hagelin, 2007), and has been shown to be related to parental bonding, and child executive functioning, in both mothers and fathers (de Cook et al., 2017). Both parents' levels of parenting stress have been linked to the couple relationship quality (Durtschi, Soloski & Kimmes, 2017; Nelson et al., 2014). According to Durtschi et al. (2017), fathers' parenting stress might influence the couples' relationship quality to a greater degree than mothers' parenting stress. The findings suggest that dyadic interactions between parents have synergistic effects on the partners' parenting stress, whereby when parenting stress is high in one partner, the other parent is less affected by the partners' stress. However, high levels of parenting stress may contribute to an increased risk of couple dissolution (Kerstis et al., 2014; Widarsson, Nohlert, Öhrvik & Kerstis, 2019).

Coparenting

New parents establish their joint parenting relationship and negotiate parenting roles within a coparenting relationship that is distinct from, though related to, their couple relationship. Coparenting dynamics reflect to which extent parents support their partner's actions and decisions, as they form a coparenting team (Feinberg, 2003). Coparenting has been referred to as the

collaboration between parents, how they trust each other, and how they share parental responsibilities (Feinberg, 2003).

Parents' relational functioning as a couple seems to influence their joint parenthood, and evidence of longitudinal associations between relationship quality and coparenting functioning across the transition to parenthood has been found for both mothers and fathers (Christopher, Umemura, Mann, Jacobvitz & Hazen, 2015; Le, McDaniel, Leavitt & Feinberg, 2016). For mothers, the influence seems reciprocal, from coparenting functioning back to couple relationship quality, indicating that mothers are likely to perceive their partner's engagement and support in parenting as associated with the quality of their couple relationship (Durtschi et al., 2017; Le et al., 2016; McClain & Brown, 2017). However, a recent study also found fathers' perceptions of maternal support in their parenting (in terms of maternal gatekeeping) related to fathers' couple relationship quality (Olsavsky, Yan, Schoppe-Sullivan & Kamp Dush, 2019). Consistent with these bidirectional associations, both parents' perceived supportive coparenting quality as new parents has been shown to predict the quality of their own relationship after two years (Durtschi et al., 2017).

Mothers' support of their partner's actions and decisions during coparenting has been linked to increased father involvement (Murphy, Gallegos, Jacobvitz & Hazen, 2017). Father involvement in their child's care seems to influence coparenting quality (Jia, Schoppe-Sullivan & Eccles, 2011), and parental disagreement about the maternal role may be a source of conflict in the triadic mother-father-infant interaction (Favez, Tissot, Frascarolo, Stiefel & Despland, 2016). Fathers' involvement in the care of their child may not only be positive; it also might trigger parental friction, often referred to as "maternal gatekeeping" (Schoppe-Sullivan et al., 2008). Maternal gatekeeping can either encourage or discourage fathers' parenting engagement, affecting their share of parenting and degree of coparenting (Puhlman & Pasley, 2013). Fathers might be sensitive to their partner's criticism, but also might feel supported when their partner offers practical support in how to carry out parenting tasks (Sheedy & Eubands Gambrel, 2019).

Equal parental leave and the couple relationship

Sharing parental leave has been reported to facilitate couples' understanding of each other's everyday life (Almqvist, Sandberg & Dahlgren, 2011), which might contribute to higher quality of the couple relationship. Recently, in the context of the United States which has no national paid parental leave policy, Petts and Knoester (2019) found associations between length of paternal leave and parental relationships, in terms of higher perceived relationship satisfaction and less reported relationship conflict by mothers who worked before childbirth, than by non-working mothers. In a longitudinal study of the same sample, fathers' leave taking after childbirth and length of parental leave were positively associated with relationship quality one year after childbirth, and the association remained over the first five years after birth (Petts & Knoester, 2020).

