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Non-Residential Father-Child Involvement, Interparental Conflict and Mental Health of Children Following Divorce: A Person-Focused Approach

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Abstract

Variable-centered research has found complex relationships between child well-being and two critical aspects of the post-divorce family environment: the level of non-residential father involvement (i.e., contact and supportive relationship) with their children and the level of conflict between the father and mother. However, these analyses fail to capture individual differences based on distinct patterns of interparental conflict, father support and father contact. Using a person-centered latent profile analysis, the present study examined (1) profiles of non-residential father contact, support, and interparental conflict in the two years following divorce ($N = 240$), when children (49% female) were between 9 and 12 years of age and (2) differences across profiles in concurrent child adjustment outcomes as well as outcomes six years later. Four profiles of father involvement were identified: High Contact – Moderate Conflict – Moderate Support, Low Contact – Moderate Conflict – Low Support, High Conflict – Moderate Contact – Moderate Support, and Low Conflict – Moderate Contact – Moderate Support. Concurrently, children with fathers in the group with high conflict were found to have significantly greater internalizing and externalizing problems compared to all other groups. Six years later, children with fathers in the group with low contact and low support were found to have greater internalizing and externalizing problems compared to children with fathers in the high conflict group, and also greater internalizing problems compared to children with fathers in the low conflict group. These results provide insight into the complex relationship among non-residential fathers' conflict, contact, and support in child adjustment within divorcing families.

Keywords

Divorce; Interparental Conflict; Father Contact; Latent Profile Analysis

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Conflicts of Interest

The authors report no conflicts of interests.

Authors' Contributions

KE participated in the design and interpretation of the data, performed statistical analyses, and drafted the manuscript. IS conceived of the study, participated in its design and coordination, and drafted the manuscript. SW conceived of the study, participated in its design and coordination, and drafted the manuscript. JYT participated in the design and coordination of the manuscript and provided statistical consultation. All authors have read and approved the final manuscript.

Introduction

Although the prevalence of divorce has stabilized in young couples over the past several decades (Kennedy & Ruggles, 2014), the structure of the post-divorce family has continued to change over time. One significant change is that non-residential fathers are increasingly involved in their children's lives following divorce (e.g., Maccoby, Depner & Mnookin, 1998; Parkinson, 2011). There is considerable research evidence that a father's active involvement (i.e., contact and support) with his children following divorce is related to better child adjustment (Bastais, Ponnet, & Mortelmans, 2012; Fabricius, Sokol, Diaz, & Braver, 2012; Flouri, 2006; Sandler et al., 2012), but that children's adjustment may be compromised when father involvement is associated with high levels of interparental conflict (Fehlberg, Smyth, Maclean & Roberts, 2011). Understanding the relationships between father involvement and children's post-divorce adjustment is complicated by the many factors that characterize father involvement, including the amount of time that fathers spend with their children (e.g., in person contact, telephone contact), quality of the relationship (e.g., activities they engage in, support provided) as well as contextual factors that may impact fathers' involvement, children's adjustment or both (e.g., conflict between the parents, quality of mother's parenting). This study takes a novel person-centered approach to investigate these relations. We first use latent profile analysis to identify the distinct combinations of contact, support and interparental conflict in a divorced sample in which the father is the non-primary residential parent. We then study the relationships between these profiles of non-residential father post-divorce involvement and children's concurrent mental health problems and children's mental health problems six years later.

Increases in Non-Residential Fathers' Involvement with their Children Following Divorce

Early research on post-divorce father involvement painted a bleak picture of the "deadbeat dad" who had little involvement, both financially and personally in their children's lives following divorce. For example, Furstenberg and Cherlin (1991, p. 36) stated that "over time, the vast majority of children [from divorced families] will have little or no contact with their fathers." However, more recent research has found a trend toward an increase in fathers' post-divorce involvement with their children (e.g., Cancian, Meyer, Brown, & Cook, 2014; Fabricius et al., 2012). Using data from four nationally representative samples, Amato, Meyers and Emery (2009) found that the percent of non-residential fathers with weekly or more frequent contact with their children increased from 18% in 1976 to 31% in 2002. Changes have also occurred in children's post-divorce living arrangements. For example, in Wisconsin in 1980–1981, 86% of children were physically placed with their mothers, and only 2% had shared placements (defined as 30% to 70% with each parent). In 2001, mother placements had decreased to 59% and shared placement had increased to 32% (Melli & Brown, 2008). The increase in fathers' post-divorce involvement with their children reflects a change in the cultural norms concerning the father's role (Fabricius, Braver, Diaz & Velez, 2010), changes in legal policy, (Maccoby et al., 1988; Parkinson, 2011), and the impact of advocacy by fathers' rights groups (Parkinson, 2011). The increase in father involvement highlights the public health significance of understanding the impact of fathers' post-divorce involvement on their children's adjustment.

