



What makes fathers involved? Fathers' time, education, and cooperative coparenting

Eva Diniz¹ · Tânia Brandão¹ · Manuela Veríssimo¹

Accepted: 15 December 2024 / Published online: 30 December 2024

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2024

Abstract

Father involvement is considered multidetermined, being influenced by personal and family characteristics. These variables, however, are rarely examined together, leaving unclear what makes fathers involved. A multilevel dyadic approach was used to examine the relationship between fathers' and mothers' demographics, parenting stress, coparenting, and father involvement among dual-earner couples ($n=311$ dyads). Fathers ($M_{\text{age}} = 39.33$; $SD=6.04$) and mothers ($M_{\text{age}} = 36.81$; $SD=5.96$) of a young child ($M=4.36$; $SD=1.69$; 52.4% boys) reported on education, parental stress, and time committed to childcare (level 1 variables), work–family conflict, their child's age, and coparenting (level 2). The findings revealed that, regarding individual variables (level 1), only father's education and father's time committed to child activities were related to a greater proportion of father involvement. At the family level (level 2), older children, more children in the family, and cooperative coparenting were related to a greater proportion of father involvement. The results highlight the importance of fathers' perspectives and characteristics to their involvement. The findings may be used to promote father involvement and inform public policies on the topic.

Keywords Father involvement · Education · Coparenting · Family · Multilevel

Parenting has changed in recent decades, with significant transformations in mothers' and fathers' roles, particularly in Western countries. Mothers are no longer seen as solely caregivers, nor are fathers seen as breadwinners and disciplinarians, and it is now expected that both parents are committed to childcare (Bianchi et al., 2012; Cabrera et al., 2018). Despite the social call for fathers to perform a central role in their children's lives (Cabrera et al., 2018; Dermott & Miller, 2015), studies show that they tend to remain and perceive themselves as peripheral to mothers in parenting (Henz, 2019; Kamp Dush et al., 2018). This is particularly significant in Portugal, which is not only the European

Union's country with more women working in full-time jobs, but also the country where men spend less daily time committed to the child(ren) and related activities. Portuguese women spend 303 daily minutes on child/household chores, whereas men spend only 77 daily minutes (EIGE, 2022; PWW, 2018). It is thus critical to understand what contributes to fathers' involvement, examining individual and family aspects related to it. This is particularly relevant during a child's early years due to the child's greater dependence on their caregivers, with father involvement playing a determinant role in child cognitive development, social competence, and family wellbeing (e.g., Cabrera et al., 2014, 2018; Lang et al., 2014).

The present study relied on the *Expanded Model of Father Involvement* (Cabrera et al., 2014), which theorizes how father involvement is multidetermined, influenced by the interplay between parents' and family characteristics. However, it is less clear how mothers' and fathers' experiences may independently influence father involvement. Despite the increasing number of studies moving from mothers' perspectives to fathers' (e.g., Diniz et al., 2023; Nóbrega et al., 2024; Schimdt et al., 2017), the understanding about fathering behaviors should include both parents' perspectives

✉ Eva Diniz
ediniz@ispa.pt

Tânia Brandão
tbrandao@ispa.pt

Manuela Veríssimo
mveriss@ispa.pt

¹ William James Center for Research, Ispa-Instituto Universitário, R. Jardim do Tabaco, 34, Lisboa 1140-041, Portugal

(Cabrera et al., 2018; Diniz et al., 2021; Kuo et al., 2024; Schoppe-Sullivan & Fagan, 2020). This was addressed in the current study that aimed to examine how aspects from each parent (e.g., parenting stress) and family (e.g., coparenting) influence father involvement in dual-earner parents of a young child, relying on a multilevel approach.

Conceptual framework for father involvement

Father involvement is a multidimensional construct that includes direct interactions with the child (e.g., playing, bathing), the supervision of the child's activities and behaviors, as well as a wide range of activities related with the child's wellbeing, such as preparing meals or planning routines (i.e., indirect care; Lamb et al., 1985; Palkovitz & Hull, 2018; Pleck, 2010). Contemporary research on father involvement has acknowledged the importance of understanding how fathering unfolds within a family's relational and ecological contexts (Cabrera et al., 2014, 2018; Diniz et al., 2021; Palkovitz & Hull, 2018). These aspects are critical to parenting in general but are determinants of father involvement in particular, due to the biological and social characteristics of fathering, which is considered more voluntary than mothering (Belsky, 1984; Dermott & Miller, 2015; Vieira et al., 2016). It is thus paramount to understand what makes fathers involved.

The *Expanded Model of Father Involvement* conceptualizes father involvement as multidetermined, resulting from a complex dynamic system, depending on the diversity of a family's life, the quality of their relationships, and the context of parenting (Cabrera et al., 2014). By incorporating developmental and systems perspectives (e.g., Belsky, 1984; Bronfenbrenner & Morris, 1998; Sameroff, 2000), the model details the understanding of what makes fathers involved. The model covers a wide range of aspects related to father involvement, detailing how *individual characteristics* of parents, such as education, beliefs, and mental health, play a critical role in fathering. The importance of the father's *personal history* (including biological, cultural, and rearing aspects) is also addressed as influencing father involvement, along with family *characteristics* (e.g., composition of the kin family, coparenting). The participation of the father in a community reflects his *social network and work conditions*. Despite the relevance of all these aspects to fathering, in the current study we focused on some of the personal and family aspects related to our study's goals, aiming to better understand the interplay of specific aspects of each parent and family related to father involvement.

The multiple determinants of father involvement

Assessing individual aspects of parents, as well as their social context and relationships, is critical to understanding how father involvement unfolds (Lee et al., 2020; Voling & Cabrera, 2019). The time a father spends with his children, the parents' education and their mental health, namely parenting stress, are addressed as *personal* key-aspects in father involvement (e.g., Cabrera et al., 2014, 2018; Palkovitz & Hull, 2018). The time fathers spend with their children is related to children's better cognitive, social, and emotional outcomes (Cabrera et al., 2014; Cano et al., 2018). However, the time a father spends with their children is highly related to his education, with highly educated parents spending more time with their children, compared to their less educated counterparts (Cano et al., 2018; Cha & Song, 2017; Kalil et al., 2012). This disparity may reflect that more educated parents tend to be more informed about the benefits of their role in their children's development, often adopting more child-centeredness behaviors (Cano et al., 2018; Cabrera et al., 2018; Palkovitz & Hull, 2018). Higher father's education also correlates with better work conditions and a greater likelihood of holding jobs with flexible work hours or family-friendly policies, contributing to fathers' availability to be involved (e.g., Molina, 2021), revealing an effect of social class in parenting (Palkovitz & Hull, 2018).

