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Parenting Time, Parenting Quality, Interparental Conflict, and Mental Health Problems of Children in High-Conflict Divorce

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Abstract

Despite widespread acknowledgement that "frequent, continuing, and meaningful" (Pruett & DiFonzo, 2014) time with both parents is beneficial for children from divorced or separated families, and that interparental conflict (IPC) is associated with increased child mental health problems, the joint effects of parenting time (PT), parenting quality (PQ), and IPC on children's mental health problems are less clear. The current study integrates two theoretical models in multiple mediator analyses to test indirect effects of mothers' and fathers' parenting quality (PQ) and interparental conflict (IPC) to explain the association between PT and children's mental health problems within the same model. Participants were children aged 9–18 years (N=141) who had one or both parents participate in a randomized comparative effectiveness trial of a court-based prevention program for high-conflict divorcing or separating families. Data were collected at pre-test and 9-month follow-up. Analyses revealed an indirect effect in which fathers' PQ mediated the association between PT and child internalizing problems both concurrently and nine months later. There were no significant indirect effects involving IPC. Analyses indicated a significant quadratic relation between PT and fathers' PQ, suggesting that although more PT is associated with better father-child relationships, there is a point beyond which more time is not related to a better relationship. We discuss the study findings, research limitations, and implications for public policy.

Keywords

child mental health; parenting; interparental conflict; divorce/separation

The allocation of parenting time following divorce has very important implications for children and their parents. Judges draw on legislative presumptions and social science research to inform decisions about how much time children will spend with each parent (Pruett & DiFonzo, 2014). Rigorous research that examines associations between allocations of time with each parent and child mental health problems in the context of known risk and protective factors can provide important information for judges as well as for legislators who

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Author Note: The ideas and data appearing in this manuscript were presented at a recent conference. They have not been presented via any other outlet. The data used in the current study comes from a larger study from which different analyses have been reported in two other publications (Braver, Sandler, Cohen Hita, & Wheeler, 2016; Sandler, Wheeler, & Braver, 2013).

develop legal presumptions about parenting time. For example, judges who are making decisions about parenting time would find it useful to know about the state of research evidence concerning how different distributions of parenting time between parents relate to child mental health problems. They may also want to know how parenting time relates to other factors that are known to predict child mental health problems following divorce, such as level of interparental conflict and quality of the child's relationships with both parents. This study examines the association between parenting time (PT) and children's mental health problems as well as the role of two well-established risk and protective factors, parenting quality (PQ) and interparental conflict (IPC) as mediators of the relations between PT and child mental health problems.

There is little disagreement that "frequent, continuing, and meaningful" time with both parents, holding all other factors constant, is beneficial for children in divorcing or separating families (Pruett & DiFonzo, 2014, p. 154). Results of the two existing meta-analyses (Adamsons & Johnson, 2013; Amato & Gilbreth, 1999) on the association between the broad constructs of father involvement (i.e., PT, relationship quality and involvement in activities) and child well-being (e.g., emotional, physical, cognitive, and social functioning) found that the associations varied as a function of how parent involvement was operationalized. Small or nonsignificant effects were found when parent involvement was defined as time spent with the child, whereas reliable, moderate effects were detected when involvement was defined as quality of parenting, involvement in activities, or quality of the parent-child relationship (Adamsons, 2018). These results highlight the importance of further understanding the processes through which different amounts of PT lead to differences in children's mental health problems.

Theoretical models of the effects of post-divorce/separation PT on child mental health have focused on two related constructs which may be impacted by PT and may themselves affect child mental health, IPC and PQ. The association between higher IPC and higher child mental health problems (Pruett & DiFonzo, 2014; Warshak, 2014) and between higher quality of post-divorce parenting and lower child mental health problems (Sandler et al., 2012) are well-documented. However, perspectives diverge when PT, IPC, and PQ are considered together. Some have argued that PT leads to lower levels of mental health problems because it increases the parents' involvement with the child and the overall quality of their relationship, regardless of the level of IPC (Fabricius, Sokol, Diaz, & Braver, 2012; Nielsen, 2017). From this perspective, the benefits of children spending substantial time with both parents, which may allow the development of high-quality parent-child relationships, outweigh other factors, including exposure to IPC, except in cases that involve abuse or violence (Jouriles et al., 2018; Warshak, 2014). Because this theory focuses on the benefits of PT, we call this the "benefits hypothesis."

Another theory posits that more PT with both parents after divorce/separation may lead to further exposure to IPC, and thus to higher levels of child mental health problems. This theory proposes that families with high IPC would be particularly likely to experience the negative effects of shared PT. Proponents of this position argue against shared PT arrangements for high-conflict families (Fehlberg, Smyth, Maclean, & Roberts, 2011). Because this theory focuses on the role of IPC, we refer to this as the "conflict hypothesis."

The current study investigated a multiple mediator model that tests predictions from the conflict and benefits hypotheses by assessing the theorized positive benefits of PQ and negative effects of IPC as mediators of the relations between PT and child mental health problems in the same model (see Figure 1). We will first describe prior support for each path in this model and then summarize how the current study advances existing research.

Parenting Quality as a Mediator of the Relations between Parenting Time and Child Mental Health Problems

Many studies have documented a significant linear relation between PT and PQ (paths A_2 & A_3, Figure 1) in divorced and separated families (for reviews see Fabricius, Sokol, Diaz, & Braver, 2016; Sandler et al., 2012). We argue that the relation between PT and PQ may not be optimally captured by a linear function, as there is likely to be a "good enough" point operating in nature. This proposition is supported by graphed data from Fabricius and colleagues (2012) which showed a nonlinear trend of young adult's emotional security across different categories of PT in a retrospective longitudinal study of contact with fathers in childhood. It is particularly important to understand the nature of these relations in the context of divorce where time spent with one parent is inversely related to time spent with the other parent. There is also strong empirical evidence that high quality parenting by both mother and father is a protective factor (paths B_2 and B_3, Figure 1) for children who experience parental divorce (Sandler et al., 2012).

The "benefits hypothesis" posits that PQ operates as a mediator, the variable through which PT following divorce or separation affects child mental health problems. Some authors have explicitly proposed PQ as the "missing link" between PT and child mental health outcomes (Fabricius et al., 2016), whereas others argue that a natural benefit of shared parenting is children's ability to maintain meaningful relationships with their parents, without explicitly stating a causal association (Pruett & DiFonzo, 2014; Warshak, 2014). However, only three studies have tested a mediation model.[1] One study focused on physical health outcomes and found that PQ across childhood and early adulthood mediated the relation between PT in childhood, as reported retrospectively in young adulthood, and physical health of young adults (Fabricius & Luecken, 2007). Another study found that more nonresidential father contact (in-person or telephone) was an indirect predictor of mothers' report of lower child internalizing problems through better father-child relationship quality and fathers' responsive parenting in a large cross-sectional sample of adolescents who lived with their mothers (King & Sobolewski, 2006). A third study found no relation between residence arrangement (dual-residence or mother-residence) and mother-child relationship quality (Lee, 2002). However, no study tested a mediation model in which PQ mediates the prospective path from PT to child mental health problems. Further, to our knowledge, no study has tested PQ of both mother and father as well as IPC as mediators of the prospective path from PT to child mental health problems in a multiple mediator model in which each of these effects are considered simultaneously.

[1]Whiteside and Becker (2000) inferred an indirect effect of the frequency of fathers' visitation on children's internalizing symptoms through father-child relationship quality from 4 studies with a significant effect of visitation on relationship quality, and 5 studies with a significant effect of relationship quality on internalizing symptoms.

