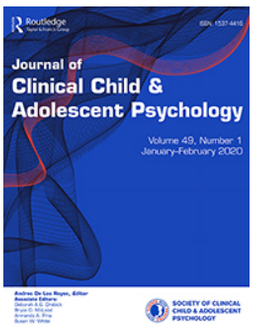

Routledge
Taylor & Francis Group

Journal of Clinical Child & Adolescent Psychology

ISSN: 1537-4416 (Print) 1537-4424 (Online) Journal homepage: https://www.tandfonline.com/loi/hcap20

The Complex Role of Parental Separation in the Association between Family Conflict and Child Problem Behavior

Yllza Xerxa, Leslie A. Rescorla, Fadila Serdarevic, Marinus H. Van IJzendorn, Vincent W. Jaddoe, Frank C. Verhulst, Maartje P.C.M. Luijk & Henning Tiemeier

To cite this article: Yllza Xerxa, Leslie A. Rescorla, Fadila Serdarevic, Marinus H. Van IJzendorn, Vincent W. Jaddoe, Frank C. Verhulst, Maartje P.C.M. Luijk & Henning Tiemeier (2020) The Complex Role of Parental Separation in the Association between Family Conflict and Child Problem Behavior, Journal of Clinical Child & Adolescent Psychology, 49:1, 79-93, DOI: 10.1080/15374416.2018.1520118

To link to this article: https://doi.org/10.1080/15374416.2018.1520118

Journal of Clinical Child & Adolescent Psychology, 49(1), 79–93, 2020

ISSN: 1537-4416 print/1537-4424 online
DOI: https://doi.org/10.1080/15374416.2018.1520118

The Complex Role of Parental Separation in the Association between Family Conflict and Child Problem Behavior

Yllza Xerxa
Generation R Study Group, Department of Child and Adolescent Psychiatry, Erasmus University Medical Center

Leslie A. Rescorla
Department of Psychology, Bryn Mawr College

Fadila Serdarevic
Generation R Study Group, Department of Child and Adolescent Psychiatry, Erasmus University Medical Center

Marinus H. Van IJzendorn
Department of Psychology, Education and Child Studies, Erasmus University Rotterdam

Vincent W. Jaddoe
Generation R Study Group, Department of Epidemiology, Erasmus University Medical Center, Department of Pediatrics, Sophia Children's Hospital, Erasmus University Medical Center

Frank C. Verhulst
Department of Child and Adolescent Psychiatry, Erasmus University Medical Center

Maartje P.C.M. Luijk
Department of Child and Adolescent Psychiatry, Erasmus University Medical Center, Department of Psychology, Education and Child Studies, Erasmus University Rotterdam

Henning Tiemeier
Department of Child and Adolescent Psychiatry, Erasmus University Medical Center Department of Epidemiology, Erasmus Medical Center Department of Social and Behavioral Science, Harvard TH Chan School of Public Health

Correspondence should be addressed to Henning Tiemeier, Department of Child and Adolescent Psychiatry, Erasmus University Medical Center, P.O. Box 2060, 3000 CB, Rotterdam, The Netherlands. E-mail: h.tiemeier@erasmusmc.nl

Parental separation is a major adverse childhood experience. Parental separation is generally preceded by conflict, which is itself a risk factor for child problem behavior. Whether parental separation independent of conflict has negative effects on child problem behavior is unclear. This study was embedded in Generation R, a population-based cohort followed from fetal life until age 9 years. Information on family conflict was obtained from 5,808 mothers and fathers. The 4-way decomposition method was used to apportion the effects of prenatal family conflict and parental separation on child problem behavior into 4 nonoverlapping components. Structural equation modeling was used to test bidirectional effects of child problem behavior and family conflict over time. Family conflict from pregnancy onward and parental separation each strongly predicted child problem behavior up to preadolescence according to maternal and paternal ratings. Using the 4-way decomposition method, we found evidence for a strong direct effect of prenatal family conflict on child problem behavior, for reference interaction, and for mediated interaction. The evidence for interaction implies that prenatal family conflict increased the children's vulnerability to the harmful effect of parental separation. There was no evidence of a pure indirect effect of parental separation on child problem behavior. Overall, results indicated that if parental separation occurs in families with low levels of conflict, parental separation does not predict more child problem behavior. Moreover, the bidirectional pattern suggested that child problem behavior influences the persistence of family conflict.

Parental separation affects approximately one third of all marriages in many societies. Parental separation has been related to diverse negative outcomes of the child, including mental and physical health problems (Felitti & Anda, 2010). Many children from separated families show difficulties in functioning, including frequent emotional and behavioral problems (Amato, 2001; Lansford et al., 2006; Spruijt & Kormos, 2014). However, family conflict often long precedes the actual physical separation, thus making it difficult to determine whether the negative effects on children are caused by the parental separation or by the family conflict (Goldthorpe, 2001), which increases the risk of separation as well as causing child maladjustment (Bhrolch, 2001; McLanahan, Tach, & Schneider, 2013). Furthermore, child maladjustment can often trigger or exacerbate family conflict (Schermerhorn, Cummings, DeCarlo, & Davies, 2007; Sturge-Apple, Davies, & Cummings, 2010). In some families, family conflict may start before the child is born and escalate over time. However, in other families, family conflict begins sometime after the child is born and increases over time, particularly if the child has physical, developmental, regulatory, emotional, or behavioral problems (Cummings, Schermerhorn, Davies, Goeke-Morey, & Cummings, 2006; Goeke-Morey, Cummings, & Papp, 2007; Rhoades, 2008). Given this complex set of factors, it is important to consider the effects of prenatal family conflict on later family conflict, on separation, and on child maladjustment. In addition, it is important to test mediation and interaction effects linking prenatal conflict and separation with child maladjustment. Finally, bidirectional effects between child maladjustment and family conflict are important to test. Before detailing our specific hypotheses, we summarize previous research relevant to associations between family conflict, separation, and child maladjustment.

Family Conflict

Many studies show that family conflict plays a central role in child maladjustment (Camisasca, Miragoli, & Di Blasio, 2016; Fosco & Grych, 2008; Pendry & Adam, 2013). Parents in high-conflict marriages are less warm toward their children, more rejecting, harsher in their discipline, and more withdrawn and depressed than parents in low-conflict marriages (Amato & DeBoer, 2001; Booth & Amato, 2001; Davies et al., 2016). When family conflict increases parental harshness, rejection, and inconsistency, it may lead to child maladjustment, such as internalizing and externalizing problems (Gryczkowski, Jordan, & Mercer, 2010; Laurin, Joussemet, Tremblay, & Boivin, 2015). In addition, the effects of family conflict may vary depending on the age of the child, with toddlers showing developmental, self-regulatory, and attachment issues but preschoolers showing self-blame, fear, confusion, guilt and sadness (Kelly & Lamb, 2000; McIntosh, 2003). As children age, they develop a more sophisticated understanding of interactions between people, but they are still troubled by loyalty conflicts when their divorced parents remain locked in conflict (McIntosh, 2003).

Few studies have examined the stability of family conflict over time, and even fewer have tested this stability starting prenatally. However, Kluwer and Johnson (2007) reported that a high level of conflict during pregnancy predicted worse marital relationships after the child was born. This may be because the stresses of parenting are added to an already conflictual relationship (Howard & Brooks-Gunn, 2009).

Separation/Divorce

Separation and divorce represent a cascade of potentially stressful changes in the social and physical environment of families. Separation is often associated with increased parental distress, reduced attention paid to the child by one or both parents, disruption of the home environment, conflict over money and custody/visitation, and reduced economic circumstances, all of which are stressors for children (Amato, 2001; Kelly & Emery, 2003; Stadelmann, Perren, Groeben, & von Klitzing, 2010). Parental preoccupation with issues pertaining to separation/divorce and adjustment to the new domestic arrangements can also interfere with effective parenting, which can lead to problems in their children (Gryczkowski et al., 2010; Laurin et al., 2015).

Most prospective studies have found that both family conflict and parental separation stress children and can lead to maladjustment (Amato & Afifi, 2006). Furthermore, the level of conflict preceding the separation influences child emotional and behavioral problems (Booth & Amato, 2001; Strohschein, 2005). Some research indicates that family conflict is a more important predictor child maladjustment than parental separation (Schoppe-Sullivan, Schermerhorn, & Cummings, 2007). Interaction effects between conflict and separation are likely, though they have not been widely studied. For example, separation may have fewer negative effects on children when conflict is low and parents can collaborate for their children's welfare before, during, and after the separation process (Amato, Kane, & James, 2011). On the other hand, when conflict is high before, during, and after the separation, then the compound effects of conflict and separation may result in many negative consequences for the children. However, a few longitudinal studies have found that children in high-conflict families showed improved well-being after parental separation. (Amato & DeBoer, 2001; Booth & Amato, 2001). This outcome may be contingent on the discrepancy between pre- and post-separation level of contact and conflict.