Parenting a young child is described as a stressful period due to the demands and responsibilities of childcare, as well as the increased levels of daily chores, often accumulated with both parents' work, leading to *parenting stress* (Beckerman et al., 2017; Liu & Wang, 2015; Stanfors, 2019) – i.e., the distress related to the demands of parenting (Abidin et al., 2006). Parenting stress is a personal variable that affects father involvement which may stem from a myriad of aspects like a family's economic resources, a family's daily experiences, and parent–child relationships (Beckerman et al., 2017; Cabrera et al., 2014). Stressed parents tend to feel filled with negative emotions, limiting their ability to be available and involved with their children (Fagan & Cabrera, 2012; Feinberg et al., 2019). Although mothers are more vulnerable to parenting stress due to their main role in childcare (e.g., Abidin et al., 2006; Stanfors, 2019), parenting stress tends to be more detrimental to father involvement. Greater father parenting stress is related to his withdrawal from family tasks and lower involvement with the child (Fagan & Cabrera, 2012; Jia et al., 2012; Yoo et al., 2015).

Family characteristics, namely a family's composition and the quality of relationships between their members, are critical to father involvement (e.g., Cabrera et al., 2014).

Coparenting is a central dimension of family characteristics, corresponding to specific dimension of the parents' relationship, reflecting the parents' ability to value each other in parenting, share decisions, and act responsibly with their child (Feinberg, 2003). The spillover effect of coparenting in father involvement has been discussed (e.g., Diniz et al., 2023; Fagan & Palkovitz 2019; Hohmann-Marriott, 2011; Lee et al., 2020). High-quality coparenting, translated as parents' cooperation, is related to greater father involvement (Cabrera et al., 2014; Hohmann-Marriott, 2011; Lee et al., 2020; Schoppe-Sullivan et al., 2008), whereas negative forms of coparenting, corresponding to conflictual/triangular coparenting, are related to lower father involvement (Jia et al., 2012; McDaniel et al., 2018). Also, aspects of the kin family, including the child's age and the number of children in the household, can influence a father's involvement. Fathers tend to be more involved as children grow up, with a peak in the preschool years, particularly when there is more than one child in the family (Kuo et al., 2018; Lamb & Lewis, 2010; Planalp & Braungart-Rieker, 2016). The double demand of childcare and work may engender work–family conflict, particularly when the local work culture does not support family life, as is more typical for men than women (Molina, 2021), thereby limiting father involvement (e.g., McDaniel et al., 2018).

Intra- and interparental associations of parents' characteristics and fathers' involvement

The *Expanded Model of Father Involvement* (Cabrera et al., 2014) emphasizes the interdependence between a family's members, with one parent's attitudes and behaviors affecting the partner (Cabrera et al., 2014, 2018). Mothers' involvement in the workforce has contributed to a greater involvement of fathers in childcare. Mothers' greater working hours are related to a higher involvement of fathers (McDaniel et al., 2018; Vieira et al., 2016). Among dual earner-couples, fathers are more involved with childcare than fathers in single-earner families (e.g., Dermott & Miller, 2015; Kuo et al., 2018). Also, in dual-earner couples, when fathers are more available for parenting, namely, to spend time with the child, the mother's work–family conflict decreases and the father's involvement increases, suggesting interpersonal effects between parents' characteristics and father behaviors (Diniz et al., 2023; Kuo et al., 2018, 2024; Molina, 2021; Vieira et al., 2016). Furthermore, more educated mothers tend to value father involvement, enhancing his parenting behaviors (e.g., Cabrera et al., 2014; Cano et al., 2018; Vieira et al., 2016). Because more educated mothers tend to work more hours, they may be less available for housework

and childcare, calling fathers to the domestic forum and requiring them to be more involved with their children (Cabrera et al., 2014; Cano et al., 2018). In addition, dual-earner couples may share more egalitarian perspectives on gender, which contribute to father involvement (Lansford, 2022; Planalp & Braungart-Rieker, 2016).

Understanding the links between parents and family characteristics and father involvement will contribute to enriching the framework of father involvement. These two-level variables, however, are rarely examined together. In the current study, we sought to examine the relationships between both parents' characteristics (i.e., education, time spend with the child, parenting stress, work–family conflict), family characteristics (i.e., child's age, number of children in the family, coparenting), and father involvement among dual-earner parents of small children. We anticipated that at the individual level, parents' greater education, lower parenting stress, and lower work–family conflict would relate to greater father involvement (H1). At the family level, we hypothesized that older and more children in the family, as well as the father's perceptions of cooperative coparenting, would be related to greater father involvement (H2).

Method

Participants

This study's sample consisted of 311 couples with a child aged between 2 and 6 years ($M=4.36$; $SD=1.69$; 52.4% boys). Most of the children were firstborns (63.5%) without significant health issues. Parents mostly lived in urban Portuguese centres (92.40%), reporting themselves as Portuguese (90.70%) and with a white skin colour (89.30%). Parents from other nationalities were typically from Brazil (5.10%) or Portuguese-speaking African countries (e.g., Cape Verde, Mozambique; 4.20%). On average, mothers were 36.81 years old ($SD=5.96$; range: 20–51), with 57.01% reporting having at least a bachelor's degree. Fathers were, on average, 39.33 years old ($SD=6.04$; range: 24–61), and 50.40% reported holding a bachelor's degree or higher. Concerning hours of paid work, 55.36% of the mothers reported working 35–40 weekly hours, which corresponded to the legal work week in Portugal, and 28% reported working more than 40 weekly hours. Concerning fathers, 48.20% declared they worked 35–40 weekly hours, and 45% reported working more than 40 weekly hours.

Measures

Sociodemographic questionnaire

A set of objective questions was developed by the research team, aiming to characterize parents, children, and their family background. Each parent self-reported information about themselves (e.g., age, education, marital status), their professional life (e.g., working status, number of daily working hours), and their child (e.g., age, sex, school attendance). Parents indicated the number of years they attended school/university. Also, they reported, based on the previous week, the number of daily hours committed to domestic chores and the time spent with the child (e.g., playing). This variable was made distinct from father involvement by examining the daily time that fathers spent directly engaged in activities with their children, whereas our father involvement scale evaluated how fathers reported to be involved with a wide range of aspects related to childcare, like supervision, discipline.

