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Family men: fathers as coparents in diverse contexts and family structures, volume II

Edited by
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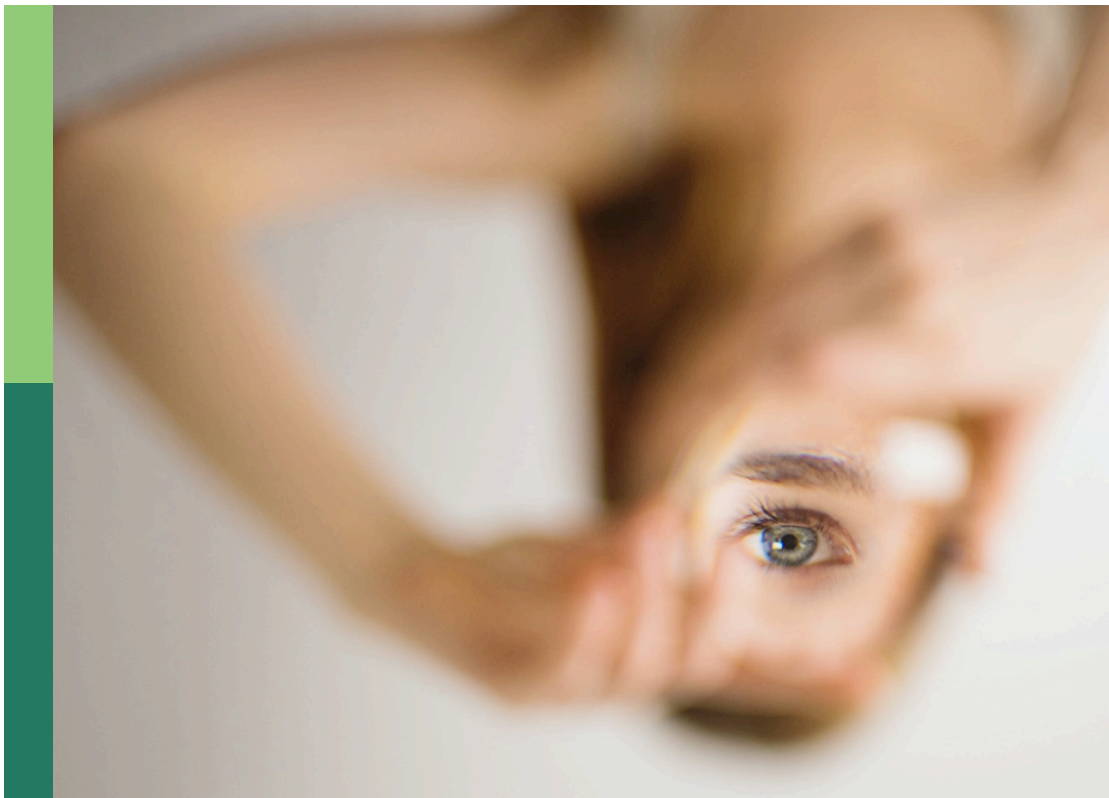

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Family men: fathers as coparents in diverse contexts and family structures, volume II

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Editorial: Family men: fathers as coparents in diverse contexts and family structures, volume II

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Editorial on the Research Topic
Family men: fathers as coparents in diverse contexts and family structures, volume II

Fathers' involvement in childrearing is on the rise despite roadblocks set by gender norms, institutions, policies, and partner dynamics (Volling and Palkovitz, 2021). Studying coparenting offers insights into parents' joint efforts in caregiving responsibilities (McHale and Jones, 2021). The second volume for our Research Topic welcomed articles that considered the challenges fathers face in relation to coparenting, such as partner dynamics; child and adolescent outcomes; diverse family structures (e.g., same- and different-sex couples, fathers of one or multiple children, divorced, or intact families); and varied racial, ethnic, and cultural backgrounds. Ten articles with a global reach are highlighted that explore modern fatherhood via rigorous methodologies.

Seven articles in our Research Topic were quantitative research studies that explored the impact of fathers from diverse family contexts and dynamics.

Parental mental health, reflective functioning, and coparenting during the transition to parenthood in relation to children's socioemotional development were cross-sectionally examined in an Australian sample (De Palma et al.). An indirect effect of general reflective functioning (certainty) on child socioemotional development via parental reflective functioning (pre-mentalizing) emerged. Also, an indirect effect of negative coparenting on child socioemotional development via parental reflective functioning (pre-mentalizing) was found.

Ji et al. aimed to identify the mechanisms that impact maternal positive coparenting on adolescents' ego-identity in a Chinese sample. Structural equation modeling revealed that peer relationships mediated the relationship between maternal positive coparenting and adolescent ego-identity. Fathers' marital satisfaction and peer relationships also chain-mediated the role between maternal positive coparenting and adolescent ego-identity.

Scheifele et al. explored how fatherhood and masculinity beliefs, social support, and environmental factors influenced men's formation of parental leave intentions across the transition to parenthood in Belgium and Germany. Hierarchical regression models suggested that men who felt more support from their partners to utilize parental leave options had increased desire and intention to use their parental leave, as well as longer planned length of leave.

McHale et al. conducted a study in the United States in which they identified a need for more trauma-informed support for families. They outlined the planning process, Trauma-Informed Family Centered principles training series, and profile assessments they underwent with local organizations to achieve this aim. Through direct collaboration with several organizations, they were able to coordinate, train, consult, self-monitor, and problem solve to effectively deliver Trauma-Informed services.

McHale et al. proposed a novel approach and rating system to aid practitioners and supervisors in assessing the quality of coparenting in couples group interventions in a United States sample in which couples were English- or Spanish-speaking. Results indicated that, over time, both English- and Spanish-speaking couples discussed coparenting related challenges; process-oriented responses were especially helpful in these circumstances.

Puglisi et al. made use of physiological assessments to investigate the association between parent-child interactive synchrony and infants' vagal tone in a Switzerland-based sample. Structural equation models suggested that variations in parent-child synchrony were related to variations in infants' vagal tone during mother-child interactions; this finding was only consistently found when mothers and their infants interacted after fathers did with their children.

The impact of parental gender and caregiving roles on positive and negative affect during interactions with their infant for same- and different-sex couples were investigated by Leter et al.. It was further investigated whether parenting stress, infant temperament, having a singleton vs. twin, and country of residence (Netherlands, France, or the United Kingdom) were associated with parental positive and negative affect. Mixed linear models revealed country of origin to be the sole predictor of parental negative and positive affect.

Our Research Topic has one Brief Research Report, which highlights ethical, original research in a succinct manner.

Kuo et al. used actor-partner interdependence moderation models to examine the role of caregiving to explain the relation between parents' marital satisfaction and coparenting quality in a United States sample. Both parents' caregiving identities interacted with their own reports of marital satisfaction to predict mothers' (but not fathers') perceptions of coparenting quality. Interestingly, both parents' caregiving identity only related to their partner's perceptions of coparenting quality but not their own perceptions.

Our Research Topic contains one Policy and Practice Review that highlights the importance of including both parents' reports in analyses.

Sandberg outlines the positive trajectory of father involvement in Denmark across recent decades. Despite this increase and the benefits of father involvement for child adjustment, Sandberg points out that father involvement and shared parenting are relatively low following divorce in Denmark. To understand factors that contribute to this phenomenon, several Danish guidelines/practices that may hinder father involvement and shared parenting in post-divorce families were examined.

The last article submission type for our Research Topic is a Community Case Study, where intersectional practices are discussed in relation to improving the health and wellbeing of a population.

Hudson and Brotherson identify systemic adversities and historical trauma amongst fathers in Native American and Afro-Caribbean communities and their ability to fulfill coparenting roles. The aim of this case study was to suggest a cross-cultural adaptation of the Fatherhood is Sacred Program, originally developed for Native American families, to Afro-Caribbean families.

The second volume of our Research Topic emphasizes the gendered effects on coparenting efforts, with contextual emphasis on the push and pull of societal pressures, cultural discrepancies, and the influence of one's partner on fathering efforts. The clinical, educational, and therapeutic recommendations from the ten articles advise on bridging the gap between applied fields and research sciences. In turn, we think it is important to embrace applied methodologies and acknowledge their contributions in and outside the format of Original Research to advance our understanding of fatherhood. It is important to recognize the shortcoming of our Research Topic, having only one study with a same-gender sample, as the heteronormativity of fatherhood lacks important perspectives in aiding fathers that represent broader society. It is our hope that readers will find our second research volume to be a springboard from which to advance further work on fathers as coparents in diverse contexts.

Author contributions

SD: Writing – original draft, Writing – review & editing. MG: Writing – original draft, Writing – review & editing. LA: Writing – original draft, Writing – review & editing. NC: Writing – original draft, Writing – review & editing.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The relationship between parental mental health, reflective functioning coparenting and social emotional development in 0-3 year old children

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Introduction: The transition to parenthood is a high-risk period for many parents and is an important period for child development. Research has identified that parental mental health, reflective functioning (capacity to consider mental states of oneself and others) and coparenting (capacity to work together well as a parenting team) may be particularly significant predictors of later child outcomes, however these factors have seldom been considered together. The present study therefore aimed to investigate the relationship between these factors and the extent to which they predict child social emotional development.

Methods: Three hundred and fifty parents of infants aged 0 to 3 years 11 months were recruited to complete an online Qualtrics questionnaire.

Results: Results indicate that both positive coparenting and parental reflective functioning (Pre-mentalizing and Certainty subscales) were found to significantly predict child development. General reflective functioning (Uncertainty subscale) predicted parental depression and anxiety, however unexpectedly, parental mental health was not a significant predictor of child development, but did predict coparenting. General reflective functioning (Certainty subscale) was also found to predict coparenting, which in turn was found to predict parental reflective functioning. We found an indirect effect of general reflective functioning (Certainty) on child SE development via parental reflective functioning (Pre-mentalizing). We also found an indirect effect of negative coparenting on child development via parental reflective functioning (Pre-mentalizing).

Discussion: The current results support a growing body of research highlighting the important role reflective functioning plays in child development and wellbeing as well as parental mental health and the interparental relationship.

KEYWORDS

parental reflective functioning, coparenting, child social emotional development, reflective functioning, parental mental health, child development and infant mental health

Introduction

It is widely understood that the first 1,000 days of life—the period of development from conception to age two—is one of the most crucial periods of development for a child (Moore et al., 2017). Given the importance of this developmental period, it is thought that adverse experiences during this time may be particularly harmful for the child's ongoing social emotional

development, with consequences potentially spanning the child's lifetime (Lyons-Ruth et al., 2017; Moore et al., 2017). Social emotional development in infancy entails the gradual increase in emotion recognition and expression, and participation in social interaction (Halle and Darling-Churchill, 2016). It is important to consider which factors in particular place a child at increased risk of adverse outcomes (Newland, 2015).

The transition to parenthood is accompanied by a series of novel and pre-existing stressors, and an increased demand on psychosocial resources that brings with it a greater risk of developing mental health difficulties for parents (Nyström and Öhrling, 2004). Within Australia, 21% of adults meet the diagnostic criteria for a mental health disorder (Australian Bureau of Statistics, 2020-21), and both maternal and paternal depression and anxiety are linked with a number of adverse child outcomes (McCall-Hosenfeld et al., 2016). These include delayed social (Ip et al., 2018), emotional (Kingston and Tough, 2014), behavioral and cognitive development (Kingston et al., 2012), lower ability to self-regulate (Hernández-Martínez et al., 2008), a more difficult temperament (Werner et al., 2007; Parfitt et al., 2013) and developmental delays (Davis and Sandman, 2010). Research has also found an increase in rates of internalizing and externalizing symptoms (Kane and Garber, 2004; Verbeek et al., 2012; Matijasevich et al., 2015) as well as depression (Murray et al., 2011; Pearson et al., 2013), among children of parents with perinatal depression or anxiety. Poor parental mental health has further been linked with difficulties in the parent-infant relationship (Murray et al., 2011; Lilja et al., 2012; Verbeek et al., 2012; Pearson et al., 2013; Matijasevich et al., 2015).

The importance of the parent infant relationship has been particularly emphasized within the field of attachment, with research consistently finding links between secure parent-infant attachment relationships and child outcomes such as positive mental health, social and emotional intelligence, physical health and enhanced cognitive capacity later in life (Ranson and Urichuk, 2008; Boldt et al., 2014). Caregiver sensitivity/responsiveness to an infant's needs has been associated with attachment security, as has the parent's own attachment representations (van Ijzendoorn, 1995; O'Neill et al., 2021). Parental attachment has been also linked with parenting behaviors, whereby secure attachment correlated with more positive parenting behaviors (Huang, 2021). Furthermore, attachment relationships are known to pass from parent to child, across generations (Steele and Steele, 2008; Sette et al., 2015).

Parental Reflective functioning (PRF) is a proposed mechanism through which these attachment relationships are transmitted from parent to child (Kelly et al., 2005; Steele and Steele, 2008). Reflective functioning, also referred to as mentalization, is defined as one's ability to understand and link mental states with behavior both for oneself and for others (Slade, 2005; Stacks et al., 2014). Psychodynamic theorists assert that reflective functioning is involved in the development and maintenance of psychopathology including depression (Luyten et al., 2013; Luyten and Fonagy, 2018) and anxiety (Lavoie et al., 2014). They suggest that while in a depressed state, individuals may be significantly biased in their reflective processes and are typically not able to engage in reflective thinking (Luyten et al., 2013; Luyten and Fonagy, 2018). A lack of reflective capacity is also thought to prevent an individual from regulating their intense emotional experiences or modulating the behavioral expression of these emotions (Bouchard et al., 2008). These suggestions are supported by a body of research finding associations between poorer reflective functioning and higher depression levels across varying samples (Fischer-Kern et al., 2013; Belvederi Murri et al., 2017; Bigelow et al., 2018; Wendelboe et al., 2021). Interventions targeting reflective functioning have also been found to have a small effect in reducing both general and interpersonal distress symptoms (Hayden et al., 2018).

High levels of PRF is thought to be essential to children's ability to regulate their emotions, and develop secure attachment relationships (Ordway et al., 2015). In fact, reflective functioning has been found to mediate the relationship between parental attachment and child social emotional wellbeing (Nijssens et al., 2020). Research suggests that parental reflective functioning allows parents to more consistently and sensitively respond to cues from their infant (Stacks et al., 2014). Moreover, poor maternal reflective functioning has been linked with adverse child outcomes including anxiety, externalizing behaviors, poor social competence and difficulty regulating emotions (Camoirano, 2017; Colonnesi et al., 2019). Other recent studies have shown that both maternal and paternal reflective functioning are linked with better social emotional adjustment (Gordo et al., 2020; Salo et al., 2021), enhanced social competence and higher levels of reflective functioning among adolescents (aged 14–18 years; Benbassat and Priel, 2012). Lower levels of reflective functioning in both parents have also been linked with more dysfunctional parent–child interactions (Vismara et al., 2021).

More recent research seeks to move beyond maternal–infant relationships to consider how the broader family system impacts a developing child. Family systems theory suggests that family-level processes influence child wellbeing over and above dyadic relationships within the family (i.e., the couple relationship, parent–child relationship and sibling relationships; Boričević Maršanić and Kušmić, 2013). Coparenting is a concept nested within family systems theory, and focuses on the intersection between parents' romantic relationship and their new role as a parent (Salo et al., 2021). Correlational research has found that coparenting predicts unique variance in child social emotional development, and argues coparenting may have a larger impact on social emotional development than that of general parenting and the couple relationship alone (Feinberg and Kan, 2008; Boričević Maršanić and Kušmić, 2013). Coparenting is defined as a parents' ability to work in harmony as a team for their child's benefit (Le et al., 2016). When coparenting works, parents are able to come together and agree on how to parent their child, making coparenting a key predictor of overall family functioning (Dollberg et al., 2021). Feinberg (2003) describes a model of coparenting comprised of 7 dimensions, 5 encapsulating positive coparenting (coparenting agreement, coparenting closeness, coparenting support, endorsement of partner parenting, division of labor) and two which make up negative coparenting (exposure to conflict, and coparenting undermining).

Positive coparenting is associated with a variety of child outcomes including cognitive development (Shai, 2019) psychological and social emotional wellbeing (Teubert and Pinquart, 2010), social skills (Cabrera et al., 2012) and prosocial behavior (Scrimgeour et al., 2013). Increased positive coparenting has also been moderately linked to increased academic achievement in school (Dopkins Stright and Neitzel, 2003; Cabrera et al., 2012), faster language development, and increased social functioning (Cheng et al., 2009). Negative coparenting has been linked with behavior problems (LeRoy et al., 2013), reduced

communication and social skills (Nandy et al., 2021), poor child adjustment and later psychopathology (Umemura et al., 2015).

Coparenting has also been linked with parental mental health, with findings indicating that parental depression negatively impacts the coparenting relationship (Price-Robertson et al., 2017; Tissot et al., 2017; Williams, 2018; Turney and Hardie, 2021). Other research suggests that coparenting conflict increases depressive symptoms among mothers (Cabrera et al., 2012), which is in line with studies demonstrating a link between relationship conflict and parental anxiety and depression (Yap et al., 2014). These findings are also consistent with Feinberg and colleagues, who found that interventions targeting the coparenting relationship can reduce symptoms of depression and anxiety in mothers (Feinberg and Kan, 2008; Feinberg et al., 2016).

Recent research has hypothesized that coparenting may act as a mechanism through which anxiety is transmitted from parents to children, with study findings demonstrating correlations between parental anxiety and undermining coparenting, as well as between undermining coparenting and fearful temperaments in children (Metz et al., 2018). A similar finding has also been shown for maternal depression with one study finding that coparenting support mediated the relationship between maternal depression and child outcomes, with increased symptoms of depression linked to poorer coparental support, which then predicted an increase in behavior problems among children (Tissot et al., 2016).

Jessee et al. (2018) theorized that reflective functioning may be a protective factor during the transition to parenthood. Given this transition is often characterized by conflict and distress for new parents, a greater capacity to understand the emotional experiences underlying the behavior of themselves and their partner protects the couple relationship and the emerging coparenting relationship. Since the relational patterns that emerge during this period often endure throughout the remainder of the coparenting relationship, it is crucial to understand the factors that may underpin both successful and at risk coparenting relationships (Jessee et al., 2018). Several studies have found links between reflective functioning and coparenting or couple interactions. One such study followed a high-risk sample of pregnant women, finding that reflective functioning was associated with greater couple cohesion (Borelli et al., 2021). Similarly, other studies have also found a relationship between better parental reflective functioning and more positive coparenting relationships (Jessee, 2012; Marcu et al., 2016; Shai et al., 2017; Holtzinger, 2021).

While the examination of reflective functioning and coparenting together is growing, very few studies have gone a step further and examined how child outcomes fit within this picture. In their study, Jessee et al. (2018) recruited 103 couples who were followed longitudinally from pre-birth to 13 months post-birth. Findings suggested that maternal, but not paternal, reflective functioning predicted both supportive and undermining coparenting (Jessee et al., 2018). They also found that higher interparental conflict was associated with greater levels of anger and lower levels of enthusiasm and compliance in children. Reflective functioning was not found to be associated with any child outcome variable (Jessee et al., 2018). The authors hypothesized that this may have been due to the low stress nature of the 15-min family play task used, which may not have been sufficient for behaviors typically associated with poor reflective functioning to emerge (Jessee et al., 2018).

León and Olhaberry (2020) went a step further in their study, carrying out an exploratory mediation analysis which found that the quality of triadic interactions (the interaction between both parents and their infant, which includes coparenting) mediated the relationship between maternal but not paternal reflective functioning and child social emotional outcomes (León and Olhaberry, 2020). Fifty Chilean families whose 12 to 38 month old children had been referred for social–emotional difficulties participated in this study (León and Olhaberry, 2020). In addition to the novel mediation analysis, they also found that more positive triadic interactions were associated with higher levels of both maternal and paternal reflective functioning as well as fewer social emotional difficulties in children. The relationships between maternal and paternal reflective functioning and social emotional difficulties were not significant because this relationship was fully explained by triadic interactions. This study also found that when both mothers' and fathers' reflective functioning were included as predictors of triadic interactions, only mothers' reflective functioning remained a significant predictor (León and Olhaberry, 2020).

It is of note that neither Jessee et al. (2018) nor León and Olhaberry (2020) included parental mental health as a variable within their studies. Given the established link between parental mental health difficulties and adverse child outcomes (McCall-Hosenfeld et al., 2016), it can be argued that parental mental health may be a significant piece of the puzzle linking parental reflective functioning, coparenting and child outcomes.

To our knowledge, Dollberg et al. (2021) were the first to include parental mental health, proposing a mediation-moderation hypothesis whereby coparenting would mediate the relationship between parental anxiety and child outcomes with parental reflective functioning acting as a moderator variable (Dollberg et al., 2021). They recruited 78 couples with children aged between 3 and 5, and found that coparenting did mediate the relationship between parent anxiety and child outcomes, however no support was found for reflective functioning as a moderator within this relationship (Dollberg et al., 2021). Findings suggested that reflective functioning did moderate the relationship between parental anxiety and child outcomes when coparenting was not included in the model (Dollberg et al., 2021). Reflective functioning was not found to be significantly correlated with any study variables with the exception of father's reflective functioning which was significantly associated with father's anxiety levels (Dollberg et al., 2021). The authors suggest that the low sample size may have contributed to the insignificant mediation-moderation hypothesis (Dollberg et al., 2021), therefore it may be worth examining whether this relationship exists in a larger sample of parents.

The current study: Aims and hypotheses

The overall aim of the present study was to cross-sectionally investigate the variables involved in predicting child outcomes in early childhood, in particular, parental mental health, parental reflective functioning and coparenting and to examine how these variables are related to one another among parents. This is important to consider given the scarcity of research examining these variables together, particularly within a large sample of parents who have children in the period of early childhood. Given that the coparenting

relationship emerges in early infancy, it is particularly worth examining how these variables interact in the first 4 years of the child's life.

Informed by prior studies, we hypothesized that:

1. Poorer infant social emotional development will be predicted by higher levels of parental depression and anxiety, less positive and more negative coparenting and poorer general reflective functioning and parental reflective functioning.
2. Poorer parental reflective functioning will be predicted by poorer general reflective functioning, less positive and more negative coparenting and increased symptoms of depression and anxiety.
3. More negative and less positive coparenting will be predicted by poorer general reflective functioning and increased symptoms of depression and anxiety.
4. Increased symptoms of depression and anxiety will be predicted by poorer general reflective functioning.

Materials and methods

Methods

Design

The present study implemented a cross-sectional, correlational research design to examine associations between parental mental health, parental reflective functioning, coparenting, and child social emotional development.

Participants

Participants were 350 parents (175 women, 175 men) with children aged 0 to 3 years 11 months who were recruited via Prolific, an online recruiting platform. Inclusion criteria were met if the participant had a child in the correct age range and was in a relationship with and living with the other parent of their child. Participants were paid £3.75 GBP (roughly $7.15 AUD) through the Prolific website after completion of the questionnaire.

Participants' ages ranged from 19 to 61 years ($M = 33.63$, $SD = 5.31$) and children were aged between 0 and 46 months ($M = 21.29$, $SD = 12.77$). 72.9% of the sample were married, 16.3% were engaged, 8.3% were in a defacto relationship and the remaining participants described their relationship status as other. This sample consisted predominantly of participants who identified as Caucasian (including British, European, American, Australian, or New Zealander; 82.5%). Other ethnicities included Asian or South East Asian (5.7%), Black (including African, African American, African British and Black Carribean) 4.3%, Hispanic 2.6%, South Asian (including Pakistani, Indian and Bangladeshi; 3.1%), Arabic or Islam 0.86%, mixed ethnicity 0.86%, while the final 0.29% of participants identified as Wichita or Native American.

In order to detect a medium size effect using a mediation analysis, research suggests a sample size of at least 300 participants is needed (Fritz and MacKinnon, 2007). Therefore, the present sample of 350 participants was deemed sufficient to detect at least medium-sized effects.

Materials

The Depression Anxiety Stress Scale (DASS; Lovibond and Lovibond, 1995) is a 21-item self-report questionnaire measuring symptoms of depression, anxiety and stress over the past 7 days, across three 7-item subscales. Items are measured on a four-point Likert scale from 0 ("Did not apply to me at all") to 3 ("Applied to me very much, or most of the time") and are summed, with higher scores indicative of more severe symptoms. The DASS 21 is a widely used, well-validated scale that has demonstrated good internal reliability across its three subscales (Cronbach's $\alpha = 0.81–0.88$) as well as good convergent validity ($r = 0.5–0.8$) as shown by correlations between the DASS and other validated measures of depression and anxiety (Osman et al., 2012).

The 4-item Couples Satisfaction Index (CSI; Funk and Rogge, 2007) is a measure of relationship satisfaction, developed using item response theory. Responses are recorded on a 6- or 7-point Likert scale. Ratings are summed, with higher scores indicative of greater relationship satisfaction. This scale has shown good reliability (Cronbach's $\alpha = 0.98$) and convergent validity ($r = 0.85–0.99$) as shown by correlations between the CSI and other validated measures of relationship satisfaction and has been found sensitive to changes in relationship satisfaction (Funk and Rogge, 2007).

The Coparenting Relationship Scale (CRS; Feinberg et al., 2012) is 35-item self-report questionnaire that measures coparenting across 7 dimensions: agreement, endorsement, closeness, support and cooperation, division of labor, competition, undermining and the extent of child exposure to parental conflict. Items include "I believe my partner is a good parent" and "My partner undermines my parenting" and are rated on a 7-point scale from 0 ("Not true of us") to 6 ("Very true of us"). Of the seven subscales, 5 focus on positive aspects of coparenting, while 2 (competition and undermining) focus on the more negative parts of the construct. Therefore, in our study, we created two subscales, positive coparenting and negative coparenting. Items were summed, and higher scores on the positive coparenting subscale indicate a more positive coparenting relationship, while higher scores on the negative coparenting subscale indicate greater levels of competition, undermining and parental conflict. This scale has shown good reliability (Cronbach's $\alpha = 0.91–0.94$) and construct validity ($r = 0.60–0.74$) as shown by correlations between the CRS and other related constructs (Feinberg et al., 2012).

The 8-item Reflective Functioning Questionnaire (RFQ; Fonagy et al., 2016) is a measure of mentalizing that is made up of two scales (certainty about mental states [RFQ_C] and uncertainty about mental states [RFQ_U]). This measure is scored on a 7-point Likert scale from 1 ("do not agree at all") to 7 ("agree completely"). Items include "People's thoughts are a mystery to me" and "I always know what I feel." Adequate reliability has been demonstrated (Cronbach's $\alpha \geq 0.7$), along with good construct validity shown through positive correlations between RFQ_U and the Toronto Alexithymia Scale ($r = 0.66$), and positive correlations between RFQ_C and the Kentucky Inventory of Mindfulness ($r = 0.39$; Cucchi et al., 2018).

The Parental Reflective Functioning Questionnaire (PRFQ-18; Luyten et al., 2017) is an 18-item self-report questionnaire that measures parental reflective functioning across three subscales. Subscales include: Pre-Mentalizing (e.g., "My child cries around strangers to embarrass me"), Certainty about Mental States (e.g., "I can always predict what my child will do"), Interest and Curiosity (e.g.,

I wonder a lot about what my child is thinking and feeling"). Items are measured on a 7-point Likert scale from 1 ("Strongly disagree") to 7 ("Strongly agree"). This questionnaire has been related to attachment, sensitivity and parenting stress and has shown good reliability (Cronbach's $\alpha = 0.79–0.85$). Construct validity ($r = 0.49$) has been demonstrated through correlations between the Pre-Mentalizing subscale on the PRFQ-18 and both attachment anxiety and attachment avoidance measured with the Experience of Close Relationships-Revised, as well as correlations with other related constructs (Luyten et al., 2017).

The Ages and Stages Questionnaire: Social–Emotional (ASQ: SE 6; Squires et al., 2001) is a measure of social–emotional development in infants aged 3 to 65 months. There are specific forms for eight different age ranges. The number of items vary for each age range. This questionnaire includes 7 subscales: self-regulation, compliance, communication, autonomy affect, interaction with people, and adaptive functioning, with items measured on a 3-point Likert scale from (0 = "Most of the time," 5 = "Sometime," 10 = "Rarely or Never"). Mothers are also able to indicate whether the listed behavior is of concern. Five points are added to the total score if this option is ticked. Higher scores are indicative of more social–emotional problems on each respective dimension. Because of the varying number of items for each age group, total scores were averaged by dividing by total number of items on the form to enable comparison between age groups. These scales have been widely used in this area of research, and have demonstrated sufficient internal reliability and concurrent validity (Squires et al., 2001).

Procedure

Ethics approval for the present study was granted by the Curtin University Human Research Ethics Committee (CUHREC). Following recruitment through Prolific, participants were redirected to a Qualtrics survey containing the study's explanatory statement and all study measures. Participants then provided consent within Qualtrics before completing the online survey which took on average 30 min to complete.

Measures were preceded by several demographic questions (i.e., age, education level, and ethnicity and the final page of the survey provided a study debrief including links to support services). Participants were credited for their time upon valid completion of the survey.

Data analysis plan

Analyses were run using both SPSS (v.28) and R statistical software (R Core Team, 2020). Our mediation model was run using the *Lavaan* package (Rosseel, 2012). We specified a sequential mediation model to assess the association between reflective functioning and child social emotional development. Using a sequential model in this way allows the relationship between mediators to be measured as well as allowing mediators to be predicted both by reflective functioning and by preceding mediator variables. Negative emotional symptoms (DASS scores) were included as the first mediator, parental reflective functioning (PRFQ scores) included as the second mediator, and finally coparenting (CRS scores) was included as the third mediator. Bias-corrected bootstrapped confidence intervals [10,000 iterations; as recommended by Hayes, (2017)] were used to test the indirect effect of reflective functioning on child social emotional development via each of these mediators.

Results

Correlations and descriptive analyses

To address issues of non-linearity, square root transformations were conducted for the DASS Anxiety subscale, the CSI, the RFQ Uncertainty subscale, the PRFQ Pre-mentalizing subscale, and the ASQ prior to model testing. The bivariate correlations and descriptive statistics are provided in Table 2. All of the variables with the exception of positive coparenting were significantly correlated with child social emotional development. Additionally, we observed a number of significant correlations between the predictor variables (see Table 2).

Predicting child social emotional development

The variables included in this sequential mediation model accounted for a statistically significant 18.7% of the variance in child social emotional development, equating to a small-sized effect. The total effect of reflective functioning (Uncertainty subscale only) on child social emotional development was statistically significant ($b = 0.171$, $p = 0.046$, 95% CI: 0.002, 0.338).

Predictors of child development

Despite statistically significant bivariate associations with children's social–emotional development (Table 1), both subscales of the RFQ as well as parental symptoms of depression, anxiety and stress were not significant predictors of child social emotional development in the final model that included the complete set of predictor variables.

Negative coparenting was also not a significant predictor. However, positive coparenting remained a significant predictor in the final model, albeit with a small effect size ($b = 0.003$, $p = 0.043$, 95% CI: 0.000, 0.005).

The Pre-mentalizing ($b = 0.373$, $p = 0.002$, 95% CI: 0.136, 0.601) and Certainty ($b = -0.057$, $p = 0.037$, 95% CI: −0.109, −0.003) subscales of the PRFQ, but not Interest and Curiosity, were also found to be significant predictors of child social emotional development. Of the variables examined in the present study, the pre-mentalizing subscale of the PRFQ was the most significant predictor of child social emotional development (see Table 2).

Predictors of parental reflective functioning

The RFQ Uncertainty subscale was found to significantly predict all three PRFQ subscales: Pre-mentalizing ($b = -0.103$, $p = 0.050$, 95% CI: −0.206, 0.000), Certainty ($b = -0.454$, $p = 0.047$, 95% CI: −0.890, −0.001) and Interest and Curiosity ($b = 0.452$, $p = 0.001$, 95% CI: 0.183, 0.720). Whereas the RFQ Certainty subscale was found to only significantly predict two PRFQ

TABLE 1 Descriptive statistics and correlations between measurement variables (N=350).

	Correlations											Descriptives		
Variables	1	2	3	4	5	6	7	8	9	10	*11*	*M*	*SD*	*α*
1. Reflective functioning uncertainty	-	-	-	-	-	-	-	-	-	-	-	0.637	0.447	0.806
2. Reflective functioning certainty	**−0.737****	-	-	-	-	-	-	-	-	-	-	0.905	0.826	0.850
3. DASS depression	0.**557****	−0.**408****	-	-	-	-	-	-	-	-	-	4.418	3.989	0.891
4. DASS Anxiety	**0.498****	**0.424****	**0.611****	-	-	-	-	-	-	-	-	1.363	1.026	0.839
5. DASS stress	**0.606****	**−0.504****	**0.716****	**0.700****	-	-	-	-	-	-	-	6.650	4.212	0.877
6. Parental reflective functioning pre-mentalizing	**0.238****	**−0.370****	**0.240****	**0.249****	**0.198****	-	-	-	-	-	-	1.385	0.302	0.753
7. Parental reflective functioning certainty	**−0.257****	**−0.210***	**−0.194****	**−0.122***	**−0.208****	**−0.176****	-	-	-	-	-	4.002	1.057	0.783
8. Parental reflective functioning interest and curiosity	−0.057	0.087	−0.010	0.052	0.036	**−0.403****	**0.189****	-	-	-	-	5.645	0.738	0.674
9. Positive coparenting	**−0.243****	**0.285****	**−0.317****	**−0.254****	**−0.241****	**−0.328****	0.085	**0.225****	-	-	-	108.611	24.425	0.939
10. Negative coparenting	**0.311****	**−0.321****	**0.373****	**0.353****	**0.328****	**0.426****	−0.043	**−0.192****	**−0.619****	-	-	11.304	10.331	0.890
11. Relationship satisfaction	**0.190***	**−0.208****	**0.303****	**0.188****	**0.236****	**0.210****	**−0.107***	**−0.118***	**−0.726****	**0.476****	-	2.609	0.879	0.950
12. Child social emotional development	**0.246****	**−0.237****	**0.220****	**0.236****	**0.191****	**0.340****	**−0.209****	**−0.165****	−0.097	**0.223****	0.026	1.273	0.493	0.336–0.912

Bivariate correlations are presented on the lower quadrant. **$p < 0.001$, *$p < 0.05$. Bold values indicate statistical significance.

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TABLE 2 Predictors of child social emotional development, with 95% Bias corrected confidence intervals reported in parenthesis.

Variables	*B* (95% CI)	*SE B*	Std. All	*p*
C1—Reflective functioning uncertainty	0.131 (−0.053, 0.317)	0.094	0.119	0.163
C2—Reflective functioning certainty	0.000 (−0.089, 0.095)	0.047	0.000	0.997
B1—Positive coparenting	0.003 (0.000, 0.005)	0.001	0.131	**0.043**
B2—Negative coparenting	0.006 (−0.001, 0.012)	0.003	0.115	0.086
B3—DASS anxiety	0.058 (−0.015, 0.134)	0.038	0.119	0.130
B4—DASS depression	0.007 (−0.011, 0.025)	0.009	0.055	0.464
B5—DASS stress	−0.009 (−0.029, 0.010)	0.010	−0.079	0.338
B6—Parental reflective functioning pre-mentalizing	0.373 (0.136, 0.601)	0.119	0.228	**0.002**
B7—Parental reflective functioning certainty	−0.057 (−0.109, −0.003)	0.027	−0.121	**0.037**
B8—Parental reflective functioning interest and curiosity	−0.044 (−0.124, 0.035)	0.040	−0.065	0.276
Total effect of RFQ uncertainty	0.171 (0.002, 0.338)	0.085	0.154	**0.046**
Total effect of RFQ certainty	−0.06 (−0.143, 0.029)	0.044	−0.101	0.172

$R^2 = 0.187$. Confidence intervals and standard errors based on 10,000 Bootstrap samples ($N = 350$). Bold values indicate statistical significance.

subscales: Pre-mentalizing ($b = -0.137$, $p = 0.000$, 95% CI: −0.183, −0.090), Interest and Curiosity ($b = 0.225$, $p = 0.002$, 95% CI: 0.077, 0.368). Negative coparenting was also found to predict the Pre-mentalizing subscale of the PRFQ ($b = 0.009$, $p = 0.000$, 95% CI: 0.005, 0.013) while Positive coparenting was found to predict the Interest and Curiosity subscale of the PRFQ ($b = 0.005$, $p = 0.038$, 95% CI: 0.000, 0.009). Parental symptoms of depression, anxiety and stress were not found to predict parental reflective functioning in the present study (see Table 3).

Predictors of coparenting

The certainty subscale (but not the uncertainty subscale) of the RFQ was found to predict both positive ($b = 7.647$, $p = 0.001$, 95% CI: 2.820, 12.232) and negative ($b = -2.667$, $p = 0.004$, 95% CI: −4.422, −0.803) coparenting. Of the DASS subscales, only symptoms of depression were found to predict both positive ($b = -1.698$, $p = 0.001$, 95% CI: −2.672, −0.686) and negative ($b = 0.664$, $p = 0.002$, 95% CI: 0.243, 1.080) coparenting, while symptoms of anxiety were found to predict negative coparenting only ($b = 1.900$, $p = 0.010$, 95% CI: 0.468, 3.364; see Table 4).

Predictors of parental mental health

The uncertainty subscale of the reflective functioning questionnaire was found to predict DASS symptoms of anxiety ($b = 0.946$, $p = 0.000$, 95% CI: 0.615, 1.297), depression ($b = 5.051$, $p = 0.000$, 95% CI: 3.658, 6.402) and stress ($b = 4.815$, $p = 0.000$, 95% CI: 3.537, 6.043), while the certainty subscale predicted symptoms of stress only ($b = -0.674$, $p = 0.039$, 95% CI: −1.291, −0.011; see Table 5).

Exploratory indirect effect analyses

We performed a number of analyses to determine whether any indirect effects were present. In particular we explored whether there was an indirect effect of general reflective functioning on child social emotional development via parental reflective functioning. In the present study, there was an indirect effect of the certainty subscale of the RFQ on child social emotional development via the Pre-mentalizing subscale of the PRFQ ($b = -0.051$, $p = 0.009$, 95% CI:-0.093, −0.017). The remaining mediation analyses explored were not significant (see Table 6).

We also explored whether there was an indirect effect of general reflective functioning on child social emotional development via coparenting. This was not found to be the case, however there was an indirect effect of negative coparenting on child social emotional development via the PRFQ Pre-mentalizing subscale ($b = 0.003$, $p = 0.011$, 95% CI: 0.001, 0.006). The remaining mediation analyses explored were not significant (see Table 7).

Finally, we explored whether there would be an indirect effect of symptoms of depression and anxiety on child social emotional development via coparenting. As seen in Table 8, we did not find any support for this hypothesis, with all *p* values found to be above the 0.05 cut-off for statistical significance.

Discussion

The overall aim of the present study was to cross-sectionally investigate the variables involved in predicting child outcomes in early childhood. The specific aims of the present study were to investigate relationships between parental mental health, parental reflective functioning, coparenting and child social emotional development in both mothers and fathers during early childhood. Surprisingly, the present study found that both general reflective functioning and parental symptoms of depression, anxiety and stress were not significant predictors of child social emotional (SE) development. However, in line with our expectations both coparenting (positive)

TABLE 3 Predictors of parental reflective functioning, with 95% bias corrected confidence intervals reported in parenthesis.

	Variables	*b*	*SE B*	Std. All	*p*
Pre-mentalizing	A12—Reflective functioning uncertainty	−0.103 (−0.206, 0.000)	0.052	−0.151	**0.050**
	A13—Reflective functioning certainty	−0.137 (−0.183, −0.090)	0.024	−0.372	**0.000**
	A14—Positive coparenting	−0.001 (−0.002, 0.001)	0.001	−0.046	0.461
	A35—Negative coparenting	0.009 (0.005, 0.013)	0.002	0.292	**0.000**
	A15—DASS anxiety	0.030 (−0.009, 0.068)	0.020	0.102	0.122
	A16—DASS depression	0.005 (−0.005, 0.016)	0.005	0.070	0.317
	A17—DASS stress	−0.009 (−0.021, 0.002)	0.006	−0.130	0.108
Certainty	A18—Reflective functioning uncertainty	−0.454 (−0.890, −0.001)	0.228	−0.191	**0.047**
	A19—Reflective functioning certainty	0.039 (−0.188, 0.272)	0.116	0.030	0.737
	A20—Positive coparenting	0.003 (−0.003, 0.009)	0.003	0.064	0.338
	A36—Negative coparenting	0.008 (−0.007, 0.023)	0.008	0.080	0.273
	A21—DASS anxiety	0.098 (−0.051, 0.243)	0.075	0.095	0.189
	A22—DASS depression	−0.018 (−0.063, 0.029)	0.024	−0.068	0.444
	A23—DASS stress	−0.027 (−0.073, 0.015)	0.022	−0.109	0.216
Interest and curiosity	A24—Reflective functioning uncertainty	0.452 (0.183, 0.720)	0.137	0.274	**0.001**
	A25—Reflective functioning certainty	0.225 (0.077, 0.368)	0.074	0.252	**0.002**
	A26—Positive coparenting	0.005 (0.000, 0.009)	0.002	0.159	**0.038**
	A37—Negative coparenting	−0.008 (−0.020, 0.003)	0.006	−0.113	0.157
	A27—DASS anxiety	0.074 (−0.030, 0.177)	0.053	0.103	0.159
	A28—DASS depression	−0.013 (−0.044, 0.019)	0.016	−0.072	0.402
	A29—DASS stress	0.008 (−0.023, 0.038)	0.016	0.048	0.591

Pre-mentalizing $R^2 = 0.268$, Certainty $R^2 = 0.095$, Interest and curiosity $R^2 = 0.097$. Confidence intervals and standard errors based on 10,000 bootstrap samples ($N = 350$). Bold values indicate statistical significance.

and parental reflective functioning (in particular Pre-mentalizing and Certainty) were found to significantly predict child SE development.

As anticipated, general reflective functioning (uncertainty subscale only) predicted symptoms of depression and anxiety, while parental depression and anxiety were both predictors of coparenting (anxiety predicted negative coparenting only). General reflective functioning (certainty only) was also found to predict coparenting. Coparenting in turn was found to predict the parental reflective functioning (positive coparenting predicted PRFQ Pre-mentalizing, while negative coparenting predicted PRFQ Interest and Curiosity). Interestingly, parental reflective functioning was not predicted by parental depression and anxiety in the present study, but was predicted by general reflective functioning.

Given the pattern of findings that were identified, in conjunction with some preliminary suggestions in further research, some exploratory tests of indirect associations were carried out. Of note, we found an indirect effect of general reflective functioning (certainty) on child SE development via parental reflective functioning (Pre-mentalizing). We also found an indirect effect of negative coparenting on child SE development via parental reflective functioning (Pre-mentalizing). We did not however find any indirect effects between depression and anxiety, coparenting and child SE development. The current results support a growing body of research highlighting the important role reflective functioning plays in child development and wellbeing as well as parental mental health and the interparental relationship.

The significant relationship found in our study between parental reflective functioning and child SE development was anticipated given prior research demonstrating links between higher maternal and paternal reflective functioning and better social emotional adjustment in children (Gordo et al., 2020; Salo et al., 2021). In particular, we found that higher scores on the pre-mentalizing subscale of the PRFQ were associated with poorer SE development. This makes sense given that increased levels of pre-mentalizing modes in caregivers are indicative of severe mentalizing difficulties (Luyten et al., 2017). This is often displayed as high levels of certainty about a child's mental state which may cause parents to attribute false malevolent intentions to a child's difficult behaviors (e.g., "my child cries around strangers to embarrass me"; Luyten et al., 2017). These parents may also have

TABLE 4 Predictors of coparenting, with 95% bias corrected confidence intervals reported in parenthesis.

	Variables	*b* (95% CI)	*SE B*	Std. All	*p*
Positive coparenting	A1—Reflective functioning uncertainty	5.207 (−4.389, 14.274)	4.732	0.094	0.271
	A2—Reflective functioning certainty	7.647 (2.820, 12.232)	2.402	0.256	**0.001**
	A5—DASS anxiety	−2.501 (−6.058, 0.901)	1.787	−0.104	0.162
	A8—DASS depression	−1.698 (−2.672, −0.686)	0.503	−0.274	**0.001**
	A11—DASS stress	0.633 (−0.436, 1.699)	0.544	0.108	0.245
Negative coparenting	A30—Reflective functioning uncertainty	−1.476 (−4.940, 2.186)	1.807	−0.065	0.414
	A31—Reflective functioning certainty	−2.667 (−4.422, −0.803)	0.917	−0.216	**0.004**
	A32—DASS anxiety	1.900 (0.468, 3.364)	0.737	0.192	**0.010**
	A33—DASS depression	0.664 (0.243, 1.080)	0.211	0.260	**0.002**
	A34—DASS stress	−0.166 (−0.562, 0.242)	0.207	−0.069	0.422

Positive coparenting $R^2 = 0.151$, Negative coparenting $R^2 = 0.188$. Confidence intervals and standard errors based on 10,000 bootstrap samples ($N = 350$). Bold values indicate statistical significance.

difficulty understanding their child's internal world (Luyten et al., 2017).

Interestingly, in the present study greater certainty about mental states (as shown by the Certainty subscale of the PRFQ) was linked with fewer social emotional symptoms. It is important to note that very high levels of certainty about mental states may suggest intrusive mentalizing (also known as hypermentalizing), whereby the parent does not recognize that it is not possible to fully comprehend the mental states of others (e.g., mental states are opaque) while very low levels of certainty may indicate hypomentalizing (a very poor understanding of one's child's mental states; Luyten et al., 2017). Therefore, better parental reflective functioning would be shown by scores in the mid-range on this subscale of the PRFQ. Given that parental reflective functioning is thought to be essential to children developing both emotion regulation skills and a secure parent-infant attachment relationship (Ordway et al., 2015) our results are overall in line with expectations based on what has been shown in the literature.

The significant relationship found between higher levels of positive coparenting and better child SE development ($b = 0.003$, $p = 0.043$) was also anticipated given the large body of research linking coparenting with later child adjustment (Teubert and Pinquart, 2010; Umemura et al., 2015). This is thought to be because better coparenting is a key predictor of overall family functioning, and may lead to reduced interparental conflict and stress and more consistent and sensitive parenting (Feinberg et al., 2010; Dollberg et al., 2021).

Based on prior research, we also hypothesized that reflective functioning would be a key variable involved in predicting coparenting, and this was found to be the case. In particular, higher levels of certainty about mental states were linked with more positive coparenting and less negative coparenting. This is unsurprising given prior research which has found associations between higher reflective functioning and better coparenting quality (Jessee, 2012; Marcu et al., 2016; Shai et al., 2017; Borelli et al., 2021; Holtzinger, 2021). It is thought that higher levels of reflective functioning should enable increased understanding of a spouse's emotional experience and perspective, which in turn may assist couples to better manage conflict and repair ruptures in their relationship (Jessee et al., 2018).

We also reasoned that having a strong coparenting relationship may support the development of parental reflective functioning, and this was again supported in our results. We found that more positive coparenting predicted fewer mentalizing difficulties as shown through lower levels of pre-mentalizing modes, while more negative coparenting predicted less interest and curiosity about their infant's internal world. It makes sense that this reciprocal relationship would exist between coparenting and reflective functioning, whereby strong reflective capacity enhances one's ability to work well in a parenting team and that in turn supports more ability to be reflective about a child's internal world.

Surprisingly, in the present study, parental symptoms of depression, anxiety and stress were not significant predictors of child SE development. This was unexpected given the large body of research that has previously shown associations between parental depression and anxiety and child outcomes (McCall-Hosenfeld et al., 2016). We hypothesize that this may be because previous studies examining parental mental health as a predictor of child outcomes have not also considered other significant predictors such as reflective functioning and coparenting which both explain a higher percentage of the variance in child SE development. This would make sense, given the statistically significant bivariate associations observed between parental depression and anxiety and children's SE development. As anticipated, our community sample had generally low levels of parental depression and anxiety. In fact, 75.4% of our sample were considered to have normal to mild symptoms of depression (60.4% of these fell in the normal range), while 82.6% of participants had normal to mild symptoms of anxiety (69.7% fell in the normal range). Parents in our sample also predominantly self-reported that their children had few SE difficulties. It is therefore possible that the low-risk nature of our sample reduced our capacity to pick up on the relationship between parental mental health and child SE development. It is therefore likely that these variables remain relevant, but may be less important as predictors in a general community sample when exampled alongside other important predictor variables (Figure 1).

In line with our expectations, we did find that poorer general reflective functioning (as demonstrated by higher levels of uncertainty about mental states) predicted greater symptoms of depression and

TABLE 5 Predictors of depression, anxiety and stress, with 95% bias corrected confidence intervals reported in parenthesis.

	Variables	*b*	*SE B*	Std. All	*p*
Anxiety	A3—Reflective functioning uncertainty	0.946 (0.615, 1.297)	0.174	0.412	**0.000**
	A4—Reflective functioning certainty	−0.151 (−0.327, 0.034)	0.093	−0.122	0.103
Depression	A6—Reflective functioning uncertainty	5.051 (3.658, 6.402)	0.695	0.566	**0.000**
	A7—Reflective functioning certainty	0.033 (−0.608, 0.670)	0.323	0.007	0.919
Stress	A9—Reflective functioning uncertainty	4.815 (3.537, 6.043)	0.632	0.511	**0.000**
	A10—Reflective functioning certainty	−0.674 (−1.291, −0.011)	0.327	−0.132	**0.039**

Anxiety $R^2 = 0.258$, Depression $R^2 = 0.315$, Stress $R^2 = 0.378$. Confidence Intervals and standard errors based on 10,000 bootstrap samples ($N = 350$). Bold values indicate statistical significance.

TABLE 6 Indirect effects of general reflective functioning on child social emotional development via parental reflective functioning, with 95% bias corrected confidence intervals reported in parenthesis.

Variables	*b*	*SE B*	Std. All	*p*
Indirect pathway from RFQ (uncertainty) to ASQ via PRFQ (pre-mentalizing).	−0.038 (−0.098, 0.000)	0.025	−0.035	0.130
Indirect pathway from RFQ (certainty) to ASQ via PRFQ (pre-mentalizing).	−0.051 (−0.093, −0.017)	0.019	−0.085	**0.009**
Indirect pathway from RFQ (uncertainty) to ASQ via PRFQ (certainty).	0.026 (−0.003, 0.068)	0.019	0.023	0.170
Indirect pathway from RFQ (certainty) to ASQ via PRFQ (certainty).	−0.002 (−0.019, 0.012)	0.007	−0.004	0.767
Indirect pathway from RFQ (uncertainty) to ASQ via PRFQ (interest and curiosity).	−0.02 (−0.064, 0.016)	0.020	−0.018	0.325
Indirect pathway from RFQ (certainty) to ASQ via PRFQ (interest and curiosity).	−0.01 (−0.029, 0.009)	0.009	−0.016	0.299

Confidence intervals and standard errors based on 10,000 bootstrap samples ($N = 350$). Bold values indicate statistical significance.

anxiety. This is consistent with a body of research demonstrating general associations between poorer reflective functioning and higher levels of depression and anxiety (Fischer-Kern et al., 2013; Belvederi Murri et al., 2017; Bigelow et al., 2018; Wendelboe et al., 2021). This is thought to be because biases in reflective processes are thought to prevent an individual from regulating their intense emotional experiences or modulating the behavioral expression of these emotions (Bouchard et al., 2008; Luyten et al., 2013; Luyten and Fonagy, 2018). In turn, we also hypothesized that parental mental health may act as a predictor for parental reflective functioning, whereby it is easier to reflect on your child's inner world when your own mental health is stronger. However, once all variables were entered into our final model, this relationship was no longer significant. It may be that this relationship does not show up with the self-report measures used in the present study, or it could be the case that other variables such as emotion regulation (Schultheis et al., 2019), and attachment history (Suchman et al., 2011) play a larger role in predicting parental reflective functioning.

Parental depression and anxiety were also found to predict coparenting such that higher levels of parental depression were associated with less positive and more negative coparenting, while higher levels of parental anxiety were associated with more negative coparenting. This is in line with a body of research suggesting that parental depression and anxiety negatively impact the coparenting relationship (Price-Robertson et al., 2017; Tissot et al., 2017; Metz et al., 2018; Williams, 2018; Turney and Hardie, 2021). This makes sense given that both executive functioning and reflective capacity are so impaired by poor mental health, and these factors make it harder to see a partner's perspective and work well as a parenting team.

We also found that parental reflective functioning was predicted by general reflective functioning such that higher levels of RFQ uncertainty and lower levels of RFQ certainty predicted increased scores on the PRFQ pre-mentalizing modes. This makes sense given that high levels of pre-mentalizing modes are indicative of a lack of reflective capacity, in the same way that very high uncertainty and low certainty may indicate difficulties with mentalizing (Luyten et al., 2017). We also found that higher levels of RFQ uncertainty predicted lower scores on the PRFQ certainty subscale, which once again makes conceptual sense. Finally, increased RFQ uncertainty predicted less PRFQ interest and curiosity, while more RFQ certainty predicted greater PRFQ interest and curiosity. High levels of interest and curiosity are suggestive of greater reflective capacity, and as such this finding is in line with what we would expect to see. Given that most prior studies that have examined reflective functioning or parental reflective functioning have done so using observational or interview measures, few studies have examined how the RFQ and PRFQ are related among parents of young children. However, these results are

TABLE 7 Indirect effects of general reflective functioning on child social emotional development via coparenting, with 95% bias corrected confidence intervals reported in parenthesis.

Variables	*b*	*SE B*	Std. All	*p*
Indirect pathway from RFQ (uncertainty) to ASQ via positive coparenting.	0.014 (−0.011, 0.050)	0.016	0.012	0.382
Indirect pathway from RFQ (certainty) to ASQ via positive coparenting.	0.02 (0.000, 0.048)	0.012	0.033	0.107
Indirect pathway from RFQ (uncertainty) to ASQ via negative coparenting.	−0.008 (−0.041, 0.013)	0.013	−0.007	0.536
Indirect pathway from RFQ (certainty) to ASQ via negative coparenting.	−0.015 (−0.039, 0.001)	0.011	−0.025	0.160
Indirect pathway from negative coparenting to ASQ via PRFQ (pre-mentalizing).	0.003 (0.001, 0.006)	0.001	0.067	**0.011**

Confidence intervals and standard errors based on 10,000 bootstrap samples ($N = 350$). Bold values indicate statistical significance.

all in the expected direction and make sense from a conceptual perspective.

In the present study we also carried out some exploratory mediation analyses, and found an indirect effect of general reflective functioning (certainty) on child SE development via parental reflective functioning (Pre-mentalizing). We found that greater certainty about mental states was associated with lower pre-mentalizing modes, which in turn was associated with better child SE development. General reflective functioning was not found to be a significant predictor of child SE development, however this is likely because the relationships between general reflective functioning and child SE development is fully explained by parental reflective functioning.

Given prior research suggesting that coparenting may act a mediator for the relationships between anxiety and depression and child outcomes (Tissot et al., 2016; Metz et al., 2018), we explored whether this would be the case in the present study. However, we did not find any evidence of an indirect effect of parental mental health on child SE development via coparenting. This may be because neither parental depression, anxiety or coparenting were strong predictors of child SE development once entered into our complete model, and therefore these relationships may have been overshadowed by stronger predictor variables. Or it could be the nature of the self-report measures included in the current study and the fact that on the whole our community sample had generally low levels of parental depression and anxiety as well as child SE difficulties, which may have reduced our ability to detect this relationship.

Unlike León and Olhaberry (2020) we also did not find an indirect effect of general reflective functioning on child SE development via coparenting, however given the exploratory nature of this part of our analysis we also considered some alternate pathways. In doing so, we found an indirect effect of negative coparenting on child SE development via parental reflective functioning (Pre-mentalizing). This effect is such that more negative coparenting predicted higher pre-mentalizing modes, which in turn was associated with worse child SE development. This makes sense given the likely reciprocal relationship between reflective functioning and coparenting, whereby the presence of a strong parenting team is likely to support stronger reflective capacity, especially in the context of parenting. We found that negative coparenting was not a significant predictor of child SE development, and once again, this is likely because the relationship between negative coparenting and child SE development is fully explained by parental reflective functioning, which overall has shown up in our study as the strongest predictor of child development.

Strengths, limitations, and future directions

Our study is strengthened by our inclusion of both mothers and fathers, and an adequately-sized sample that allowed us to examine a range of key variables (parental mental health, coparenting, both general and parental reflective functioning) that are thought to predict child SE development. Nevertheless, our findings do need to be considered in light of several limitations. Firstly, the cross-sectional nature of this data prevents us from drawing causal inferences between study variables. The order in which we tested our variables was informed by prior literature and theoretical considerations, however these analyses alone are unable to make an inference of causality. For example, we argue that poor general reflective functioning may lead to increased risk of experiencing depression and anxiety, however there is also evidence suggesting that while experiencing depression and anxiety, an individual's reflective processes are impeded (Luyten et al., 2013; Luyten and Fonagy, 2018). The same is true for the relationship between depression and anxiety and coparenting. We argue that poor mental health is likely to lead to a worse coparenting relationship, however there is also a body of research suggesting that coparental conflict may predict declining mental health (Cabrera et al., 2012). Given these considerations, we recognize that causal inferences cannot be drawn solely from this cross-sectional data. However, we hope that the findings presented in this paper will inform future more resource intensive longitudinal studies.

Another limitation within our study is our sole reliance on self-report measures for all study variables. In particular, coparenting, reflective functioning and child SE development are likely to be more accurately measured via observational tasks. This is because parents may lack the insight to answer accurately, or may attempt to portray a more favorable image of themselves and their coparental and parent–child relationships. Future research examining the relationship between these variables would benefit from including additional methods of data collection such as behavioral observation or interviews. Our data is also limited by the fact that while we included both fathers and mothers, we did not recruit couples and therefore we are limited in the inferences we can draw about how one parent's reflective functioning may influence the other parent and in turn did not have an additional source of data on either the coparenting

TABLE 8 Indirect effects of DASS subscales on child social emotional development via coparenting, with 95% bias corrected confidence intervals reported in parenthesis.

Variables	*b*	*SE B*	Std. All	*p*
Indirect pathway from DASS depression to ASQ via positive coparenting	−0.004 (−0.011, 0.000)	0.003	−0.036	0.109
Indirect pathway from DASS depression to ASQ via negative coparenting	0.004 (0.000, 0.010)	0.003	0.030	0.153
Indirect pathway from DASS anxiety to ASQ via positive coparenting	−0.007 (−0.021, 0.002)	0.006	−0.014	0.288
Indirect pathway from DASS anxiety to ASQ via negative coparenting	0.011 (−0.001, 0.028)	0.008	0.022	0.162
Indirect pathway from DASS stress to ASQ via positive coparenting	0.002 (−0.001, 0.006)	0.002	0.014	0.382
Indirect pathway from DASS stress to ASQ via negative coparenting	−0.001 (−0.004, 0.002)	0.001	−0.008	0.523

Confidence intervals and standard errors based on 10,000 bootstrap samples ($N = 350$).