Gaps in Previous Research

Few studies thus far have explored the extent to which the association between parental separation and child maladjustment depends on family conflict, and even fewer have tested this in young children. Most previous research has considered the effects of family conflict and divorce individually, but the two are likely to interact. The few studies (Amato, 2000; Davies et al., 2016) that have considered both family conflict and parental separation did so by adjusting the regression analyses of separation predicting child behavior for family conflict. However, these studies have generally not tested the interaction effect between family conflict and parental separation. Moreover, family conflict has typically been assessed after the child was born. Because child behavior can influence family conflict and separation, reverse causality can create a bidirectional feedback loop, but this has been largely unexplored in previous studies (Pardini, 2008). Measuring family conflict prenatally controls for such bidirectional effects. Furthermore, measuring both family conflict and child maladjustment at successive time points in a longitudinal design permits analysis of the bidirectional associations between parental and child behavior over time (Sameroff & Mackenzie, 2003; Shaw & Bell, 1993). In addition, many studies of divorce/separation do not obtain ratings of child emotional and behavioral problems from both parents, although discrepancies between maternal and paternal ratings are a well-documented finding (Achenbach, McConaughy, & Howell, 1987; De Los Reyes et al., 2015).

Goals of Our Research

To address these limitations in the literature, we examined effects of family conflict and parental separation on child maladjustment using a large, multiethnic population-based prospective cohort from The Generation R Study (Kooijman et al., 2016). Both parents provided reports of family conflict prenatally and at age 9, and mothers reported on family conflict at age 5. Information about marital status (i.e., married/living together vs. separated/divorced) was obtained prenatally and at ages 3, 5, and 9. The parents each reported child behavioral and emotional problems at age 3 and 9 and mothers also provided reports at age 5. We used these data to test the following hypotheses: (a) prenatal family conflict is associated with later family conflict, separation, and child maladjustment; (b) parental separation is associated with child maladjustment; (c) parental separation might not affect child maladjustment independent of prenatal family conflict; and (d) bidirectional associations would be found between child maladjustment and family conflict.

METHOD

Participants

Our research was embedded in the Generation R Study, a multiethnic population-based cohort from fetal life onward. The Generation R Study has been described in detail previously (Kooijman et al., 2016). Briefly, all pregnant women living in Rotterdam, the Netherlands, with an expected delivery date between April 2002 and January 2006 were invited to participate. The study was approved by the Medical Ethics Committee of the Erasmus Medical Center, Rotterdam. Written informed consent was obtained from all adult participants. Of the 8,879 pregnant women enrolled during pregnancy, we excluded 1,266 mothers with no partner and 490 with missing family conflict data,

leaving 7,123 mothers and 4,561 fathers. Of the 7,123 mothers who completed questionnaires on family conflict before the child was born, 1,315 (18%) mothers were lost to follow-up, leaving 5,808 remaining mothers with child report data. Not all of these 5,808 mothers were seen at every time point (i.e., ages 3, 5, and 9). We tabulated the number of mothers who reported being separated from their partners at each time point and calculated this as a percentage of the mothers seen at that time point, as follows: (a) by age 3 (342/4,174 = 8.2%), (b) from ages 3 to 5 (430/5,163 = 8.9%), and (c) from ages 5 to 9 (298/4,543 = 7.9%). Overall, by the time the child was 9 years old, 1,070 (23.6%) mothers were separated/divorced from their partner. At age 9 years, 4,062 mothers reported data on child problem behavior (4,223 and 5,063 had reported child problem behavior at age 3 and 5 years, respectively; see supplementary Figure 1). At age 9 years, 3,080 fathers reported data on child problem behavior (3,556 had reported child problem behavior at age 3years, respectively).

Measures

Family Assessment Device

Family functioning was assessed with the General Functioning subscale of the Family Assessment Device (FAD; Byles, Byrne, Boyle, & Offord, 1988; Epstein, Baldwin, & Bishop, 1983) at pregnancy of 20 weeks, as well as when the child was 5 and 9 years old. Both mothers and fathers completed this measure prenatally and at age 9, but only maternal report was available at age 5. The General Functioning scale is a validated self-report measure of family health and pathology consisting of 12 items. Half of the items describe healthy functioning (e.g., "In times of crisis, we can turn to each other for support"). The other half describe unhealthy functioning (e.g., "There are a lot of unpleasant and painful feelings in our family"). Parents were asked to rate how well each item described their family by selecting from four responses ranging from 1 to 4: *strongly agree, agree, disagree*, or *strongly disagree*. So that a higher total FAD score could indicate less well-functioning families, the six positively worded healthy items were reverse-coded. Then all 12 items were summed and divided by 12, yielding a total score from 1 to 4. The FAD score is therefore referred to henceforth as *family conflict*. In the current study, internal consistencies (Cronbach's alpha) ranged from 0.82 to 0.87.

Child Behavior Checklist

The Child Behavior Checklist for Ages 1½–5 (CBCL/1½–5; Achenbach & Rescorla, 2000) and the Child Behavior Checklist for Ages 6–18 (CBCL/6–18; Achenbach & Rescorla, 2001) were used to obtain standardized parent reports of children's emotional and behavioral problems. The CBCL/1½–5 contains 99 problems items, which are scored on seven empirically based syndromes and three broadband scales (Internalizing, Externalizing, and Total Problems). Each item used a 3-point rating scale of 0 (*not true*), 1 (*somewhat or sometimes true*), and 2 (*very true or often true*), based on the preceding 2 months. The CBCL/6–18 has 118 problem items, also yielding syndrome scales and the same three broadband scales, with ratings based on the preceding 6 months. Good reliability and validity have been reported (Achenbach & Rescorla, 2000), and the scales were found to be generalizable across 23 societies, including the Netherlands (Ivanova et al., 2010). We used the continuous Total Problems score (the sum of ratings on all problem items) as our outcome measure because it reflects all the behavioral and emotional problems tapped by the CBCL and is thus the best overall index of maladjustment. Cronbach's alpha at the different time points ranged from 0.77 to 0.80.

Parental Separation/Divorce

Marital status questions from the Generation R Study parental questionnaires were used to measure the occurrence of parental separation at four data collection rounds: during pregnancy and when the child was 3, 5, and 9 years old. At each time point, marital status was scored dichotomously: "married/living together" and "separated/divorced." If parents reported "not living together anymore" or "divorced," the child was coded as having experienced separation. In the Netherlands, many unmarried couples have a registered partnership. Marriage and registered partnership are similar in many ways. They are both relationships formalized by law. When registered partners who live together with their children decide to separate, the procedure must be conducted as if it were divorce. For our study, once a family was classified as separated/divorced, that classification remained for all subsequent time points. With our data, we were not able to differentiate children who were exposed to multiple separation/divorces from those exposed to a single such event.

Covariates

Descriptive statistics for the parent and child characteristics used as possible confounders are presented in Table 1. Parental age, ethnicity, education, and parental psychopathology are well-established predictors of children's problems in existing separation/divorce studies (Amato, 2001), as well as in many studies from the Generation R group. Maternal religion (e.g., Muslim vs. non-Muslim) has been an important variable in previous Generation R studies (Choté et al., 2011; El Marroun et al., 2008). Gestational age at birth was included as a confounder because perinatal

TABLE 1
Baseline Characteristics for Participants With Information on Family Conflict (FAD)

	Mother[a]	*Father*[b]
Age, M (SD)	30.9 (4.8)	33.3 (5.3)
Ethnicity		
Dutch, (%)	62.6	67.9
Other Western, (%)	9.3	6.9
Non-Western, (%)	28.1	25.2
Education Level		
High (%)	52.4	54.8
Middle (%)	28.9	25.7
Low (%)	18.7	19.5
Religion		
Yes (%)	57.7	
No (%)	42.3	
Parental Psychopathology Score, M (SD)	0.26 (0.34)	0.13 (0.21)
Gestational Age at Birth, Weeks, M(SD)	39.81 (1.83)	
Gender (% boy)	49.5	
Family Functioning (FAD Score) Prenatal, M (SD)	1.54 (0.46)	1.51 (0.39)
Family Functioning (FAD Score) at Age 5, M (SD)	1.50 (0.41)	
Family Functioning (FAD Score) at Age 9, M (SD)	1.52 (0.44)	1.49 (0.41)
Parental Separation by Age 3 Years		
Yes (%)	8.2	
Parental Separation Between 3–5 Years of Age		
Yes (%)	8.9	
Parental Separation Between 5–9 Years of Age		
Yes (%)	7.9	
Parental Separation by Age 9 Years		
Yes (%)	23.6	
Child Problem Behavior (CBCL Score) at Age 1.5, M (SD)	22.47 (14.7)	
Child Problem Behavior (CBCL Score) at Age 3, M (SD)	20.33 (14.6)	22.34 (15.6)
Child Problem Behavior (CBCL Score) at Age 5, M (SD)	19.16 (16.1)	
Child Problem Behavior (CBCL Score) at Age 9, M (SD)	17.18 (15.0)	17.30 (14.9)

Note: Numbers denotes children included in one or more analyses. Values are frequencies for categorical and means and standard deviations ($M \pm SD$) for continuous measures. FAD = Family Assessment Device; CBCL = Child Behavior Checklist.