Parental involvement scale: caretaking and socialization activities (Monteiro et al., 2008)

This scale is a 26-item self-report questionnaire that examines the multidimensionality of father involvement, covering aspects related to direct (e.g., *Who bathes the child?*) and indirect care (e.g., *Who buys the child's clothes?*); education (e.g., *Who establishes the child's rules?*); teaching (e.g., *Who teaches new things to the child?*); and play/leisure (e.g., *Who plays with the child?*). The scale examines the proportion of involvement of one parent in relation to the other parent, answered on a 5-point scale, ranging from 1 (*always the mother*) to 5 (*always the father*); the middle value (3) corresponds to “either the mother or the father”. Hence, higher values correspond to a greater proportion of involvement of the fathers in the multiple domains assessed. All items were mean-averaged into a single score of father involvement. The average father involvement was 2.44 ($SD=0.53$; range: 1–5), with the fathers' average perceptions corresponding to slightly less involved than mothers. Due to our objective of understand the different levels of influence accounting to father involvement, only father's reports were included. Good internal consistency reliabilities (Cronbach's alpha) were obtained (0.82).

Work–family conflict scale: brief version (Portuguese version; Vieira et al., 2014)

We used an abbreviated version of the multidimensional Work–Family Conflict Scale (Carlson et al., 2000). The scale examines in nine items how work-related activities

constrain family-related activities, concerning time-based, strain-based, and behaviour-based conflicts (e.g., *The behaviors I perform that make me effective at work do not help me to be a better parent and spouse*). Both the mother and father answered on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher values indicating greater work–family conflict. Very good internal consistency values (Cronbach's alpha) were obtained by both the mothers (0.89) and fathers (0.87).

Parenting stress scale (Portuguese version; Algarvio et al., 2018)

This scale evaluates parental stress on a 17-item scale, answered on a 5-point Likert scale, with mean scores summed into a single score. Higher scores correspond to higher stress (e.g., *One of the main sources of stress in my life is my child[ren]*). Satisfactory internal consistency values (Cronbach's alpha) were obtained by both the mothers (0.82) and fathers (0.69).

Coparenting scale (Portuguese version; Pedro & Ribeiro, 2015)

This scale evaluates coparenting quality through parents' perceptions of each other in their parental role, reflecting the individual's perception about the partner's behavior in parenting. The perception of being valued and included in parenting decisions and responsibilities corresponds to cooperative coparenting (e.g., *My partner talks with me about our child*), whereas perceptions of being criticized or seeing their child included in the conflict by the partner correspond to conflict (e.g., *My partner argues with me because of our child*) or triangulation, respectively (e.g., *My partner talks badly about me in front of our child*). Fathers answered on a 14-item scale, with a 5-point Likert scale. Items were mean-averaged, and the dimension with a higher mean value reflected the dominant type of coparenting of the dyad. In this study we only included the father's perception of coparenting given that the father's perceptions influence his behaviour (e.g., Hohmann-Marriott, 2011; Johnson et al., 2024). Good internal-reliability values (Cronbach's alpha) were obtained for the dimensions of cooperation (0.84), conflict (0.75), and triangulation (0.71).

Procedures

The participants were mostly recruited from schools and kindergartens (73.5% public) from institutions that target multiple socioeconomic backgrounds. Previously, the study was approved by the ethics committee of the university [blind for peer review] and the direction board of schools.

Parents were asked to participate through a letter explaining the study's goals and procedures. Flyers describing the study were also disseminated in these schools. Parents interested in participating were instructed to inform the teacher of their child, and the teacher delivered to each couple a pack containing two envelopes (one to be completed by the mother and the other by the father), including a letter presenting the study, the consent form, instructions to fill out the questionnaires, and the study's measures. Parents who agreed to participate provided their written informed consent. Parents were instructed to complete their questionnaires individually, and afterwards to insert them in individually sealed envelopes and return them to their child's teacher. All collected questionnaires were then returned to the research team. In households with more than one child aged 2–6 years, parents were instructed to report about the older child. Instructions were provided to parents individually to create a code system to ensure that both were reporting on the same child. Discrepancies in the coding led to data elimination. Outliers and incomplete data were also eliminated from the study. All measures were presented at random.

Some schools asked for an online survey (rather than paper format). Thus, a link for the survey was created on Qualtrics and shared with schools to be disseminated among their mailing lists. This link was also shared by the research team on social media platforms (Facebook and Instagram). Flyers that described the study included a QR code with a link to the study were also disseminated in schools and places related to child activities (e.g., children's swimming schools) after obtaining authorization from the school board. In the current study, 21% of the valid data were collected online. No significant differences were found between online- and paper-format data collection per the variables of interest (e.g., parents' age, father involvement, parenting stress, coparenting). Parents were informed that 20 vouchers of €20 would be raffled among those who agreed to participate and provided their email to be contacted with the raffle's result.

Data analysis

Multilevel modelling (MLM) was performed with SPSS (Version 28.0) for Windows, with the couple as the unit of measurement. Because mothers and fathers were nested within couples, the assumption of independent observations could not be assumed, requiring an MLM approach. Dyadic data violate the assumption of independent observations, with MLM accounting for the correlated nature of the measures for data that have more than one level (Luke, 2004).

MLM was adopted to examine the associations between the individual and family variables with father involvement. The data were structured in a two-level MLM, with

parents' variation (e.g., parents' education, time spend with child) at level 1 and family variation (e.g., number of children, coparenting) at level 2. The interaction between main variables and parents' gender was also included in level 2, allowing us to estimate whether the parents' gender varied as a function of the main effects (Kenny & Kashy, 2011). Analysis was performed in two independent sequential steps to investigate the independent effects of individual and family factors on father involvement. According to Kenny and Kashy (2011) recommendations for analyzing non-independent data, the models were constrained to allow only fixed effects so that they could be equal across mothers and fathers. The heterogeneous compound symmetry (HCS) method was used to allow the two variances of dyads to differ (Kenny & Kashy, 2011). Both regression models were constructed based on an unconditional model with random intercepts to study the variability between individuals, estimating the intraclass correlations. The intraclass correlation coefficient (ICC) provides an estimate of how much variance in the model is due to grouping structure. A lower ICC corresponds to greater heterogeneity in individuals in the same group, addressing the need of exploring the variability between parents. Previously, all continuous variables were grand mean-centred to reduce multicollinearity effects. The models were estimated with maximum likelihood (Heck et al., 2014; Kenny & Kashy, 2011; Luke, 2004).