Interparental Conflict as a Mediator of the Relations between Parenting Time and Child Mental Health Problems

From the perspective of the "conflict hypothesis,", more shared PT leads to higher ongoing exposure to IPC for divorced or separating families (path A_1, Figure 1), which in turn leads to higher levels of child mental health problems (path B_1, Figure 1). PT and IPC are often tested as competing predictors (for a review see Nielsen, 2017) or as interacting variables in predicting child mental health problems (for a review see Mahrer, O'Hara, Sandler, & Wolchik, 2018), but only one study has tested a theoretical model in which the association between PT and child mental health is mediated through IPC. Using a community sample of 59 children and their mothers, Lee (2002) found that children in dual-residence arrangements were more likely than children in maternal-residence arrangements to experience mother-reported interparental aggression, which in turn predicted higher child behavior problems. To our knowledge, no other study has tested the effect of PT on IPC (path A_1). The second path in the theoretical mediation model, the association between IPC and child mental health problems (path B_1) is reliable and well established but variable in magnitude in married families and divorced families (Amato & Keith, 1991; Buehler et al., 1997; Kelly & Emery, 2003). It is important to note that the conflict hypothesis specifically proposes that the path from PT to IPC more likely exists for families with pre-existing high IPC. Thus, to appropriately test this path researchers should either examine this association in families that have been identified as having high IPC or test baseline IPC as a moderator of the path from PT to IPC.

How Do Parenting Quality and Interparental Conflict Work Together?

Given evidence that PQ and IPC are both plausible mediators of the association between PT and child mental health problems and that IPC is associated with lower PQ (Krishnakumar & Buehler, 2000), the paths from PT to IPC and PQ (A paths) and the corresponding indirect effects of PT on child mental health problems through IPC and PQ need to be considered in the same mediation model. Prior research has found that PQ of both mother and father are significant predictors of child mental health problems after accounting for the effects of the other parent's PQ and IPC (Sandler et al., 2012). However, no studies have tested PQ and IPC as multiple mediators of the relations between PT and child mental health problems.

Current Study

The current study tested mediational models of PT, PQ, IPC, and child mental health problems in a sample of high-conflict divorced and separated families. The models specified IPC and PQ of each parent operating simultaneously to explain the association between PT and child mental health problems. The benefits and conflict hypotheses would predict that we would find evidence of indirect effects of PT on children's internalizing and externalizing problems through PQ of both parents and IPC. Specifically, we expected that the indirect effects would operate in opposite directions such that more PT would be associated with higher PQ and higher IPC, but PQ would be protective while IPC would be detrimental for children's mental health problems. The first part of the models tested linear and nonlinear relations between PT and PQ-mother, PQ-father, and IPC. Based on prior

research by Fabricius and his colleagues (2012), we hypothesized that the relation between PT (operationalized as the number of overnights with the father, which is inversely related to number of overnights with the mother) and PQ-father functions as a quadratic relation in which the association would be positive between low and medium levels of PT and then level off at high levels of PT. We made no a priori prediction about the path between PT with father and PQ-mother because there is contradictory evidence in the literature. Although there has been no prior test of nonlinear relations between PT and IPC, we hypothesized that a quadratic relation would represent the "conflict hypothesis" in which more shared PT would lead to higher IPC in high-conflict families. This nonlinear association would indicate that low and high levels of PT (i.e., low representing majority of overnights with mother and high representing majority of overnights with father) would be associated with low IPC and moderate levels of PT (i.e., representing approximately equal number of overnights with both parents) would be associated with high IPC. The second part of the models tested linear relations between each putative mediator (i.e., IPC, mother's PQ, and father's PQ) and child mental health problems, operationalized as internalizing and externalizing problems. We hypothesized that IPC would be positively associated, and PQ of both parents would be negatively associated, with child internalizing and externalizing problems.

Method

Participants

Participants were 141 children aged 9–18 years, who had one or both parents participate in a randomized comparative effectiveness trial of a court-based preventive program for high-conflict divorcing parents (see Braver, Sandler, Cohen Hita, & Wheeler, 2016) for outcomes of the trial). The sample was comprised of families from a southwest metropolitan area that were litigating custody issues (i.e., PT) following divorce or separation and, based on a judge's evaluation of them as "high-conflict," were mandated to attend a one-session, 3-hour program. The mandate was entirely up to the judge's discretion. Judges were free to use any information that indicated to them that the parents were in conflict over PT arrangements and therefore may benefit from a program designed to reduce conflict. Parents, all of whom were mandated to receive a program, were randomized to one of two court programs (Parent Conflict Resolution [PCR]; court program based on psychoeducation vs. Family Transitions Guide [FTG]; experimental program based on motivational interviewing), both of which aimed to reduce IPC and promote agreement on a parenting plan.

All parents in the court-mandated programs were invited to participate in a research study via a video explaining the voluntary, confidential nature of their participation. Sixty-seven percent (728 parents from 536 families) agreed to participate. Researchers obtained informed consent from participating parents, as well as permission to conduct a telephone interview with the oldest child in the family between the ages of 9 and 18. Of the 536 families in which at least one parent completed the pre-test, 405 (76%) had a child in the eligible age range. Forty-one percent of parents (n=165) gave permission to interview their children, and 87% (n=141) of those children were interviewed. The current study included all 141 children who completed the pre-test and had at least one parent reporting on their mental health problems. At pretest (T1), both parents participated in 43% of the families

(n=60); only fathers participated in 21% (n=30) and only mothers participated in 36% (n=51) of the families. Of children who participated in the pre-test interview, 94% (n=132) participated in the 9-month follow-up interview (T2). At the T2 interview, we had parent report of children's mental health problems for 132 children (94%); 41 cases had both parents' report, 54 had mother-only report, and 37 had father-only report.

The child participants were 13 years old on average (*SD*=2.63) and 45% were female. They spent an average of 17.2 (SD=9.2) overnights per month with their mothers and 11.8 (SD=9.2) overnights per month with their fathers. Fifty-nine percent (n=83) of the children spent the majority (more than 15 per month, on average) of overnights with their mother, 27% (n=38) spent the majority of overnights with their father, and 14% (n=20) spent an equal number (15 nights) of overnights with each parent. Eighty-five percent of the parents had been legally married to the child's other parent. On average, at baseline, the parents in the sample had been separated for 5 years (*M* = 62.9 months, *SD* = 52.1); 83% were post-decree. The majority of the parents had 1–4 years of college education and were non-Hispanic white (92%). Mothers were 37 years old (SD=5.6) and fathers were 43 years old (SD=8.4) on average.

Procedure

Parents completed the T1 study measures at the beginning of the court program class and via telephone at T2, which occurred nine months later. Trained interviewers conducted structured phone interviews with children at both assessments. Parents were paid $10 for the pre-test interview and $50 for the post-test interview, and children received a $50 for each interview. The university Institutional Review Board approved all study procedures.

Measures

Father parenting time (child report)—Parenting time was assessed at baseline and operationalized as the number of overnights children spent with their father (father parenting time; FPT) in the last 30 days. Child report, rather than mother or father reports, were used to have a consistent reporter across families and because of the high levels of missing data (43% and 40%, respectively on the parent reports). Child reports were highly correlated with parent reports (r = .72 with both mother and father reports for the subsample where data from both reporters were available). Low values on FPT indicate more overnights spent with the mother; the middle of the FPT scale represents equal overnights with each parent; high values represent more overnights with the father. The number of overnights with father was nearly perfectly inversely correlated with number of overnights with mother ($r = -.95$, $p < .01$). SDQ = Strengths and Difficulties Questionnaire; INT = internalizing problems subscale; EXT = externalizing problems subscale.