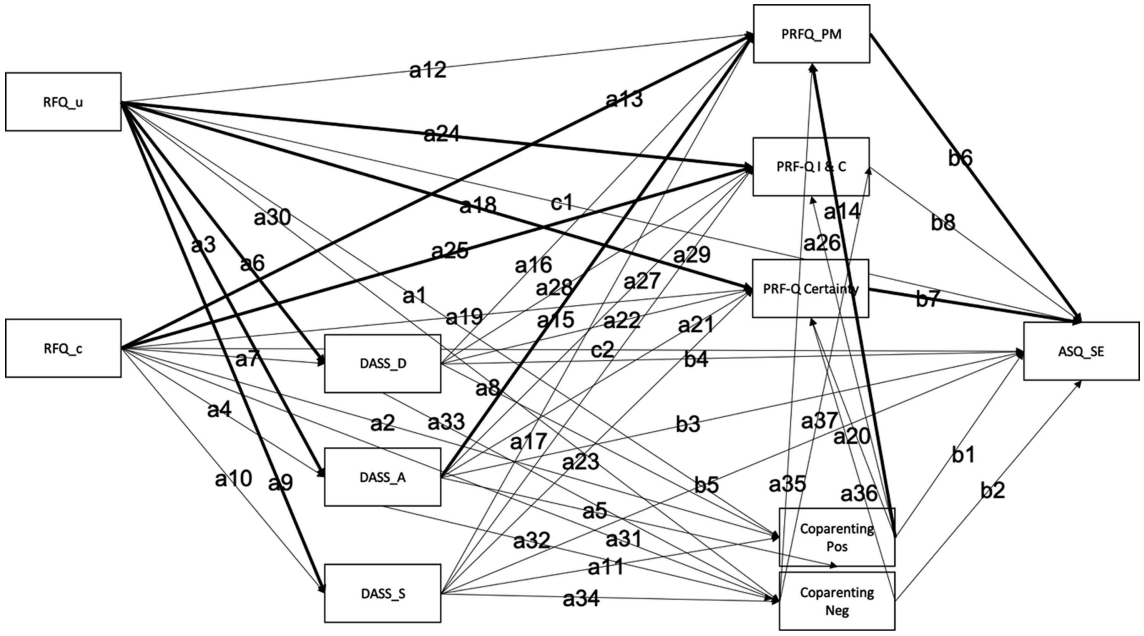

FIGURE 1
Relationship between parental depression and anxiety, reflective functioning, parental reflective functioning, coparenting and child social emotional symptoms. RFQ, reflective functioning questionnaire; DASS, depression, anxiety and stress scale; PRF-Q, parental reflective functioning questionnaire; ASQ-SE, ages and stages questionnaire—social emotional.

relationship or child SE development (i.e., the other parent may view the coparenting relationship or child's level of development differently).

Our study also recruited participants from Western countries with a majority of participants identifying as Caucasian, thus some caution should be applied when attempting to generalize these findings into other cultural settings. Future research may wish to consider investigating how coparenting and reflective functioning relate to child SE development in different cultural contexts, given prior research establishing cultural differences in child care practices (Chen et al., 1998; Rosenthal and Roer-Strier, 2001).

Finally, the predictors examined in the present study explained only 18.7% of the variance in child SE development, which is a relatively small proportion of variance. This leaves 81.3% of the variance unexplained by the predictors considered in this study. This would suggest that numerous other variables are involved in predicting child outcomes, and future research may wish to consider additional factors that may be important to social emotional development in young children. In particular it may be important to consider variables such as the social support available, maternal and paternal attachment style, level of parental self-efficacy and stress as well as parental self-compassion.

Implications

This study adds to a small but growing body of research investigating how both coparenting and reflective functioning interact

to predict child outcomes. We are one of the first studies to demonstrate that reflective functioning is a key predictor of the coparenting relationship. We are also one of the first studies to consider how parental mental health fits into this picture. Parental mental health, and maternal depression in particular, has long been considered a key risk factor for the development of adverse child outcomes, and therefore targeting maternal depression has been a key focus of many public health initiatives during the perinatal period. Our results appear to suggest that parental reflective functioning is one of the most important predictors of child outcomes over and above parental mental health. Current interventions designed to improve parental reflective functioning, both group-based and dyadic, are still being refined and there is limited evidence for their effectiveness (Barlow et al., 2021; Lo and Wong, 2022). The findings of the current study support the continued development of these interventions as they indicate changes in parental reflective functioning may contribute to changes in child outcomes.

Our findings suggest that parental reflective functioning appears to play a large role in developing both a strong coparenting relationship and also supporting child social emotional development. Therefore, we hope these findings will inform future research and enable the continued development of early interventions for new parents that specifically target their reflective capacity. Targeting reflective functioning is likely to in turn reduce symptoms of poor mental health, improve coparenting and general family functioning and most importantly enable optimal social emotional development in infants and young children.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Curtin Human Research Ethics Committee. The patients/participants provided their written informed consent to participate in this study.

Author contributions

MD conceptualized and carried out the research project, including the selection of study variables, data collection, and data analysis and was the principal author of this publication. RR, EI, VM, and RK were the supervisors of the study, assisting in designing and conducting the research, and providing feedback on the publication. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Maternal positive coparenting and adolescent ego-identity: the chain mediating role of fathers' marital satisfaction and adolescent peer relationships

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Introduction: Based on the ecological systems theory and the family systems theory, this study explores the mechanisms underlying the effects of maternal positive coparenting on adolescent ego-identity.

Methods: This study employed the Maternal Positive Coparenting Scale to assess mothers, the Father Marital Satisfaction Scale to examine fathers, and the Adolescent Peer Relationship Scale, along with the Ego-Identity Scale, to evaluate adolescents. This comprehensive approach involved investigating 522 families, encompassing both parents and adolescents.

Results: The results obtained indicate a significant positive correlation between maternal positive coparenting and adolescent ego-identity. Peer relationships mediated the relationship between maternal positive coparenting and adolescent ego-identity. Father marital satisfaction mediated the relationship between maternal positive coparenting and adolescent ego-identity insignificantly. Paternal marital satisfaction and adolescent peer relationship have a chain mediating role between maternal positive coparenting and adolescent ego-identity. The study contributes by offering insights from the perspectives of family and peer relationships for further enhancing the development of adolescent ego-identity.

KEYWORDS

coparenting, ego-identity, marital satisfaction, peer relationships, adolescents

1. Introduction

Ego-identity refers to the individual's thoughts and ideas about "who I am and how I define myself," and is the subjective feeling and experience of an individual's internal consistency and continuity (Fromm, 1968). Ego-identity is considered the most important psychological developmental task in the adolescent stage (Fromm, 1968; Chen et al., 2021; Maree, 2022). Good ego-identity development has been found to be associated with improved academic performance, social adjustment, and well-being among adolescents (Abu-Rayya, 2010; Pellerone et al., 2015; Perumal, 2020), whereas poor ego-identity development is linked to lower life satisfaction, hindered psychological health development, and even leads to problematic behaviors (Abu-Rayya, 2010; Waterman and Waterman, 2015; Saniye and Ayhan, 2023).

The family parenting environment has been recognized as the primary influence on adolescent ego-identity development (Bortz et al., 2019; Hasanah et al., 2019). Previous research

has predominantly examined the impact of either the father's (or the mother's) parenting style or parent–child attachment on adolescents' ego-identity (Grove, 2015; Zhang and Deng, 2015; Wang et al., 2017), overlooking the interactive dynamics among fathers, mothers, and children, such as the role of coparenting in adolescent ego-identity. Compared to one-sided father-child interactions between fathers and children or mothers and children, exploring more diverse father–mother–child interactions involving both fathers and mothers (e.g., coparenting) can provide a more comprehensive understanding of family dynamics and the influence of parents on children's mental health development (Belsky and Hsieh, 1998; Schoppe-Sullivan et al., 2004). Furthermore, in the context of previous Western cultures, research on coparenting has primarily focused on divorced families (Beckmeyer et al., 2014; Bowers et al., 2014). In contrast to Western cultural norms, in Eastern cultures, nuclear families represent the predominant family structure. Within nuclear families, there exists the presence of spousal coparenting behaviors, where wives exhibit coparenting behaviors toward husbands, and husbands exhibit coparenting behaviors toward wives (Huang et al., 2019; Ji et al., 2022). With fathers increasingly engaging in coparenting, a mother's positive attitude toward paternal coparenting assumes significant importance for family harmony and the psychological well-being of adolescents. However, there is currently a relative scarcity of research examining the influence of maternal positive coparenting on adolescents' ego-identity development. Consequently, this study aims to delve deeply into the relationship between maternal positive coparenting and adolescent ego-identity and its underlying mechanisms. The findings of this study hold significant implications for enhancing our understanding of coparenting, refining coparenting theory, guiding family education practices, and promoting positive psychological development in adolescents.

1.1. Maternal positive coparenting and adolescents' ego-identity

Coparenting refers to an alliance formed by parents during the process of raising children, encompassing positive or negative attitudes of one parent toward the other (Feinberg et al., 2007; Liu and Wu, 2015). Positive coparenting occurs when a family member responds positively to the child-rearing actions and goals of another family member. Based on this definition, maternal positive coparenting signifies the unity and consensus demonstrated by a mother in her child-rearing process toward the father's parenting style (Ji et al., 2022).

The role of coparenting in adolescents' psychological well-being has been widely acknowledged (Camisasca et al., 2019; Zhao et al., 2022), with different forms of coparenting exerting distinct effects on their psychological development. Supportive and positive coparenting between parents can enhance the parent–child relationship between parents and children, improve children's adaptive emotional regulation abilities, increase positive emotions, and contribute to their psychological well-being (Thomassin et al., 2017; Coates et al., 2019). Conversely, destructive and negative forms of coparenting behaviors can lead to increased negative emotions, weakened emotional regulation abilities, and a greater susceptibility to mental health problems (Thomassin et al., 2017; Coates et al., 2019). Furthermore, research has demonstrated that supportive or destructive coparenting behavior from one parent toward the other can promote family intimacy and cohesion. Positive coparenting behavior by one parent toward the other can also increase adolescents' sense of security and interpersonal trust (Chen and An, 2019; Huang et al., 2019).

While there is currently no direct evidence supporting a relationship between maternal positive coparenting and adolescent ego-identity, we can infer from the aforementioned studies that when a mother demonstrates a positive attitude and approach toward supporting the father's parenting behavior (positive coparenting), it has the potential to enhance family intimacy and cohesion. This, in turn, may foster warmth and love experienced by adolescents, ultimately strengthening their sense of security and interpersonal trust. These factors are crucial variables that contribute to adolescent ego-identity development (Meeus et al., 2002; Wang et al., 2008; Årseth et al., 2009). Therefore, we propose hypothesis 1 (H1): Maternal positive coparenting is positively related to the level of adolescent ego-identity development.

1.2. The mediating role of fathers' marital satisfaction

As proposed by Minuchin (1985), family systems theory posits that families are composed of a set of interacting subsystems, each interconnected subsystems that influence one another. The "crossover hypothesis," informed by this theory, suggests that the emotions or behaviors of one family member within a family subsystem can impact the emotions or behaviors of another member in a different subsystem (Bolger et al., 1989; White, 1999). In the context of coparenting, this implies that mothers' supportive and solidarity-based coparenting behaviors toward fathers can intersect with fathers' attitudes toward marriage, such as their level of satisfaction.

Previous research has demonstrated that parental cooperation in child-rearing fosters closer relationships between parents, leading to increased marital satisfaction (Feinberg, 2003; Patrick et al., 2007; Morrill et al., 2010). Additionally, studies have examined the impact of coparenting on the psychological well-being of the other parent and have found that positive coparenting behavior from one parent toward the other can enhance positive psychological qualities, such as resilience and parenting efficacy, in the recipient parent (Tao, 2021). Building on these theoretical and empirical foundations, it can be inferred that positive coparenting behaviors exhibited by mothers in support and solidarity with fathers may improve parental intimacy and foster positive psychological qualities in fathers, thereby enhancing fathers' satisfaction with marriage.

Similarly, according to the family systems theory spillover hypothesis of family systems theory, the parental relationship subsystem can also spill over and affect the child subsystem (Bolger et al., 1989; White, 1999). Fathers' experiences with marriage can transfer to influence their children's psychological development, including their ego identity. Research has shown that parents who are less satisfied with their own marriages are more likely to transfer this dissatisfaction to their children and adopt negative parenting styles (Coln et al., 2013), which negatively impact adolescents' ego identity development (Wang et al., 2008). Furthermore, scholars have pointed out that parents in poor relationships experience and express more negative emotions in their daily lives, which can disrupt the parent–child relationship and lead to excessive control or a lack of family intimacy (Lindsey et al.,

2009; Wang et al., 2016), hindering positive self-exploration and identity formation in adolescents. Therefore, this study formulates hypothesis 2 (H2): Father's marital satisfaction plays a mediating role between maternal positive coparenting and adolescent ego-identity.

1.3. The mediating role of adolescent peer relationship

According to the ecological systems theory, the microsystem refers to the immediate environments of individual activities and interactions. During adolescence, both family and peer relationships constitute direct microenvironments that significantly influence the daily life and experiences of adolescents, holding vital implications for individual psychological development. Additionally, the mesosystem highlights the interconnectedness or relationships between microsystem environments. Consequently, an adolescent's family environment, such as the parenting context, may be closely linked to their peer relationships (Harris, 1995; Brown et al., 1997). Social learning theory suggests that adolescents perceive their parents as role models and tend to imitate their behaviors and attitudes (Bandura, 1973). Positive coparenting behavior between parents can also be observed and learned by adolescents, and they may assimilate these behaviors into their own interpersonal communication skills, thus facilitating the establishment of positive peer relationships. Research has consistently shown that positive coparenting is associated with more positive social behavior and higher-quality peer attachments compared to negative coparenting (Leary and Katz, 2004; Huang et al., 2019). Therefore, it is expected that positive coparenting between mothers and fathers will have a positive impact on adolescent peer relationships.

Moreover, adolescent peer relationships, as a significant microsystem for adolescent psychological development, play a crucial role in adolescent ego-identity development. Becht et al. (2017) pointed out that there is a close association between peer relationships and the clarity of adolescents' self-concept. The better the peer relationships, the clearer adolescents' self-perception becomes. At the same time, peer acceptance provides emotional support and establishes a social network on which teenagers can depend during their journey of identity exploration (Zhang and Qin, 2023). Moreover, adolescents with strong peer relationships often receive more peer support and acceptance. Therefore, we propose hypothesis 3 (H3): Adolescent peer relationships mediate the relationship between maternal positive coparenting and adolescent ego-identity.

1.4. The chain-mediated role of paternal marital satisfaction and peer relationship

Based on the above analysis, it is proposed that a father's marital satisfaction and peer relationships may serve as mediators between maternal positive coparenting and adolescent ego-identity. Similarly, based on the ecological systems theory, the family and peer relationships serve as two crucial microsystems in adolescent development. These two systems are not mutually exclusive; rather, they are interconnected and mutually influential (Pérez et al., 2021; Rivers et al., 2022). Therefore, father's marital satisfaction, as a crucial variable in the family system, may also impact adolescent relationships with peers. Social learning theory suggests that children tend to develop their interpersonal communication patterns by observing their parents' interaction behaviors (Bandura, 1973). When parents have low marital satisfaction, it often leads to more conflicts, arguments, and attacks (Rosen Grandon et al., 2004). Adolescents observe and learn these negative behaviors, assimilating them into their own interpersonal communication patterns, which hinders the establishment of positive peer relationships. On the other hand, when parents have high marital satisfaction, their interaction patterns tend to be more harmonious and intimate, which can help improve the quality of adolescent peer relationships.

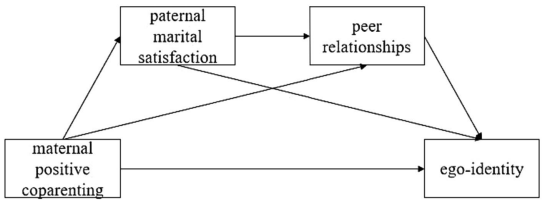

FIGURE 1
Hypothetical model diagram.

Empirical studies have shown that children growing up in families where parents are dissatisfied with their marital quality often exhibit higher levels of aggression or negative interpersonal communication (Buehler et al., 2009; Massar and Patil, 2020; Avci et al., 2021), hindering the establishment of positive relationships between adolescents and peers. Therefore, it is proposed that father's marital satisfaction may positively predict the quality of adolescent relationships with peers. Finally, we propose hypothesis 4 (H4): Paternal marital satisfaction and peer relationships play a chain mediating role between maternal positive coparenting and adolescent ego-identity (Figure 1).

2. Methods

2.1. Setting and participants

The study utilized a whole-class sampling method and targeted middle school students in a specific area of Henan Province, China, as participants. The students and their parents were notified by their schools and invited to complete the questionnaires online through the platform Questionnaire Star platform. A total of 620 questionnaires were collected for the study. After excluding incomplete or duplicate responses, 522 sets of valid questionnaires were retained, which were completed by all three parties (i.e., fathers, mothers, and teenagers), resulting in a valid response rate of 84.19%. To eliminate the interference of parental divorce, data from 34 groups of divorced families were deleted subsequently, so 488 families were ultimately included in the study. Among the teenagers, there were 257 males and 231 females. Furthermore, the participants included 224 students in Grade 7, 165 students in Grade 8, and 99 students in Grade 9. The seventh-grade target adolescents ranged in age from 12 to 14 years (mean age 12.61), and 52.33% of them were girls. The fathers ranged in age from 31 to 65 years (mean age 41.58, $SD = 5.08$). The mothers ranged in age from 31 to 58 years (mean age 40.03, $SD = 5.08$).

2.2. Measures

2.2.1. Maternal Positive Coparenting Scale

The Maternal Positive Coparenting Scale, originally developed by McHale (1997) and revised by Liu et al. (2017), was employed in this study. The scale comprises 17 items and is divided into two dimensions: Unity and Consistency. Participants rate each item on a 7-point scale, ranging from 1 (never) to 7 (always). Items were averaged and higher scores indicated a greater level of positive coparenting exhibited by the mother. Confirmatory factor analysis was conducted to assess the scale's validity and yielded satisfactory results:$\chi^2/df = 3.464$, CFI = 0.928, TLI = 0.915, SRMR = 0.063, RMSEA = 0.069 [0.061, 0.076]. The α coefficient was 0.941.

2.2.2. Father's Marital Satisfaction Scale

The Father's Marital Satisfaction Scale, initially developed by Fowers and Olson (1993), was utilized in this study. The scale is unidimensional and comprises 10 items. Participants rate each item on a 5-point scale. Responses are provided on this scale ranging from 1 (very inconsistent) to 5 (very consistent). Items were averaged, and higher scores indicating greater marital satisfaction in fathers. The fifth item was excluded from the scale due to a standardized factor loading of only 0.122. Confirmatory factor analysis yielded satisfactory results: $\chi^2/df = 1.986$, CFI = 0.983, TLI = 0.970, SRMR = 0.028, RMSEA = 0.043[0.024, 0.063]. The α coefficient was 0.841.

2.2.3. Adolescent Peer Relationship Scale

The Peer Relationship Scale, developed by Damme et al. (2002), is a unidimensional scale comprising 10 items. The scale is scored on a 4-point scale, ranging from 1 (never) to 4 (always). Items were averaged and a higher score indicated better peer relationships for the child. Confirmatory factor analysis yielded satisfactory results: $\chi^2/df = 3.772$, CFI = 0.938, TLI = 0.912, SRMR = 0.083, RMSEA = 0.073 [0.059, 0.087]. The α coefficient was 0.846.

2.2.4. Ego-Identity Scale

The Ego-Identity Scale, revised by Zhang (2000), was employed in this study. The scale comprises 12 items and is scored on a 6-point scale, ranging from 1 (very inconsistent) to 6 (very consistent). Items were averaged and a higher score indicated a higher level of ego-identity. Confirmatory factor analysis yielded satisfactory results: $\chi^2/df = 2.424$, CFI = 0.971, TLI = 0.944, SRMR = 0.037, RMSEA = 0.052[0.035, 0.070]. The α coefficient was 0.789.

2.3. Data analysis

Descriptive statistics, reliability analysis, and common method bias analysis were conducted using SPSS 25. Confirmatory factor analysis, path analysis, and structural equation modeling were performed using Mplus 8.3.

3. Results

3.1. Common method bias analysis

Harman's single-factor test was conducted by performing an unrotated factor analysis on the items of the respective scales. The results indicate that nine factors had eigenvalues greater than 1. The first factor accounted for 20.745% of the variance, below the critical threshold of 40%. Therefore, it can be concluded that the presence of common method bias is insignificant.

3.2. Descriptive statistics results

Correlation analysis was conducted among the total scores of the variables. The results indicated that the associations between family socioeconomic status, parental education level, and other variables are relatively low, and according, they will not have a significant impact on the model. Therefore, these variables will not be included in the subsequent covariate analysis. The results of correlation analysis showed that the correlation coefficients between the total scores of maternal positive coparenting, father's marital satisfaction, adolescent peer relationship and ego-identity ranged from 0.127 to 0.436 (all $p < 0.01$). Due to the complexity of the measurement model, a parceling technique was adopted to construct the structural equation model, which retained the information of the original items and dimensions while achieving acceptable model fit. Mother's positive coparenting and ego-identity were parceled based on their respective dimensions to enhance common variance and reduce random error. The factor loading of the 5th item in paternal marital satisfaction was only 0.122, leading to its removal. The remaining items were parceled into 3 groups using a high-loading approach to increase indicator consistency. As for adolescent peer relationships, since the number of reverse-scored items was equal to the number of forward-scored items, a unique information approach was used to parcel them into 2 groups, which helped to reduce within-group differences (Table 1).

3.3. The structural equation model testing

The structural equation model was constructed using the parceling groups, and the results indicated a good model fit: $\chi^2/df = 1.372$, CFI = 0.995, TLI = 0.992, SRMR = 0.025, RMSEA = 0.027 [0.000, 0.046]. The path coefficients of the mediated pathways were examined, and the results are presented in Table 2. The predictive effect of maternal positive coparenting on paternal marital satisfaction was significant (coeff = 0.185, $z = 3.442$, $p < 0.001$). The predictive effect of maternal positive coparenting on peer relationships was significant (coeff = 0.265, $z = 3.598$, $p < 0.001$), as well as the predictive effect of paternal marital satisfaction on peer relationships (coeff = 0.133, $z = 2.413$, $p < 0.05$). The predictive effect of maternal positive coparenting on ego-identity was significant (coeff = 0.210, $z = 3.720$, $p < 0.001$), while the predictive effect of paternal marital satisfaction on ego-identity was not significant (coeff = 0.018, $z = 0.379$, $p > 0.05$). The predictive effect of peer relationships on ego-identity was significant (coeff = 0.615, $z = 9.555$, $p < 0.001$) (Figure 2).

Further mediation analysis revealed that the mediating effect of paternal marital satisfaction was not significant ($coeff = 0.003$, $p > 0.05$), while all other effects were significant (all $p < 0.05$), and the confidence intervals did not include 0. Specifically, the direct effect (0.210), the mediating effect of peer relationships (0.163), and the chain-mediated effect of paternal marital satisfaction and peer relationships (0.015) accounted for 53.708, 41.688, and 3.836%, respectively, of the total effect (0.391). Specific details can be found in Table 3.

TABLE 1 Descriptive statistics and correlation analysis of total scores for each variable ($n = 488$).

Index	M ± SD	1	2	3	4	4	5	6
1. Family socioeconomic status	4.865 ± 2.096	1						
2. Maternal education level	2.750 ± 1.176	0.280**	1					
3. Maternal education level	2.994 ± 1.202	0.329**	0.614**	1				
4. Maternal positive coparenting	72.207 ± 19.893	0.072	0.111*	0.107*	1			
5. Paternal marital satisfaction	39.033 ± 6.643	0.105*	0.055	0.084	0.170**	1		
6. Peer relationships	31.996 ± 5.506	−0.066	−0.001	0.007	0.253**	0.143**	1	
7. Ego-identity	47.992 ± 8.170	0.075	0.080	0.131**	0.131**	0.307**	0.137**	0.424**

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

TABLE 2 Analysis of chain mediation path coefficients.

Model	Outcome variable	Predictive variable	Coefficient	Est./S.E.
1	Paternal marital satisfaction	Maternal positive coparenting	0.203	3.790***
2	Peer relationships	Maternal positive coparenting	0.305	3.920***
		Paternal marital satisfaction	0.173	2.703**
3	Ego-identity	Maternal positive coparenting	0.218	3.007**
		Paternal marital satisfaction	−0.001	−0.014
		Peer relationships	0.584	7.197***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

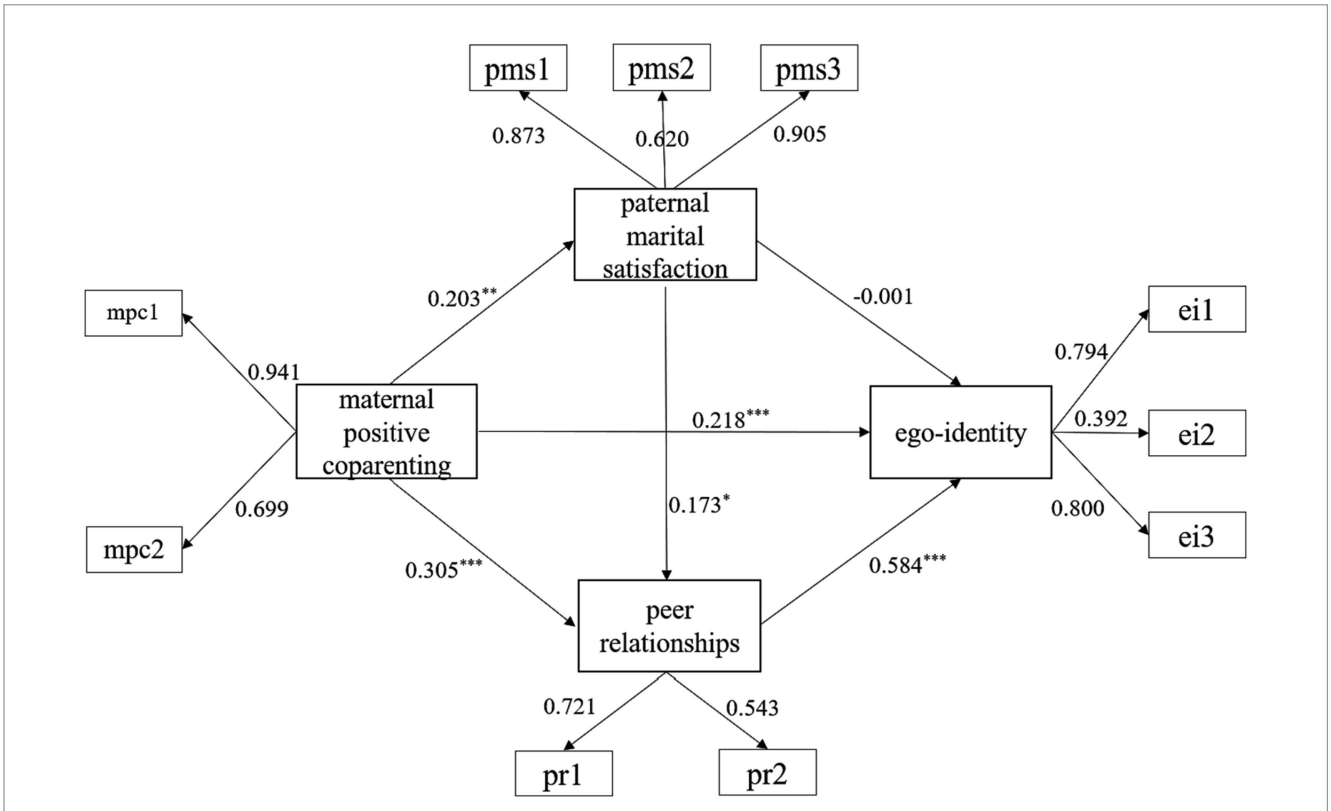

FIGURE 2
Chain mediated regression path. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

TABLE 3 Decomposition of mediation effects.

	Effect	Est./S.E.	Lower 2.5%	Upper 2.5%	Percentage
Direct effect	0.218	3.007***	0.069	0.3329	52.163%
Indirect effect	0.199	3.335**	0.105	0.318	47.837%
M1	0.000	−0.013	−0.024	0.017	0.000%
M2	0.178	3.026**	0.087	0.294	42.788%
M3	0.021	1.965*	0.006	0.044	5.048%
Total effect	0.416	8.119***	0.312	0.498	–

M1, Maternal positive coparenting→Paternal marital satisfaction→Ego-identity; M2, Maternal positive coparenting→Peer relationships→Ego-identity; M3, Maternal positive coparenting→Paternal marital satisfaction→Peer relationships→Ego-identity; Lower 2.5% and Upper 2.5% indicate BCBootstrap 2.5 and 97.5%. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

4. Discussion

4.1. Maternal positive coparenting and adolescents' ego-identity

This study provides innovative insights into the relationship between maternal positive coparenting and adolescents' ego-identity. The findings support the research hypothesis by demonstrating that maternal positive coparenting positively predicts the level of adolescents' ego-identity. The results emphasize the significance of maternal positive coparenting as a significant family variable associated with the development of adolescents' ego-identity. Mothers adopting a unified and positive coparenting approach with fathers fosters intimacy and cohesion within the family. Consequently, adolescents to feel more supported, and secure, and experience warmth within the family context (Chen and An, 2019; Huang et al., 2019). These factors contribute to the healthy development of adolescents' ego-identity (Meeus et al., 2002; Wang et al., 2008; Årseth et al., 2009). Conversely, lower levels of positive coparenting may result in reduced intimacy among family members and increased family conflicts, which can hinder the positive development of adolescents' self-awareness and ego-identity.

4.2. The mediating role of fathers' marital satisfaction

The results indicate that parental marital satisfaction does not significantly mediate the relationship between maternal positive coparenting and adolescent ego-identity. However, the analysis revealed that maternal positive coparenting is positively associated with father's marital satisfaction. This finding is consistent with prior research (Feinberg, 2003; Morrill et al., 2010), suggesting that when mothers demonstrate a consistent and united approach to fathers' parenting, it promotes a higher level of intimacy between the parents. These findings further validate the Family Systems Theory, which suggests that multiple subsystems within a family system interact and rely on each other (Minuchin, 1985). The triadic coparenting subsystem, comprising the father, mother, and child, can also "spillover" and impact the behavior or attitudes of the parent–child subsystem (father's marital satisfaction).

It is worthy to note that father's marital satisfaction cannot directly predict adolescents' levels of ego-identity. This finding further validates the coexistence of the spillover and compensation hypotheses within the Family Systems Theory. According to the Family Systems Theory, various subsystems within the family (such as the father-child, mother–child, and marital subsystem) mutually influence each other, following the spillover or compensation hypotheses (Erel and Burman, 1995). Based on the spillover hypothesis, lower marital satisfaction in fathers indicates more conflicts, dissatisfaction, and negative emotional and behavioral interaction patterns within the marital relationship (Wang et al., 2016). These negative patterns and emotions may potentially spill over into the father-child interaction process, resulting in more negative interactions with adolescents (Coln et al., 2013), which hinders adolescents' self-exploration and commitment, thus impairing the development of adolescents' self-identity (Meeus et al., 2002). On the other hand, according to the compensation hypothesis (Erel and Burman, 1995), when fathers have lower marital satisfaction and their need for intimate relationships within the marital relationship is not fulfilled, they may redirect the missing marital intimacy toward their adolescents by providing more attention and emotional support. This further promotes adolescents' positive self-exploration and self-identity development (Wang et al., 2008). Therefore, due to the simultaneous spillover and compensation effects, the promotion effect of father's marital satisfaction on adolescents' self-identity is not significant in the results. However, further research can explore potential moderating variables, such as the father's personality type (de Moor et al., 2019), to investigate why some fathers follow the spillover hypothesis while others follow the compensation hypothesis.

4.3. The mediating role of adolescent peer relationships

The research results indicate that adolescent peer relationships mediate the relationship between maternal positive coparenting and adolescent ego-identity, thus supporting Hypothesis 3. According to the ecological systems theory, family dynamics such as parental coparenting and peer relationships serve as crucial micro-level environments for adolescent psychological development, including aspects like ego-identity. Furthermore, the mesosystem emphasizes the interconnectedness and interrelations between various micro-level systems. As a result, the coparenting within the family environment and adolescent peer relationships are likely to be closely interconnected in the context of adolescent development (Zhang and Qin, 2023). When there is supportive and cohesive coparenting within the family,

it enhances adolescents' sense of security and interpersonal trust, leading to improved attachment quality with their peers and facilitating the formation of positive peer relationships (McHale, 1997; Chen and An, 2019; Huang et al., 2019). Simultaneously, engaging in peer interactions is beneficial for adolescents' self-identity development (Kerpelman et al., 2012; Becht et al., 2017). The process of communication with adolescent peers provides opportunities for self-identification. Adolescents receive acceptance and support from positive peer relationships, which facilitates their active self-exploration (Newman and Newman, 1976; Weeks and Pasupathi, 2010). As a result, this promotes the development of adolescents' ego-identity levels.

4.4. The chain mediating role of fathers' marital satisfaction and adolescent peer relationships

This study also found that the mediating pathway of "father's marital satisfaction → peer relationships" is an important mechanism through which maternal positive coparenting is associated with adolescent ego-identity, supporting Hypothesis 4. This result suggests that a mother's supportive and consistent attitude or behavior toward coparenting with the father can enhance the intimacy among parents (Feinberg, 2003; Morrill et al., 2010), thereby increasing the father's satisfaction with marriage (Patrick et al., 2007). Higher levels of paternal marital satisfaction may be associated with less family conflict and more positive patterns of husband-wife interactions which may be imitated and learned by adolescents (Wu et al., 2016; Becht et al., 2017), thus influencing the quality of adolescent peer relationships (Cui et al., 2018); Communication with peers can further promote adolescent identity formation and self-exploration (Weeks and Pasupathi, 2010; Becht et al., 2017), thus promoting the development of adolescent ego-identity. Therefore, the mediating pathway of "father's marital satisfaction → peer relationships" serves as an important bridge between a maternal positive coparenting and adolescent ego-identity. This finding confirms the perspective of the ecological systems theory, where both family and peers are core microsystems in adolescent development, interconnected and able to jointly affect adolescent psychological development (Pérez et al., 2021; Rivers et al., 2022).

4.5. Research significance

This study investigates the effect of maternal positive coparenting, paternal marital satisfaction, and peer relationships on adolescent ego-identity from family system theory and ecological systems theory perspectives. It holds both theoretical and practical significance.

Firstly, the study's sample was selected from intact nuclear families within an Eastern cultural context. The findings of this research offer empirical references for potential cross-cultural investigations into co-parenting dynamics, spanning both Eastern and Western environments. Moreover, these results enrich the content and significance of family systems theory.

Furthermore, the findings of this study also hold significant educational implications for enhancing adolescent ego-identity. Firstly, The findings of this study contribute to enhancing adolescent ego-identity from the perspectives of psychological counseling practices and the collaboration between home and school. In the process of psychological counseling, it is beneficial to guide adolescents' mothers in increasing their positive coparenting behaviors. Simultaneously, within the school environment, encouraging teachers to facilitate the formation of positive peer relationships among adolescents can further elevate their ego-identity; In the cultural context of China, as primary caregivers, mothers should aim for a cohesive and consistent approach to involving fathers in parenting. Secondly, when mothers engage with their children, providing positive feedback to fathers' parenting behaviors, it results in an increase in paternal marital satisfaction. This, in turn, encourages adolescents to learn positive interaction patterns from their parents, further enhancing their peer relationships. Consequently, this progression is conducive to the development of adolescent ego-identity.

4.6. Research limitations and prospects

While this study provides theoretical and empirical support for exploring the association between maternal positive coparenting and adolescent ego-identity, several limitations should be addressed in future research.

Firstly, this study has not taken into account potential moderating variables in the relationship pathway between maternal positive coparenting and adolescent ego-identity. However, family life factors, such as unemployment, economic preferences, and education level, which are crucial variables within the microsystem of the family, might serve as latent moderating variables within the pathway between maternal positive coparenting and adolescent ego-identity. Therefore, in future research, investigating these moderating variables and family life factors could provide greater depth to our insights.

Secondly, the results of the mediation analysis in this study revealed that the mediating variables played a partial mediating role in the relationship between maternal positive coparenting and adolescent ego-identity, rather than a full mediation. Therefore, future research could continue to explore the influence of other potential mediating variables, such as family life factors. This could provide a deeper understanding of the pathways that underlie the relationship between maternal positive coparenting and adolescent ego-identity.

Thirdly, this study employs a quantitative research approach for investigation. In the future, it is advisable to consider incorporating qualitative research methods, such as interviews, to explore the experiences of parents and adolescents during their growth that could potentially impact the development of adolescent ego-identity.

Fourthly, this study employed a cross-sectional design, which limits the ability to make causal inferences about the relationships between variables. Future longitudinal studies could examine the dynamic nature of the relationship between maternal positive coparenting and adolescent ego-identity over time.

Lastly, the sample for this study comprised only families from central cities in China. It thus remains unclear whether the findings

can be generalized to economically more developed coastal cities. Future research could possibly expand the sample size and consider surveys conducted in economically developed coastal areas to further explore the generalizability of the results.

5. Conclusion

From the perspective of positive psychology, based on family system theory and family-peer linkage perspectives, this study investigated the mechanism of adolescent ego-identity formation. The findings suggest that there is an association between maternal positive coparenting and adolescent ego-identity, with maternal positive coparenting being linked not only to direct predictions of adolescent ego-identity but also to indirect predictions through adolescent peer relationships or the "paternal marital satisfaction → peer relationships" pathway.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Research Ethics Committee of the Institute of Psychology and Behavior, Henan University. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

Author contributions

WJ: conceptualization, methodology, data curation and writing-review and editing. RL: writing-original draft, review and editing. PM: data curation, formal analysis. HZ: validation and investigation. LF: data collection, editing. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Shared parenting and father involvement after divorce in Denmark

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The Scandinavian countries make interesting samples for the study of shared parenting as they are characterized by some of the highest levels of father involvement and gender equality globally. Despite numerous studies, data from Denmark is noticeably absent in the international debate, partly due to a researcher preference for publishing in Danish. Here, I present an overview of the increase in father involvement in Denmark since the 1960s and on the increase in shared parenting across recent decades. I further examine Danish law, ministerial guidelines and guidelines from major Danish public and private institutions/organizations involved in deciding or advising on parenting practices post-divorce. I relate these to international research findings as well as to findings from Danish research. Overall, I find that Danish guidelines/practice have several reservations against shared parenting and substantial father involvement, which are not considered warranted by a substantial number of scientists and which are not supported by the majority of the available evidence. It thus appears that societal transition toward increased shared parenting has happened on a largely voluntary basis in spite of official law/practice. Updated law and/or ministerial guidelines are likely necessary if politicians desire that children experience the same high degree of father involvement post-divorce that they experience in society in general.

KEYWORDS

shared parenting, joint physical custody, father involvement, divorce, mental health, well-being, dual residence, parent–child relationship

1. Background and definitions

The Scandinavian countries form interesting samples for the study of post-divorce family organization and shared parenting due to their high degree of gender equality and father involvement in childcare. Numerous studies are published internationally from particularly Sweden but also Norway. However, data from the third Scandinavian country, Denmark, is remarkably absent in the international literature. This is not because studies are not conducted, but rather that they have been published in Danish, and thus are not easily accessible to readers outside of Scandinavia. A main purpose of this article is to remedy this situation by conducting a detailed analysis of the development of shared parenting in Denmark over recent decades. Specifically, I review the literature on the development in custody and parenting time in Denmark in the context of local and international research on the topic, and I discuss this research in relation to Danish law, official guidelines and legal practice. The review examines whether the historical increase in shared parenting has happened on a voluntary basis or whether it has been facilitated by law/professional guidelines, and it raises the question of whether joint physical custody should be a legal presumption.

The scientific literature on the topic discusses parenting time using a set of terms that are to some extent bound to specific societies/laws. For example, the English-language literature often uses terms from the US legal system: joint custody (JC) and sole custody (SC). These can be further elaborated to specify if the custody is physical or legal: sole/joint physical custody (SPC/JPC) and sole/joint legal custody (SLC/JLC). JPC and SPC are defined on the basis of how much time the child spends with each parent. In some older studies, JPC is defined as children spending at least 25% of the time with each parent (i.e., having at least a 25–75 division of time with the parents) (Bauserman, 2002) whereas recently, it is more commonly defined as children spending at least 35% or even 50% of their time with each parent (for an overview of definitions in 40 studies between 2007 and 2018, see Steinbach, 2019). JLC refers to the legal right to be involved in major decisions about a child's life and does not, as such, set any rule on how often the parent and child are physically together. Nevertheless, there is of course in practice a relationship so that a parent with legal custody on average spends more time with their child than one without. I use these terms primarily when discussing research in which clear definitions are made.

The terms and definitions in Danish law and practice are in many ways comparable to those in the US system, but also differs in some aspects. It is legally split into three separate domains: custody, residence and visitation. In Danish law ("Forældreansvarsloven"), custody refers to legal custody exclusively, and it is estimated to be shared in over 90% of the cases (Ottosen, 2016, p. 37). In the same law, residence refers to where the child is registered to live, and this is nearly always in one place (as I describe in Section 3). Since 2019, the law has technically allowed shared residence if both parents agree, but it can be argued that it has little to no legal significance for a number of reasons. For example, the law establishes that it can only be introduced voluntarily, it can be revoked unilaterally, it cannot be established in court, and even when it is in place, the child is still formally listed as residing in only one place for most purposes in public records. The residential parent has a number of rights above those of the non-residential parent, including, for example, the right to relocate with the child to anywhere within the country. Visitation is typically set (voluntarily, by mediation or by court) as a specific number of days across a 14-day period. For example, an equal division of 7 days with each parent is referred to as a 7–7 arrangement. In everyday conversation, typically only 7–7 is considered shared parenting. In Danish scientific studies, shared parenting is often referred to as an "equally split arrangement" ("lige deleordning") or simply "split arrangement" ("deleordning"), and it includes typically only 8–6, 7–7 and similar divisions (e.g., Ottosen et al., 2018, p. 102; Ottosen and Stage, 2012, p. 14). Legally, the residential parent typically cannot claim child support from the other parent in an 8–6 or a 7–7 division. Comparing to the international literature where JPC is frequently used to describe 30–35% of the time with each parent, the Danish equivalent of JPC is thus defined relatively high as 43% (an 8–6 split) or more time with each parent. To avoid confusion based on differences in definitions, I generally avoid the term JPC when discussing Danish research/guidelines, and instead use the broader term shared parenting (which I also use when discussing the concept in general) or equal time/equal parenting time when a more specific definition is warranted.

In this article, I first provide an overview of the developments in parental caregiving time across recent decades for Danish men and women. Next, I compare men's share of caregiving after divorce[1] to that in society in general and establish that there is a substantial gap (with divorced men providing less care than men in society in general). Subsequently, I examine how Danish law and official guidelines might contribute to this gap. In order to examine whether reduced post-divorce father involvement could have a negative impact on children, I review both the international and Danish research literature on the topic in the context of Danish law and guidelines. The review focuses on the overall impact of parenting time, but also considers specific situations – for example when divorce involves young children or high interparental conflict. Finally, I report studies of children's view on increased post-divorce father involvement, and I present researcher/expert consensus statements.

2. Changes in the division of labor

As in many other countries, the division of labor and parental roles in Denmark has changed dramatically over the past two generations, and equal divisions are closer than ever historically. I first examine this change and subsequently compare it to changes in children's residence and to time spent with each parent post-divorce.

Over the past 60 years in Denmark, a dramatic change is evident both in terms of how time is spent overall and how women and men spend their time, respectively. Bonke (2012) presents an overview of this development, dividing time spent into work (paid labor), housework (a broad grouping of all unpaid work at home, including parental caregiving) and leisure time (including sleep). Using the data from Bonke's (2012, Table 4.3) of the time spent in each of these categories by men and women between 1964 and 2009, a number of observations can be made and the development in men's share of housework can be calculated. For example, Bonke (2012, Table 4.3) reports that in 1964, Danish men worked an average of 6 h per day (all year round) compared to 4 h in 2009, and the time gained has been transferred almost one to one to housework, which has increased from just under half an hour a day to 2 h and 17 min. This corresponds to an increase from 10 to 40% in men's share of the housework (Figure 1). Interestingly, the additional 1 h and 45 min spent on housework by men has resulted in just approximately 45 min less housework and more professional work for women on average (Bonke, 2012, Table 4.3). A recent report with data from 2018 shows a continuation of the tendency with men performing 46% of the housework (Bonke and Wiese Christensen, 2018, Table 3.3). Overall, leisure time has increased slightly over the years, but so has the total amount of time spent on housework despite more household appliances. The question is how the extra time is spent?

The children seem to be a significant part of the answer. In 2008, fathers and mothers both spent approximately 30–40 min more each day on primary caregiving of children than fathers/mothers did in 1987 (Bonke, 2009, Table 5.2). In that period, the fathers' share increased from 33 to 39%, and the share was relatively stable for

1 I use the term divorce throughout the article for simplicity, but it should be noted that some studies include unmarried partners who have separated. This is also the case for the reviewed Danish studies. Given the high prevalence of children outside marriage in Denmark, I consider this a relevant inclusion.

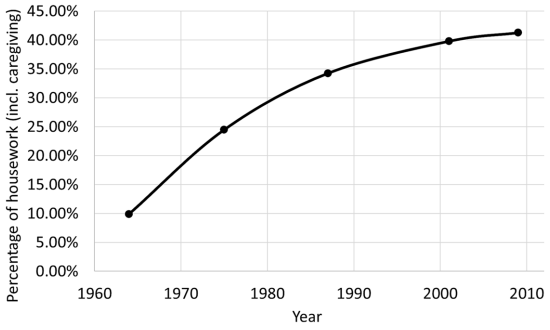

FIGURE 1
Danish Men's share of housework in the period 1964–2009. Calculations are made using data on the number of hours spent on housework for men and women, respectively, as reported by Bonke (2012, Table 4.3) for the years 1964, 1975, 1987, 2001, and 2009. Men's share of the housework is calculated as the number of hours spent by men divided by the total number of hours spent by men and women for each year. Parental caregiving is grouped as part of the housework in the report.

children of different ages (Bonke, 2009, Figure 5.2).[2] The fathers' share of the total housework thus seems to correspond roughly to their share of caring for the children, *cf.* Figure 1. It may be noted that a large part of the average increase in caregiving time for fathers is due to far more fathers actively participating in childcare on a given day rather than them spending more time on their active days. Specifically, the probability of a father spending any caregiving time on a given day doubled from 31% in 1987 to 61% in 2009, but the time spent on an "active" day increased only from 1 h and 11 min to 1 h and 27 min. Perhaps surprisingly, the figures show that fathers spent more time with the children on average in 2001 and 2009 than mothers did in 1987. When counting also secondary caregiving (caregiving while performing another activity), fathers provided around 50% of the care when the difference in parent education level was 6 or fewer years and 40% for larger educational gaps already in 2001 (Bonke, 2009, Table 5.6).

A recent report shows that in society in general, 19% of men and 27% of women provide caregiving on a given day, and they spend 2 h and 54 min and 3 h and 16 min respectively, leading to an overall nearly identical contribution (47%) on active days but an overall contribution of 38% for men due to the fewer active days (Bonke and Wiese Christensen, 2018, Table 5.4). When examining parents exclusively, more caregiving time was spent on younger children, but fathers' share of care was 38–39% for both young (under 7 years) and older children (Bonke and Wiese Christensen, 2018, Table 5.5).

The trend of increased time with the children for both mothers and fathers, as well as generally increased father involvement, can be found in other western countries, e.g., in a study with data from 13 western countries, incl. Denmark (Dotti Sani and Treas, 2016). Based on the study's graphs, the fathers' share of the care can be calculated to be approximately 35% in the period 2000–2010 in for example the United States, Canada, Norway, Netherlands, and the United Kingdom.

Overall, it can thus be said that both mothers and fathers spend significantly more time with their children than before, and despite the fact that Danish fathers in 2009 and 2016 were "only" responsible for approximately 40% of the primary care of children, they spent more time with them than mothers did 1–2 generations before that. It may further be noted that Figure 1 appears to have an asymptote below 45% and primary caregiving does not seem to exceed 40%, indicating that something is preventing a fully equal distribution of responsibilities, perhaps primarily that men appear to not reach the same number of active caregiving days as women.

3. Changes after divorce

Fathers' increased total and relative time with the children is reflected to some extent in post-divorce custody in Denmark and internationally. An overview from Wisconsin, United States, shows for example, that SC has always been the most common outcome, but the proportion of children in such an arrangement decreased from around 80% in 1988 to around 40% in 2008 (Cancian et al., 2014). During that period, the proportion of children who lived primarily with their father remained more or less unchanged between 5 and 10%, while equal and unequal shared custody increased from around 5% each to around 25 and 20%, respectively. An even greater increase is observed in Sweden, where the proportion of children with shared residence and equal parenting time increased from around 1% to 30–40% (Bergström et al., 2015). Recent figures from other comparable countries show a similar development in JPC with an increase from 10% in 2002 to around 30% in 2012 in Norway (Kitterød and Wiik, 2017) and from around 10% in the early 1990s to 33% in 2006–2008 in Flanders, Belgium (Sodermans et al., 2013). Canada stands out with only 9% reported in a 2009 article (Swiss and Le Bourdais, 2009) and Australia also with only 8% (Cashmore et al., 2010).

Recent figures for residence and visitation in Denmark are reported, for example, in publications from The Danish Center for Social Science Research. Every four years (in 2010, 2014, 2018 and 2022), the center has published a report on the welfare and wellbeing of children – including children of divorce – in Denmark, and they have occasionally published research reports fully dedicated to shared parenting (in 2011 and 2012). One such publication reports a longitudinal study that followed children born in 1995. Here, Ottosen and Stage (2012, Figure 3.3) report that residence was almost always registered with the mother – in 100% of the cases for children aged 4–5 months, 92% at 7 years and 88% at 15 years. In a report from 2018, only a minor change in the asymmetry is seen: 88% at 7 years, 83% at 15 years (Ottosen et al., 2018, Figure 5.1.3). The 2022 report grouped children by whether they lived with their mother (53%) or father (6%), or whether they lived equally with both (41%) (Ottosen et al., 2022, Table 5.1.5). This means that for the children outside equal time arrangements, 90% (53%/(53% + 6%)) resided with their mother. They note that the probability of a child being in an equal time arrangement is largest if the residence is formally registered with their father, and that this probability increased gradually between 2009 and 2021 (Ottosen et al., 2022). This may be because many parents of two children, who practice shared parenting, register one child with each parent (Ottosen et al., 2022, p. 236). The small historic increase in

2 For example, for children below 1year, fathers spent 1.7h/day on primary caregiving and mothers spent 2.45h/day in 2008. At age 10, fathers spent around 35min/day while mothers spent around 55min/day.

paternal residence likely thus simply reflects an increase in shared parenting. Indeed, the proportion reporting living with the father (and not also with the mother) has been stable around 6–8% since 2009 (Ottosen et al., 2022, Table 5.1.5).

Ottosen and Stage (2012, Figure 3.4) further report that in this cohort, the proportion of children with equal parenting time arrangements varied by age, peaking at age 11 (around 18%), while it was rarer at ages 3 and 15 (both around 8%). Limited contact, weekend contact and extended contact (1–3, 4–6, and 7–11 monthly overnights, respectively) were consistently more prevalent at all ages. In general, with 15% in shared parenting schemes in 2009 (Ottosen et al., 2022, Table 5.1.3), Denmark thus ranked relatively low compared to many comparable countries despite general high societal father involvement. The proportion increased rapidly to 29% in 2013, 37% in 2017, and 41% in 2021 (Ottosen et al., 2022, Figure 5.1.3). This substantial increase across less than a decade is found for all age groups except for young children, where, for example, the prevalence for 3-year-olds decreased from 36% in 2013 to 21% in 2017 (Ottosen et al., 2018, Figure 5.1.4). The researchers behind the report speculate that this decrease could be related to official recommendations against shared parenting for young children or random fluctuation due to small samples in this category (Ottosen et al., 2018, p. 108). Based on the reports, it is possible to estimate the fathers' share of care after divorce compared to society in general.

The 2012 report provides relatively precise definitions of the various visitation groups with the last measurement taken in 2011 when the children were 15 years old (and the earliest in 1996 when the children were 4–5 months). Knowing the probability of residence with the mother/father, respectively, for each age group, the proportion of children in each visitation group for each age group and how many nights the child spent with each parent, a fairly precise estimate can be made of how much time the children spent with their father and mother after a divorce.[3] The figure is around 20–25% with their father at all ages. Therefore, it may be assumed that the day-to-day care after divorce around 10–20 years ago was provided primarily by the mother to an extent that differed significantly relative to what one would expect based on caregiving by fathers and mothers in society in general. After divorce, children spent 3–4 times as much time with their mother as with their father (an 75–80% versus 20–25% division), while mothers in general "only" provided 50% more primary care than fathers in society in general (a 60 to 40% division). In other words, the father's share in care after divorce around 2000–2010 was less than the average father's share in the overall housework in 1975 and thus approximately 30–40 years behind the development in society in general.

Corresponding calculations based on the 2014, 2018, and 2022 reports are somewhat less precise, as the visitation groups were defined more loosely and subjectively. In the latter reports, for example, it is divided into "no contact," "shared parenting," (meaning complete or almost completely equal time) and "other," where the latter thus covers the three intermediate arrangements of the 2012 report. The 2022 report contains the numbers for all years so estimations can be made based on this report alone. If we assume an equal division of children reported as having the "other" arrangement into the three visitation groups from the 2012 report, the fathers' share childcare post-divorce is estimated to just below 30% in 2013 and around 30–35% in 2017 for children of most ages. However, the younger children are again the exception, where the fathers' share is down to 25% in 2017 after having been at nearly 30% in 2013. The assumption of an equal division appears relatively accurate as the more precise 2011 paternal caregiving estimates are generally −1.5% percent higher than the 2009 estimates and 3–8% lower than the 2013 estimates across the various age categories.

Using data from the 2022 report (Ottosen et al., 2022), fathers' overall share of caregiving can be estimated to be around 33% in general in 2021. The share varies by age group from 25% for 3-year-olds to around 35% for 11- and 15-year-olds). Overall, fathers' share in caring for the children after divorce in 2021 thus corresponded to the average father's involvement in the period 1987–2001 [where it was 33–34% according to Bonke (2009)]. It was thus "only" 20–35 years after the general development in society despite a substantial increase in shared parenting. Specifically for young children aged 3, the involvement nevertheless corresponded to that of the 1970s.

In principle, there can be many reasons why fathers' involvement in childcare after divorce lags decades behind general societal development such as the children's/parents' wishes, the children's needs (and parents' perception of this) and the practice of the family law system. Common to all perspectives appear to be a desire to act in the child's best interests, but there are different perceptions of what that is. Below, I examine the current recommendations of Danish institutions and authorities in the field and subsequently relate these to recent scientific research and consensus.

4. Danish law and guidelines

With respect to residency and visitation, the Danish law ("Forældreansvarsloven") is remarkably vague. §4 establishes that decisions must be based on the child's best interests, without further specifying these except with respect to physical violence. §17 establishes that the courts have the authority to decide the child's residence if the parents disagree. Importantly, §18a establishes that shared residency can only be established voluntarily (and thus not decided by the authorities), and it can be revoked by one parent (whether or not the other agrees). In terms of visitation, §19 establishes that the child (i.e., not the parent) has a right to visitation with the non-residential parent, and §21 establishes that the extent is defined to be set based on concrete assessment of the child's situation without specifying how. §42 further establishes that the minister of social affairs can set rules/guidelines for these aspects, and this is indeed done (Social-, Bolig- og Ældreministeriet, 2023).

Much of these ministerial guidelines relate to procedures and to considerations for complex cases (e.g., cases involving violence,

3 For example, for 3-year-olds, 28% of children have "weekend contact" with an average of 5 overnights stays, and 94% reside with their mother. For these children, fathers thus provide an average of 5*0.94+25*0.06=6.2 monthly care nights, or 20.7% of the care if we treat a month as 30days (i.e., 6.2/30=20.7%). Across all visitation categories for 3-year-olds, fathers provided 6% the care for 16% of the children (no contact category), 11.9% for 31% of the children (limited contact), 20.7% for 28% of the children (weekend contact), 32.4% for 17% of the children (extended contact) and 50% for 8% of the children (equal time). Adding these proportions lead to an estimate of fathers providing 19.9% of the care for 3-year-olds.

mental illness or substance abuse) while relatively little space is dedicated to specific guidelines for deciding residency and visitation in non-complex cases where the parents disagree. For residency, section 4.2 of the ministerial guidelines primarily establish that emphasis may be placed on the parent–child attachment, the parents' personal characteristics, and on how the child will react to potentially moving as a consequence of the decision. Gatekeeping behavior (primarily obstruction of visitation according to section 2.2 of the guidelines) may also be considered as well as the risk of violence or witnessing violence. For visitation, Section 5 of the guidelines lists that the decision may be based on the age and development of the child, the child's own opinion, their everyday life and activities, prior contact, interparental collaboration, the personal characteristics of the parents, the distance between homes, contact to siblings and other practical matters. It lists that any arrangement can be set, but for equal time it is usually required that it should not affect the child's school or social life, and it is a decisive requirement that parents can collaborate to create continuity between the two homes and allow for flexibility with respect to the child's need for contact. Specific guidelines are also set for children under the age of 3. It is, for example, mentioned that within the first 5 months of the child's life, frequent but brief visitation of less than an hour may be set, and that these can be increased with age. At around 9–12 months, overnights can be initiated. Together, the law and ministerial guidelines primarily establish that unless both parents agree to shared residence, a single parent holds the residence and the courts can decide who. Apart from the decision of equal visitation time, no explicit rules guide the verdicts, but some factors are listed that may (or may not) be considered, leaving a lot of power of decision to the courts and The Agency of Family Law ("Familieretshuset"), which is described below.

The Agency of Family Law is the first and, in many cases, only institution that parents encounter during divorce. The agency – for example – handles divorce applications, provides mediation between parties, provides advice on custody/visitation arrangements, conducts interviews with children, and they can assign residence/visitation temporarily and refer a case to court. The majority of families set a visitation scheme without any official involvement, but for the substantial minority – 23-30% (Ottosen, 2016, p. 59) – who do not, the process begins at the Agency of Family Law. The agency is also often the first place where parents seek information about their choice of visitation scheme. They act according to the law and ministerial guidelines, but in light of the vague framework set by these, they also have their own published guidelines. These guidelines are central to understanding the workings of the legal system in Denmark as they are more explicit, form the basis of the initial mediation/decision and thus largely reflect the consensus within system.

The Agency of Family Law have recently updated their visitation guidelines (November 2022) (Familieretshuset, 2022a), but the previous document is still on the website (Familieretshuset, 2022b), and it is the one you are referred to if you access the website via Google's search engine. In both documents, emphasis is placed on the child's age, previous contact to parents, distance between parents' residences and parents' ability to cooperate, as well as their personal relationship. I review both these guides below. In March 2023, the guide document was updated with a new date, but I was unable to identify any other changes from the November 2022 guide.