Results

Preliminary analysis

Correlations were performed, aiming to identify significant variables to be included in the MLM (Table 1). An examination of the correlations revealed that, at the individual level, both mother and father's higher education, time spent with the child, and father's age were related to greater father involvement, whereas both mothers' and fathers' greater stress were related to lower father involvement. Concerning family variables, greater cooperative coparenting and lower conflictual and triangular coparenting were related to greater father involvement. Also, older children and more children in the family were related to greater father involvement.

Multilevel analysis

To examine if mothers' and fathers' responses concerning father involvement had significant variability, we initially ran an intercept-only model (i.e., the unconditional model). Results revealed a significant variability in father involvement within couples ($ICC=0.54$, $p<.001$), showing moderate discrepancy in the dyad, indicating that a multilevel

Table 1 Correlations among study variables and sociodemographic information

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.FatherInvolve	-																
2.FWFC	-.04	-															
3.MWFC	-.01	.29**	-														
4.FStress	-.10**	.32**	.21**	-													
5.MStress	-.12**	.21**	.32**	.43**	-												
6.FCoopCoparent	.51**	-.09**	-.18**	-.21**	-.19**	-											
7.FConfCoparent	-.23**	.20**	.20**	.30**	.23**	-.51**	-										
8.FTriangCoparent	-.29**	.04	.09	.11**	.03	-.51**	.58**	-									
9.Fage	.16**	-.01	.01	-.08*	-.02	.04	-.02	-.02	-								
10.Mage	.05	.01	-.01	-.02	-.08*	-.00	.02	.02	.62**	-							
11.Feducation	.11**	.04	.04	.08*	.01	-.08*	.05	.05	.11**	.03	-						
12.Meducation	.13**	-.02	.01	.10*	.05	-.20**	.11**	.13**	-.05	.22**	.18**	-					
13.Ftimechild	.10**	-.12**	-.04	-.01	-.01	.08*	-.02	-.02	-.04	-.04	.04	.18**	-				
14.Mtimechild	.12*	-.04	-.12	-.03	-.03	.19**	-.02	.04	-.01	-.01	.06	.12**	.33**	-			
15.Child's age	.00	.03	.05	-.05	-.06	-.08*	-.03	.06	.17**	.08*	-.05	-.02	.05	.02	-		
16.Child's sex	.04	.03	.01	.05	.05	-.04	.11*	.09*	.01	-.01	.04	-.05	-.04	.01	.02	-	
17.NrChildren	.03	-.03	-.03	.01	.01	-.02	.03	.08*	.12**	.00	.07	-.01	-.06	.01	.16**	.03	-

Note. WFC= Work-family Conflict. * $p < .05$; ** $p < .01$

Table 2 Multivariate hierarchical linear model concerning father involvement

Fixed effects	Coefficient β	SE
Constant	-0.154*	0.070
Individual level		
Father's age	0.003	0.003
Father's education	0.129*	0.034
Mother's education	0.000	0.000
Father's parenting stress	-0.038	0.042
Mother's parenting stress	-0.045	0.039
Father's time childcare	0.018*	0.007
Mother's time childcare	0.006	0.006
Parent's gender	-0.001	0.067
Family level		
Child's age (in years)	0.026*	0.013
Number of children in family	0.056*	0.028
Cooperative coparenting	0.078*	0.031
Conflict coparenting	-0.025	0.028
Triangulation coparenting	-0.074	0.067
Parent's gender x Father's education	-0.111*	0.042
Parent's gender x Time childcare father	-0.013	0.009
Parent's gender x Child's age	-0.001	0.011
Parent's gender x Number children family	-0.013	0.027
Parent's gender x Cooperative Coparent	0.031	0.034
Parent's gender x Triangle Coparent	-0.106	0.069
Random effects		
Within couples	0.673**	0.042
Reduction in -2 LL	78.209	

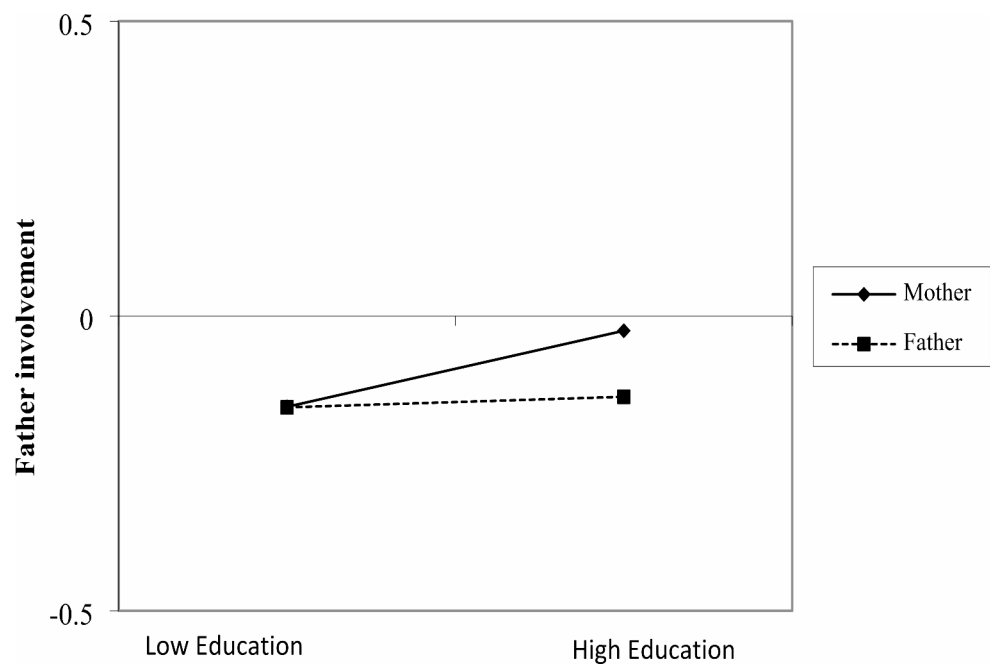
* $p < .05$; ** $p < .01$

approach was required. A model with random intercepts and covariates at levels 1 and 2 examined, respectively, the effects of the individual as family variables in father involvement.

Aiming to examine individual level aspects (H1), the level 1 model examined the characteristics of each parent, previously correlated with father involvement. The following variables were introduced as fixed factors in the model: father's age, education, parenting stress, and time spent with child. Concerning mothers, education, parenting stress, and time spent with child were also included. The parents' gender was introduced as a fixed factor in the model. Next, to examine the influence of family aspects in father involvement (H2), the father's perception of coparenting and child's age were included in the second level of the analysis, according to correlation results. In addition, the interactions between the parents' gender and main significant variables were entered in the final model. The outcomes of the random intercept model with covariates at the individual (level 1) and family (level 2) levels are presented in Table 2.