A recent study by Lappegård, Duvander, Neyer, Viklund, Andersen and Garðarsdóttir (2020) in Sweden, Norway, and Iceland found that couples where the father took parental leave for any period of time were at lower risk of union dissolution than couples where the father took no leave, but there was no

association between equal division of parental leave and relationship stability. In the Swedish context fathers' parental responsibility is expected to include caregiving initiatives, and ideals of gender equality is strongly articulated in the contemporary mindset (Duvander, Haas & Thalberg, 2017). Fathers' who report dissatisfaction with their share of parental leave, and who wish they had more time on parental leave have been found to experience lower relationship satisfaction and higher risk of union dissolution, than fathers who are satisfied with the division of parental leave (Brandén, Duvander & Ohlsson-Wijk, 2016). However, mothers might exhibit undermining behavior if they perceive that their traditional parenting role and authority as expert, is threatened by the father's involvement (Schoppe-Sullivan et al., 2015). Parents' collaboration and coordination of their parenting activities and responsibilities often is a process of negotiations, which might put stress on the couple relationship (Favez et al., 2016).

Parental roles are settled early in parenthood and set the stage for future interactions in family life (Murphy et al., 2017), entailing a need for increased understanding of the quality of the couple relationship in early family life and how it is affected by division of parental leave. If supportive coparenting can be established, couple relationship quality may remain stable throughout infancy and beyond (Favez et al., 2016; Le et al., 2016). In our previous research, we found that sharing parental leave equally was associated with lower parenting stress in fathers, but not in mothers (Lidbeck, Bernhardsson & Tjus, 2018), and with higher coparenting quality in both mothers and fathers (Lidbeck & Bernhardsson, 2019), compared with not sharing the leave equally. Mothers who shared parental leave equally also have reported higher satisfaction with their partner's involvement in caregiving than those who did not share equally (Lidbeck & Bernhardsson, 2019). As parenting stress and coparenting quality are likely to have a bearing on couple relationship quality, it is of relevance also to investigate how parents' division of parental leave influences their couple relationship. Therefore, the aim of this study was to explore associations between division of parental leave and change in perceived quality of the couple relationship in parents of infants, and whether this association is influenced by parenting stress or coparenting quality. We hypothesized that equal division of parental leave is positively associated with couple relationship quality (Hypothesis 1). Furthermore, this association should be mediated by parenting stress and coparenting quality (Hypothesis 2).

METHODS

Design and setting

The study employed a prospective, longitudinal design in which data were collected via a survey from mothers and fathers of newborn children at two time points; when the child was 6 months (T1) and 18 months old (T2), respectively. Participants were consecutively recruited from 25 child health centers in south-western Sweden.

Participants and procedure

Parents of 4-month-old infants were asked for participation by 58 nurses at the 25 child health centers. The child health centers serve almost 100% of

infants in their respective area and cover both urban and suburban settings. Inclusion criteria were that parents should be cohabiting and be fluent enough in the Swedish language to understand the questionnaires. The recruiting nurses provided written information about the study to eligible participants, both mothers and fathers, and those who agreed to participate signed consent. Those who agreed were given the option of receiving the questionnaire by email or by regular post, and email addresses and postal addresses were collected. The first survey was sent to participating parents at T1, as a webbased survey by email or a postal questionnaire, according to their preference. Two reminders were sent to non-responders after 2 and 4 weeks, respectively. The follow-up survey was sent at T2 to parents who had participated in the first survey and to those partners who had not responded at T1.

Of the 910 parents invited to participate, 748 consented to participate and were each sent a questionnaire (Fig. 1). After two reminders, 431 parents (255 mothers and 176 fathers, including 156 couples) completed the survey, corresponding to a response rate of 57.8%.

The second survey at T2 was similarly distributed to the 431 parents who had responded to the first survey, and to 86 of their partners who had not responded to the first survey, for a total of 517. After two reminders, 302 parents (176 mothers and 126 fathers) completed the second survey, a response rate of 58.4%. The present subsample consists of the 280 parents (174 mothers and 106 fathers, including 87 couples) who responded to both surveys. Of the 280 parents, 62.1% were dyads.

Among those who participated in only the first survey (T1), the proportion of first-time mothers was smaller than among those who completed both surveys [$\chi 2$ (1, n = 255) = 4.47, p = 0.034]. No other significant demographic differences were found between participating mothers or fathers and dropouts.