The previous guide listed some very specific recommendations for visitation and residence. It was stated that young children need a primary caregiver with whom the child resides. Initially overnight stays with the other parents are discouraged, but contact may be gradually extended so that overnights can be attempted between the ages of 1 and 3 (i.e., somewhat later than mentioned in the ministerial guidelines). For children between ages 3 and 6, contact and the number of overnights can be increased, and if it works well for the child, shared time can be approached. For 6-12-year-olds, it is stated that nothing can be said about specific needs in relation to visitation schemes, apart from the fact that it can be important to listen to the child's wishes. From the age of 12 and up, it is mentioned that children themselves typically do not desire shared parenting. Furthermore, it is mentioned that when there is a high level of conflict between parents, children should live primarily with one parent.

Overall, the previous guidelines focus on the relationship with the primary caregiver (typically the mother, considering the residency statistics), and then you may or may not gradually develop a relationship with the other parent, who would typically be the father, if circumstances allow for it. A very cautious attitude is expressed toward shared parenting both for young children, older children and in divorces with conflict or where parental cooperation is less than ideal. According to Ottosen and Stage (2012, Table 4.2), cooperation is less than "reasonable/tolerable" in 44% of all divorces in Denmark, and 59% of parents do not have "extensive cooperation." If you take into account both age and cooperation/conflict, the recommendation was effectively that shared parenting at any given time is only suitable for a minority of children, around 15–20%, corresponding to the actual prevalence of shared parenting more than a decade earlier. It is also mentioned that not much is known about the effects of shared parenting, except that parental cooperation is crucial. In light of these recommendations, the decline in shared parenting of 3-year-olds since 2017 is unsurprising.

In the updated guidelines from November 2022 (Familieretshuset, 2022a), it is stated that research says that many children benefit from shared parenting if they are already closely attached to both parents, but that this does not mean it is always the right solution. In relation to specific ages, there has been a thorough rewrite, where focus is shifted from the importance of a primary caregiver and one home to a greater focus on relationships (plural). For young children aged 0 to 3 years, the guidelines say that the child can form attachments with multiple caregivers, and that both parents can have an important function if they are engaged in the daily care. However, it is still emphasized that young children need predictability and familiarity, and that this can be accommodated when the child resides with one parent and has frequent, short contact with the other. For 3-6-year-olds, it is specified that the number of successive overnights can be increased, while it is stated that 6-12-year-olds can be away from their (important) caregivers for a longer period of time. The guidelines mention that shared parenting is more common at this age, and that many children benefit from it. Older children are once again described as generally not wanting shared parenting.

In the recent guidelines (Familieretshuset, 2022a), research is summarized as indicating that there is insufficient knowledge about shared parenting of young children (0–3 years), but that it does not appear to be harmful to children aged 3–6 years, although it still is unclear which factors are decisive. Research findings are not mentioned specifically for older children. Parental cooperation is

referred to as a generally important factor rather than something that affects different visitation schemes in different ways, and the statement that children should live primarily with one parent in cases of high interparental conflict has been removed. It is nevertheless emphasized that when children are asked, they report the parents' cooperation as being of great importance to whether they thrive in shared parenting. A bibliography has also been included referring the reader to relevant research.

Overall, The Agency of Family Law appears to have changed their view from emphasizing the importance of a primary caregiver to the importance of caring relationships with both parents. The statements about young children's need for unequal care have been replaced by statements that the research is unclear or does not indicate that children are harmed by shared parenting. Indeed, the recent guidelines indicate a greater openness to shared parenting overall (seemingly more open than the ministerial guidelines), but the specific examples of parenting plans are still based on young children having a single home and gradually seeing the other parent more until shared parenting can be approached around school age and likely abandoned again for teenagers. Statements about parental cooperation and low conflict are also toned down in relation to shared parenting and now appear to be viewed more as independently important factors, but there are still some cautious statements that might indicate reluctance toward shared parenting in case of conflict. Despite the less negative or reluctant attitude toward shared parenting in general, however, it is not presented as a general recommendation for most families, and research is only mentioned once as positively supporting it, followed by a sentence urging not to generalize.

In addition to state entities, at least two other major Danish organisations with significant funding provide support and advice in relation to divorce: Mødrehjælpen (meaning "Mothers' help") and Børns Vilkår (meaning "Children's conditions"). These express similar opinions. For example, Børns Vilkår writes that "it is your cooperation, level of conflict and responsiveness to the child that are most important for your child's well-being – not where your child lives and sleeps," and it is emphasized, that shared parenting requires extensive cooperation. Nevertheless, they do mention shared parenting in relation to relatively young children, and they mention in one example that it is something a four-year-old might suddenly need (Børns Vilkår, 2023). Interestingly, for teenagers, they mention that instead of moving between homes every week, children might need shifts 1–2 times a month (in contrast to seeing the non-residential parent less). In this way, Børns Vilkår's recommendations seem clearly more open to shared parenting than The Agency of Family Law's previous guide, while they still seem to place more emphasis on cooperation as a prerequisite than the new guide. Mødrehjælpen's recommendations seem to be completely in line with the old guide and write that shared parenting places great demands on parents and children and, among other things, requires good cooperation (Mødrehjælpen, 2023).

Taken together, Danish law and ministerial guidelines are relatively vague and mostly provide a list of aspects that may be taken into account. Critically, however, the law establishes that when parents disagree, residency can be listed with one parent only, effectively establishing this parent as the primary caregiver. This parent has additional rights, and the child has preferential access to them as they must live at least half of the time with this parent. This means that shared parenting can only be practiced through the rules on visitation in case of disagreement. In that context, the ministerial guidelines place a hard requirement of interparental collaboration on equal time, meaning that this becomes difficult to establish outside of a mutual decision by the parents. Other organizations advising and taking part in the initial decisions on residence/visitation are relatively conservative and generally refrain from endorsing shared parenting as a default solution. Below, I review the latest research and relate it to Danish law/guidelines. The main focus is placed on The Agency of Family Law's guides as these are both the most detailed/explicit in terms of recommendations and as the latest guide provides a list of specific references.

5. The impact of custody on children's wellbeing

Studies of JC have measured a number of parameters both in relation to the child's general wellbeing, mental health and academic ability immediately after divorce and later in life. An early meta-analysis (which appears on the literature list in The Agency of Family Law's guide) showed that frequency of contact was generally not related to child outcome (Amato and Gilbreth, 1999), and this finding is still often referred to in both Danish and international literature, e.g., in Ottosen and Stage's (2012, p. 78) analysis. The findings have since been replicated and extended, and often quality of contact (e.g., the father-child relationship and involvement in care activities) is emphasized over frequency (Adamsons and Johnson, 2013). However, it has been pointed out that the *frequency* of contact is not a meaningful measure of the *amount* of contact, and that the "quality" measures in reality reflect quantity (Fabricius, 2020). For example, a child with only two weekly hours of contact is scored as having a contact frequency of 4 times per month, while a child living with each parent in alternating weeks is scored at 2 times per month. The quality variables, in contrast, include how often the non-residential parent puts the child to bed or does homework with them, and of course this happens more often with more overnights. It has also been pointed out that time is a prerequisite for building and maintaining a close relationship so it is difficult to have quality without quantity (Adamsons, 2018).

When the amount of contact has been examined directly, the results are quite different. Children in JC typically do substantially better than children in SC as evidenced in two meta-analyses (neither of which are referenced by The Agency of Family Law). In an early meta-analysis of 33 studies, Bauserman (2002) compared JC and SC and found that children in JC did better than children in SC (and moreover not significantly different from children in intact families) on a wide range of parameters: general adjustment, family relationships, self-esteem, emotional and behavioral adjustment, and divorce-specific adjustment. In a subsequent meta-analysis, he also found that JC was associated with a better father-child relationship, less parenting stress, less interparental conflict and a lower relitigation rate, and better overall adjustment (Bauserman, 2012).

Most studies contrast SC and JC as dichotomous categories, but graded increases toward equal time have also been examined. A meta-analysis of 16 studies found a large number of benefits related to JPC, and the effects were greater for children who spent at least 40% of their time in each home compared to those who spent only 30–39% in one of the homes (Baude et al., 2016). Similarly, a Swedish study of around 148,000 children (including around 46,000 children from divorced

families) found that psychosomatic symptoms decreased gradually as a function of parenting time (Bergström et al., 2015). Neither of these are referenced by The Agency of Family Law.

In Denmark, Ottosen et al. (2022, Table 5.2.6) report that the proportion of children that have a confidential relationship with their parents vary with respect to residence. A confidential relationship was defined as whether the child reported that it is "easy" or "very easy" for them to talk to the parent about a topic that really bothered the child. Children living with their father typically had a lower chance of having a confidential relationship with their mother than in intact or shared residence families, and similarly for the father-child relationship in maternal residence arrangements. The total amount of confidential relationships is very high for shared residence and similar to the numbers for intact families. While shared residence may be associated with a slight decrease in the probability of a confidential relationship with one parent compared to sole residence, this is compensated by a much larger increase in the probability of a confidential relationship with the other parent, thus increasing the total number of confidential relationships. Similar effects were found when examining whether children feel that their parents care for them (Ottosen et al., 2022, Table 5.2.8). Here, the numbers were nearly identical for shared parenting and intact families, but substantial drops were observed for the non-residential parent in sole residence families without any increase for the residential parent. Children in shared parenting arrangements thus had a high probability (around 85–94%) of having a caring relationship with each of their parents while children in sole residence arrangements at best had a similarly high probability for one parent (69–95%) but a much lower probability for the other parent (47–83%).

The literature thus consistently finds a positive relationship between equal parenting time and well-being of the children on a wide range of parameters, and equal parenting time is related to optimal parent–child relationships mirroring those found in intact families. Given the consistency of the findings, subsequent skepticism has focused on whether JC has a causal effect or whether the effect is due to other factors such as wealthy, educated, resourceful parents with low mutual conflict and older children self-selecting JC. The research has therefore tried to separate these factors in increasingly sophisticated designs to examine if equal time in itself has causal, positive effects. In the sections below, I review the literature on the proposed confounding factors.

6. The effect of interparental conflict

Interparental conflict in the context of divorce is particularly interesting as it has not only been proposed as a confounding factor (the claim that lower conflict is the cause of benefits of JPC), but also as one that interacts with the type of custody (the claim that for high-conflict couples, SC is best for the children). It is specifically mentioned in all the guidelines presented above, but at the same time, the level of conflict post-divorce frequently changes, and conflict is rarely ongoing for years. For example, the level of conflict is relatively high up to and immediately following divorce – when custody/residence is determined – but it declines afterwards (Fabricius and Braver, 2006). In Ottosen and Stage's Danish sample (N = 919) from the 2012 analysis, none of the custodial parents who reported conflict in 2007 also reported it in 2011, while other custodial parents who did not previously report conflict now did (Ottosen and Stage, 2012, Table 4.4). In general, the proportion reporting conflict was very low already in 2007 (around 4%), which is presumably related to the fact that most divorces had occurred years in advance. The level was 4–5% for all visitation categories (apart from "no visitation," where there was typically no contact between the parents and therefore no possibility of conflict).

Interestingly, Bauserman investigated conflict already in 2002 and did not find that it moderated the positive effects of JC, but he also noted that the data at the time was sparse (Bauserman, 2002). A more complete investigation was carried out by Nielsen in a review of 60 quantitative studies on JPC (Nielsen, 2018). She categorized studies according to the outcome and according to the additional factors (e.g., conflict) that the studies took into account. Based on the numbers reported by Nielsen, Figure 2 plots the percentage of studies showing positive, neutral (non-significant) and mixed outcomes (no study is reported to show exclusively negative outcomes). The figure is supplemented with information from Nielsen (2021) to include calculations for young children. Figure 2 shows that a clear majority of studies report increased well-being in JPC, both in general (45 of 60 studies) and when conflict was taken into account (14 of 19 studies). Nielsen dedicated three pages to a detailed discussion of the evidence and concluded that there is very little support for the view that reduced conflict explains the benefits of JPC.

Mahrer et al. (2018) conducted a detailed review of 11 studies on conflict. They found that conflict within 2–3 years of the time of divorce – i.e., when custody/residence is first determined – was not related to poorer outcomes for children in JPC. They mentioned that studies that controlled statistically for the level of conflict typically still found better outcomes for JPC (and for more versus less time with the father in SC in the studies that compared little or no contact to 25% or more time with the father). They also examined the effect of quality of care and concluded, for example, that high-quality parenting by at least one parent protects against negative effects of conflict. In terms of policy and practice, they concluded that there is no consistent set of findings that support a policy against shared parenting based on having a conflictual relationship at the time of divorce, and they argued that other factors (such as quality of parenting) should be weighed more heavily. Finally, it is worth mentioning that primarily older studies found negative effects of conflict, and that several of these studies did not examine JPC, but instead increased father contact in SC. This highlights the possibility that conflict is primarily harmful when combined with unequal parenting time compared to when there is no contact at all (which is in itself associated with poorer outcomes) as well as to when parenting time is equal.

The Agency of Family Law does not refer to the reviews of Nielsen or Mahrer and colleagues, but instead to two others by Steinbach (2019) and Berman and Daneback (2022). Compared to Bauserman, Nielsen and Mahrer, they adopt a somewhat different perspective.

Berman and Daneback (2022) argue that there is overall consensus on the benefits of shared parenting. Yet, the consensus only applies when there is no interparental conflict, when parents are able to cooperate and when the children are above 4 years old, thus effectively dividing scientists into two camps that they label advocates and opponents of shared parenting. They dedicate one paragraph to the topic of conflict, and they reference only a subset of the available articles. They mention that conflict increases behavioral and psychosocial problems (and thus is a general negative factor), and they

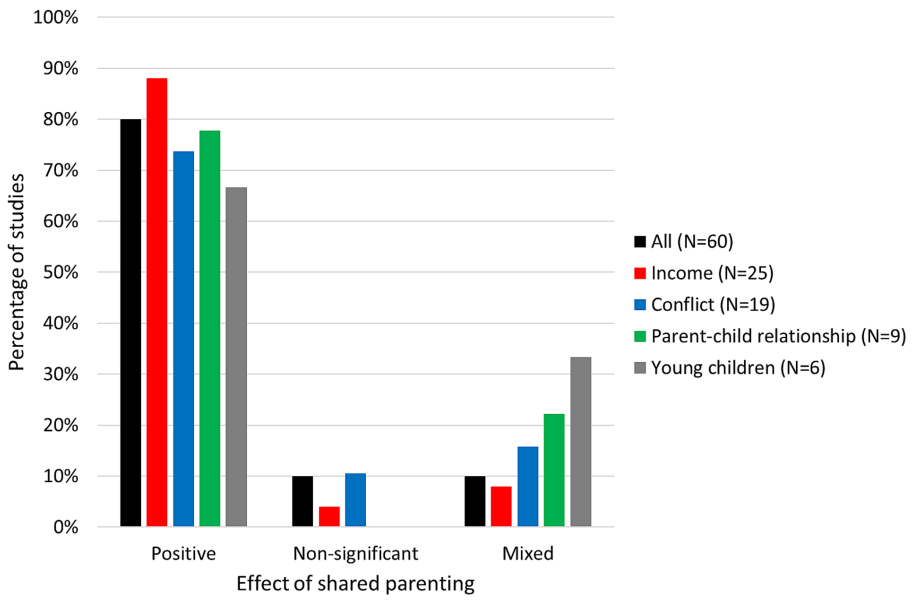

FIGURE 2
Studies of children's outcome in JPC. Percentage of studies which – according to Nielsen (2018, 2021) – report positive (for some or all outcome variables), non-significant or mixed effects of JPC (no studies reported exclusively negative effects). The studies are shown jointly (first bar) and individually grouped according to whether they take into account parents' income, interparental conflict, parent–child relationship and whether they studied young children (ages 0–5) exclusively.

highlight, with reference to five studies, that dual residence can be a bad solution for some children as they are exposed to conflict. They reference only one of the 14 studies identified by Nielsen showing benefits of JPC when taking into account conflict. Nevertheless, they subsequently mention, with reference to – for example – Nielsen's and Mahrer's reviews that others argue that the negative effects of conflict are more than outweighed by the positive effects of having a relationship with both parents, and that conflict might only be harmful if it is persistent. In the discussion section, they conclude conservatively that children benefit from dual residence when conflict is low. This conclusion seems somewhat in contrast to earlier parts of their review where they emphasized that there is no consensus on this aspect, and that the debate is still ongoing.

Steinbach (2019) similarly mentions that there is currently consensus on the benefits of JPC when parents cooperate and have low levels of conflict. In her review of the studies generally showing benefits of JPC, Steinbach often focuses on potential confounds and mentions, for example, that the benefits in one study (Jablonska and Lindberg, 2007) became non-significant when the number of close friends and school satisfaction were controlled for. However, these appear to be very conservative control variables as one could easily imagine that if JPC has a causal effect on general well-being, psychological problems, physical health and cognitive development, then SC could result in a range of academic and social difficulties. If this is the case, controlling for them is in effect controlling for an outcome measure. In connection with the literature on conflict, Steinbach dedicates one paragraph (on p. 357) to theoretical arguments as well one (on p. 360) to empirical studies. She cites one study with a positive effect (Spruijt and Duindam, 2009) as well as two quantitative studies and one qualitative with mixed findings (McIntosh, 2009; Cashmore et al., 2010; Vanassche et al., 2013). Of the 14 studies reported by Nielsen (2018) as showing positive effects, only one (Spruijt and Duindam, 2009) is thus included in Steinbach's review, and Steinbach refers to the studies labeled "mixed findings" by Nielsen as having identified negative findings.

Taken together, the reviews of Steinbach (2019) and Berman and Daneback (2022) dedicate relatively little space to the conflict literature whereas Nielsen (2018) and Mahrer et al. (2018) dedicate substantially more. While the quantity of space is not synonymous with the quality of a review, it does allow for a more detailed discussion and mention of all studies identified for the review. This might make it easier for a reader to judge the relative strength of evidence for each position themselves. The conclusions of the four reviews also differ quite substantially. Nielsen and Mahrer and colleagues argue that the level of conflict cannot explain the benefits of JPC and that the presence of conflict should not prevent JPC. In contrast, Steinbach and Berman and Danebach report that there is no consensus. The Agency of Family Law thus refers to the two literature reviews that convey the least positive view of JPC in case of conflict while they do not mention the two reviews that take a more positive view on JPC.

7. The effect of income, education, and parent–child relationship

Other factors such as parental income and the existing parent–child relationship have also been investigated. As can be seen in Figure 2; Nielsen (2018) found that these two factors could not explain the benefits of JPC. Furthermore, a number of Swedish studies controlled for education and other variables. For example, Bergström et al. (2018) found positive effects of JPC after controlling for parents' level of education and country of birth. Fransson et al. (2018) found that the living conditions (with respect to economy, social relations, health, culture/leisure time) of shared parenting children were better

than those of single-custodial-parent children even when controlling for the child's sex and age as well as the parents' education and country of birth. Bergström et al. (2015) found that the benefits of JPC remained when statistically controlling for parents' age and country of origin as well as perceived wealth and (current) parent–child relationship. The latter is quite a conservative control variable as the relationship is likely related to the time spent together. In the Danish report by Ottosen et al. (2018), there was a positive effect of JPC, but it disappeared in models controlling the interparental relationship and parent–child relationships. They mention, however, in this connection precisely that one cannot conclude that time with each parent is irrelevant because relationships require time, and because their analysis showed that the relationship with the father and the mother had separate positive contributions to well-being.

8. The role of the Age of the children

Another topic mentioned in all of the above Danish recommendations is the age of the children. Here, there have been theoretical reasons as well as early research indicating a lack of benefits of JPC. However, recent studies are generally more positive. In a study of 3,656 children aged 3–5 years (including 287 children of divorce), Bergström et al. (2018) found that children in JPC had fewer psychological problems than children who lived primarily or exclusively with one parent – even when controlling for parents' level of education and country of origin. Nielsen (2021) reported and discussed the results of six studies specifically examining young children (see Figure 2). She referred to two of the studies as controversial and pointed out that they were criticized in a consensus statement (Warshak, 2014) from 110 researchers and practitioners. One study (McIntosh et al., 2010) was criticized for using non-standardized tests, questionable interpretations of results, small samples of non-representative couples who had never lived together, and the study failed to mention positive effects. The second study (Tornello et al., 2013) has also been criticized for using non-standardized tests in a non-representative sample of minority parents living in impoverished areas with high rates of violence, abuse and mental health problems. In this study, too, the negative findings were emphasized, while the positive and non-significant findings were ignored or downplayed. The remaining four studies (Solomon, 1998; Pruett et al., 2004; Fabricius and Suh, 2017; Bergström et al., 2018) concluded that babies, toddlers and preschoolers who often spent the night with their father (up to equal time) did better overall than children who primarily spent their nights with their mother.

One of the very recent studies mentioned by Nielsen (2021) provides some interesting insights. Fabricius and Suh (2017) investigated the relationship between young adult children of divorce and their parents in relation to the degree of contact they had between ages 0–2 years. They observed positive effects on the young adult's relationship to both parents as a function of overnight stays with the father in early childhood up to and including equal time. In other words, the best overall young adult-parent relationship was observed for the participants who – before the age of three – had a similar number of overnights with both their parents. The effect was found for overnights when the child was under 1 year old, but to an even greater extent for 2-year-olds. The results held after controlling for subsequent parent–child time as children/adolescents, parents' level of education and conflict up to 5 years after the divorce. The father-child relationship improved gradually up to equal time. In contrast, the mother–child relationship improved primarily between 0 and 1–2 overnights with the father across a 14-day period and subsequently remained stable between 1–2 and 6–7 overnights. It thus appears that early equal contact is related to a better lasting father-child relationship without the mother–child relationship suffering from it. One of the measures that was used in the study ("mattering" – i.e., whether the child fells that it matters to the parent) has subsequently been found to be related to children's mental health (Vélez et al., 2020).

Fransson et al. (2018) have published a short overview article of recent Swedish studies on the topic. They included three epidemiological studies and one interview study in their overview for young children. Based on the epidemiological studies, they concluded, for example, that young JPC children had fewer psychological and behavioral problems than young SPC children. In the interview study, they found that 24% of the interviewed parents did not initially agree to JPC and some of these did not trust the other parent's ability to take care of the child. Nevertheless, the majority ended up being satisfied with JPC and feeling that their children benefitted from it. They focused on the positive effects of involved fathers as part of the explanation for the good results.

After this overview article, another Swedish study was published. Bergström et al. (2021) examined 12,845 3-year-old children, including 642 children of divorce, in relation to the connection between psychological well-being, JPC and parental cooperation. They found that 3-year-olds in JPC generally had fewer psychological problems, even when controlling for the parental level of education. After statistically controlling for parental cooperation, the findings were rather surprising, in that there were no significant differences between children in the different divorce categories, but children in intact families fared significantly worse than JPC children. This indicates that controlling for the level of cooperation may be too conservative as few would argue that parents should generally divorce for the sake of their children. A follow-up analysis was more informative and showed that good cooperation generally correlated with better mental health, but that the benefit was greatest in intact families and JPC. In other words, psychological well-being was roughly equally bad regardless of whether parental cooperation was good or bad when children lived exclusively or mostly with one parent, while children benefited from positive parental cooperation in JPC and intact families. While Bergström and colleagues do not mention it explicitly, it could thus be speculated that JPC might be a prerequisite for reaping the benefits of good parental cooperation in relation to psychological problems. It should be emphasized that SPC or inequal parental care constellations were not found to provide better well-being in the case of poor cooperation. There was thus no support for SPC or inequal care being a better choice in the absence of good collaboration as mentioned in the previous guide from The Agency of Family Law.

In her review article, Steinbach (2019) summarizes the results of only two studies on young children (Mcintosh et al., 2013; Tornello et al., 2013) despite the Swedish studies being mentioned elsewhere in the article. The two studies are cited as providing evidence against JPC, although it is acknowledged that the conclusions are debated. The position of the advocates of JPC is described as based on theoretical arguments from attachment theory, and it is accompanied by a remark that not only emotional support but also competency is required to

care for a very small child. In contrast, Berman and Daneback (2022) highlight broader literature reviews and conclude that overnights with both parents are unproblematic, but more research is needed. Rather remarkably, they reference one study of Bergström et al. (2018) elsewhere, but do not mention it in relation to the findings on young children. In their discussion section, they are once again more conservative and write that research is too scarce to draw any conclusions for children under the age of four.

Of the four reviews presented above, The Agency of Family Law refers only to the latter two, of which at least one is very limited and both take a relatively conservative perspective on JPC and neglect to mention individual studies with positive outcomes. The Agency of Family Law does, however, additionally list one study by Bergström et al. (2018), but not the 2021 study (Bergström et al., 2021). The ministerial guidelines similarly appear more in line with the perspectives taken in the reviews with the most skeptical views of JPC.

9. Causality

Establishing the causal effects of different visitation arrangements is notoriously difficult as random, controlled trials obviously cannot be done. Instead, researchers have used a range of different methodologies to make inferences about causal effects. For example, parental relocation often causes abrupt, drastic changes in the amount of contact with one parent, and one can therefore examine the effect of moving on parent–child relationships. Braver et al. (2003) investigated this and found negative effects for children where one parent had relocated. These children experienced greater inner turmoil during the divorce/experienced it as more unpleasant, and they experienced less support from the noncustodial parent (regardless of which parent had moved and regardless of whether they themselves had moved). They further experienced to a lesser extent having two good role models. In a follow-up control analysis, it was ensured that the effects were not due to existing conflict/violence before moving (Fabricius and Braver, 2006).

Self-selection is typically considered the alternative to a causal explanation so another line of research has examined the extent of self-selection and attempted to rule this out as an explanatory factor. For example, it can be examined whether the benefits of shared parenting disappear when the parents initially oppose it, i.e., whether they have self-selected or (possibly reluctantly or after a court decision) have accepted it. Nielsen (2017) identified four studies (from the 1980s and 1990s) where a large proportion of the JPC families (between 40 and 82%) were initially in conflict regarding the custody arrangement. JPC children in these studies still fared better than SPC children, indicating that self-selection into JPC could not explain the benefits. In addition to these, Fabricius and Suh's (2017) above-mentioned findings also held when there had been no agreement about shared parenting.

10. The children's perspective

The Danish-language research literature places a prominent focus on the perspective of the children, often in qualitative studies, and this is reflected in the guides of The Agency of Family Law. A large, qualitative study of 200+ pages examines the experiences of children in shared parenting arrangements through interviews with 28 non-randomly selected children along with 24 parents and 4 adult children (Ottosen et al., 2011). As in the international literature on the topic, the study provides diverse and nuanced reports from the children of the perceived advantages and disadvantages of equal time with both parents, but it is difficult to generalize broadly. It is worth noting, however, that most children reported equal time to be a positive thing – whether or not it was established voluntarily (Ottosen et al., 2011, pp. 135–6). To obtain a more representative overview, it can be valuable to look at larger, quantitative studies. Fabricius and Hall (2000) investigated children's perspectives in a larger sample of around 800 young adults whose parents had divorced during the young adults' childhood. They asked what the participants themselves had preferred, what their parents had preferred, how it actually was, and what they and their parents generally thought was best for children. There was a general reported agreement between the wishes of the participants and their fathers, while the actual time with each parent corresponded to the perceived wishes of the mothers. Similarly, in the perception of what is generally best for children, the majority of the participants – in agreement with their fathers – reported that equal time with both parents is best, while they reported that the mothers thought less time with the father is better. In fact, 93% of participants who had experienced shared parenting reported that this is best for children, while children who had not had equal time with both parents reported that it is best for children to have either equal time or significant time with father (corresponding to ratings of 4 and 3, respectively, on a scale from 0 to 4).

A major quantitative Danish study has also been conducted on the topic. Ottosen and Stage (2012, Table 4.6) investigated 1,354 children's wishes for more time with their father/mother across different types of visitation arrangements for children when they were 11 and 15 years old. Children were categorized as belonging to one of the following groups: No visitation (no visitation at all), limited visitation (has visitation but less than 3 nights per month), weekend visitation (visitation up to 6 nights per month), extended visitation (visitation up to 11 nights per month), and shared parenting (has approximately equal time with each parent; typically moving between homes every 7 or 14 days). The figures for the 11-year-olds are plotted in Figure 3 for all categories with visitation. It is evident that there were many more children who desired more time with their father compared to what they had, than there were children who desired more time with their mother compared to what they had. This unmet desire decreased as a function of overnights. Even for shared parenting, however, there were twice as many children who wanted more time with their father as there were children who wanted more time with their mother. Considering that around 90% of the children resided with the mother, this difference likely reflects that there was a significant minority of children who would have preferred living mostly with their father, but instead got equal time with both parents. The distribution for the 15-year-olds were in every way similar to those for the 11-year-olds, except that virtually everyone with shared parenting (about 95%) was satisfied with the time with the father as well as the mother.

Ottosen and Stage (2012) concluded that satisfaction generally increased with overnights (without commenting on the differences for fathers and mothers) and that overall satisfaction was greater for the 15-year-olds. It is worth taking a closer look at the second conclusion.

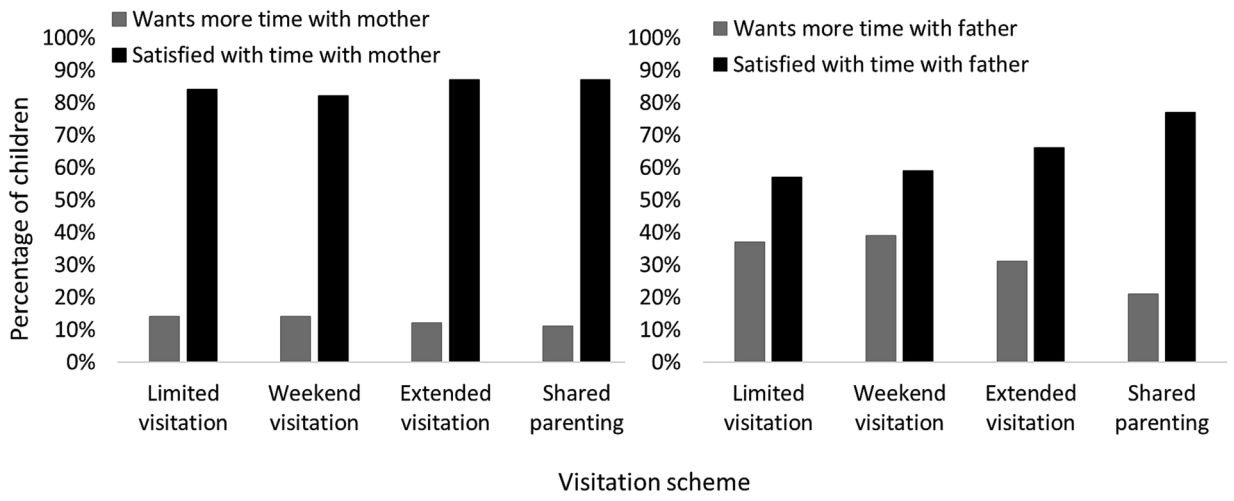

FIGURE 3
Danish children's satisfaction with visitation. Reports of 11-year-old children of whether they desire more or have adequate time with their mother (left) and father (right) as a function of visitation scheme. Data from Ottosen and Stage (2012, Table 4.6).

Satisfaction for 15-year-olds compared to 11-year-olds was indeed higher for each visitation category considered separately without taking into account how many children were in each category: For example, the proportion of children who wanted to see their father more was reduced by 4, 11, 7 and 17% for each of the four categories leading to apparent substantially less dissatisfaction. Such a conclusion is, however, problematic as a large number of children (around 200) between ages 11 and 15 were moved to the "limited visitation" category (in accordance with the guidelines that teenagers do not want shared parenting), which had the greatest degree of dissatisfaction. Using the numbers provided by Ottosen and Stage (2012), the total proportion of children who wanted to see father more – independently of visitation category – can be calculated to be 33% for the 11-year-olds and 30% for the 15-year-olds. The overall proportion of dissatisfied children was thus relatively similar at 11 and 15 years. One interpretation is that the desires of the children who wanted less time with their father were met as they got older, while those who wanted a more equal arrangement still did not have their wish fulfilled and risked even less time with him, resulting in highly similar levels of dissatisfaction in combination with less time with the father on average.

Overall, it thus appears that, both in Denmark and internationally, children's desires are taken significantly more into account when they want time with their mother than when they want time with their father, and at the same time, it is the children's impression that the mother has significantly more power in relation to determining custody/visitation than they themselves and their father have had. The issue is evident in Danish research, but it is not reported outside a table listing. Presumably for this reason, The Agency of Family Law does not refer to it, and it is not mentioned in ministerial guidelines.

11. Consensus reports and expert evaluations

Several international groups of experts have published consensus reports or conclusions from panel discussions, but these do not appear on The Agency of Family Law's reference list. In the most recent consensus statement (Warshak, 2014) from 110 researchers and practitioners, most Nordic countries were represented (Sweden was represented by five experts, for example), but Denmark was noticeably absent. The report concluded the following: 1) Shared parenting (typically defined in the literature as at least 35% of the time with each parent) should be the norm for children of all ages, incl. very small children. 2) Children under the age of 4 should have the opportunity for overnight stays with both parents. The alternative of only spending a few hours together several times a week stresses the parent–child relationship. There is no evidence that infants and young children should not have frequent contact, including overnights with both parents. 3) The recommendations apply generally to most parents/children. The exceptions – where parents, for example, neglect the children – should not dictate the rules for the broad majority. This very positive view of shared parenting is quite different from both law and all available guidelines in Denmark.

Regarding conflict, the report concludes that it should not rule out shared parenting, but that the focus should instead be on conflict reduction. This can be done, for example, through practical measures such as reducing the number of times the parents have to meet to hand over the children (e.g., by one parent dropping them off at daycare and the other picking them up). The report highlights the danger of considering conflict as a valid reason for avoiding shared parenting as this can give one parent an incentive for creating and maintaining conflict, effectively exposing the children to a higher level of conflict than otherwise. It is also emphasized that shared parenting may actually shield the children from the effects of conflict instead of exposing them to it. This recommendation very much stands in contrast to most Danish guidelines.

Braver and Lamb (2018) report a panel discussion on shared parenting between 12 leading international researchers. All 12 researchers agreed that children's benefits of shared parenting could no longer be doubted and were found in areas such as: 1) lower depression, anxiety and dissatisfaction, 2) lower aggression

and reduced alcohol/substance abuse, 3) better school performance and cognitive development, 4) better physical health, 5) lower smoking rates and 6) better relationships with fathers, mothers, stepparents and grandparents. They referred to literature concluding that the benefits are not due to self-selection, but that shared parenting has a causal, positive effect. The panel also addressed the question of whether shared parenting should be a legal presumption (which is currently only the case in Sweden, Belgium and four US states (Arizona, Arkansas, Kentucky and West Virginia)). In practice, this would make shared parenting the default arrangement unless concrete circumstances make it inappropriate. The experts assessed (though not unanimously) that this should be the case. It was agreed that there must be legitimate reasons for deviating from the norm, e.g., abuse/neglect, too great a distance between parents' homes, threat of abduction and excessive gatekeeping. The majority of the experts also agreed that conflict should not prevent shared parenting, and that shared parenting does not require the parties to agree on the arrangement. The panel furthermore noted that their recommendations do not align with current practice and consider them ahead of practice. Indeed, there is once again quite a gap between these recommendations and Danish law/guidelines.

As mentioned above, shared parenting is still only rarely a legal presumption, but one such implementation has been evaluated by a range of professionals. Fabricius et al. (2018) asked four professional groups about their experiences with Arizona's law change in 2013, including judges, attorneys, mental health staff and conciliation court staff. The Danish system is composed of largely similar groups where Agency of Family Law staff carries out similar work to conciliation court staff, including mediation between the parties and child interviews. No professional groups assessed the law negatively and most assessed it as positive overall. Specifically in relation to the children's best interests, attorneys and mental health staff assessed it neutrally while conciliation staff and judges assessed it positively. The positive view from conciliation court staff is particularly interesting as this is the group that meets the far larger and most representative share of divorced couples.

Regarding Danish experts, researchers at the Danish Center for Social Science Research appears to have had a number of reservations regarding shared parenting around 2011 and 2012 whereas the stance appears more neutral in later publications. For example, Ottosen et al. (2011, p. 12) emphasize that the logistics of shared parenting is an additional stressor for children, that it requires that the child is robust, and that a range of other requirements need to be in place for the child to be able to handle the arrangement. An article on their website concludes from the 2012 report that equal time is not for teenagers based on the drop in prevalence for this group (but it does not mention that the satisfaction was higher for teenagers with equal time compared to those in other arrangements). Similarly, an introductory literature review in the 2011 publication takes a relatively cautious stance toward shared parenting. The report referred to the findings on contact frequency (but not duration), it referenced an article reporting that more frequent contact is bad for children if there is interparental conflict (but not evidence for the opposite position or for the view that equal time reduces conflicts), and it concluded overall that quality of contact is important whereas frequency is not (Ottosen et al., 2011, p. 26). The literature was summarized as inconclusive and when advantages of shared parenting were mentioned, potential confounds from self-selection or requirements about absence of conflict were emphasized, and it was followed by references for the quality over quantity view (Ottosen et al., 2011, p. 30). In a final summary, the report stated that for equal time to work best, it must be voluntary (not court-imposed), it requires extensive collaboration, and finally, that some results indicate that it is problematic for young children (Ottosen et al., 2011, pp. 33–34). Overall, this position aligns well with the recent position taken by Danish authorities recommending shared parenting only for the 15–20% of Danish children who are around 6–11 years old and whose parents are not in conflict but work well together.

The 2022 publication generally has a much less extensive review but presents a more neutral or positive view toward shared parenting, likely reflecting that more evidence has become available and that there is now less reason for caution. Nevertheless, it does report the finding from the 2018 publication that there was no positive effects of equal time when controlling for additional variables without mentioning the authors' previous caution not to draw causal conclusions (Ottosen et al., 2022, p. 228). In contrast, the report presents positive effects of equal time but cautions not to draw causal conclusions (Ottosen et al., 2022, p. 236). The most positive view was possibly expressed in the 2018 publication, which highlighted research by Nielsen as well as Baude and colleagues arguing that the positive effects of shared parenting remain when taking into parent–child relationship, income and conflict (Ottosen et al., 2018, p. 247).

12. Concluding discussion

Over the past 60 years, the caregiving role of Danish fathers has transitioned from peripheral involvement to providing around 40% of the primary care, and at the same time spending more time with the children than mothers did one and two generations ago (see Section 2 of this article). Despite the increased role in caregiving in society in general, fathers' share of care after divorce has lagged decades after societal development (Section 3). While there is no clear scientific consensus on all aspects, the majority of studies report benefits associated with increased father involvement up to and including equal time (Sections 5–9). Similarly, a large number of experts recommend shared parenting in the vast majority of cases (Section 11), just as the children themselves report the greatest satisfaction in shared parenting and later in adulthood assess that this is the best for children in general (Section 10). Specifically in Denmark, a substantial proportion of children report that they wish to have more time with their fathers (Section 10).

Although a causal link cannot be established, the slow transition toward shared parenting post-divorce in Denmark has coincided with law and guidelines that reflect a cautious stance toward it. Specifically, current law and guidelines are quite open to interpretation and set only a minimal framework for children's rights to contact with both parents, yet they impose special requirements on shared parenting. The law establishes that in case of disagreement, one parent is decided to hold residency, thus

effectively establishing an unequal starting point by default. In ministerial guidelines, equal parenting time as a visitation scheme has some additional relatively strict and specific requirements (regarding collaboration) that do not align with recent consensus statements and which make it difficult to establish equal time outside of mutual agreement among the parents. Guidelines from the most important Danish institution, The Agency of Family Law, have until very recently recommended against shared parenting for the vast majority of children, meaning that societal transition toward shared parenting can be said to have happened on a voluntary basis in spite of official recommendations and with a legal framework against it. Researchers at the Danish Center for Social Science Research agree that the change is largely cultural and not facilitated by law or structural changes (Ottosen et al., 2022, p. 236), and they speculate that the only documented historical decline in shared parenting – from 36 to 21% for 3-year-old children between 2013 and 2017 – was related to the authorities' recommendations. The center itself appears to take a relative cautious stance in publications from 2011 and 2012, but a more positive stance appears present in particularly a 2018 publication and to some extent in a 2022 publication.

The most recent Agency of Family Law guidelines are less conservative, but nevertheless reference selectively the review articles that dedicate the least space to studies about young children and interparental conflict, yet express the least positive view on shared parenting. Reviews that argue that the evidence supports a positive stance on shared parenting for most families are not listed and neither are statements from leading international researchers and experts. Quantitative studies showing that children generally desire more time with their father are not mentioned either. Reference is made to studies reporting little to no impact of paternal contact frequency but not to studies reporting numerous positive effects of overall contact duration.

Taken together, current Danish institutional guidelines/law/legal practice appear to reflect a more reluctant stance on shared parenting than research evidence, children's reports and societal practice warrants. This is not unique to Denmark but indeed appears more the rule than the exception internationally. The status is nevertheless particularly surprising given the high degree of father involvement in Danish society and Denmark's relatively high degree of gender equality in general. With a father involvement of 40–45% in society in general, it appears in fact that the reduction to 30–35% post-divorce is a main limiting factor in achieving near-complete equality overall.

The slow implementation of research and expert opinion into Danish practice may stem in part from a principle of caution to avoid departing from traditional practice without clear evidence. It may also have been influenced by a relatively cautious stance taken by leading Danish researchers. In this context, it is worth noting that the debate presently does not focus on whether shared parenting is related to the best outcome, but whether it is *causally* related, and the main alternative explanation is that the extent of contact does not matter when taking confounding factors related to the parents into account. It may thus be argued that a departure from the stance that sole maternal residence is best for the child unless both parents agree otherwise carries primarily a risk of not having an effect. In contrast, if the effect is causal, restraint in departing from current practice restricts tens of thousands of Danish children to parenting arrangements that negatively impact their parent–child relationships, their development and their mental health, and which they themselves do not desire.

It may be mentioned in this context that divorce is not a traditional event with a traditional solution, but rather something that became common just 50–60 years ago in Denmark. The solution of maternal residence and unequal parenting time in the vast majority of cases can in itself be described as a large-scale societal experiment, which was not based on empirical evidence, and which authorities should not be afraid to revise in light of such evidence. It is particularly interesting that shared parenting appears to allow children to benefit from a good father-child relationship and good parental cooperation while the benefits of these are reduced or lost entirely in other arrangements. In contrast, skewed arrangements do not appear to offer anything unique that is not possible in shared parenting. Particularly in a society with high pre-divorce father involvement, it is worth considering whether shared parenting as a legal presumption might not be the most effective way of preventing widespread, negative divorce-related changes in parent–child relationships. An update of ministerial guidelines on visitation schemes may serve a similar function to establish equal parenting time (in the absence of official dual residence). There also appears to be some room for Agency of Family Law staff to update their guidelines and decrease the gap in parenting time within the existing rules. Of course, such changes should not exclude that the parties involved can choose another arrangement if there is agreement that it is the best, or that the authorities can rule against it in a number of cases.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Inspiring respect for fathers as coparents through a trauma-informed, infant-family mental health transformation of community-based services: process and early implementation with a multi-agency community collaborative

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Introduction: Despite compelling evidence that high-quality early care has an enduring impact, there has been little coordinated effort to transform services delivery to infuse Trauma-Informed Family Centered (TI-FC) principles into community-based agencies serving children and their families. A need for more culturally attuned, family-sensitive, evidence-based, and trauma-informed supports, especially for vulnerable children, their families and fathers, is apparent in evidence amassed by key stakeholders within the geographic area of this study. This report details the planning process, TI-FC training series, and organizational profile assessments. Authors conclude with recommendations regarding the establishment of multi-agency collectives, to include fathers, toward betterment of infant-family mental health at the community level.

Methods: The current case study details the community-level transformational effort in which major health, mental health, substance abuse, and child welfare organizations serving families of children age 0-3 worked collaboratively to enhance TI-FC services. We describe a four-stage process (1 - planning, 2 - assessment of organizational readiness, 3 - surveys, document reviews and focus groups, 4 - delivery of a training series) detailing the work of the collaborative, guided by key agency decision-makers.

Results: The study found significant initial success in adapting approaches to serving children 0-3 and their families through TI-FC perspectives. By proactively engaging several lead organizations in a deliberative planning process with universal aims and transformational principles, the collaborative team was able to coordinate organizational assessment, staff training and consultation, self-monitoring of organizational shifts, and problem-solving of obstacles and solutions to TI-FC services delivery.

Discussion: All agencies succeeded in completing comprehensive, multi-faceted analyses of organizational culture, preparing personnel for TI-FC services through comprehensive training, and utilizing this collaborative to make deliberate and customized changes within their programs, as concerns both support of families and father engagement. Preliminary data indicate that important shifts took hold and signified changes across key domains of TI-FC care.

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coparenting, fathers, systems transformation, trauma-informed, family-centered, infant mental health

1 Introduction

According to the National Child Traumatic Stress Network (2016), trauma-informed child and family service systems are those:

> …in which all parties involved recognize and respond to the impact of traumatic stress on those who have contact with the system, including children, caregivers, and service providers. Programs and agencies within such a system infuse and sustain trauma awareness, knowledge, and skills into their organizational cultures, practices, and policies. They act in collaboration with all those who are involved with the child, using the best available science to maximize physical and psychological safety, facilitate the recovery of the child and family, and support their ability to thrive (para. 1).

The dual focus on understanding trauma and celebrating and fostering strengths and resilience are each equally important. Families themselves, particularly families from nearly all marginalized, underserved ethnic and minority groups in the United States, are less likely to trust and engage in services provided by individuals and entities that view them as vulnerable, broken, or "less than" (Bocknek et al., 2017). Strategically helping service agencies and providers to recognize the importance of strengths-based approaches–at the same time as they are upskilled to recognize and respond more sensitively to historical and present-day trauma, adversity, and stress impacting infants, young children, fathers, and families–is an exigent and formidable task. However, with a collaboration of key community partners and a collective impact lens, transformational attainments in family service systems are an achievable goal.

Cultivating a family-strengths orientation that proceeds from a trauma-informed frame is not instinctive and is best seen as a work in progress. In customary practice, agency personnel have been trained to see and record evidence of men's absenteeism and violence potential. Such perspective and due documentation create a bias to view fathers, at best, as weak and requiring help to remedy their failings – and, at worst, as neglectful or as purposeful perpetrators of trauma and harm toward their young children. Indeed, even the very act of guiding agencies and agency personnel to systematically screen for trauma can heighten bias for singling out problems and their aftereffects. Further, most men do not respond well to inquiries about susceptibility to trauma and suggestions of vulnerability (McHale and Jenkins, 2023). And, assumption of a pathology lens can be problematic and even disruptive if agencies do not possess the proper resources to afford responsive follow-up once historical or ongoing trauma has been uncovered. Tight-knit resource and referral pathways in service systems can alleviate some of the burdens felt by individual agencies and organizational entities, but only as far as an organizational culture has evolved to provide adequate supervisory and accessible backup support for front-line personnel in their direct everyday dealings with fathers and families. Internal policies and procedures for such backup and self-sustaining mechanisms enabling upper and middle management to reflect, monitor, and replenish can all be crucial determinants of the sustainability of trauma-informed, family-centered practices and transformations within systems.

Reflecting on the NCTSN principle that child- and family-serving agencies must act with all involved with the child, constraints and limitations within agencies and service systems abound. As has been well-chronicled throughout the professional literature, most infant- and young-child-serving agencies have historically positioned themselves to initiate and maintain contact with one and only one informant within the family when an infant or young child is identified for services (McHale and Phares, 2015). Almost invariably, points of contact for children birth to age 3 are children's mothers, though certainly identified clients can be fathers, grandparents, foster parents, or other caregivers. However, the NCTSN tenet that agencies engage all involved with the child is rarely achieved.

The reasons are legion. Organizational policies, documentation and billing procedures and constraints, harmful stereotypes characterizing lower income and nonresidential fathers principally in terms of their failings, the conspicuous absence of professional competencies among agency staff for comfortably and knowledgeably engaging and working with fathers and mothers as coparents – simultaneously - and other unnoticeable constraints in organizational, funding and service system structures combine to militate against instituting a true family-centered approach (Lu et al., 2010). In response, infant-family mental health perspectives and best practice approaches have begun calling for an assessment of and attention to the child's full coparenting and caregiving context in offering effective client (infant, family) centered services (Zeanah and Lieberman, 2016; McHale et al., 2023).

It was within this zeitgeist that a transformative cross-sector community initiative spearheaded by a university-based Family Study Center (FSC) in the Southeast United States, hereafter referred to as the Trauma-Informed Family-Centered (TI-FC) Collaborative[1] was established. The Collaborative set out to reimagine the overall scope and delivery of services to families by bringing TI-FC care and practices to the center of the region's infant and early childhood services landscape. A dawning collective awareness throughout the county and the state had begun acknowledging the unparalleled importance and impact of children's earliest years, a recognition reflected through numerous state and local efforts and initiatives designed to support the foundations of early learning.

1 For the community and partners involved, the initiative was dubbed a Trauma-Informed Family-Centered Collaborative, as not all agencies, partners and staff were familiar with the terminology Infant-Family Mental Health. The approach taken, however, was guided by and wholly commensurate with the relevance of coparenting theory and practice within the infant mental health field (McHale, 2007; McHale and Phares, 2015), and broadly speaking the efforts inculcated through this collaborative directly and materially supported infant-family mental health.

The FSC envisioned a collaborative through which transformative efforts would result in a platform from which to launch the new directions for scope and delivery of services to children age 0–3 and their families. The inroads to inter-agency collaboration began by gathering partners to collaboratively consider and agree upon terminology and ideas. The FSC's history as a convenor for community partnership initiatives concerning the unparalleled importance of the first 3 years of every child's life offered a common starting place for consensus on critical descriptions. It its first meeting the TI-FC Collaborative agreed upon key terms, concepts, definitions and operationalization. Cross-partner dialog resulted in the following:

- By trauma, we mean deeply distressing or disturbing experiences that usually include an emotional response to a terrible event such as abuse, violence, (including domestic violence, sexual violence, etc.), accidents or a natural disaster. Trauma can be defined as a single event, series of related or unrelated occurrences, or chronic and overwhelming stressors within an environment.
- By trauma-informed (TI) care, we mean services that consider the impact of trauma and the often-complicated paths to healing and recovery. Trauma-informed care includes specific policies and practices that identify, incorporate, and remain sensitive to an individual and/or family's trauma history, symptoms, strengths, and coping with overwhelming emotion. The goal of TI care is to avoid re-traumatizing the individual while creating an environment of safety, healing, and empowerment that ultimately helps individuals and families make meaning of their trauma. Trauma-informed care requires changes at every level of the organization to achieve full implementation.
- By infant mental health we mean infants' and very young children's ability to experience emotions, develop relationships and learn. Key to preventing and treating mental health problems of very young children and their families is an approach informed by infant mental health principles and practices, with supports for relational health enabling development of healthy social and emotional behaviors. Infant-family mental health is best promoted by intentional and successful strengthening of the relationships among the important caregiving adults ("coparents") responsible for the child's care, upbringing, and social–emotional development.
- Finally, with human services agencies increasingly supplementing and supplanting deficit-based practices (prioritizing problems and needs) with strengths-based approaches in work with children and families, this project operationalized strengths-based approaches as valuing strengths, skills, connections, potential, and capacity for growth, with each organization reflecting internally on applications of these principles in their own change efforts.

Despite agencies' concurrence that high-quality early care can have enduring impact (Haskins, 1989; Heckman, 2011), no coordinated effort to transform systems of care to infuse TI-FC principles into standard multi-agency ways of work had previously been undertaken. A need for more culturally attuned, father- and family-sensitive, evidence-informed trauma-informed supports and services - especially for the area's most vulnerable young children and families - had become starkly apparent in countywide geographic data (Warren, 2013; Figure 1).

As evident from Figure 1, risk determinants are not proportionally distributed throughout Pinellas County. Rather, in a manner paralleled in communities throughout the United States, significant sectors of young children and families disproportionately experience substantial and substantive risk, inferior quality of care, and unmet health needs. Not surprisingly, concurrent disparities are also documented in early socioemotional and early physical health outcomes (Pinellas County Access to Health Profile, 2015). These data are wholly consistent with the growing recognition of the relationship between neighborhoods and health, where zip code has been recognized as a stronger predictor of a person's health than their genetic code (Graham et al., 2015).

When the current initiative began, amassing scientific data and targeted communications had begun illuminating how early, inadequately addressed stress and adversity weigh heavily and inordinately on young children and their families, adversely impacting children's thriving and readiness to learn by kindergarten age (Zeanah, 2009; Shonkoff, 2010). From an agency service perspective, in circumstances where young children's emotional health is jeopardized, intensive family support is called for to help the child move back onto a positive developmental trajectory. High quality, accessible and culturally attuned services are indispensable in communities that contend with a high concentration of environmental stress owing to poverty, racism, disenfranchisement, and trauma. Such were the circumstances challenging many families with young children in the Florida community that is the focus of this report (Warren, 2013).

Buoyed by this converging evidence, the TI-FC Collaborative assumed a TI-FC lens for service provision as its collective aim. The initiative was conceived and coordinated through the joint efforts of a small collaborative of leading service providers in the community for greater initial impact. Goals were to transform how major child- and family-serving agencies approached their work with fathers and families so that there would be no "wrong door" – that is, any family with a young child who received supports and services from a program or an agency established to serve them could expect to be met with a culturally competent and humble, respectful and authentic set of supports that (a) recognized and validated the family's love and ongoing efforts to support the child (b) recognized and knew how to sensitively address challenges to father (and mother) engagement, and seeming resistance to treatment that had its roots in trauma histories (c) saw and supported the child within the context of their full family support network, instead of directing all services and supports to and through the child's mother or primary caregiver alone and (d) recognized when family needs outpaced the existing capacities of the provider or agency to call upon known, connected community partners to help adequately redress unmet needs.

Though no community transformation blueprints existed, the FSC and partner organizations representing maternal and child health, home visiting, substance abuse, and child welfare set out to create a coordinated, systematic, and comprehensive framework drawing on the evidence-based practice of early childhood mental health consultation (ECMHC; Perry et al., 2010). The FSC assembled an expert team to support agencies in reviewing their policies, procedures and networks and adjusting their already effective and evidence-based intervention models to systematically incorporate TI-FC practices into the routine care and services afforded to families. Partners all agreed to begin the work evaluating their organizational readiness for implementation of new services and/or best practices in TI-FC care, to use these baseline data to guide transformational efforts within individual entities and to strengthen referral channels among them.

The structure, process and early implementation of these efforts are outlined in the sections that follow, with particular attention given to details of the procedures of the planning sessions to illuminate key elements of the Collaborative's planning.

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Pinellas
Demographics[1]						
Total Population	26,215	54,957	16,946	102,400	70,093	925,030
Children under 18 (count)	4,004	11,753	3,636	18,345	15,883	160,854
Children under 18 (percent)	15%	21%	21%	18%	23%	17%
Race/Ethnicity						
White	91%	76%	79%	80%	31%	83%
Black	5%	18%	12%	8%	65%	10%
Other	2%	4%	6%	9%	2%	4%
Two or More	2%	2%	3%	3%	2%	2%
Hispanic	6%	15%	22%	10%	4%	8%
Increase in Hispanics (2000-2010)[2]	64%	68%	117%	77%	40%	71%
Increase in Hispanics (2011-2014)[1,3]	20%	4%	28%	13%	6%	11%
Household Arrangements of Children[1]						
Living in single female-headed households	25%	43%	34%	36%	61%	33%
Living in single male-headed households	11%	15%	9%	8%	7%	8%
Living in married-couple households	64%	42%	56%	56%	32%	58%
Living with grandparents responsible for their care	6%	6%	2%	6%	7%	5%
Poverty[1]						
Children under 5 living in poverty	20%	33%	34%	28%	51%	24%
Children under 18 living in poverty	18%	35%	29%	26%	42%	22%
Total population in poverty	15%	23%	24%	18%	26%	14%
*Cost burdened households	16%	22%	16%	18%	21%	15%
Living Conditions[1]						
Households that are renting	28%	42%	50%	36%	45%	35%
No vehicle access - Owners	4%	7%	4%	11%	9%	7%
No vehicle access - Renters	62%	69%	29%	54%	50%	51%
No vehicle access - Owners and Renters	7%	15%	8%	12%	13%	9%
Unemployment[1]						
Unemployment rate (ages 16+)	14%	11%	14%	11%	14%	10%
Unemployment rate (ages 16-19)	45%	31%	28%	28%	34%	26%
Unemployment rate (ages 20+)	12%	10%	13%	10%	12%	9%
Highest Educational Attainment (Age 25+)[1]						
Less than high school	11%	15%	16%	17%	17%	11%
High school diploma or equivalent	33%	30%	32%	37%	32%	30%
No education beyond high school	44%	46%	48%	53%	49%	40%
Education beyond high school	56%	54%	52%	47%	51%	60%
Childcare (Ages 0-5)[4]						
Children in subsidized childcare	44%	45%	48%	43%	60%	38%
Children in subsidized childcare AND in Gold Seal sites	15%	4%	5%	13%	7%	9%
Language[1]						
Primary language other than English	18%	18%	25%	18%	7%	13%
Speak English less than "very well"	4%	8%	13%	9%	2%	5%
Health						
Number of teen births (Ages 15-19)[5]	16	58	18	70	99	468
Number of births (All ages)[5]	218	689	249	1,148	957	8,519
Number of infant deaths[6]	3	5	2	5	7	60
Number of 211 requests only[7]	1,244	5,531	1,419	7,813	11,095	49,481
Percent of Pinellas 211 requests only[7]	3%	11%	3%	16%	22%	100%
Number of juvenile arrests/referrals[8]	69	456	114	714	1,289	4,886

FIGURE 1
Differential Risk in Zone 5. (south St. Petersburg, Pinellas County). *Household income less than $20,000 AND spending more than 30% of income on housing. Sources: [1]American Community Survey 5-year Estimates [5]FloridaCHARTS Birth Query System [2]Decennial Census [6]FloridaCHARTS Infant Mortality Query System [3]American Community Survey 5-year Estimates [7]2–1-1 Counts Tampa Bay Requests (not total calls) [4]Early Learning Coalition JWB Data Uploads [8]Florida Department of Juvenile Justice.

2 Method

2.1 Participants and setting

The community collaborative was organized by a university-based, community-engaged Family Study Center, whose mission includes the development of family-sensitive models that help promote infant-family mental health regionally, statewide, and nationally. Collaborative partners whose local efforts on behalf of families were essential in the transformation that this initiative sought to achieve included home visiting programs -- specifically those in maternal and child health; pediatric medical homes, including Community Health Centers; child welfare initiatives, specifically the foster/relative caregiver care system; and mental health programs and agencies. While designed as an inclusive multi-sector effort that could increasingly incorporate multiple additional providers, agencies, and organizations in training and support efforts core to the transformative work, five organizations took leadership as core strategic partners in the initial planning and implementation of the transformative initiative:

- Pinellas County Health Department, Maternal and Child Health Division- PCHD's Maternal and Child Health Division (MCHD)-Healthy Families, Nurse-Family Partnership, WIC, and Healthy Start
- Community Health Centers of Pinellas at Johnnie Ruth Clarke-Family and Pediatric Medicine, Obstetrics and Gynecology Care.
- Adoption Related Services- Mental Health Organization serving biological, foster, and adoptive families in Pinellas County
- Operation PAR- Pinellas County's lead Substance Abuse Treatment organization
- Healthy Start Coalition-the county's Maternal and Infant Home Visiting network

Dedicated funds were provided by the sponsor of the Planning Grant to cover the administrative costs of regular attendance by agency leaders and decision-makers at planning meetings. The participation of leadership was viewed as essential in supporting staff motivation and "buy-in" of the TI-FC changes that would be advocated and encouraged internally. Funds also supported special data collection and collation efforts carried out by partner agencies to provide the process and output indicators enabling assessment of project impact.