The final model revealed that both level 1 and 2 variables influenced father involvement. Concerning individual variables (level 1), father's education and the father's time spent with the child were related to a greater proportion of father

Fig. 1 Father involvement: Interaction between mothers' perception of father involvement and fathers' education



involvement, partially addressing H1. At the family level (level 2), older children, and cooperative coparenting were related to a greater proportion of father involvement (H2). Only the interaction effect between the parents' gender and father's education was significant ($b = -0.11$, $p < .05$; see Fig. 1). Further analysis revealed that mothers perceived fathers as being more involved with their child when fathers had more education ($b = 0.13$, $p < .001$).

Discussion

The present study examined the interplay between fathers' and mothers' individual and family factors influencing father involvement, relying on a multilevel approach. The findings showed how father involvement was multidetermined and influenced both by individual and family aspects, as addressed by the expanded model of father involvement (Cabrera et al., 2014). Given the critical role of fathers in child development (e.g., Cabrera et al., 2014, 2018; Cano et al., 2018) and the gender imbalances that persist in parenting (e.g., Bianchi et al., 2012; Kamp Dush et al., 2018), particularly in Portuguese families (e.g., EIGE, 2022), our findings contribute to a better understanding of how father involvement unfolds among Portuguese working parents, as we assessed both mother and father characteristics.

The determinants of father involvement

The most relevant result was that father involvement was mainly influenced by the father's characteristics, but not the mother's characteristics. Although we expected that

both mother and father variables would be related to father involvement (H1), this was partially confirmed, revealing the critical importance of the father's factors in his involvement. In particular, the father's education and daily time spent with his child were the main individual factors associated with greater involvement. Indeed, the time fathers spend in childcare has been recognized as an important determinant of father involvement (Cabrera et al., 2014; Cano et al., 2018; Pleck, 2010), which is also highly related to the father's educational level (Cano et al., 2018; Cha & Song, 2017; Kalil et al., 2012). These two variables have been addressed as playing a key role in father involvement, given that more-educated fathers tend to be more aware about how their involvement contributes to the quality of child development, achieving higher scores in involvement (Cha & Song, 2017; England & Srivastava, 2013; Yeh et al., 2021). Still, a possible bias of social class in parenting exists: more educated fathers tend to benefit from better work conditions, namely more flexible schedules and lower workloads that may contribute to greater involvement (Molina, 2021; Palkovitz & Hull, 2018). Thus, further examination of these variables with fathers from diverse social classes is an important avenue for future research.

At the family level (H2), the father's perception that their partner was able to share decisions and responsibilities related to their child (i.e., cooperative coparenting) was reflected in a greater proportion of father involvement. Indeed, cooperative coparenting has been described as critical for father involvement, showing a spill-over effect on family wellbeing and father's behavior toward the child (Hohmann-Marriott, 2011; Johnson et al., 2024; Kuo et al., 2024; Lee et al., 2020). When fathers perceive they

are supported, they may themselves feel more competent in their parenting role, thereby contributing to his greater involvement. Perhaps from himself feeling that he is playing an active role in parenting, with a capacity to give input regarding the child's education and decision-making, fathers may be more prone to invest in daily activities related to their children (Diniz et al., 2023; Fagan & Cabrera, 2012; Schoppe-Sullivan et al., 2008). Also, the child's older age was related to greater father involvement, a finding in line with some studies on the topic that had revealed that a father's involvement with young children tends to increase during the first years (e.g., Amodia-Bidakowska et al., 2020; Halme et al., 2009; Kuo et al., 2018). This may suggest, on the one hand, that as children grow up, fathers may perceive children as less dependent on their mothers, and thus feel more confident in playing a more active role with the children (Kuo et al., 2018; Planalp & Braungart-Rieker, 2016). Also, as children move from toddlerhood into childhood, they are more available for more diversified shared activities and interactions (e.g., playing games, reading books), calling for a greater involvement of the fathers (Planalp & Braungart-Rieker, 2016). Conversely, studies that examined parents' transition to a second child uncovered how fathers tend to be more involved with the older children (Kuo et al., 2018). Because most of our sample included firstborns (63%), the fathers may have been more involved with them. Moreover, having more children may contribute not only to a father's greater confidence in his skills but also to a real demand for his involvement, which is reflected in his greater involvement.

Finally, our multilevel analysis indicated a moderation role of the parents' gender in the association between the father's education and his involvement, revealing that mothers perceived fathers as more involved with their children when the fathers had more education. It is discussed that more educated fathers value their parenting role, revealing more child-centric attitudes (e.g., Cano et al., 2018) which may contribute to mothers perceiving them as more involved. Also, perhaps fathers with higher education are more sensitive and adjusted to parenting, contributing to a greater support for and valorization of his role being reflected in mothers' greater perceptions of father involvement. Educated fathers tend to use practices often associated with cognitive and emotional support, with greater commitment to egalitarian parenting roles (Jia et al., 2012; Kalil et al., 2012; Planalp & Braungart-Rieker, 2016). Such interactions, visible in daily routines and educational activities, could lead mothers to perceive these fathers as more actively participating in their children's development, thereby influencing their overall perception of involvement. Furthermore, more educated fathers may hold work careers that offer more flexibility, allowing them to allocate more

time to family activities (Cano et al., 2018; Molina, 2021). This combination of factors could influence mothers' perceptions in recognizing and valuing the enhanced involvement of more-educated fathers in childcare.

Overall, our findings contribute to a better understanding of father involvement, empirically illuminating the expanded model of father involvement (Cabrera et al., 2014, 2018) by highlighting the interplay between fathers' characteristics, including education, daily time spent with the child, and cooperative coparenting. Contrary to our expectations, neither parents' stress nor work–family conflict related to father involvement (H1). The non-significance of these results may suggest that these direct effects typically found may be a consequence of other factors related to parenting that often remain overlooked, such as time spent with children (Cano et al., 2018). They may also be influenced by intraindividual aspects, such as gender role perspectives, and the father's (role) salience (Dermott & Miller, 2015; Kuo et al., 2024; Planalp & Braungart-Rieker, 2016), which were not examined in this study, but may affect how fathers manage parental and professional demands to be more involved with their children. Thus, future studies should examine the roles of these variables in father involvement.