Impact of Non-Residential Fathers' Contact, Support, and Interparental Conflict on Children's Adjustment

The impact of fathers' post-divorce contact and support on their children's adjustment has been the subject of considerable research. Although there is a trend for fathers' increased contact and support following divorce, there is mixed evidence of how this increased involvement relates to their children's adjustment. A study by Bastaitis et al. (2012) found non-residential fathers to have lower levels of support compared to married fathers and fathers in joint custody, but non-residential fathers' support was still associated with better adolescent outcomes. Flouri (2006) found non-residential fathers' contact, but not support, to be negatively associated with adolescent's emotional symptoms. Some studies have found moderate associations between time spent with fathers (e.g., number of overnights) and children's post-divorce adjustment (Fabricius et al., 2012). However, other studies have failed to find significant relationships or reported that these relationships were weak across different measures of contact (e.g., Amato & Gilbreth, 1999; Hawkins, Amato & King, 2007). Fabricius et al. (2012) argue that simply studying the bivariate relationships among fathers' contact, support and children's adjustment is an overly simplistic approach to understanding the impact of father involvement on children's adjustment. They propose a theoretical model in which the effects of fathers' parenting time are moderated by the number and kinds of supportive interactions that fathers engage in with their children and the fathers' responsiveness to their children. Others have proposed that the effects of fathers' post-divorce involvement on children's adjustment may differ as a function of the broader family context, particularly the level of interparental conflict (Modecki, Hagan, Sandler, & Wolchik 2014; Sandler et al., 2012).

Interparental conflict is known to have a negative influence on adolescents' internalizing and externalizing problems (David & Murphy, 2004; Doyle & Markiewicz, 2005), especially conflict between mother and non-residential father (Dunn, O'Connor, & Cheng, 2005). However, research is inconsistent concerning the effects of non-residential father involvement when interparental conflict is high. In the presence of a high interparental conflict, some studies have shown that greater father contact and support is related to better child adjustment (Fabricius et al., 2012) whereas others have found that greater father contact and support was related to poorer child adjustment (McIntosh, Smyth, Kelaheer, Wells, & Long, 2010).

Understanding the Heterogeneity of Fathers' Involvement

A number of approaches have been used to disentangle the effects of fathers' post-divorce contact and support from the effects of other factors that influence children's adjustment following divorce. One approach examines the unique effect of each variable while controlling for the effects of the others. For example, several studies have found that the quality of the father-child relationship predicts children's adjustment after controlling for interparental conflict and mother-child relationship quality (e.g., Sandler et al., 2012). A second approach examines interactive effects where the effect of each variable is conditioned by the effect of other variables. For example, Sandler, Wheeler and Braver (2014) found that the effect of father-child relationship quality on children's mental health problems differed as a function of the number of overnights that the child spent with the

father. When children spent more overnights, higher positive parenting by their fathers was related to lower mental health problems, but when children spent few overnights, the relationship between fathers' positive parenting and mental health problems was non-significant.

Another factor that may influence the relationship between fathers' involvement and their children's mental health problems is the level of interparental conflict. It has been proposed that in the context of high interparental conflict, high father contact may put children in the middle of the conflict, leading to increased stress and poorer adjustment (Sobolewski & Amato, 2007). Sandler, Miles, Cookston and Braver (2008) found that both the level of interparental conflict and quality of mothers' parenting moderated the relationship between fathers' positive parenting and children's adjustment. Under conditions of high interparental conflict, fathers' positive parenting was related to lower internalizing problems when mothers provided low levels of positive parenting but fathers' positive parenting was not significantly related to internalizing problems when mothers provided high levels of positive parenting. Clearly, it is methodologically challenging to understand the effects of the multiple factors that need to be considered to understand the role of fathers' contact and support in their children's adjustment.