Interparental conflict (child report)—Two different ways of assessing children's exposure to IPC were used. The first represents a traditional approach that focuses on the properties of the conflict that children observe between their parents (i.e., frequency and intensity), often referred to as overt conflict (Buehler, Krishnakumar, Anthony, Tittsworth, & Stone, 1994). The second assessed the extent to which children felt caught in the middle of their parents' conflict, referred to in previous research as covert conflict (Bradford & Barber,

2005; Buehler et al., 1994). Both types of conflict have been shown to represent pathways through which IPC may confer risk for children's mental health problems (e.g., Fosco & Grych, 2010).

Children's perception of frequency and intensity of IPC was assessed using five items from the frequency and intensity (α =0.55) subscales of the Children's Perception of Interparental Conflict scale (CPIC; Grych, Seid, & Fincham, 1992). "Your parents got really mad when they argued" and "You never saw your parents arguing or disagreeing" are examples of intensity and frequency items, respectively. The CPIC has well-established psychometric properties in samples of children and adolescents (Bickham & Fiese, 1997; Grych et al., 1992). Also, six items (α = 0.68) that were conceptually similar to items from the original CPIC intensity scale assessed mother's and father's behaviors separately. For example, the original CPIC item "My parents pushed or shoved each other during an argument" was assessed by two items, "Your mom hit, punched, or threw something at your dad" and "Your dad hit, punched, or threw something at your mom." To ensure that the items represented a latent construct, we used confirmatory factor analysis (CFA) to test a one factor model with 11 items. CFA results indicated good model fit at T1, (χ^2 (41) =49.18, p=0.18, RMSEA = 0.04 (.00, 0.07), CFI = 0.95) and at T2 (χ^2 (42) = 48.94, p=0.21, RMSEA = 0.04 (.00, .07) CFI = 0.97).

Children completed the seven-item Caught in the Middle Scale (CIM) (α = 0.70; Buchanan, Maccoby, & Dornbusch, 1991; e.g., "how often does your mother/father ask you to carry messages?"). Psychometric reliability and validity of this scale has been established for youth who experience parental divorce and scores are related to post-divorce adjustment (Buchanan et al., 1991). They also completed two items assessing badmouthing ("my mother said bad things about my father" and "my father said bad things about my mother"). We used CFA to ensure that all 9 items measured the construct of CIM adequately. CFA results indicated that a two-factor model with correlated latent variables of mother- and father-driven CIM (r = −0.11) demonstrated acceptable model fit at T1(χ^2(21) = 50.40, p <. 01, RMSEA = 0.10 (0.07, 0.14), CFI = 0.90) and good fit at T2 (χ^2(21) = 32.72, p=.05, RMSEA = 0.07(.00, 0.11), CFI = 0.97). Four items specific to mother/father behaviors loaded on the mother-driven CIM or father-driven CIM factor (e.g., "How often does your father ask you to give messages or information to your mother?"), and one item, "How often do you feel caught in the middle (between your parents when they argue or disagree about something)?" was specified to load on both factors. The latent constructs were considered two aspects of children's perception of being caught in the middle of the conflict.[2]

Factor scores from the CFA models (T1 conflict, T1 mother-driven CIM, T1 father-driven CIM) were saved and used in the mediation analyses. Higher scores indicated higher reported conflict or CIM. Because we conceptualized conflict and CIM as two aspects of children's experience of IPC, we tested these constructs in separate models.

[2]A second order CFA with all indicator items was tested first, but did not fit the data well, χ^2(167) = 734.62, p <.01, RMSEA = 0.16 (0.14, 0.17), CFI = 0.30. This analysis revealed that in this sample the items did not represent a single latent factor, but two distinct constructs. The models were respecified and tested as separate constructs.

Parenting quality (child report)—At T1, Children reported on PQ for their mother and their father using the same scales. Children completed two subscales from the Children's Report of Parenting Behaviors Inventory (CRPBI; Schwarz, Barton-Henry, & Pruzinsky, 1985) consistent discipline (11 items; α = 0.88 mother, 0.86 father; e.g., "When your mother/father made a rule for you, she/he made sure it was followed") and acceptance (16 items; α = 0.96 for both father and mother; e.g., "Your mother/father made you feel better after talking over your worries with her/him"). The items were rated on a 5-point scale (1 = *almost never* to 5 = *almost always*). The subscales have established reliability and validity data and are linked to youth mental health problems in divorced families (Wolchik, Wilcox, Tein, & Sandler, 2000). Children also completed the Mattering scale (7 items; α = 0.86 mother, 0.93 father; e.g., "I am one of the most important things in the world to my mother/father"). This scale was developed by Schenck et al. (2009) using items by Rosenberg and McCullough (1981) and Marshall (2001). It has been established as a reliable measure of youth's perception of parental mattering across parent types (e.g., mothers, fathers, stepparents) and predicts child mental health problems (Schenck et al., 2009). Items were rated on a 5-point scale (1= *strongly disagree* to 5= *strongly agree*).

We used CFA to test the fit of a latent construct of PQ using all available indicators from the consistent discipline, acceptance, and mattering scales. Specifically, we specified two (separately for mother and father) 2nd order 3-factor models. After allowing unique variances of items within scales (i.e., consistent discipline, acceptance, mattering) to correlate, results indicated adequate model fit (PQ-mother: χ^2 (517) = 756.90, p <.01, RMSEA = 0.06 (0.05, 0.07), CFI = 0.92; PQ-father: χ^2 (516) = 753.92, p <.01, RMSEA = 0.06 (0.05, 0.07), CFI = 0.93. Factor scores were created for T1 PQ-father and T1 PQ-mother with higher scores reflecting higher PQ.

Child mental health problems (child and parent report)—Children completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001) at T1 and T2. Psychometric properties of the SDQ are well established (Goodman, 2001). Scores on the 5-item emotional symptoms subscale (e.g., "Often unhappy, depressed, or tearful") assessed internalizing problems (T1 α =.72; T2 α =.77); scores on the 5-item conduct problems subscale (e.g., "Often lies or cheats") assessed externalizing problems (T1 α =.54[3]; T2 α =.71). The two subscales were allowed to correlate but treated as separate dependent variables in the models. Items were rated on a scale of 0 = *not true* to 2 = *certainly true*. Scores ranged from 0–10, with higher scores indicating more problems.

Parents completed an abbreviated version of the Behavior Problems Index (BPI; Bureau of Labor Statistics, 2005) at T1 (8 items[4], α = .82 mother, .91 father) and the full measure comprised of internalizing (15 items, α = .86 mother, .87 father; e.g., "feels worthless or

[3]Two alternative measure of reliability were computed based on a recent paper indicating that Cronbach's alpha underestimates internal consistency due to overly stringent assumptions, such that items contribute equally (i.e., known as tau equivalence) to the overall score, are measured on a continuous scale, and are normally distributed (McNeish, 2017). We calculated Cronbach's alpha using a polychoric covariance matrix appropriate to the ordinal nature of response options, which demonstrated reliability of .67. We also calculated Omega total (conceptually similar to Cronbach's alpha without the assumption of tau equivalence) which demonstrated reliability of .68.