Agencies organized around the objective of helping their organizations develop trauma-informed, family-centered practices. The collective aim was to create a service system that better promoted families' capacities to furnish stable environments and strong, secure relationships that would support the growth and thriving of the county's young children. An interlocking aim was to assure access to resources that would help with challenges they faced and would face. Core strategic partners agreed to participate in a common set of development activities, brokering Memoranda of Understanding to collaboratively transform ways of working with families with young children in the community. Specifically, agency partners agreed to:

- Participate in monthly leadership meetings involving all partner organizations.
- Undertake an organizational self-assessment to determine readiness for a trauma-informed, infant-family mental health initiative.
- View the self-assessment as an iterative living document to undergo intentional edits, informed by the organization's participation in the initiative, at two follow-up timepoints
- Establish a universal family-level trauma screening for all programs serving children birth to 5 years.
- Mandate that program staff participate in trauma-informed practice and coparenting/ family-centered practice training that focused on effective engagement and work with men and fathers.
- Mandate that all supervisors and managers take part in Reflective Supervision training, toward the goal of enhancing the agency's commitment to reflective practice.
- Create policies and procedures regarding agency use of trauma-informed practices, family-centered services, and infant-family mental health approaches.
- Work with the initiative to establish a streamlined referral and linkage system for families with children birth to 5 years needing infant-family mental health clinical services.

2.2 Procedures

The study design was rooted in an *interactive approach* to *formative evaluation* to ensure that the collaboration activities among community partners were feasible and appropriate when held up to the stated objectives for frameworks for change within partner organizations. Whether partner agencies were developing new activities or adapting and modifying existing services, the formative evaluation was designed to improve models for change over time. Moreover, with the knowledge that efficient change within organizations happens through a combination of top-down and bottom-up approaches, administrative leads and agency staff were engaged in a range of data collection methods, providing opportunities for equitable sharing of information on critical organizational operations, as well as change efforts over time. Activities within each of the four stages of the process proceeded as follows:

Stage 1: Funding was obtained to compensate key agency decision-makers to take part in a 5-month planning stage. During the planning phase, agency leaders met bi-weekly to define terms and objectives, outline the scope of the initiative, agree on a common design, and set of commitments, plan communications with agency personnel and concretize a strategy for regularly reviewing progress. Meetings were facilitated by the first and third authors; the third author worked regularly and collaboratively with a university-based program assistant to serve as the dedicated administrative liaison for the project coordinating team.

Stage 2: This stage consisted of an Organizational Readiness Self-Assessment in which collaborative partners invited agency or unit staff to participate in or contribute to four data collection activities addressing TI-FC care within their organizations. Timelines for the major OSA activities are summarized in Table 1, and an overview of the Method including evaluation details and participant survey numbers is provided in Table 2. A forthcoming manuscript considers sampling, data quality and representativeness, and nonresponse bias in greater detail. Specifics of the various activities completed are outlined below:

First, a *program staff survey* was disseminated to eligible program staff; eligible staff were personnel within partner organizations that had direct contact with and knowledge of the clients served within the 0–3 programs and services. The staff survey was adapted, with permission from the authors, from a Trauma-Informed Care Organizational Survey, developed at the University of South Florida (Hodges et al., 2014). Survey participants were identified by agency partners, and specifically those key leaders attending the meetings of the TI-FC Collaborative. These agency leads were seen as change

agents with knowledge of two critical pieces of information: (1) the mission and objectives of the Collaborative; and (2) persons within their agencies well-suited to providing information about the agency and its clients. They were therefore asked to disseminate survey links by email to agency staff and to provide encouragement and prompts to complete the survey. The staff survey addressed seven domains of TIC, including:

Domain 1: Competent Trauma-Informed (TI) Organizational and Clinical Practices

- Sample item 1: My agency offers trauma-specific, evidence-based practices.
- Sample item 2: Staff members use a strengths-based, person-centered approach in their interactions with clients and their families.

Domain 2: Client and Family Engagement in TI Care

- Sample item 1: Clients and their families are routinely involved in treatment and/or service planning.
- Sample item 2: There are systematic opportunities (beyond satisfaction surveys) for clients and families to give feedback regarding TI care.

Domain 3: Father and Coparent Engagement in TI Care

- Sample item 1: My agency prioritizes active outreach to fathers and coparents and includes them in case planning and services provided.
- Sample item 2: I receive the encouragement, support, guidance, and training I need from my agency for working with fathers and coparents with TI care needs.

Domain 4: Organizational Readiness for TI Care

- Sample item 1: Leadership in my agency ensures that all staff are prepared to offer TI care in culturally responsive and appropriate ways.
- Sample item 2: My agency provides the resources (technology, staffing, and training) for implementation of TI care.

Domain 5: Vision for Services

- Sample item 1: Trauma-informed care should be offered within all the agencies programs and services.
- Sample item 2: All staff should be informed on TI care and knowledgeable about delivering TI services.

Domain 6: Training, Knowledge, and Skills

- Sample 1: I have received the training I need to participate in delivering TI care.
- Sample item 2: My background, education, and experience are a good match for providing TI care.

Domain 7: Trauma-Informed Care in the Community

- Sample item 1: Trauma-informed evidence-based practices are accessible to children and families in my community.
- Sample item 2: My community is committed to developing a trauma-informed workforce.

The *program staff survey* was conducted at each partner organization site three times: at baseline, 12 months (midpoint), and project end. Concurrently, a *supplemental administrative survey*, was completed by partner organization administrators at the same three

TABLE 1 Timeline for TI-FC stages 2 (organizational readiness self-assessment) and 3 (OSA profile development and dissemination) activities.

Activity	Year one				Year two			
	OCT-DEC 2018	JAN-MAR 2019	APR-JUN 2019	JUL-SEP 2019	OCT-DEC 2019	JAN-MAR 2020	APR-JUN 2020	JUL-SEP 2020
Organizational readiness self-assessments								
OSA–staff survey	X				X			X
OSA–administrative survey	X				X			X
OSA–document review		X	X	X	X	X	X	X
Creation of organizational profiles from OSAs								
OSA–development and updating of partner organization profiles			X			X		X
Agency staff focus groups								
Conduct focus groups regarding perspectives on TI-FC care at agency					X	X		
Analyze focus group results and disseminate recommendations						X	X	
Final reports to organizations on all evaluation activities								

TABLE 2 Summary of evaluation activities.

Methods	Relevant data
Surveys. Surveys were conducted at 3 time points, online through Qualtrics. Response choices were presented as 5-point Likert Scales, with response options ranging from Completely Agree to Completely Disagree Staff survey participants: • Counselors/therapists • Case managers/home visitors • Administrative support staff • Medical staff • Other Administrative supplemental survey participants: • Supervisors • Directors/Executive management	Staff Survey Baseline: ($n = 204$) Midpoint: ($n = 210$) Project End: ($n = 196$) Administrator Supplemental Survey Baseline: ($n = 47$) Midpoint: ($n = 56$) Project End: ($n = 34$)
Document reviews. Partner agencies provided access at 3 time points to documents reflected organizational efforts regarding: service planning and trauma-specific services; trauma screening and assessment; treatment, referral, and discharge planning; client engagement and representation; administrative support and training; and program evaluation.	Documents reviewed from partner organizations ($n = 5$) at three time points
Focus groups. Focus groups were conducted to supplement organizational profile data on key elements of progress toward TI-FC capacity. Participants were volunteers from agency direct-service staff. A report summarizing focus group topics, themes, summary, and recommendations was presented to the collaborating partners at project end.	Focus groups Agencies: ($n = 4$) Total participants: ($n = 38$)
Evaluation methods culminated in the development of *Organizational Self-Assessment Profiles* These profiles were iterative individual agency profiles documenting key indicators of readiness to implement, modify, or enhance trauma-informed family-centered care. Profiles were presented to agency leads at three times points and reviewed in meetings with the evaluation team. Progress in developing TI-FC agencies was documented and quantified along key TI-FC domains. Separate sections were dedicated to strengths, areas for improvement, and a plan of action for each partner organization.	

time points. Participants completed the surveys via Qualtrics. The supplemental administrative survey, which was adapted from the *Creating Cultures of Trauma-Informed Care CCTIC Fidelity Scale* (Fallot and Harris, 2015), directed program administrators to describe program indicators reflecting five core values associated with a culture of trauma-informed care (safety, trustworthiness, choice, collaboration, and empowerment; Harris and Fallot, 2001a,b). The CCTIC includes six domains, each incorporating subdomains corresponding to the five core values. The six major CCTIC domains are:

1 Program Procedures and Settings;
2 Formal Services Policies;
3 Trauma Screening, Assessment, and Service Planning; Trauma-Specific Services;
4 Administrative Support for Program-Wide Trauma-Informed Services;
5 Staff Trauma Training and Education; and.
6 Human Resources Practices.

The objective of all surveys was to seek information from program staff and administrators about their experiences in the identified areas of TI-FC care to determine whether their experiences were consistent with the proposed model for systems transformation. All surveys were disseminated via emails sent by the university-based administrative liaisons for the project coordinating team to the community partner administrative leads. They were considered census surveys with no exclusionary criteria. Participation was voluntary and anonymous, and no incentives were offered for participation. No major risks were projected, and no adverse events were reported. Procedures were reviewed by the USF IRB, and exemption from signed consent was granted. Each survey took approximately 15 min to complete.

Microsoft Excel was used to organize data obtained through Qualtrics. The survey data were analyzed using SPSS 25. Descriptive statistics (e.g., mean scores, item response frequencies) were obtained along with the characteristics of participants. Surveys from participants who did not complete questions beyond the second domain were treated as incomplete and excluded from group analyzes.

Also in Stage 2, a *document review* was conducted. Documentation is valuable as a method of program evaluation because it provides an historical context for change, relies on readily available and unbiased information, and does not interrupt staff routines related to client care. The documents reviewed pertained to key program components associated with a culture of trauma-informed care, including trauma screening, assessment, service planning, and trauma-specific services; administrative support, involvement of persons served/peer representatives; staff training, education, and support; and program evaluation (Fallot and Harris, 2015). Participating agencies provided the second and fourth authors with common public documents describing the nature of their programs and service activities (particularly related to TI-FC care) for review. The materials submitted provided documentary evidence of the presence or absence of policies, procedures, and organizational functions of material interest to the process evaluation component of the study (e.g., policies and procedures related to trauma-informed intake and assessment; staff training and development).

Finally, a smaller subset of staff from each organization participated in *focus groups* designed to obtain direct and first-hand confirmatory information about staff experiences with the implementation of TI-FC strategies and to determine whether services, as portrayed in census surveys, were on-target and amenable to planned enhancements - which included implementation of a universal family level trauma screening for adults and children birth-3 years. The study team developed and implemented the schedule of focus groups with agency staff as participants.

Focus groups are useful in exploring topics in depth and in this case providing essential perspectives from people served. Focus groups offer a quick, reliable way to gather information on common impressions and ensure range and depth of information (Barbour,

2007; Liamputtong, 2011). Program staff were ideally situated to provide insights into TI-FC care over time. The broad topic areas discussed included participants' experiences in various programs and the delivery of services, their impressions of TI-FC care within their respective programs, and the degree to which their experiences matched the program as it was intended. For example, they were asked to describe services, policies, and protocols to assess if said services operated from trauma-informed perspectives. Initially, it was anticipated that focus groups would be conducted at two time points, with the intent of learning how the activities of the TI-FC Collaborative impacted services and the experiences of program staff over the duration of project efforts. However, the second focus group was not completed due to the COVID-19 pandemic and related obstacles.

Focus group participants were identified and recruited by partner agency administrative leads (consistent with the requirements for the protection of privacy), with the goal of recruiting a minimum of 6 to 8 participants per focus group. Verbal consent was requested and given at the start of each group, and discussions were audio-recorded with the permission of the participants. Each focus group lasted 60–90 min (about 1 and a half hours). Focus groups were conducted at partner agencies' offices for participants' convenience. In total, 30 staff participated in the focus groups across four agencies. A wide range of perspectives were represented across the groups as staff roles ranged from direct care staff and program supervisors to executive leadership. Participating staff indicated varying lengths of employment at their respective agency, with employment periods ranging from less than 1 year to 28 years.

Two evaluation staff facilitated the focus groups, with one member as the primary moderator and the second as a facilitator/recorder. The evaluation team then analyzed findings and disseminated results to collaborative partners. Honoring the time-compressed nature of the evaluation timeline, the team completed rapid thematic analysis of the data so that findings could efficiently inform practice, i.e., content development for staff trainings. Rapid thematic analysis is an evidence-based qualitative approach commonly used in health pragmatics research (Renfro et al., 2022). Results from focus groups helped to augment organizational profiles for key aspects of TI-FC capacity.

Stage 3: In stage 3, data from the completed *surveys*, *document reviews* and *focus groups* were collated to inform development of partner organizational profiles, which completed the Organizational Self-Assessment (OSA). These profiles were developed by each partner organization in collaboration with the study team and the first served as a baseline against which the organization could later assess transformational shifts. OSAs resulted in individual agency profiles of key indicators of readiness to implement, modify, or enhance TI-FC care. The baseline OSAs were first updated at 12 months, and then again at project end, for each agency partner. In this way, the OSA was able to illustrate for programs how they were improving over time, brought to light areas for continued quality improvement, and helped to engender plans for continued growth and development going forward.

Stage 4: In the fourth stage, which launched soon after the initial OSAs were completed and shared with agency leaders, all front-line staff, managers, and supervisors were required by their organizations and programs to participate in a coordinated series of TI-FC trainings for multi-agency staff. Trainings addressed universal trauma-informed practices, infant-family mental health, father engagement and coparenting and reflective supervision and practice. The university-based administrative liaisons scheduled the trainings for the project coordinating team in collaboration with the lead representatives from each partnering agency. Forethought was given to rotating the sites for the trainings held in the community at the various participating agencies. Multiple offerings of each training module were arranged, and each training session was made accessible to members from all partnering organizations to maximize flexibility.

The unusual composition of the multi-partner collaborative elevated the memorability of these trainings, as – following presentation of relevant core content by the university-based content experts (the first and fifth authors) - staff from different agencies would reflect as a group on the current state of practice within their spheres of operation. Staff would describe typical practice, experiences of better or best practice, and experiences of falling short of the mark. Together partners would reflect on one or more areas for immediate adjustments within their own organizations and services and present these publicly to the other organizations in attendance so multiple organizations could hear the analyzes of changes, big and small, that others anticipated being able to make. As the last exercise, partners were instructed to project forward to simple but larger procedural adjustments that might make practice changes more enduring and sustainable.

The thrust of the initiative was that mindfulness about obstacles – agency-wide, family-specific concerns and challenges and personal (blind spots and biases) - were all part of the formula and solution for transformational change. For this reason, the presence of upper and middle management supervisory staff as participants together with front-line providers at the large-group training sessions and convenings helped build solidarity. It also provided multiple perspectives from which others learned. Training content was later enshrined in a series of short recordings and manuals made accessible to project partners for use in future onboarding and training of new staff in strengths-based approaches. Throughout the initiative, the university-based study team took responsibility for planning and directing all activities. In planning, they creatively combined qualitative and quantitative methods of both process and outcomes activities to best meet the needs of short-, mid-, and long-term goals for organization-level as well as systems change. The evaluation results were reported to project leads and community partners in a timely manner. In fact, lead evaluators attended the monthly leadership meetings to actively observe the transformational process in real time, and to provide reports of progress of and findings from evaluation activities.

Formative information and outcomes guided the consultation and feedback provided to partner organizations on elements critical to the development of TI-FC care and related programs and services. Addressed were training plans (including protocols for onboarding new staff), policies and procedures, intake and screening processes and materials, interventions offered, and referrals made. This intensively collaborative process enabled organizational leads and agency partners to make use of their own evaluation results to best determine opportunities for procedural shifts in TI-FC care. Study activities were hence deliberate and intentional in assisting each partner organization to consider how they might strengthen approaches, add interventions where needed, and improve outreach to and engagement of all caregiving adults coparenting children prenatal to age 3, specifically men and fathers but also other engaged family caregivers.

3 Results

This section summarizes findings from the organizational self-assessments (OSAs) and from additional corroborating data collected from the participant organizations on the state of TI-FC care at their agencies at various stages of the initiative. We first present select findings from OSA staff surveys at various junctures of the initiative capturing the overall momentum of cross-time change. This is followed by illustrative results from the OSA administrative supplemental surveys and the OSA focus group sessions. Rather than providing agency-by-agency findings to best reflect system transformation, we summarize the trends seen upon combining data across all partner agencies. Overall, both survey findings and additional qualitative data collected over the course of the initiative (which were also broken out into separate reports for each participating agency) reflected commitments from staff across agencies to streamline referrals and services and transform their system to become trauma informed.

OSA Survey – As described in Table 2, the OSA Survey included a Staff Survey and an Administrative Supplemental Survey. Results of the two surveys are detailed separately below.

3.1 Findings from OSA staff surveys

Our chief interest in examining survey data from staff was establishing if there was an increase in uptake of TI-FC principles across the initiative's duration. Figure 2 depicts familiarity of agency staff, collated across all participating partners, with TI care principles at the beginning, middle and end of the initiative. Survey data showed that staff levels of familiarity with targeted principles improved over the project's life.

Next, we examined what agency staff had to say about their familiarity with the content of each of the different domains targeted in the OSA surveys. Figure 3 summarizes levels of understanding reported by agency staff across the 7 key domains (Competent Trauma-Informed (TI) Organizational and Clinical Practices; Client and Family Engagement in TI Care; Father and Coparent Engagement in TI Care; Organizational Readiness for TI Care; Vision for Services; Training, Knowledge, and Skills; and Trauma-Informed Care in the Community).

As can be seen from Figure 3, comparison of mean scores over time for the 7 domains suggests gradually higher scores for Domains 1 through 5 at Times 2 and 3. There was also a higher mean at Time 2 than at Time 1 for Domain 7, but no further elevation at Time 3. Only on Domain 6 (Training, Knowledge, and Skills) did mean scores appear unchanging across time, perhaps because newly onboarded staff who had not partaken of the training series were among those completing surveys at later time points. It is also possible that the seeming lack of organizational change from Time 2 to Time 3 for Domains 6 and 7 may have been because they were the last two domains presented in the survey. More respondents submitted only partially complete surveys at the time of the third administration. Since analyzes were run Domain by Domain, the effective sample size would have been smaller for incomplete Domains, potentially affecting the overall result pattern.

Once available, summary data were presented to and discussed with agency partners in group consultation. Afterward, each agency was provided with organization-specific results capturing the shifts depicted just for their own entity. This allowed each organization to reflect upon and make decisions for future internal action and change, based on their own profile. Overall, based on staff survey results, the TI-FC Collaborative partners as a group were encouraged to consider the following:

- Continuing efforts to revise and develop policies and augment staff capacity-building efforts (e.g., training, reflective supervision) beyond the TI-FC initiative.
- Reviewing specific survey domains and their indicators to fine-tune organization-level policies and protocols related to TI-FC care
- Addressing strengths as well as areas of improvement that emerged from the survey to help advance the mission of systems transformation in TI-FC care
- Continuing with training plans for each unit and staff member such that each person's training, knowledge, and skills in the targeted domains continued to grow;
- Ensuring that onboarding of all new staff included comprehensive training in TI-FC principles (as noted, presence of fresh staff at Times 2 and 3 may have contributed to the relative lack of cross-time change seen in Domain 6)
- Continuing efforts to engage the community in TI-FC principles (as apropos to the relative lack of change seen in Domain 7)

3.2 Findings from OSA administrative surveys

The *Organizational Self-Assessment Administrator Supplemental Survey* highlighted program administrators' experiences in six identified areas of TIC (Program Procedures and Settings; Formal Services Policies; Trauma Screening, Assessment, and Service Planning and Trauma-Specific Services; Administrative Support for Program-Wide Trauma-Informed Services; Staff Trauma Training and Education; and Human Resources Practices) to document whether their experiences in those realms were consistent with the TI-FC Collaborative's proposed model for systems transformation. The survey augmented previously reported data from the OSA Staff Survey (above) and yielded additional insight into the TI-FC Collaborative's efforts to become a more trauma-informed provider network. The following key findings from the Administrative Supplemental Survey highlighted advances toward becoming more trauma-informed over the initiative.

- Comparison of partner-wide level of familiarity with TI principles overall showed a cross-time decline in those reporting being only slightly familiar or not at all familiar.
- Commensurately, the proportion of partner-wide administrative respondents who reported being *moderately to very familiar* with TIC principles advanced steadily over the course of the initiative, climbing across the three time points - 72% at Time 1, 89% at Time 2, and 97% at Time 3.
- A comparison of administrator reports on the CCTIC over the course of the TI-FC initiative (Figure 4) indicated that on Domain 1 (Program Procedures and Settings), mean subdomain

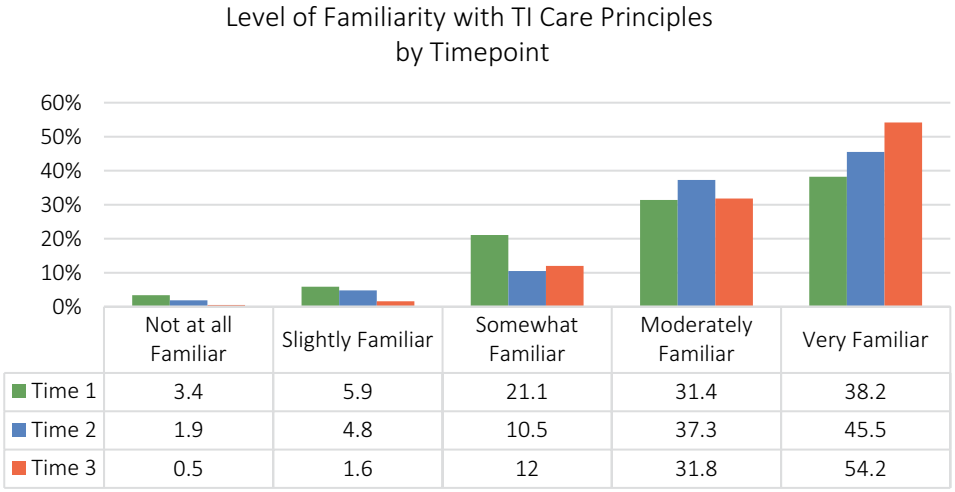


FIGURE 2
Familiarity with trauma-informed care principles by timepoint.

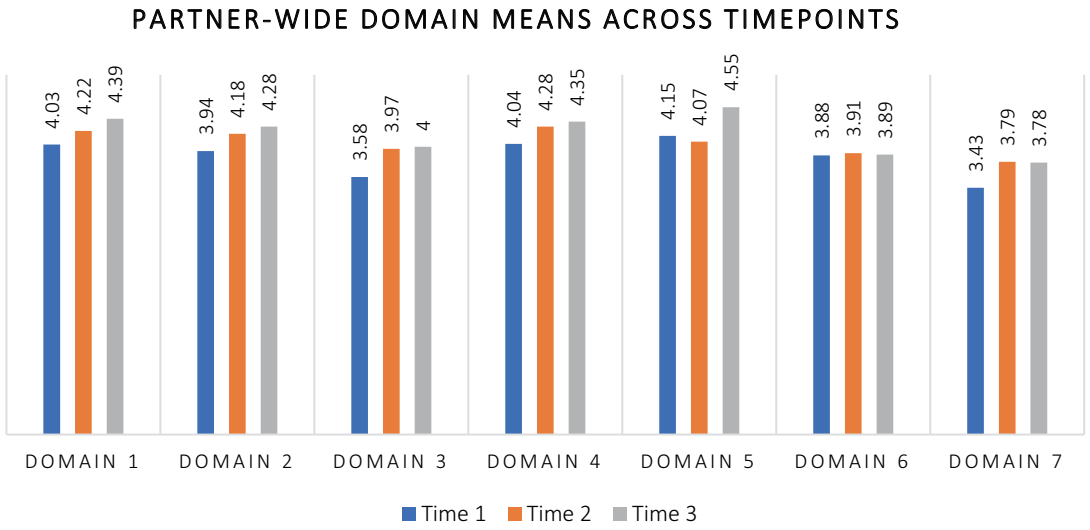


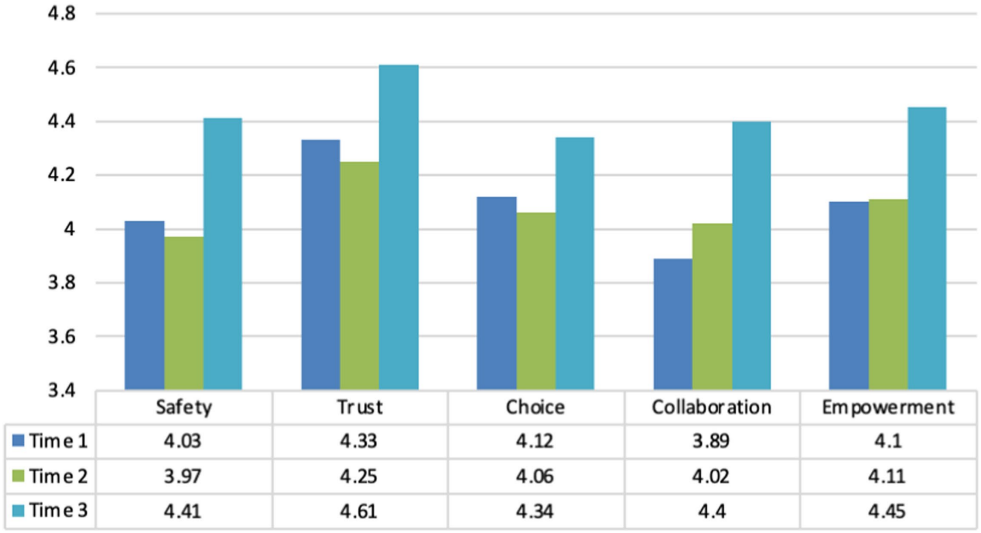
FIGURE 3
Partner-wide domain means across timepoints.

scores for the five core values of TI care (i.e., safety, trustworthiness, choice, collaboration, and empowerment) changed only modestly from Time 1 to Time 2. Still, all showed notable mean level changes by Time 3.

The progression noted in Figure 4 is considered particularly auspicious. In that pronounced initiative effort was invested in addressing transformations of program procedures and settings, advancements in administrators' mean scores for all 5 subdomains was important. Because those in administrative or leadership positions often have more longevity in their agencies and possess greater familiarity with TI-FC care principles, they are well-positioned to foster an infrastructure and environment needed to strengthen their organization's internal efforts toward becoming more trauma-informed and family-centered.

As with the OSA staff results, administrator results were also presented to and discussed with agency partners so each agency could reflect on both trends across the system or care and on their own organization-specific results, enabling informed decisions for future internal action and change based on their own entity's profile. Overall, based on administrative survey results, TI-FC Collaborative partners were encouraged as a group to:

- Review specific survey domains and their indicators to fine-tune organization-level policies and protocols related to TI-FC care and ensure that agency leadership took a leading role in moving the agency forward regarding these practices.
- Address the strengths as well as areas of improvement that emerged to help advance the mission of systems transformation in TI-FC care. Partners were directed to look most closely at the



	Safety	Trust	Choice	Collaboration	Empowerment
Time 1	4.03	4.33	4.12	3.89	4.1
Time 2	3.97	4.25	4.06	4.02	4.11
Time 3	4.41	4.61	4.34	4.4	4.45

FIGURE 4
Domain 1 (program procedures and settings) sub-domain mean scores.

highest and lowest endorsed items. This helped them to identify specific training needs and to develop strategies helping assure that key domains and subdomains became an integral component of agency-wide meetings (formal and informal).

- Work to streamline the continuum of care across partners and, therefore, improve services available to the community.

3.3 Findings from focus groups

Whereas participant knowledge and awareness of the initiative's purpose and goals varied within and across agencies, most demonstrated at least a perfunctory understanding. Most frequently referenced in responses was the helpful nature of the trainings. This undoubtedly owed to the training series as the most overt exposure staff had with the initiative. Specific topics/themes that emerged from focus groups included:

3.3.1 Training, skills, knowledge

Participants highlighted numerous benefits to the trainings, especially how they increased staff awareness of the widespread impact of trauma. Staff valued how trainings provided them with tools and language to inform how they approach and discuss trauma with clients. They also commented on how their own trauma could influence their well-being and ability to serve clients. Most pertinent to the focus of this special issue, they spoke to their new insights regarding the importance to children of actively involving fathers and other coparenting family caregivers in services.

3.3.2 Observed changes

Participants across all groups said that they saw benefits and changes occurring within their agencies due to the initiative. Several observed modifications in the continuum of care such as changing screening procedures and forms to be more trauma informed. Others noted how staff in their services were changing the way they talked about trauma. Challenges to integrating trauma-informed care were also noted. One barrier was perceived inability to change certain standardized practices that, due to existing policies, were not subject to modification or were standards put in place by national boards. Some participants wondered about how to best integrate TI-FC care into such externally mandated practices.

3.3.3 Engagement of Clients/Families and fathers/Coparents

A variety of strategies for engaging and involving caregiving adults in the continuum of care were reported, with changes necessarily specific and tailored to the practices of the different partner agencies. For example, Obstetrics and Gynecology Care began inviting fathers to a specific longer prenatal visit typically attended by mothers alone (if the mothers so wished), developing father-friendly flyers explaining prenatal procedures for mothers that were shared at that visit. Other positive new developments described included gathering of informal feedback and satisfaction surveys, involvement in treatment planning, and greater involvement of families at community events. Awareness of involving families in an advisory capacity was reported in one agency. Specifically, regarding enhancements to father and coparent engagement, participants at each agency noted making strides in being more conscientious about involving men and fathers -- and attributed this greater awareness to the initiative training.

3.3.4 Community awareness, organizational readiness and vision

Participants expressed interest in learning from leadership more about the purpose and future goals of TI-FC care and developing initiatives. They expressed interest in learning how the Collaborative would take the training to the next level, both in terms of expansion and sustainability. Many asked (enthusiastically), "What's next?" (e.g., practical knowledge application, sharing of information, resources, and strategies across agency partners). Perspectives regarding leadership involvement in promoting TI-FC care ranged from viewing "higher" leadership as minimally present or active in promoting the

integration of TI-FC practice, to perceiving leadership as open and receptive to staff needs. One recommendation concerned the continuation of visibility among the agency's executive leaders in advocating for and promoting TI-FC care. A shared theme across several groups concerned the importance of sustaining training efforts to avoid reverting "back to business as usual." Participants also emphasized the need to broaden community partnerships and to expand education efforts within the agency and out in the community.

Focus group results were presented to agency partners to reflect on and make decisions about future internal action and change. Overall, based on focus group results, partners were encouraged to:

- Ensure all staff impacted by the initiative received regular communications describing initiative goals and accomplishments, such as newsletters/email communications, and that executive leadership were visible in these efforts.
- Improve trainings by delving into more nuanced topics such as the impact of racial and other forms of trauma specific to particular populations of clients and families.
- Add staff support at the trainings in the event re-traumatization occurred.
- Provide staff with organized assemblies of training materials and resources.
- Add more activities to support knowledge integration and practical application of learned material following training activities.
- Explore the feasibility of developing brief tools and practices that can supplement standardized procedures.
- Continue emphasizing the complementary nature of TI-FC care to existing practice.
- Explore opportunities for supporting a meaningful and authentic involvement of families in a formal, advisory capacity.
- Continue providing additional strategies for supporting father/coparent involvement.

4 Discussion

As evidence of the long-term impact of trauma and early adversity during children's first 3 years of life has mushroomed, health care providers have increasingly sought to develop more grounded approaches to trauma-informed care. However, emerging evidence indicates that intentional and broad-based changes to organizational policy and culture are needed before health care settings can become truly trauma-informed and ready to responsibly address aftereffects of trauma among clients and staff (Menschner and Maul, 2016). Transformations toward becoming trauma-informed organizations that respect and include children's fathers in their work need guidance and leadership from senior staff and management. Concurrently, the front-line workforce must also take part in transformative efforts to maximize buy-in throughout the organization. Involving multiple lead agencies in making such changes simultaneously and collaboratively can synergize changes within systems of care and maximize impact for fathers and their families in communities served.

The case study presented in this report found significant initial success in adapting approaches to care in serving children 0–3 and their families. We proactively engaged several lead agencies and organizations that maintained the most saturated touch in the lives of families from pregnancy through the child's first 3 years. We also engaged all partners in purposeful planning in which universal aims, transformational principles, and common on-the-ground shifts were synchronized across an intensive two-year implementation period. This deliberative and collaborative multi-agency team approach enabled coordination of organizational assessment, staff training and consultation, self-monitoring of organizational shifts, and problem-solving of obstacles and solutions. The Collaborative's particular success in serving fathers owed, in large part, to participating agencies all successfully completing comprehensive and multi-faceted analyzes of organizational culture -- then using products of this evaluation to make calculated and customized changes within their agency. Preliminary data presented in this report indicate that considered across agencies, important cultural shifts took hold in agencies and signified changes not just in father engagement, but across multiple key domains.

The infrastructure of the initiative helped agencies systematically approach assessment, self-review and reflection, staff training, and competency-building among senior staff, all enhanced by improvements in reflective practice. The commitment to regular participation in review meetings, sending the same staff and delegates across time, and coming prepared to discuss successes and hiccups held organizations accountable during the intensive change period. The camaraderie of multiple organizations investing similar efforts and producing customized innovations afforded unique and, in some ways, unparalleled opportunities for brainstorming, emulation, and experimentation. The ongoing exposure of staff and supervisors to how the initiative was taking hold across sister organizations during the training series events was also unusual and impactful. Personnel across multiple agencies gathering in the same rooms for core trainings, hearing how father engagement and other TI-FC issues were being prioritized -- and playing out -- across different healthcare and related settings elevated everyone's awareness of the endemic nature of ingrained practices. It also highlighted the promise of striking upon new ways of viewing and collaborating with fathers and families informed by a trauma-informed family-centered lens.

The guiding inspiration for this effort was questioning and challenging the narrow lens behind the typical approach to trauma-informed training in agency settings serving children birth to 3. Almost invariably, that lens is dyadic (child and one parent), at best (McHale and Phares, 2015). While we advocated that infants' fathers be noticed and valued, such advocacy was not itself new – father engagement has been discussed for nearly 30 years in major federal initiatives. What was innovative was providing not just a conceptual blueprint for understanding but also "in-the-trenches" role plays and conversations reviewing how providers can properly – and also ineptly – approach fathers. Understanding the psychology of men and fathers is essential when the aim is to include them substantively in care plans (McHale and Jenkins, 2023). During live trainings, multi-agency staff were asked to - and proved capable of - reflecting upon and articulating why they'd left fathers out of current cases they were seeing, when fathers actually could have been involved. Gains in provider recognition that true trauma-informed care for infants requires outreach to and engagement of the multiple adults, or coparents, responsible for the child's care and upbringing were seen in the

cross-agency data presented above. Staff ratings of increases in their understanding were greatest for Domain 3: Father and Coparent Engagement in TI Care (Table 2).

These gains and benefits noted, the work reported here only began to scratch the surface of true organizational and systemic change. There were certainly major successes. All agencies implemented or augmented universal trauma screenings. Several agencies also made substantive changes to their clinical approaches to father and coparental engagement. For example, a substance abuse agency altered their intake questionnaires to ask men seeking treatment if they were fathers, expanding service options if they were, and expanded treatment groups – and staff competencies in leading groups - from "mommy and me" to "my family and me". However, other agencies – particularly medical settings, but others too - reported greater obstacles.

Common in medical contexts was upper management disinclination to pursue more inclusive approaches, often citing confidentiality, charting, and billing conventions and constraints. Challenges were also encountered in the ready development of a desired single central intake and referral port of entry (through a Healthy Start Coalition) for referrals among agency partners. Legal concerns were cited regarding confidentiality protections in patient consents. While workarounds were struck upon for certain obstacles, others were not as readily navigated. Still, each agency did make considered and meaningful changes within the purview of that allowable by their own oversight boards and funders. Cultural shifts were also seen in the development of new, more inclusive client materials, even within medical settings, such as the aforementioned father-friendly flyers explaining prenatal procedures for mothers.

We cannot close without commenting on the costs of such work, and the value of having had a sponsor to help defray some of the genuine expenses associated with a time- and labor-intensive initiative such as this. As alluded to earlier, the project was sponsored by an area Foundation. The investment of planning funds to help compensate agencies for the allocation of time by upper-level management and decision-makers to attend planning and calibration meetings regularly was crucial. So too was allocation of funds for agencies to designate time for staff training, rather than billable clinical activities. The wholesale participation of unit staff in ongoing training might potentially have negatively influenced the financial health especially of smaller organizations, so the financial offset was helpful in those cases.

Foundation staff themselves even made time to attend group partner meetings where progress was charted. Because of their deep, informed understanding of the transformations being accomplished through the TI-FC Collaborative, they were well-situated to consider a Family Study Center request for a new arm of the community effort. Reflective trainings had uncovered staff concerns and occasional discomfort working across racial and cultural lines with fathers and families from non-concordant demographic groups. As a result, the Foundation augmented the TI-FC transformative project with additional new funding allowing both original TI-FC partners and new area providers access to training and consultation on casework with families, with a focus on race-based trauma. The initiative also offered support for BIPOC practitioners in the region.

Moreover, the extensive contacts with agency over the course of the TI-FC Collaborative identified a second competency concern harbored by staff – that they had never had training working with multiple caregivers simultaneously. This self-identified knowledge and skill gap has become a focus in a second, follow-on initiative currently being piloted with some of the same original TI-FC collaborative agencies. That initiative, which included an intensive planning phase involving organizational leadership, emulating the approach taken it this report, is situated to provide intensive organizational training and in-services, and weekly group and *ad-hoc* case consultation, for delivery of agency-customized brief coparenting consultations to families already being served by front-line providers (McHale, 2023).

We believe that the modest but pivotally important humanitarian investments of knowledgeable funders open to supporting dedicated activities that helped contextualize and expand the scope of the community's systems change efforts are crucial. Funder-supported university-community partnerships -- especially when they are deliberative and inclusive of the major community partners already serving infants, fathers, and families -- stand to expand the existing knowledge base about system change and supports for higher risk children, families, and communities. In this regard, we note that agency leadership in the community served had already been meeting, often several times annually in various forums absent of funding, for over 12 years to focus on infant-family mental health. Hence a stage had been set to organize quickly and effectively once a funding opportunity presented itself. This model is one that can be realized in any community at no cost, and authentic, altruistic collaborations in the best interests of young children and their families are desirable to collective impact Foundations and funders.

We believe future efforts will be most effective when attentive to fathers' and families' lived experiences and past encounters with healthcare systems, guided by community voices, and attuned to needs of agency staff for protected opportunities to reflect upon and receive support for the challenges and occasional secondary traumatization they sometimes face. Such efforts are on the upswing, and the chronicling of their successes and challenges is necessary to continue to help broaden the collective impact of trauma-informed, family-centered work. TI-FC systems of care promise to increase and maximize the impact of coordinated supports in responding authentically to early childhood adversity and the sensibilities of fathers and families to cultivate meaningful, long-term change.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical approval was not required for the study involving humans in accordance with the local legislation and institutional requirements. Written informed consent to participate in this study was not required from the participants or the participants' legal guardians/next of kin in accordance with the national legislation and the institutional requirements.

Author contributions

JM: Conceptualization, Funding acquisition, Writing – original draft, Investigation. DB: Data curation, Formal analysis, Methodology, Writing – review & editing. LN: Conceptualization, Funding acquisition, Project administration, Writing – review & editing. AJ: Writing – review & editing, Formal analysis, Writing – review & editing. LB: Resources, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Interactive synchrony and infants' vagal tone as an index of emotion regulation: associations within each mother- and father-infant dyad and across dyads

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Introduction: Studies have shown that infants' emotion regulation capacities are closely linked to the quality of parent-infant interactions. However, these links have been mostly studied in mother-infant dyads and less is known about how the quality of father-infant interactions contributes to the development of emotion regulation during infancy. In this study, we aimed to investigate the links between interactive synchrony (i.e., an index of the quality of parent-infant coordination of interactive behaviors) and infants' vagal tone (i.e., a physiological index of emotion regulation). To understand the respective contributions of both parents, as well as the interrelations between the functioning of both dyads within a family, we observed mothers and fathers from 84 families interacting with their infants.

Methods: Synchrony was assessed by using the CARE-Index; infants' vagal tone was derived from the analysis of infants' electrocardiograms recorded during the interactions. Moreover, to take the play's order into account, we counterbalanced the procedure, so that approximately half of the mothers played first. We specified a first structural equation modeling (SEM) model to investigate the associations between interactive synchrony and the infants' root mean square of successive differences (RMSSD), an index of vagal regulation, in the two successive parts of the play. We conducted a multigroup analysis in a second SEM model to investigate the associations of the first SEM model in two groups based on the order of interaction.

Results: The results of the SEM models showed that greater synchrony was related to greater infant RMSSD within mother-infant dyads and across one dyad to the other dyad in the full sample and in the group of fathers who interacted first with the infants. The associations between synchrony and infant vagal tone within father-infant dyads never appeared to be significant, nor did any associations within each dyad and across dyads when mothers interacted first.

Discussion: This study highlights that the links between interactions and infants' vagal tone are sensitive to family members' interdependencies and some conditions (the order of interaction).

KEYWORDS

parent-infant interactions, emotion regulation, synchrony, vagal tone, infancy

1 Introduction

1.1 The interpersonal component of emotion regulation

The interpersonal component of emotion regulation is crucial in early infancy because, by interacting with parents, immature infants develop emotion regulation patterns that allow them to be progressively autonomous in recognizing their internal states and regulating emotions (Sameroff, 2004). Emotion regulation can be defined as a "process responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goal" (Thompson, 1994, p. 27). This definition reflects a functionalist view of emotion regulation, according to which emotion regulation allows the infant to achieve goals in the surrounding environment (e.g., for the infant to be fed, comforted, or protected; Campos et al., 1994; Cole et al., 1994). Emotion regulation involves intrinsic and extrinsic processes within the individual, with a strong influence from and on the environment. At 3 months, the quality of early interactions with the parents, the infant's main social interactants, helps the infant to shape behavioral and physiological patterns of emotion regulation, with consequences for the infant's socioemotional development (Tronick and Cohn, 1989; Cole et al., 2004; Cabrera et al., 2014; Morris et al., 2017; Low et al., 2019).

One index of the quality of parent-infant interactions that has been previously linked with emotion regulation is interactive synchrony, which reflects the quality of the mutual regulation of the interaction by the parent and the infant (Tronick, 2007; Bernard et al., 2013; Nguyen et al., 2020). Provenzi et al. (2018) defined interactive synchrony as the "degree of congruence between trans-modal behaviors of two partners, which is lagged in time and which promotes infants' learning of emotional regulation skills and the emergence of expectations on interactive repertoires" (p. 12). Interactive synchrony is linked with better cognitive development, fewer externalizing and internalizing symptoms, and adaptive self-regulation, with effect sizes ranging from small to large (e.g., Laible and Thompson, 2000; Kochanska et al., 2008; Feldman and Eidelman, 2009; Pesonen et al., 2010; Hinnant et al., 2013; Suveg et al., 2016). Interactive synchrony implies that the parent and the infant exchange and coordinate behavioral (e.g., gaze, affection, voice, and touch) and physiological (e.g., brain networks, affiliative hormones, and autonomic responses) signals, within each other, between each other, and between the physiology of one member of the dyad and the behavior of the other member (Tronick and Cohn, 1989; Feldman et al., 2010; Beebe et al., 2016; Provenzi et al., 2018). The repeated experience of synchronous exchanges during parent-infant interactions fosters the emergence of repetitive and rhythmic matched patterns within the dyad characterized by being "concurrent" (when the parent is happy, the infant is happy) and "sequential" (variations in the parent predict variations in the infant) between partners (Feldman, 2007a; Wass et al., 2020). During the perinatal period, synchrony is predominantly driven by the parent, who through direct glances, expressions of positive affect, vocalizations, and affectionate touch coordinates with the infants' attention during awake time. Later in infancy, the infant becomes an active social partner capable of co-constructing interactive synchrony with the parent(s) through the active coordination of gaze, affective expressions, co-vocalizations, and touch patterns (Feldman, 2007b, 2015). Although being in synchrony is desirable, synchrony in social interactions is most often difficult to achieve. The reason is that social interactions naturally contain mistakes or external perturbations and thus many possibilities for moments of miscoordination that reduce interactive synchrony (Markova and Nguyen, 2022). For example, moments of miscoordination can occur when a parent misunderstands the infant's signals by being withdrawn when the infant is willing to interact or by trying to engage the baby when he or she is fussy. However, despite moments of miscoordination, both partners may maintain a certain degree of interactive synchrony when they implement behavioral and physiological changes appropriate to the signals coming from the other partner (Tronick and Gianino, 1986; Beeghly et al., 2011). For example, a withdrawn parent may stay involved in the interaction by making eye contact with the infant, or a parent with a fussy baby might gently pat the baby's hand to distract and maybe soothe the baby, avoiding overstimulating activities.

Interactive synchrony involves regulatory behaviors, observable during an interaction, and emotion regulation processes, measurable on a physiological level through vagal tone. Vagal tone is a valid index of physiological regulation; it reflects the vagus nerve's contribution to the autonomic nervous system mechanisms related to emotion regulation. According to Porges (2011, 2021) polyvagal theory, vagal tone variations relate to the experience and expression of social, emotional, and communicative regulation during interactions. High vagal tone in early childhood has been associated with better regulation and fewer externalizing, internalizing, and cognitive problems across development. Conversely, low vagal tone has been shown to correlate with difficulty in regulation, poorer sustained attention, more impulsiveness, and greater disinhibition (Feldman, 2006; Graziano and Derefinko, 2013; Provenzi et al., 2015; Wagner et al., 2021). The suppression of vagal tone is a physiological indication of difficulty in social regulation and emotion regulation processes. The study of vagal tone in parent-infant interactions has shown, predominantly in the mother-infant dyad, that physiological variations can be observed depending on the quality of the interactions (Moore and Calkins, 2004; Lunkenheimer et al., 2020). When the quality of the interaction is high, with adaptive coregulation between parent and infant behavior, the infant vagal tone generally increases to support behavioral organization during social involvement (e.g., gaze sharing, shared attention). Conversely, when the quality of the interaction decreases, the lower coregulation generates a stress for the infant and is associated with lower vagal tone to support behavioral responses to a difficult interaction (e.g., avoidance of adult gaze, crying; Feldman et al., 2010; Provenzi et al., 2015). Pratt et al. (2015) found that mother-infant synchrony positively correlated with and predicted vagal withdrawal. In addition, mother-infant synchrony may strengthen vagal regulation in infants with high and low negative reactivity. Provenzi et al. (2015) observed a higher frequency of dyadic matching of affective states and dyadic repair in dyads with optimal vagal functioning. To summarize, infant's vagal tone is a crucial aspect to consider when investigating the interpersonal aspect of emotion regulation development.

1.2 The interdependencies between mother- and father-infant interactions

During infancy, different adults (e.g., parents, grandparents, aunts, uncles, and professional caregivers) may shape social interactions with infants, thus contributing to the development of regulation patterns

(Bronfenbrenner, 1974; Kokkinaki et al., 2012; Kokkinaki and Pratikaki, 2014). However, the most frequent interactions for infants occur with primary caregivers, that is, one or both parents, as they are closest to them and quickly provide them with the care they need to survive. Interactions with each parent allow the infant to experience different types of interactive synchrony, with different consequences on the coordination of physiological states and interactive behavior within each dyad (Lamb et al., 1987; Moore and Calkins, 2004; Skibo et al., 2020; Wu and Feng, 2020; Rodrigues et al., 2021). For example, during interactions with fathers, which often focus on highly stimulating physical play, interactive synchrony tends to involve the regulation of higher levels of positive arousal than it does during interactions with the mother, which often focus on the regulation of mutual gazes and vocalizations during face-to-face interactions (Feldman, 2003). In Western societies, mothers still mostly play the role of primary caregiver in early infancy, and thus previous research on the interpersonal components of emotion regulation in early infancy has largely focused on the mother-infant dyad. Furthermore, previous research has often considered the mother-infant dyad without taking into account other social interactions that might influence it (father-infant dyad) or encompass it (the whole family). Family system theorists, however, have long suggested that consideration of the connections between the different members of a family and their influence on the infants' functioning is necessary for a more accurate view of family influences on infant development. According to family system theory (Minuchin, 1974, 1985; Cox and Paley, 1997), the family system is composed of several subsystems, each of which has specific properties and the potential to influence and be influenced by the others. Minuchin (1985) argued that each subsystem can only be accurately understood in the context of its relationships with the others, as subsystems do not function in isolation from one another. What happens in one dyad (mother-infant) is likely to influence and be influenced by what happens in another dyad (father-infant). In sum, the infant's interactions with the mother and father are non-independent because complex interdependencies exist in a family.

The interdependencies in a family may function cumulatively during parent-infant interactions, so that adaptive or maladaptive functioning in one subsystem (e.g., parent-infant) spreads to other subsystems (e.g., interparental), leading to multiple factors influencing the infant's emotion regulation. However, it is also possible that several subsystems may compensate for others. Thus, the maladaptive effect of one subsystem on the infant's emotion regulation may be compensated by the protective effect of another system. Examples of interdependencies in a family are the spillover effect and the crossover effect. The spillover effect refers to the impact of the emotional quality of the parent–parent relationship on the emotional quality of the parent(s)-child relationships (Stroud et al., 2011; McCoy et al., 2013). A parent might take less care of an infant by purposely not being at home to avoid facing the other parent. On the other hand, parents with a good marital relationship are more likely to collaborate in caring for their infant, allowing the infant to experience more positive interactions with the parent(s) (Sears et al., 2016). The crossover effect, which may co-occur with the spillover effect, refers to the transfer of emotions or behavior between individuals within a subsystem rather than between subsystems or domains. In other words, a parent's attitudes or experiences could influence the partner's functioning with the infant (Tissot et al., 2017; Tucker et al., 2017; Miragoli et al., 2018; Pu and Rodriguez, 2021). While caring for the infant, a parent with a partner in distress (e.g., due to the presence of depressive symptoms or burnout) might present reduced availability, difficulty concentrating, and increased irritability because of worrying thoughts about the partner's difficulties (Sutton et al., 2017). Conversely, parents who are less confident in infant care might interact with the infant with greater confidence in their gestures because they are reassured by their partners' supportive attitude toward their parenting skills (Udry-Jørgensen et al., 2016).

To date, many studies have brought evidence of links between the quality of parent-infant (mostly mother-infant) interactions and physiological outcomes of infants' emotion regulation in an interaction. However, no study to our knowledge has ever investigated these processes in intact biparental families, taking both the mother-child and father-child dyads into account. In the present study, we aimed to fill this gap by investigating the associations between synchrony and vagal tone within mother-infant and father-infant dyads, as well as across dyads, that is, from one dyad to the other. In particular, we examined the links between mother-infant synchrony and infants' vagal tone during father-infant interaction, as well as the links between father-infant synchrony and infants' vagal tone during mother-infant interaction. In line with previous research, we expected to find within-dyad associations between the variations in the quality of interactions and the infants' physiological regulation during these interactions. Specifically, we hypothesized that high mother-infant synchrony would be linked with high infant vagal tone during the interaction with the mother. Although previous studies are scarce, we expected to find similar associations in father-infant dyads, such that higher father-infant synchrony would be linked with higher infant vagal tone during interaction with the father. As across-dyad associations have never been investigated in an empirical study to our knowledge, we formulated the exploratory hypothesis that we would find associations between high synchrony in one dyad and high infant vagal tone in the dyad, but that these associations would probably be weaker than within-dyad associations.

2 Method

2.1 Participants

The participants were a convenience sample of 84 mother–father-infant families. The mothers had a mean age of 33.75 years ($SD = 4.00$), the fathers had a mean age of 35.83 years ($SD = 5.68$; $n = 77$ due to missing data), and the infants had a mean age of 15.38 weeks ($SD = 1.25$). The infants were 44 boys and 40 girls. Mothers were mostly university graduates (54.8.0%, $n = 70$ due to missing data) with 66.7% of them employed ($n = 56$ due to missing data), 38.1% full time. Fathers were mostly university graduates (41.7%, $n = 65$ due to missing data) with 73.8% of them employed ($n = 62$ due to missing data), 63.1% full time. Mothers ($n = 70$ due to missing data) were mostly married (44%) and in a cohabiting couple (35.7%; some of them were divorced or separated from a previous relationship). Among the fathers ($n = 65$ due to missing data), 36.9% were married and 35.7% were in a cohabiting couple. A socio-economic index (IPSE) was calculated by using the formula of Genoud (2011), which is calculated based on the education level and occupation of both parents. Regarding socio-economic status, 48.8% of families belonged to the

middle-upper class, 13.1% to the middle class, and 11.9% to the upper class ($n = 72$ due to missing data).

2.2 Procedure

In this study, we used data collected from a larger study on emotion regulation and family functioning. A midwife recruited parents around the 37th week of pregnancy at the maternity unit of the University Hospital of Geneva. We presented the objectives of the research and then provided the parents with a consent form that the interested participants signed. The midwife explained to the parents that the study's focus was the infant's emotions. Three months after delivery, the research team contacted and scheduled a meeting with the parents when the infant was between 3 and 4 months old. At the beginning of the meeting, the researchers reminded parents of the context and the course of the study and invited them to place the infant on a changing table. To record the measurements of the infant's heart activity during family playtime in the study, one of the researchers placed three pediatric electrodes on the infant's chest to record an electrocardiogram (ECG). The researcher asked the parents to interact with the infant following the family play of the Lausanne Trilogue Play paradigm (Fivaz-Depeursinge and Corboz-Warnery, 1999). In the first part, one parent played with the infant for 2 min while the other parent was outside the room. In the second part, the parents changed roles. Because in the first two parts of the play the infant interacted separately with each parent, we decided to counterbalance the order of the parts to have an equal distribution between the mothers and fathers who interacted first. Finally, in the third part, the two parents played together with the infant for 2 min. In this study, we considered only the first two parts, that is, the interactions of each parent with the infant. Before starting the interactions, the researchers indicated the position of the cameras and specified that the experiment could be interrupted at any time if the infant showed signs of excessive fatigue or distress. The researchers instructed the parents to interact, as usual, avoiding objects if possible and not to carry, pick up, or place the infant in a sitting position on the changing table to limit the recording of noise during the ECG. At the end of the interactive session, and after the removal of the electrodes from the infant, the parents were asked to fill out a form to receive online self-report questionnaires. A debriefing in the form of video feedback was offered to interested parents.

2.3 Measures

2.3.1 Parent-infant synchrony

We assessed mother- and father-infant synchrony with the infant CARE-Index (Crittenden, 2006). The CARE-Index is an adult-infant interaction assessment that can be used from birth to 25 months. The coding system assesses global dyadic synchrony, that is, fathers' sensitive behavior and infants' cooperative behavior, within the context of parent-infant interactions. Scores ranged from 0 to 14, with higher scores indicating better dyadic synchrony. The total sample of 84 parent-infant interactions was coded from March 2022 to August 2022. To ensure inter-rater reliability, a random sample of 23.8% of the video recordings (20 videos in a total sample of 84) was initially coded by the first and second authors, both trained and certified as research raters in February 2022. The intraclass correlation (two-way random absolute agreement) on the synchrony scores was excellent with a coefficient of 0.982 (Koo and Li, 2016). Coders were blind to the results of the ECG analyses (see Section 2.3.2).

2.3.2 Vagal tone

An ECG was recorded during baseline, mother-infant interaction, and father-infant interaction. During the 2-min baseline, the ECG was recorded while the researchers explained the instructions of the experiment, and the parents were not directly involved with the infant. Physiological data were collected with a Biopac MP160 system (Biopac Systems, Inc.) and recorded on AcqKnowledge 5.0 software (Biopac Systems, Inc.). The infants' cardiac activity was processed on Kubios HRV v2.2 software to obtain heart rate variability measures, which reflect vagal tone. Analyses allowed us to derive the root mean square of successive differences (RMSSD), which represents the activity of the parasympathetic system and is widely considered to be a valid measure of vagal activity (Laborde et al., 2017).

2.4 Statistical analysis

We computed first a set of descriptive statistics for the variables under study (see Table 1). The normality test was performed by using the Shapiro–Wilk test. We also tested for bivariate correlations between the variables under study, as well as for differences depending on the order of the parts in the play through the Student's *t*-test and the Mann–Whitney *U* test (non-parametric alternative to the Student's *t*-test used when the samples to be compared do not have a normal distribution). Missing data analysis was conducted, as there were missing data in two control variables: fathers' age ($n = 7$) and families' socioeconomic status ($n = 12$). There was no missing data in the target variables. The Little's Missing Completely at Random (MCAR) test was not significant, $\chi^2 = 19.471$, $df = 20$, $p = 0.49$. Which indicates that data were missing completely at random. Then, we tested for associations between the target variables and the potential control variables (sex of the infant, age of the parents, and socioeconomic status) to be included in subsequent analyses. Because of the small size of our sample, we wanted to optimize statistical power by eventually including in multivariate analyses only those control variables that would have shown significant correlations with the target variables (see Table 2 for more details). As none of the control variables showed significant correlations with the target variables, they were excluded from subsequent analyses.

To test the main hypotheses of this study, we then used structural equation modeling (SEM) techniques to test the associations between the target variables, namely, parent-infant synchrony and the infants' RMSSD within each dyad and across one dyad to the other. In a first model (see Figure 1), we specified covariance paths between parent-infant synchrony and infants' RMSSD to investigate their association within each dyad (see Figure 1). We refer to these covariance paths as "within-dyad" covariances. Thus, there were two within-dyad covariances in this model, one between mother-infant synchrony and infants' vagal tone during mother-infant interactions, and one between father-infant synchrony and infants' vagal tone during father-infant interactions. To investigate the influence across one dyad to the other, we also specified covariance paths between parent-infant synchrony in one dyad and infants' RMSSD during the interaction in

TABLE 1 Descriptive statistics.

	Model 1					Model 2									
	Full sample					Mothers interacted first					Fathers interacted first				
Variable	*n*	*Min*	*Max*	*M*	*SD*	*n*	*Min*	*Max*	*M*	*SD*	*n*	*Min*	*Max*	*M*	*SD*
RMSSD M-I	84	2.95	19.80	11.20	3.48	41	3.61	19.80	11.67	3.59	43	2.95	16.90	10.76	3.36
RMSSD F-I	84	3.42	20.07	11.26	3.90	41	4.18	20.07	11.33	3.68	43	3.42	19.92	11.19	4.15
Synchrony M-I	84	1	14	8.31	3.36	41	1	14	8.71	3.53	43	2	14	7.93	3.20
Synchrony F-I	84	1	14	7.85	3.21	41	1	14	8.24	3.15	43	1	14	7.47	3.26

RMSSD, root mean square of successive differences; M, mother; F, father; I, infant.