At the theoretical level, our findings highlight how a father's behaviors can be influenced both by his individual (e.g., time spent) and ecological aspects of the family (e.g., cooperative coparenting). This result may help in subsidizing interventions and policies to enhance father involvement in countries like Portugal, which have limited resources and policies to support young families in their parenting. Specifically, employers and public policies should promote fathers' free time, namely by facilitating specific work schedules for fathers of young children. These policies should account for fathers with lower education, who often have jobs which limit their opportunities to be engaged with their children (Cano et al., 2018; Molina, 2021). Our findings also revealed the importance of cooperative coparenting for father involvement (Fagan & Palkovitz, 2019; Diniz et al., 2024; Schoppe-Sullivan & Fagan, 2020). When the fathers perceived themselves as included, valued, and supported in decisions concerning their child, they revealed a greater involvement, supporting Cabrera et al.'s (2014) model. Because fathers who perceive positive coparenting revealed more involvement, services working with families should value and include fathers as active players in their child's lives. This finding may guide policies to include fathers in all aspects concerning their children, namely in healthcare and educational services. Our findings reinforce the perspective that policies that support fathers of young children will benefit fathers' involvement, which will be reflected in greater child adjustment and improved family wellbeing (e.g., Cabrera et al., 2018; Cano et al., 2018).

Limitations and future research

Despite the relevance of examining personal and family determinants of father involvement, this study had several limitations. First, our cross-sectional design did not allow us to discern either the directionality of the results or their development over time. Hence, longitudinal studies are needed to clarify the directionality between the identified variables, as well as their stability (or instability) in different family life periods. Second, our findings relied on dual-earner heterosexual couples with relatively high education and a consistent number of working hours, limiting the generalization of these results to other contexts of parenting, such as disadvantaged families – namely unemployed fathers – or parents working nights or opposite shifts. This is an important limitation, given that some studies on the topic had uncovered how these professional arrangements often contribute to unique forms of father involvement (Linnenberg, 2012; Waller, 2009) and should be better explored by future research. Moreover, father involvement in same-sex couples should be explored, given that these couples tend to endorse more egalitarian perspectives related to gender roles and sharing domestic work (Cudeville et al., 2020; Vleuten et al., 2021), which may influence father involvement. Third, self-report assessments are critical to assessing individuals' perspectives about individual behaviors and family dynamics. Because we were focused on the father's perceptions about his involvement and how he evaluated coparenting, only the father's perspectives on these variables were included, which may have introduced some bias into our findings. Thus, the use of other methodologies like dyadic approaches, observation, or implicit measures will enrich knowledge on this topic. Finally, our measure of father involvement, which relied on an overall score, although it assessed the diverse dimensions of the construct, limited our understanding of how the fathers were involved. This might also be better examined in the future, allowing researchers to uncover whether specific dimensions may (not) be equally influenced by (inter)personal–ecological factors. Also, our assessment of the quantity of time and father involvement did not enable us to evaluate the quality of the father's interactions, which should be explored by future studies. Moreover, the fathers' cultural background, namely religion, influence his involvement (e.g., Cabrera et al., 2014; DeMaris et al., 2011; Petts, 2007), but findings are mixed on their directionality calling for a better understanding of their role in father involvement. It is also important to note that the acceptable reliability of the *Parenting Stress Scale* may introduce some bias on findings that should be better examined in future studies.

Still, we believe our findings are relevant, uncovering the importance of fathers' education, time, and cooperative

coparenting in their greater involvement. These findings are particularly relevant in the context of dual-earner families, such as the Portuguese society. Findings contribute to guide interventions and policies to enhance father's work-family conciliation.

Acknowledgements The authors thank to institutions that welcome our study and to all families who participated on it.

Funding This work was supported by the Portuguese Foundation for Science and Technology to Eva Diniz [CEECIND/04111/2017. doi:10.54499/CEECIND/04111/2017/CP1474/CT0001] and [UIDB/04810/2020. doi:10.54499/UIDB/04810/2020].

Data availability The dataset of the study and their coding are available under request to the first author.

Declarations

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

References

- Abidin, R., Flens, J. R., & Austin, W. G. (2006). *The parenting stress index*. Lawrence Erlbaum Associates Publishers.
- Algarvio, S., Leal, I., & Maroco, J. (2018). Parental stress scale: Validation study with a Portuguese population of parents of children from 3 to 10 years old. *Journal of Child Health Care*, 22(4), 563–576. <https://doi.org/10.1177/1367493518764337>
- Amodia-Bidakowska, A., Laverty, C., & Ramchandani, P. G. (2020). Father-child play: A systematic review of its frequency, characteristics and potential impact on children's development. *Developmental Review*, 57. <https://doi.org/10.1016/j.dr.2020.100924>
- Beckerman, M., van Berkel, S. R., Mesman, J., & Alink, L. R. (2017). The role of negative parental attributions in the associations between daily stressors, maltreatment history, and harsh and abusive discipline. *Child Abuse and Neglect*, 64, 09–116. <https://doi.org/10.1016/j.chiabu.2016.12.015>
- Belsky, J. (1984). The determinants of parenting: A process model. *Child Development*, 55(1), 83–96. <https://doi.org/10.2307/1129836>. JSTOR.
- Bianchi, S. M., Sayer, L. C., Milkie, M. A., & Robinson, J. P. (2012). Housework: Who did, does or will do it, and how much does it matter? *Social Forces*, 91, 55–63. <https://doi.org/10.1093/sf/91.120>
- Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (5th ed., pp. 993–1028). John Wiley & Sons Inc.
- Cabrera, N. J., Fitzgerald, H. E., Bradley, R. H., & Roggman, L. (2014). The ecology of father-child relationships: An expanded model. *Journal of Family Theory & Review*, 6(4), 336–354. <https://doi.org/10.1111/jftr.12054>
- Cabrera, N. J., Volling, B. L., & Barr, R. (2018). Fathers are parents, too! Widening the lens on parenting for children's development. *Child Development Perspectives*, 12, 152–157. <https://doi.org/10.1111/cdep.12275>
- Cano, T., Perales, F., & Baxter, J. (2018). A matter of time: Father involvement and child cognitive outcomes. *Journal of Marriage and Family*, 81. <https://doi.org/10.1111/jomf.12532>

- Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior*, *56*, 249–276. <https://doi.org/10.1006/jvbe.1999.1713>
- Cha, S. E., & Song, Y. J. (2017). Time or money: The relationship between educational attainment, income contribution, and time with children among Korean fathers. *Social Indicators Research*, *134*, 195–218. <https://doi.org/10.1007/s11205-016-1414-2>
- Cudeville, E., Gross, M., & Sofer, C. (2020). *Measuring gender norms in domestic work: A comparison between homosexual and heterosexual couples*. Documents de travail du Centre d'Economie de la Sorbonne 20001, Université Panthéon-Sorbonne (Paris 1), Centre d'Economie de la Sorbonne.
- DeMaris, A., Mahoney, A., & Pargament, K. I. (2011). Doing the scut work of infant care: Does religiousness encourage father involvement? *Journal of Marriage and Family*, *73*, 354–368. <https://doi.org/10.1111/j.1741-3737.2010.00811.x>
- Dermott, E., & Miller, T. (2015). More than the sum of its parts? Contemporary fatherhood policy, practice and discourse. *Families Relationships and Societies*, *4*, 183–195. <https://doi.org/10.1332/204674315X14212269138324>
- Diniz, E., Brandão, T., Monteiro, L., & Veríssimo, M. (2021). Father involvement during early childhood: A systematic review of the literature. *Journal of Family Theory and Review*, *13*, 77–99. <https://doi.org/10.1111/jftr.12410>
- Diniz, E., Monteiro, L., & Veríssimo, M. (2023). Work gains and strains in father involvement: The mediating role of parenting styles. *Children*, *10*, 1357. <https://doi.org/10.3390/children10081357>
- Diniz, E., Brandão, T., D'Orsi, D., & Veríssimo, M. (2024). Work-family conflict influences mothers' perception of father involvement with childcare: A dyadic approach. *Journal of Family Communication*, *24*, 154–170. <https://doi.org/10.1080/15267431.2024.2394025>
- England, P., & Srivastava, A. (2013). Educational differences in US parents' time spent in childcare: The role of culture and cross-spouse influence. *Social Science Research*, *42*, 971–988.
- European Instituto for Gender Equality (EIGE; 2022). Gender Equality Forum 2022. Retrieved on November 10th 2022, from <https://eige.europa.eu/events/eige-gender-equality-forum-2022>
- Fagan, J., & Cabrera, N. (2012). Longitudinal and reciprocal associations between coparenting conflict and father engagement. *Journal of Family Psychology*, *26*, 1004–1011. <https://doi.org/10.1037/a0029998>
- Fagan, J., & Palkovitz, R. (2019). Coparenting and father engagement among low-income parents: Actor-partner interdependence model. *Journal of Family Psychology*, *33*(8), 894–904. <https://doi.org/10.1037/fam0000563>
- Feinberg, M. E. (2003). The internal structure and ecological context of coparenting: A framework for research and intervention. *Parenting*, *3*(2), 95–131. https://doi.org/10.1207/S15327922PAR0302_01
- Feinberg, M. E., Jones, D. E., McDaniel, B. T., Liu, S., & Almeida, D. (2019). New fathers' and mothers' daily stressors and resources influence parent adjustment and family relationships. *Monographs of the Society for Research in Child Development*, *84*(1), 18–34.
- Halme, N., Åstedt-Kurki, P., & Tarkka, M. T. (2009). Fathers' involvement with their preschool-age children: How fathers spend time with their children in different family structures. *Child Youth Care Forum*, *38*, 103–119. <https://doi.org/10.1007/s10566-009-9069-7>
- Heck, R. H., Thomas, S., & Tabata, L. N. (2014). *Multilevel and longitudinal modeling with IBM SPSS*. Routledge.
- Henz, U. (2019). Fathers' involvement with their children in the United Kingdom: Recent trends and class differences. *Demographic Research*, *40*, 865–896. <https://www.jstor.org/stable/26727019>
- Hohmann-Marriot, B. (2011). Coparenting and father involvement in married and unmarried coresident couples. *Journal of Marriage and Family*, *73*, 296–309. <https://doi.org/10.1111/j.1741-3737.2010.00805.x>
- Jia, R., Kotila, L. E., & Schoppe-Sullivan, S. J. (2012). Transactional relations between father involvement and preschoolers' socio-emotional adjustment. *Journal of Family Psychology*, *26*(6), 848–857. <https://doi.org/10.1037/a0030245>
- Johnson, V. J., Choi, D., Wheeler, L. A., & Kuo, P. X. (2024). Coparenting support in the context of difficult children: Mother and father differences. *Family Process*, *63*(3), 1373–1391. <https://doi.org/10.1111/famp.12911>
- Kalil, A., Ryan, R., & Corey, M. (2012). Diverging destinies: Maternal education and the educational gradient in time with children. *Demography*, *49*, 1361–1383. <https://doi.org/10.1007/s13524-012-0129-5>
- Kamp Dush, C. M., Yavorsky, J. E., & Schoppe-Sullivan, S. J. (2018). What are men doing while women perform extra unpaid labor? Leisure and specialization at the transitions to parenthood. *Sex Roles*, *78*(11–12), 715–730. <https://doi.org/10.1007/s11199-017-0841-0>
- Kenny, D. A., & Kashy, D. A. (2011). Dyadic data analysis using multilevel modeling. In J. J. Hox, & J. K. Roberts (Eds.), *Handbook for advanced multilevel analysis* (pp. 335–370). Routledge/Taylor & Francis Group.
- Kuo, P. X., Volling, B. L., & Gonzalez, R. (2018). Gender role beliefs, work-family conflict, and father involvement after the birth of a second child. *Psychology of Men & Masculinity*, *19*(2), 243–256. <https://doi.org/10.1037/men0000101>
- Kuo, P. X., Xu, W., & Yang, Z. (2024). Dyadic associations between marital satisfaction and coparenting quality: Gender differences and the moderating role of caregiving identity. *Frontiers in Sociology*, *1*. <https://doi.org/10.3389/fsoc.2024.1422404>
- Lamb, M. E., & Lewis, C. (2010). The development and significance of father-child relationships in two-parent families. In M. E. Lamb (Ed.), *The role of the father in child development* (5th ed., pp. 94–153). John Wiley & Sons, Inc.
- Lamb, M. E., Pleck, J. H., Charnov, E. L., & Levine, J. A. (1985). Paternal behavior in humans. *American Zoologist*, *25*(3), 883–894. <https://www.jstor.org/stable/3883043>
- Lang, S. N., Schoppe-Sullivan, S. J., Kotila, L. E., Feng, X., Dush, C. M., & Johnson, S. C. (2014). Relations between fathers' and mothers' infant engagement patterns in dual-earner families and toddler competence. *Journal of Family Issues*, *35*, 1107–1127. <https://doi.org/10.1177/0192513X14522243>
- Lansford, J. E. (2022). Annual research review: Cross-cultural similarities and differences in parenting. *Journal of Child Psychology and Psychiatry*, *63*, 466–479. <https://doi.org/10.1111/jcpp.13539>
- Lee, J. Y., Volling, B. L., Lee, S. J., & Altschul, I. (2020). Longitudinal relations between coparenting and father engagement in low-income residential and nonresidential father families. *Journal of Family Psychology*, *34*, 226–236. <https://doi.org/10.1037/fam0000612>
- Linnenberg, K. (2012). CinderFella and first-shift fathers: The effect of work schedule on father involvement. *Sociological Focus*, *45*, 203–220. <https://doi.org/10.1080/00380237.2012.686092>
- Liu, L., & Wang, M. (2015). Parenting stress and children's problem behavior in China: The mediating role of parental psychological aggression. *Journal of Family Psychology*, *29*, 20–28. <https://doi.org/10.1037/fam0000047>
- Luke, D. A. (2004). *Multilevel modeling*. Sage.
- McDaniel, B. T., Teti, D. M., & Feinberg, M. E. (2018). Predicting coparenting quality in daily life in mothers and fathers. *Journal of Family Psychology*, *32*, 904–914. <https://doi.org/10.1037/fam0000443>