Multiple regression methods, such as those discussed above, are variable-centered approaches that address how variability in aspects of father contact and support either individually or in combination relate to variability in their children's adjustment. Modecki et al. (2014) proposed the use of a person-oriented approach as an alternative way to understanding the relationships between fathers' involvement and their children's adjustment. Modecki et al. (2014) proposed that a person-oriented approach has advantages over variable-centered approaches because it identifies distinct patterns of the variables of interest (i.e., father contact, support and interparental conflict) that empirically categorize families who share similar observed characteristics into subsamples (which are referred to as latent profiles), and studies how children's adjustment differs between families with these distinct patterns of characteristics. Using Latent Profile Analysis (LPA), Modecki et al. (2014) identified three profiles of post-divorce father involvement six to eight years following the divorce: moderate involvement with low conflict, low involvement with moderate conflict, and high involvement with high conflict. They found that, nine years later (15 to 17 years after the divorce), young adults from families with moderate father involvement and low conflict during adolescence were better adjusted than young adults who had either high father involvement and high conflict or low father involvement and a moderate level of conflict during adolescence.

The Current Study

The current study extends Modecki et al.'s (2014) approach by studying profiles of father involvement earlier in the post-divorce process, within two years of the divorce. Because father involvement (including the amount of father's contact and father's supportive relationship with their child) and the level of interparental conflict has been found to change over time following the divorce (Cheadle, Amato & King, 2010) it is likely that different profiles of post-divorce fathers' support, contact and interparental conflict will be found

closer to the time of divorce compared to six to eight years after the divorce, the period in Modecki et al.'s (2014) study. Due to the exploratory nature of latent profile analysis, no hypotheses are made about the nature of the profiles that will be identified.

One contribution of this study is to identify profiles of father involvement and conflict within two years of the divorce. Although until profiles are identified no specific predictions can be made about the relationships between these profiles and child adjustment problems, we can make hypotheses concerning the relationships between certain combinations of characteristics of profiles and child adjustment. Profiles characterized by a combination of variables that have each previously been found to relate to lower child adjustment problems [i.e., high father support and low conflict (Kelly, 2012)] should be related to lower levels of child mental health problems. Profiles that are characterized by high contact should only be related to lower child mental health problems if they also include high father support because research has indicated that the effects of father contact is accounted for by the quality of the relationship (Sandler et al., 2011). Although there is mixed evidence from prior studies on how combinations of father support and interparental conflict relate to child mental health problems, based on Modecki's findings from the only prior latent profile analysis study of this issue, we predict that a profile characterized by low conflict will have lower child mental health problems than other profiles regardless of whether they have high or low father support.

Another contribution of the current study is to investigate the relationships among father involvement profiles and long-term, prospective as well as concurrent child mental health problems. It is possible that the long-term effects of father involvement or conflict that are reflected in the prospective six-year relationships differ from the short-term concurrent relations. Although causal effects cannot be claimed for either short or long-term relations, differences in findings provide perspective on how the effects of father involvement may change over time. Similar to prior research on father involvement following divorce, the present study will control for the effects of other family factors that may affect child adjustment including mother-child relationship quality, mother's remarriage, and individual child factors such as previous levels of child mental health problems in the prospective analyses (Modecki et al., 2014; Sandler et al., 2012).

Methods

Participants

Participants were 240 mothers and children who participated in an experimental, randomized trial of the New Beginning Program (NBP), a preventive intervention for residential mothers and their children after divorce (Wolchik et al., 2000). The majority of families (80%) were recruited using randomly selected court records of divorce decrees within the 2 years prior to the intervention start date that involved a child between 9 and 12 years old. The remainder responded to media advertisements. Potential participants were contacted via letters and telephone calls. Eligibility criteria were (a) divorced in the past 2 years; (b) mother was primary residential parent (i.e., at least one 9- to 12-year-old child resided at least 50% time with the mother); (d) neither mother nor any child was in treatment for mental health problems; (e) mother had not remarried, did not plan to remarry during the

program, and did not have a live-in boyfriend. In families with multiple children in the age range, one was randomly selected as the target child for the assessments to ensure independence of responses. Further details on eligibility and parent recruitment are provided in Wolchik et al. (2000) and Winslow, Bonds, Wolchik, Sandler, and Braver (2009). A study of selection into the NBP found that those who enrolled had higher child externalizing problems and income as compared with those who did not enroll (Winslow et al., 2009).

At pre-test, children were on average 10.76 years old ($SD = 1.11$, range = 9–12 years old) and 48.8% were female. The average time since divorce was 12.23 months ($SD = 6.41$, range of less than 1 month to two years). Of the 240 families, 63% had sole maternal legal custody, 35% had joint custody, and 2% had split custody arrangements. Mothers' and fathers' ethnicity was, respectively, 87.9% and 86.3% White, non-Hispanic; 7.5% and 7.9% Hispanic; 1.7% and 2.9% African American; 0% and 1.3% American Indian; 1.3% and .8% Asian/Pacific Islander; 1.7% and .8% Other. Mothers' median gross household income fell in the range of \$20,000 to \$25,000. Of the fathers, 14.2% had remarried and 21.1% had relocated out of the Phoenix metropolitan area. At the 6-year follow-up, 218 (91%) youths participated (M age = 16.91, $SD = 1.11$ [range = 15–19 years old]; 49.5% female). The average time since divorce was 7.19 years ($SD = .55$, range = 6–8 years). Fathers' median gross household income fell in the range of \$45,000 to \$50,000.