TABLE 2 Correlation matrix for the full sample.

Full sample, $N = 84$								
Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. RMSSD M-I	1							
2. RMSSD F-I	0.734**	1						
3. Synchrony M-I	0.353**	0.246*	1					
4. Synchrony F-I	0.311**	0.164	0.524**	1				
5. I sex	−0.054	−0.033	−0.111	−0.165	1			
6. M age	−0.099	−0.119	−0.122	−0.175	−0.144	1		
7. F age	0.067	0.053	−0.123	−0.156	−0.017	0.537**	1	
8. SES	0.123	0.122	0.077	−0.075	0.061	0.276*	0.278*	1

** $p < 0.01$; * $p < 0.05$; RMSSD, root mean square of successive differences; M, mother; F, father; I, infant; Sex: 1 = female, 2 = male; SES, socio-economic status: 1 = lower, 2 = lower-middle, 3 = middle, 4 = middle-upper, 5 = upper.

the other dyad. We refer to these covariance paths as "across-dyad" covariances. Thus, there were two across-dyad covariances in this model, one between mother-infant-synchrony and infants' vagal tone during the interaction with the father, and one between father-infant synchrony and infants' vagal tone during the interaction with the mother. As previous work suggested that the order of interaction (mother or father interacting first) in a family play situation may influence the parents' behaviors during the interactions (Frascarolo et al., 2003), we conducted a multigroup analysis in a second model to test whether the order of the parts in the play influenced the study results. In this second model, the relations between the variables were specified similarly to the first model, but the model was separately estimated in two groups according to which parent interacted first ($n = 41$ families with mother playing first and $n = 43$ with father interacting first). In this model, all the parameters were left free to vary between the two groups. In order to estimate the magnitude of the differences between the two groups, we created a third nested model in which we imposed difference and equality constraints on all parameters of the model.

The first, second, and third SEM models were estimated by using a maximum likelihood with robust standard errors estimator. Because the first and second models were saturated (0 degrees of freedom), the model fit was irrelevant, as the model was perfectly fitted to the data. Information on model fit was in turn available for the third model, as it had 14 degrees of freedom. Chi-square tests and other fit indices (e.g., root mean square error of approximation [RMSEA]) were used to evaluate model fit according to the standard criteria defined by Hu and Bentler (1999). For the comparative fit index, values above 0.90 indicate a fair fit and values above 0.95 an excellent fit. For the RMSEA, values below 0.06 indicate an excellent fit and values between 0.06 and 0.08 an acceptable fit. Descriptive statistics, bivariate correlations, the Student's *t*-test, and the Mann–Whitney *U* test were computed in IBM SPSS Statistics 27 software (IBM Corp., Armonk, NY). Mplus 7.4 (Muthén and Muthén, 2016) was used to perform SEM.

3 Results

3.1 Descriptive statistics

The mean and standard deviations of parent-infant synchrony and infants' RMSSD during the interactions with each parent were calculated in the total sample and the two groups based on the order of the parts in the play (mother or father interacting first; see Table 1).

The Shapiro–Wilk test was performed to verify the normal distribution of the study variables, revealing that the infants' RMSSD scores were normally distributed (with the mother, $p = 0.783$; with the father, $p = 0.331$) and that synchrony scores were not (mother-infant synchrony, $p = 0.017$; father-infant synchrony, $p = 0.009$). To investigate whether the mean scores for the target variables would vary according to the order of the parts in the play, we used the Student's *t*-test for the infants' RMSSD scores and the Mann–Whitney *U* test for parent-infant synchrony scores. Results revealed that the infants' RMSSD during the interaction with the mother [$t(82) = 1.189$, $p = 0.23$] and the father [$t(82) = 0.165$, $p = 0.86$] and the synchrony scores with the

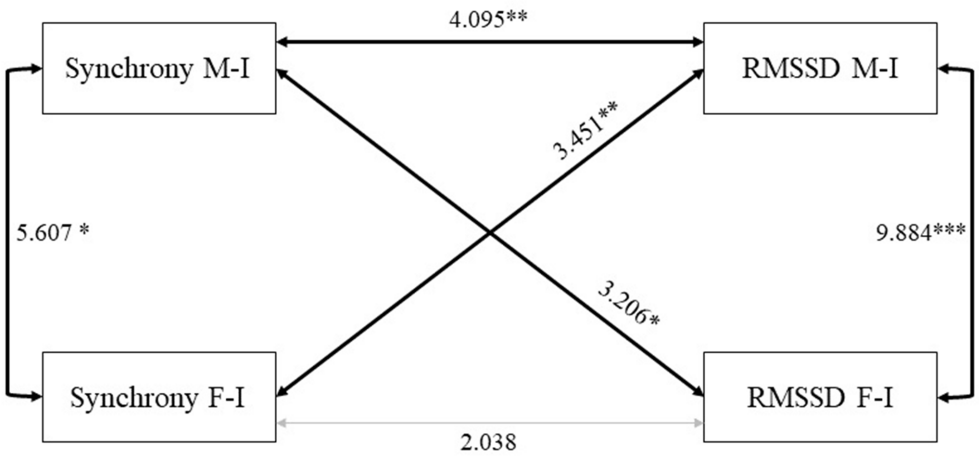

FIGURE 1
Graphical representation of the first SEM model in the full sample (= 84). *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; RMSSD, root mean square of successive differences; M-I, mother-infant; F-I, father-infant. Structural equation modeling (SEM) shows paths between mother-infant synchrony, father-infant synchrony, and infants' RMSSD during interactions with parents. Bold rows show significant paths between variables, and gray rows show nonsignificant paths.

mother (U: 761.000, $p = 0.27$) and the father (U: 747.000, $p = 0.22$) did not vary depending on the order of the parts in the play.

The normative values for RMSSD during infancy are predominantly rooted in 24-h ECG recordings (Massin and von Bernuth, 1997; Patural et al., 2019), which posed a challenge in their direct comparison with the 2-min segments used in the current study. However, previous investigations that focused on brief 10- or 2-min excerpts from ECG recordings during infants' restful periods (Zeegers et al., 2017; Arce-Alvarez et al., 2019) revealed values that were either similar or slightly higher than those observed in the present sample. This minor variance might be attributed to the recording circumstances—capturing the ECG during social interactions rather than in a resting state.

3.2 Correlational analyses

The correlational analyses between target variables (parent-infant synchrony, and infants' RMSSD during the interaction with each parent) and the control variables (sex of the infant, age of the parents, and socioeconomic status) were calculated in the full sample (see Table 2). The infants' RMSSD during the interaction with the mother correlated positively and significantly with synchrony with both parents, so that, when the infants' regulation with the mother was higher, the synchrony with both parents was also higher. The infants' RMSSD during the interaction with the father correlated positively and significantly with mother-infant synchrony, so that, when the infants' regulation with the father was higher, the synchrony with the mother was also higher. There was a positive and significant correlation between both synchrony scores, so the higher the synchrony with the mother, the higher the synchrony with the father. Infants' RMSSD scores correlated positively and significantly, so that the more regulated the infants were with the mother, the more regulated they were with the father. None of the control variables showed a significant correlation with the target variables.

3.3 Models linking parent-infant synchrony and infants' RMSSD

The results of the estimation of the first model (Model 1; see Figure 1 for more details) showed that the within-dyad covariance was significant and positive in the mother-infant dyad and not significant in the father-infant dyad. In other words, greater mother-infant synchrony was related to greater infant RMSSD during the interaction with the mother. The across-dyad covariance was significant and positive between mother-infant synchrony and infants' RMSSD with the father and between father-infant synchrony and infants' RMSSD with the mother. In other words, mother-infant synchrony was positively related to infant regulation with the father, and father-infant synchrony was positively related to infant regulation with the mother. In turn, father-infant synchrony was not related to infant RMSSD during father-infant interaction. Finally, the covariance between synchrony with the mother and father was positive and significant, such that greater synchrony related to greater synchrony, and the covariance between the infants' RMSSDs with each parent was positive and significant so that greater regulation with one parent related to greater regulation with the other.

The results of the estimation of the second model (Model 2; see Figures 2, 3 for more details) showed that in both groups (Group 1: mothers interacted first, $n = 41$; Group 2: fathers interacted first, $n = 43$), there were three similarities: the covariance between synchrony and infants' RMSSD in the father-infant dyads was not significant, the covariance between synchrony with the mother and father was positive and significant so that greater synchrony related to greater synchrony, and the covariance between the infants' RMSSDs with each parent was positive and significant so that greater regulation related to greater regulation. Two differences between the groups appeared: For mothers who interacted first, the covariance between mother-infant synchrony and infants' RMSSD with the mother was not significant. Although the covariance (i.e., unstandardized) was not significant, the correlation (i.e., standardized) was ($r = 0.337$, $p = 0.034$). In turn, this covariance was significant when mothers interacted second and fathers first. The second difference between the groups was that for mothers who interacted first,

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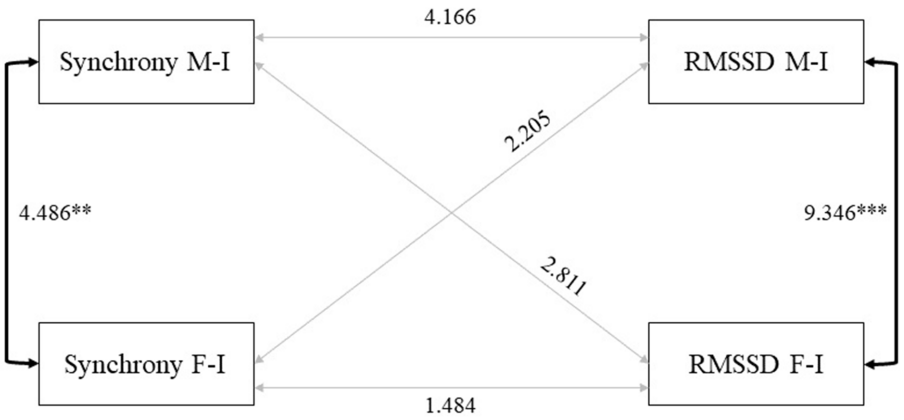

FIGURE 2
Graphical representation of the second SEM model in the group in which mothers interacted first (= 41). *** $p < 0.001$; ** $p < 0.01$; RMSSD, root mean square of successive differences; M-I, mother-infant; F-I, father-infant. Structural equation modeling (SEM) shows paths between mother-infant synchrony, father-infant synchrony, and infants' RMSSD during interactions with parents. Bold rows show significant paths between variables, and gray rows show nonsignificant paths.

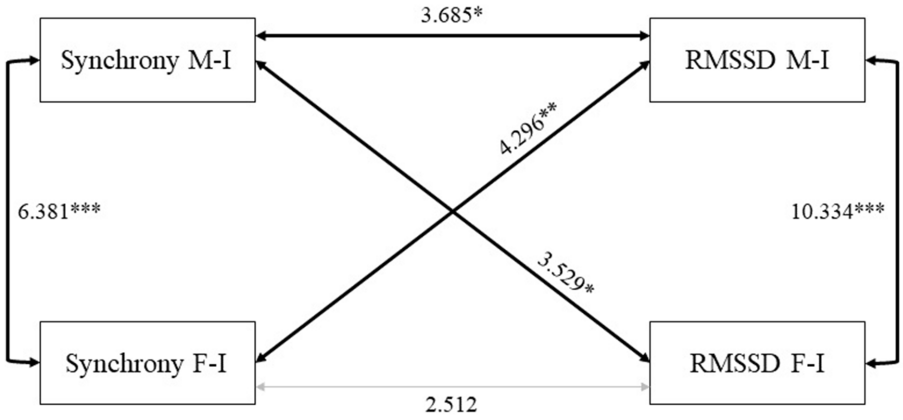

FIGURE 3
Graphical representation of the second SEM model in the group in which fathers interacted first (= 43). *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; RMSSD, root mean square of successive differences; M-I, mother-infant; F-I, father-infant. Structural equation modeling (SEM) shows paths between mother-infant synchrony, father-infant synchrony, and infants' RMSSD during interactions with parents. Bold rows show significant paths between variables, and gray rows show nonsignificant paths.

the covariance between mother-infant synchrony and infants' RMSSD with the father was not significant. In turn, this covariance was positive and significant when fathers interacted first, such that mother-infant synchrony was related to the infant's regulation with the father.

In the third model that aimed to test the magnitude of these differences, we imposed differences and equalities between groups on all the parameters of the second model. This model demonstrated a good fit: $\chi^2(14) = 10.802$, $p > 0.05$, RMSEA = 0.000, comparative fit index = 1. The finding that the chi-square test of the third model was nonsignificant suggests that the differences between the groups, if any, were minimal, as the fit of a model specified with equality constraints on all parameters was not statistically different from a model assuming between-group differences.

4 Discussion

In this study, we investigated associations between interactive synchrony (an indicator of interaction quality) and infants' vagal tone (an index of emotion regulation) during mother-infant and father-infant interactions, both within each parent-infant dyad (within-dyad) and across one dyad to the other (across-dyad).

Our hypotheses that associations exist between interactive synchrony and infants' vagal tone within each dyad were partially confirmed. The results showed that interactive synchrony has a significant association with infants' vagal tone within mother-infant dyads, such that variations in synchrony were related to variations in infants' vagal tone during mother-infant interactions. Although this association was present in the whole sample (Model 1), the multigroup analyses (Model 2) revealed that this association is actually due to mother-infant dyads interacting second (i.e., after the father), as it disappears when the order of interaction is reversed. Our hypothesis that there are associations between interactive synchrony and vagal tone in infants within father-infant dyads was not confirmed in either the whole sample or subgroups based on the order of interaction. Although this lack of associations might lead to the assumption that fathers have a reduced influence on the infants' physiological regulation of emotion, we propose looking at the family organization

at 3 months in Switzerland to potentially shed light on the reasons behind the lack of associations within the father-infant dyad. At 3 months, Swiss mothers are on mandatory maternal leave and assume the role of primary caregiver, spending more time with the infant than fathers do. Fathers indeed have a shorter leave (paternity leave 2 weeks) than mothers do (maternity leave 3.5 months) and tend to work full time during the first months after their infants' birth, reducing the opportunities for the father-infant dyads to interact (Swiss Civil Code, 2021; Federal Statistical Office, 2022). Therefore, it is plausible that the fathers in our study might have encountered limited chances for one-on-one interactions with their infants. The infrequency of these interactions could have hindered the formation of strong associations within the father-infant dyad, for which more shared time may be necessary for the development of mutual regulation. In simpler terms, increasing the duration fathers spend with their infants could have provided additional opportunities for infants to become accustomed to mutual regulation with their fathers. This, in turn, might have improved infants' physiological responsiveness to these interactive moments, much like what is observed with mothers who are consistently present during the initial 3 months. This understanding of our results suggests that enhanced shared time during the early months may strengthen the impact of the father-infant relationship on children's social–emotional development. To confirm the influence of shared time, future research should investigate the associations between the variables in our study by comparing groups of fathers with paternity leave of different lengths.

Moreover, the existence of significant associations across the dyads suggests that fathers' influence may take another path, as suggested by the results. Our hypothesis that associations exist between the interactive synchrony in one dyad and infants' vagal tone in the other dyads was indeed confirmed. The results showed that the interactive synchrony in one dyad had a significant association with infants' vagal tone in the other dyad, such that variations in the quality of interactions in one dyad were related to variations in infants' vagal tone during interactions in the other dyad. These associations across dyads were present in the whole sample and in the group in which fathers interacted first, revealing that they were mainly due to those father-infant dyads interacting first and those mother-infant dyads interacting second. Specifically, our results showed that father-infant synchrony was significantly associated with the infants' RMSSD in the subsequent mother-infant interaction, whereas infants' RMSSD during father-infant interaction was associated with mother-infant synchrony in the subsequent interaction. These results thus seem to indicate that although fathers may not have an impact on the infant's physiological regulation during father-infant interactions, they have an indirect influence. The results across dyads in the group in which fathers interacted first suggest a way in which fathers might influence infants' physiological regulation of emotion by influencing mother-infant synchrony and the infants' RMSDD during mother-infant interactions. This across-dyad association in the multigroup analyses (Model 2) also suggests a potential causal relationship because the interactions occurred in sequence. Moreover, the infants' physiological regulation of emotions during father-infant interactions might have subsequently influenced the variations in the quality of later mother-infant interactions. Further investigations are needed to assess these possible causal links.

In sum, interesting results emerged from the estimation of Model 2, in which we controlled for the influence of the order of the play, such that all within-dyad and across-dyad associations disappeared in the group of families in which mothers were asked to interact first. A speculative explanation may be proposed to explain the absence of association within mother-infant dyads when the mother interacted first. This explanation may also extend our previous explanation about the lack of associations within father-infant dyads, particularly for those father-infant dyads that interacted first. In our study, just before the start of the two parts of the play, the infants were barely stimulated by the parents engaged in listening to the researchers' instructions. Once alone with the first interacting parent, the infants had to "tune in" to the parents' request to interact. This moment of attunement may have delayed the establishment of coregulatory processes within the dyads and their associations with the physiological patterns of the infant, regardless of the dyads' increased habit of interaction at 3 months. Further investigation is required to delve into our speculative explanation, as well as to understand the reasons behind the absence of associations across dyads in the group in which fathers interacted second. Gaining a more comprehensive understanding of how the order of interaction affects parent-infant interactions could yield profound insights into the influences molding infant physiological regulation of emotion. In turn, this broader understanding will enhance the interpretation of the results of this study.

This study has some limitations. Most of the participants belonged to the middle-upper socio-economic class in the Swiss population and were university graduates. Furthermore, most of the study participants lived in a heterosexual two-parent family, so we had to limit our analysis to this group. Our results may therefore be different in other types of families. Although a global assessment of the interactive synchrony considers the behavioral patterns within mother- and father-infant dyads, it does not allow for the investigation of the association between specific interactive synchrony behaviors (e.g., sharing of smiles, the direction of gaze toward the other partner, demonstration of readiness for interaction, and vocalizations) and changes in vagal tone. The systemic nature of emotion regulation involves physiological, affective, and social mechanisms (Barrett, 2017; Thompson, 2019; Pruessner et al., 2020). Thus, although vagal tone is often used in studies as the main indicator of emotion regulation, other indicators could have captured the contextual and extrinsic factors crucial for infant emotion regulation. In addition to vagal tone, future studies should also consider the observed behaviors of emotion regulation during interaction so that the findings of this study can be further confirmed.

Our study is the first to consider the association between the quality of interactions and the vagal tone of 3-month-old infants, both within each parent-infant dyad and across one dyad to the other during subsequent interactions. Notwithstanding its limitations, our study shows the existence of associations between interactive processes and infants' physiological regulation of emotions within the mother-infant dyad and across dyads in a family. The associations across dyads provide evidence that the quality of father-infant interactions has a crucial influence on family relational dynamics, with consequences for the early physiological regulation of infant emotions. However, the significance of the associations may vary when controlling for the order of interaction, demonstrating that interactive processes within and beyond the dyad are sensitive to contextual factors and interdependencies between family members. Future research with a

systemic perspective of family relationships is needed to investigate the complex family influences on the socio-emotional development of the infant.

Data availability statement

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found at: https://doi.org/10/gsrmqw.

Ethics statement

The studies involving humans were approved by Ethical Committee of the State of Geneva. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was obtained from the participants.

Author contributions

NP: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. NF: Conceptualization, Data curation, Funding acquisition, Project administration, Resources, Supervision, Validation, Visualization, Writing – review & editing. VR: Data curation, Formal analysis, Investigation, Software, Visualization, Writing – review & editing. ME: Funding acquisition, Resources, Writing – review & editing. CR: Funding acquisition, Resources, Writing – review & editing. HT: Conceptualization, Data curation, Formal analysis, Funding acquisition, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Predictors of expectant fathers' parental leave-taking intentions before birth: masculinity, fatherhood beliefs, and social support

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Despite continuing progress, men remain underrepresented in childcare, domestic labor, and other care work. Because parental leave is discussed as a gateway to increasing men's childcare engagement, we aimed to gain insights into predictors of men's parental leave-taking intentions during the transition to parenthood. Using outcomes on a continuum from behavioral preferences to more behavior-oriented measures, we examine how masculinity and fatherhood beliefs as well as social support become relevant during men's formation of their leave-taking intentions. Planned analyses of data collected from 143 expectant fathers in Belgium and Germany revealed that the support men perceive from their partners for taking leave predicts their parental leave-taking desire, intention, and planned length of leave. Moreover, men's conception of a prototypical man, especially in terms of agency, was linked to their desire to take leave. Against expectations, father role attitudes and workplace support did not emerge as relevant predictors of men's intended leave-taking. Results of exploratory analyses suggest that care engagement of peers, expected backlash, and self-efficacy beliefs additionally play a role in men's intended leave-taking. We discuss parental leave as a negotiation process within couples and review the role of men's normative environment for their intended leave-taking.

KEYWORDS

parental leave, transition to parenthood, masculinity, fatherhood, social support

1 Introduction

Involved, caring, and new – these are some of the terms that are frequently used when talking about fatherhood today. In fact, the shift towards a fatherhood ideal that expects fathers to be more involved in childcare and to develop closer emotional bonds with their children is not exactly new anymore but was already observed in Western cultures since the 1980s (Wall and Arnold, 2007; Dermott and Miller, 2015). Indeed, fathers have increased their engagement in childcare and household labor and continue to do so (Altintas and Sullivan, 2016, 2017). For example, more and more fathers across Europe are making use of their parental leave entitlement (Eurofound, 2019), and roughly a third of fathers in Belgium and Germany takes parental leave (Samtleben et al., 2019b; Koslowski et al., 2022). Nevertheless, women continue

to be more affected by the transition to parenthood and after becoming a parent often reduce their work hours while increasing time spent on childcare and household tasks (Abele and Spurk, 2011; Baxter et al., 2015). Women across cultural contexts also at a young age already have higher intentions than men to take parental leave (Olsson et al., 2023) and continue to be overrepresented relative to men in actual leave uptake (Koslowski et al., 2022). A more equal share of parental leave among women and men has been discussed as a way to promote gender equality (Castro-García and Pazos-Moran, 2016; Meeussen et al., 2020), especially during the transition to parenthood when gender-role attitudes and the gendered division of labor tend to become more traditional (Baxter et al., 2015). In addition, men's increased care engagement can have benefits on various levels, for example, for their own well-being, their partners' career advancement, and their children's developmental outcomes (for an overview, see Croft et al., 2015; Meeussen et al., 2020). Men's parental leave-taking specifically can lead to fathers being more involved in childcare later on (Meil, 2013; Almqvist and Duvander, 2014; Bünning, 2015; Petts and Knoester, 2018).

Various reasons for men's comparatively low interest in and uptake of parental leave have been discussed in the literature. Whereas external barriers such as the lack of sufficient income replacement during leave are often emphasized (e.g., Castro-García and Pazos-Moran, 2016; Karu and Tremblay, 2018; Kaufman, 2018), a recent examination of young men's (and women's) intentions to take parental leave across 37 nations suggests that individual-level factors such as men's gender role attitudes outweigh country-level factors such as specific leave policies (Olsson et al., 2023). The goal of the current study is to have a closer look at such psychological contributors to men's parental leave-taking intentions before birth. By examining leave-taking *intentions*, we learn more about precursors of men's leave-taking and possible pathways for interventions. Moreover, we examine the different layers of men's intended leave-taking, namely whether they desire to take leave, whether they intend and plan to do so, and if so, for how long. We assume that these dependent variables form a continuum from behavioral preferences to behavioral intentions (Bagozzi, 1992; Perugini and Bagozzi, 2001) and thus provide more insights into predictors of men's intended leave-taking at various stages in their decision-making process. In addition, examining the hypothesized relations cross-sectionally will provide suggestive evidence as to whether the relations can also be expected longitudinally. Furthermore, we contribute to the current literature by simultaneously considering men's gender beliefs regarding what constitutes a prototypical, ideal man and gender *role* beliefs regarding men's role as a father for their intended leave-taking. Accounting for the normative environment men find themselves in, we additionally focus on how active support or discouragement from relevant others is related to men's intended leave-taking.

A starting point for understanding men's interest in care roles generally and parental leave specifically are gender norms and stereotypes (see Croft et al., 2015; Meeussen et al., 2020). According to social role theory (Eagly, 1987; Eagly and Wood, 2012), such gendered beliefs develop from observing a gendered division of labor and deriving expectations about male and female traits and behaviors. Gender stereotypes can be divided into two fundamental content dimensions: agency and communion (Bakan, 1966; Abele and Wojciszke, 2014). Traditionally, gender stereotypes ascribe agentic traits and behaviors to men (e.g., being independent, assertive, or competent) and communal traits and behaviors to women (e.g., being warm, caring, or helpful; Bakan, 1966; Burgess and Borgida, 1999; Prentice and Carranza, 2002). However, recent examinations of change in gender stereotypes found that men's self-descriptions are becoming less stereotypic and that men do associate themselves with communion (Hentschel et al., 2019). Other findings suggest that women and men do not ascribe communion more to men now than in the past and that women's higher scores on communion persist or have even increased (Hentschel et al., 2019; Eagly et al., 2020). Given the ambiguity in change of gender stereotypes, an important source of men's interest in communal, care-oriented engagement is what *they* perceive as desirable and normative for their gender group. We, therefore, examine men's conception of a prototypical man, the ideal-type member of their gender group (Oakes et al., 1998; Wenzel et al., 2007). Prototypes, as described in self-categorization theory (Turner et al., 1987), have conceptual similarity to constructs such as stereotypes or norms but better capture an *individual's* perception of a prototypical member of their gender group (see Hogg et al., 2012). Such notions of what it means to be a man have already been examined from a sociological and qualitative perspective with regard to men's parental leave-taking (Brandth and Kvande, 1998; Almqvist, 2008; Johansson, 2011; Schmidt et al., 2015). For example, in a study conducted in Austria, fathers' parental leave-taking decisions were made within work-focused masculinity ideals and depended on fathers' personal wishes and whether external circumstances allowed for leave (Schmidt et al., 2015). Moreover, Norwegian fathers who felt like they did not have to prove their masculinity were more content during leave but also kept strong ties to their breadwinning role (Brandth and Kvande, 1998). Thus, first evidence of how masculinity is constructed in relation to men's parental leave-taking exists, but we know less about how male gender stereotypes and gender norms contribute to whether men intend to take leave. From research on father involvement more generally, we know that less traditional masculinity norms are related to more care-oriented father involvement, such as showing more warmth and using less harsh discipline (Petts et al., 2018; Shafer et al., 2020). In the present research, we aim to shed light on whether less traditional (i.e., more communal and less agentic) notions of masculinity are also related to an important precursor of father involvement, namely men's intended leave-taking. Thus, we examine the link between intended leave-taking and the degree to which men associate a prototypical man with the stereotypic dimensions of agency and communion (Bakan, 1966; Abele and Wojciszke, 2014).

When men become fathers, they not only face masculinity ideals but also ideals regarding fatherhood. In fact, the father role could provide leeway for men to engage in caretaking as stereotypes of fathers are less restrictive in terms of communal aspects than those of men (Park and Banchefsky, 2018; Ciaccio et al., 2021). These differing perceptions of men and fathers are likely based on the added social role of being a parent, a role that implies some degree of communion and caretaking. Thus, in addition to examining men's conception of their gender group and which attributes constitute a prototypical man, we examine men's gender *role* of being a father and their attitudes towards this role. First evidence for the relevance of gender role attitudes for men's leave-taking exists across national contexts such as Sweden, the United States, and Germany. Generally, less traditional gender role attitudes were related to higher intentions to take leave, higher chances to do so, and longer leave length (Hyde et al., 1993;

Vogt and Pull, 2010; Duvander, 2014; Olsson et al., 2023). However, in more recent research men's leave length was neither predicted by their own nor by their partners' gender role attitudes (in a United States context and German-speaking countries; Stertz et al., 2017; Berrigan et al., 2021). An explanation could be the ambiguous measurement of gender role attitudes in some of these studies, which mostly included attitudes towards women's gender roles (Hyde et al., 1993; Stertz et al., 2017; for an exception, see Vogt and Pull, 2010). Yet, how men see their own role as a father could be more closely related to their parental leave-taking intentions. In addition, fatherhood does not have to be defined on a continuum from breadwinning to caregiving, but men could see their responsibility in and identify with both. Thus, in the current study we examine father role attitudes towards breadwinning and childcare separately (as suggested by Hyde et al., 1993).

Men's parental leave-taking decision is, furthermore, shaped within a normative environment in which social support (or lack thereof) can signal whether others approve or disapprove of their communal engagement. As communal engagement is traditionally counter-stereotypic for men, men can fear backlash and negative consequences, such as experiencing stigma or career disadvantages for wanting to take leave (see role congruity theory, Eagly and Karau, 2002; Rudman and Mescher, 2013; Miyajima and Yamaguchi, 2017). However, when others signal that they support men's leave-taking, this challenges what is perceived as normative and can alleviate such threat (for first evidence on social support and men's communal orientation, see Schreiber et al., 2023).

For parental leave-taking decisions, especially the interactions and support between partners plays a crucial role. In fact, negotiations are often focused on the partner's wishes (McKay and Doucet, 2010; Beglaubter, 2017; Kaufman and Almqvist, 2017; for an exception, see Schmidt et al., 2015), especially when there is no earmarked leave available for fathers (McKay and Doucet, 2010; Castro-García and Pazos-Moran, 2016). Nevertheless, mothers have been found to encourage fathers to take longer leaves to achieve a more equal division of childcare and foster the bonding between father and child (Kaufman and Almqvist, 2017). More generally, when mothers encouraged childcare efforts, fathers' relative involvement as reported by both parents was higher, and fathers perceived that they had a greater say in decisions regarding the child's health (Schoppe-Sullivan et al., 2008; Zvara et al., 2013). Besides their partners and others around them, men's normative environment and leave-taking decisions are additionally shaped by their workplace. As a general trend, organizations are becoming more supportive of men's leave-taking (Haas and Hwang, 2009; Brandth and Kvande, 2019). Moreover, colleagues can be a facilitator of men's leave-taking as men are more likely to take longer leave if colleagues have done so before them (Bygren and Duvander, 2006). However, in organizations that emphasize ideal worker norms (i.e., prioritizing work over family and aiming for high workload and output), men are less likely to take (longer) leave and report more negative career consequences if they still do so (Haas et al., 2002; Haas and Hwang, 2019; Samtleben et al., 2019a).

Taken together, we investigate predictors of men's intended parental leave-taking before birth, with a focus on men's conception of a prototypical man, father role attitudes, and social support. As outcomes, we look at expecting fathers' general intentions to take leave, their desire to do so, as well as for how long they expect to take leave (summarized as *intended parental leave-taking* in the following). Looking at men's conception of a prototypical man, we expect communal prototypes of men to be positively related to men's intended parental leave-taking (H1.1), whereas agentic prototypes of men should be negatively related to men's intended parental leave-taking (H1.2). Likewise, we expect father role attitudes regarding childcare to be positively related to men's intended parental leave-taking (H2.1), whereas father role attitudes regarding breadwinning should be negatively related to men's intended parental leave-taking (H2.2). Lastly, we investigate the role of men's personal environment in their intended leave-taking. We expect partner support (H3.1) and workplace support (H3.2) for leave-taking to be positively related to men's intended parental leave-taking.

2 Materials and methods

The study was preregistered on Aspredicted[1] and received ethical approval from the Social and Societal Ethics Committee of the University of Leuven. We describe deviations from the preregistration and further included measures in Supplementary material.

2.1 Procedure and context of data collection

We collected data from men in Belgium and Germany who were expecting their first child. Participants were asked to complete an online survey around 3 months before birth.[2] Importantly, different national policies for protected paid leave apply in Belgium and Germany. In Belgium, men can take parental leave ("*ouderschapsverlof*") for 4 months, and this leave cannot be transferred between partners. Part-time leave regulations are available, but income replacement (provided through government funding) is comparatively low, with roughly 800€ per month for full-time leave (Koslowski et al., 2022; RVA, 2022).[3] In 2021, 34% of leave-takers in Belgium were fathers (vs. mothers) who predominantly used it as a flexibility measure to combine work and family. Sixty-three percent of fathers took 1 day of leave per week, and 20% took half a day per week or 1 day every 2 weeks (Koslowski et al., 2022). In Germany, parents can divide paid parental leave ("*Elterngeld*") of up to 12 months between each other, with an additional period of 2 months not transferrable to the other parent. Regulations for part-time leave also exist, and combining work and childcare is encouraged by an additional 4 months of part-time leave if both

1 https://aspredicted.org/3HY_17Q

2 Data are part of an ongoing longitudinal study on men's parental leave-taking with data having been collected at roughly 3 months before birth, and planned measurement points at 4 months after birth and 12 months after birth. As the current study focuses on men's leave-taking intentions before birth and data collection for later measurement points is ongoing, we only present analyses on the data collected before birth.

3 A paternity leave of an additional 20days (15days until 2022) is available for fathers only (FOD, 2023). As no equivalent exists for Germany and because of ceiling effects in our data for the intended uptake (almost all fathers intend to take the full amount), we do not present results for paternity leave.

parents work part-time. Income replacement is higher than in Belgium, with parents receiving 65% of the average Net income of the last 12 months before the birth (capped at 1800€, provided through government funding; BMFSFJ, 2022; Koslowski et al., 2022). In 2016, 37% of fathers took parental leave in Germany. However, in 2018, 72% of those took parental leave at most for the duration of the non-transferable period of 2 months (Samtleben et al., 2019b).

We recruited participants through people and places that we expected to be in touch with expectant parents (e.g., prenatal classes, hospitals, gynecology practices, midwives, shops for baby equipment, parenting and baby fairs, professional organizations for midwives or gynecologists, companies in male-dominated industries etc.). Furthermore, we used social media (Facebook, Instagram, and Twitter) and encouraged snowball sampling. We invited participants to take part in a study on how the birth of the first child affects the work and family situation of men (and their partners). At the beginning of the online survey, participants received a detailed information letter on the procedure of the study and gave informed consent online. Afterwards, we assessed and implemented the exclusion criteria specified above. Eligible participants then read a short summary of the current leave policies in their respective countries before completing the main survey measures, suspicion and quality checks, and demographic information. At the end, participants could indicate special circumstances of, for example, their work or family situation. Lastly, we thanked participants and asked them for help with recruiting additional participants. For each referred participant who filled in the first survey, participants (and others) could receive a 10€ gift card. Moreover, participants themselves received a 10€ gift card for each completed survey and had the chance to win a family weekend trip at the end of the study.

2.2 Sample and sensitivity analysis

In total, 171 participants completed the survey who met the preregistered criteria of identifying as male, being at least 18 years old, expecting their first child, and being eligible to receive parental or paternity leave. We excluded the data of eight participants from the analyses because they failed attention or quality checks. We also excluded 20 multivariate outliers based on the MCD75 (Minimum Covariance Determinant with a breakdown point of 0.25), with a chi-square at $p = 0.001$ (Leys et al., 2019; see Supplementary material for results including outliers). Among the final 143 participants, 115 resided in Belgium and 28 in Germany. Participants were, on average, 31 years old ($SD = 3.60$; range: 25–42). Most were married (69%) or in a committed relationship (26%) and identified as heterosexual (98%; 2% identifying as bisexual). Participants were, on average, highly educated, with 43% having a university degree, 27% higher professional education, and 17% secondary education. In terms of relative income, 18% had a much higher income than their partner, 35% a higher income, 23% more or less equal income, and 15% a lower income than their partner. They worked, on average, 41 h per week ($SD = 7.32$), and the majority did not have any leadership responsibility (66%). Their political orientation was moderate to slightly left ($M = 4.56$ on a 9-point scale, $SD = 1.65$), and they were not religious on average ($M = 2.48$ on a 9-point scale, $SD = 2.07$).

We conducted a sensitivity analysis with G*Power 3 (Faul et al., 2007) to learn which effect sizes we were able to detect given a sample size of $N = 143$ ($\alpha = 0.05$, 1 - $\beta = 0.95$). In analyses with up to 11 predictors, we were able to detect effect sizes for regression coefficients of $f^2 = 0.09$ (i.e., small- to medium-sized effects).

2.3 Measures

Unless otherwise indicated, we used 7-point scales ranging from 1 = "strongly disagree" to 7 = "strongly agree." For measures we suspected to be prone to ceiling effects (and, for consistency, for those situated in close proximity to them within the survey), we implemented 9-point scales to ensure adequate differentiation at the higher end of the scale.

2.3.1 Prototypes of men

We assessed participants' idea of a prototypical man by asking what it means to them to be a man and to what extent four agentic (e.g., assertive, $\alpha = 0.64$) and six communal (e.g., compassionate, $\alpha = 0.77$) traits describe an ideal man in their opinion [adapted from Van Grootel et al. (2018) and Hentschel et al. (2019); see Supplementary material for results excluding items for which no gender differences were found in past research]. We used a 7-point scale from 1 = "not at all" to 7 = "very much."

2.3.2 Father role attitudes

We asked participants what it means to them to be a father and how they see the responsibility of a father for his child, adapted from the Caregiving and Breadwinning Identity and Reflected-Appraisal Inventory (CBIRAI; Maurer et al., 2001; using a 9-point scale from 1 = "strongly disagree" to 9 = "strongly agree"). Five items focused on physical and social caregiving, with only two items sufficiently correlated to form a scale ($r = 0.66$; e.g., "A father should NOT be very involved in the day-to-day matters of caring for his child."; recoded). Four items formed a scale focusing on breadwinning ($\alpha = 0.65$; e.g., "A father has a strong responsibility as a parent to be the financial provider for his family."). The results of factor analyses can be found in Supplementary material.

2.3.3 Social support for leave-taking

We measured the social support men perceived with one item pertaining to the support from their partner and one from people at work (e.g., their boss or colleagues). Participants indicated how much support or discouragement they experienced from their partner [people at work] to take up parental leave adapted from Schreiber et al. (2023) on a 9-point scale (1 = "lots of discouragement," 5 = "neither much discouragement nor support," 9 = "lots of support").

2.3.4 Others' leave-taking, others' childcare engagement, expected backlash for leave-taking, expected parental self-efficacy

We included additional predictors in the analyses that have been linked to men's parental leave-taking before. Focusing on men's personal environment, we asked participants how many men in their surroundings who became fathers during the past years took parental leave (9-point scale from 1 = "very few" to 9 = "almost all") and how much these fathers engage in childcare (9-point scale, 1 = "very little as compared to their partner," 5 = "as much as their partner," 9 = "much more than their partner"). For expected backlash effects, participants

answered the item "I worry about being labeled negatively for putting my career on hold to care for my young child." Adapted from Rudman and Fairchild (2004) and Vogt and Pull (2010), omitting a second item due to low correlation (for links to men's leave-taking, see Samtleben et al., 2019a). Lastly, we measured expected self-efficacy for childcare with two items [$r = 0.82$; e.g., "I feel like I will be capable of taking care of my child."; adapted from Črnčec et al. (2008)]. Although general self-efficacy beliefs were not related to men's leave-taking (Horvath et al., 2018), evidence exists for the relation between *parental* self-efficacy and father involvement as well as parental competence (Jones and Prinz, 2005; Trahan, 2018).

2.3.5 Intended parental leave-taking

We measured men's intended leave-taking via three operationalizations: desired parental leave-taking, parental leave-taking intentions, and expected length of parental leave. We assessed desired parental leave-taking with one item ("I would like to take leave."), adding two items on parental leave-taking intentions [$r = 0.88$; e.g., "I intend to take leave."; adapted from Yzer (2012) and Miyajima and Yamaguchi (2017)]. For the expected length of parental leave, participants indicated how long they expected to take parental leave in full-time weeks (Belgium) or months (Germany). Those planning to take leave part-time thus recalculated their intended length into full-time weeks or months. We then calculated a percentage measure, indicating how much of the available leave participants expected to take (see Supplementary material for results using absolute expected leave lengths).

3 Results

3.1 Descriptive statistics

Table 1 shows means, standard deviations, and correlations for all predictors and dependent variables. Notable here are the high means for father role attitudes regarding childcare and support from the partner for taking leave, suggesting a comparatively egalitarian sample. Moreover, participants had a relatively strong wish to take parental leave, whereas average leave-taking intentions were slightly lower. On average, participants expected to take roughly 58% of the available leave length. Descriptive statistics per country of data collection can be found in Supplementary Table S1.

3.2 Analytical approach

We first screened the data and checked the statistical assumptions, followed by hierarchical regression analyses conducted separately for the three dependent variables *desired parental leave-taking* (Table 2), *parental leave-taking intentions* (Table 3), and *expected length of parental leave* (Table 4). We used the R package *lavaan* (Rosseel, 2012) for the regression analyses because robust estimation methods are available given assumption violations as well as full information maximum likelihood estimation for treating missing data. Missing data were mainly present for the dependent variables and for predictors related to men's normative environment (i.e., social support from partners and workplaces and other men's leave-taking and childcare engagement; 9–13% of missings). Participants with and without missing data did not differ significantly in terms of demographic characteristics (all $ps > 0.078$). Due to the sample size, we do not present more complex models such as multivariate regression or structural equation models. For regression models, interpreting fit indices in *lavaan* is not informative due to the presence of saturated models. In the Supplementary Table S2, we present *F*-tests (which are not available in *lavaan*) for regression models using the R package *lm* (however, accordingly without treatment of missing data and assumption violations).

In the first set of models (Models 1), we included the covariates age, country of residence (dummy-coded with 1 = Germany and 0 = Belgium), educational level (dummy-coded with 1 = university education or higher and 0 = below university education to reduce number of predictors), relative income, and weekly work hours. We decided on these covariates before data analyses due to prior evidence for relations to men's parental leave-taking (e.g., Trappe, 2013a, 2013b; Stertz et al., 2017; Geisler and Kreyenfeld, 2019; Marynissen et al., 2019). In the second set of models (Models 2), we added beliefs regarding masculinity and fatherhood, namely communal and agentic prototypes of men, and father role attitudes regarding childcare and breadwinning. In the third set of models (Models 3), we added the social support men received from their partners and their workplace for taking parental leave, and in a fourth step (Models 4), additional predictors related to men's intended leave-taking for which we did not generate hypotheses (others' leave-taking, others' childcare engagement, expected backlash for leave-taking, expected parental self-efficacy). Lastly, we present parsimonious models (Models 5) with only those predictors included that were significant (or tended to be) in Models 4.

3.3 Covariates

The covariates explained 12% of variance in desired parental leave-taking, 14% in parental leave-taking intentions, and 13% in the expected length of parental leave (Models 1). Age only emerged as a significant predictor of intended leave-taking in some models, but if so, older age was associated with higher intended leave-taking. Residing in Germany was associated with a higher desire and intention to take leave (but these relations did not hold in later models). In contrast, Belgian residence was related to planning to take a higher percentage of available leave, possibly because the available leave is shorter than in Germany (average expected absolute leave lengths were 10 out of 16 weeks in Belgium, $M = 10.09$, $SD = 6.63$, and four and a half out of 12 months in Germany, $M = 4.48$, $SD = 4.45$). A higher educational level was negatively related to men's desired parental leave-taking and parental leave-taking intentions. Men's income relative to their partners was not significantly related to their intended leave-taking. Lastly, longer weekly work hours were related to men expecting to take shorter percentages of parental leave (and in Models 1 and 2 also to lower intentions to take leave).

3.4 Hypothesis tests

We found partial support for Hypothesis 1.1, that men's beliefs that an ideal man has communal attributes would be related to higher intended leave-taking (operationalized in the present research as

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TABLE 1 Means, standard deviations, and correlations of study variables.

	M (*SD*)	Correlations (*N* = 124–143)												
		2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Prototypes of men—communion[a]	5.10 (0.79)	0.22**	0.13	0.07	0.10	0.17*	0.11	0.07	−0.09	0.20*	0.26**	0.15†	0.10
2. Prototypes of men—agency[a]	5.21 (0.82)		−0.03	0.22**	0.11	0.05	−0.05	0.05	0.10	0.07	−0.04	−0.03	−0.16†
3. Father role attitudes— childcare[b]	8.22 (0.95)			−0.10	0.29***	0.08	−0.03	−0.05	−0.09	0.13	0.15†	0.15†	0.08
4. Father role attitudes— breadwinning[b]	4.46 (1.53)				−0.31***	−0.01	−0.19*	0.23**	0.05	−0.17*	−0.15†	−0.22*	−0.27**
5. Partner support[b]	7.89 (1.50)					0.35***	0.23**	−0.10	−0.08	0.17†	0.48***	0.45***	0.25**
6. Workplace support[b]	6.36 (1.76)						0.36***	−0.04	−0.37***	0.12	0.24**	0.31***	0.08
7. Others' leave-taking[b]	5.44 (3.01)							0.02	−0.10	−0.05	0.26**	0.32***	0.07
8. Others' childcare engagement[b]	4.56 (1.24)								0.11	0.02	−0.10	−0.20*	−0.17†
9. Expected backlash[a]	2.57 (1.82)									−0.13	−0.20*	−0.42***	−0.20*
10. Expected parental self-efficacy[a]	5.81 (0.90)										0.25**	0.31***	0.18*
11. Desired parental leave-taking[a]	6.14 (1.56)											0.76***	0.40***
12. Parental leave-taking intentions[a]	5.58 (1.92)												0.49***
13. Expected length of parental leave (%)	57.67 (41.77)												

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; †$p < 0.10$ (all two-tailed). [a]7-point scale; [b]9-point scale.

desired parental leave-taking, parental leave-taking intentions, and expected length of parental leave). Communal prototypes of men were positively related to men's desired parental leave-taking but not to any other dependent variable. Also, relations were weaker with increasing numbers of predictors, possibly due to correlations amongst predictors (see Table 1). Hypothesis 1.2 postulated that men's beliefs that an ideal man should have agentic attributes would be related to lower intended leave-taking. We again found support for desired parental leave-taking but none of the other operationalizations of intended leave-taking. Thus, the degree to which men think an ideal man should have agentic attributes was negatively related to their wish to take parental leave. In contrast to communal prototypes of men, relations were stronger in later models.

We did not find support for Hypothesis 2.1, that father role attitudes regarding childcare would be positively related to men's intended leave-taking. For father role attitudes regarding breadwinning (H2.2), we found significant negative relations in Models 2 between father role attitudes regarding breadwinning on the one side and parental leave-taking intentions as well as the expected length of parental leave on the other, indicating that the more men think it is a father's role to be involved in breadwinning, the lower their intentions and expected length of parental leave. These relations did not hold when additional, partly correlated (see Table 1) predictors such as social support were added. Yet, only *perceived* support was measured, and men could perceive more or less support from their partner or people at work depending on their father role attitudes. Hence, we possibly did not find support for Hypothesis 2.2 in later models due to correlated measures or even mediation effects.

Lastly, we examined whether the support men perceive to receive from their partners and people at work for taking parental leave was related to their intended leave-taking (H3.1 and 3.2). Across dependent variables and models, support from the partner was a significant predictor, supporting Hypothesis 3.1. The more support for their leave-taking men perceived receiving from their partners, the more they desired to take leave, the more they intended to take leave, and the longer they expected to take leave. In contrast and contradicting Hypothesis 3.2, the support men perceived from people at work was not significantly related to their intended leave-taking. Yet, examining bivariate correlations revealed that partner support and workplace support were significantly correlated (see Table 1). Apparently, perceiving much support from the partner was positively related to perceiving much support from people at work for the expectant fathers in our sample. This could, on the one hand, suggest a selection effect (i.e., one also selects the places where one works and continues to work as fitting) or, on the other hand, wishful thinking of the care-oriented fathers to receive support, generalized to the social environment.

3.5 Robustness checks and exploratory analyses

As a robustness check for the partner support findings, we ran additional analyses in which we controlled for men's perception of their partner's prototypes of men and father role attitudes (see Supplementary Table S3). Including these measures did not affect the results for partner support on men's intended leave-taking (βs = 0.26–0.40), suggesting that active support or discouragement from partners

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TABLE 2 Hierarchical regression models (with standardized regression coefficients) for desired parental leave-taking.

	Model 1	Model 2	Model 3	Model 4	Model 5
Step 1: Covariates					
Age	0.07	0.02	−0.00	−0.05	
Country of residence	0.23*	0.26**	0.21**	0.13†	0.13
Education level	−0.27**	−0.26**	−0.26**	−0.22**	−0.26**
Relative income	0.07	0.04	0.08	0.08	
Work hours	−0.22†	−0.15	−0.13	−0.10	
Step 2: Masculinity and fatherhood beliefs					
Communal prototypes of men		0.26**	0.21*	0.17†	0.19†
Agentic prototypes of men		−0.08	−0.15†	−0.16*	−0.19*
Father role attitudes—childcare		0.11†	−0.01	−0.02	
Father role attitudes—breadwinning		−0.13	0.01	0.08	
Step 3: Social support					
Partner support			0.41**	0.42***	0.38**
Workplace support			0.02	−0.06	
Step 4: Additional predictors					
Others' leave-taking				0.14†	0.13†
Others' childcare engagement				−0.09	
Expected backlash				−0.13	
Expected parental self-efficacy				0.15*	0.13†
Adjusted R^2	0.12	0.19	0.30	0.35	0.35
R^2 change		0.07	0.11	0.05	

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, †$p < 0.10$.

plays a role for men's intended leave-taking beyond the partner's general gender egalitarianism. Moreover, we repeated the analyses for the expected length of parental leave, now also controlling for whether participants intended to take leave part-time or full-time (see Supplementary Table S4). For that, we excluded participants from the analyses who did not intend to take any leave and added a dummy variable for part-time versus full-time leave-takers. This exclusion reduced the sample size to 107, but the results of hypotheses tests were not affected. Still, the support men perceived from their partners for taking leave was the main robust predictor of their expected length of parental leave ($\beta = 0.29$, $p = 0.007$).

As exploratory analyses, we examined further predictors that could be related to men's intended leave-taking based on past research: other men's leave-taking in their personal environment, other men's childcare engagement, expected backlash for leave-taking, and expected parental self-efficacy (see Tables 2–4, Models 4). For all dependent variables, we found small positive relations with men's expected parental self-efficacy: The more men expected to be capable of taking care of their child in the future, the more they wished and intended to take leave and the longer they expected to take leave. Counterintuitively, how much other men engaged in childcare was negatively related to men's parental leave-taking intentions and expected length of parental leave. Thus, the less men perceived other men to be engaged in childcare, the more and the longer they intended to take leave (or perhaps: the more and the longer the participants intended to take leave, the less they perceived other men to be engaged in childcare – suggesting a contrast effect). Others' leave-taking and expected backlash for leave-taking were additionally related to men's parental leave-taking intentions: The more other men took leave before them, and the less they expected backlash for leave-taking, the higher were men's intentions to take parental leave.

However, the models including exploratory predictors were rather complex given the sample size and could be prone to overfitting and lack of generalizability to other datasets. Therefore, we aimed to check whether the predictors that appeared relevant for intended leave-taking in the larger models also hold in more parsimonious models (Models 5) including only predictors that were significant in Models 4 or showed trends. For desired parental leave-taking, especially the support men receive from their partners for leave-taking seemed to be related to their wish to take leave. In addition, we found a small relation between agentic prototypes of men and desired parental leave-taking, suggesting that the less men saw an ideal man as agentic, the more they wished to take parental leave. Communal prototypes of men and the expected parental self-efficacy were not significantly related to desired parental leave-taking in the parsimonious model. Overall, these predictors, including covariates, explained 35% of variance in desired parental leave-taking. For parental leave-taking intentions, again, partner support emerged as an important predictor with a medium-sized relation, besides small relations for others' leave-taking, others' childcare engagement, expected backlash for leave-taking, and expected parental self-efficacy beliefs. We were able to explain the largest amount of variance in parental leave-taking intentions (47% of variance explained). Lastly, the support men perceived receiving from their partners for taking leave, how much

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TABLE 3 Hierarchical regression models (with standardized regression coefficients) for parental leave-taking intentions.

	Model 1	Model 2	Model 3	Model 4	Model 5
Step 1: Covariates					
Age	0.17*	0.13†	0.10†	0.05	
Country of residence	0.26**	0.27**	0.21**	0.08	
Educational level	−0.26**	−0.26**	−0.24**	−0.16*	−0.14*
Relative income	0.09	0.05	0.10	0.10	
Work hours	−0.19*	−0.16*	−0.13	−0.08	
Step 2: Masculinity and fatherhood beliefs					
Communal prototypes of men		0.14	0.09	0.02	
Agentic prototypes of men		−0.01	−0.06	−0.06	
Father role attitudes—childcare		0.14†	0.05	0.03	
Father role attitudes—breadwinning		−0.23*	−0.11	0.03	
Step 3: Social support					
Partner support			0.32**	0.31**	0.30***
Workplace support			0.11	−0.03	
Step 4: Additional predictors					
Others' leave-taking				0.24**	0.27***
Others' childcare engagement				−0.21**	−0.20**
Expected backlash				−0.25**	−0.28***
Expected parental self-efficacy				0.21**	0.22**
Adjusted R^2	0.14	0.21	0.30	0.46	0.47
R^2 change		0.07	0.09	0.16	

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, †$p < 0.10$.

other men in their personal environment engaged in childcare, and their expected parental self-efficacy were also predictive of the percentage of parental leave men expected to take. For this more behavior-oriented dependent variable, we were able to explain 25% of variance in the parsimonious model.

4 Discussion

Parental leave has been discussed as a tool to foster men's engagement in communal roles with benefits for men themselves as well as their personal environment. However, men continue to take less parental leave than their partners, raising the question of how their intentions to take parental leave are shaped. In the current paper, we investigated predictors of men's intended parental leave-taking before birth, using data from soon-to-be fathers in Belgium and Germany. To gain a deeper understanding of men's intended leave-taking, we examined different operationalizations on a continuum of behavioral preferences to more concrete behavioral intentions.

The findings provide support for the hypothesized positive relation between partner support and men's intended leave-taking (H3.1). The more support men perceived from their partners to take parental leave, the more they desired to take leave, intended to do so, and aimed to take a higher percentage of available leave. We additionally found partial support for the expected negative relation of agentic prototypes of men and men's intended leave-taking (H1.2) and, to a lesser degree, for the expected positive relation of communal prototypes of men and men's intended leave-taking (H1.1). That is, the more men thought an ideal man has agentic attributes (e.g., being independent or assertive) the less they wished to take parental leave. Seeing an ideal man as communal (e.g., communicative or emotional) tended to be related to a stronger wish to take parental leave. Yet, we did not find any significant relations of prototypes with other operationalizations of men's intended leave-taking besides their wish to take leave. Moreover, the results provided partial support for the hypothesized relation of father role attitudes regarding breadwinning and intended leave-taking (H2.2). Men with more breadwinning-oriented father role attitudes partially intended less to take leave and a lower percentage of the available leave. Father role attitudes regarding childcare and perceived workplace support for leave-taking were not related to men's intended leave-taking, providing no support for Hypotheses 2.1 and 3.2.

However, exploratory analyses suggested that men's parental leave-taking intentions were also predicted by other men's engagement in childcare and their take-up of parental leave, the backlash participants expected to receive for taking parental leave, and participants' expected self-efficacy as a parent and caregiver. Moreover, how much other men engaged in childcare was also negatively related to how long men expected to take leave. Lastly, the more capable men felt of taking care of their child in the future (i.e., their expected parental self-efficacy), the longer they expected to take leave.

The perceived support men receive from their partners for taking parental leave played a crucial role in their intended leave-taking in the current study. This finding suggests that parental leave decisions

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TABLE 4 Hierarchical regression models (with standardized regression coefficients) for expected length of parental leave in percent of available leave.

	Model 1	Model 2	Model 3	Model 4	Model 5
Step 1: Covariates					
Age	0.18*	0.13	0.13	0.09	
Country of residence	−0.23**	−0.23**	−0.28**	−0.37***	−0.33***
Educational level	−0.09	−0.10	−0.09	−0.06	
Relative income	0.09	0.04	0.07	0.08	
Work hours	−0.21**	−0.17*	−0.15*	−0.14†	−0.22**
Step 2: Masculinity and fatherhood beliefs					
Communal prototypes of men		0.06	0.03	−0.00	
Agentic prototypes of men		−0.07	−0.10	−0.12	
Father role attitudes—childcare		0.09	0.02	0.01	
Father role attitudes—breadwinning		−0.24**	−0.15	−0.05	
Step 3: Social support					
Partner support			0.25**	0.25**	0.28***
Workplace support			0.02	−0.03	
Step 4: Additional predictors					
Others' leave-taking				0.14	
Others' childcare engagement				−0.18*	−0.22**
Expected backlash				−0.07	
Expected parental self-efficacy				0.14†	0.14*
Adjusted R^2	0.13	0.18	0.22	0.27	0.25
R^2 change		0.05	0.04	0.05	

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^{\dagger}p < 0.10$.

are shaped through negotiations in partnerships. As the transition to parenthood is often experienced as a couple, the new life tasks have to be negotiated and distributed interpersonally. Qualitative research on men's leave-taking has focused on the decision-making process of couples who shared parental leave before, concluding that often only limited negotiations were taking place (Beglaubter, 2017). Even when men desired to take leave, decisions were often based on a strong sense of mothers' entitlement for leave-taking, which placed fathers' leave-taking as a "bonus" to the mothers' share. Nevertheless, within these boundaries, the female partners' point of view remained an important driver for determining parental leave shares, for example, when partners wanted to return to work soon or were not eligible to take leave. Brandt (2017) also discussed men's leave-taking as a matter of negotiation in partnerships. However, there the negotiation process was examined implicitly by looking at distributions of economic resources in partnerships, working conditions of partners, and gendered values, suggesting, for example, that partners' family orientation hinders, whereas fathers' family orientation helps their take-up of leave. While the role of economic considerations or gender ideologies has thus been discussed before, the current paper goes one step further in showing that partners' active support or discouragement can contribute to men's intended leave-taking beyond relative income shares or gender role attitudes. Even though this provides a tangible parameter for influencing men's leave-taking (i.e., partners' active encouragement), the conclusion of the current findings should not solely be that the responsibility for men's leave-taking lies with their partners. This would make women responsible for yet another aspect and add to the pressures on women when combining family and career and facing intensive motherhood norms (e.g., Meeussen and Van Laar, 2018). Nevertheless, mothers can play a key role, functioning as gatekeepers for men's leave-taking, especially in the case of transferable leave periods between partners (Allen and Hawkins, 1999; Cannito, 2020). Thus, the perceived role of partners for men's leave-taking is crucial given specific policy designs, but decision-making processes remain a joint task for couples in which women *and* men carry responsibility.