- Molina, J. A. (2021). The work–family conflict: Evidence from the recent decade and lines of future research. *Journal of Family and Economic Issues*, 42, 4–10. <https://doi.org/10.1007/s10834-020-09700-0>
- Monteiro, L., Veríssimo, M., Pessoa, & Costa, I. (2008). *[Parental involvement questionnaire: Child care and socialization related tasks]*. (unpublished manual). ISPA– Instituto Universitário.
- Nóblega, M., Monteiro, L., Santos, C., Diniz, E., Guimet, M., Ugarte, A., & Marinelli, F. (2024). Father’s engagement in direct care is associated with children’s social competence for preschool boys but not girls in Peru. *Psychology of Men & Masculinities*. <https://doi.org/10.1037/men0000466>
- Palkovitz, R., & Hull, J. (2018). Toward a resource theory of fathering: Resource Theory. *Journal of Family Theory & Review*, 10(1), 181–198. <https://doi.org/10.1111/jftr.12239>
- Pedro, M. F., & Ribeiro, M. T. (2015). Portuguese adaptation of the coparenting questionnaire: Confirmatory factor analysis, validity and reliability. *Psicologia: Reflexão e Crítica*, 28(1), 116–125. <https://doi.org/10.1590/1678-7153.201528113>
- Petts, R. J. (2007). Religious participation, religious affiliation, and engagement with children among fathers experiencing the birth of a new child. *Journal of Family Issues*, 28, 1139–1161. <https://doi.org/10.1177/0192513X07300788>
- Planalp, E. M., & Braungart-Rieker, J. M. (2016). Determinants of father involvement with young children: Evidence from the early childhood longitudinal study–birth cohort. *Journal of Family Psychology*, 30, 135–146. <https://doi.org/10.1037/fam0000156>
- Pleck, J. H. (2010). Paternal involvement: Revised conceptualization and theoretical linkages with child outcomes. *Em The role of the Father in Child Development* (pp. 58–93). Wiley.
- Progress of the World’s Women (PWW) 2015–2016: Transforming economies, realizing rights (2015). Retrieved on January 28th, 2018, from <https://progress.unwomen.org/2015/Pordata18>
- Sameroff, A. (2000). Developmental systems and psychopathology. *Development and Psychopathology*, 12, 297–312. <https://doi.org/10.1017/S0954579400003035>
- Schmidt, E. M., Rieder, I., Zartler, U., Schadler, C., & Richter, R. (2017). Turning points in the transition to parenthood: Variability of father involvement over time. *Zeitschrift für Familienforschung*, 29. <https://doi.org/10.3224/zff.v29i2.01>
- Schoppe-Sullivan, S. J., & Fagan, J. (2020). The evolution of fathering research in the 21st century: Persistent challenges, new directions. *Journal of Marriage and Family*, 82, 175–197. <https://doi.org/10.1111/jomf.12645>
- Schoppe-Sullivan, S. J., Brown, G. L., Cannon, E. A., Mangelsdorf, S. C., & Sokolowski, M. S. (2008). Maternal gatekeeping, coparenting quality, and fathering behavior in families with infants. *Journal of Family Psychology*, 22(3), 389–398. <https://doi.org/10.1037/0893-3200.22.3.389>
- Stanfors, M. (2019). *Gendered Parenthood in the 21 st Century? Everyday Time Use and Stress in Sweden, 2000/01–2010/11*. Population Association of America Annual Meeting 2019.
- Vieira, J. M., Lopez, F. G., & Matos, P. M. (2014). Further validation of work–family conflict and work–family enrichment scales among Portuguese working parents. *Journal of Career Assessment*, 22(2), 329–344. <https://doi.org/10.1177/1069072713493987>
- Vieira, J. M., Matias, M., Lopez, F. G., & Matos, P. M. (2016). Relationships between work–family dynamics and parenting experiences: A dyadic analysis of dual-earner couples. *Work & Stress*, 30(3), 243–261. <https://doi.org/10.1080/02678373.2016.1211772>
- Vleuten, M., Jaspers, E., & Lippe, T. (2021). Same-sex couples’ division of labor from a cross-national perspective. *Journal of GLBT Family Studies*, 17, 150–167. <https://doi.org/10.1080/1550428X.2020.1862012>
- Volling, B. L., & Cabrera, N. J. (2019). Advancing research and measurement on fathering and children’s development. *Monographs of the Society for Research in Child Development*, 84. <https://doi.org/10.1111/mono.12404>
- Waller, M. R. (2009). Family man in the other America: New opportunities, motivations, and supports for paternal caregiving. *The Annals of the American Academy of Political and Social Science*, 624, 156–176. <https://doi.org/10.1177/0002716209334372>
- Yeh, C., Ballard, S., Bian, H., et al. (2021). An exploratory cross-cultural study: Fathers’ early involvement with infants. *Early Child Development and Care*, 191, 373–388. <https://doi.org/10.1080/03004430.2019.1621859>
- Yoo, Y. S., Adamsons, K. L., Robinson, J. L., & Sabatelli, R. M. (2015). Longitudinal influence of paternal distress on children’s representations of fathers, family cohesion, and family conflict. *Journal of Child and Family Studies*, 24, 591–607. <https://doi.org/10.1007/s10826-013-9870-7>

Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.