Procedures

Mothers and children were individually interviewed by trained project staff in the family's home. Confidentiality was described to mothers and children who signed consent/assent forms. After the pre-test, families were randomly assigned to one of three conditions; a parenting program, a parenting-plus-child coping program, or a literature control. The interventions consisted of separate clinician-led groups for mothers and children that included structured activities. Sessions took place over 11 weeks. Mothers also attended two individual sessions that focused on individual needs. Fathers were not included in the intervention. The New Beginnings Program has been described in detail elsewhere (Wolchik, Sandler, Weiss, & Winslow, 2007) and the findings from the evaluation of the program have been presented in numerous publications (e.g., Wolchik et al., 2007; Wolchik et al., 2013).

Families participated in 6 assessments. The first assessment was collected prior to randomization in 1992–1993, followed by a post-test assessment, as well as follow-ups at 3 months, 6 months, 6 years, and 15 years post-intervention. Data from the current study are from the pre-test ($N = 240$) and 6-year follow-up in 1998–1999 ($N = 218$; 91%).

Pretest Measures included in Latent Profile Analysis

Contact with non-residential father—Mothers reported on their child's contact with the father using two items that assessed telephone contact and in-person contact from the Dad Contact/Maternal Barriers to Father Contact measure (Braver, Wolchik, Sandler, Fogas, & Zvetina, 1991), "Think about the different types of contact your ex-husband has had with your child during the past month. How often have they talked on the telephone?" and "How many different times did your ex-husband visit with your child during the last month?"

representing counts of number of instances of contact. The items were moderately correlated ($r = .36, p < .001$), but were kept separate in analyses to examine possible profile differences by method of father-child contact.

Father support—Children completed 5 items from the Children's Inventory of Social Support (CISS; Wolchik, Ruchman, Braver, & Sandler, 1989), which assesses support in five domains; play, advice, provision of goods and services, emotional support, and positive feedback. A sample item is "How often has your (dad/mom's ex-husband) done fun things with you in the past month. Items were rated on a 4-point scale (1- almost never, 2- sometimes, 3-often, 4- a lot of times). Items were averaged; higher scores reflected greater support. Internal consistency was $\alpha = .78$.

Interparental conflict—Children completed the 13-item Children's Perception of Interparental Conflict Scale (CPIC; Grych, Seid, & Fincham, 1992), which assessed children's perceptions of frequency and intensity of conflict between their parents over the past month. A sample item is "You often saw your parents arguing." Items were rated on a 3-point scale (1-True, 2- Sort of True, 3- False). Items were averaged; higher scores reflected greater conflict. Internal consistency was $\alpha = .82$.

Child Outcome Measures Assessed at Pretest and at 6-Year Follow-Up

Internalizing problems—Mothers and children reported on the same measure of child's internalizing problems at pre-test and at 6-year follow-up, respectively. Mothers reported on the 31-item internalizing subscale of the Child Behavior Checklist at pre-test and at the 6-year follow-up (CBCL; Achenbach, 1991). Items were rated on a 3-point scale (1- Not true, 2-Sometimes true, 3- Often true). Items were averaged; higher scores reflected greater internalizing problems. Internal consistency was $\alpha = .88$ at pre-test and $\alpha = .86$ at the 6-year follow-up.

Children completed the 28-item Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), which assessed anxiety related to physiological problems, worry and oversensitivity, and concentration problems. A sample item is: "You worried a lot of the time." Items were rated (1) Yes and (2) No. Items were averaged within time. Internal consistency was $\alpha = .88$ at pre-test and $\alpha = .89$ at the 6-year follow-up. Children also reported on the 27-item Children's Depression Inventory scale (CDI; Kovacs, 1981), which assessed affective, cognitive, and behavioral aspects of depression. Items were assessed using a triplet response (e.g., "I do not feel alone", "I feel alone many times", "I feel alone all the time"). Items were averaged within time. Internal consistency was $\alpha = .76$ at pre-test and $\alpha = .85$ at the 6-year follow-up. The RCMAS and CDI scores, which were highly correlated at pre-test and the 6-year follow-up ($r = .58, p < .001$; $r = .70, p < .001$), were averaged into respective pre-test and 6-year follow-up scores. Mother and child scores were standardized and averaged into respective pre-test and 6-year follow-up scores; greater scores reflected greater internalizing problems.