[4]The abbreviated scale was administered due to time constraints. Six of the eight items in T1 BPI assessed externalizing problems and the remaining two assessed internalizing problems.

inferior") and externalizing (17 items, α = .86 mother, .87 father; e.g., "is disobedient at home") problems subscales at T2. The BPI is highly correlated with other well-established measures of child mental health problems (Goodman & Scott, 1999; Peterson & Zill, 1986). All children had at least one parent report on their mental health problems. For cases in which both parents completed the BPI, we used the report of the parent who spent more time with the child (operationalized as majority of child's report of overnights with that parent). For the 10 cases in which both parents provided data and the child spent an equal number of overnights with each parent, we designated the reporter at random. The reporter was the same for T1 and T2.

Covariates—All models included child age, child gender, and court program condition (PCR or FTG) as covariates. Prospective models also included baseline measures of the dependent variable(s).

Data Analysis Approach

FPT was operationalized as T1 child-reported overnights with father in all models[5]. The models simultaneously tested linear and quadratic A paths from FPT to each of the three mediators: PQ-mother, PQ-father, and one aspect of IPC (frequency/intensity of conflict or CIM by mother and CIM by father), and linear B paths from all theoretical mediators (PQ-mother, PQ-father, conflict, CIM-mother, and CIM-father) to child mental health problems. The models were tested concurrently (all T1) and prospectively (predictor and mediators at T1 and child mental health problems at T2 controlling for child mental health problems at T1[6]) separately for child report and parent report of internalizing and externalizing problems and separately for each indicator of IPC (i.e., frequency and intensity of IPC, CIM-father, CIM-mother). Our goal was to understand how FPT related to children's mental health problems through the theoretical mediators both concurrently and over time and from the perspective of different reporters. Eight models were tested in total. The prospective models represent a half-longitudinal design that establishes time precedence and directionality of effects from the predictor and mediators to child mental health problems, but not between the predictor and mediators (Cole & Maxwell, 2003). We describe results of the concurrent and prospective models and report tests of indirect effects when A and B paths were significant.

We conducted descriptive analyses and performed multivariate outlier analyses to identify potentially influential cases. No influential cases were identified. Because we were not interested in studying effects of the two program conditions, we performed Box's M analyses to check the assumption of equality and symmetry of variances and covariances using all dependent measures and covariates. Results were nonsignificant (Box's M = 37.95; $F(28) = 1.27$, p = .16) indicating that the parameters (i.e., regression paths, residuals, and variances) were equivalent. Thus, we combined the two program conditions and included

[5]We also tested the models using number of visits with father ("In the last month, how many days did you see your father?") as an alternative indicator of PT and the results did not change.

[6]We originally specified mediation models that specified T1 predictor (overnights with father), T2 mediators (conflict, CIM, PQ mother, PQ father), and T2 child adjustment (child- and parent-reports). However, when we controlled for baseline levels of the mediators, all A paths were non-significant, likely due to high stability across the 9-month lag between measurement occasions.

program condition as a covariate in all models to control for potential effects of the program on T2 child behavior problems.[7]

The mediation models were tested using a structural equation modeling framework with observed measures and factor scores (i.e., path analysis) in Mplus Version 7.4 (Muthén & Muthén, 2010). We tested the significance of the indirect effects using the RMediation package, which constructs confidence intervals based on the distribution-of-the-product method (Tofighi & MacKinnon, 2011). We used full information maximum likelihood to handle missing data due to attrition at T2 and Yuan and Bentler (2000) robust standard error correction estimator for unbiased estimates for all models.

Results

Preliminary Analyses

Table 1 displays descriptive statistics and zero-order Pearson product moment correlations for all study variables and covariates at both waves. FPT was negatively correlated with Conflict, CIM-father, and PQ-mother and positively correlated with PQ-father. FPT was not significantly correlated with any parent or child reports of children's mental health problems. A parallel pattern of relations emerged between CIM and PQ for mothers and fathers. CIM-mother was negatively correlated with PQ-mother but positively correlated with PQ-father and CIM-father was negatively correlated with PQ-father but positively correlated with PQ-mother. Child-and parent-report of children's mental health problems at T2 were significantly correlated for internalizing ($r=.37$, $p<.001$) and externalizing ($r=.47$, $p<.001$) problems.

Parenting Time as a Predictor of Parenting Quality and Interparental Conflict

There were significant quadratic ($\beta = -0.37$, 95% CI = −0.53, −0.20, $p < 0.01$) and linear ($\beta = 0.54$, 95% CI = 0.38, 0.71, $p < 0.01$) effects of FPT on PQ-father (see Figure 2). Because the quadratic effect is significant, the linear effect is conditional at average FPT, indicating that at the mean level of overnights with father (11.8), higher FPT was associated with higher levels of PQ-father. The total effect of FPT was $R^2=0.28$ for PQ-father. The pattern of directional effects, interpreted together when there are significant linear and quadratic effects present, indicate a predominately positive, concave downward curve (positive linear effect, negative quadratic effect) for PQ-father (i.e., more overnights with father associated with higher PQ-father; however the positive effects reduced as the number of overnights increased) (Aiken & West, 1991). There was a significant linear effect of FPT on PQ-mother ($\beta = -0.32$, 95% CI = −0.47, −0.16, $p < 0.01$), indicating that the association between FPT and PQ-mother is negative. The quadratic effect was non-significant. The total effect was $R^2=0.19$ for PQ-mother. See Figure 3 for graphical representation of these findings.

We found a significant linear effect (Figure 2) of FPT on conflict ($\beta = -0.24$, 95% CI = 0.41, −0.07, $p < 0.01$), such that more overnights with father were related to lower IPC. The total effect for IPC is $R^2=0.12$. In the models with CIM-mother and CIM-father, there was a

[7]There were no main effects of the program on child behavior problems. See Braver et all., 2016 for detailed analyses of program effects.

significant linear negative relation between FPT and CIM-father (β = −0.29, 95% CI = −0.47, −0.10, p < 0.01), such that more overnights with father were related to lower CIM-father. The relation between FPT and CIM-mother was not significant.

Mediation Model with Child Report of Child Mental Health Problems

We first tested a model with PQ-mother, PQ-father, and conflict as mediators[8] of the relations between FPT and child report of own mental health problems. In the concurrent model (Figure 2A), lower conflict (β = 0.18, 95% CI = 0.01, 0.34, p < 0.05) and higher PQ-father (β = 0.20, 95% CI = −0.38, −0.02, p < 0.05) significantly predicted fewer internalizing problems, and higher PQ-mother significantly predicted fewer externalizing problems (β = −0.24, 95% CI = 0.42, −0.05, p < 0.02). There was a significant indirect effect of FPT on T1 externalizing problems through PQ-mother (b = 0.014, 95% CI = 0.002, 0.031) and a significant indirect effect of FPT on T1 internalizing problems through PQ-father (b = −0.03, 95% CI = −0.052, −0.007). The indirect effect of FPT on T1 internalizing problems through conflict was nonsignificant.

In the prospective model (Figure 2B), higher PQ-father significantly predicted fewer internalizing problems (β = −0.21, 95% CI = −0.41, −0.01, p < 0.05) at T2, controlling for baseline internalizing problems. The indirect effect of FPT on T2 internalizing problems through PQ-father was significant (b = −0.028, 95% CI = −0.059, −0.001). The model effect was R^2=0.37 for externalizing problems and R^2=0.37 for internalizing problems. There were no significant paths from conflict or PQ-mother to T2 internalizing or externalizing problems.