Parents were instructed to respond to the questionnaire individually and the survey took approximately 30 minutes to complete. The study was approved by the Regional ethical review board in Gothenburg. Data were collected between January 2011 and January 2013.

The participants were divided into two groups based on how they reported at T2 how they had shared the parental leave: equal sharing (each parent taking parental leave at least 40% of the time) and non-equal sharing (one parent, generally mothers taking more than 60% of the time on parental leave). Equally shared parental leave was defined in accordance with the definition of the Swedish Social Insurance Agency (Försäkringskassan, 2019). At T2, 35 participants were transferred between the groups because data indicated that they had not shared parental leave as they had planned to do. Among those, 12 were couples (of a total of 87 couples). Demographic characteristics were similar in the equal and non-equal sharing groups at T1 (Table 1).

Outcome measures

The outcome reported in this paper is the change in couple relationship quality in mothers and fathers of infants and whether this is affected by division of parental leave. This was operationalized as change in perceived couple relationship quality between T1 and T2, and measured with the Quality of Dyadic Relationship instrument (QDR36) (Ahlborg, Lilleengen, Lönnfjord & Petersen, 2009). The QDR36 is based on the Dyadic Adjustment Scale (DAS; Spanier, 1976), which was translated and adapted to the Swedish language and context, modified, and validated by Ahlborg et al. (2009). The instrument comprises 36 items divided into five dimensions: dyadic consensus (11 items), dyadic cohesion (4 items), dyadic satisfaction (11 items), dyadic sensuality (5 items), and dyadic sexuality (5 items). Each item is scored on a Likert scale ranging from 1 to 6. Sums are calculated for each subscale (dimension) and divided by the number of items in the subscale. Means for each subscale are then added to a weighted index that ranges from 5 to 30. Higher scores indicate a stronger perceived quality of couple relationship. Cronbach's alphas for the current sample were 0.94 for mothers and 0.91 for fathers.

In addition, data were collected on perceived parenting stress, measured with the Swedish Parenthood Stress Questionnaire (SPSQ; Östberg, Hagekull & Wettergren, 1997) and perceive quality of coparenting, measured with the Parenting Alliance Measure (PAM; (Abidin & Konold, 1999). Data also were collected on parental leave division and family sociodemographic factors.

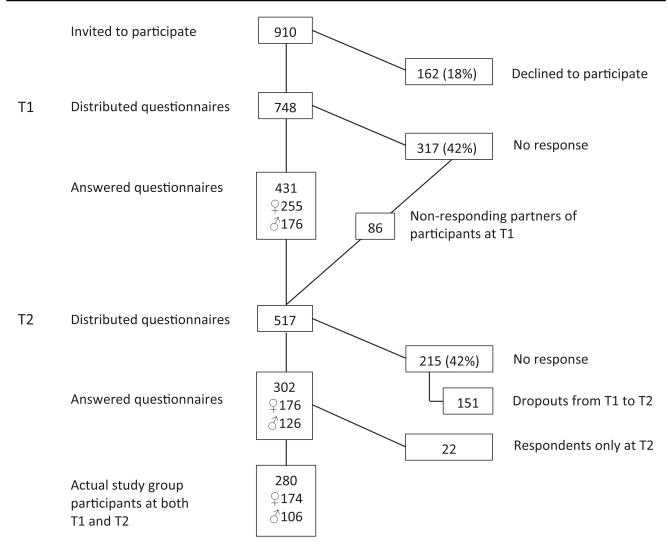


Fig. 1. Flowchart of data collection at 6 months (T1) and 18 months (T2) after the child's birth.

The SPSQ comprises 34 items on five subscales: *incompetence, role restriction, social isolation, spouse relationship problems*, and *health problems*. The subscales form a *Total SPSQ* score, calculated as a mean value of all items. Higher scores indicate higher parenting stress. The SPSQ is reliable and has been validated for measuring parenting stress in parents of young children (Östberg *et al.*, 1997, 2007). In the current study, Cronbach's alphas were 0.89 for mothers and 0.86 for fathers at T1.