Externalizing problems—Mothers and children completed the same measures of child's externalizing problems at pre-test and at the 6-year follow-up. Mothers reported on the 33-

item externalizing subscale of the Child Behavior Checklist (CBCL; Achenbach, 1991), which assesses aggression and delinquency. A sample item is: "My child gets in many fights." Internal consistency was $\alpha = .87$ at pre-test and $\alpha = .84$ at the 6-year follow-up. Children reported on 25 items from the Divorce Adjustment Project Externalizing Scale (Cook, 1986), which assesses aggression, hostility, and delinquency, as well as 2 items on delinquency from Achenbach's (1991) Youth Self Report scale. Items were rated on a 3-point scale (1- Not true, 2- Sometimes true, 3- Often true). Items were averaged within time. Internal consistency was $\alpha = .87$ at pre-test and $\alpha = .89$ at the 6-year follow-up. Mother and child reports were standardized and averaged into respective pre-test and 6-year follow-up measures; greater scores reflected greater externalizing problems.

Covariates/predictors—Several covariates were included to control for child- and mother-level variables that may be related to father involvement and child mental health problems. In formation of the latent profiles, child age and gender, mother's gross income (which included all sources of income including child support payments), and mother-child relationship quality were controlled for. Children's scores on the 16-item acceptance and 16-item rejection subscales from the Children's Report of Parental Behavior Inventory (CRBPI, Schaefer, 1965) were used to assess mother-child relationship quality. A sample item is: "Your mother enjoyed doing things with you." Items were rated on a 3-point scale (1- Like your mother, 2-, Somewhat like your mother, 3- Not like your mother). Internal consistency was $\alpha = .87$. Items were scored to reflect higher levels of mother support; rejection items reverse coded to reflect low levels of rejection. Items were averaged to form a measure of mother-child relationship quality. Quality of the mother-child relationship was included as a covariate in concurrent and prospective tests of child adjustment across father profiles. Analyses that involved the 6-year follow-up data also controlled for pre-test internalizing problems and externalizing problems, child age and gender, intervention condition, child support payments, and mother's remarriage.

Statistical Analyses

All analyses were conducted within Mplus version 7 using full information maximum likelihood for missing data (Muthén, & Muthén, 2012). Thus all 240 families were included in this study (9.2% of data were missing from child outcome variables at the 6-year follow-up). Within the present sample, Little's (1988) test indicated that data were missing completely at random ($\chi^2(29) = 32.75, p = .29$).

Latent class analysis (LCA) within Mplus was used to create discrete profiles across four variables: father-child phone contact, father-child in-person contact, interparental conflict, and father support. Since these four variables were all continuous variables, we were essentially conducting latent profile analysis (LPA) and use these terms interchangeably. LPA groups individuals into discrete profiles based on a set of continuous observed variables. The observed scores within a profile are assumed to come from the same probability distribution, representing a distinct sub-population from those of other profiles (Vermunt & Magidson, 2002).

A recently published power analysis on latent profile analysis (Tein, Coxé, & Cham, 2013) indicated that given adequate distance between profiles (Cohen's $d = 1.5$) a sample size of $N = 250$ provides adequate power. After testing for differences across profile indicators we examined average effect size to assess power in the current sample ($N = 240$).

The observed variables were all continuous variables. Fathers had telephone contact 8.47% and in-person contact 15.17% of the time (days/month) on average. Continuous indicators were standardized for ease of presentation. Child gender, age, mother's income, and mother-child relationship quality were included as predictors of the latent profile given their theoretical relationship to the indicators. As a first step of the latent profile analysis, the optimal number of profiles was determined. We used various starting values which provided consistent results, indicating a lower likelihood of local maxima. Following this, significant mean differences across father profiles were tested for among covariates using logistic regression and among observed indicators using Wald's Chi-Square Equality Test. Multinomial regression was subsequently used to test for differences across father profile in (1) concurrent children's adjustment at pre-test and (2) prospective differences in children's adjustment at the 6-year follow-up, separately by internalizing and externalizing problems. Concurrent analyses controlled for mother-child relationship quality, child support payments, child age and gender. Prospective analyses controlled for pretest internalizing problems and externalizing problems (respectively), child age and gender, pretest mother-child relationship quality as well as mother's remarriage, child support payments, and intervention condition.