[a] n = 5,808.

[b] n = 4,561.

problems are known risk factors for psychopathology. The divorce literature generally considers child gender as an important variable, given that separation/divorce often has differential effects on boys versus girls. For example, boys often become more oppositional and aggressive, whereas girls often show more dependency, anxiety, and depression (Ellis, 2000a).

Maternal and paternal age were assessed at intake. Parental ethnicity was categorized into Dutch, non-Western and other Western national origin (Netherlands Statistics, 2006). Parental education was classified in three levels: low (maximum of 3 years general secondary school), medium (more than 3 years general secondary school; intermediate vocational training), and high (higher vocational training, bachelor's degree, higher academic education). Information on maternal religion was obtained with questionnaires filled in by the mothers during pregnancy. Based on their responses to two questions about religion, mothers were classified into four categories: not religious, Christian, Islamic, and other religion. Date of birth and gender of the infant were obtained from community midwife and hospital registries at birth. Information on gestational age was established by fetal ultrasound examinations within the Generation R Study. Parental psychopathological symptoms were assessed at 20 weeks of pregnancy and when the child was 3 years old using the Brief Symptom Inventory, a validated self-report questionnaire with 53 items to be answered on a 5-point scale, ranging from 0 (*not at all*) to 4 (*extremely*; De Beurs, 2004; Derogatis & Melisaratos, 1983). High validity and reliability have been reported for the Dutch translation (De Beurs & Zitman, 2005). Cronbach's alpha was $\alpha = 0.86$. In summary, it is important to control for factors such young maternal age, low education, minority status, child gender,

religion, gestational age and parental psychopathology, as they are often associated with family conflict, parental separation, and/or child maladjustment (Amato, 2001; Rhoades, 2008).

Statistical Analyses

Prior to our data analyses, missing values of the covariates were imputed using multiple imputations. With the Markov Chain Monte Carlo multiple imputation technique, 10 complete data sets were created (Schunk, 2008). Multivariate analyses were performed on each imputed data set, and effect estimates were pooled. The data were analyzed using SAS 9.4 software.

To address our first hypothesis, we computed concurrent and predictive correlations among family conflict scores over time and CBCL Total Problems scores over time. Then we used logistic regressions to analyze prenatal family conflict as a predictor of separation at ages 3, 5, and 9. We then analyzed with separate linear regressions the prospective associations of prenatal family conflict and parental separation with CBCL Total Problems scores over time. In a sensitivity analysis, we used generalized estimating equations (GEE; (Litman et al., 2007), to test the interaction with age in the associations between family conflict and maladjustment. This analysis tested if the association of family conflict (as reported by both mothers and fathers) with child problem behavior depends on the age of the child by comparing the single estimate of the repeatedly assessed family conflict.

Our main analysis involved the use of the four-way decomposition method (VanderWeele, 2014), to test if the association of prenatal family conflict with child problem behavior is due to mediation by, or interaction with, parental separation. To this aim, the association of prenatal family conflict with child problem behavior mediated by parental separation (referred as the total effect) was decomposed into four nonoverlapping components: (a) the controlled direct effect of prenatal family conflict on child problem behavior with parental separation absent; (b) the reference interaction (INTref), which is the additive interaction of prenatal family conflict and parental separation on child's problem behavior; this operates only if the effects of prenatal family conflict and parental separation on child problem behavior differ from the sum of the effect of being exposed to only family conflict and the effect of only separation; (c) the mediated interaction (INTmed), which operates when parental separation is causally dependent on prenatal family conflict, and the interaction of the two has an effect on child problem behavior (i.e., parental separation occurs due to family conflict, and separation has an effect on child problem behavior only at certain levels of family conflict); and (d) the pure indirect effect (PIE), which operates when parental separation is associated with child problem behavior independent of prenatal family conflict (i.e., pure mediated effect). This regression-based approach was used to estimate these direct and indirect effects and involved combining parameter estimates according to the analytic expressions in the literature (Vander Weele, 2014). Confidence intervals (CIs) were obtained from standard errors for these effects using the delta method.

We first ran the four-way decomposition model adjusting for all previously mentioned confounders. We then adjusted the model for child problem behavior at 1½ years as an additional confounder. These primary analyses assumed no additional unmeasured confounding. However, because it is possible that potential unmeasured confounders could have affected our results (Imai, Keele, & Yamamoto, 2010), we posited and evaluated an unmeasured confounder in a sensitivity analysis. That is, an unobserved covariate that correlates with parental separation and child problem behavior to such an extent that it would substantially reduce or eliminate the natural direct and indirect effects (details can be found in Supplementary Table 1).

The four-way decomposition model extends the formula from Baron and Kenny (1986) to take account of exposure-mediator interactions in mediation analysis. Several previous studies in the social science field have reported mediated effects in the presence of interaction, but in the past it was difficult to decompose the total effect into direct and indirect effects in these studies (Preacher & Hayes, 2004). Such a decomposition is important because, in many studies, the exposure and mediator do interact to affect the outcome (Valeri & Vanderweele, 2013).

Finally, we examined the bidirectional relations between child problem behavior and postnatal family conflict. Structural equation modeling (SEM) methods were used with the covariance matrices as input. The goodness-of-fit of the estimated SEM models with the data was considered acceptable if the following criteria were met: The root mean square error of approximation had a value of 0.05 or less, and the comparative fit index and Tucker–Lewis index had a value of 0.90 or higher (Hartman et al., 1999). A baseline model was identified in which all paths were free to vary across time and across maternal and paternal reports. Then, for each type of effect (child effect on mother, child effect on father, mother effect on child, and father effect on child), a model was run in which these effects were constrained to be equal across time.

RESULTS

Predictions from Prenatal Family Conflict

The correlations in Table 2 show that mothers' and fathers' reports of family conflict were moderately associated both in the prenatal period and at age 9 (rs = .44).

TABLE 2
Correlation Coefficients between Family Conflict and Child Problem Behavior

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Family Conflict (FAD) Prenatal—Mother Report	—									
2. Family Conflict (FAD) Prenatal—Father Report	.44**	—								
3. Family Conflict (FAD) at Age 5—Mother Report	.40**	.28**	—							
4. Family Conflict (FAD) at Age 9—Mother Report	.38**	.25**	.53**	—						
5. Family Conflict (FAD) at Age 9—Father Report	.25**	.40**	.34**	.44**	—					
6. CBCL Total Problems Scores at Age 3—Mother Report	.25**	.13**	.23**	.24**	.15**	—				
7. CBCL Total Problems Scores at Age 3—Father Report	.14**	.14**	.13**	.14**	.19**	.55**	—			
8. CBCL Total Problems Scores at Age 5—Mother Report	.21**	.13**	.27**	.24**	.15**	.60**	.42**	—		
9. CBCL Total Problems Scores at Age 9—Mother Report	.19**	.12**	.20**	.29**	.20**	.43**	.31**	.59**	—	
10. CBCL Total Problems Scores at Age 9—Father Report	.11**	.12**	.13**	.17**	.31**	.29**	.41**	.41**	.61**	—

**p = .01, two-tailed.

Within-informant longitudinal stability in family conflict ratings (rs = .38–.53 for mothers and .40 for fathers) was higher than cross-informant longitudinal stability (rs = .25). Prenatal ratings of family conflict had modest correlations with CBCL Total Problems score at age 3 (rs = .13–.25), age 5 (rs = .13–.21), and age 9 (rs = .11–.19), consistent with our first hypothesis.