The PAM is a 20-item self-report instrument measuring strength of the perceived alliance between parents. Response options range from strongly disagree to strongly agree on a five-point Likert scale, and PAM's sum of raw scores can range from 20–100. Higher scores indicate a stronger working alliance with the other parent. The PAM is reliable and has been validated for measuring parenting alliance in parents of children aged 1–19 years (Abidin & Konold, 1999; Hurley, Trout, Epstein, Griffith & Huscroft-D'Angelo, 2014). Cronbach's alphas were 0.93 and 0.94, respectively, for mothers and fathers in the current sample at T1. The Swedish translation of PAM by Broberg and Axberg (2004) was used, with permission from the developer, Psychological Assessment Resources, Inc, Lutz, Florida.

Data analysis

Descriptive statistics were computed for all sociodemographic and study variables. Sociodemographic characteristics are presented as means and standard deviations or as frequencies and percentages. Mean, SD, and range for each dimension and for the total index of the QDR36 were calculated.

Chi-square tests were used for between-group comparisons of categorical data, and one-way analysis of variance (ANOVA) was

computed for continuous data. To test Hypothesis 1, multiple linear regressions were performed with change in couple relationship quality from T1 to T2 as dependent variable and division of parental leave as independent variable. The analyses were performed in several steps. In the first regression model only division of parental leave was entered. Potentially confounding demographic variables (being a first-time parent, occupation, education level, and speaking a language other than Swedish) were tested with Spearman's rank correlation, and none of them correlated with each other (r < 0.3), while parental age correlated with being a first-time parent (r = 0.54 for mothers, r = 0.37 for fathers). To adjust for these potential confounders, they were first entered as independent variables in univariate analyses. Only one variable, being a first-time parent, was associated with the dependent variable with a p-value of < 0.2, and was entered in a second model.

To test Hypothesis 2, we entered the potential mediators parenting stress and coparenting quality in a final, adjusted, model. Only parents who responded to all items in the three scales (QDR at T1 and T2, SPSQ and PAM at T1) were included in the regression analyses. All analyses were stratified by sex to handle non-independence between partners. Data were analyzed using IBM SPSS Statistics (Version 25.0). An alpha level of 0.05 was used for all computations.

RESULTS

Parents' total time on parental leave with consideration of part time leave, differed between mothers in the Equal sharing group

Table 1. Characteristics of participants 6 months after childbirth (T1), grouped by reported actual division of parental leave

	Equal Sharing		Non-Equal Sharin		
	Mothers $(n = 88)$	Fathers $(n = 55)$	Mothers $(n = 86)$	Fathers $(n = 51)$	Total $N = 280$
Age, mean (SD)	33.93 (3.71)	35.62 (5.35)	33.02 (4.40)	35.29 (4.96)	33.92 (4.69)
Experience of parenthood, n (%)					
First-time parent	55 (62.5)	32 (58.2)	47 (52.1)	27 (52.9)	161 (57.5)
Parent with previous children	33 (37.5)	23 (41.8)	39 (45.3)	24 (47.1)	119 (42.5)
Number of children, mean (SD)	1.57 (0.79)	1.60 (0.78)	1.64 (0.84)	1.67 (0.84)	1.61 (0.81)
Occupation, n (%)					
Parental leave	72 (81.8)	6 (10.9)	75 (87.2)	1 (2.0)	154 (55)
Work and/or studies	3 (3.4)	45 (81.8)	2 (2.3)	47 (92.2)	97 (34.6)
Parental leave and work/ studies	13 (14.8)	4 (7.3)	9 (10.5)	3 (5.9)	29 (10.4)
Unemployment	0	0	0	0	0
Language, n (%)					
Swedish	83 (94.3)	52 (94.5)	80 (93.0)	49 (96.1)	264 (94.3)
Other	5 (5.7)	3 (5.5)	6 (7.08)	2 (3.9)	16 (5.7)
Education, n (%)	. ,	. ,		. ,	` ′
Upper secondary or below	9 (10.2)	11 (20.0)	13 (15.1)	13 (25.5)	46 (16.4)
University/ post-secondary	79 (89.8)	44 (80.0)	73 (84.9)	38 (74.5)	234 (83.6)

(M = 10.70 months, SD 2.79) and the Non-equal sharing group (M = 14.54 months, SD 3.37). In comparisons between fathers was differences in total time on parental leave also found: the Equal sharing group (M = 7.87 months, SD 1.78) and the Nonequal sharing group (M = 2.97 months, SD 1.77).