Results

Latent profile analysis was first conducted with a 2 profile solution and then with the number of profiles iteratively increased until the best solution was indicated by fit indices and theoretical interpretation. The Adjusted Bayesian Information Criterion (ABIC; Schwarz, 1978) and bootstrap likelihood ratio test (BLRT; McCutcheon, 1987) were examined as indicators of fit (see Tein et al., 2013). Following previous guidelines on class selection we excluded solutions in which a profile size was less than 5% of the overall sample to ensure stable and meaningful class formation (Modecki et al., 2014; Tein et al., 2013).

Table 2 presents the model fit indices from 1-profile to 5-profile solutions. Comparing to the 4-profile solution, the 3-profile solution collapsed across high and low levels of interparental conflict in forming a single profile resulting in a comparative loss of interpretability. The 5-profile solution extracted two profiles which were very similar, one of which contained less than 5% of the sample, so was disregarded. The 4-profile solution was therefore chosen based on fit indices and the interpretability of patterns of interparental conflict based on the observed indicators and predictors.

Differences across Profiles among Indicators and Covariates

The standardized means of the indicators for the four profiles are presented in Figure 1. Significant differences were found among the indicators across the four profiles (see Table 3, Panel A). Groups were labelled based on the factors that distinguished them from the

other profiles. The groups were characterized as high on a characteristic if they were significantly higher than at least two of the other profiles on that characteristic and were not significantly lower than the other profile on that characteristic. They were characterized as low on a characteristic if they were significantly lower than at least two of the other profiles on that characteristic and not significantly higher than the other profile. If they did not meet the criteria for high or low they were characterized as moderate on a characteristic.

Levels of contact varied by profile (days/month); Group 1 (consisting of 16.7% of the sample) had higher phone contact than the other groups (Group 2: Wald's $X^2(1) = 146.59, p < .001$; Group 3: Wald's $X^2(1) = 158.35, p < .001$; Group 4: Wald's $X^2(1) = 219.50, p < .001$) and higher in-person contact than Group 4 (Wald's $X^2(1) = 20.14, p < .001$). Group 1 was labelled as **High Contact – Moderate Conflict – Moderate Support**.

Group 2 (consisting of 31.8% of the sample) had lower conflict than Group 1 (Wald's $X^2(1) = 6.39, p = .011$) and Group 3 (Wald's $X^2(1) = 109.95, p < .001$). Group 2 was labelled as **Low Conflict – Moderate Contact – Moderate Support**.

Group 3 (consisting of 24.3% of the sample) had higher conflict than Group 1 (Wald's $X^2(1) = 36.96, p < .001$) and Group 4 (Wald's $X^2(1) = 12.85, p < .001$). Group 3 was labelled as **High Conflict – Moderate Contact – Moderate Support**.

Group 4 (consisting of 27.2% of the sample) had lower phone and in-person contact than Group 2 (Wald's $X^2(1) = 5.00, p = .02$; Wald's $X^2(1) = 6.35, p = .012$) and Group 3 (Wald's $X^2(1) = 9.85, p = .002$; Wald's $X^2(1) = 5.39, p = .02$), as well as Group 1 (see above). Group 4 also had lower support than Group 1 (Wald's $X^2(1) = 16.04, p < .001$), Group 2 (Wald's $X^2(1) = 64.37, p < .001$), and Group 3 (Wald's $X^2(1) = 8.63, p = .003$). Group 4 was labelled **Low Contact – Moderate Conflict – Low Support**.

According to Tein et al. (2013), large distances between profiles (Cohen's $d = 1.5$) with an $N = 250$ provides adequate power to detect profiles. Our LCA had a large average effect size ($M = 2.34, SD = 3.09$), indicating power does not appear to be an issue in the current study.

Significant differences were found among the predictors across the four profiles (see Table 3, Panel B). Children of fathers in the Low Conflict – Moderate Contact – Moderate Support group were more likely to be boys as compared to the High Contact – Moderate Conflict – Moderate Support group ($B = -1.22, SE = .51, p = .017$). Mother-child relationship quality was higher in the Low Conflict – Moderately Contact – Moderate Support group as compared to the High Conflict – Moderately Contact – Moderate Support group ($B = .09, SE = .04, p = .017$).