Also consistent with our first hypothesis, the odds ratios (ORs) results derived from logistic regressions (see Table 3) indicate that prenatal family conflict was associated with parental separation across childhood, after adjusting for parent age, ethnicity, education, religion, and psychopathology, as well as child sex and gestational age at birth. The largest *OR*s were for separation by age 3 (*OR*s = 2.8 for mothers' ratings and 3.14 for fathers ratings). However, *OR*s predicting separation between ages 3 and 5 and by age 9 were all greater than 2.0. Thus, regardless of the informant, each unit increase in prenatal family conflict doubled the relative risk of later parental separation.

Family Conflict and Child Problem Behavior

Table 4 presents results from the regression analyses predicting CBCL Total Problems across childhood from family conflict as reported by both mothers and fathers at various time points. For mothers' ratings of prenatal family conflict, prediction of CBCL Total Problems scores was as strong for age 9 as for age 3, with a slight dip at age 5. For fathers' reports of prenatal family conflict, prediction to age 9 was slightly weaker than prediction to age 3. For later reports of family conflict, concurrent associations between family conflict and CBCL Total Problems scores were stronger than associations for both informants. Overall, a child exposed to family conflict was more likely to have higher levels of behavioral and emotional problems at both

TABLE 3
Associations between Mother and Father Reported Prenatal Family Conflict and Later Parental Separation

	Parental Separation							
	By Age 3		*By Age 3–5*		*By Age 5–9*		*By Age 9*	
	OR [95% CI][a]	*p*	*OR [95% CI]*[b]	*p*	*OR [95% CI]*[c]	*p*	*OR [95% CI]*[d]	*p*
Mother Reported: Prenatal Family Conflict (FAD), per Score	2.80 [2.20, 3.56]	< .001	2.18 [1.74, 2.72]	< .001	1.32 [1.00,1.74]	.048	2.16 [1.84, 2.53]	< .001
Father Reported: Prenatal Family Conflict (FAD), per Score	3.14 [2.11, 4.66]	< .001	2.14 [1.51, 3.02]	< .001	1.15 [0.77, 1.71]	.476	2.07 [1.62, 2.64]	< .001

Note: Binary logistic regression analysis of Family Assessment Device (FAD) and separation outcome. Odds ratios (*ORs*) are averaged from 10 imputed data sets. The models are adjusted for age, ethnicity, education and religion, parental psychopathology, child sex, and gestational age at birth reported by mother and father. Separated mothers by age 3 (8.2%), ages 3–5 (8.9%), ages 5–9 (7.9%), and by age 9 (23.6%). CI = confidence interval.

[a]n = 4,174.

[a]n = 4,821.

[a]n = 3,771.

[a]n = 4,543.

TABLE 4
The Association of Family Conflict and Child Problem Behavior

	Child Problem Behavior (CBCL–Total Score, per Point)					
	Age 3		*Age 5*		*Age 9*	
	B [95% CI][a]	p	*B [95% CI]*[b]	p	*B [95% CI]*[c]	p
	n = 4,223		*n* = 5,063		*n* = 4,062	
Mother Reported Family Conflict						
Prenatal Family Conflict (FAD), per Score	5.01 [4.01, 6.02]	< .001	4.20 [3.17, 5.22]	< .001	5.08 [4.01, 6.16]	< .001
Age 5 Family Conflict (FAD), per Score	—		8.53 [7.49, 9.57]	< .001	6.32 [5.17, 7.48]	< .001
Age 9 Family Conflict (FAD), per Score	—		—		9.26 [8.24, 10.2]	< .001
	(*n* = 3,556)			(*n* = 3,091)		
Father Reported Family Conflict						
Prenatal Family Conflict (FAD), per Score	3.87 [2.27, 5.47]	< .001	—		3.45 [1.73, 5.16]	< .001
Age 9 Family Conflict (FAD), per Score	—		—		10.84 [9.61, 12.0]	< .001

Note: Linear regression analysis of Family Assessment Device (FAD) and Child Behavior Checklist (CBCL) outcome. Betas are averaged from 10 imputed data sets. The models are adjusted for age, ethnicity, education and religion, parental psychopathology, gestational age at birth, and child sex reported by mother and father. CI = confidence interval.

concurrent and later ages, consistent with our first hypothesis.

Our GEE sensitivity analysis tested the interaction between levels of family conflict as assessed by each informant and age in predicting child problem behavior at age 9. The GEE estimates were very similar to the results in Table 5, only the CIs varied slightly because this method takes into account within-individual correlation across the time points. Tests for homogeneity of the varying family conflict effects at different ages showed a significant interaction between levels of family conflict across time in predicting child problem behavior at age 9 (GEE: $F = 10.97$, $p_{int} = .001$ for mothers' report; GEE: $F = 16.37$, $p_{int} < .001$ for fathers' report). Specifically, the strongest association with child problem behavior at age 9 was found when family conflict at age 9 was the predictor.

Parental Separation and Child Problem Behavior

To address our second hypothesis, we conducted regression analyses predicting CBCL Total Problems scores at different ages from parental separation at different ages. As shown in Table 5, parental separation was consistently related to higher CBCL Total Problems scores as reported by both mothers and fathers. However, consistent with our third hypothesis, no associations of parental separation were observed after prenatal parental family conflict was added to the model for all the regressions presented in Table 5 except for the "separation by age 9" results for mother-reported Total Problems score, which had a $B = 1.67$, 95% CI [0.12, 3.22], $p = .034$.

Four-Way Decomposition Analysis

Our four-way decomposition analysis provided an integrated test of our first three hypotheses, namely, that prenatal conflict and parental separation would both associated with child emotional and behavioral problems but that separation might not be a significant predictor independent of prenatal family conflict. In this analysis, we tested direct, mediation, and interaction effects of prenatal family conflict and parental separation on CBCL Total Problems scores at age 9. Because the four components sum to the total effect, each component's proportional share of the total effect can be obtained by dividing the coefficient for each effect (which approximates a beta value) by the total effect.

As shown in Table 6, a strong "direct effect" (controlled direct effect) of prenatal family conflict on child problem behavior was present, with a large effect size. That is, in families with high levels of prenatal conflict, children had higher CBCL Total Problems scores at age 9. Second, there was evidence for a "reference interaction effect" (INTref) of prenatal family conflict and parental separation on child problem behavior, with a small effect size. The direction of this effect suggests that when prenatal family conflict was high, the children were more vulnerable to the harmful effects of parental separation. Third, if parental separation was preceded by prenatal family conflict, the interaction of the two "mediated" the effect on child problem behavior with a small effect size (INTmed). The direction of this effect suggests that parental separation had a negative effect on child problem behavior at high levels of family conflict, allowing for prenatal family conflict and separation to interact. As previously noted, traditional methods of

TABLE 5
The Association of Parental Separation and Child Problem Behavior

	Child Problem Behavior (CBCL–Total Score, per Point)					
	Age 3		*Age 5*		*Age 9*	
	B [95% CI][a]	*p*	*B [95% CI][b]*	*p*	*B [95% CI][c]*	*p*
	Mother reported					
	n = 5,063		*n* = 4,223		*n* = 4,062	
Separation by Age 3 (Yes)						
Model 1	1.90 [0.28, 3.52]	.021	1.98 [0.68, 3.89]	.042	3.01 [1.03, 4.99]	.003
Model 2	1.08 [−1.14, 3.30]	.341	1.65 [−0.97, 4.28]	.218	0.94 [−1.79, 3.68]	.499
Separation Ages 3–5 (Yes)						
Model 1	—		2.58 [0.98, 4.18]	.002	2.24 [0.38, 4.10]	.018
Model 2			1.50 [−0.65, 3.66]	.172	0.84 [−1.55, 3.23]	.490
Separation Ages 5– 9 (Yes)						
Model 1	—		—		3.93 [2.07, 5.80]	< .001
Model 2					1.21 [−1.06, 3.48]	.296
Separation by Age 9 (Yes)						
Model 1	—		—		3.28 [2.08, 4.48]	< .001
Model 2					1.67 [0.12, 3.22]	.034
	Father reported					
	(*n* = 3,556)				(*n* = 3,091)	
Separation by Age 3 (Yes)						
Model 1	3.29 [0.46, 6.13]	.023	—		4.88 [1.64, 8.12]	.003
Model 2	1.09 [−2.31, 4.49]	.530			2.78 [−1.08, 6.64]	.159
Separation Ages 5–9 (Yes)						
Model 1	—		—		3.40 [0.93, 5.87]	.007
Model 2					1.27 [−1.63, 4.18]	.391
Separation by Age 9 (Yes)						
Model 1	—		—		3.05 [1.34, 4.76]	< .001
Model 2					1.13 [−0.92, 3.18]	.280

Note: Linear regression analysis of parental separation and Child Behavior Checklist (CBCL) outcome. Betas are averaged from 10 imputed data sets. Model 1 is adjusted for age, ethnicity, education and religion, parental psychopathology, gestational age at birth and child sex reported by mother and father. Model 2: Model 1 + prenatal family conflict reported by mother and father. CI = confidence interval.

mediation do not allow for interaction between the effects of exposure (family conflict) and the effects of the mediator (parental separation). The PIE of parental separation on child problem behavior in the absence of prenatal family conflict was not significant and the CI spanned zero, as shown in Table 6. Although the direction of this effect could suggest that parental separation might have some inverse (i.e., beneficial) effect on child behavior, this cannot be inferred from our data given the broad CI and nonsignificant *p* value. In summary, we found that parental separation partially mediated the association between prenatal family conflict and CBCL Total Problems scores.