Perceived quality of couple relationship at T1 and T2, including the five subscales of the QDR and the QDR36 index, is presented in Table 2, grouped by reported actual division of parental leave at T2. Mothers and fathers in the equal sharing group reported the highest scores on the QDR36 index, and on the subscales concerning dyadic consensus, dyadic cohesion, and dyadic satisfaction.

Parenting stress and coparenting quality at T1 is presented in Table 3, in relation to actual division of parental leave. The equal sharing group reported the higher levels of both parenting stress and coparenting quality, in both mothers and fathers.

Association between division of parental leave and change in couple relationship quality

The crude unadjusted model, and the final, adjusted, model for change in overall couple relationship quality from 6 to 18 months after childbirth are presented in Table 4. In fathers, the first hypothesis was supported; equally shared parental leave was significantly associated with higher perceived couple relationship quality (B 0.87; 95% CI 0.12-1.61; p = 0.023). The model explained 6% of the variance in the change in couple relationship quality (F(1, 87) = 5.369; p = 0.023). In mothers, the first hypothesis was not supported since no significant association was found between division of parental leave and perceived couple relationship quality. One control variable, being a first-time parent, was included in the regression analyses as a potentially confounding factor (association with p-value < 0.2) for mothers, and none for fathers. When controlled for the confounding factor in the multiple regression model, the association did not reach the threshold of significance in the regression and consequently, the

results are presented without the control variable. As Table 4 shows, the second hypothesis was not supported for fathers, even if the association between division of parental leave and couple relationship quality remained significant in the final model, controlling for parenting stress and coparenting quality (B 0.91; 95% CI 0.16-1.67; p = 0.019). However, the mediation roles of parenting stress and coparenting quality were not confirmed (95% CI - 0.64 to 1.36 for parenting stress, and 95% CI - 0.07 to 0.04 for coparenting quality), indicating that these factors did not affect couple relationship quality. In mothers, the adjusted, final model revealed no significant association between division of parental leave and couple relationship quality (B 0.05; 95% CI -0.56 to 0.66; p = 0.873), and the second hypothesis was not supported.

DISCUSSION

The main finding of this study is that sharing parental leave equally is associated with higher perceived couple relationship quality 18 months after childbirth in fathers, but not in mothers, compared with not sharing parental leave equally. Our analyses showed no mediating effects of parenting stress or coparenting quality in either gender. The findings contribute novel perspectives on how both mothers and fathers with different division of parental leave perceived the quality of their couple relationship, and provide insights about how fathers' experiences as primary caregivers for a longer period might influence the perception of how their couple relationship works. In conclusion, paternal involvement during equally shared parental leave seemed to influence fathers' views on their couple relationship quality positively over time.

In keeping with a bioecological system perspective (Bronfenbrenner, 2001) on processes within families, the present study explored how external and internal factors interact and might influence how parents perceived their couple relationship quality during early parenthood. The generous social and financial prerequisites, which are the premises for our study, are given

Table 2. Couple relationship quality at 6 months (T1) and 18 months (T2) after childbirth, by: reported actual division of parental leave