Concurrent and Prospective Differences in Child Mental Health Problems between Profiles

Significant differences were found in *concurrent* child internalizing and externalizing problems across father involvement profiles after controlling for mother-child relationship quality, child support, child age, and child gender (see Table 3, Panel B). The High Conflict – Moderate Contact – Moderate Support group was found to have significantly more internalizing problems than each of the other groups (Low Contact – Moderate Conflict –

Low Support: $B = -.26$, $SE = .15$, $p = .051$, 95% CI $[-.55, .02]$; Low Conflict – Moderate Contact – Moderate Support: $B = -.32$, $SE = .15$, $p = .018$, 95% CI $[-.59, -.05]$; High Contact – Moderate Conflict – Moderate Support: $B = -.38$, $SE = .16$, $p = .016$, 95% CI $[-.70, -.07]$). The High Conflict – Moderate Contact – Moderate Support group was also found to have significantly higher externalizing problems than the High Contact – Moderate Conflict – Moderate Support group ($B = -.31$, $SE B = .15$, $p = .033$, 95% CI $[-.59, -.02]$) and Low Conflict – Moderate Contact – Moderate Support group ($B = -.36$, $SE B = .14$, $p = .009$, 95% CI $[-.63, -.09]$).

Significant differences were also found across father involvement profiles in the *prospective* analyses. Higher internalizing problems were found in the Low Contact – Moderate Conflict – Low Support group compared to the High Conflict – Moderate Contact – Moderate Support group ($B = -.41$, $SE B = .17$, $p = .016$, 95% CI $[-.75, -.08]$) and Low Conflict – Moderate Contact – Moderate Support group ($B = -.31$, $SE B = .14$, $p = .032$, 95% CI $[-.59, -.04]$). Higher externalizing problems were found in the Low Contact – Moderate Conflict – Low Support group compared to the High Conflict – Moderate Contact – Moderate Support group ($B = -.33$, $SE B = .15$, $p = .025$, 95% CI $[-.62, -.03]$).

Discussion

A wealth of prior research has studied non-residential fathers' involvement in the post-divorce family environment. One key question involves whether fathers' contact and support is beneficial to their children's adjustment in the context of a conflicted interparental relationship. Findings have been inconsistent, with greater father involvement linked to both better and poorer child adjustment (Fabricius et al., 2012; Flouri, 2006; McIntosh et al., 2010). To date, these relationships have largely been examined using variable-oriented approaches, which do not account for the different patterns of fathers' contact, support, and interparental conflict that actually characterize divorced families. The current study makes an important contribution to this literature by its use of a person-centered approach to characterize individual family levels of father-child contact, father support and interparental conflict within the two years following divorce and by examining concurrent and prospective relationships between profile membership and children's mental health problems.

The study found four distinct profiles of non-residential father post-divorce involvement. The High Contact – Moderate Conflict – Moderate Support profile (16.7%) had relatively high levels of in-person and phone contact compared with the other profiles. Although the mean level of contact in this group (28.6% of days included contact) was higher than that in the other groups, it is at the lower bound of the criterion that is currently commonly used to designate shared parenting (25 – 35% time with children; Melli & Brown, 2008; Nielsen, 2013), and far lower than the 50% parenting time that is advocated by some in current policy debates (Fabricius et al., 2012). This is likely due to primary maternal residency being an eligibility criterion, and the sample being drawn in 1992–93, before the secular trends in post-divorce family plans in which fathers obtain more parenting time (Parkinson, 2011).

Two of the profiles are distinguished by their level of conflict, one being a high conflict (24.3% of the sample) group and the other being a low conflict (31.8% of the sample) group; both groups had moderate levels of father-child contact and moderate levels of support. The percent of the sample characterized as high conflict is similar to estimates in prior research (e.g., Maccoby & Mnookin, 1992). Although the level of interparental conflict is often associated with the quality of the parent-child relationship (e.g., Sandler, Wheeler & Braver, 2013), the profiles found in this study indicated that there can be groups in which high conflict is not necessarily associated with a poor father-child relationship. A fourth group (27.2%) was distinguished by a low level of contact and support and a moderate level of interparental conflict. This combination of qualities are characteristic of fathers who withdraw from the parenting role following divorce (Cabrera, Tamis-Lemonda, Bradley, Hofferth, & Lamb, 2000), and the percent of the sample so characterized is similar to that in prior research (e.g., Smyth, 2005). Given when the data were collected (1992–1993) and the changes in father involvement after divorce in the last two decades (see Fabricius et al., 2012), the size of this group likely represents a higher rate of dropping out of the parenting role than currently characterizes the general population of divorced fathers (Amato & Dorius, 2010). However, some more recently collected data indicate similar patterns of father involvement (Cheadle et al., 2010). No group was distinguished from the others by a high level of supportive father-child relationship. This may be because the sample included only divorces with primary maternal residency.