It should be noted that the results in Table 6 and reported here represent adjustment for our potential confounders, namely, maternal age, ethnicity, education, religion, maternal psychopathology, gestational age at birth, and child sex. We additionally adjusted for child emotional and behavioral problems at age 1½ years, yielding results that were essentially unchanged. Our sensitivity analysis (Imai et al., 2010) indicated that is unlikely to be eliminated by the influence of an unobserved confounder (details in Supplementary Table 1). This suggests that even under the scenario of substantial unmeasured confounding, the effect of prenatal family conflict on child problem behavior is not purely mediated by parental separation.

Bidirectional Analysis

To address our last hypothesis, we examined bidirectional effects between child maladjustment and family conflict. The SEM showed good fit to the data (root mean square error of approximation = 0.08, comparative fit index = 0.99, Tucker–Lewis index = 0.89; Figure 1). For cross-lagged standardized paths, coefficients are shown. The long-term bidirectional effects between child problem behavior and family conflict were positive for both directions based on maternal and paternal report. Thus, the SEM showed that both parent-to-child

TABLE 6
Estimates of Direct and Indirect Effects Mediated through Parental Separation of the Association between Prenatal Family Conflict and Child Problem Behavior

	Child Problem Behavior (CBCL–Total Score, per Point),[a] Mother Reported														
Mediator: Parental Separation	*Controlled Direct Effect*			*Reference Interaction*			*Mediated Interaction*			*Pure Indirect Effect*			*Total Effect*		
		[95% CI]	*p*		[95% CI]	*p*		[95% CI]	*p*		[95% CI]	*p*		[95% CI]	*p*
Family Conflict (FAD) Prenatal, per Score	2.90	[1.69, 4.10]	< .001	0.19	[0.03, 0.33]	.013	0.18	[0.04, 0.31]	.008	−0.14	[−0.37, 0.08]	.206	3.12	[1.94, 4.29]	< .001

Note: The models are adjusted for maternal age, ethnicity, education, religion, maternal psychopathology, gestational age at birth, child sex and prior child problem behavior when child was 1½ years reported by mother. Confidence interval (CI) obtained from delta method standard errors. Parental separation mediated through prenatal family conflict were estimated as follows: TE = (CDE + INTref + INTmed + PIE), where INTref and INTmed refer to the corresponding betas for controlled direct effect and pure indirect effect mediated through parental separation respectively. Overall proportions are not presented because the natural direct effect and indirect effect are in the opposite directions. CBCL = Child Behavior Checklist; FAD = Family Assessment Device.

[a] n = 3,787.

effects and child-to-parent effects operated, such that child maladjustment led to increased family conflict, and vice versa.

DISCUSSION

We tested the longitudinal effects of family conflict and parental separation on child maladjustment using a large, multiethnic, population-based prospective cohort from the Generation R Study. Innovative aspects of our study include that we measured family conflict prenatally as well as periodically up to age 9 and that we obtained ratings of family conflict and child problems from mothers and fathers both prenatally and at age 9. Also, we used an association pathway mediation analysis to better understand the interaction of prenatal family conflict with postnatal parental separation as they relate to child problem behavior. Findings generally supported our four major hypotheses, as summarized next.

As hypothesized, prenatal family conflict predicted later family conflict, with longitudinal stability in family conflict ratings that were moderate to high for both maternal and paternal reports of conflict up to age 9. Also, as we hypothesized, prenatal family conflict, whether reported by mother or father, strongly predicted later parental separation across childhood, with the strongest association for separation by age 3. These findings replicated previous studies (Amato & Afifi, 2006; Amato & DeBoer, 2001; Davies et al., 2016), showing that family conflict is associated with separation.

Also consistent with our first hypothesis, prenatal ratings of family conflict modestly predicted child maladjustment up to age 9. This replicates findings from previous studies showing that family conflict is consistently related to maladjustment in childhood. This study extends previous findings by using paternal reports. Thus, our findings from family conflict and parental separation analyzed and measured separately confirm previous research showing that both family conflict and parental separation predict child behavioral and emotional problems (Amato, 2001; Weaver & Schofield, 2015), consistent with our first two hypotheses. However, we advanced that research by showing that parental separation was no longer predictive of maladjustment once prenatal parental family conflict was added to the regression model, except for the "separation by age 9" results for mother-reported Total Problems score, consistent with our third hypothesis.

To further test our hypothesis that parental separation might not affect child maladjustment independent of prenatal family conflict, we used the four-way decomposition model. Results indicated that prenatal family conflict was strongly related to maladjustment. Furthermore, the interaction of prenatal family conflict with separation predicted child maladjustment. High levels of prenatal family conflict

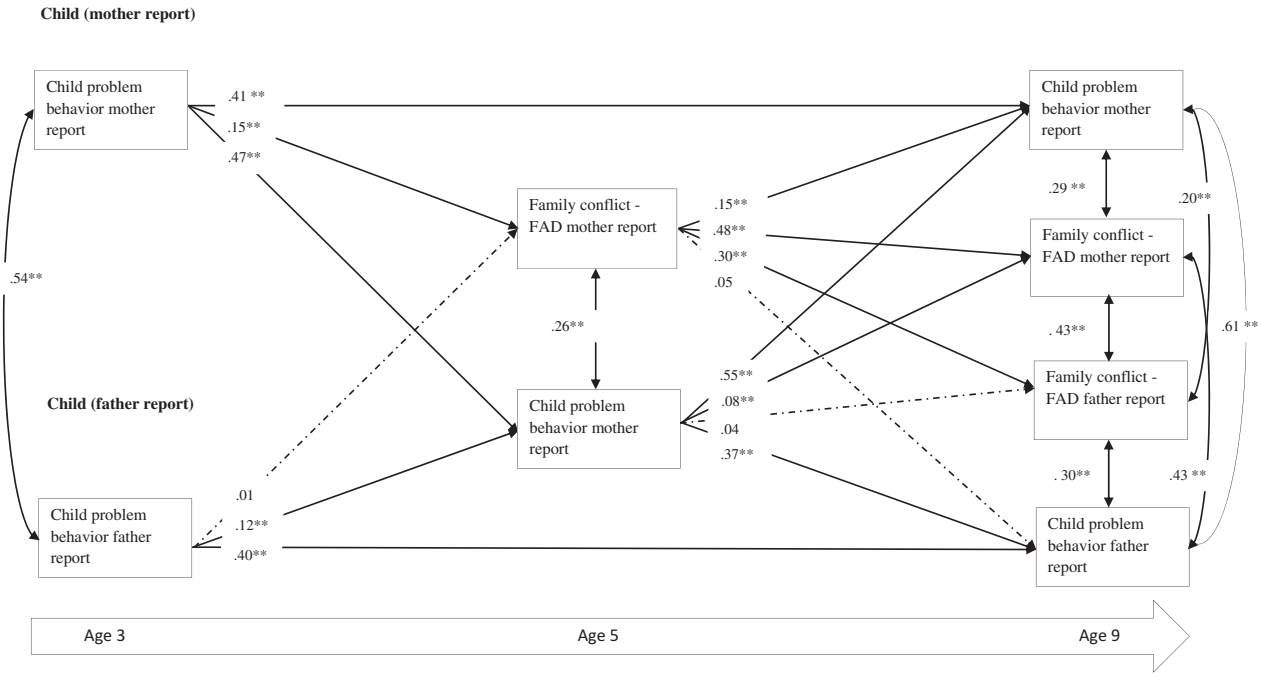

FIGURE 1. Bidirectional associations of child problem behavior and family conflict.
Note. Structural equation modeling of child problem behavior and family conflict. Numeric values are standardized path regression coefficients averaged from 10 imputed data sets. The models are adjusted for parental age, ethnicity, education and religion, gestational age at birth, child sex and age, prenatal parental psychopathology, and prenatal family conflict reported by mother and father. Root mean square error of approximation (RMSEA) = 0.08, comparative fit index (CFI) = 0.99, Tucker–Lewis index (TLI) = 0.89. FAD = Family Assessment Device. *$p < .01$. **$p < .001$.

increased the vulnerability to the effects of separation on child problem behavior. The observed mediated interaction effect suggests that family conflict to some extent leads to separation and interacts with the effects of separation on child problem behavior. This result supports the notion that prenatal family conflict to some extent affects child problem behavior through a pathway of parental separation.