We then tested a model with PQ-mother, PQ-father, CIM-mother, and CIM-father as mediators. In the concurrent and prospective models, the B paths from CIM-father and CIM-mother to internalizing and externalizing problems were non-significant.

Mediation Model with Parent Report of Child Mental Health Problems

In the model with PQ-mother, PQ-father, and conflict, the B paths were not significant for any mediator on parent-reported child behavior problems at T1 or T2 (see Figure 4). However, in the concurrent model (Figure 4A), there was a significant quadratic direct effect of FPT on child behavior problems at T1 (β = −0.23, 95% CI = −0.41, −0.04, p < 0.02, R^2=0.06). The quadratic effect, in the absence of a significant linear effect, indicates an inverted U-shaped curvilinear relation between FPT and child behavior problems. Similarly, the prospective model (Figure 4B) showed significant quadratic direct effects of FPT on T2 internalizing problems (β = 0.21, 95% CI = 0.01, 0.42, p < 0.05) and on T2 externalizing problems (β = 0.18, 95% CI = 0.01, 0.35, p < 0.05). These represent direct effects of FPT on child mental health problems, controlling for baseline scores and the mediators. The predicted associations between FPT and externalizing and internalizing problems at T2 are characterized by U-shaped curvilinear relations (Aiken & West, 1991; see Figure 5) indicating that child mental health problems were lower at moderate number of overnights

[8]Because both linear and quadratic effects of FPT were included in mediation models, the indirect effects reflect the effect at the statistical mean of FPT (Hayes & Preacher, 2010).

with father (i.e., about equal number of overnights with each parent) and higher at both low and high number of overnights with father.

In the concurrent and prospective models with CIM-mother, CIM-father, PQ-mother, and PQ-father as mediators, there were no significant effects of CIM-mother or CIM-father on parent-reported child mental health problems.

Discussion

The most noteworthy contribution of this study is that it is the first, to our knowledge, to test IPC and PQ as simultaneous mediators of the relations between FPT and children's mental health problems. This approach allowed us to examine the unique effect of each parents' PQ while controlling for IPC, and vice versa. It is also the first study to test a nonlinear association between FPT and PQ. The most noteworthy findings include: (1) an indirect effect of FPT on child report of internalizing problems nine months later, mediated through the effect of fathers' PQ and (2) a quadratic relation between FPT and fathers' PQ. In addition, a significant quadratic effect was found for FPT to predict parent reported internalizing and externalizing problems nine months later. We discuss findings from each research question and place the findings in context of prior literature and theories about how FPT, PQ, and IPC relate to children's post-divorce mental health problems. We also discuss implications for policy and practice about allocation of FPT following divorce, strengths and limitations of the study, and directions for future research.

Do the Putative Mediators of Parenting Quality and Interparental Conflict Explain the Link Between Parenting Time and Child Mental Health Problems?

Based on the benefits and conflict hypotheses we predicted that we would find evidence of inconsistent mediation where one indirect effect (e.g., detrimental effect of IPC) operates in the opposing direction of another indirect effect (e.g., protective effect of PQ). This view reflects the complexity of families and recognizes the dynamic and sometimes opposing processes that can occur following parental divorce. From a meta-research perspective, inconsistent mediation is a plausible explanation for null or unreliable total effects (MacKinnon, Cheong, & Pirlott, 2012), such as the mixed findings on the association between FPT and child well-being (Fabricius et al., 2016). We did not find evidence supporting inconsistent mediation in this high-conflict sample. Instead, we found an indirect effect between FPT and child report of internalizing problems such that the number of overnights was fathers were positively associated with fathers' PQ, which was in turn negatively associated with internalizing problems assessed nine months later. These findings suggest that the protective effect of more overnights with fathers is in part accounted for by fathers' quality of parenting, which is consistent with previous studies (e.g., Adamsons, 2018; Sandler, Wheeler, & Braver, 2013). Although the magnitude of the effect of fathers' PQ and children's internalizing problems was small-to-medium (−0.23), longitudinal associations that control for baseline levels are typically small in magnitude because they represent effects above and beyond what is accounted for by stability over time (Adachi & Willoughby, 2015). The take-home message is that PT with fathers is important because it

may facilitate high quality parenting, a robust protective factor for children's mental health problems.

Are there Nonlinear Associations between Parenting Time and Parenting Quality and Interparental Conflict?

In the current study, the cross-sectional model demonstrated that a quadratic relation between FPT and fathers' PQ fits the data above and beyond a linear effect. The results suggest that although the effect of overnights with father on fathers' PQ is *generally* positive, the positive effects level out at some point as suggested by the graphic depiction of this relation (Fabricius et al., 2016). Visual inspection suggests that the optimal number of overnights per month for fathers' PQ is approximately 15 overnights, although the positive slope between 12 (40%) overnights and 15 (50%) overnights appears small in magnitude and may not be either statistically or practically significant. For mothers' PQ, the optimal point appears to be between zero and five (16.6%) overnights with father, but again, the decline between five and 10 (33.3%) overnights looks to be small in magnitude. These findings suggest that the optimal number of overnights which maximizes the benefit to both mother and father without penalizing the other parent might be somewhere between 33% and 40% time with the father.

This effect of FPT on fathers' PQ is a particularly important finding to consider in context because results suggest an opposite effect of overnights with fathers on mothers' PQ. We found a significant linear effect of FPT on mothers' PQ, which suggests a negative association. There appears to be a slight quadratic shape, but it was not statistically significant (see Figure 3). This means that it is possible the negative effect may be weak or indistinguishable from zero at low number of overnights with father (and thus, more overnights with mother) and becomes a stronger negative association as the number of overnights with father increases beyond 10 overnights (or 33%). An exploratory, post hoc analysis showed that the linear effect of FPT on mothers' PQ was nonsignificant at 8 overnights with father. We urge readers not to over interpret this number as it may be capitalizing on variance specific to this sample, and most importantly, these are cross-sectional findings. Further, given that the quadratic effect, albeit in the direction consistent with this explanation, was not reliably different from zero, it needs to be tested in an independent sample. We can conclude, however, that at the mean level of overnights (approximately 12) with father, the effect on mothers' PQ was negative, which is inconsistent with previous research suggesting that spending up to an equal number of overnights with father does not affect the mother-child relationship (Fabricius, Braver, Diaz, & Velez, 2010; Luecken & Fabricius, 2003).

Methodological differences between our study and the studies that have reported no significant effect of FPT on mothers' PQ may explain the discrepancy. For example, in Luecken and Fabricius' (2003) sample of college students, retrospective reports of spending more time living with father was positively correlated with fathers' caring and negatively correlated with mothers' caring in the full sample, but the relation was nonsignificant when the authors analyzed only the 90% that lived with mothers 50% or more of the time. The

difference across findings may also be explained by sample characteristics, as the current study was conducted with court-mandated, high-conflict families.

Contrary to the conflict hypothesis, we found a negative association between FPT and IPC (conditional at the mean level of overnights with father), such that more overnights with father were associated with less child-reported IPC. We found a similar negative association between FPT and father-driven CIM behaviors (conditional at the mean level of overnights with father). Further, the results did not support the prediction of the conflict hypothesis that moderate FPT (i.e., comparable or equal number of overnights with both parents) would be associated with higher exposure to IPC, and low and high levels of FPT would predict lower IPC. These findings are particularly interesting because the parents were considered to be experiencing high conflict by judges, which is the group in which shared PT would be expected to be associated with children being exposed to higher IPC. This finding contradicts earlier findings by Lee (2002) who found evidence of an indirect effect of residential arrangements on child behavior problems through mother-reported interparental aggression. The discrepancy may be explained by differences in sample characteristics, as the previous study used a community sample and the current study was conducted with high-conflict families mandated to receive court services.