Besides partner support for leave-taking, no other variable was consistently related to all operationalizations of men's intended leave-taking. This suggests that different predictors may be relevant for men's leave-taking the more concrete their intentions become. Men's conception of an ideal, prototypical man (especially in terms of agency) was related to their desire to take parental leave but not to the more behavior-oriented operationalizations of intended leave-taking, such as their expected length of leave. It is intuitive that prototypes of men as more abstract masculinity ideals are relevant for shaping behavioral preferences because they prescribe what is desirable for group members (Oakes et al., 1998; Wenzel et al., 2007; Hogg et al., 2012). Yet, when looking at more behavior-oriented outcomes, reality constraints are introduced, which require going beyond behavioral preferences based on ideal circumstances. As found in the current paper, outside influences and men's broader normative environment (e.g., how much other men before them engaged in leave-taking and childcare, or the negative consequences men expect to face for wanting to take leave) additionally contribute to their concrete intentions for

taking parental leave. Also, men's expected parental self-efficacy, as the degree to which they perceived themselves as *able* to take care of their child independently, provides a reality check and was found to be related to how long men planned to take leave in the current study. Still, explaining correlates of more concrete leave-taking plans remained more difficult, and we were able to explain the smallest amount of variance in men's expected length of parental leave ($R^2_{adj} = 0.25$ compared to 0.35 for desired leave-taking and 0.47 for leave-taking intentions), in line with general models of attitudes, behavioral intentions, and behavior (Ajzen, 1991). Likely, the specific length of the planned leave depends more strongly on individual circumstances within the relationship and external reality constraints than behavioral preferences or intentions do.

Besides masculinity ideals, we also included father role attitudes, but results were mixed and only significant in a few models in line with hypotheses. An explanation for that could be a self-selection process within our sample: Highly identified expectant fathers, who may relate to current norms of involved fatherhood, could have been more motivated to participate in the study than traditional, work-focused expectant fathers. The general high orientation towards care (i.e., high ratings on childcare-related father role attitudes and intended leave-taking) underline this assumption, making it more difficult to find significant relations due to restricted variance. In a more diverse sample, internal contributors such as attitudes towards fatherhood likely are more relevant next to external influences like social support. Moreover, in a similar study on predictors of men's leave-taking in the US, only maternal essentialism emerged as a correlate of men's leave-taking in contrast to parenting role beliefs (a similar measure to our father role attitudes; Berrigan et al., 2021). Thus, whether men think women are *naturally* better caregivers could be more closely related to childcare decisions regarding newborns than more general parenting beliefs. This is in line with evidence on the relevance of breastfeeding for parental leave-taking decisions (Beglaubter, 2017; Bueno and Grau-Grau, 2021). A strong endorsement of breastfeeding puts mothers in the role of primary caregivers and reduces men's claim for taking parental leave because of biological differences. Hence, future research should examine more closely how essentialist, compared to general beliefs toward parenting roles, are related to men's leave-taking, using more representative samples.

Furthermore, we did not find evidence for the relation between workplace support and men's intended leave-taking. This contrasts with past research that stresses the importance of the workplace for men's leave-taking decisions (Bygren and Duvander, 2006; Kaufman and Almqvist, 2017; Brandth and Kvande, 2019; Haas and Hwang, 2019). However, other studies also failed to find consistent relations for men's higher workplace support as compared to their partner (Brandt, 2017) or for supervisor support with men's leave-taking (whereas workgroup support and workplace norms were related to men's leave-taking; Haas et al., 2002; Samtleben et al., 2019a). The latter finding suggests that, in future research, workplace support should be measured separately for colleagues and supervisors instead of using a combined measure like in the current study. Moreover, participants could have selected their workplace partly based on correspondence with their personal values, such as family orientation, reducing the relevance of workplace support for predicting men's intended leave-taking. In addition, workplace support was correlated with other predictors in the models, namely others' leave-taking and expected backlash effects. When asking expecting fathers how much other men in their personal environment took leave, colleagues are likely an important reference group. Moreover, being encouraged or discouraged by people at work signals whether men could expect negative consequences and backlash for taking leave. Future longitudinal research could therefore shed light on the interplay and temporal order of these constructs and how they contribute to men's leave-taking decisions. In addition, some participants commented that they filled in the survey earlier than 3 months before birth and had not made concrete plans regarding parental leave yet. Possibly, conversations with people at work take place at later stages in men's decision-making process, and there had not been much room for receiving support from the workplace yet.

In addition to hypotheses tests, we explored further predictors of men's intended leave-taking. Results confirmed the relevance of fearing backlash (e.g., Vogt and Pull, 2010; Samtleben et al., 2019a): The more men expected negative consequences when taking leave, the less they intended to take leave. Furthermore, these explorations yielded additional evidence for how men's leave-taking decision appears to be shaped within a normative environment and how others' behavior is related to their own intentions. Here, other men can function as role models who show the feasibility of taking leave as a man, for example, by reducing the perception of external barriers (Morgenroth et al., 2015). In fact, backlash effects and career consequences following men's leave-taking are often less negative than expected (Fleischmann and Sieverding, 2015; Samtleben et al., 2019a; see also mixed evidence in the review by Steffens et al., 2019). Moreover, seeing other men take leave can reduce self-stereotyping and facilitate the consideration of counter-stereotypic engagement – which parental leave-taking traditionally is for men (Morgenroth et al., 2015; also see Asgari et al., 2010). Lastly, role modeling is especially effective in the case of similarity and shared group membership, speaking again to the inspirational role of male colleagues' leave-taking (Bygren and Duvander, 2006). Whereas we found this motivational relation of other men's leave-taking with participants' leave-taking intentions, other men's childcare engagement was negatively related to participants' leave-taking intentions and expected length of parental leave. It is possible that other men who engage less in childcare than their partners function as negative role models (see Lockwood et al., 2002), showing men what they would miss out on. Alternatively, given the correlational data and unclear causal order, men with stronger leave-taking intentions could perceive other men as engaging comparatively little in childcare. Lastly, the negative relation could also be interpreted inversely as perceiving other men to be highly engaged in childcare being related to lower leave-taking intentions. In fact, men who do more childcare than their partners, like in the case of stay-at-home dads, indeed often experience backlash (Steffens et al., 2019), which could deflate men's leave-taking intentions.

4.1 Strengths and limitations

The current results should be viewed in light of the following limitations. Most importantly, we report on cross-sectional correlational data and are therefore not able to draw causal conclusions

about precursors of men's intended leave-taking. Although experimental designs allow for such conclusions, they can be ethically questionable and difficult to implement for life decisions such as parenthood and parental leave-taking (for experimental evidence for hypothetical leave-taking, see Rudman and Mescher, 2013; Scheifele et al., 2021). The current study adds to existing research by examining intentions of men who are actually becoming parents and are facing parental leave-taking decisions. Naturally, an interesting avenue for future research is to gain more insight into predictors of men's actual leave-taking instead of mere intentions. Still, by zooming in on men's intended leave-taking and different nuances from preferences to more concrete plans, we gain a deeper understanding of which factors are related to men's leave-taking decisions before birth. In addition, analyzing cross-sectional data on men's leave-taking intentions enables us to make better predictions for a longitudinal assessment of men's leave-taking decisions across the transition to parenthood.

Although the current study goes beyond student samples, we still rely on a convenience sample with limited representativeness in terms of socio-economic status or gender and parenting attitudes. Therefore, the current findings cannot easily be generalized to the population of expectant fathers in Belgium and Germany. Nevertheless, one could argue that it is particularly interesting and a more conservative test to look at how, for this sample, leave-taking intentions are shaped through attitudes and normative environments because external factors such as whether parents can financially afford men's leave-taking play a minor role here. Also, if there is limited variance in our sample, the correlations we found likely are lower boundaries of true correlations in more diverse samples, including more traditional fathers.

Another limitation can be found in the start of the data collection at the end of 2021 when the global COVID-19 pandemic was ongoing. However, only few participants completed the surveys when measures such as mandatory teleworking were still implemented. In addition, although the pandemic had consequences for parents' division of labor, with men increasing their time spent at home, mothers continued to shoulder the majority of childcare and housework (Yerkes et al., 2020; Hipp and Bünning, 2021; Kreyenfeld and Zinn, 2021; Petts et al., 2023; Van Tienoven et al., 2023; research conducted in Belgium, Germany, the Netherlands, the United Kingdom, Canada, and the United States). Researchers in Belgium concluded that changes in the division of household labor were rather temporal and that the inertia of gender roles is still evident (Van Tienoven et al., 2023). Thus, while the unique period in which parts of the data were collected should be considered, we do not think that the current findings are caused by this period but likely generalize to other periods as well.

Methodologically, we used several non-validated measures due to a lack of validated alternatives, resulting in issues with internal consistencies and ceiling effects. Lastly, we did not reach the required sample size based on an *a-priori* power analysis. As a result, we were not able to detect small effects and, at times, only found trends in the data. Moreover, sample sizes varied across countries of data collection which could lead to biased estimates and impeded cross-national comparisons. Such examinations would have been interesting though based on the differing results of country of residence across dependent variables, speaking to the role of policy design for men's intended leave-taking. We, therefore, encourage future longitudinal studies on the relations between men's parental leave-taking intentions and actual leave-taking, including larger, more representative samples and validated measures.

4.2 Conclusion

We see the contribution of the present research in gaining first insight into the parental leave-taking intentions of expectant fathers while addressing different facets of the studied constructs and carving out the role that men's social setting plays in their orientation towards care. Across analyses, higher levels of partner support were accompanied by a higher desire and intention of expectant fathers to take (longer) leave, illustrating the role of partners as gatekeepers for men's leave-taking. Other predictors were more relevant for different facets of intended leave-taking, speaking to a nuanced assessment of such. Notions of what it means to be a man tended to be linked to whether expectant fathers wished to take parental leave, whereas men's broader normative environment was especially predictive of their behavioral intentions to take leave. Taken together, these findings advance current knowledge on predictors of men's intended parental leave uptake but also of men's involvement in childcare more generally, as parental leave can represent a gateway for continuous father involvement.

Data availability statement

The original contributions presented in the study are publicly available. The raw data omitting demographic information can be found here: https://osf.io/f7jeh/.

Ethics statement

The studies involving humans were approved by the University of Leuven's Social and Societal Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required from the participants or the participants' legal guardians/next of kin because the study was fully conducted online and therefore participants provided informed consent digitally as was specified in the ethics application.

Author contributions

CS, CL, and MCS contributed to the conception and design of the study. CS spearheaded data collection, performed the statistical analyses, and wrote the first draft of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2024.1247193/full#supplementary-material

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Parental positive affect and negative affect in same- and different-sex parent families: no associations with parental gender and caregiving role

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Positive and negative parental affect influence developing parent–child attachment relationships, especially during infancy as well as children's social–emotional, academic, and behavioral functioning later in life. Increasingly, because both mothers and fathers can play central caregiving roles, the parenting qualities of both parents demand consideration. Therefore, this study investigated whether parental gender and caregiving role were associated with mothers' and fathers' positive affect and negative affect during interactions with their 4-month-old firstborn infant, while determining whether parenting stress, infant temperament, having a singleton/twin, and living in the Netherlands, France, or the United Kingdom were related to parental positive affect and negative affect. In all, 135 different-sex, same-sex male, and same-sex female couples (113 fathers and 157 mothers, comprising 147 primary, and 123 secondary caregivers) who conceived through artificial reproductive techniques were studied. The couples were videorecorded at home while in feeding, cleaning, and playing contexts to assess the levels of positive and negative parental affect. In addition, the couples completed questionnaires about their caregiving role, parenting stress, and the infants' temperament. Mixed linear models indicated that the levels of positive and negative parental affect toward the infant in all contexts were not related to parental gender, caregiving role, the interaction between parental gender and caregiving role, parenting stress, infant temperament, or singleton/twin status. However, the target parental behaviors were related to the country of origin, suggesting differences among Dutch, French, and British parents. Overall, we found no evidence that gender or caregiving roles were associated with the levels of positive and negative affect shown by the parents.

KEYWORDS

positive affect, negative affect, fathers, mothers, primary caregivers, secondary caregivers, parent–child observations

Introduction

Fathers are increasingly involved in the family (Cabrera et al., 2000; Yeung et al., 2001), and increased access to parental leave for fathers is enhancing paternal involvement (Huerta et al., 2014). However, mothers are still less likely to be employed after the birth of their children and tend to spend more time caring for their children than fathers (Endendijk et al., 2018), perhaps in response to societal expectations and gender stereotypes, and this affects how parents behave toward their children (Endendijk et al., 2017, 2018). Gender-dependent qualities may increase the likelihood that mothers and fathers will treat their children differently (Popenoe, 1996; Cabrera et al., 2000).

However, most research on gender differences in parenting has involved traditional families, with male and female biological parents, and more importantly, with mothers as the parents most concerned with caregiving responsibilities (i.e., primary caregivers) and fathers as secondary caregivers (Rubio et al., 2017). With primary caregiving mothers being the focus of most research on parenting, it is unclear whether behavioral differences between mothers and fathers are attributable to gender or to caregiving role. For example, Abraham et al. (2014) found that primary caregivers, regardless of the parents' gender, showed similar patterns of activity in their 'parenting caregiving' neural networks (e.g., amygdala), at levels greater than in secondary caregiving fathers. This suggests the importance of caregiving role. However, caregiving role is seldom considered in research on mothers' and fathers' parenting quality. This study explored the relative importance of gender and caregiving role in shaping differences between mothers' and fathers' levels of infant-directed positive and negative affect.

Positive and negative affect

Whereas 4– to 5-month-old infants cannot understand their parents' language, they can recognize emotional expressions and to some degree the valence of parental speech (Bornstein, 2012). Parents can display such expressions by showing positive or negative affect toward their infants. Positive affect involves parents showing pleasure when interacting with their infants by smiling with eye contact, laughing, warm intonation in the voice, and physically touching or displaying affection (for example, by hugging), and speaking with a warm intonation (Landry et al., 2008; Lunkenheimer et al., 2011; Kwon et al., 2012). Negative affect involves parents expressing irritability, anger, or hostility when interacting with their infants though negative tone, raised voice, negative comments, negative facial expressions (e.g., frowning or eye rolling), or sighing (Morris et al., 2002; Lunkenheimer et al., 2011; Kwon et al., 2012). According to Bowlby, children develop mental representations of attachment figures depending on how those figures treat them (Bowlby, 1969; Atzaba-Poria and Pike, 2015). These mental representations shape children's thoughts and behavior about themselves and relationships with others (Bowlby, 1969). Positive and negative affect also relate to parents' emotional availability, which provides feedback on how the parents perceive the child (Biringen et al., 2000). Furthermore, the expression of appropriate emotions may play a key role in effective parenting by activating, engaging, and regulating positive interactions with children (Dix, 1991). At the same time, when parents experience emotions that are too strong, this can undermine rather than enhance effective parenting by, for example, leading them to express negative emotions instead of behaving in a pedagogically effective way (Dix, 1991), with less optimal child outcomes as a consequence.

Empirical studies have supported these theoretical ideas regarding the influence of parental positive and negative affect on children's social–emotional, academic, and behavioral functioning later in life. For example, a meta-analysis showed that more parental warmth and affection were related to better psychological adjustment in school-aged children (Khaleque, 2013). Studies focused on younger children also found that positive affect matters. One study showed that parents who directed more positive affect to their 3-month-old infants had infants who were more likely to be securely attached to them as 1-year-olds (Cox et al., 1992), while another study showed that 3-to 4-year-old boys whose parents expressed more positive affect were better accepted by peers 1 year later (Pali et al., 2022). On the other hand, research shows that negative parental affect has adverse effects on children's social–emotional, academic, and behavioral functioning (Taraban and Shaw, 2018) and is an early childhood risk factor for the development of externalizing and internalizing problems in children and adolescents (Alemany et al., 2013). A systematic review by Samdan et al. (2020) indicated that negative parenting, defined as harsh parenting and hostility, is associated with infants' excessive crying and problematic eating behavior. Thus, both forms of affect are relevant to children's development, but do fathers and mothers of young infants display similar affect?

For a long time, it was assumed that gender was one of the factors affecting the amount of affect expressed by parents, with women considered more emotional and emotionally expressive than men (Grossman and Wood, 1993). Some research also suggests that women are more aware of and knowledgeable about emotions than men (Barrett et al., 2000) and are more capable of labeling facial expressions (Montagne et al., 2005). We might, therefore, expect mothers to express more positive and negative affect than fathers toward their infants.

Examining positive affect, Brundin et al. (1988) showed that mothers of 6-month-olds laughed and vocalized more than fathers did. Similarly, more positive affect was expressed in mother-toddler than father-toddler interactions (Lunkenheimer et al., 2011) in both dyadic and triadic contexts (Kwon et al., 2012). However, few researchers have explored the differences between mothers' and fathers' negative affect. Research with 1-to 11-year-old children and their parents found that mothers reported expressing more negative affect than fathers, but only toward the youngest child when parents had multiple children (Deater-Deckard, 1996). Other observational research found that, in both dyadic and triadic contexts, mothers showed less negative affect toward their toddlers than fathers did (Kwon et al., 2012). However, those studies of gender differences in parental positive and negative affect have not considered the possible effect of the caregiving role.

Examining positive affect, gender, and caregiver role, a study of 3-to 6-month-old infants and their different-sex parents found that

mothers directed more positive affect toward their infants than fathers did, regardless of the parents' employment status (Forbes et al., 2004). However, employment status is not necessarily indicative of caregiving role because a full-time working parent can still be the primary caregiver. Observational research with 1-year-old infants and their different-sex parents found that mothers were more involved in caregiving and displayed more affection, vocalizations and smiling than fathers (Sun and Roopnarine, 1996). This was also true for older children, showing that mothers remained the primary caregivers of their 32-to-72-months old children, even when mothers were employed, with mothers displaying more positive affect than fathers (Stuckey et al., 1982). These studies all showed that primary caregiving mothers showed more positive affect than secondary caregiving fathers. The studies did not investigate differences between primary and secondary caregivers of both genders.

Earlier studies ostensibly controlling for caregiving role showed that differences in positive affect were related to parental gender. An observational study of 8-month-old firstborn infants and their parents indicated that mothers showed more affectionate and touching behavior, vocalizations, smiling, and attention to their children than fathers did regardless of the parents' caregiving roles (Lamb et al., 1982), and when dual-career parents reported an equal division of caregiving tasks (Field et al., 1987). Other research with 8-to-12-month-old infants similarly showed that mothers were more affectionate than fathers regardless of whether the fathers had been primary caregivers (Hwang, 1986). Furthermore, research with 9-and 15-month-old infants and their parents, who both worked full-time, indicated that the mothers were primarily responsible for caregiving, both parents were equally involved in playing, and that mothers vocalized more (a component of positive affect) during play than fathers (Laflamme et al., 2002). Finally, regarding positive affect, Field (1978) reported that primary caregiving fathers and mothers smiled and vocalized more, and imitated facial expressions more than secondary caregiving fathers did.

Differences in positive affect have been related to caregiving role rather than parental gender in some studies. For example, when fathers were observed in one-on-one interaction with their 8-to-12-month-old infants, those who were not primary caregivers showed more affection than those who were (Hwang, 1986).

Examining negative affect, gender, and caregiver role, one study found that highly educated and stressed fathers with demanding jobs were reported by both mothers and fathers to be more irritable with their children than mothers were (Heath, 1976). Other studies found that employed fathers who were highly involved in caregiving expressed more negative affect toward their 4-month-old infants when the mothers worked part-time than when the mothers were unemployed (Grych and Clark, 1999). However, the effect of employment and caregiving role were not properly distinguished, the fathers' caring roles were unclear, and the mothers' behavior was not examined, making it impossible to determine whether differences were related to parental gender or caregiving role.

In sum, all empirical studies of differences between mothers and fathers in parental positive and negative affect failed to include secondary caregiver mothers whose inclusion is necessary to fully distinguish between the contributions of parental gender and caregiving role. In addition, most of these studies were conducted decades ago, before major changes in the context of parenting and the accessibility of artificial reproductive techniques that have made it easier for both mothers and fathers to play central caregiving roles. Furthermore, all the research reported above involved parents in different-sex couples, with little to no research on secondary caregiving mothers. Researchers clearly need to compare primary caregiver mothers and fathers, and secondary caregiver mothers and fathers (Carone and Lingiardi, 2022). Artificial reproductive techniques (ART) are increasingly sophisticated and accessible, making it possible for same-sex male and same-sex female parents to have children. Studying the latter parents, as we did in this study, provides a unique opportunity to assess the independent effects of parental gender and caregiving role while controlling for child and parent characteristics that might also influence parenting quality.

Child temperament can significantly shape parent–child interactions (Belsky, 1984), with parents of children with difficult temperaments (negative emotionality) expressing less positive affect and more negative affect toward their children (Taraban and Shaw, 2018). Stress can adversely affect parental wellbeing making parents less tolerant and more irritable with their children (Bornstein, 2012; McFadden and Tamis-Lemonda, 2013), especially those who have difficult temperaments (negative emotionality) (Taraban and Shaw, 2018). In addition, having singletons as opposed to twins can also affect parent–child interaction. Twins demand more care and thus create more stress for parents than singletons do (Lytton and Gallagher, 2012). Because mothers often specialize in nurturing and fathers in play (Lamb, 2010) it is valuable to examine differences in parental behavior in diverse contexts. Lastly, countries differ with respect to views of same-sex parents (Takács et al., 2016), the use of ART (González, 2019), and gender stereotypes. Because previously reported differences between the parents in different countries, notably in parental sensitivity and intrusiveness (Ellis-Davies et al., 2022), have been inconsistent (Ellis-Davies et al., 2022), we were not able to formulate hypotheses about specific national differences we might find in our study. However, we expected that the country of residence would be related to different levels of affect. Therefore, this study of positive and negative parental affect both controlled for and examined the correlates of infant temperament, parenting stress, singleton versus twin status, and country of residence.

Current study

Given the role of positive and negative affect in both attachment formation (Cox et al., 1992) and social–emotional, academic, and behavioral functioning (Alemany et al., 2013; Taraban and Shaw, 2018; Samdan et al., 2020; Pali et al., 2022), as well as increasing paternal involvement in many countries (Huerta et al., 2014), it is important to study the impact of gender and caregiving role on parents' expressions of positive and negative affect. We did so by observing mothers' and fathers' displays of positive and negative affect while feeding, cleaning, and playing with their 4-month-old first-born infants. As explained earlier, the study also considered parent–child factors (parenting stress and infant temperament) and

contextual factors (namely: singleton versus twin status and country of residence).

Based on previous research, we expected mothers to show more positive affect than fathers (Field, 1978; Lamb et al., 1982; Hwang, 1986; Field et al., 1987; Brundin et al., 1988; Sun and Roopnarine, 1996; Laflamme et al., 2002) and that mothers and fathers would display different levels of negative affect as well (Deater-Deckard, 1996; Kwon et al., 2012). There is a lack of prior research on this topic, and we could not predict the effect of the caregiving role on the parents' positive and negative affect.

Methods

Participants

The participants in the current study were part of the New Parents Study (NPS) of collaborating Dutch, British, and French researchers (see also: Rubio et al., 2017; Van Rijn-van Gelderen et al., 2018, 2020; Ellis-Davies et al., 2022). The NPS consisted of 140 two-parent families from the Netherlands (33.6%), the United Kingdom (23.6%), and France (42.8%), 38 of whom were same-sex male parent families, 61 same-sex female parent families, and 41 different-sex parent families. Only families who participated in the video-recorded observations when their children were around 4 months old were included in the analytic sample of this study. Therefore, the sample consisted of 135 two-parent families ($N = 270$ parents) from the Netherlands (34.8%), the United Kingdom (23.0%), and France (42.2%), 36 of whom were same-sex male parent families, 58 same-sex female parent families, and 41 different-sex parent families. For families with twins ($N = 42$), the observations of only one (randomly selected) twin were included in the analyses.

The analytic sample consisted of 113 fathers and 157 mothers ($N = 270$) between 22 and 59 years old ($M = 35.11$, $SD = 5.36$). At the time of the observations, the infants had a mean age of 3.68 months ($SD = 0.59$). Most couples had singletons (85.2%) and girls (60.0%). The duration of the relationship between the parents ranged from 2.00 to 16.50 years ($M = 8.11$, $SD = 3.60$). The majority of the couples were married or registered as partners (80.0%) for an average duration of 3.49 years ($SD = 3.05$), and the others were cohabiting (20.0%), with an average duration of 6.68 years ($SD = 3.46$). The majority (61.7%) of the parents worked full-time, 24.9% of the parents worked part-time, and 13.4% of the parents did not work outside the home. Most parents were highly educated (82.5%), indicating that the parents had a college or higher degree. Families lived in small cities (33.3%), medium cities (31.9%), or large cities (28.9%), with a few in rural areas (5.9%). Most families had annual incomes of more than 42,356 dollars (71.6%), with the remaining families having annual incomes between 12,706 and 42,356 dollars (26.9%) or less than 12,706 dollars (1.5%).

To distinguish which parent was the primary caregiver and which parent was the secondary caregiver, "The Who Does What" questionnaire (Cowan and Cowan, 1990) was used. Both parents answered 6 items, on a scale from 1 (*I do it all*) to 9 (*Partner does it all*), about responsibility for caregiving tasks during the weekdays, namely: (1) when getting up, during breakfast, and when dressing the infant, (2) during the day from 9.00 a.m. to 1.00 p.m., (3) during the day from 1.00 p.m. to 5.00 p.m., (4) when having dinner, during playtime, at bedtime, (5) in the evening until midnight, and (6) when the infant needed care in the middle of the night. Multiple imputation, with $m = 20$ imputations, was used for missing data in 13 cases (for more information see: Ellis-Davies et al., 2022). The questionnaire resulted in a score for both parents, in which the parent with the lowest score was identified as primary caregiver and the other parent as secondary caregiver. In some cases, due to multiple imputation, both parents were identified as primary caregivers (Ellis-Davies et al., 2022). Eventually, 147 parents were identified as primary caregivers and 123 as secondary caregivers. In Table 1 the gender and the family type of primary and secondary caregivers are presented.

In Table 2 the demographic characteristics of mothers and fathers as well as primary and secondary caregivers are compared. Table 2 shows that there were significant differences between mothers and fathers regarding their age, the length of the relationships, marital status, having a twin, working status, educational level, income, and country of residence. There were no significant differences between mothers and fathers regarding their living location. Table 2 also shows the only significant difference between primary and secondary caregivers related to their work status: secondary caregivers more often worked full-time and were less likely to be unemployed than primary caregivers.

TABLE 1 Caregiving role disaggregated by parental gender and family type.

Gender			Primary caregiver	Secondary caregiver	Total
Male	Family type	Same-sex male	40	32	72
		Different sex	5	36	41
	Total		45	68	113
Female	Family type	Same-sex female	63	53	116
		Different sex	39	2	41
	Total		102	55	157
Total	Family type	Same-sex male	40	32	72
		Same-sex female	63	53	116
		Different sex	44	38	82
	Total		147	123	270

TABLE 2 Demographic characteristics of mothers, fathers, primary caregivers, and secondary caregivers.

	Mothers ($N = 157$)	Fathers ($N = 113$)	ANOVA or χ^2	p	Primary caregivers ($N = 147$)	Secondary caregivers ($N = 123$)	ANOVA or χ^2	p
Age, *M* (*SD*)	33.26 (3.99)	37.71 (5.95)	$F(1, 263) = 53.142$	<0.001	34.93 (5.19)	35.31 (5.56)	$F(1, 263) = 0.336$	0.563
Length of relationship (in years), *M* (*SD*)	7.24 (3.07)	9.32 (3.94)	$F(1, 268) = 23.756$	<0.001	7.98 (3.53)	8.27 (3.69)	$F(1, 268) = 0.429$	0.513
Relationship status: married, *n* (%)	87.3	69.9	$\chi^2(1) = 12.362$	<0.001	80.3	79.7	$\chi^2(1) = 0.015$	0.903
Infant is a twin, *n* (%)	7.0	25.7	$\chi^2(1) = 18.124$	<0.001	13.6	16.3	$\chi^2(1) = 0.374$	0.541
Working status, *n* (%)			$\chi^2(2) = 8.089$	<0.05			$\chi^2(2) = 20.333$	<0.001
Full time	56.1	69.6			51.7	73.8		
Part-time	31.2	16.1			27.2	22.1		
Not working	12.7	14.3			21.1	4.1		
Educational level, *n* (%)			$\chi^2(2) = 7.226$	<0.05			$\chi^2(2) = 1.111$	0.574
High	87.7	75.2			82.8	82.1		
Middle	11.0	21.2			15.9	14.6		
Low	1.3	3.5			1.4	3.3		
Family income, *n* (%)			$\chi^2(2) = 7.626$	< 0.05			$\chi^2(2) = 0.431$	0.806
Over 42,356 dollars	65.2	80.5			73.3	69.7		
Between 12,706–42,356 dollars	32.9	18.6			25.3	28.5		
Under 12,706 dollars	1.9	0.9			1.4	1.6		
Country of residence, *n* (%)			$\chi^2(2) = 10.264$	< 0.05			$\chi^2(2) = 0.343$	0.842
The Netherlands	42.7	23.9			36.1	33.3		
The United Kingdom	19.7	27.4			21.8	24.4		
France	37.6	48.7			42.2	42.3		
Living location, *n* (%)			$\chi^2(3) = 7.092$	0.069			$\chi^2(3) = 0.544$	0.909
Large city	22.9	37.2			29.3	28.5		
Medium city	33.8	29.2			33.3	30.1		
Small city	37.6	27.4			32.0	35.0		
Rural area	5.7	6.2			5.4	6.5		

Procedure

The study obtained ethical approval from the collaborating research institutes in the Netherlands, the United Kingdom, and France. Participants were recruited in these three countries via online forums, magazines, surrogacy-lawyers, parent support groups, and fertility clinics (for more information about this procedure, see Rubio et al., 2017). To be included in the study, parents had to meet several inclusion criteria. All couples used artificial/assisted reproductive techniques to become parents for the first time of either singletons or twins. Same-sex male parents used egg donation and surrogate females, same-sex female parents used anonymous sperm donation for one of the mothers to become pregnant, and different-sex parents used IVF for the mother to become pregnant without sperm or egg donation. All infants were around 4 months old when the assessment took place.

After meeting the inclusion criteria and giving (informed) consent, parents were separately invited before the home-visit to fill in online standardized questionnaires about demographic characteristics and child temperament. When the infant was between 3.5 and 4.5 months old, the assessment took place in the parents' home and additional online standardized questionnaires, audio-recorded standardized semi-structured interviews, and three video-recorded observations were conducted by trained researchers. For this study only several standardized questionnaires (about caregiving tasks, child temperament, and parenting stress) and the video-recorded observations during the home-visit were relevant.

Each parent was videorecorded interacting with the infant in three daily caregiving task contexts: cleaning, feeding, and playing. The other parent was not present during this observation. Both parents were separately observed cleaning, feeding, and playing at the time appropriate for the infant. In the cleaning context, the parent had to change the infants' diaper or bathe the infant. Observations started when the infant was put on the changing mat and continued until the cleaning act was clearly finished, and the infant was removed from the changing mat. In the feeding context, the parent had to breastfeed or bottle feed the infant. Observations started when the food was presented to the infant, until the food was finished, or the infant would not eat anymore. In the playing context, the parent was asked to play with the infant as they normally did for 10 min.

Measures

Observations of positive affect and negative affect during daily caregiving tasks

The three video-recorded observations of the parent and the infant in the cleaning, feeding, and playing contexts were used to measure the parents' positive and negative affect toward their infant. At least two trained researchers from the parents' country coded the video-recorded observations using coding scales for positive and negative affect.[1] To ensure inter-rater reliability, the researchers discussed the coding until they came to consensus. To ensure maintenance of agreement across the three countries, 22% of the videos were re-coded by a coder from another country.

Positive affect

The amount and quality of positive parental affect was indexed by "(a) warm facial expressions (e.g., smiling) showing interest in the baby, (b) vocalizations with a happy or playful intonation, affectionate phrases and laughs, (c) affectionate touching, like kissing and stroking, and (d) playful, game-like interaction (see text footnote 1)." Positive affect was rated on a scale from 1 to 4. A score of 1 was given when the parent expressed little or no positive affect to the infant and had a neutral/negative face and voice. A score of 2 was given when the parent expressed positive affect of a forced/stiff quality or which was inappropriate to the interaction. A score of 3 was given when the parent expressed some positive affect to the infant which was natural, relaxed, and spontaneous. A score of 4 was given when the parent predominantly expressed positive affect, appropriate to the interaction, in a genuine and spontaneous way. A higher score indicated more positive affect than a lower score. Average absolute intraclass correlations indicated adequate inter-rater reliability between two coders, 0.80, 95% CI = 0.77, 0.82, and among three coders in 22% of the videos, 0.73, 95% CI = 0.66, 0.79.

Negative affect

Negative affect was measured as the frequency with which the parent directed a negatively toned facial or vocal expression toward the infant (see footnote 1). Negative affect was rated on a scale from 1 to 4. A score of 1 (*no negative affect*) was given when the parent showed no negative affect toward the infant. A score of 2 (*low negative affect*) was given when the parent expressed one instance of low-level negative affect. Low-level negative affect was indicated by impatience, irritation, resentment, rolling of the eyes, teasing, or adopting a long-suffering attitude. A score of 3 (*moderate negative affect*) was given when the parent expressed more than one instance of low-level negative affect. A score of 4 (*clear negative affect*) was given when the parent expressed at least one instance of clear anger or displeasure toward the infant. Overt anger or displeasure was seen as the highest level of negative affect and was indexed by speaking in a sharp, harsh, or raised voice, making negative remarks about the infant, or threatening the infant. For the parent behavior to be indexed as negative, the infant was not required to responded negatively. A higher score indicated more negative affect than a lower score. Average absolute intraclass correlations indicated adequate inter-rater reliability between two coders, 0.81, 95% CI = 0.78, 0.83, and among three coders in 22% of the videos, 0.70, 95% CI = 0.59, 0.78.

Control variables

Child temperament

To measure the temperament of the infant, the Infant Characteristics Questionnaire (ICQ) was used. There were English (Bates et al., 1979), French (Bertrais et al., 1999), and Dutch (Kohnstamm, 1984) versions. Only the primary caregiver filled in the questionnaire before the home visit and only the subscale "Fussiness/Difficulty," consisting of six items, was used. The items measured the parents' perception of their infants' temperament by asking the parent to rate the difficult/fussiness of the infant on a scale from 1 (*easier behavior*) to 7 (*most problematic behavior*). An example item was: "*How easy or difficult it is for you to calm or soothe your baby when he/she is upset?*." A mean score was used for the analyses, with a higher score indicating more fussiness/difficulty in the infants' temperament and a lower score indicating an easy temperament. The Fussiness/Difficulty subscale had good internal consistency in this sample ($\alpha = 0.79$).

Parenting stress

To measure parenting stress, the short version of the Parenting Stress Index (PSI) questionnaire was completed (Abidin, 2012) in the language of the parents. Both parents filled in the questionnaire during the home visit and only the subscale "Parental Distress," consisting of 12 items, was used. An example item is: "*I feel trapped by my responsibilities as a parent*." Parents answered the items on a scale from 1 (*strongly agree*) to 5 (*strongly disagree*). Scores ranged between 12 and 60, with a high score (score > 33) indicating high parenting distress. The Parental Distress subscale had good internal consistency in this sample (Cronbach's $\alpha = 0.84$).

Data analytic approach

IBM SPSS Statistics version 29.0 was used for the statistical analyses. First, descriptive statistics (means, standard deviations, and correlations) were calculated. Then, the data were checked for outliers and the assumptions of normality, linearity, and homoscedasticity were checked. Multiple imputation was performed, with $m = 20$ imputations, to handle missing data (for more information about this procedure, see Van Rijn-van Gelderen et al., 2018, 2020; Ellis-Davies et al., 2022). As part of sensitivity analyses, we confirmed that the results were similar when the imputed data were not used. To investigate whether parental gender and caregiving role were associated with positive affect and negative affect in the feeding, cleaning, and playing contexts, six linear mixed models were conducted with parental gender (male/female), caregiving role (primary/secondary), and an interaction between parental gender and caregiving role as fixed effects. Contextual factors (singleton vs. twin status, country of residence) and parent–child factors (parenting stress

1 The authors KE-D, LV, AW, OV, and BR were part of the coding team. They were trained to use a coding scheme that was developed by Nanmathi Manian, under the supervision of Marc Bornstein from the National Institute of Child Health and Development (NICHD) based upon the Emotional Availability Scales (Biringen et al., 2000). More information is available upon request.

[centered variable] and infant temperament [centered variable]), were added as covariates to control for their effects. In the models, family was added as a random effect to control for dependencies in the data. We checked whether we should control for different family types (different-sex parent families, same-sex male parent families, and same-sex female parent families) by running six linear mixed models (positive affect while feeding, cleaning, and playing, and negative affect while feeding, cleaning, and playing) with families as a random effect and family type as a parameter.

Results

Preliminary analyses

In Table 3 the descriptive statistics for the outcome variables (positive affect during feeding, cleaning, and playing, and negative affect during feeding, cleaning, and playing) and the continuous covariates (child temperament and parenting stress) are presented, including the number of missing values for which the multiple imputations were used. The correlations between the outcome variables and the continuous covariates are presented in Table 4.

Checking for outliers revealed univariate outliers for positive affect during cleaning and playing. Upon closer inspection of these outliers, it appeared that these outliers were values of 1 and 4, which are the end points on the scale. Since 1 and 4 are plausible values on these scales, it was decided on substantive grounds to not remove these outliers and not to conduct a sensitivity analysis.

The assumption of normality was checked using a histogram and normal probability plot of the residuals. The assumptions of linearity and homoscedasticity were also checked using a scatterplot of the residuals and predicted values. The assumptions were not met, due in part to the kind of data and the scale used for the outcome variables. The distribution of the residuals appeared bimodal instead of normal for the negative affect outcomes but transforming the data to achieve normality would have made the results less interpretable (Schielzeth et al., 2020). Because non-normality influences results minimally (Schielzeth et al., 2020), the data were not transformed.

The intraclass correlations in six linear models (for the six outcome variables) revealed a random effect of family that varied between 0.07 and 0.37, indicating that observations within one family were dependent. Because Musca et al. (2011) showed that even small intraclass correlations, such as 0.01, can cause Type I error rates to inflate family was added as a random effect to the models.

We found no differences between family types except for positive affect during feeding and negative affect during playing. For positive affect during feeding, same-sex female parent families showed more positive affect than different-sex parent families (Estimate = 0.322, SE = 0.154, $p = 0.037$, 95% CI [0.019; 0.626]). For negative affect during playing, same-sex male parent families showed less negative affect than different-sex parent families (Estimate = −0.306, SE = 0.155, $p = 0.048$, 95% CI [−0.610; −0.003]) and same-sex female parent families showed less negative affect than different-sex parent families (Estimate = −0.456, SE = 0.138, $p < 0.001$, 95% CI [−0.726; −0.185]). We therefore added family type as a covariate in the linear mixed models for positive affect during feeding and negative affect during playing to control for the effect.

Positive affect

Table 5 shows the results of the three linear mixed models examining positive affect separately in each of the contexts. The results indicated that parental gender, parental caregiving role, and an interaction between parental gender and caregiving role did not predict parental positive affect significantly in any context. Similarly, child temperament, parenting stress, and singleton versus twin status were not significant predictors of parental positive affect in any context. Despite the significant differences found in the preliminary analyses between family type in positive affect during feeding, family type was not a significant predictor in this linear mixed model.

However, whether the parents came from France or the Netherlands was significantly related to their positive affect in all contexts whereas whether the parents came from the U.K. or the Netherlands was only significantly related to their positive affect while playing. The average mean differences displayed in Table 5 indicate that parents from the Netherlands showed the most positive affect toward their infants, followed by those from the United Kingdom (only significant for playing), with French parents showing the least positive affect toward their infant in all contexts. The results were the same when the analyses were computed using the dataset without imputation (see Supplementary materials), except for parental positive affect during feeding. In the dataset without the imputation, caregiver role was a significant predictor for positive affect during feeding (B (*SE*) = −0.389 (0.192), $p = 0.045$). However, the small estimate and the varying significance, demonstrate the instability of the effect.

Negative affect

Table 6 shows the results of the three linear mixed models examining negative affect during each of the three contexts. The results indicated that parental gender, parental caregiving role, an interaction between parental gender and caregiving role, child temperament, parenting stress, and singleton versus twin status did not significantly predict negative affect during feeding and playing. However, whether the parents came from France or the Netherlands was significantly related to their negative affectivity in the feeding and playing contexts. The average mean differences in Table 6 showed that French parents were more negative toward their infant than Dutch parents in both feeding and playing contexts. In addition, whether the couples involved same-sex male or different-sex parents was significantly related to negative affect during playing. The average mean differences showed that same-sex male parents were less negative toward their infant than different-sex parents in the context of play.

By contrast, parental gender, child temperament, and whether parents came from France or the Netherlands significantly predicted parental negative affect in the cleaning context. Parents showed less negative affect toward their infants in the cleaning context when the

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TABLE 3 Means and standard errors for positive affect, negative affect, child temperament, and parenting stress by parental gender and caregiving role.

	Mothers ($N = 157$)		Fathers ($N = 113$)		Primary caregiver ($N = 147$)		Secondary caregiver ($N = 123$)		Total ($N = 270$)	
	M	*SE*	*M*	*SE*	*M*	*SE*	*M*	*SE*	*M*	*SE*
Positive affect during feeding [a]	2.65	0.074	2.37	0.093	2.50	0.076	2.57	0.092	2.53	0.059
Positive affect during cleaning [b]	2.99	0.058	2.92	0.070	2.99	0.057	2.93	0.070	2.96	0.044
Positive affect during playing [c]	2.98	0.053	2.88	0.063	2.97	0.055	2.90	0.060	2.94	0.041
Negative affect during feeding [d]	1.73	0.078	1.84	0.094	1.71	0.078	1.85	0.098	1.77	0.062
Negative affect during cleaning [e]	1.84	0.074	1.78	0.081	1.75	0.072	1.88	0.082	1.81	0.054
Negative affect during playing [f]	1.76	0.069	1.99	0.090	1.81	0.072	1.91	0.086	1.86	0.055
Child temperament: fussiness [g]	3.067	0.061	2.766	0.063	2.928	0.060	2.957	0.068	2.941	0.045
Parenting stress [h]	21.671	0.454	21.763	0.712	22.016	0.533	21.344	0.596	21.710	0.397

Calculated from the pooled dataset from the $m = 20$ imputations.
Number of missing values:
[a]$n = 52$ (19.26%).
[b]$n = 8$ (2.96%).
[c]$n = 2$ (0.74%).
[d]$n = 52$ (19.26%).
[e]$n = 8$ (2.96%).
[f]$n = 3$ (1.11%).
[g]$n = 4$ (1.48%).
[h]$n = 2$ (0.74%).

TABLE 4 Correlations among positive affect, negative affect, child temperament, and parenting stress.

	Positive affect – feeding	Positive affect – cleaning	Positive affect – playing	Negative affect – feeding	Negative affect – cleaning	Negative affect – playing	Child temperament	Parenting stress
Positive affect – feeding	1							
Positive affect – cleaning	0.147*	1						
Positive affect – playing	0.288**	0.279**	1					
Negative affect – feeding	−0.244**	−0.100	−0.180**	1				
Negative affect – cleaning	−0.151*	−0.254**	0.403**	0.369**	1			
Negative affect – playing	−0.126	−0.171**	−0.237**	0.358**	0.403**	1		
Child temperament	−0.013	0.077	−0.081	0.055	−0.116	−0.068	1	
Parenting stress	−0.089	−0.042	−0.139*	0.090	−0.073	0.127*	0.232**	1

Calculated from the pooled dataset from the $m = 20$ imputations.
$N = 270$.
*Significant with $p = 0.05$ as criterion for significance (two-tailed).
**Significant with $p = 0.01$ as criterion for significance (two-tailed).

TABLE 5 Linear mixed models for positive affect during feeding, cleaning, and playing.

	Positive affect														
	Feeding					Cleaning					Playing				
Effect	Estimate	*SE*	95% CI		*p*	Estimate	*SE*	95% CI		*p*	Estimate	*SE*	95% CI		*p*
			Lower limit	Upper limit				Lower limit	Upper limit				Lower limit	Upper limit	
Fixed effects															
Intercept	2.571	0.198	2.180	2.962	<0.001	3.052	0.120	2.816	3.288	<0.001	3.195	0.101	2.996	3.394	<0.001
Parental gender [a]	0.230	0.256	−0.272	0.733	0.368	0.079	0.135	−0.186	0.344	0.559	0.035	0.112	−0.184	0.254	0.755
Parental caregiving role [b]	−0.336	0.182	−0.694	0.022	0.066	0.169	0.138	−0.102	0.440	0.221	0.041	0.108	−0.171	0.253	0.702
Parental gender * parental caregiving role	0.285	0.244	−0.193	0.764	0.242	−0.205	0.182	−0.561	0.152	0.260	0.016	0.145	−0.268	0.299	0.913
Child temperament	−0.032	0.078	−0.185	0.121	0.681	0.082	0.063	−0.041	0.205	0.191	−0.051	0.054	−0.158	0.055	0.346
Parenting stress	−0.003	0.009	−0.020	0.015	0.757	−0.002	0.007	−0.016	0.012	0.748	−0.007	0.006	−0.019	0.005	0.264
Having singletons or twins [c]	−0.040	0.166	−0.366	0.286	0.810	−0.087	0.138	−0.358	0.184	0.527	0.190	0.120	−0.046	0.427	0.114
Country of residence: U.K. – the Netherlands [d]	−0.096	0.177	−0.446	0.255	0.590	−0.155	0.125	−0.400	0.090	0.216	−0.346	0.111	−0.564	−0.128	0.002
Country of residence: France – the Netherlands [e]	−0.475	0.134	−0.738	−0.212	<0.001	−0.243	0.104	−0.447	−0.038	0.020	−0.611	0.095	−0.796	−0.425	<0.001
Family type: same-sex male parents – different-sex parents	0.304	0.223	−0.136	0.743	0.174										
Family type: same-sex female parents – different-sex parents	0.117	0.171	−0.219	0.453	0.496										
Random effects															
Within families variance	0.044	0.064	−0.083	0.171	0.495	0.024	0.045	−0.064	0.111	0.596	0.071	0.033	0.007	0.136	0.031

Calculated from the pooled dataset from the $m = 20$ imputations.

[a]0 = male, 1 = female.

[b]0 = secondary caregiver, 1 = primary caregiver.

[c]0 = singleton, 1 = twins.

[d]0 = the Netherlands, 1 = U.K.

[e]0 = the Netherlands, 1 = France.

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TABLE 6 Linear mixed models for negative affect during feeding, cleaning, and playing.

	Negative affect														
	Feeding					Cleaning					Playing				
Effect	Estimate	*SE*	95% CI		*p*	Estimate	*SE*	95% CI		*p*	Estimate	*SE*	95% CI		*p*
			Lower limit	Upper limit				Lower limit	Upper limit				Lower limit	Upper limit	
Fixed effects															
Intercept	1.548	0.157	1.239	1.857	<0.001	1.618	0.142	1.340	1.895	<0.001	1.905	0.163	1.586	2.223	<0.001
Parental gender [a]	0.025	0.180	−0.329	0.379	0.891	0.312	0.159	0.001	0.623	0.049	−0.153	0.224	−0.592	0.285	0.493
Parental caregiving role [b]	−0.146	0.167	−0.473	0.181	0.380	−0.022	0.158	−0.333	0.288	0.888	0.022	0.171	−0.313	0.358	0.895
Parental gender * parental caregiving role	−0.004	0.227	−0.450	0.442	0.986	−0.278	0.211	−0.691	0.135	0.187	−0.118	0.224	−0.557	0.321	0.598
Child temperament	0.035	0.079	−0.120	0.191	0.654	−0.170	0.075	−0.316	−0.023	0.024	−0.110	0.074	−0.256	0.036	0.140
Parenting stress	0.003	0.009	−0.015	0.021	0.738	−0.009	0.009	−0.025	0.008	0.319	0.014	0.008	−0.003	0.031	0.101
Having singletons or twins [c]	0.189	0.168	−0.142	0.519	0.263	−0.047	0.164	−0.369	0.275	0.774	−0.091	0.166	−0.416	0.234	0.584
Country of residence: U.K. – the Netherlands [d]	−0.006	0.180	−0.363	0.350	0.972	−0.199	0.150	−0.493	0.095	0.185	0.278	0.152	−0.019	0.576	0.066
Country of residence: France – the Netherlands [e]	0.635	0.143	0.353	0.918	<0.001	0.416	0.128	0.166	0.666	0.001	0.595	0.128	0.344	0.847	<0.001
Family type: same-sex male parents – different-sex parents											−0.439	0.186	−0.804	−0.074	0.018
Family type: same-sex female parents – different-sex parents											−0.237	0.169	−0.568	0.095	0.162
Random effects															
Within families variance	0.061	0.070	−0.077	0.200	0.382	0.078	0.062	−0.043	0.199	0.209	0.076	0.061	−0.043	0.196	0.212

Calculated from the pooled dataset from the $m = 20$ imputations.

[a]0 = male, 1 = female.

[b]0 = secondary caregiver, 1 = primary caregiver.

[c]0 = singleton, 1 = twins.

[d]0 = the Netherlands, 1 = U.K.

[e]0 = the Netherlands, 1 = France.

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infant had a more difficult temperament while French parents expressed more negative emotions toward their infants than Dutch parents did. More importantly, mothers expressed more negative affect in the cleaning context than fathers did, although the average mean difference between mothers and fathers was only 0.312 (on a scale from 1 to 4). Furthermore, when data for both twins were included in the analyses ($N = 312$ instead of $N = 270$), parental gender, and infant temperament were no longer significant predictors of negative affect during cleaning (for parental gender: B (SE) = 0.255 (0.150), $p = 0.090$; for infant temperament: B (SE) = −0.070 (0.068), $p = 0.300$), but the country of residence remained a significant predictor (B (SE) = 0.426 (0.126), $p < 0.001$). In the dataset without imputation, parental gender was also no significant predictor of negative affect during cleaning. The remaining results were the same when the analyses were computed using the dataset without imputation (see Supplementary materials).

Discussion

Parental positive affect and negative affect are relevant for developing children, especially during infancy (Bornstein, 2012), because they are related to the development of parent–child attachment relationships (Cox et al., 1992), as well as aspects of children's social–emotional, academic, and behavioral functioning later in life (Alemany et al., 2013; Taraban and Shaw, 2018; Samdan et al., 2020; Pali et al., 2022). The goal of this study was to investigate whether parental gender and caregiving role were associated with mothers' and fathers' positive affect and negative affect while interacting with their 4-month-old first-born infants in feeding, cleaning, and playing contexts. In addition, we investigated whether contextual factors, namely singleton versus twin status and country of residence (the Netherlands, the U.K., and France), and parent–child factors, namely parenting stress, and infant temperament, were related to positive and negative parental affect. Overall, the results indicated that positive and negative parental affect in the three contexts were not related to the gender or caregiving role of the parents or the interaction between gender and caregiving role, nor to parenting stress, infant temperament, and singleton versus twin status. However, positive and negative parental affect were related to whether the parents came from the Netherlands, the U.K. or France. This study is one of very few to include samples of both different-sex and same-sex couples who conceived using ART and were all observed interacting with their infants in three different contexts in light of previous evidence that parents behave differently in different contexts (Leyendecker et al., 1997; Van Vliet et al., 2022).

Contrary to previous research indicating that mothers show more positive affect toward their infant than fathers do (Lamb et al., 1982; Hwang, 1986; Field et al., 1987; Brundin et al., 1988), and that primary caregivers, who are mainly mothers, show more positive affect than secondary caregivers (Field, 1978; Sun and Roopnarine, 1996; Laflamme et al., 2002), this study revealed no differences between mothers and fathers or between primary and secondary caregivers in the levels of positive affect displayed in feeding, cleaning, and playing contexts. Likewise, there were no differences between mothers and fathers or between primary and secondary caregivers in the levels of negative affect directed toward their infants in the three contexts, even though previous research suggested that mothers and fathers would differ (Deater-Deckard, 1996; Kwon et al., 2012).

The present results differed from those obtained in previous studies, perhaps because previous studies did not distinguish between the impact of gender and caregiving role (Brundin et al., 1988), did not investigate the caregiving role of the parents at all (Deater-Deckard, 1996; Kwon et al., 2012), confused caregiving role with employment status (Heath, 1976; Grych and Clark, 1999), or failed to include both secondary caregiver mothers and primary caregiver fathers in their samples (Field, 1978; Lamb et al., 1982; Hwang, 1986; Field et al., 1987; Sun and Roopnarine, 1996; Laflamme et al., 2002). The design of this study differed and thus provided an opportunity to investigate the extent to which parental gender and caregiving role separately contributed to parenting qualities (Carone and Lingiardi, 2022). It is also noteworthy that the context of parenting has changed, with increased paternal involvement in caregiving in many countries (Cabrera et al., 2000; Yeung et al., 2001; Huerta et al., 2014). In addition, same-sex parent couples might divide caregiving tasks more equally, which may affect the results. The group of different-sex parent families, who conceived through IVF, might be more similar to same-sex parent families than expected (Imrie and Golombok, 2020), perhaps dividing tasks more equally than expected.

Previously reported findings might also differ from those reported here because this study included same-sex male and same-sex female couples. Prior studies mostly involved traditional families with different-sex parents and mothers as the primary caregivers. Same-sex male and same-sex female couples are relatively understudied in parenting research although there is a growing body of evidence that parental sexual orientation does not adversely affect children's adjustment (Lamb, 2012; Golombok, 2021) as once believed and is associated with more egalitarian attitudes (Sutfin et al., 2008; Bos and Sandfort, 2010; Goldberg et al., 2012). It is also possible that parents who conceive using ARTs have distinctively different attitudes to parenthood and behave differently as a result (Mazrekaj et al., 2022). It is noteworthy that a previous analysis of the same parents' sensitivity and intrusiveness showed no differences associated with parental gender or sexual orientation (Ellis-Davies et al., 2022). Earlier studies might not have captured the diversity of today's parents adequately.

As in previous analyses of data involving the same sample (Ellis-Davies et al., 2022), we found differences related to the countries where the parents lived. French parents showed less positive affect and more negative affect than Dutch parents in all contexts. British and Dutch parents only differed with respect to positive affect while playing, with British parents showing less positive affect than Dutch parents but more positive affect than French parents. The fact that Dutch parents displayed more positive affect than both French and British parents might be because the Netherlands is one of the most supportive and tolerant countries for same-sex parents (Takács et al., 2016). Social support and involved, responsive parenting are positively associated (Rhoad-Crogalis et al., 2020) so societal support might make the parenting context more relaxed and enjoyable for Dutch than for French and British parents, leading Dutch parents to show more positive affect toward their infants. Furthermore, because surrogacy was and remains

forbidden and donor insemination was forbidden for same-sex female couples until 2022 in France, whereas altruistic surrogacy is legal in the Netherlands (González, 2019), it may have been harder for French same-sex (male) couples to conceive children. Although parenting stress was not related to positive affect and negative affect in this study, other sources of stress, for example related to same-sex couples being a minority (Meyer, 2003), might be experienced at a higher level in French same-sex male couples, possibly leading French parents to show less positive affect and more negative affect toward their children than Dutch parents. In contrast to France, altruistic surrogacy is permitted in the United Kingdom (González, 2019) and different surrogacy policies might explain the differences between British and French parents.

The differences between Dutch, British and French parents might also be due to cultural differences in parenting styles (Lansford, 2022). Ellis-Davies et al. (2022) also reported differences between Dutch, French, and British parents in sensitivity and intrusiveness. These cross-country differences in parenting qualities underline the fact that even western European countries, which are similar in many respects can still differ. Future research on parenting qualities should take possible differences like this into account.

Contrary to our expectations, parenting stress, infant temperament, and singleton versus twin status were not related to positive affect and negative affect. It is possible that different operationalizations of parenting stress or stigma resulted in the same-sex male and same-sex female parents not being completely honest (Meyer and Wilson, 2009) or that the levels of stress experienced by these parents were relatively modest. Similarly, most of the temperament ratings were around the middle of the scale, with few difficult temperaments identified. We also relied exclusively on the fussiness/difficulty subscale to assess temperamental difficulty; other components of infant temperament, such as reactivity and self-regulation (Rothbart et al., 2000) or adaptability and unpredictability (Bates et al., 1979), might influence parental behavior. Finally, few (14.8%) of the parents had twins, limiting our ability to recognize effects of this status and the fact that we observed the parents of twins in one-on-one interactions with their infants might have reduced the representativeness of the observed interactions.

Some limitations should also be noted. First, the fact that most parents in the sample were highly educated limits the generalizability of the results (Roubinov and Boyce, 2017). Besides that, parents' gender was dichotomized in terms of males and females. However, it would have been a valuable addition to consider whether parents were cisgender or transgender. Future research might take that into account. In addition, we defined primary and secondary caregivers in each couple using proportion scores on "The Who Does What" questionnaire. This method of defining which parent is the primary and secondary caregiver might be less suitable for same-sex parents than for different-sex parents, because in same-sex parent couples caregiving tasks are known to be more equally divided. Moreover, the questionnaire solely included items about responsibility for caregiving tasks during the weekdays, which might fail to capture other primary caregiving tasks that matter as well, like attending healthcare appointments and emotional regulatory processes. Further, positive and negative affect were coded on a scale from 1 to 4 which may have been too restricted to adequately represent subtle differences. We also did not examine the children's response to the parents' displays of emotion although these might have affected the parents' behavior. In addition, as discussed in the Results section, the assumptions for a linear mixed-model analysis were not met because the distribution of the residuals of the negative affect scores were bimodally distributed, suggesting that the dataset included two normal distributions (Schielzeth et al., 2020). According to Schielzeth et al. (2020), this kind of non-normality minimally influences results but the bimodal distribution might indicate that a (binary) predictor was missing from the model.

Notwithstanding these limitations, the study showed that neither gender nor caregiving role affected the levels of positive and negative affect directed by parents to their 4-month-old infants. Future research should investigate whether these and other aspects of parenting quality are affected by parental gender or caregiving role during childhood and adolescence as well.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: controversial topic. Requests to access these datasets should be directed to L.vanRijn-vanGelderen@uva.nl.

Ethics statement

The study obtained ethical approval from the collaborating research institutes in the Netherlands, the United Kingdom, and France. The studies were conducted in accordance with the local legislation and institutional requirements. The participants' legal guardians/next of kin provided written informed consent.

Author contributions

TL: Formal analysis, Writing – original draft, Writing – review & editing. KE-D: Investigation, Supervision, Writing – review & editing. BR: Investigation, Writing – review & editing. OV: Funding acquisition, Investigation, Writing – review & editing. HB: Funding acquisition, Supervision, Writing – review & editing, Investigation. ML: Funding acquisition, Supervision, Writing – review & editing. LV: Conceptualization, Investigation, Project administration, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The handling editor NC declared a past co-authorship with the author HB.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2024.1332758/full#supplementary-material

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Reaching out to fathers in Afro-Caribbean contexts: a case study review of best practices from the Fatherhood is Sacred program in native communities

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Historical trauma has played a significant role in the difficulties of fathers to fulfill their coparenting roles in Native American communities. This pattern is also true for men in Afro-Caribbean communities. Fatherhood programs developed by the Native American Fatherhood and Family Association (NAFFA) have shown effectiveness in supporting fathers, enhancing their confidence and coparenting skills, and overcoming trauma in Native communities. This paper seeks to identify the opportunities and best practices for cross-cultural adaptation of the Fatherhood is Sacred program to Afro-Caribbean families and contexts.