An important benefit of the four-way decomposition model used in this study is the ability to estimate interaction and mediation effects of prenatal family conflict and parental separation on child problem behavior. Although these effects were small, both were observed and significant. Whether parental separation has a direct and independent effect on child problems as opposed to family conflict leading to parental separation, which then increases child problems, has to our knowledge not been previously studied. When prenatal family conflict was not included in the model (by setting it to 0), we found no substantive PIE. In other words, parental separation was not related to child problem behavior in the absence of family conflict.

Thus, our two interaction results support the hypothesis that parental separation did not increase child problem behavior if the level of prenatal family conflict was low. Our sensitivity analyses modeling unobserved confounders underscores these conclusions; the direct effect of prenatal family conflict on child problem behavior increased, whereas the indirect effect decreased. Traditional methods of mediation could not have shown that family conflict both causes separation and interacts with the effect of separation. Furthermore, many studies have noted considerable difficulties of drawing conclusions about separation (Bhrolch, 2001; McLanahan et al., 2013), leading to uncertainty regarding whether family conflict plays a more important role for child problem behavior than parental separation. Our results indicate that parental separation did not have a negative effect on child problem behavior at low levels of prenatal family conflict. Indeed, low family conflict has previously been identified as one of the major protective factors for children's of separated parents (Kelly & Emery, 2003).

Generally, parental psychopathology and family conflict are closely interwoven and predispose each other (A. De Los Reyes et al., 2011). Yet, in the current study, when we adjusted for parental psychopathology we found no change in results. Thus, our findings for the associations between family conflict, separation, and child held regardless of other maternal, paternal, child, and family factors. Our findings also did not depend on the gender of the parent reporting on the family conflict, which we could test because we obtained both mother and father reports prenatally and at age 9.

The associations of family conflict on the child have often been explained by the effects of parenting stress (Anthony et al., 2005; Camisasca et al., 2016) and consequent negative parenting (Deater-Deckard, 2005; Simons et al., 2002). Parental separation also may cause many stressful life changes for children, such as transition to a new home and/or school, changed relations with peers, financial insecurities, and visitation issues (Robbers et al., 2012). To enable comparison with these studies, we also analyzed family conflict and separation independently. Although we replicated many findings reported in the literature, parental separation was not associated with child problem behavior after adjustment for family conflict. This is in contrast with some studies, which found that parental separation independently predicts child problems (Amato, 2000; Kelly & Emery, 2003; Lansford et al., 2006). These longitudinal studies found that children of high conflict families that separated experienced improvement in well-being (Amato et al., 2011; Booth & Amato, 2001). We did not find this in our study perhaps because we used different analytical approaches and ours was not a high-risk sample exposed to extremely high levels of conflict.

Finally, our hypothesis about bidirectional associations between child maladjustment and family conflict was also confirmed. Parent-reported family conflict was associated with increases in child maladjustment across childhood and child maladjustment, which in turn was associated with later family conflict levels. These findings underscore the importance of measuring problem behavior early in childhood, which can help further clarify the directionality of the associations between family conflict and child problem behavior.

Some possible limitations of this study should be discussed. First, we measured parental separation repeatedly only by mother reports. That is, we obtained reports of both mothers and fathers for family conflict as well as child problem behavior, but parental separation was reported only by mothers. However, this can be considered factual information. An important limitation is that information about postseparation family conflict was not available. It is likely that the degree of postseparation family conflict could moderate the effects of separation on children's mental health. In addition, we should be careful generalizing our findings to clinical populations, as this study was performed in a general population sample. Family conflict and parental separation cannot be easily studied as a cause of child problem behavior. In particular, separation is a predictor or indicator of a process, "a series of dominos cascading in several directions" (Ellis, 2000b, p. 57). At the individual level, once a given family separates, one cannot know what the outcome of the children in that family might have been if the separation had not occurred. However, future research might statistically stratify families for the level of family conflict and then compare postseparation family conflict and child outcomes in families in which separation then occurred or did not. Last, another limitation of this study is the absence of information for children who were exposed to more than one separation and/or divorce as a distinct group.

On the other hand, the study has several strengths. It is a population-based study with a large sample size, which made it possible to take into consideration numerous confounders. We used validated questionnaires with good reliability and validity. We also had repeated measurements of family conflict, parental separation, and child emotional and behavioral problems. Mothers and fathers participated in this study, and information about family conflict and child problem behavior as reported by both parents was available. Thus, our study used multiple informants, which increases the reliability of our findings and reduces the risk of reporter bias. Although we replicated that child problem behavior can increase the risk of family conflict (Burke, Pardini, & Loeber, 2008; Jenkins, Simpson, Dunn, Rasbash, & O'Connor, 2005), our primary conflict measure was prenatal, thus obviating this reverse causality issue in part. Also, we ensured temporal ordering by adjusting for preexisting child emotional and behavioral problems.

Clinical Implications

Our study has several important clinical implications for prevention and treatment of emotional and behavioral disorders in children. Our findings that both family conflict and parental separation predict child maladjustment and that prenatal family conflict predicted child emotional and behavioral problems up to age 9 underscore that conflict and separation are significant risk factors for children. Practitioners should be aware that if parental separation occurs in families with high levels of conflict, some proactive intervention may be needed to help the children adjust. These children remain at risk for behavioral and emotional problems even after separation. Family counselors and practitioners should address conflict arising around new domestic arrangements, financial problems, parental care, or guardianship even after separation. Furthermore, school-based or health-care-based screening for emotional and behavioral problems in children experiencing family conflict and/or separation would be helpful as a prevention measure (Dawson-McClure, Sandler, Wolchik, & Millsap, 2004).

In cases of severe family conflict, separation is seen by many parents and family counselors as a potential solution. Also, we did not find a positive effect of separation on child behavioral and emotional problems; the association was tentative at best, given the lack of statistical significance

and broad CIs. However, because clinicians sometimes do find beneficial effects of separation on children, examination of possible beneficial effects of separation merits further research. The interaction of family conflict and parental separation could be explored in adolescence and incorporated into studies addressing the impact of family conflict on emotional and behavioral problems.

Conclusions

Using the large and diverse Generation R sample, we found that family conflict from pregnancy onward and parental separation each strongly predicted child problem behavior up to preadolescence according to maternal and paternal ratings. Our use of the four-way decomposition method yielded evidence prenatal family conflict increased the children's vulnerability to the harmful effect of parental separation but no evidence of a beneficial effect of parental separation on child problem behavior. Overall, our findings indicated that if parental separation occurs in families with low levels of conflict, parental separation does not predict more child problem behavior. Moreover, our bidirectional findings suggested that child problem behavior influences the persistence of family conflict.

ACKNOWLEDGMENTS

The Generation R Study is conducted by the Erasmus Medical Center, Rotterdam. in close collaboration with the Faculty of Social Sciences of the Erasmus University Rotterdam, the Municipal Health Service, Rotterdam Homecare Foundation, and Stichting Trombosedienst & Artsenlaboratorium Rijnmond. We thank the contribution of participating parents and their children, general practitioners, hospitals, midwives, and pharmacies. We also thank Sonja Swanson for providing important statistical advice.

FUNDING

The general design of the Generation R Study is supported by the Erasmus Medical Center-Rotterdam, the Erasmus University Rotterdam, the Netherlands Organization for Health Research and Development, the Netherlands Organization for Scientific Research, and the Ministry of Health, Welfare and Sport, the Municipal Health Service Rotterdam area, the Rotterdam Homecare Foundation, and the Stichting Trombosedienst and Artsenlaboratorium Rijnmond. Henning Tiemeier was supported by a grant of the Netherlands Organization for Scientific Research (NWO grant No. 024.001.003), Consortium on Individual Development, funding from the European Union Seventh Framework Program (FP7/2007-2013): ACTION: Aggression in Children: (grant number 602768), and NWO/ZonMW grant 016.VICI.170.200). ERAWEB scholarship, financed by the European Commission was granted to Yllza Xerxa (grant agreement 2013-2548/001-001-EMA2).