	Mothers, at 6 months		Mothers, at 18 months		Fathers, at 6	months	Fathers, at 18 months		
QDR ^a	Equal sharing $n = 84$ Mean (SD)	Non-equal sharing n = 78 Mean (SD)	Equal sharing $n = 82$ Mean (SD)	Non-equal sharing n = 84 Mean (SD)	Equal sharing $n = 49$ Mean (SD)	Non-equal sharing $n = 45$ Mean (SD)	Equal sharing $n = 52$ Mean (SD)	Non-equal sharing n = 49 Mean (SD)	
QDR36 Index Dimensions	22.96 (2.84)	22.21 (3.20)	22.52 (3.03)	21.92 (3.42)	23.15 (2.61)	22.87 (2.30)	23.35 (2.50)	22.04 (2.58)	
Consensus	5.09 (0.51)	4.90 (0.69)	5.04 (0.56)	4.80 (0.78)	5.13 (0.43)	4.97 (0.49)	5.06 (0.45)	4.87 (0.58)	
Cohesion	4.55 (0.79)	4.32 (0.89)	4.49 (0.86)	4.26 (0.91)	4.80 (0.84)	4.58 (0.70)	4.78 (0.77)	4.32 (0.74)	
Satisfaction	4.90 (0.60)	4.68 (0.67)	4.77 (0.63)	4.61 (0.73)	4.90 (0.52)	4.89 (0.54)	4.81 (0.58)	4.65 (0.59)	
Sensuality	4.81 (0.92)	4.75 (0.99)	4.55 (0.96)	4.62 (1.00)	4.88 (0.85)	4.83 (0.81)	4.81 (0.72)	4.63 (0.85)	
Sexuality	3.62 (0.80)	3.55 (0.77)	3.66 (0.72)	3.60 (0.76)	3.60 (0.85)	3.59 (0.69)	3.85 (0.71)	3.59 (0.73)	

^aQuality of Dyadic Relationship instrument. QDR36 index: theoretical range 5–30, dimensions: range 1–6, higher scores indicate stronger perceived quality of couple relationship.

Table 3. Parenting stress and Parenting alliance 6 months after childbirth, by actual division of parental leave

	Mothers		Fathers			
	Equal sharing (n = 87) mean (SD)	Non-equal sharing (n = 84) mean (SD)	Equal sharing (n = 54) mean (SD)	Non-equal sharing (n = 50) mean (SD)		
Total SPSQ ^a PAM ^b	2.33 (0.49) 90.57 (8.98)	2.38 (0.52) 87.23 (10.58)	2.23 (0.41) 90.72 (7.99)	2.27 (0.43) 87.40 (8.14)		

^aSwedish Parenthood Stress Questionnaire. Range 1–5, higher scores indicate higher parenting stress.

from the well-established Swedish parental leave system, providing both parents equal access to paid parental leave. In this context, parents' division of parental leave may indicate their engagement in working life and caregiving, which through reciprocal transactions between individuals and environment influences family processes. Our main finding is in line with the bioecological theory (Bronfenbrenner, 2001), as parental roles are formed over time in response to contextual conditions and fathers'

taking an equal share of the parental leave seems to influence their perception of the couple relationship quality as the family functioning process is formed and evolves. However, when interpreting our results in the light of previous research, it is central to keep in mind that contextual settings regarding access to parental leave vary widely among countries (Koslowski *et al.*, 2019).

Previous findings in family research indicate considerable challenges for couples when entering parenthood, and a subsequent increase in risk of experiencing their relationship in a less positive way (e.g., Mitnick et al., 2009). Overall, our findings suggest that parents' levels of perceived relationship quality slightly decrease from six to 18 months after childbirth, following the trend described in a similar Swedish context during transition to parenthood (Bäckström et al., 2018), with the exception of fathers sharing parental leave equally. Parents' ratings on the total QDR36 index and on three subscales of the QDR suggest that both mothers and fathers who shared parental leave equally were most satisfied with their relationship quality. However, only fathers' experiences of equally shared parental leave significantly contributed to a greater change in the couple relationship in general (QDR36 index) from six to 18 months after childbirth. Even though the size of the effects is small (an increase in mean score of 0.9 points in the QDR36 Index with a theoretical range

Table 4. Association of parental leave division and change in couple relationship quality^a with mediation analysis in mothers and fathers