Associations of Parenting Quality and Conflict on Child Mental Health Problems

PQ and IPC have been consistently shown to predict child adjustment outcomes (for reviews see Amato, 1993, 2001; Sandler et al., 2012). The results of the current study align with previous literature in demonstrating an adverse effect of IPC on concurrent child-reported internalizing problems. Likewise, results indicate a protective effect of mothers' and fathers' PQ on concurrent externalizing and internalizing problems, respectively. However, the only effect that held in the prospective models was the protective effect of fathers' PQ on internalizing problems. This finding replicates and extends King and Sobolewski's (2006) finding of an indirect effect of nonresidential father contact on children's mental health problems in a cross-sectional sample. The current study emphasizes the importance of high-quality parenting by showing that its protective effect is associated with children's internalizing problems over time.

Although mothers' PQ was associated with lower externalizing problems in the concurrent model, the absence of a prospective path between mothers' PQ and children's internalizing or externalizing problems is surprising. The direction of the bivariate association between T1 mothers' PQ and T2 child externalizing problems was as expected ($r = -0.12$) but mother PQ was not a unique predictor of child mental health problems after accounting for baseline problems and covariates of age, gender, and program condition. The prospective analysis tests predictors of change over time and it may be that externalizing problems demonstrates high stability ($r = .59$ in the current study), especially over a period of 9 months. In this case, smaller prospective effects may be because the effect of mother PQ is already accounted for by its association with baseline externalizing problems (Adachi & Willoughby, 2015). With regard to the different findings for IPC and children's mental health problems in the cross-sectional and half-longitudinal models, other studies have found that the effect of IPC on child mental health problems is typically larger when assessed concurrently than

prospectively (Buehler et al., 1997; Harold & Conger, 1997; Warmuth, Cummings, & Davies, 2018).

Associations between Parenting Quality and Indicators of Interparental Conflict

Although not the focus of this study, the bivariate correlations found in this sample (see Table 1) highlight the complex relations between PQ and indicators of IPC. Consistent with other recent findings (Rowen & Emery, 2018), we found higher scores on CIM driven by either mother or father was associated with lower child reported PQ of the parent who is seen as driving the conflict, and higher child reported PQ with the other parent. These results suggest that when a parent engages in behaviors that may lead the child to feel caught in the middle, such as disparaging the other parent or asking the child to pass messages, it damages the child's relationship with the instigating parent, and may strengthen the child's relationship with the other parent. Given this replicated relation between CIM and PQ, a practical implication may be to educate parents that even covert conflict behaviors like putting their children in the middle of their conflict may have the exact opposite of its intended effect. Interestingly, these effects did not emerge with the more frequently-used measure of the frequency and intensity of conflict, highlighting the need to study the effects of different aspects of IPC on child well-being.

Theoretical Implications

The results of this study lend partial support for the benefits hypothesis. A model that posits PQ as the mediating factor explaining associations between FPT and self-reported child mental health problems is consistent with the data but was limited to fathers' PQ on children's internalizing problems. The pattern of results that emerges when comparing the concurrent and prospective models suggests that mothers' PQ and IPC may explain associations between FPT and child adjustment in the short term, but not prospectively, whereas father PQ may have a protective effect on internalizing problems that persists over time.

Policy and Practice Implications

This study has important implications for court policies and practices around allocations of PT for high-conflict families following parental divorce. In particular, our findings extend previous research that highlights the importance of considering PQ of both parents and providing an adequate amount of PT so that children can reap the benefits of a high quality relationship with both parents, even in families who are considered high-conflict and mandated to court-based programs (Sandler, Miles, Cookston, & Braver, 2008; Sandler et al., 2013). Understanding the implications of PT allocations for these families is particularly relevant to court policy and practice, as the vast majority of states implement mandated parent education programming (Pollet & Lombreglia, 2008). Although the current study does not identify a specific amount of PT for each parent that optimizes the likelihood of a positive quality relationship with both parents, the results do support a presumption of shared PT. It is more likely that there is a "good enough" amount of PT that allows a child to benefit from spending time with that parent while not interfering with the ability for the child to also benefit from time with the other parent. As an example, in the current study the optimal amount of PT (i.e., associated with maximal PQ from both parents) was between

approximately 33–40% of overnights with father. Parenting plans should strive to maximize the collective parental resources while also being mindful of the need for flexibility to accommodate other important factors in a child's life. The current study augments evidence that supports the importance of father's quality of parenting as a pathway through which shared PT may benefit children. A key direction for future investigations is to identify, using a larger representative sample of divorces, an optimal range of overnights that maximizes positive parenting and quality of relationships between the child and both parents.

Finally, despite ample research on the risks associated with children's exposure to high levels of IPC, using this as the single determining factor in decisions about allocations of PT was not supported by the current data. In the current study, higher PT for fathers was associated with lower scores on father-driven caught in the middle behaviors. There was no support for the conflict hypothesis that shared PT would be associated with children being exposed to more IPC. It should be noted that in some families, children's contact with a parent who is abusive or violent represents a safety concern and therefore the child's safety must be prioritized in allocating PT (Jouriles et al., 2018; Warshak, 2014). Further, even for cases in which the child is not directly in danger, past research suggests that a high-quality relationship between a child and an aggressive or antisocial father figure may be a risk factor for higher levels of externalizing problems, perhaps due to the combination of the child's positive view of the aggressive father figure and social learning of observed aggressive behaviors (DeGarmo, 2010; Skopp, McDonald, Jouriles, & Rosenfield, 2007). Further, though the current study measured multiple aspects of IPC (i.e., frequency, intensity, degree to which the child felt caught in the middle), future research should include multiple measures of conflict (e.g., initiator, intimate partner violence, impact on emotional security) in order to capture the complex nature of children's exposure to IPC (Bradford & Barber, 2005; Hardesty & Chung, 2006).

Limitations

The results of the current study should be considered in light of its limitations. The current study included only two assessment occasions and because key paths between PT, conflict, and PQ were assessed cross-sectionally, we cannot rule out the alternative explanation that families with lower conflict, lower mother PQ, and/or higher father PQ may elect for or be ordered to more overnights with fathers. Future research with multiple assessments of all study variables at time points both closer to and further from the divorce or separation is needed to allow clearer interpretations about relations among PT, PQ, and IPC and to provide a more nuanced picture of decisions about how PT impacts children's adjustment over the long term. In particular, studies that include measurement of all variables across at least three time points (i.e., a fully lagged longitudinal mediation design) will be critical to establish directionality of relations among the variables of interest. For example, although we are not aware of any study testing the path from PQ to PT, an intervention targeted to improve fathers' parenting quality demonstrated program effects on days of contact for older children (Sandler et al., 2018). It is also important to note that the majority of parents who had a child in the eligible age range declined to have their child interviewed, and our sample consisted only of families deemed "high-conflict" by judges, limiting the generalizability of results. Further, the sample size was relatively small, and results need to be replicated in a

larger sample of high-conflict, divorcing families. Finally, the parents were mandated to a program for high-conflict divorces and thus the results may not generalize to the broader population of divorced and separated families.