POTENTIAL CONFLICTS OF INTEREST

Dr. Verhulst is the contributing editor of the *Achenbach System of Empirically Based Assessment*, from which he receives remuneration. No other disclosures were reported.

AVAILABILITY OF DATA AND MATERIALS

Data can be obtained upon request. Requests should be directed to the toward the management team of the Generation R Study (secretariaat.genr@erasmusmc.nl), which has a protocol of approving data requests. Because of restrictions based on privacy regulations and informed consent of participants, data cannot be made freely available in a public repository.

SUPPLEMENTARY DATA

Supplemental data for this article can be accessed on the publisher's website.

REFERENCES

Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*, *101*(2), 213–232.

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms & profiles: An integrated system of multi-informant assessment; Child behavior checklist for ages 1 1/2-5; Language development survey; Caregiver-teacher report form*: University of Vermont.

Achenbach, T. M., & Rescorla, L. A. (2001). ASEBA school-age forms & profiles: Aseba Burlington, VT.

Amato, P. D., & DeBoer, D. D. (2001). The transmission of marital instability across generations: Relationship skills or commitment to marriage? *Journal of Marriage and Family*, *63*(4), 1038–1051. doi:10.1111/j.1741-3737.2001.01038.x

Amato, P. R. (2000). The Consequences of Divorce for Adults and Children. *Journal of Marriage and Family*, *62*(4), 1269–1287. doi:10.1111/j.1741-3737.2000.01269.x

Amato, P. R. (2001). Children of divorce in the 1990s: An update of the Amato and Keith (1991) meta-analysis. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *15*(3), 355–370.

Amato, P. R., & Afifi, T. D. (2006). Feeling caught between parents: Adult children's relations with parents and subjective well-being. *Journal of*

Marriage and Family, *68*(1), 222–235. doi:10.1111/j.1741-3737.2006.00243.x

Amato, P. R., Kane, J. B., & James, S. (2011). Reconsidering the "Good Divorce". *Family Relations*, *60*(5), 511–524. doi:10.1111/j.1741-3729.2011.00666.x

Anthony, L. G., Anthony, B. J., Glanville, D. N., Naiman, D. Q., Waanders, C., & Shaffer, S. (2005). The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. *Infant and Child Development*, *14*(2), 133–154. doi:10.1002/icd.385

Baron, R. M., & Kenny, D. A. (1986). The moderator–Mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173. doi:10.1037/0022-3514.51.6.1173

Bhrolch, M. N. (2001). 'Divorce Effects' and causality in the social sciences. *European Sociological Review*, *17*(1), 33–57. doi:10.1093/esr/17.1.33

Booth, A., & Amato, P. R. (2001). Parental predivorce relations and offspring postdivorce well-being. *Journal of Marriage and Family*, *63*(1), 197–212. doi:10.1111/j.1741-3737.2001.00197.x

Burke, J. D., Pardini, D. A., & Loeber, R. (2008). Reciprocal relationships between parenting behavior and disruptive psychopathology from childhood through adolescence. *Journal of Abnormal Child Psychology*, *36*(5), 679–692. doi:10.1007/s10802-008-9219-7

Byles, J., Byrne, C., Boyle, M. H., & Offord, D. R. (1988). Ontario child health study: Reliability and validity of the general functioning subscale of the mcmaster family assessment device. *Family Process*, *27*(1), 97–104.

Camisasca, E., Miragoli, S., & Di Blasio, P. (2016). Families with distinct levels of marital conflict and child adjustment: Which role for maternal and paternal stress? *Journal of Child and Family Studies*, *25*(3), 733–745. doi:10.1007/s10826-015-0261-0

Choté, A. A., Koopmans, G. T., Redekop, W. K., de Groot, C. J. M., Hoefman, R. J., Jaddoe, V. W. V., … Foets, M. (2011). Explaining ethnic differences in late antenatal care entry by predisposing, enabling and need factors in the Netherlands. The Generation R Study. *Maternal and Child Health Journal*, *15*(6), 689–699. doi:10.1007/s10995-010-0619-2

Cummings, E. M., Schermerhorn, A. C., Davies, P. T., Goeke-Morey, M. C., & Cummings, J. S. (2006). Interparental discord and child adjustment: prospective investigations of emotional security as an explanatory mechanism. *Child Development*, *77*(1), 132–152. doi:10.1111/j.1467-8624.2006.00861.x

Davies, P. T., Hentges, R. F., Coe, J. L., Martin, M. J., Sturge-Apple, M. L., & Cummings, E. M. (2016). The multiple faces of interparental conflict: Implications for cascades of children's insecurity and externalizing problems. *Journal of Abnormal Psychology*, *125*(5), 664–678. doi:2016-23425-001 [pii]. doi:10.1037/abn0000170

Dawson-McClure, S. R., Sandler, I. N., Wolchik, S. A., & Millsap, R. E. (2004). Risk as a moderator of the effects of prevention programs for children from divorced families: A six-year longitudinal study. *Journal of Abnormal Child Psychology*, *32*(2), 175–190.

de Beurs, E. (2004). *Handleiding*. Brief symptom inventory. Leiden, The Netherlands: Pits Publishers.

de Beurs, E., & Zitman, F. (2005). *De betrouwbaarheid en validiteit van een handzaam alternatief voor de SCL-90*. De Brief Symptom Inventory (BSI). Leiden, The Netherlands: Leids universitair medisch centrum.

De Los Reyes, A., Augenstein, T. M., Wang, M., Thomas, S. A., Drabick, D. A., Burgers, D. E., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin*, *141*(4), 858–900. doi:2015-18640-001 [pii]. doi:10.1037/a0038498

De Los Reyes, A., Youngstrom, E. A., Pabon, S. C., Youngstrom, J. K., Feeny, N. C., & Findling, R. L. (2011). Internal consistency and associated characteristics of informant discrepancies in clinic referred youths age 11 to 17 years. *Journal of Clinical Child and Adolescent Psychology : the Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53*, *40*(1), 36–53. doi:932227165 [pii]. doi:10.1080/15374416.2011.533402

Deater-Deckard, K. (2005). Parenting stress and children's development: Introduction to the special issue. *Infant and Child Development*, *14*(2), 111–115. doi:10.1002/(ISSN)1522-7219

Derogatis, L. R., & Melisaratos, N. (1983). The brief symptom inventory: An introductory report. *Psychological Medicine*, *13*(3), 595–605.

El Marroun, H., Tiemeier, H., Jaddoe, V. W. V., Hofman, A., Mackenbach, J. P., Steegers, E. A. P., & Huizink, A. C. (2008). Demographic, emotional and social determinants of cannabis use in early pregnancy: The Generation R Study. *Drug and Alcohol Dependence*, *98*(3), 218–226. doi:10.1016/j.drugalcdep.2008.05.010

Ellis, E. M. (2000a). The legacy of divorce in the postmodern age. Divorce wars: *Interventions with families in conflict* (pp. 21-25). American Psychological Association.

Ellis, E. M. (2000b,p. 57). Impact of parental conflict on children's adjustment following divorce. Divorce wars: *Interventions with families in conflict* (pp. 55-58). American Psychological Association.

Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). THE McMASTER FAMILY ASSESSMENT DEVICE*. *Journal of Marital and Family Therapy*, *9*(2), 171–180. doi:10.1111/j.1752-0606.1983.tb01497.x

Felitti, V. J., & Anda, R. F. (2010). The relationship of adverse childhood experiences to adult health, well-being, social function, and health care. In R. Lanius, E. Vermetten, & C. Pain (Eds.), *The effects of early life trauma on health and disease: The hidden epidemic*. Cambridge, USA: Cambridge University Press.