KEYWORDS

fathering, native fathers, historical trauma, Afro-Caribbean families, Fatherhood is Sacred

1 Introduction

Systemic adversities have troubled Native American families and communities for generations. The available literature recounts the persistent loss of lives, land, language and cultural identity among these populations. Native American individuals, families and communities have experienced repeated episodes of ethnic and cultural disruption, conflict and even genocide (Evans-Campbell, 2008). The results have included lasting disruptions in the indigenous family systems which focused on the active engagement of both parents in raising children (co-parenting), alongside other family members.

The literature on family systems theory gives special importance to the coparenting relationship. Parents are seen as the family's executive system. The effective functioning of this system provides children with a sense of predictability, stability, and security in the family (Holmes et al., 2013). Research on the impact of coparenting is relatively new, but initial indications are that coparenting contributes to the well-being of the child over and above the sole effects of maternal or paternal parenting (Boričević Maršanić and Kušmić, 2013). In this paper, we will highlight the effects of two coparenting models within distressed Native American and Afro-Caribbean communities. This section provides background and context on the family and cultural settings in which a potential intervention might be implemented. Then, we will reflect on and distill critical lessons and best practice possibilities that can be learned from the Fatherhood is Sacred program (Native American), which encourages the re-engagement of paternal parenting as a critical element to the coparenting alliance.

Implications for application of such lessons and practices for use with men and families in the Afro-Caribbean community will be discussed.

2 Context

2.1 Family system shifts, single parenting and fathering in native communities

From the mid-19th century through to the 1970s in the United States, federal policy included the creation of boarding schools to support the forced assimilation of Native Americans (Zephier Olson and Dombrowski, 2020). Native youths were forcibly taken from their families from as early as 5 years of age, with reports of exposure to child abuse, while spiritual and cultural practices were prohibited among Native peoples. Diseases resulted in widespread death, while government policies led to the establishment of under-resourced reservations (Thornton, 2005). Scholars have reported that such historical pressures "had a profound and traumatic impact on the Native American family unit and the tribal community" (Shears et al., 2011, p. 203).

This bleak narrative has continued into the modern day, with varied Native communities recording some of the highest rates of poverty, violence, substance abuse, incarceration, and parental absence in the United States (U.S.) (Centers for Disease Control and Prevention, 2019; Richards et al., 2021). More recently, U.S. Census data has revealed the prevalence of single-parent families in Native families, headed primarily by the matriarch. On some reservations this phenomenon has become a growing trend that has persisted over time (Sandefur and Liebler, 1996). A recent demographic analysis by the U.S. Administration for Children and Families of 2015 American Community Survey (ACS) data notes: "Almost 41% of Native American children in tribal areas with a child support program lived in female-headed single-parent families. Another 12% lived in male-headed single-parent families. Combining these two-family types, we find that 53% of Native American children in tribal areas with a child support program lived in single-parent families. In contrast, only a third of all American children lived in single-parent families: 26% in female-headed and 7% in male-headed single-parent families" (Sorensen, 2023). Often without the benefit of co-parenting relationships in these family settings, Native American children in single-parent families experienced twice the rate of poverty (54%) than their peers in married-couple families (22%) (Sorensen, 2023).

Juxtapose this contemporary reality with traditional Native American cultures where families were seen as being sacred. Strong families were the foundation upon which Native Americans transmitted their traditions, heritage, and culture. Families included a wide circle of relatives linked together in kinship and mutual dependence, going beyond the nuclear family to include grandparents, uncles, aunts, cousins and many others, forming an extended family unit (Pritzker, 2000). By extension, traditional tribal communities also viewed children as sacred beings, placed at the center of the Nation, and were to be protected within the tribal community. Fathers were involved in providing for families (though "breadwinning is a concept that emerged with industrialization, urbanization, and the separation of the home from the workplace) (Pfau-Effinger, 2004), but they also served as figures of authority, providing guidance, spiritual leadership and the transmission of communal rituals, strong values and life skills to children (Brave Heart et al., 2012; Deer, 2015). Among the Lakota peoples, for example, fathers and father figures acted in the role of *wicasa was'aka* ("strong men" in Lakota), or as the warriors and protectors of their children, families, and nations (Brave Heart et al., 2012). The term *historical trauma* has been employed to explain the significant and long-lasting exposure to displacement, violence and adversity that has been visited upon Native peoples for centuries (Brave Heart et al., 2012).

Our understanding of the full direct and indirect effects of traumatic events of this nature on individuals, families and communities is still limited. However, it is clear that the healthy functioning of families with the active involvement of men as fathers, and the social structures to support thriving families and communities, have been disrupted within Native American communities (Pritzker, 2000). The intergenerational effects of historical trauma have given rise to family patterns that undermine coparenting and extended family support in Native communities, putting many American Indian children at risk. Extensive research has shown that the absence of a father from the home is associated with developmental challenges in children, including developmental delays, teenage pregnancy, delinquency and physical as well as emotional abuse (McLanahan, 2014; Chavda and Nisarga, 2023). Also, father absence or under-involvement is strongly associated with risk of juvenile justice difficulties for youth (Major et al., 2004; Rolnick, 2016).

We would suggest that any attempt to make sense of the challenges facing Native American families, fathers and communities, as well as any effort to respond to these challenges, must consider the possible direct connection to past traumatic events (historical trauma), the transmission of these events through generations and the compounding of this situation by persistent contemporary traumatic events.

2.2 Can historical trauma explain shifts in co-parenting norms in ethnic communities?

Historical trauma has been defined as a kind of "collective complex trauma" which is imposed on a group of people who share a common identity or affiliation, e.g., ethnicity, nationality, or religious affiliation (Evans-Campbell, 2008). The members of the affected community share a similar experience, usually loss, with the majority displaying a similar set of reactions linked to trauma. The resulting legacy is usually that of psychological and social responses to traumatic events. There is a substantial body of research in the developmental science field that points to epigenetic processes mediating the intergenerational transmission of trauma effects, resulting in the biological embedding of adverse experiences across generations (Yehuda and Lehrner, 2018; Švorcová, 2023). Continuing research is likely to further illuminate how such impacts that persist at the genetic level across time may be significant in adaptive reactions to stress within communities such as Native America or the African diaspora.

In Native communities, it is suggested that despite tremendous resilience being displayed, the effects of historical trauma "have had a toll, not only on individual mental health but also on the healthy functioning of families and AIAN (e.g., American Indian-Alaska Native [AIAN]) social structures as a whole" (Evans-Campbell, 2008, p. 317). Much of the initial scholarly work related to historical trauma

dates back to studies on Jewish Holocaust survivors and their descendants – the "survivor syndrome" and the survivor child complex (Brodaty et al., 2004).

The work of Brave Heart and Chase (2016), as well as other scholars, presents evidence to suggest that historical trauma has affected Lakota parents and children by changing parenting behavior, with the adverse effects of placing children at risk for alcohol and other substance abuse. For example, research findings reveal that Lakota Indian parents who were raised in boarding schools felt a high level of inadequacy as parents, as a direct effect of the trauma experience, and in turn were often unable to provide the support needed by their own children. Their children in turn reported a history of neglect and abuse from parents who were unfamiliar with and unable to demonstrate healthy parenting styles, in contrast to healthy coparenting and extended family models that previously existed among the Lakota. The normalization of impaired parenting behaviors (which included non-nurturant and ineffective parenting and poor bonding with family, as well as uninvolved parenting), resulted in the perpetuation of risk behaviors among youth through multiple generations (Brave Heart, 1999; Brave Heart et al., 2012; Brave Heart and Chase, 2016). This behavior has been reinforced over the years by being transmitted in indigenous communities where traditional parenting values and culture have been eroded. The perpetuation of similar trauma effects in varied Native communities has led to strained and altered social systems that often result in absentee fathering and limits healthy coparenting in these Native American communities. Unfortunately, a similar tale has been played out and now persists in Afro-Caribbean communities.

2.3 Historical trauma and Afro-Caribbean family systems

In the Caribbean, slavery, colonization, indentured servitude and racism have marked the history of Afro Caribbean peoples from as far back as the 1500s. Enslaved people could not legally marry as, by colonial laws, they were considered property and not legal people who could enter contracts such as marriage. Some families were non-nuclear, with fathers owned by one plantation master and the children he fathered, as well as the children's mother, owned by another plantation master, miles away. In these instances, family bonding and father involvement were not encouraged (Klein and Vinson, 2007; Morgan, 2016). Enslaved people lived with the perpetual possibility of separation through the sale of one or more family members. Slaveowners purposefully separated children from their parents to blunt the development of affection between them (Bush, 2010). The legacy of enslavement of African peoples in the Caribbean persisted beyond its abolition, with economic hardship for Afro-Caribbean peoples resulting in "a system of migratory labor between islands that took men away from their homes" (Bush, 2010, p. 86). This led to the common stereotype of the "mother-headed, black family characterized by the absent, irresponsible black man and negligent parenting" (Bush, 2010, p. 86). For families seeking to manage their problems and survive through a dependence on kin networks and group support that persisted despite a history of trauma, these lasting effects of displacement and degradation simply continued to strain family patterns and re-fashion them into unhealthy models.

The result of this lasting trauma has been an Afro-Caribbean culture which is replete with patterns of matriarchal single-parent households, common-law marriages, visiting fathers and child-shifting (where other persons besides the parents are given the responsibility of taking care of children). Roopnarine (2013) notes that non-married mating unions in the Caribbean were common, with marriage rates in three different samples in Jamaica being ranging between 23.7 percent and 37.3 percent. The concept of coparenting does not require marriage as a precursor to responsible parenting (McHale et al., 2004). Instead, there must exist a high degree of coordination and support between adults rearing a child together. In the Caribbean, among Afro-Caribbean populations in Jamaica, it is estimated that more than 47 percent of children live in single-parent homes with their biological mothers (Headley, 2021). This cultural context appears to have emerged as a result of family shifts due to slavery and other traumas, and thus provided the basis for absentee fatherhood in Afro-Caribbean communities with this social phenomenon being normalized by the presence of modern-day traumatic experiences including poverty, racism and persistent unemployment (Jemison, 2015). Of note, research into mediating factors such as extended family support systems or social fathers that serve to mitigate the impact of absentee fathers on children in these communities is limited.

Degruy-Leary (2017), writing reflectively about a similar family pattern of absent fatherhood shared by many African Americans in the United States, posits the concept of *post-traumatic slave syndrome* (PTSS). According to Degruy-Leary (2017), PTSS is a variation of historical trauma that describes the multigenerational trauma and injustices unfairly visited upon African Americans. The emotional and psychological effects include, among other difficulties, the experience of displacement and troubled relationships between fathers and their children. Although there is some critique of this perspective, its relevance here relates to the linkage with other frameworks of historical trauma and their application to specific groups, in this case those of African descent whose ancestors endured slavery. Degruy-Leary (2017) further argues that post-traumatic slave syndrome has been passed down through generations and continues to affect many individuals and families in the African diaspora today, which would include those in the Caribbean. The forced separation of fathers from their families during this painful period in history established a pattern that continues to be evidenced today in the tendency among Afro-Caribbean fathers to be separated from their families (Jemison, 2015).

Recent government data in 2019 from the Planning Institute of Jamaica noted that "an estimated 36.4 per cent of children had no father figure in the home compared to 2.1 per cent with no mother figure" [The Planning Institute of Jamaica (PIOJ) and The Statistical Institute of Jamaica (STATIN), 2022, p. 2], leaving many Caribbean children without a meaningful father presence in their lives.

From a developmental science perspective, a key question focuses on how we can develop systems and intervention programs to treat and heal individuals and families affected by historical trauma. Undoubtedly, any solution must be community based, given the far-reaching effects of the trauma, and must encompass culturally informed solutions to repair the damage done to the loss in identity, familial stability and cultural cohesion. In the cases noted here, particular injury has accumulated in the roles and relationships of men as responsible fathers in their families, and so information that

offers best practices to follow in mitigating negative effects and improving resilience has promise for application in these communities.

3 An overview of the Fatherhood is Sacred program

In 2002, Albert Pooley, President of the Native American Fatherhood and Families Association (NAFFA), founded the Fatherhood Is Sacred® program to address the challenge of father absence and under-involvement within Native American communities. Pooley noted that government policies and programming efforts in the United States were primarily "focused on the well-being of Native American women and children, with little attention being paid to Native American men" (Montgomery, 2015, p. 91). To focus more resources on assisting men in their development and strengthening their family systems, Pooley developed an intervention program that sought to promote the importance of responsible parenting among Native American families and communities. More specifically, the program focused on healthy fathering and bringing back the building blocks of culture, heritage, tradition, and Native spirituality. The overall purpose of the programs supported by NAFFA are to "re-establish the close familial ties of Native Americans, including the role of Native American men as leaders within their family and community" (Montgomery, 2015, p. 92).

The Fatherhood is Sacred program identifies the need for healthy men in Native American families and communities today. To facilitate this goal, it embraces the importance of healthy parenting and generative fathering, with the main objective of the program being that of "reinvigorating and uplifting the male population's role within the family setting" (Brotherson et al., 2005; Montgomery, 2015, p. 91), contextualizing their role as fathers against a renewed focus on culture and spirituality. Specifically, the program seeks to empower, train and support Native American men and fathers so they understand that: (1) families are sacred and should be treated as such; (2) they are not the problem in their communities, but instead, are the solution; (3) they possess innate leadership abilities and their cultures intrinsically value families; and (4) their role, involvement and leadership as fathers is critical to keeping families together and ensuring their wellbeing (Montgomery, 2015; Pooley, 2021). In this regard, the program has three core pillars: self-worth, identity, and purpose. These pillars are embedded throughout the 12 individual sessions of the curriculum. Building a strong sense of self-worth, cultural identity, and life purpose as a father is central to the program. The program also encourages relationship building, with activities geared towards improving family bonds and responsible parenting, with a curriculum that is delivered through a series of twelve group sessions that allow for discussions, critical thinking, and problem-solving around fatherhood and family issues. Through this programming, traditional values are restored, a sense of identity, direction, purpose and self-worth is rekindled in men, and they come to view their role as critical to the development of their families and by extension, their communities (Pooley, 2021). For more specific information on the program, details and curriculum materials are available through the Native American Fathers and Families Association (see https://www.nativeamericanfathers.org/).

The intervention programs supported by NAFFA explicitly acknowledge the impact of historical trauma on family systems in Native communities. For example, Goodrow (2015) notes in an evaluation of the program that family roles in Native communities "have been greatly impacted by the history of emotional and psychological injury and genocide of Indigenous cultures over the generations," and further states that such impacts have been "especially significant to the development of the sacred roles of mothers and fathers, the feeling of cultural belonging, and the loss of traditional practices" (p. 1). As a response to these historical impacts, the Fatherhood is Sacred approach encourages participants to "stand on their own goodness" (Goodrow, 2015, p. 4), which means they must recognize and affirm the character, resiliency and cultural heritage that have enabled their generations to survive and affirm the centrality of family. The program's intent seeks to provide hope, inspire gratitude and increase understanding among the men as a means of bringing about change in behavior and attitude and encouraging self-motivation, notwithstanding the current context of their daily lives (Montgomery, 2015). Program facilitators lead sessions on topics such as nurturing the entire family, linking generations, strengthening individual and cultural identity, and the benefits of service to family and community (Montgomery, 2015; Pooley, 2021). The Fatherhood is Sacred Program has been used extensively by tribal communities in the United States, Canada and beyond, and has been recommended by government entities and agencies for its "best practices" in encouraging responsible and involved fatherhood (Goodrow, 2015; Montgomery, 2015; Sarche et al., 2020).

The adoption of the Fatherhood is Sacred program has been widespread in the United States. For example, Project LAUNCH (Linking Action for Unmet Need in Children's Health) furnishes federal grants to support child health and wellness to a variety of grantees, and particularly "facilitate increased access and use of evidence-based prevention and promotion practices" (Sarche et al., 2020, p. 1). For tribal LAUNCH grantees serving Native American populations, a key priority has been to facilitate culturally grounded and relevant approaches to serving children and families. By 2020, 40% of grantees reported using the NAFFA programs in their efforts, which was the second highest usage among 18 different models or intervention programs documented (Sarche et al., 2020). Another brief summary about the program indicated that by 2015, over 300 facilitators had been trained and "implemented the program in over ninety tribes and twelve urban centers across the nation" (Montgomery, 2015, p. 92).

Reviews of the program have noted its success in helping with recovery from addiction, increasing understanding of historical trauma, facilitating healing and enhanced spirituality, increasing connection, and supporting healthy coparenting relationships within American Indian and Alaska Native families (White and Brotherson, 2005; Goodrow, 2015; Wilson et al., 2022). Best practice ideas and implications from this program are explored in the sections that follow.

An initial quantitative evaluation of the Fatherhood is Sacred program, conducted by White and Brotherson (2005), surveyed program participants at two sites in the southwestern United States. Respondents included 84 Native American men who participated in the program. Nearly 80% of these men reported challenges with substance misuse and broken relationships with their children (White and Brotherson, 2005).

While most men surveyed about the program indicated its positive value to them and 94% would recommend the program to other men, also 93% indicated that they would benefit from additional supportive services. The survey used a retrospective post-then-pre design to gather fathers' perspectives on the Fatherhood is Sacred program and its influence on them. Among the men, more than 90% of them indicated that the program improved their self-confidence as a father, helped their parenting and relationship skills, supported them in their sobriety efforts (if this was an issue), and increased their connection to community services and groups of men who provided positive support (White and Brotherson, 2005). All of these items link well with the need to support and sustain healthy coparenting relationships in families.

Additionally, those surveyed also noted the program's impact on their general wellbeing, with more than 80% of respondents noting lower levels of personal discouragement, improved anger management and an increased sense of belonging. For men with substance abuse concerns, over 70% of them indicated a reduction in varied substance use behaviors or relapse to past behaviors since the inception of the program. Program participants also reported improvements in employment circumstances, interactions with law enforcement, and feelings about their heritage. Importantly, 92% of the men indicated that their feelings about being a father improved, with more than 80% noting increased father involvement and support of their children. Also, they reported improvements in the quality of relationship with the child's mother. Finally, the men surveyed also rated the Fatherhood is Sacred program as most useful among a variety of sources for individual guidance on parenting, and also rated it highest among 11 other organizational support sources for being useful to them in their parenting and support (White and Brotherson, 2005).

While more extensive and careful research is needed to better understand the Fatherhood is Sacred program, the initial findings from evaluative research efforts and investigations of programs with best practices suggest that the program has much promise for application and adaptation to other settings (White and Brotherson, 2005; Goodrow, 2015; Wilson et al., 2022).

4 Practical implications—best practice applications for Afro-Caribbean populations

The interesting question arising from this review is whether other populations beset by the vestiges of intergenerational and modern-day trauma, like some Afro-Caribbean families and communities, can benefit from this program or its related best practices. When considering the adaptation of fatherhood programs to the Afro-Caribbean context, there are several factors to bear in mind. Programs should be culturally and contextually relevant; address masculinity norms; utilize a strengths-based approach to fatherhood programming; allow for community engagement and collaboration; be holistic in their approach; adopt an intergenerational focus; and importantly, incorporate robust evaluation and impact measurement. For Afro-Caribbean men and families, there are a variety of obstacles to navigate and diverse family settings to consider when exploring opportunities for responsible fathering (Anderson and Daley, 2015). There is a substantive history of fatherhood programs supporting Black American fathers, and also some efforts for men in the Afro-Caribbean contexts (though these tend to be much more limited) (Lu et al., 2010; Karberg et al., 2017). Such programs in the Caribbean context include: Fatherhood Initiative by Rising Ground, which is a 3-month Program implemented in the Bronx, New York; Fathers Incorporated, which is Jamaican initiative that sought to promote positive fatherhood involvement in the 1990s but has since sought to focus on supporting disadvantaged children; the newly established Caribbean Fatherhood Coalition by Deeds Driven Dads in the Eastern Caribbean; and the "Affirming Fatherhood" Webinar Series organized by the Caribbean Male Action Network (CARIMAN) and Parenting Partners Caribbean (PPC).

One of the challenges with fatherhood related programs in the Caribbean and those implemented in Diaspora communities in the United States is that robust impact and evaluation measurement data is not readily available for most efforts (Karberg et al., 2017). Also, many of these programs are built on a deficits-based narrative and do not incorporate elements that resonate with the cultural traditions, values, and family structures prevalent in the Afro-Caribbean communities. While not a monolithic view, there is also a tendency among Afro Caribbean people, to feel greater cultural affinity and closeness to Africa compared to African Americans, who experienced more dilution of African roots over centuries in the U.S. (Thornton et al., 2017). This increases the challenge associated with adapting programs to an Afro-Caribbean context that were designed and implemented in the U.S. that target African Americans.

By and large, the Fatherhood is Sacred Program appears to be an example of a community-based program that fits with the key factors to consider already mentioned, with the final concern being that of cross-cultural adaptation. In the development field, there are multiple examples of evidence-based fatherhood and parenting programs that were developed in one cultural context and have been systematically adapted and implemented successfully in other cultural contexts. Accounting for differences in values, traditions, language, and barriers is fundamental. Examples of such programs include: the Healthy Dads, Healthy Kids (HDHK) Program, which was originally developed in Australia, and was culturally adapted as "Papás Saludables, Niños Saludables" for Hispanic families in the U.S.; the ParentCorps Program, which is an evidence-based parenting intervention originally designed for African American and Hispanic/Latino families living in low-income communities, which was culturally adapted for engagement with a wider cross-section of people; and Incredible Years Parenting Program, which was developed in the U.S., but has since been transported and culturally adapted for use in countries like Sweden, Norway, Netherlands, Portugal, and others (Booth and Lazear, 2015; Leijten et al., 2015; O'Connor et al., 2020).

Studies addressing cross-cultural adaptation with interventions to further culturally competent practice have pointed to the challenges, as well as the opportunities, related to cultural adaptation of behavioral interventions. Since culture occurs at multiple levels and is also fluid and ever-changing, the process of cultural adaptation becomes particularly complex and dynamic (Marsiglia and Booth, 2015). A culturally grounded approach can only be effective when it is centered around the lived experiences of the participants without compromising the effectiveness of the program. Both the models posited by the Southwest Interdisciplinary Research Center (SIRC) and the Centers for Disease Prevention and Control (CDC) postulate that adaptation in cross-cultural contexts is possible and can be effective (Marsiglia and Booth, 2015). As an example, in looking at cross-cultural similarities and differences in parenting, Lansford (2022) notes that sometimes entirely

new programs are developed within a particular cultural context, but that it is more common that a program developed in one context is adapted for use in another context or population. Further, cultural adaptation of a program is deemed as necessary when seeking to apply it in a different setting, which fits squarely with the general premise of this paper.

While an in-depth discussion of this possibility is beyond the scope of this paper, it does suggest two important considerations for applying best practices from the Fatherhood is Sacred program in a Caribbean context. First, since the Fatherhood is Sacred program draws upon and reinforces cultural background and identity for Native populations in its application (Goodrow, 2015), any effort to implement the program in an Afro-Caribbean setting ought to review and incorporate relevant cultural background and identity factors for Caribbean families into the program like the tradition of storytelling, the vibrant music and other cultural factors. Second, usage of a cultural adaptation model (such as those outlined by SIRC or the CDC) to facilitate adjustment of program elements as needed to fit within an Afro-Caribbean context would be necessary and advance the program's cultural relevance.

Another best practice lesson from the Fatherhood is Sacred program that also fits within an Afro-Caribbean context is the importance of acknowledging historical and intergenerational trauma with a focus on healing from such traumas and moving forward (Wilson et al., 2022). A key lesson learned from the Native American experience is that context matters. Native American and Afro-Caribbean populations share some similarities in historical experience. Both communities have experienced traumatic events that are pervasive and persistent, creating high levels of collective distress that have been passed through generations. For both populations, the resultant effects are evidenced in the displacement and damage caused to family systems, which provide the foundation of any society. Continuing patterns of absentee fatherhood and low father involvement have placed youths in these communities at risk for maladaptive behaviors.

The Fatherhood is Sacred program was developed to directly address the adverse effects of the abusive and culturally insensitive programs and policies directed at Native American peoples (Montgomery, 2015). It is important to treat intergenerational trauma, as with any trauma, directly, through identifying its effects on personal attitudes and family patterns, thereby facilitating parental awareness of lifespan implications and the collective effects of lost identity that can span generations (Wilson et al., 2022). In an Afro-Caribbean context, necessary adaptations would include an awareness of the legacies of enslavement, migration, racism and other policies that dramatically impacted today's Caribbean populations (Morgan, 2016).

The Fatherhood is Sacred program and its expansion indicates that the development of a strong cultural model can be a critical ingredient to success. The program is grounded in traditional Native American values – this is a key factor in its primary appeal (Goodrow, 2015). In reviewing strategies for effective intervention approaches with Native populations, Wilson et al. (2022) emphasize the need to "include content that highlights and respects the cultures, heritages, beliefs, traditions, and histories of AIAN peoples" (p. 5). Restoring culture and identity as a Native American is one foundational principle of the program that in many ways accounts for its resonance and success among Native American populations (Montgomery, 2015; Sarche et al., 2020). Including the heritage and beliefs of Native American peoples through this program has provided fathers with a sense of identity (White and Brotherson, 2005).

Would it be possible to replace that particular program element of the cultural connections for Native Americans with that of Afro-Caribbean peoples? The culture of Afro-Caribbean people is a melting pot of varied and distant African traditions that were mixed with the European practices of slave masters, and more recently adapted based on the acculturation influences from North America (Bush, 2010). It would be likely impossible to identify in its purest form anything like the *Woope Sakowin* (Seven Laws), which are universal virtues of the Lakota Indian people and the foundation of Lakota culture (Brave Heart, 1999). In a study undertaken by Thornton et al. (2017), it was found that Black Caribbean people feel significantly closer to Black people in Africa than do African Americans. This cultural affinity may create an opportunity to superimpose some elements of African culture into this program. In the Caribbean, it is also possible to identify a unique set of Afro-Caribbean values—values that are rooted in a shared history of the people. Such values would include respect, especially for adults; non-entitlement; hard work; a drive to succeed; strong religious beliefs; and the acceptance of the extended family as a support system (Archibald, 2011). These are values upon which programs like the Fatherhood is Sacred program that encourage father involvement could be adapted to an Afro-Caribbean context. Archibald (2011) suggests that such "cultural tailoring" promotes program effectiveness, citing examples that this approach improves motivation to participate "when such interventions are culturally relevant and respectful of their culture" and also promotes "a sense of empowerment among parents" (p. 115).

Another best practice included in the Fatherhood is Sacred program includes incorporating a holistic, positive and strengths-focused perspective of fathers in families and communities. As noted by Montgomery (2015), the program explicitly seeks to engage men in understanding their roles are important, their leadership is needed, and they can bring solutions to families and communities. In doing so, the program fits well with the framework of generative fathering and the lifelong development of fathers. Hawkins and Dollahite (1997) note that scholars and practitioners, in evaluating models of fatherhood, typically focus attention on the deficiencies of fathers using a deficit-driven paradigm. As a result, such efforts are likely to find and focus on inadequate role performance by fathers. Cases of absentee fathers or fathers who fail to support families economically and emotionally are identified as being prevalent in the Afro-Caribbean culture (Boyne, 2005; Roopnarine, 2013; Jemison, 2015). In contrast, the generative fatherhood model incorporated in the Fatherhood is Sacred program focuses on seeing men as being willing and able to execute the work of responsible, healthy, and involved fathering, though often constrained by the context in which they must operate (including historic and contemporary traumatic events) (Hawkins and Dollahite, 1997).

An additional best practice that emerges from the Fatherhood is Sacred program is its intentional focus on the value and importance of fathers for child and family well-being as a priority versus other topics (Wilson et al., 2022). While other elements are included in the program, this focus on men and their sacred roles as fathers and their contributions to children is highly emphasized (Goodrow, 2015). This emphasis aligns well with a key practice identified in Wilson et al.'s (2022) review of programming for Native populations, which notes that "fathers primarily participate in fatherhood programming in hopes of promoting the best possible outcomes for their children" (p. 6). The Fatherhood is Sacred program seeks to restore confidence in fathers' role and contributions that has been lost or diminished, and heralds the

accomplishments of Native American men, the *Akicitas* (in Lakota culture), who were also caregivers (Montgomery, 2015). Daly (1996) presents research findings that illustrate that most fathers have strong feelings for their children, believe that their families are more important than their work and want to spend more time with and caring for their children. In Afro-Caribbean family systems where the efforts of mothers are often most emphasized, adopting such an intentional focus on fathering would likely be important to appeal to men and their interests.

Yet another best practice in the Fatherhood is Sacred program that has relevance includes its explicit focus on identifying and cultivating men's potential and their strengths in family life. Too often, populations that have experienced trauma become characterized primarily by narratives of loss, dysfunction or difficulty. However, Wilson et al. (2022) note, "Experts and previous research support the idea of using strengths-based practices and incorporating traditional AIAN values like reciprocity, respect, kindness, and fairness" (p. 6). While there have been few dedicated studies in recent years on the issue of fathering in the Afro-Caribbean community, the existing work has focused attention on the deficit-driven model of fatherhood, drawing attention almost solely to the prevalence of fatherlessness in the region and the adverse impact this has had on developmental outcomes for children and society (Roopnarine, 2013; Jemison, 2015). Few studies have approached the challenge from a different angle, a strengths-based approach, that evaluates the willingness and capacity of Afro-Caribbean fathers to be involved parents and coparents, while also highlighting the historical, cultural, and social factors that may discourage men in their family efforts.

5 Conclusion

In summary therefore, the specific aspects of the Fatherhood is Sacred program that could potentially be adapted to make it more culturally relevant for Afro-Caribbean communities could include the incorporation of Afro-Caribbean cultural teachings, practices and activities; addressing the unique historical experiences and contemporary challenges facing Afro-Caribbean fathers and families, such as the traumatic legacies of slavery, migration and racism; engaging Afro-Caribbean community leaders, and fathers, with a view to identifying cultural mismatches and tailoring program content, metaphors, and delivery methods appropriately; and finally, the examination of family and gender norms to enhance relevance, while considering urban/rural and island contexts.

We would suggest that these and other best practices provide a direction for adapting a program like Fatherhood is Sacred for use in Afro-Caribbean contexts. To strengthen the contributions of men in Caribbean families and communities, light needs to be focused on examples of generative fatherhood in this society, notwithstanding the challenges, with a view to increasing understanding of how such behavior can be supported and replicated. Built on the foundation of empowering men to see themselves as good fathers and move toward that vision, the Fatherhood is Sacred program teaches men how to support the next generation of fathers and views this forward-looking strategy as being integral to the future growth and development of children. The Afro-Caribbean community can, without a doubt, benefit from this visioning exercise and the possibility of similar approaches. Naturally, when contemplating the use of instruments to measure concepts across different groups, consideration must be given to concepts of configural invariance, metric invariance, and scalar equivalence.

There are still many unanswered questions about the effects of intergenerational trauma on family systems and coparenting. Continued research on Native American families and communities is providing much needed answers to some of these questions. These answers can benefit other communities affected by historical trauma, such as Afro-Caribbean populations. Culturally informed approaches to treat family and community effects of such trauma need to be identified and promoted. We suggest there are meaningful possibilities to adapt interventions like the Fatherhood is Sacred program and utilize its best practices to address the needs of populations experiencing similar coparenting and familial challenges, such as the Afro-Caribbean community. In doing so, we can respond in a meaningful way to those whose cry for help spans generations.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by Institutional Review Board, North Dakota State University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

SH: Conceptualization, Writing – original draft. SB: Conceptualization, Supervision, Validation, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Dyadic associations between marital satisfaction and coparenting quality: gender differences and the moderating role of caregiving identity

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Our study investigated the contribution of caregiving identity in the association between marital satisfaction and coparenting quality in fathers and mothers from a sample of opposite-sex couples of young children living in different areas of the United States. We conducted nested Actor-Partner Interdependence Models and moderation tests to examine potential differences between fathers and mothers in associations between marital satisfaction and coparenting quality, as well as the role of caregiving identity in the association. Results confirmed gender differences in the association between marital satisfaction and coparenting. Both mother's and father's caregiving identity interacted with their own marital satisfaction, but these interactions only impacted the coparenting quality reported by mothers. Additionally, caregiving identity in fathers and mothers was associated with the coparenting quality reported by their spouses. Our study highlighted the important role of caregiving identity in understanding the relation between marital satisfaction and coparenting quality in the intrafamilial processes of couples with young children.

KEYWORDS

coparenting, marital satisfaction, mothers, fathers, caregiving identity

Introduction

The degree to which individuals can effectively coparent together primarily depends on the couple relationship, according to the Ecological Model of Coparenting (Feinberg, 2003). Coparenting quality describes how parents support each other in their role as parents and is a component, but distinct from the overall couple relationship (Feinberg, 2003). However, marital satisfaction (i.e., satisfaction with the marital couple relationship) impacts coparenting quality (Feinberg, 2003). Recent meta-analytic evidence revealed that parent gender moderates the association between marital satisfaction and coparenting quality (Ronaghan et al., 2024), with slightly larger associations for mothers ($r = 0.48$) compared to fathers ($r = 0.42$), revealing potentially different couple-coparenting processes for women and men, and these gender differences are not articulated in predominating theory about coparenting processes. These results also call into question some predominating frameworks for understanding fathers as coparents. According to the Father Vulnerability hypothesis, fathers' coparenting is supposedly more vulnerable to marital discord than mothers' because of their relatively weaker socialization into caregiving and fathering compared to women's lifetime socialization into

mothering and caregiving roles (Cummings and Davies, 2010). A critical argument in this hypothesis is that a strong caregiving identity (i.e., importance of engaging in caregiving in their role as a parent, Maurer et al., 2001) buffers their parenting from problems in the couple relationship, and the reason for father vulnerability is because men have not been adequately socialized into caregiving roles (Cummings and Davies, 2010).

Maternal gatekeeping, or the deliberate exclusion of fathers from caregiving, offers another explanation for gendered differences in couple-coparenting processes, particularly among women who view caregiving as critical to their own parenting identities (Allen and Hawkins, 1999). However, cultural movement toward involved fathering in the U.S. and more gender egalitarian countries in Europe have included heightened expectations for more overlap between mothers and fathers' responsibilities as parents (Fagan et al., 2014; Schoppe-Sullivan and Fagan, 2020; Volling and Palkovitz, 2021). These expectations include fathers actively engaging in caregiving for their children (e.g., feeding, dressing, and coordinating children's schedules). Fathers as active coparents is part of a gender role shift in families (Volling and Palkovitz, 2021; Campbell, 2023). While egalitarian gender role beliefs appear to improve coparenting quality (Kuo et al., 2017; Campbell, 2023), we surmise that these effects are not driven by all facets of gender role beliefs, which encompass perceived appropriate conduct in multiple domains such as sex, emotionality, and typical activities based on gender. Indeed, the concept of caring masculinities also allows for simultaneous inclusion of traditional gender role beliefs such as men's responsibility for protection and provision along with centering caregiving (Elliott, 2016). Thus, if caregiving is no longer specifically tied to gender roles for women and men, then the relative impact of caregiving identity on coparenting should be consistent across fathers and mothers. Whereas previous research that has found gender differences in couple-coparenting processes and hypothesized differences in mothers' and fathers' parenting identities as a potential mechanism for gender differences (Le et al., 2016; Peltz et al., 2018), we are directly testing the proposed underlying processes that contribute to gender differences within father vulnerability (fathers have weak caregiving identities) and maternal gatekeeping (mothers have strong caregiving identities) by incorporating caregiving identity as a moderator. Our primary aim in the present study was to investigate the unique contributions of marital satisfaction, parents' caregiving identity, and the interaction between marital satisfaction and caregiving identity to coparenting quality in the parent dyad. Our secondary aim was to evaluate gender differences. Aligning with recent meta-analytic evidence (Ronaghan et al., 2024), we hypothesized marital satisfaction would predict coparenting quality, with stronger effect sizes for mothers compared to fathers. We also hypothesized that stronger caregiving identity would be related to better coparenting quality, regardless of parents' gender. Finally, we hypothesized that caregiving identity would mitigate associations between marital satisfaction and coparenting quality.

Materials and methods

Data came from a multi-phase online study which was designed to study parenting stress in couples of young children (Kuo and Johnson, 2021; Johnson et al., 2023; Kuo et al., 2023) and received ethical approval from University of Notre Dame's Institutional Review Board. The criteria of eligibility for participation included that parents were living in the U.S., aged 18 years or older, cohabitating with opposite-sex partners, and parenting at least one child aged 6 years or younger. Potential participants and their spouses needed to be enrolled together. Each parent was expected to complete all measures independently from their partners. The study included baseline surveys and subsequent daily diaries on mood, stressors, and familial emotional climate. A rigorous screening was conducted to prevent fraudulent and bot responses. Interested parents were first required to fill out a contact information form on a separate website from the Qualtrics survey. After the consent, participants were asked for provision of contact to their partner or spouse, who were reached directly by the first author and asked to complete the same screening questionnaire and consent form. Matching information was required for each pair of parents to proceed to enrollment. Each participant was compensated with a $5 gift card for completing the 20-min baseline survey, a $1 gift card per 5-min diary survey up to 10 days, and eligibility to a drawing for a $100 gift card for couples with full survey completion. The current study analysis included baseline data only. Two hundred and two parents (101 couples) were enrolled in the project, and 198 parents (99 couples) completed the full baseline survey.

Most participants (89.7%) were married, and the couples averaged 9.89 ($SD = 4.87$) years in relationship. The children in the study included 114 boys and 110 girls, who were 3.22 ($SD = 2.33$) years old on average. Couples had one to seven ($M = 2.24$, $SD = 1.31$) children in the family. Most mothers (98.0%) and all fathers lived with at least one biological child. Both mothers and fathers were highly educated with 76.0% of mothers and 70.4% of fathers holding at least a bachelor's degree. There was a high racial composition of White parents (87.1% of mothers; 89.1% of fathers), followed by Black/African-American (seven mothers; three fathers), Asian (three mothers; four fathers), and others racial group (two mothers; one father). Five mothers and two fathers identified themselves as Hispanic. Fathers and mothers differed in working status and role status. There were 84.7% of fathers but 36.4% of mothers working full-time, more mothers (15.2%) worked part time than fathers (4.1%), and 43.4% of mothers but only 3.1% of fathers reported to be "homemakers." Household income ranged from $20,000 to $120,000 and up, with the median income range of $70,000– $79,000. Participants were living in all areas of the U.S., including the Midwest (65.0%), the South (16.0%), the Northeast (13.0%), and the West (6.0%).

Coparenting quality was assessed with the Parental Alliance Measure (Abidin and Brunner, 1995; Abidin and Konold, 1999). This measure includes 20 items to assess parents' perception of teamwork with parenting partners. Each item (e.g., "*My child's other parent believes I am a good parent*") was responded to on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*), regarding responders' agreement with the item statement. A mean score was calculated for each individual based on 20 items, with higher scores indicating higher levels of coparenting quality. The internal consistency of the measure was good for mothers ($\alpha = 0.95$) and fathers ($\alpha = 0.92$).

Marital satisfaction was measured by the well-validated Kansas Marital Satisfaction Scale (Schumm et al., 1986). This measure consists of three items on people's satisfaction with spouses, marriage, and marital relationship. Participants responded to each item (e.g., *How*

satisfied are you with your marriage?") using a 7-point Likert scale (1 = *not at all* to 7 = *extremely*). Item scores were averaged to indicate participants' marital satisfaction levels, with higher scores represent higher satisfaction levels. The measure exhibited good internal consistency in the current study (mothers' $\alpha = 0.97$ and fathers' $\alpha = 0.95$).

Caregiving identity was assessed by the Caregiving Identity subscale of the Caregiving and Breadwinning Identity and Reflected-Appraisal Inventory (Maurer et al., 2001). This subscale included 14 items asking about parents' commitment as a child caregiver. Parents rated their agreement with each item, (e.g., *I should be committed to actively meeting my child's physical needs*) from 1 = *strongly disagree* to 5 = *strongly agree*. Mean scores of the 14 items were used to indicate caregiving identity levels (mothers' $\alpha = 0.65$ and fathers' $\alpha = 0.73$), with a higher score representing a stronger caregiving identity. Previous studies reported the Cronbach's alpha of the subscale to be 0.74 in fathers (Nguyen, 2018) and similar values in combined samples of mothers and fathers [0.75 in Maurer et al. (2001) and 0.74 in Maurer and Pleck (2006)].

Results

Preliminary analyses

See Table 1 for descriptive statistics and correlations of all main study variables. We examined potential covariates among several parent and child demographic variables for mother and father variables on coparenting quality. Pearson's correlation tests were conducted for continuous, potential covariates, including parents' age, education, family income, years of cohabitation, and number of children in the family. None of these were significantly correlated with the outcome variables (i.e., father coparenting or mother coparenting; *p*s ranged from 0.18 to 0.85). ANOVA was conducted for categorical variables including ethnicity and residential region. Results indicated non-significant differences in coparenting across ethnicity (*p*s ranged from 0.53 to 0.80) or residential region (*p*s ranged from 0.58 to 0.76). *T*-tests were used for binary variables, mothers' and fathers' work status (full time vs. not full time), and no significant results were found (*p*s ranged from 0.30 to 0.71). Overall, none of the potential covariates significantly related to coparenting quality in our sample. In addition, we examined the missing value patterns of our data and conducted the Little's missing completely at random (MCAR) tests (Little, 1988; Koptur, 2022). Results suggested that our data is MCAR. Therefore, none of these potential covariates or missingness were controlled for in the following analyses.

Using *Mplus* 8.8 Muthén and Muthén (1998-2022), we conducted a pair of nested path models to test the standard equal variance assumption in Actor-Partner Interdependence Models (APIM; Gonzalez and Griffin, 2012) for our APIM Moderation Model (APIMoM; Garcia et al., 2015). Specifically, variances were constrained to be equal of each independent and dependent variable across spouses, and then released for free estimation to test this assumption. Considering the nonnormality of some study variables, we used maximum likelihood estimation with robust standard errors (MLR in *Mplus*). The Chi-Square Difference test (Satorra and Bentler, 2010; Bryant and Satorra, 2012) was calculated using formulas suggested by Asparouhov and Muthén (2010). The difference test was non-significant, meaning that our model met the equal variance assumption in APIMs and that the equality constraints on the variances should be retained for hypothesis testing (Gonzalez and Griffin, 2012).

Hypothesis testing

Our study aims were to (1) investigate the unique contributions of marital satisfaction and parents' caregiving identity to coparenting quality, and the moderating role of caregiving identity on associations between marital satisfaction and coparenting quality; and (2) to evaluate gender differences in these processes. Testing for potential gender differences requires conducting a series of nested APIM models and statistically comparing models that impose equality constraints on paths between mothers and fathers (hypothesis: gender equivalence), and a model that does not have equality constraints between mothers and fathers (hypothesis: gender difference). Our base model was the total gender difference model. It included (1) actor and partner paths from marital satisfaction and caregiving identity to coparenting quality and (2) interaction terms between each parent's own marital satisfaction and their own caregiving identity on their reported coparenting quality and their partner's reported coparenting quality. There were no equality constraints imposed and our base model showed excellent fit, $\chi^2(11) = 9.08$, $p = 0.62$, RMSEA = 0.00, CFI = 1.00.

TABLE 1 Descriptive statistics and correlations among the study variables.

	1	2	3	4	5	6
1. Mother's marital satisfaction						
2. Father's marital satisfaction	0.35***					
3. Mother's caregiving identity	0.09	−0.03				
4. Father's caregiving identity	0.15	−0.002	−0.35***			
5. Mother–reported coparenting quality	0.61***	0.37***	−0.08	0.32***		
6. Father–reported coparenting quality	0.35***	0.40***	0.10	0.18	0.57***	
M	6.06	6.12	4.08	3.57	4.37	4.32
SD	1.14	1.15	0.38	0.42	0.57	0.48

***$p < 0.001$.

The marital satisfaction and caregiving identity gender equivalence model was used to test the alternative hypothesis that there were no gender differences in caregiving identity-coparenting paths and marital satisfaction-coparenting paths for both mothers and fathers. Equality constraints were placed on each of the marital and the caregiving identity paths predicting coparenting quality (i.e., mother actor path = father actor path; mother partner path = father partner path). No equality constraints were placed on the interaction paths. We compared the marital satisfaction and caregiving identity gender equivalence model [$\chi^2(15) = 20.47$, $p = 0.15$, RMSEA = 0.06, CFI = 0.95] with the total gender difference model. The Satorra-Bentler Scaled Chi-Square difference test revealed significant differences in model fit [$\Delta\chi^2(4) = 21.39$, $p < 0.001$], meaning that the total gender difference model fit the data better than the marital satisfaction and caregiving identity gender equivalence model.

To attempt to isolate the patterns of gender differences, we then compared our total gender difference model to a model that tested gender equivalences in the patterns of associations for marital satisfaction and coparenting by releasing equality constraints on the caregiving identity paths but keeping the constraints on the marital satisfaction paths. The total gender difference model fit better than the gender equivalence in marital satisfaction model [$\Delta\chi^2(2) = 41.01$, $p < 0.001$], evincing that gender differences existed for associations between marital satisfaction and coparenting. However, results suggested that there was no statistically significant difference between the total gender difference model and the gender equivalence in caregiving identity model [$\Delta\chi^2(2) = 3.70$, $p = 0.16$]. This means that there are no gender differences in the caregiving identity-coparenting paths between mothers and fathers.

In summary, our nested model comparisons indicated that while there were gendered patterns for marital satisfaction and coparenting, the effect sizes predicting coparenting from caregiving identity were statistically nonsignificant between mothers and fathers. Recommended procedures for model selection for results interpretation among nested models is to choose the more parsimonious model if there is no significant chi-square difference in model fit between models (Gonzalez and Griffin, 2012). As a result, we chose the caregiving identity gender equivalence model for final interpretation.

Table 2, Figure 1 shows the estimates for our final model. In this model, caregiving identity exerted significant partner effects (e.g., fathers' caregiving identity significantly predicted mother-reported coparenting quality), but no significant actor effects. Marital satisfaction exerted significant actor (e.g., mother's marital satisfaction predicting her own reports of coparenting quality) and partner paths. Mothers' reported coparenting quality was also significantly predicted by two interactions that affected the coparenting quality reported by mothers: one between mother's marital satisfaction and caregiving identity; the other between father's marital satisfaction and caregiving identity. *Post hoc* simple slopes tests of these interactions revealed significant, positive slopes for mothers' caregiving identity and marital satisfaction (See Figure 2). Across all levels of mothers' caregiving identity, as marital satisfaction increased, mothers' reported

TABLE 2 Coefficients in the final APIMoM, with imposed equality constraints on caregiving identity paths only ($N = 94$).

Regression coefficients	*b*	*S.E.*	95% CI	*β*
Mother-reported coparenting quality				
Intercept	4.34***	0.04	[4.27, 4.42]	7.11
Actor paths				
Mother marital satisfaction	0.31***	0.05	[0.21, 0.40]	0.57
Mother caregiving identity	0.08	0.08	[−0.08, 0.24]	0.05
Mother marital satisfaction × mother caregiving identity	0.36**	0.11	[0.15, 0.57]	0.27
Partner paths				
Father marital satisfaction	0.10**	0.04	[0.03, 0.17]	0.18
Father caregiving identity	0.25**	0.08	[0.09, 0.41]	0.16
Father marital satisfaction × father caregiving identity	−0.26**	0.08	[−0.42, −0.10]	−0.18
Father-reported coparenting quality				
Intercept	4.33***	0.04	[4.24, 4.41]	9.25
Actor paths				
Father marital satisfaction	0.15***	0.04	[0.07, 0.22]	0.35
Father caregiving identity	0.08	0.08	[−0.08, 0.24]	0.07
Father marital satisfaction × father caregiving identity	−0.17	0.10	[−0.37, 0.04]	−0.15
Partner paths				
Mother marital satisfaction	0.08*	0.04	[0.01, 0.16]	0.20
Mother caregiving identity	0.25**	0.08	[0.09, 0.41]	0.21
Mother marital satisfaction × mother caregiving identity	0.02	0.10	[−0.19, 0.22]	0.02

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

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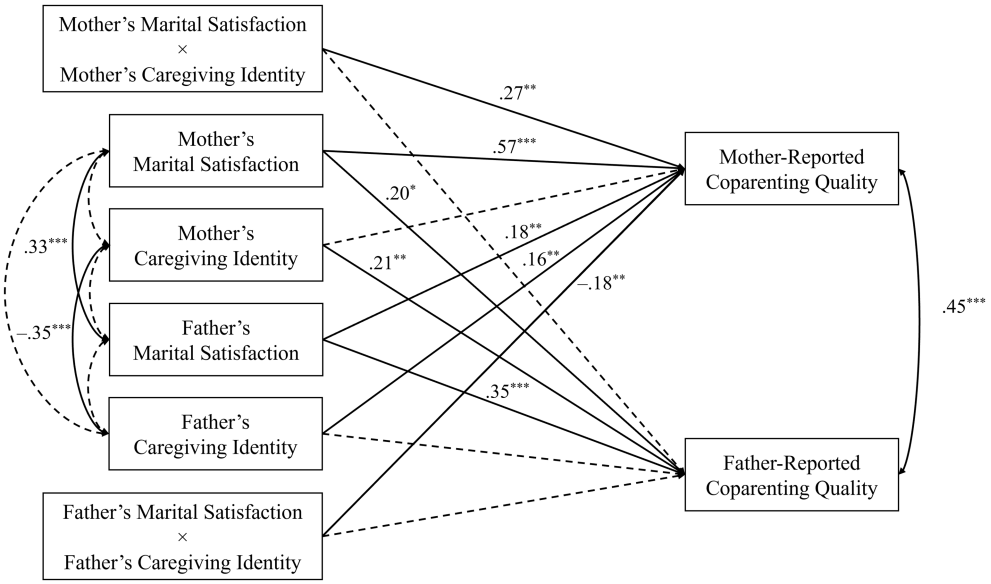

FIGURE 1
Standardized coefficients in final APIMoM ($N = 94$). *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. Statistically significant paths are shown in solid lines and non-significant paths are shown in dashed lines.

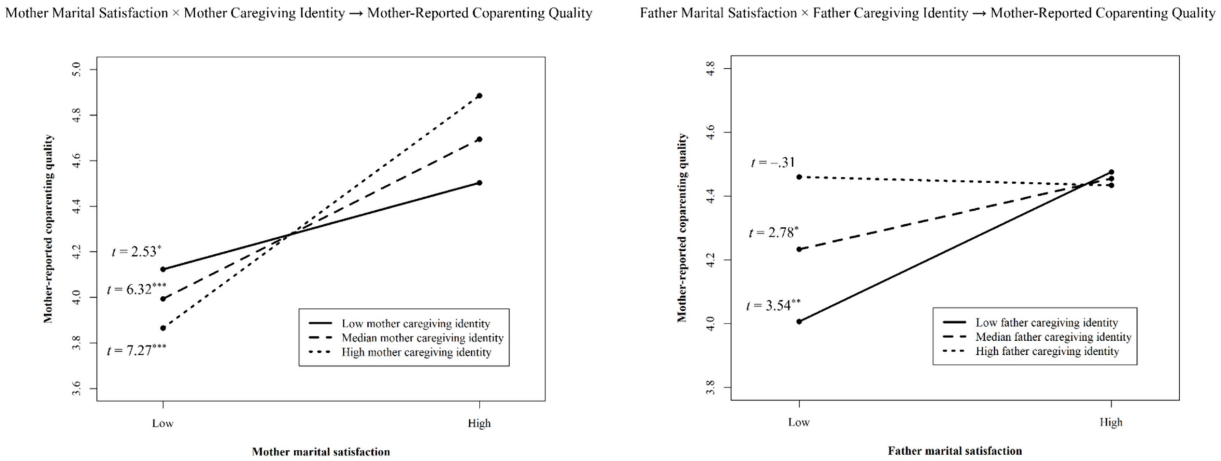

FIGURE 2
Interaction effects. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

coparenting quality also increased, but the slopes were steeper for mothers with higher caregiving identities. The same was not true for fathers' caregiving identity. Mothers partnered with fathers who had low or median caregiving identity reported higher coparenting quality as his marital satisfaction increased. Mothers partnered with high caregiving identity fathers reported greater coparenting quality, regardless of fathers' own marital satisfaction. There were no significant interactions predicting fathers' coparenting quality.

Discussion

Our results about marital satisfaction and coparenting quality mirrored findings from a recent meta-analysis that showed positive associations between marital satisfaction and coparenting quality (Ronaghan et al., 2024). Here, we found the expected positive associations in both actor (one person's marital satisfaction predicting their own reported coparenting quality) and partner effects (one person's marital satisfaction predicting their spouse's reported coparenting quality). Whereas the meta-analysis used to compare gender differences in samples including only mothers and only fathers showed that there were larger effects of marital satisfaction on coparenting quality for mothers than fathers (Ronaghan et al., 2024), our study is showing significant gender differences in these associations even *within* families. Thus, there are likely some gendered processes that are occurring in the marital and coparenting subsystems – but not that of father vulnerability, which was previously proposed (Cummings and Davies, 2010). Instead, mothers' reported coparenting

quality appeared to be more strongly related to marital satisfaction than for fathers.

Findings from the study suggested that caregiving identity impacted mothers' perceptions of the coparenting relationship in more nuanced ways than for fathers. Although mother's and father's reported coparenting quality were both predicted by spouse caregiving identity, mother-reported coparenting quality was also affected by interactions of caregiving identity and marital satisfaction in themselves and their partners. However, these interaction effects were not significant for fathers' reported coparenting quality. Park et al. (2010) argued that despite trends toward increasingly egalitarian division of labor between women and men in parenting roles, stereotyped experiences persisted regarding parental identity and parenting experiences, and there continued to be stronger implicit effects of parental identities in women than men (Park et al., 2010; Hodges and Park, 2013). Our findings seemed to align with this argument that mothers were more susceptible to the influences of their own and their partners' caregiving identity.

Several researchers have also proposed that the gendered process arises from differences in caregiving responsibilities and the relative importance of caregiving identities for mothers, compared to fathers (Cummings and Davies, 2010; Le et al., 2016; Ronaghan et al., 2024). Contrasting theorists claimed that as fathers and mothers' roles become more similar over time (Fagan et al., 2014), gendered differences seen in studying parenting may cease to exist. Our paper's key novel contribution was to examine the role of caregiving identity on coparenting quality and whether caregiving identity could moderate associations between marital satisfaction and coparenting quality. Here, we found that both mothers and fathers reported a higher quality coparenting relationship when their *partners* held stronger caregiving identities. This means that when a parent feels a personal responsibility toward caregiving, the other parent is likely to see their partners as a supportive coparent, regardless of gender (Figure 1, Table 2).

Caregiving identity also moderated associations between marital satisfaction and coparenting quality, but for mothers' reported coparenting quality only. Although all mothers reported lower quality coparenting relationships when they were also in unsatisfactory marriages, our cross-over interaction results revealed that the marital and coparenting subsystems appeared to be more tightly connected for mothers with stronger caregiving identities. This link was attenuated (i.e., slope was flatter) among mothers with lower caregiving identities. Previous work has also found longitudinal associations from coparenting at a previous point predicting mothers' marital satisfaction, but not fathers, hinting that coparenting quality may actually be driving mothers' marital satisfaction (Le et al., 2016; Peltz et al., 2018), rather than the reverse. Predominating theories on the ecology of coparenting do not assume gender differences (Feinberg, 2003), but evolutionary biosocial theories do. According to parental investment theory (Trivers, 1972), due to biologically-based differences in reproduction between males and females, women have evolved to select men that would be more invested in resource provision and care. In modern day terms, this means a better coparent. If we assume that coparenting quality is the basis of marital satisfaction for women, women with stronger caregiving identities may need additional support from their spouses in their role as a parent to feel satisfied with their marriages overall.

Father's caregiving identity also moderated the partner effect of father's marital satisfaction on mother's reported coparenting quality. We found fathers' marital satisfaction was no longer associated with mothers' reported coparenting quality (i.e., nonsignificant slope) when fathers reported having a high caregiving identity. These results show that fathers' caregiving identity can buffer potential negative impacts of an unsatisfactory marriage on the coparenting relationship. We contend that fathers with stronger caregiving identities are more likely to actively be supportive coparents.

Our study has several limitations to consider, including constraints on generality, based on sample characteristics (e.g., all parents in opposite-sex relationships; majority white, highly educated). We also note that a slightly substandard alpha for the caregiving identity measure for mothers. Using a significance level of 0.05 and to achieve a power level of 0.80 for analyses, a sample size of 108 is required (Cohen, 1988). However, our current sample size is 94 participants, which might lead to type II error.

While our findings shed light on gendered processes in coparenting quality, if parental roles between mothers and fathers are becoming more similar in some families, we wonder why there are still overall gender differences in the magnitude of associations between marital satisfaction and coparenting. Perhaps a strong identification with gendered roles (i.e., mothers as primary caregivers) leads women to place greater importance on parenting and coparenting as factors contributing to marital satisfaction. As trends toward intensive parenting increase (Cha and Park, 2021), we contend that both mothers' and fathers' caregiving identities will become more critical to marital and coparenting family processes. Family professionals can invite couples to engage in conversations about their own roles as parents, and what each person needs from their partner to feel supported in their parental role as a way to strengthen the overall couple relationship.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the University of Notre Dame Institutional Review Board. The study were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

PK: Conceptualization, Data curation, Formal analysis, Funding acquisition, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing. WX: Formal analysis, Writing – original draft, Writing – review & editing. ZY: Formal analysis, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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A method and approach for evaluating coparenting events during couples group interventions

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Introduction: When interventionists stimulate productive father-mother dialogues around coparenting, there are numerous potential benefits for families. Families stand to benefit from more positive involvement of fathers with both coparents and children, key contributors to healthy child developmental outcomes. In this report, we introduce a new strategy and rating system for helping practitioners and supervisors assess the nature and quality of coparenting-related dialogues and conversations in the context of couples group interventions.

Method: The system derives from analysis of 24 relationship-enhancement groups, 13 enrolling English-speaking couples and 11 enrolling Spanish-speaking couples, all parents of young children. All groups were co-led by a male-female team explicitly trained to focus on marital and parenting themes and supervised to address couples issues - not coparenting issues explicitly. All co-leaders spoke the native language of group participants. We documented how frequently coparenting events occurred, and how the nature and quality of events varied within and across groups.

Results: Overall, in both English- and Spanish-speaking groups expressly assembled to focus on marital and parenting issues, coparenting events occurred relatively infrequently. At the same time, both mothers and fathers appeared motivated to raise and discuss issues associated with their coparenting, and extended discussions about coparenting issues broached by the parents blossomed in approximately 37% of all instances. Process-oriented (rather than didactic) co-leader responses appeared especially helpful in scaffolding prolonged coparenting discussions.

Discussion: We propose that use of the system as a training, supervision and self-assessment tool can help clinicians become more consciously aware of how well their interventions succeed in promoting and scaffolding coparenting conversations during group interactions.