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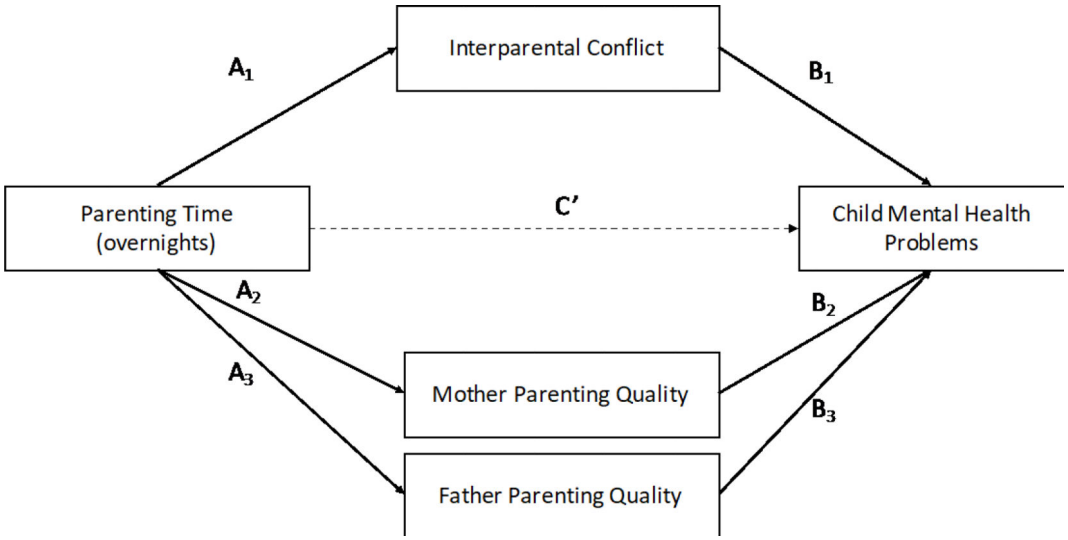

Figure 1.
Conceptual Model.

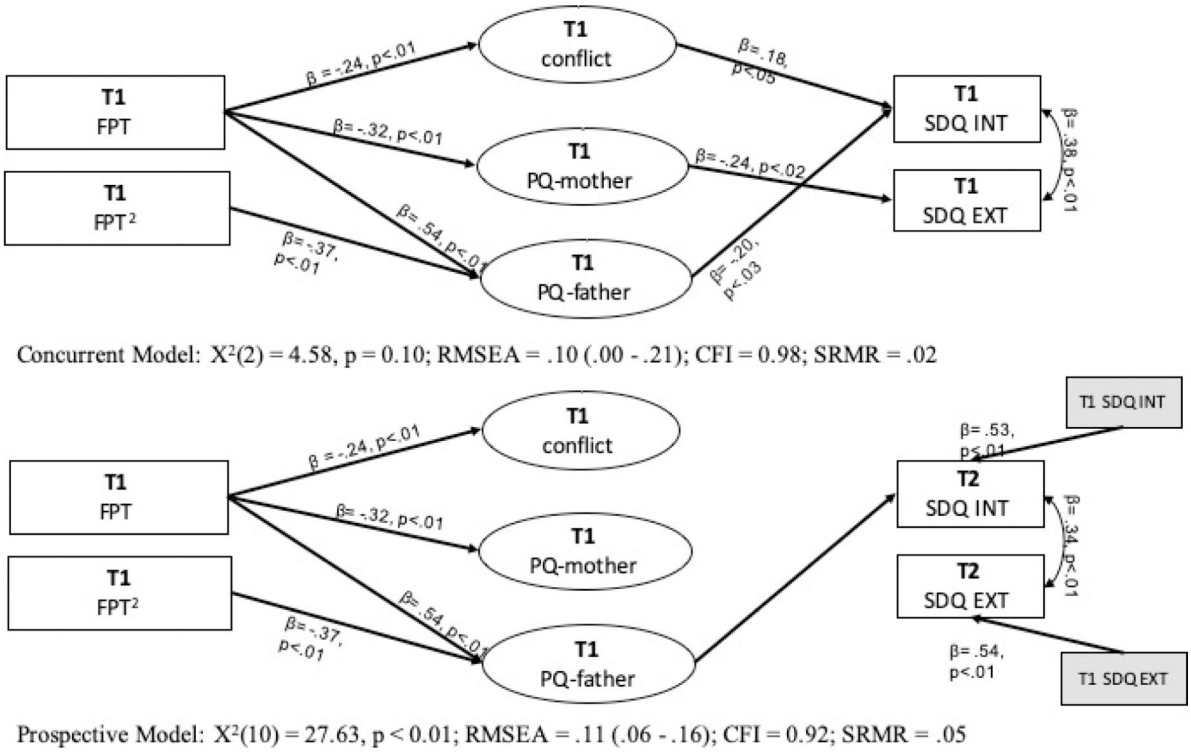

Figure 2.

Model fit statistics and standardized regression coefficients of mediation path model of T1 FPT to T1 mediators PQ-mother, PQ-father, and conflict on self-reported child adjustment problems at T1 (Panel A) and T2 (Panel B). Covariates include child age, child gender, and program condition (class).

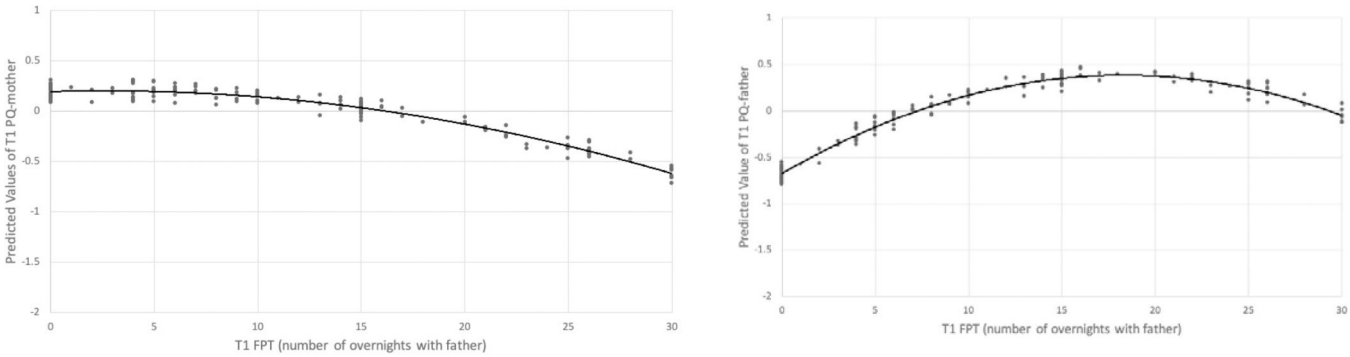

Figure 3.

Association between Time 1 (T1) father parenting time (FPT) and predicted scores on T1 parenting quality (PQ)-mother and T1 PQ-father.