Fosco, G. M., & Grych, J. H. (2008). Emotional, cognitive, and family systems mediators of children's adjustment to interparental conflict. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *22*(6), 843–854. doi:2008-17958-005 [pii]. doi:10.1037/a0013809

Goeke-Morey, M. C., Cummings, E. M., & Papp, L. M. (2007). Children and marital conflict resolution: Implications for emotional security and adjustment. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *21*(4), 744–753. doi:2007-18728-020 [pii]. doi:10.1037/0893-3200.21.4.744

Goldthorpe, J. H. (2001). Causation, statistics, and sociology. *European Sociological Review*, *17*(1), 1–20. doi:10.1093/esr/17.1.1

Gryczkowski, M. R., Jordan, S. S., & Mercer, S. H. (2010). Differential relations between mothers' and fathers' parenting practices and child externalizing behavior. *Journal of Child and Family Studies*, *19*(5), 539–546. doi:10.1007/s10826-009-9326-2

Hartman, R. C., Bertsch, D. L., Bloom, S. D., Chen, A. W., Deines-Jones, P., Esposito, J. A., … McDonald, L. M. (1999). The third EGRET catalog of high-energy gamma-ray sources. *The Astrophysical Journal Supplement Series*, *123*(1), 79. doi:10.1086/313231

Howard, K. S., & Brooks-Gunn, J. (2009). Relationship supportiveness during the transition to parenting among married and unmarried parents. *Parenting*, *9*(1–2), 123–142. doi:10.1080/15295190802656828

Imai, K., Keele, L., & Yamamoto, T. (2010). Identification, inference and sensitivity analysis for causal mediation effects. *Statistical Science*, 51–71. doi:10.1214/10-STS321

Ivanova, M. Y., Achenbach, T. M., Rescorla, L. A., Harder, V. S., Ang, R. P., Bilenberg, N., … Verhulst, F. C. (2010). Preschool psychopathology reported by parents in 23 societies: Testing the seven-syndrome model of the child behavior checklist for ages 1.5-5. *Journal of the American Academy of Child and Adolescent Psychiatry*, *49*(12), 1215–1224. doi:S0890-8567(10)00735-5 [pii]. doi:10.1016/j.jaac.2010.08.019

Jenkins, J., Simpson, A., Dunn, J., Rasbash, J., & O'Connor, T. G. (2005). Mutual influence of marital conflict and children's behavior problems: Shared and nonshared family risks. *Child Development*, *76*(1), 24–39. doi:CDEV827 [pii]. doi:10.1111/j.1467-8624.2005.00827.x

Kelly, J. B., & Emery, R. E. (2003). Children's adjustment following divorce: Risk and resilience perspectives. *Family Relations*, *52*(4), 352–362. doi:10.1111/j.1741-3729.2003.00352.x

Kelly, J. B., & Lamb, M. E. (2000). Using child development research to make appropriate custody and access decisions for young children. *Family Court Review*, *38*(3), 297–311. doi:10.1111/j.174-1617.2000.tb00577.x

Kluwer, E. S., & Johnson, M. D. (2007). Conflict frequency and relationship quality across the transition to parenthood. *Journal of Marriage and Family*, *69*(5), 1089–1106. doi:10.1111/j.1741-3737.2007.00434.x

Kooijman, M. N., Kruithof, C. J., van Duijn, C. M., Duijts, L., Franco, O. H., van, I. M. H., … Jaddoe, V. W. (2016). The Generation R Study: Design and cohort update 2017. *European Journal of Epidemiology*, *31*(12), 1243–1264. [pii]. doi:10.1007/s10654-016-0224-9

Lansford, J. E., Malone, P. S., Castellino, D. R., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2006). Trajectories of internalizing, externalizing, and grades for children who have and have not experienced their parents' divorce or separation. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *20*(2), 292–301. doi:2006-07278-013 [pii]. doi:10.1037/0893-3200.20.2.292

Lansford, J. E., Malone, P. S., Dodge, K. A., Crozier, J. C., Pettit, G. S., & Bates, J. E. (2006). A 12-year prospective study of patterns of social information processing problems and externalizing behaviors. *Journal of Abnormal Child Psychology*, *34*(5), 715–724. doi:10.1007/s10802-006-9057-4

Laurin, J. C., Joussemet, M., Tremblay, R. E., & Boivin, M. (2015). Early forms of controlling parenting and the development of childhood anxiety. *Journal of Child and Family Studies*, *24*(11), 3279–3292. doi:10.1007/s10826-015-0131-9

Litman, H. J., Horton, N. J., Hernández, B., & Laird, N. M. (2007). Incorporating missingness for estimation of marginal regression models with multiple source predictors. *Stat Med*, *26*(5), 1055–1068. doi:10.1002/sim.2593

McIntosh, J. (2003). Enduring conflict in parental separation: Pathways of impact on child development. *Journal of Family Studies*, *9*(1), 63–80. doi:10.5172/jfs.9.1.63

McLanahan, S., Tach, L., & Schneider, D. (2013). The causal effects of father absence. *Annual Review of Sociology*, *399*, 399–427. doi:10.1146/annurev-soc-071312-145704

Netherlands Statistics. (2006). *Begrippen: Allochten*. Retrieved from

Pardini, D. A. (2008). Novel insights into longstanding theories of bidirectional parent–Child influences: Introduction to the special section. *Journal of Abnormal Child Psychology*, *36*(5), 627–631. doi:10.1007/s10802-008-9231-y

Pendry, P., & Adam, E. K. (2013). Child-related interparental conflict in infancy predicts child cognitive functioning in a nationally representative sample. *Journal of Child and Family Studies*, *22*(4), 502–515. doi:10.1007/s10826-012-9603-3

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*(4), 717–731. doi:10.3758/bf03206553

Rhoades, K. A. (2008). Children's responses to interparental conflict: A meta-analysis of their associations with child adjustment. *Child Development*, *79*(6), 1942–1956. CDEV1235 [pii]. doi:10.1111/j.1467-8624.2008.01235.x

Robbers, S., van Oort, F., Huizink, A., Verhulst, F., van Beijsterveldt, C., Boomsma, D., & Bartels, M. (2012). Childhood problem behavior and parental divorce: Evidence for gene-environment interaction. *Social Psychiatry and Psychiatric Epidemiology*, *47*(10), 1539–1548. doi:10.1007/s00127-011-0470-9

Sameroff, A. J., & Mackenzie, M. J. (2003). Research strategies for capturing transactional models of development: The limits of the possible. *Development and Psychopathology*, *15*(3), 613–640.

Schermerhorn, A. C., Cummings, E. M., DeCarlo, C. A., & Davies, P. T. (2007). Children's influence in the marital relationship. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *21*(2), 259–269. 2007-09250-013 [pii]. doi:10.1037/0893-3200.21.2.259

Schoppe-Sullivan, S. J., Schermerhorn, A. C., & Cummings, E. M. (2007). Marital conflict and children's adjustment: evaluation of the parenting process model. *Journal of Marriage and Family*, *69*(5), 1118–1134. doi:10.1111/j.1741-3737.2007.00436.x

Schunk, D. (2008). A Markov chain Monte Carlo algorithm for multiple imputation in large surveys. *AStA Advances in Statistical Analysis*, *92*(1), 101–114. doi:10.1007/s10182-008-0053-6

Shaw, D. S., & Bell, R. Q. (1993). Developmental theories of parental contributors to antisocial behavior. *Journal of Abnormal Child Psychology*, *21*(5), 493–518.

Simons, R. L., Lin, K.-H., Gordon, L. C., Brody, G. H., Murry, V., & Conger, R. D. (2002). Community differences in the association between parenting practices and child conduct problems. *Journal of Marriage and Family*, *64*(2), 331–345. doi:10.1111/j.1741-3737.2002.00331.x

Spruijt, E., & Kormos, H. (2014). *Handboek scheiden en de kinderen [Handbook divorce and children]*. Houten Bohn Stafleu van Loghum, The Netherlands.

Stadelmann, S., Perren, S., Groeben, M., & von Klitzing, K. (2010). Parental separation and children's behavioral/emotional problems: The impact of parental representations and family conflict. *Family Process*, *49*(1), 92–108. doi:FAMP1310 [pii]. doi:10.1111/j.1545-5300.2010.01310.x

Strohschein, L. (2005). Parental divorce and child mental health trajectories. *Journal of Marriage and Family*, *67*(5), 1286–1300. doi:10.1111/j.1741-3737.2005.00217.x

Sturge-Apple, M. L., Davies, P. T., & Cummings, E. M. (2010). Typologies of family functioning and children's adjustment during the early school years. *Child Development*, *81*(4), 1320–1335. doi:CDEV1471 [pii]. doi:10.1111/j.1467-8624.2010.01471.x

Valeri, L., & Vander Weele, T. J. (2013). Mediation analysis allowing for exposure-mediator interactions and causal interpretation: Theoretical assumptions and implementation with SAS and SPSS macros. *Psychological Methods*, *18*(2), 137–150. doi:2013-03476-001 [pii]. doi:10.1037/a0031034

Vander Weele, T. J. (2014). A unification of mediation and interaction: A 4-way decomposition. *Epidemiology*, *25*(5), 749–761. doi:10.1097/EDE.0000000000000121

Weaver, J. M., & Schofield, T. J. (2015). Mediation and moderation of divorce effects on children's behavior problems. *Journal of Family Psychology : JFP : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *29*(1), 39–48. doi:2014-49425-001 [pii]. doi:10.1037/fam0000043