	Mothers $(n = 156)$					Fathers $(n = 89)$						
	Model 1		Model 2		Model 1		Model 2					
	В	95% CI	<i>p</i> -value	В	95% CI	<i>p</i> -value	В	95% CI	<i>p</i> -value	В	95% CI	p-value
Division of parental le	eave											
Non-equal sharing	Ref			Ref			Ref			Ref		
Equal sharing	0.00	-0.60 to 0.61	0.987	0.05	-0.56 to 0.66	0.873	0.87	0.12 to 1.61	0.023	0.91	0.16 to 1.67	0.019
Parenting stress				0.18	-0.49 to 0.86	0.590				0.36	-0.64 to 1.36	0.472
Coparenting quality				-0.01	-0.04 to 0.03	0.731				-0.02	-0.07 to 0.04	0.563

Notes:: Model 1: Crude model. Mothers R² 0.00, Fathers R² 0.06

Model 2: Final two-mediator model. Mothers Adjusted R^2 -0.00, Fathers R^2 0.08

^bParenting Alliance Measure. Range 20–100, higher scores indicate higher quality of parenting alliance

^aQuality of Dyadic Relationship instrument. QDR36 index: theoretical range 5-30, higher scores indicate stronger perceived quality of couple relationship.

of 5-30), the findings might indicate that equal sharing of parental leave contributes to higher satisfaction with the relationship quality in fathers. The small change may be reflective of the fact that most of the transition-to-parenthood relationship change may have already occurred from pre-birth to post-birth (Mitnick et al., 2009). The finding is supported by previous Swedish research on fathers' satisfaction with how much parental leave they used and with their relationship (Brandén et al., 2016).

The association identified between division of parental leave and fathers' perceived couple relationship quality became evident in the changes over one years' time, when fathers who shared parental leave equally had primary caregiving responsibility for a longer period of time than fathers who took less parental leave. Equally sharing fathers experienced what it takes to meet their child's caregiving needs, and in a similar way that mothers traditionally care about the quality of family relationships, these fathers might be likely to let their parenting experiences influence their perception of the couple relationship quality as well as the quality of coparenting. This finding is in line with previous research suggesting that experiences of shared parental leave increase parents' understanding of each other's parenting and everyday life (Almqvist et al., 2011; Duvander et al., 2017).

Fathers' parental leave taking has been discussed as a sign of a deeper commitment to family life (Petts & Knoester, 2019), yet parents' experiences of egalitarian parental roles during equally shared parental leave were not fully reflected in the family dynamics as we hypothesized. Our expectation that equally shared parental leave would be associated with parents' couple relationship satisfaction, was met for fathers but not for mothers. This finding is in contrast to Petts and Knoester's (2019) finding that fathers' parental leave taking and length of time on parental leave was associated with perceived couple relationship satisfaction only in mothers, but not in fathers. Maybe the substantive differences between the United States (Petts & Knoester, 2019) and Sweden in contextual prerequisites for paid parental leave can bring some understanding to the contrasting findings. The fact that most Swedish fathers take some parental leave means that fathers are expected to be involved in the responsibility for caregiving (Duvander et al., 2017), and therefore Swedish mothers might not value fathers' leave taking in the same way as mothers in the American study did (Petts & Knoester, 2019).

Consequently, we found that division of parental leave does not seem to influence mothers' perception of the couple relationship in the same way as it influences fathers' perceptions, although previous research has pointed to the importance of fathers' involvement for mothers' perception of couple relationship quality (McClain & Brown, 2017). Maybe the lack of association between parental leave and mothers' perceived couple relationship indicates that mothers feel content with their share of parental leave and that couples' decisions on division of parental leave have no significant bearing on how they perceive their couple relationship. This kind of "mother-led" decisions about division of parental leave (Kaufman & Almqvist, 2017; McKay & Doucet, 2010) might indicate that primary caregiving responsibility generally is more pronounced for mothers than for fathers, and that couples' negotiations on how to divide their leave accede to the women's wishes regardless of the proportion of leave taken

by their partners. Factors that have been acknowledged as important for the parental leave allocation are economic considerations and work life factors, although gender has been found to be the most influential determinant of parental leave division (Almqvist et al., 2011). Our finding that mothers did not differ in their perception of their couple relationship is consistent with previous Swedish research, which also did not find any significant association between mothers' (dis)satisfaction with their division of parental leave and relationship satisfaction (Brandén et al., 2016). Future studies are needed to replicate the study findings and explore the mechanism underlying the link found in fathers, but not in mothers, between parental leave division and change in perceived couple relationship quality.