KEYWORDS

coparenting, couple and relationship education (CRE), couples groups, rating system, group dynamics

Introduction

Over the past 30 years, two complementary lines of inquiry have helped expand a once-narrow focus on mother–child relationships in the child development literature and enhanced clinical and preventive efforts benefiting families with young children. First, converging evidence from scores of observational studies of coparenting dynamics within diverse family

systems have established that children benefit when the adults responsible for their care and upbringing—their coparents (McHale et al., 2022a; McHale et al., 2022b; McHale et al., 2024; McHale and Lindahl, 2011)—work collaboratively as a supportive, coordinated team. Second, unprecedented growth of federal and state-funded programs designed to support healthy marriages and promote responsible fatherhood have given rise to evidence-based interventions for married and committed couples delivered in group settings, guided by curricula designed to strengthen couple partnerships, foster greater father involvement, or both (Halford and Bodenmann, 2013; Hawkins et al., 2008). Group interventions have a sound clinical and empirical base drawing on extensive work by prominent marital researchers (Cowan and Cowan, 1992; Gottman et al., 2010).

To date, however, unexpectedly little attention has been given to the relational dynamics within couples groups pertaining to issues relevant to coparenting. While there have been studies examining fidelity to standardized curricula, such efforts focus largely on whether elements of manualized treatments are delivered with fidelity in the ways that curriculum designers intended, rather than on the extent to which the activities of group leaders and group members elevate and sustain exploration relevant to coparenting conflict and communication *per se* (Ketring et al., 2017). This is a potentially important informational gap, given that more positive coparenting processes in families have both proximal and distal effects on children's safety, security and socioemotional adjustment (Feinberg, 2003; McHale and Lindahl, 2011).

In the literature on couples group interventions to date, there has also been comparatively less attention given to whether interventions delivered in community settings with diverse clientele have the same positive aftereffects as have been found in studies of middle-class couples seen in university and clinic settings (Hawkins, 2019). This line of work is important, underscored by Urganci et al. (2024) analysis of a large sample of couples ($N = 1{,}595$) drawn from Parents and Children Together (PACT), a Healthy Marriage and Relationship Education (HMRE) program for low-income couples. In their analysis of PACT baseline data, more than half of couples participating in community based RE programs were experiencing moderate to severe levels of relationship distress and had concerns that their relationship was in trouble. Using the approach taken in the official evaluation of the PACT program (Moore et al., 2018; Urganci et al., 2024) determined that contrary to expectations, there were no significant treatment effects for these couples. They found that more distressed couples were no better off 1 year after receiving RE than couples with similar concerns who did not receive RE. Treatment effects were limited to those couples who entered the program already in happier, more stable relationships.

These findings are not without precedent; there has been a recurring line of thought that the intensive relationship focus of many RE programs is not always the best fit for lower income couples parenting young children. Rather, fathers and mothers in such families may respond more favorably to interventions focused on their child and on their coparenting relationship (McHale et al., 2012; Pruett et al., 2017). There is emerging, albeit still limited evidence that coparenting-themed interventions hold appeal for certain lower-income families (McHale et al., 2022a,b), and that well-conceived programs enrolling lower income families and maintaining a relationship focus can yield desired longer-term benefits. Among the more prominent pioneering studies in this regard has been the Supporting Father Involvement (SFI) project (Cowan et al., 2007).

The SFI program model encourages fathers' involvement through a coparenting lens with the goal of improving the well-being of family members and strengthening relationships between parents and between parents and children. The original SFI study examined whether group interventions created to support couple relationships and father engagement could also help families at the lower end of the socioeconomic continuum as they have for the middle-class samples most often featured in the research literature. SFI evaluated the effectiveness of an intervention to facilitate the positive involvement of low-income Mexican American and European American fathers with their children, in part by strengthening the men's relationships with their children's mothers. The study was a randomized clinical trial in which participants were assigned to a 16-week couples group, a 16-week fathers group, or a single-session control group. Couples in all conditions included partners who were married, cohabiting, and living separately but raising a young child together. Published results from this work have highlighted the efficacy of the groups in promoting relationship quality and father engagement in the manner predicted (Cowan et al., 2014; Cowan et al., 2009; Kline Pruett et al., 2019).

Historically, the question of "what works?" in relationship education has been an interest of marital researchers, though a focus on coparenting within traditional couples group formats has rarely been flagged as a topic for considered exploration. Recently, a line of research spearheaded by clinical family researchers in Switzerland has taken interest in whether intentional interventions targeting coparenting in the context of couples therapy have an impact on coparenting outcomes (Darwiche et al., 2022; Nunes et al., 2022). This work is in its early stages, and has been conceived to test a particular model, but the novel intention of the work is meritorious. There would be parallel value in examining what transpires in couples and relationship education groups, currently the major means of supporting families with young children in the United States, since couples group formats do afford couples an opportunity to attend to issues related to coparenting children while they are together. Unlike the family's marital subsystem, which is dyadic in nature, coparenting relationships are by definition at least triadic in nature, pertaining to the couples relationship vis a vis one or more referent children (McHale, 2009).

On the one hand, effectively addressing important marital issues such as tolerating difference, problem-solving effectively, and resolving conflict might be expected to bear directly on issues related to the couple's work together coparenting their children, as some intervention studies have suggested (e.g., Lavner et al., 2019). Indeed, most research studies that have examined marital and coparenting systems in the family separately have verified that there is a significant relationship between functioning in these two distinct family subsystems (Christopher et al., 2015; Favez and Frascarolo, 2013; Feinberg et al., 2016; McHale, 2007). But at the same time, conflict related to children also calls into play a more complex triadic emotional system (McHale et al., 2024). Issues of competition, exclusion, jealousy and other triangular dynamics (Bowen, 1976) can make coparenting problems more challenging to discuss and resolve in a couples group setting than dyadic couples issues such as expressions of affection, handling family finances, and other core marital themes, and hence it is unclear whether such issues are given significant voice when they do come up in couples groups.

To advance the study of coparenting events within couple relationship groups, needed are strategies and tools that can help establish the extent to which such groups - convened as they are to aid couples with marital and parenting issues – actually evoke and accommodate discussions of coparenting themes. This question is a somewhat different one than the question of whether coparenting-themed groups stand as effective alternatives to couples groups. Initial evidence suggests that with middle-income couples, both types of groups can have beneficial effects (Doss et al., 2014). Rather, specific information is needed about the quality, nature and frequency of naturally occurring coparenting exchanges and events as they coalesce between practitioners and parents during the course of couple and relationship-enhancement groups serving fathers and mothers parenting young children.

Discussions of coparenting can be challenging to broker in a group setting as dissonant views between coparents can evoke concerns about uncontained conflict or high emotions. Equally, when interventionists avoid extended discussions about coparenting differences and fail to coax couple and group communication or to explore problem-solving when opportunities arise, they risk signaling to parents that such conversations are chancy and best left unexplored. Since couple and relationship enhancement interventions aspire to enhance better couple communication and problem-solving, a detailing of the nature of coparenting events in couples groups, and identification of how such events blossom – or fail to blossom – when they do surface would be of considerable value both to practitioners conducting couples groups, and to supervisors and training programs working to build the coparenting expertise of less experienced interventionists.

To begin study of this important issue, this report examined couples groups from the original wave of SFI families, exploring the extent to which the groups afforded opportunities for participants to engage in conversations about the family's coparenting relationship. The original SFI sample is a relevant target for these analyses, because the group leaders who served as interventionists in the original SFI study were supervised to focus on marital and parenting themes, and not coparenting *per se*. The analyses of spontaneously emerging coparenting events hence provided a relevant test of the extent to which well-conceived couples group formats provide a generative platform for coparenting discussions to surface and flourish - if interventionists have been trained principally to focus on couples and their relationships.

To help address this question, we designed a new rating system to identify and characterize coparenting events during couples groups sessions—the frequency with which such occur, how the nature or quality of these events differed from each other, and how different groups varied in their embracing of coparenting events. This tangible means for spotting and documenting coparenting events, successes, and missed opportunities to heighten coparenting awareness and communication competencies during couples groups introduces a needed, value-added contribution that can sharpen the focus of both intervention design and evaluation. Further, the capacity to quantify the nature and quality of coparenting events and exchanges also stands to advance theories of family functioning maintaining that the enhancement of coparenting quality in the family is a key to fostering young children's development and adjustment.

Research questions

1. How often do coparenting events occur during couples group interventions designed to strengthen relationships in families with young children?
2. What is the character of these events, both within and across different groups?
3. Are there specific elements of group process that distinguish groups in which coparenting becomes a more prominent focus from those in which coparenting is less prominent?

Method

Participants

Participants were enrolled in the "Supporting Father Involvement" (SFI) project, a preventive intervention designed to examine the effectiveness of couples groups for promoting father involvement in low-income families sponsored by a state Office of Child Abuse Prevention. The SFI project and staff were located within Family Resource Centers in four California counties (San Luis Obispo, Santa Cruz, Tulare, and Yuba) in primarily rural, agricultural, low-income communities with a high proportion of Mexican American residents. At each site, project staff recruited some participants through direct referrals from within the Family Resource Centers and most participants from other county service agencies, talks at community organizational meetings, ads in the local media, local family fun days, and information tables placed strategically at sports events, malls, and other community public events where fathers were in attendance. Because the project was conceptualized as preventive—to help families early in the family formation years before smaller problems become intractable—the project targeted expectant parents and those with a youngest child from birth to age 12.

During the recruitment and screening process, parents had to meet the following additional criteria: (a) both partners had to agree to participate; (b) both father and mother had to be the biological parents of their youngest child and raising the child together, regardless of whether they were married, cohabiting, or living separately; and (c) neither parent suffered from a mental illness or drug or alcohol abuse problems that interfered with their daily functioning at work or in caring for their children. Finally (d) couples were not accepted into the study if there was a current open child or spousal protection case with Child Protective Services or an instance within the past year of spousal violence or child abuse.

Of the 276 couples who completed pre-test and post-test assessments and completed at least one group meeting, just over two thirds of the participants (67%) were Mexican American, 27% were European American, and 6% were Asian American, African American, Native American, or mixed race. On entering the study, 72% of the couples were married and living together, 22% were cohabiting, and 6% were living separately and raising a child together (separated, divorced, or never-married, never cohabiting couples). Participants were not screened for income, although the sample was heavily weighted toward low incomes. Median household income was $29,700 per year, with more than two thirds of the sample falling

below twice the federal poverty line at that time ($40,000 yearly household income for a family of four). 2.5% had household incomes over $100,000 per year. A large majority (79%) of the fathers and a minority (39%) of the mothers had worked for pay during the week prior to their baseline assessment. About half of the participants had completed high school or beyond. At baseline, the number of children in the household ranged from 0 (mother was pregnant with a first child) to 7, with a mean of 2.34 children; the median age of the youngest child was 2.25 years.

For this report, we analyzed all 24 couples groups from the original SFI study, each of which enrolled 4 to 5 couples. 54% of the groups analyzed consisted of English-speaking couples and co-leaders and 46% were comprised of Spanish-speaking couples and co-leaders. The thirteen English-speaking groups were mostly constituted by European and Mexican American parents with a smaller proportion of African- and Asian-American parents. The eleven Spanish-speaking groups, by contrast, were constituted only by Mexican and Mexican American parents. Hereafter, we will use the terms "English-speaking groups" and "Spanish-speaking groups" only to respect the diversity and complexity in ethnicity that both groups represented.

Design and procedure

All procedures were approved by the University of California at Berkeley's Institutional Review Board. Consent forms included permission to use participants' responses to questionnaires and video recordings for research purposes. The video cameras were visible in the meeting room. All groups were led by male–female pairs of mental health professionals selected by project directors based on clinical expertise, training, and experience with couples or groups or both, knowledge of family and child development, cultural fluency and sensitivity, and the ability to work collaboratively with other professionals and agencies.

The original study design consisted of three different conditions, determined by random assignment: a 16-week group for fathers, a 16-week group for couples, and a low-dose comparison condition in which both parents attend one 3-h group session. All interventions were led by the same trained mental health professionals who focused on the importance of fathers to their children's development and well-being. The one-time meeting and the 16-week curricula for fathers and couples' groups were based on an evidence-based five-domain family risk model of the central factors that research has shown are associated with fathers' positive involvement with their children (Cowan and Cowan, 2012): (a) individual family members' mental health and psychological distress; (b) the patterns of both couple and parent–child relationships transmitted across the generations from grandparents to parents to children; (c) the quality of the relationship between the parents, including communication styles, conflict resolution, problem-solving styles, and emotion regulation; (d) the quality of the mother–child and father-child relationships; and (e) the balance between life stressors and social supports outside the immediate family.

The groups were formed by 6 to 12 fathers or five to nine couples; they met for 2 h each week for 16 weeks and all sessions were videotaped. The curriculum was designed in a semi-structured fashion. Sessions included exercises, structured discussions, and short presentations together with an open-ended time during which participants were invited to raise their real-life issues and concerns for discussion and problem solving. Each SFI session was devoted to coverage of at least one of the five main domains of the curriculum. The couples and the fathers-only curricula were comparable, and almost identical, covering the same topics in the same order. The teaching segments about individual, couple, and parenting issues were identical. The exercises for the individual, parenting, and life stress topics were also identical. The only difference came in the sessions addressing couple relationships, in which fathers described their couple issues and were encouraged to do "homework" in which they explored these issues with their partner in between group meetings.

Based on the topical themes, we decided to observe two sessions for our analysis – one in which the primary theme for the week was to be devoted to a discussion of parenting styles and the other in which the theme was to be devoted to the division of labor. Our choice of these two specific sessions was guided by collective clinical experience that parenting and the division of childcare labor can be especially evocative topics for coparents (Pruett, 2010).

During the first year of the project, the first two authors (JM, KI) watched the videotapes both independently and together and once a system had been developed and categories reliably identified and coded, met together with the third and fourth authors (PC and CC) to review and discuss a series of the coparenting events that had been identified. During this second stage of the work the investigators reviewed the system, categorized events, and made decisions about how to identify stop and end points for "bounded units." A bounded unit was an event that started with a statement by a speaker (either a parent or group leader) that could be considered a coparenting-related bid, prompt, or query, and that ended once a subsequent speaker's comment ended the focus on coparenting by effectively shifting the conversation in a different direction. Once this development process was completed, the tapes were evaluated by the second author and a second trained coder. After a period of initial training during which three cases were rated independently and discussed together, these two individuals evaluated all 48 sessions for the 24 couples groups. The second author (a native Spanish-speaking coder) rated events for the Spanish-speaking groups and the trained coder rated events in the English-speaking groups.

Description of the coding process

In reviewing videotapes for each session, coders identified and characterized all "coparenting events" that emerged during the group. A coparenting event was defined as a bounded unit relating specifically to the two parenting individuals' perspectives on or about their shared child. Common events included expression of an opinion about the child or about parenting, whether the opinion was shared (or not) by the coparent, and remarks comparing how the two parents handled things with their child – whether similarly or differently - as individuals.

Each bounded coparenting unit involved the person or couple who raised the issue. The bounded unit could also involve group leaders and/or members of the group, if they spoke up while the coparenting event was underway. Using structured coding sheets, coders systematically took note of whether each target event was preceded and triggered by a group leader prompt, evolved spontaneously, or began when a group leader explicitly followed a

parent's comment about their child or about parenting by asking the other parent if s/he saw things the same way. These latter events, while rare, transformed an event that might otherwise have been understood as one individual's unique personal standpoint about parenting into a coparenting event. They occurred when a group leader saw potential for a family-specific coparenting conversation and prompted further consideration of the topic by the same person and couple who brought up the issue. By contrast, events coded as having been triggered by a group leader prompt typically either (a) followed a question that had been posed to the group as a whole or (b) followed a question asked to certain individuals in the group, but without engaging the coparent. Spontaneously evolving coparenting events were always initiated by a member of the group, with no prompting.

Whenever an event was identified that met the preceding criteria, coders reviewed the tapes several times to be able to specify precisely when the event began and ended, and recorded verbatim all statements that followed, and specifically related, to the initiating comment of the individual who triggered the event. Raters recorded several additional units of information (see below) and then assigned one of 10 different codes to capture the quality of the events.

Measures

This coding process yielded frequency data for each of the following items:

(a) The total time subsumed by each event – shorter events signifying topical conversations that may have had potential, but did not blossom, and longer events including conversations that involved deeper exploration and/or multiple speakers.
(b) The partner who initiated the event (mother or father).
(c) The spontaneity of the initiating partner's comment (i.e., whether it was made as a direct response to an explicit group leader prompt related to coparenting issues, or whether the mother or father raised the issue on their own)
(d) Whether the partner of the person who initiated the issue joined in on the exchange their spouse or partner had initiated.
(e) Whether a group leader responded to the coparenting issue that was raised by the parent.
(f) Whether other wives and husbands in the group responded to the coparenting conversation.
(g) How involved each person remained (how many additional comments they made) until the event wound to a close (as determined by a lasting topic shift).

Once all these features had been recorded for each given event, raters assigned one of ten codes (most with sub-codes) to capture the overall quality of the event. The system was designed so that lower-end scores reflected coparenting monologues or brief dialogues with negligible contribution by/payoff for others in group. That is, low-end scores were used to denote events that had the potential to blossom into a prolonged exchange on the topic of coparenting but did not. Why they did not could be attributed to one or more reasons. For example, the speaker's initiating comment may not have been responded to by their partner, by group members and/or by co-leaders at all. Or the response they received to their initiating comment shifted the conversation away from coparenting and into some other area (child behavior, parenting styles, stress management). All low-end scores, however, shared the characteristic that what could have been a coparenting-related discussion never got going, having been squelched in some way. Events receiving higher scores played out for a longer period, involved the partner and/or others in the group, and (when at their best), resulted in a productive resolution or insight for both partners that were witnessed and sometimes shared in by others in the group.

Results

The Results section is divided into three parts. In the first we provide a summary of the new system that identified and characterized coparenting-related events during the couples groups. This first section recapitulates each category, from comments never responded to by partners, group members or leaders through the extended and very productive discussions having everyone involved. We describe the overall "lay of the land" in terms of how frequently each category event occurred, and include excerpts taken from the groups that illustrate different categories. The second section provides a global look at the contributions of group leaders and of group members in their different group roles. Finally, we present a quantitative analysis of different interior processes among the 24 groups with respect to the quality of coparenting events within those groups.

Quality of the 198 bounded coparenting units identified across the 24 couples groups

The 10 codes developed for the system are presented in Table 1, along with their frequency and their total time of occurrence (in minutes) during the 24 groups. As detailed further below, we divided the categories into conceptual groupings, with categories 0–5 capturing events that by and large did not blossom into meaningful or extended considerations of the topic raised, and categories 6–10 capturing more protracted and potentially helpful explorations. Below, we describe each category and provide a few examples to illustrate events that received these rating scores.

Category 0: group leader attempts to evoke coparenting-related discussion; parents do not respond (1.4% of all events identified)

A relatively small (1.4%) proportion of all coparenting events took the form of a failed attempt by a group leader to prompt the group to consider a coparenting issue. Such attempts were typically generic remarks concerning the importance of coparenting solidarity and teamwork. Codes of 0 were assigned if such comments appeared to be ignored altogether by group members, who instead responded by

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TABLE 1 Frequency and duration of various categories of coparenting events.

Codes	Frequencies		Definition
	n	Time	
			Unsuccessful group leaders actions
0a	0	0:00:00	Failed process-oriented intervention by leaders to transform a parenting comment to a coparenting event.
0b	0	0:00:00	Failed spontaneous leader comment in trying to open a coparenting dialogue.
0c	3	0:03:01	Failed didactic intervention by leaders to transform a parenting comment into a coparenting event
Totals	3	0:03:01	
			Missed opportunities
1a	28	0:20:55	A parent's coparenting comment that fizzled because neither the partner nor the group picked up on the coparenting bid.
1b	9	0:06:50	Equal to 1a, but the parent's comment was in response to a previous leader's coparenting bid.
2a	2	0:05:13	A parent's coparenting comment triggered at least a related comment by another group leader.
2b	15	0:29:36	A parent's coparenting comment triggered at least a related comment by another group leader.
Totals	54	1:02:34	
			Brief, relevant dialogues without meaningful payoff
3a	27	0:36:44	A coparenting dialogue between partners went unnoticed and hence not responded to by leaders/others in the group.
3b	14	0:13:51	Parallel to 3a, except the partners' dialogue was in response to a previous leader's coparenting bid.
4	23	0:23:54	Parents' dialogue/monologue responded to by leaders with a re-statement/acknowledgment of the coparenting issue.
5	3	0:06:26	A partners' dialogue responded to by group members without leader intervention.
Totals	67	1:20:55	
			Brief, relevant dialogues with some minor payoff
6a	1	0:01:39	A parent's coparenting comment that did not trigger his/her partner but is responded to by group members.
6b	7	0:11:59	Leaders' comment in response to a parent's coparenting comment that did not trigger the partner, but that triggered group member(s).
7a	7	0:08:12	A coparenting dialogue between partners that went well with no intervention by leaders.
7b	17	0:39:13	A coparenting dialogue between partners punctuated by a specific leader's comment, but nothing further.
Total	32	1:01:03	
			Brief, prolonged relevant dialogues with useful payoff
8a	15	0:47:09	Leaders posed strategic questions to amplify a couple's issue; they paid attention to the couple, but without resolution.
8b	6	0:14:48	Equal to 8a but achieving some resolution.
9a	14	1:25:10	Leaders' attention to a couple's issue reached a payoff for the group, but failed to finish the original couple's issue.
9b	5	0:17:52	A couple's issue reached a payoff for the group, triggering active group participation, failing to finish the central couple issue.
10	2	0:14:27	The issue reached payoff for both the couple and the group.
Total	42	2:59:26	
Grand Total	198	6:26:59	

shifting focus onto a different, non-coparenting-related issue. The proportion of 0 events among the different groups ranged from 0.0 to 0.20 (i.e., 20% of all coparenting events that transpired in the group received codes of 0). Though few were detected, we believe that such events are not uncommon in work with couples – interventionists believe they see a "teachable moment" and so attempt to influence couples by educating them about a coparenting-related topic, only to be met by immediate parental movement onto a different issue.

Category 1 to 2: parent monologues about coparenting followed by partner/leader/group member non-response and topic shifts (23.86%)

1a: Opportunity for a coparenting dialogue missed because neither the partner nor the group leader picks up on the bid. 13.0% of all coparenting events involved a coparenting concern spontaneously

raised by a parent that did not progress further because the initiator's bid was not responded to further by the partner, group members and /or group leaders. The proportion of 1a events among groups ranged from 0.0 to 0.43. The following is a prototypical 1a event drawn from one of the sessions:

A father commented, "When Tony does not want to eat, I say, 'Eat your food or go to your room.' And if he cries, he has to go to his room. (I say -) 'Which one do you chose?' Then if he starts throwing a fit, I stick with that. If he still cries and throws his fit, then he goes to his room. Then I'll come back and talk to him, ask him 'Are you ready to come out?' or something like that. The more consistent I am with that when it does happen, the more he'll say 'Sure I will sit down.' But then if it does not happen for a few days or I'm not there during dinnertime or something, he just cries and cries and cries. Then we have to do it again, but after two or three times he can see he knows we mean business. And it seems to work good." The group leader's response to this father's story was "Kids need containment, when they have too many choices they can kind of pick whatever they want; sometimes it can be really overwhelming for kids. And so structuring it down, saying 'you can do this, or this,' sometimes is really helpful for them. Just cognitively, I do not care how smart they are. They need smaller choices.

Although this father's story might simply be construed as his own perspective on parenting, it was his indirect mention of problems with inconsistency when he was not at home (and presumably his partner was) that transformed the story into an event that might be considered to involve covert coparenting dynamics. Discussing covert coparenting, McHale (1997) noted, "what happens during alone, one-on-one time with the child may be as or more important in establishing a sense of coparental alliance and authority for the child as what happens when the partners are parenting together" (p. 207). In this Category 1a event, the father shared a concern that if he wasn't physically present to reinforce his strategy, all his hard-won progress with the son would take a step backward. Moreover, his remark invites an interpretation that his wife chose not to support his efforts when he wasn't present. However, rather than picking up on this bid and inviting a dialogue (either with the couple, or with the group) about the relevance of coparental support of partner interventions with children, the leaders instead chose to educate the group on the importance of containment for children (i.e., providing psychoeducation about parenting) - and hence a coparenting dialogue never blossomed. We believe that these kinds of events may be of particular interest to interventionists, whose first impulse may often be to educate rather than to deliberately invite and give voice to a potentially contentious discussion of differences about parenting.

1b: 3.2% of all coparenting events involved a coparenting question or comment voiced by one parent that, just as in 1a, was not picked up on and embellished. The only distinction between 1a and 1b was that the initiating parent's contribution had been activated by a group leader question or comment. However, just as in 1a, the parent's comment did not blossom into a coparenting dialogue between the speaker and his/her partner because it was not recognized and responded to by the partner, by group members and/or by the group leaders who had prompted the comment. The range of the 1b events among the groups was 0.0 to 0.17.

2a: Another 0.5% of all coparenting events were coparenting monologues that did not materialize into a dialogue between spouses, but that did trigger at least one related comment by another group member. The proportion of 2a events among the groups ranged from 0.0 to 0.06.

2b: Finally, closing out Category 0 to 2, 7.2% of all coparenting events were opportunities for coparenting dialogues that did not materialize between partners but that triggered a related coparenting speech by the leaders. These speeches were like those in Category 0 in that they were psychoeducational interventions. However, they differed from 0 events in two ways. First, they followed a parent's remark. Second, they included advice, personal experiences and didactic comments about coparenting. The proportion of 2b events among groups ranged from 0.0 to 0.43.

Category 3 to 5: brief, contained dialogue about coparenting; negligible contribution by/payoff for others in group (34.08%)

3a: Brief coparenting dialogue between parents (2 turns or more) that goes unnoticed or unresponded to by group leaders or others in the group. Of special note, a fairly high proportion of all coparenting events (12.6%) were short coparenting exchanges that emerged spontaneously between parents (2 turns or more) - but went unnoticed or unresponded to by group members and/or group leaders. In such instances, leaders and other group members either missed the exchange altogether or redirected the conversation to a non-coparenting-related topic. The range of the 3a events among the groups was 0.0 to 0.50. As with Category 1a, we believe that Category 3a is of special interest both to interventionists who lead couples groups and to those who work individually with coparents. The following example is prototypical of this category:

A husband, talking about different parenting styles for younger children and teenagers, expressed his belief that parents must be more rigid with younger children than with teens. A group leader replied: "It sounds like you start a little tighter, and when they start to grow up you loosen up." He says: "yes, I think so." His wife replied: "I am the opposite. At some point you have to say 'Absolutely not' … (feigning a teen's voice): 'Mom and Dad, can I go to the party?'… (Then taking a parental voice): 'No - over my dead body'" Her husband tried to interject, but she spoke over him to continue explaining her position "That is just a flat out 'no' - there is not going to be a discussion about it." In response, rather than turning to the husband to determine what he had tried to interject - or whether his stance did differ from that of his wife - the group leaders instead educate the group about what authoritative parenting is, and how an authoritative parent might respond in this hypothetical case. The flow of the group hence moved away from coparenting, and back to parenting behavior.

This example differs from Code 1a above in that the event of interest actually involved an exchange between the two partners rather than a monologue by one parent that was not picked up upon by anyone else in the group. The mother clearly delineated a difference between herself and her husband ("I am the opposite"). However, the difference between the two never became a thrust of the conversation that followed, in part because of the inaction of the group leaders.

3b: In a related 7.3% of all coparenting events the coparenting dialogue between parents that ended without comment was one that had actually been prompted by a group leader question or comment. However, just as in Category 3a both the group leaders and the other group members missed the opportunity to advance or prolong the

coparenting discussion further. Again, most prototypically, the discussion was instead redirected onto a non-coparenting-related topic. The proportion of 3b events among the groups ranged from 0.0 to 0.33.

4: Dialogue responded to, then ended, by leaders with a simple restatement/ acknowledgment of the coparenting issue. 12.8% of all coparenting events involved a brief coparenting dialogue or coparenting-relevant monologue that was responded to by a group leader, who provided either a re-statement of what the speaker(s) said or a perfunctory acknowledgment of the issues. But the event then ended, and there was no further dialogue with either partner or discussion in the group about the issue that had been raised. The proportion of 4 events among the groups ranged from 0 to 1.0 (i.e., all coparenting events that transpired in the group were of this form).

5: Coparenting dialogue responded to by group members with empathic concerns, but without further development in the group. 1.36% of all coparenting events were brief coparenting exchanges between partners that triggered one or more related comments by other group members. While the group member comment(s) could have been offered in empathy, the event then ended; there was no further development of coparenting-related discussion in the group about the issue that had been raised. The range of events coded 5 among the groups was 0.0 to 0.20. Following is a verbatim transcription of a Category 5 event, in which the conversation revealed an ongoing dispute between parents about clothing they chose to put on their children to go out:

> Husband B said (ostensibly to Wife C, who had made a comment about getting her son dressed): "Does he…does it matter to you if he matches…?"
>
> Wife B added: "Like if they are going to a birthday party— (and in an apparent aside to her husband)—put that fact out there…"
>
> Wife C replied "Well, if it is important to my partner. He can be hard on me - he'll be like, *'he is going to school…*."
>
> Female leader said, "Having issues when dressing the child…"
>
> Husband B said, "If my child wants to wear something…"
>
> Wife B said, "We do that during the day, but I do not want to…."
>
> Husband B said: "You know, she is 4 years old. If she wants to wear something, I am glad she wears it. She (referring to his wife) on the other hand, will not go along…And I say, '*honey, she is 4 years old*'."
>
> Male leader said: "If she is okay…?"
>
> Husband B said: "It's like to me…'okay honey'."
>
> Wife B said: "It wasn't the dress. It was a birthday party, and these patterns…these were different colors. During the day in the house, she can wear what she wants, I do not care but if we were going to…I want…."
>
> Husband A said: "I kind of…where we go, they can wear what they want to wear."
>
> Wife A said: "No, no, no. Dude, they are going outside the house. No, no."
>
> Husband A said, "I generally say, wear you want to wear, then they pick it out and come up with something completely absurd. I am more like 'are they suitable to go outside than actually how they look'. I am not too concerned with looks as long as they are happy."
>
> Male leader said: "When you think about taking the child outside, it is a reflection of us."
>
> Husband A said: "Yes."
>
> Male leader commented that his wife thought differently than he did about their daughter.
>
> Female leader said: "It's sort of cute…."
>
> Husband B said: "That would not be the reason for me doing that. The reason for me doing that is that she wants to wear that."
>
> Wife B said: "We've seen kids in the store that their parents…I would not do that …if it just for a birthday party, kids play, they get on the ground…I just want the colors to match."
>
> Female leader (shifting the topic to division of labor) said: "So you do more of the child's dressing?"
>
> Wife B said: "No, actually, we do it equally."

This event was interesting both in terms of how it started and the group dynamic that followed. When the husband initiated the conversation by ostensibly addressing a question to a female member in the group about whether matching her child's clothes mattered to her, he did so with the apparent intention of infusing into the group a discussion he had already had independently with his wife. He appeared to be looking for allies and succeeded in finding one and having his opinion validated when another husband in the group agreed with him. His wife also received support from another female member, such that the central couple's discussion ultimately ran across gendered lines. Gendered perspectives in couples groups have been discussed by Feld (2003) as one useful means for helping individuals to find validation and support from others of the same gender in their group. She posits that such events occur in a second phase in the development of groups that she calls "the working group"—a subsequent phase to an initial "holding-containing" phase. Working groups, Feld notes, are characterized by the formation of subgroups different than the couple – the most common of which runs across gender lines. Feld cautions that therapists be careful in not to get drawn into any particular "sides" but rather aim to help each subgroup listen to and begin to understand the others.

In the featured scenario, the leaders did not quite manage to do so; the male leader sought to validate the wife's opinion when he said,

"When you think about taking the child outside, it is a reflection of us." Though his intention was to make the wife feel better, taking a side did not facilitate fathers and mothers in the group's understanding and accepting of their different positions, or of how their differences might affect their solidarity in the coparental alliance. The event was ultimately given a Category 5 code owing to the husband's recruitment of allies in the group to validate his opinion. What did not get developed as a coparenting theme was how validation of his opinion discredited and perhaps undermined his wife's perspective. The differences across gender sides might have been framed and developed further as a metaphor for understanding women and men's equally legitimate points of view as parents, and for helping the couples develop greater empathy about and support for one another's perspectives about their children.

Category 6 to 7: brief monologues/ dialogues about coparenting with some minor contribution by/payoff for others in group (18.3%)

6a: 0.3% of all coparenting events were opportunities for coparenting exchanges that failed to materialize between the initiating speaker and his/her partner, but that triggered a coparenting-related conversation among other group members. The proportion of 6a events among groups ranged from 0.0 to 0.03.

6b: In 3.2% of all coparenting events, group leaders responded to one person's initiating coparenting comment by posing a question or comment to prompt a coparenting dialogue between them and their partner. Though the intervention was unsuccessful in eliciting such a dialogue between partners, it did trigger a coparenting-related monologue or conversation involving other group members. The proportion of 6b events among groups ranged from 0.0 to 0.25.

7a: 3.5% of all coparenting events were brief coparenting exchanges between partners that went well with no intervention (i.e., each partner offered measured counterpoint/ acknowledgement/ validation/support). The event then ended with no further response from leaders/group members. The range of the 7a events among the groups was 0.0 to 0.33.

7b: 11.3% of all coparenting events were brief coparenting exchanges between partners that were punctuated by group leaders who commented specifically about the coparenting issue the couple had aired. The event then ended; there was no further dialogue with either partner or discussion in the group about the issues the couple had raised. The range of the 7b events among the groups was 0.0 to 1.0.

Category 8 to 10: Brief or prolonged dialogues about coparenting; significant leader involvement; significant contribution by/payoff for others in group (22%).

8a: In 7.2% of all coparenting events, group leaders attended to the couple's issue, posed strategic questions that amplified the issue, and enabled productive dialogues about differences. The events, while productive, ended without specific resolution for the couples of the issues they had raised. The proportion of 8a events among groups ranged from 0.0 to 0.40.

8b: In another 3.86% of all coparenting events, group leaders attended to the issue, posed strategic questions amplifying the issue, enabled productive dialogue about differences, and coaxed some resolution (e.g., some evidence that one partner understood/validated the other's point of view). The range of the 8b events among the groups was 0.0 to 0.25.

9a: 8.31% of all coparenting events were coparenting dialogues between partners responded to by group leaders who prolonged and amplified the coparenting discussion by involving other couples. In these instances, however, the events, while productive for the group, ended without any specific resolution for the couple of the issue they had raised. The range of the 9a events among the groups was 0.0 to 0.50.

9b: 2.16% of all coparenting events were coparenting dialogues between partners that triggered related coparenting comments by other group members. The group discussion, later joined as well by the leaders, prolonged and amplified the coparenting discussion. However as in 9a, the events, while productive for the group, ended without specific resolution for the couple of the issues they had raised. The range of the 9b events among the groups was 0.0 to 0.20.

10 0.8% of all coparenting events reached payoff for both couple and group. The coparenting dialogues between partners were responded to by group leaders who successfully prolonged and amplified the coparenting discussion *and* expanded it to other couples without changing or diluting the issue raised by the original couple. The range of the 10 events among the groups was 0.0 to 0.14.

Following is a verbatim transcription of a Category 9 event, in which group leaders amplified a coparenting dispute about childcare inequities and differences by intentionally inviting other group members to engage in the conversation:

The following is an example of a prolonged coparenting exchange (rated a 9b) that illustrates effects of amplification following a group leader's well-timed invitation to fathers in the group:

> Wife B said: "It seems what I'm trying to say to him because right now I'm in maternity, but I used to be working or doing school, with the kids - and then he came in. I used to be a single parent. For the last 3 years, I am trying to work him into it, and he is…."
>
> Husband B said: "No - get this. This is what a female does. All right…whatever…they can get in trouble."
>
> Female leader said: "I just want to point out that you are sitting between two women…." (group members laugh at the leader's joke.)
>
> Husband B continues: "They'll get on them… and then – no -even just 5 s later: 'oh it's okay. Do you want a piece of candy? What do you want?"
>
> Wife B replied: "This is what it is like, especially since X was born, I have a 3 years old screaming: 'I want my daddy; I want my daddy!' Who is always gone."
>
> Husband B said something inaudible.
>
> Female leader said: "Oh!"
>
> Wife B said: "I have a 1 year old on my legs, the dishwasher is going, the TV, you sitting there, the baby crying, he needs to be fed, and the toys need to be picked up. How am I going to do it? I have two hands."

> Husband A said: "I know I can read pretty well…"
>
> Male leader interrupted this comment and said: "I want to hear from a father about what mom said. What did you hear mom say?"
>
> Husband C said: "The same as I hear everyday… blah, blah, blah."
>
> Husband A said: "I think she has a good point."
>
> Wife B said: "She is frustrated."
>
> Husband A said: "I played that role too; a stay home husband with a wife that has to work. I spent the first 2 h after she went to work, and I have a baby too, you know, cleaning the house… the bath, the kid, the dishes, it never stops."
>
> Wife B began to ask: "How many…?
>
> Husband A said: "And I realized that too. I need to be more flexible when is about to help, but a lot of us, for me, I took it from granted… to take care of the house, the laundry, the kids when you have one person to worry about the baby and yourself, is pretty simple. When we are talking about the kid… men, *I cannot relate very well*. Honestly for me, *I cannot understand a crying kid*."
>
> Wife B said: "To discipline a kid is…You know, hold the baby for a minute, you know it just has worked."
>
> Husband B said: "How do I get the kids to be quiet, though?"
>
> Wife B said: "You yell at them."
>
> Husband B said: "I yell them? I send them to their room."
>
> Wife B said: "And you shut the door."
>
> Husband B said: "I shut the door and then, they turn on a movie, and they both sit and they watch it in their room."
>
> Female leader said: "So, they are like self-parents. If they are watching a movie, they can figure out how to calm themselves."
>
> Wife D said: "I do daycare…If I ask them to calm down, like on Mother's Day, I read them a story and it was good."

This event was instructive in that the leader's comment simultaneously interrupted, momentarily, an escalating dispute between the coparenting couple, containing mounting tensión that was apparent to group members, and drew other group members in to participate in a consideration of the dissonance being aired. At the start of this event, the mother who voiced the issue lamented her coparenting partner's lack of support with child care labor, later pivoting to his abrupt manner when disciplining the children. Her coparent, for his part, responded to her critiques by framing their differences as contention between men and women. At the point of the event's initiation, the mother noted (with a blend of anguish and anger) her struggle to include her partner as a coparent. She recalled managing her single parent role adequately, with her coparenting partner having been the cause of the problems since *he came in*. The portrayal of her encounter and relationship with her partner as having been with someone that *came in* to her life hinted at some distancing of responsibility for personal choices. The dialogue between partners remained tense while featuring two common arguments: inequity in childcare, and disagreements about the coparent's style of dealing with children. The male leader's intervention mitigated the increasing emotional strain felt not just by the couple but by the entire group, inviting other fathers to listen to the mothers' complaints. This opened the discussion to all group members, most pointedly the male subgroup, inviting them to listen empathetically to the female subgroup. This turn of events elevated the quality of the coparenting conversation in the group to a 9 code.

The first father who responded aligned with the father "on the hot seat" to support his expression of the feelings of a man being critiqued by a woman. The second father offered an empathetic response validating the mother's feelings. The event hence became more productive for the group, but it ended without resolution for the couple who raised the issue. Additionally, the feelings of the father who expressed difficulties dealing with the children when they misbehaved were not validated by any of the women in the group. Rather, they were countered by the mother, and her remarks rekindled the argument anew. Had the leader (or co-leader) expanded the intervention strategy by inviting women in the group to empathically listen to the fathers' complaints—"what did you hear dad say?"—a strategy encouraged by Feld and Urman-Klein (1993), the group as well as the couple might have found resolution or at least greater understanding of each other's perspectives. Because this did not happen, only the women's "side" found some validation. Though this could have helped mothers feel more supported in the group, it also risked reifying a narrative wherein mothers are usually right and fathers usually wrong in the childrearing domain. Such a perspective can sabotage coparenting solidarity in the couple, creating a divide that erodes both marital and coparenting dynamics. Emphasizing complementarity of the coparental relationship (Minuchin and Fishman, 1981) when addressing childrearing differences avoids mother vs. father and women vs. men traps, allowing each coparent to consider how his or her own behavior may prompt or even reinforce unwanted behavior from the other. These things said, the leader's deliberate interruption and expansion of the coparenting conversation enabled group members to consider looking at concerns and disputes from an alternate perspective.

Overall contributions made by group leaders, and by coparents in their different group roles

Figure 1 depicts the overall number of contributions made by group leaders, and by husbands and wives across groups in their different participatory roles.

Analysis of group processes and group differences

This section describes conceptually interesting distinctions among the different groups with respect to the coparenting data. First, we graphically illustrate the overall landscape of coparenting events in the 24 different groups. Figure 1 summarizes the proportion of different kinds of events within each group. In Figure 2, we depict

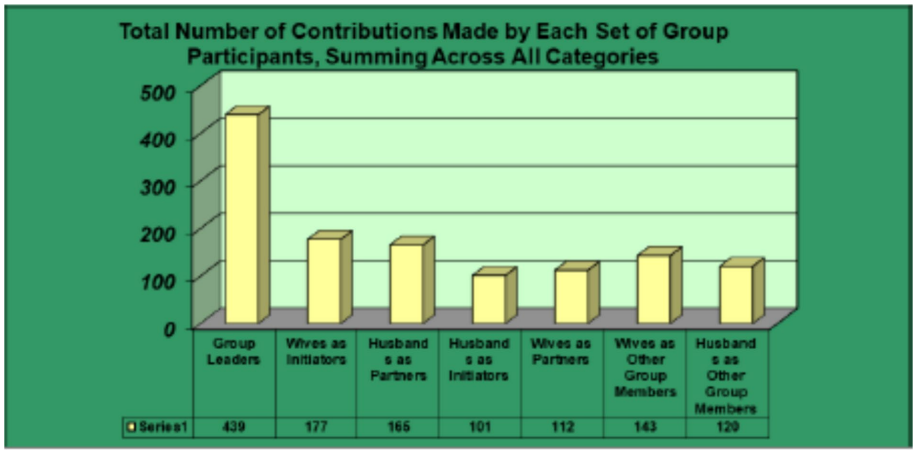

FIGURE 1
Total contributions by facilitators and by husbands and wives in group roles.

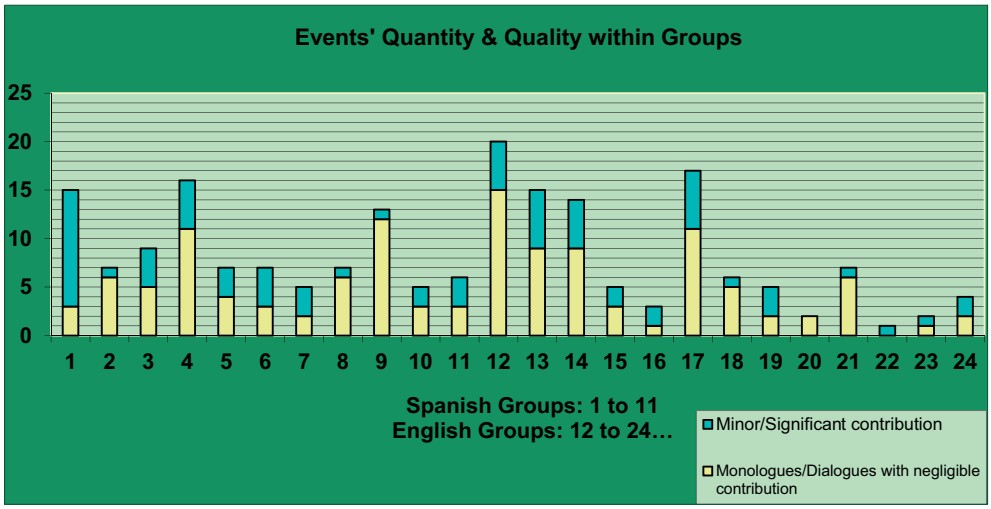

FIGURE 2
Coparenting event quantity and quality within each of the 24 couples groups.

events categorized as monologues or dialogues with negligible contribution (categories 0–5) in yellow and events with minor to significant contribution (6–10) in blue.

We then undertook a set of comparative analyses[1]—first examining whether there were any noteworthy differences as a function of linguistic composition of the groups, and then delving into differences among the 24 different groups in the saturation of coparenting content within group conversations.

Language differences

Overall, group sessions for Spanish-language groups (groups 1–11 in Figure 1) ran a bit longer. This was true for both the Parenting session ($M = 109.52$ min, $S = 24.38$, for Spanish-language groups; $M = 74.23$ min, $S = 38.68$ for English-language groups; $F(1, 22) = 6.83$, $p = 0.02$, $\eta^2 = 0.24$, 95% CI [0.01, 0.48]) and the "Who Does What" session (M = 105.94 min, S = 42.05 for Spanish-language groups compared with M = 62.23, S = 29.57 for English-language group; F (1, 22) = 8.89, $p < 0.01$, $\eta^2 = 0.29$, 95% CI [0.03, 0.52]). We believe this reflected a difference in tempo; many Spanish-speaking groups took an unhurried approach in warming up to each topic gradually, pondering each issue raised. However, virtually all two-hour sessions for both

1 Analyses were conducted using SPSS/PASW 18.0. Where variables were normally distributed, statistical analyses were performed with relevant parametric tests (e.g., between- and within-group ANOVA, Pearson's correlation). Where variables were skewed (skewness > |0.80|), appropriate non-parametric statistical analyses were performed (e.g., medians and inter-quartile ranges for univariate descriptive statistics, Mann–Whitney U for independent groups comparisons, Wilcoxon signed rank tests for dependent groups comparisons). Confidence intervals for correlations were computed using Fisher's r-to-z transformation and using the exact method for η^2 (c.f. Odgaard and Fowler, 2010).

groups stayed focused on the Parenting or Who Does What topic of the day. The only other significant difference between linguistic groups was that during WDW sessions, English-language group leaders made more bids to start coparenting dialogues (Median = 2.00, IQR[1.00, 3.00]) than did the Spanish-language group leaders (Median = 0.00, IQR[0.00, 1.00]); U = 34.50, z = −2.23, $p = 0.03$, $r^2 = 0.21$, 95% CI [0.01, 0.53]. It appeared this difference reflected some English-speaking leaders having asked each participant to call out numerical ratings they had given for specific Who Does What survey items. By contrast, most Spanish-speaking leaders did not do item-by-item checks, instead asking what differences coparenting partners saw in how they perceived their contributions to division of labor. Differences as a function of the language in which sessions were conducted by the multiple group leaders were hence negligible, and there were no patterns indicating that any particular co-leader team inordinately affected findings.

Session differences

Because there were differences in the length of sessions (not only between languages, but also within languages, reflected by the relatively large standard deviations for duration in those analyses), we analyzed total duration of coparenting events as a ratio of the total duration of each session. One-tailed Wilcoxon signed rank test found a marginally significant difference between Parenting and WDW sessions; groups averaged a higher percentage of time on coparenting events during WDW (Median = 8.84%, IQR [4.48, 15.68%]) than during Parenting sessions (Median = 4.97%, IQR [1.80, 10.21%]); z = −1.69, $p < 0.05$, $r^2 = 0.12$, 95% CI [−0.01, 0.42]. Since sessions were presented in the same order to all groups, it is not possible to determine how much of this difference was a function of the respective topic of each session, and how much owed to an improving payoff in groups and group leaders effectively pursuing coparenting dialogues.

Coparenting dialogues: differences among groups

A primary interest in this study was in examining the nature of coparenting events within couples groups, and so we asked whether any factors discriminated groups from one another on the basis of such events. K-means cluster analyses were used to identify groups with notably different patterns of such events. As there were relatively few numbers of coparenting events overall (M = 8.25, S = 5.40, range 1–20), we used the four main categories from the 10-level scale presented earlier: events that were "missed opportunities" (categories 1–2), events without meaningful payoff (3–5), events with minor payoff (6–7), and events with useful payoff (8–10). Given considerable variability in the total duration of sessions and total amount of time each group spent in all coparenting dialogue events, these variables were included in the cluster analysis. Because cluster analyses require standardized variables with normal distributions in order to reduce bias, we performed a square root transform on each variable with skewness > |0.80|, then converted all variables to z-scores.

A 2-group clustering solution offered a very simple picture. Cluster 1 had shorter average sessions and less total time in coparenting dialogue, plus less of each level of payoff ($p < 0.01$ in all cases) except total number of minor payoffs ($p = 0.115$). There were 13 couples groups in cluster 1 and 11 in cluster 2, with no statistically significant pattern of language across the clusters (χ^2 [1, N = 24] = 2.59, $p = 0.11$, $\varphi = 0.33$). This presents the relatively unremarkable picture that shorter session length is associated with less coparenting dialogue.

However, a 3-group clustering solution offered a more intriguing picture. Table 2 shows the final cluster centers, with the alpha level of the contribution of each variable (all are statistically significant [$p < 0.007$] except for the total number of useful payoffs, which is marginally significant [$p = 0.065$]). In this model, cluster 1 (n = 9) had shorter average sessions, less total time in coparenting events, and fewer of all levels of payoff. Cluster 2 ($n = 10$) had the longest average sessions, most missed opportunities, and more of each other variable than cluster 1. It was cluster 3 (n = 5) that provided the intriguing addition to the 2-group model. This is a cluster of groups with session length times that ran less than cluster 2 but had much higher amounts of time discussing coparenting events. Moreover, though slightly above average in missed opportunities, cluster 3 also had a far greater number of all other levels of payoff (i.e., events without meaningful payoff, events with minor payoff, and events with useful payoff).

Analyses examined were the total number of coparenting events; the number of group leaders' initiating bids and responses to participants; the number of comments of wives as initiators, as respondents to husbands, as repeat commentators on their own issues within a bounded event, and as respondents to other group members; the comments of husbands as initiators, responders to wives, repeat commentators on their own issues, and respondents to other group members; and the responses of couples as a unit to other group members. Again, all skewed variables were normalized, then converted to z-scores. All analyses were BG ANOVAs with (2, 21) df.

The results were striking; of the 14 variables we examined as potential participant factors distinguishing among the clusters, all but three showed statistically significant differences among the three clusters. The three were: total number of husbands who responded to dialogues started by other couples ($F = 1.795$,

TABLE 2 Mean z-scores for the 3-group clustering solution, with *p*-values.

Variable (z-scores)	Cluster 1	Cluster 2	Cluster 3	*p*-value
Total time in sessions	−0.92	0.63	0.39	< 0.001
Total time in Coparenting events	−0.79	0.10	1.24	< 0.001
Total # missed opportunities	−0.85	0.69	0.14	= 0.001
Total # w/o meaningful payoff	−0.57	−0.03	1.08	= 0.006
Total # with minor payoff	−0.54	−0.15	1.28	= 0.001
Total # with useful payoff	−0.33	−0.15	0.90	= 0.065

$p = 0.19$), total number of responses by husbands to dialogues started by other couples ($F = 1.037$, $p = 0.37$), and total number of responses by wives during dialogues they themselves initiated ($F = 2.878$, $p = 0.079$). For the remaining variables examined, the three clusters did differ. Table 3 shows results for statistically significant BG ANOVAs of normalized, z-scored variables, with medians of raw scores on each variable for each cluster. We underscore the last column, which contains the median data from cluster 3 (relative to clusters 1 and 2).

The overall pattern was Cluster 3 > Cluster 2 > Cluster 1 on three of the four coparenting event categories – coparenting events without meaningful payoff, with minor payoff, and with useful payoff. It is hence perhaps not surprising that that same general ordering of the 3 clusters emerged for most variables in Table 2. Nonetheless, a few patterns that bucked this trend may hold interest. First, Cluster 3 had a higher average number of group leader comments (both as bids and on the dialogues of others). Second, husbands (but not wives) in Cluster 3 on average offered many more comments on dialogues they themselves had initiated. Clusters 1 and 2 were also equivalent (and worse than Cluster 3) in the frequency with which wives responded to their partner initiating an event and in the total number of responses by spouses to other couples who had initiated events. Otherwise, the analyses in Table 3 provide relatively little basis for drawing differences between Clusters 1 and 2.

Discussion

Practitioners' preparedness and capacity to scaffold deliberate exchanges between parents about coparenting and coparenting differences plays an important role in interventions aiming to improve communication, problem-solving and conflict resolution (see Figure 2). Yet specific clinical training in the detection and expansion of coparenting impasses, particularly in group settings, is uncommon. The aims of this study were to present a new strategy and coding approach to capture the essential nature of coparenting events within couples groups, attend to the inclinations of group leaders as potential influencers of these events, and explore how differences among the various groups studied may have captured greater or lesser success in elevating meaningful coparenting dialogues.

Somewhat surprisingly, the total overall number of coparenting events in relationship enhancement groups expressly conceived to address marital and parenting issues was relatively modest—we identified a total of 198 such events during the two specific sessions most closely relevant to coparenting across the 24 different couples groups analyzed. Approximately 6% of the overall session time analyzed contained coparenting events of any form. Events ranged from scenarios in which group leaders attempted to evoke a coparenting-related discussion but got no response from parents (who instead raised a different topic), to prolonged exchanges about coparenting involving multiple members of the groups. We compared English- and Spanish-speaking groups and though Spanish-speaking groups on average remained on topic for longer, there were no material differences in the proportion of group time allocated to coparenting events.

Although overall, there was not much coparenting discussion during the groups, data also indicated that coparenting conversations blossomed when group leaders got involved to help expand them. We note that in over a third of the instances identified (37%), higher-quality coparenting events (codes 8–10)

TABLE 3 Statistically significant differences between clusters on normalized, standardized dependent variables, with medians of raw scores.

Variable	F (2,21)	η^2	95% CI	Cluster 1	Cluster 2	Cluster 3
Total # events[c] ‡	23.24***	0.69	0.38, 0.79	4	7	15
Total leader responses[c] ‡	21.14***	0.67	0.35, 0.78	3	6	14
Total bids by leaders[a]	4.55*	0.30	<0.01, 0.51	2	1	4
# Initiated by husband[c] ‡	11.25***	0.52	0.16, 0.67	1	3	7
# Initiated by wife[c] ‡	10.39**	0.50	0.14, 0.66	3	5	10
Wife response as partner[c] †	8.53**	0.45	0.09, 0.62	1	2	5
Husband response as partner[b] ‡	9.13***	0.47	0.11, 0.64	1	2.5	6
Total # responses by husband to bids he himself initiated[b] †	6.25**	0.37	0.04, 0.57	0	1	110
Total number of wives responding to others[b] †	4.95*	0.32	0.01, 0.53	1	2	6
Total # responses of wives to other couples[b] ‡	7.20**	0.41	0.06, 0.59	1	2	6
Total responses of H + W to other couples[b] †	4.86*	0.32	0.01, 0.52	2	2.5	9

[a] = this item is not correlated with either total time in sessions or total time of coparenting events ($p > 0.10$). [b] = these items are correlated ($p < 0.05$) with total time of coparenting events. [c] = these items are correlated with ($p < 0.05$) both total time in sessions and total time in coparenting events. * = $p < 0.05$; ** = $p < 0.01$; *** $p < 0.001$; † cluster 3 > cluster 2 = cluster 1; ‡ cluster 3 > cluster 2 > cluster 1; ⁇ cluster 1 > cluster 2, cluster 1 = cluster 3.

materialized. Such instances often involved successful amplification of issues by group leaders, enabling a process that drew other members of the group to get involved. Both concrete coparenting prompts and frequency of participation by leaders once coparenting events were underway were important; indeed, over a third of all events (35%) were prompted by leaders. This finding suggests that the amount of session time spent on coparenting-related topics may have been even lower had it not been for such prompts.

From the perspective of practitioner training and supervision, focusing on both missed opportunities to amplify coparenting discussions (for example, in instances where parents' comments are not responded to by their partners, or brief dialogues between partners that fail to catch the group's and/or co-leaders' attention from a coparenting point of view) and on more successful events (as when leaders' amplification of issues allow other members of the group to get involved) afford opportunities for supervisors to help future practitioners develop greater attentiveness and preparedness to open dialogue. Specifically, supportive examination of coparenting events and of practitioners' inclinations, successes and oversights during clinical training and supervision can promote increased mindfulness and ultimately lead to enhanced capacity for self-monitoring. We believe that such guided reflection, an important stepping stone in the training and professional competency building of practitioners who serve couples and families, can and should be more intentionally built into clinical training and continuing education programming.

Such an advance in clinical training stands to have significant impact. Unlike practitioners who conduct groups with individuals, those who lead couples groups must relate to the individuals and their interaction with leaders and other participants, while simultaneously dedicating special attention to the couple as a unit. This work is demanding and complex, as aptly detecting subtle instances of coparenting requires deliberate attunement by practitioners serving as group leaders, and preparedness to step in ably to capitalize on emergent coparenting events in couples groups to effectively amplify coparenting dialogues. Those who have developed both the intentionality and the skills for doing so will be better poised to help address important coparenting issues that entangle parents and, in some cases, adversely impact their children.

We believe the conceptual framework outlined above together with the scheme developed for tracking the progression of coparenting events once initiated will be helpful in advancing productive explorations of important coparenting issues in traditional couples group formats. Our experience watching the nearly 200 events described in this report leads us to advocate responding to burgeoning coparenting discussions using process-oriented rather than didactic approaches. Discussions are most likely to take off if leaders open dialogues between partners and take a position of guide or facilitator of the group process rather than teacher or expert. We look forward to future exposition and analyses of coparenting events within couple and relationship enhancement groups both to further advance coparenting theory and research, and to expand the training of future family practitioners.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by University of California Berkeley Institutional Review Board. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

JM: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. KI: Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization. PC: Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Investigation, Funding acquisition, Data curation, Conceptualization. CC: Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Investigation, Funding acquisition, Data curation, Conceptualization. EO: Writing – review & editing, Writing – original draft, Formal analysis.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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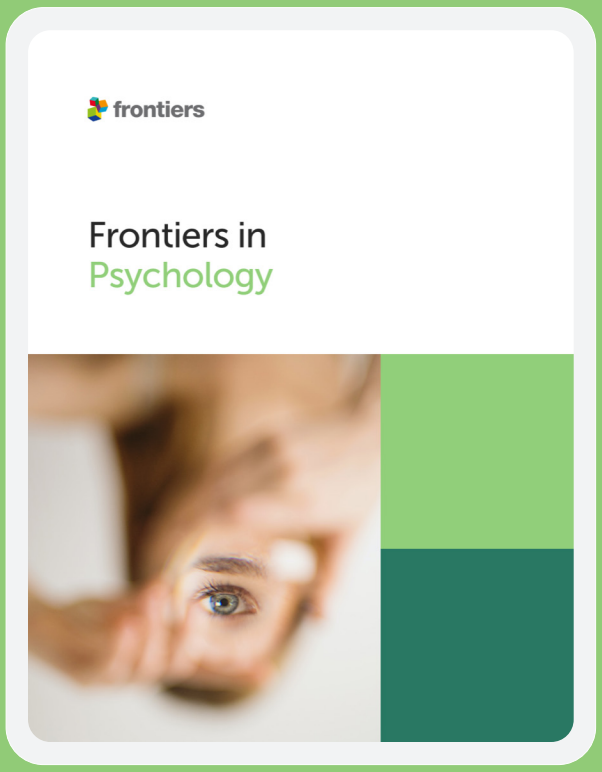

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