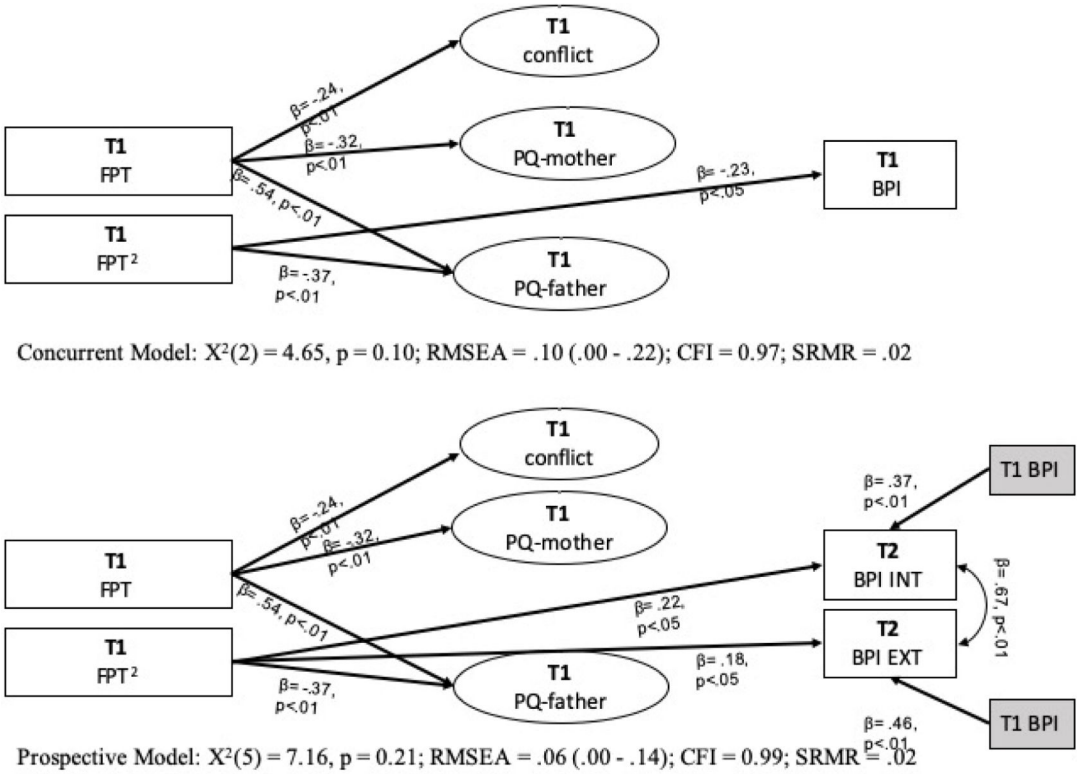

Figure 4.

Model fit statistics and standardized regression coefficients of mediation path model of T1 FPT to T1 mediators PQ-mother, PQ-father, and conflict on parent-reported child mental health problems at T1 (panel A) and Time 2 (T2; panel B). Covariates include child age, child gender, and program condition (class). BPI = Behavior Problems Index; INT = internalizing problems subscale; EXT = externalizing problems subscale.

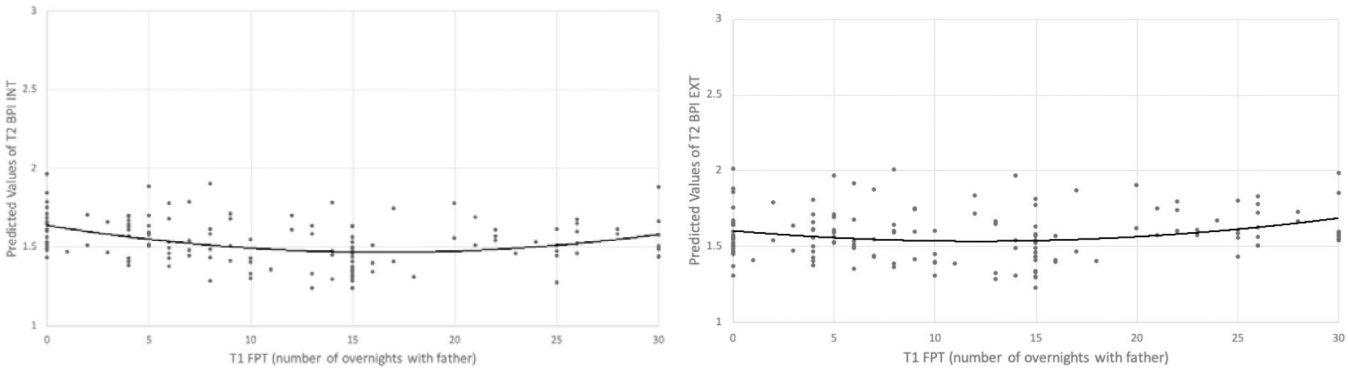

Figure 5.

Association between Time 1 (T1) father parenting time (FPT) and predicted scores on parent-reported child internalizing (INT) and externalizing (EXT) problems, respectively. BPI = Behavior Problems Index.

Table 1.

Bivariate correlations and descriptive statistics of all study variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Child Age	1															
2. Child Gender	0.00	1														
3. Class	0.12	0.02	1													
4. T1 FPT	−0.09	0.02	−0.08	1												
5. T1 Conflict	**0.22** **	−0.05	**0.17** *	**−0.20** *	1											
6. T1 CIM-mother	0.00	0.13	−0.01	0.09	0.12	1										
7. T1 CIM-father	0.06	−0.03	−0.01	**−0.21** *	**0.38** **	−0.16	1									
8. T1 PQ-mother	−0.06	−0.04	−0.05	**−0.39** *	−0.06	**−0.46** *	**0.37** **	1								
9. T1 PQ-father	**−0.22** *	−0.02	−0.09	**0.39** **	**−0.26** *	**0.31** **	**−0.54** *	**−0.25** *	1							
10. T1 SDQ Internalizing	−0.17	**0.22** **	−0.03	0.03	0.13	0.13	**0.18** *	−0.01	−0.15	1						
11. T1 SDQ Externalizing	−0.14	0.05	0.05	0.02	0.09	**0.22** **	0.02	**−0.18** *	0.01	**0.40** **	1					
12. T2 SDQ Internalizing	−0.13	**0.22** *	0.11	−0.04	0.10	0.05	**0.22** *	0.05	**−0.23** *	**0.61** **	**0.36** **	1				
13. T2 SDQ Externalizing	**−0.19** *	0.02	0.10	−0.02	0.01	0.18	0.05	−0.12	−0.01	**0.35** **	**0.59** **	**0.49** **	1			
14. T1 BPI	−0.04	−0.04	0.12	0.03	−0.03	0.02	−0.04	−0.07	0.02	0.11	**0.32** **	**.21** *	**0.28** **	1		
15. T2 BPI Externalizing	−0.08	−0.10	0.15	−0.01	0.01	0.04	0.10	0.01	0.02	**0.18** *	**0.42** **	**0.26** **	**0.47** **	**0.45** **	1	
16. T2 BPI Internalizing	−0.05	−0.11	0.04	−0.12	0.02	0.00	**0.17** *	0.02	−0.09	**0.28** **	**0.36** **	**0.37** **	**0.41** **	**0.34** **	**0.71** **	**1**
M	13.01	-	-	11.79	−0.01	0.00	0.00	0.00	0.00	3.38	2.55	3.26	2.12	1.65	1.54	1.51
SD	2.63	-	-	9.21	0.40	0.35	0.29	0.59	0.64	2.42	1.82	2.38	1.92	0.53	0.33	0.35

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
N	141	141	141	141	140	140	140	141	141	141	141	125	125	141	133	133

FPT = father parenting time; IPC = interparental conflict; CIM = caught in the middle; PQ = parenting quality; SDQ = Strengths and Difficulties Questionnaire; BPI = Behavior Problems Index; T1 = study time 1; T2 = study time 2; M = mean; SD = standard deviation; N = sample size. Bold type indicates significant correlations.

* p<.05

** p<.01