Our results gave no support for the second hypothesis that the association between division of parental leave and change in perceived couple relationship quality was mediated by parenting stress. This finding was unexpected since previous research has described such a link between parenting stress and relationship quality (Durtschi et al., 2017). Our study also did not confirm previous findings of an association between parents' reports on coparenting and relationship quality (Durtschi et al., 2017). Feinberg (2003) underlined that the couple relationship and parents' joint parenting in terms of coparenting are distinct dimensions, thus related in the family systems. How these relations might be affected by division of parental leave needs to be further investigated. Furthermore, other possible predictors or mediators of couple relationship dynamics in relation to parental leave need to be identified.

The findings from our study have implications for parents, professionals, and policymakers on the understanding of family relationships and consequences of different parental leave allocation. The topic of equally shared parental leave, with a special focus on the couple relationship, includes broad aspects of modern family life and dual breadwinning, in terms of expectations on parental roles and gendered norms affecting couple's life situations in different social and cultural contexts. Parents may consider that their division of parental leave may affect the quality of their couple relationship, and reflect on possible pros and cons for their families when negotiating division of parental leave. Professionals may discuss these issues within individual counseling and parent support group settings. Policymakers may consider that these findings reflect Swedish parents' experiences of different parental leave division and preliminary consequences for relationship dynamics within the family, which can hopefully contribute insights for future development of social policies.

Although our study was one of the first known to explore division of parental leave and associations with change in perceived couple relationship quality from both parents' perspectives, several limitations of this study must be acknowledged. First, the sample might be limited in representation since only Swedish-speaking parents were informed about the project due to the data collection being based on questionnaires. This premise contributed to selection bias, which may also be the consequence of only asking married or cohabiting couples to participate. The participating parents were well-educated, which could be considered as a resource in family and working life, but this background might also bring high expectations between spouses. A larger and less resourceful sample might show different patterns in the couple relationship satisfaction and the influence of division of parental leave, and would have provided more confidence in our results and allowed us to generalize the results more extensively. Also, the 58% response rate from each of the two surveys could abate the representativeness of the sample. Furthermore, parents planning to share parental leave equally may have been more motivated to participate in the survey, which might explain the high proportion of equally sharing parents in our sample.

Concerning validity of our study's findings, the data collection was performed before the introduction of the third month of the individual quota. However, the added month has shown no effect on the number of parents who share parental leave equally (Duvander & Johansson, 2019), so the results are likely to be relevant also in contemporary Sweden. It could be seen as a limitation that we did not perform a dyadic analysis, in view of 62% of the respondents being dyads. However, we aimed to explore associations of mothers and fathers separately, because the sample of 280 parents includes 87 couples. The data for each group represent a mix of couples' and individual parents' data. In order to minimize intercouple dependence from a subsample, the analysis of individual data was stratified by gender. Another potential limitation is the reliance on self-reported data. Furthermore, it should be pointed out that although an association was established, its direction is not known. Does equal parental leave lead to improved couple relationship, or does a strong relationship cause parents to share their leave more equally? Finally, the context of the study, based on the Swedish parental leave system providing both parents the same opportunity to combine parental leave and uphold their engagement in working life, limits generalizability of the results to other countries with different contextual prerequisites.

CONCLUSION

This study explored possible changes in couple relationship quality related to parents' division of parental leave. The finding of an association between division of parental leave and change in perceived couple relationship quality among fathers, but not mothers, is the main contribution of the study. Our findings suggest that sharing parental leave equally is linked to higher couple relationship quality at 18 months after childbirth in fathers. Overall, the study adds important knowledge about consequences of division of parental leave for relationship satisfaction when equal sharing of parenting responsibilities is put into practice. Our findings on the topic of shared parental leave and couple relationships dynamics are relevant to consider in discussions between parents, professionals, and policymakers.

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