Although the study of profile membership is exploratory and we did not make predictions about what profiles would emerge, it is interesting to examine the factors that predicted profile membership. The finding that the High Conflict – Moderate Contact – Moderate Support group had a poorer mother child relationship compared with the Low Conflict – Moderate Contact – Moderate Support group is consistent with prior research that high levels of conflict impair the quality of parenting by the mother following divorce (Faubert, Forehand, Thomas, & Wierson, 1990). The finding that the Low Conflict – Moderate Contact – Moderate Support group was more likely to have boys than the High Conflict – Moderate Contact – Moderate Support group is counterintuitive given that some research has found that fathers have more contact with boys than girls (Maccoby et al., 1988).

The use of a latent profile approach to identify groups of families based on profiles of father contact, conflict, and support extends our understanding of how, in combination, these factors contribute to children's adjustment. For example, the current approach, which identifies distinct profiles of father involvement, allows patterns of behavior to be captured at the individual-family level. In the current sample, no group was identified as being differentiated from the others on the basis of both high support and high conflict, so that the theoretical question of how children fare under conditions of high conflict and high father support does not correspond to a practical question for those concerned with the adjustment of children in this sample.

The current findings are consistent with our hypotheses that profiles that are characterized by high conflict would be associated with higher mental health problems and that profiles that are low on father support would be associated with higher mental health problems.

However, these effects differed across the concurrent and the prospective longitudinal analyses.

In the concurrent analyses, children in the High Conflict – Moderate Contact – Moderate Support group had greater internalizing problems than those in all the other groups and greater externalizing problems than children in the High Contact – Moderate Conflict – Moderate Support and Low Conflict – Moderate High Contact – Moderate Support groups, controlling for the quality of mother-child relationship. This supports our hypothesis that interparental conflict, would be associated with greater child adjustment problems. These findings are consistent with prior literature demonstrating the negative effects of children's exposure to interparental conflict (e.g., Doyle & Markiewicz, 2005; Dunn et al., 2005; Kelly, 2012), including when high conflict occurs in the context of moderate levels of contact (McIntosh et al., 2010).

The prospective longitudinal analysis found that children in the Low Contact – Moderate Conflict – Low Support group had higher levels of internalizing problems and externalizing problems six years later as compared to children in the High Conflict – Moderate Contact – Moderate Support and higher internalizing problems than children in the Low Conflict – Moderate Contact – Moderate Support groups. These differences were found after controlling for other individual and family context factors including previous levels of internalizing and externalizing problems, child support, quality of the mother-child relationship, intervention condition, child age and gender, as well as mother's remarriage. These Low Contact – Moderate Conflict – Low Support fathers appear to have withdrawn from the parenting role, that is, they saw their children infrequently, and provided minimal support. The finding that this pattern is associated with more child problems over time is consistent with prior literature showing that fathers' withdrawal associates with their children's higher development of problems (Fabricius et al., 2012; McLanahan et al., 2013, Sandler et al., 2011).

The absence of a significant prospective association between the High Conflict – Moderate Contact – Moderate Support group and child mental health problems is inconsistent with our prediction. This may be because the predictive model assessed change in children's mental health problems over time, so that the negative effects of conflict at time one were already accounted for in the model. These findings contrast with those of Modecki et al. (2014), who examined father profiles 6–8 following divorce, finding that the profile characterized by low conflict and moderate father involvement had lower levels of problems nine years later when they were young adults as compared with the profile that had lower levels or higher levels of father involvement but higher levels of conflict. Modecki et al. (2014) concluded that their results indicated that “greater paternal psychological support and more frequent father–adolescent contact do not outweigh the negative impact of interparental conflict on youth outcomes in the long term” (p. 1). One factor that may account for the different findings is that by assessing interparental conflict six to eight years following divorce, Modecki et al. may have captured more chronic interparental conflict, and it may be that the diminishment of conflict by six to eight years after divorce has particularly important implications for youth's long-term outcomes.

Whereas the latent profile approach used in the current study provides important insight into individual family patterns of conflict, fathers' contact and support following divorce, it does not explain why the relationship among these variables may exist, or the relationship between profiles and children's adjustment problems. Variation in levels of conflict, contact, and support may be due to differences in mother's gatekeeping, which can affect the level of father-child contact and support as well as conflict (Fabricius et al., 2012; Flouri, 2006). Results are also mute as to the theoretical processes that account for the relationships between the High Conflict – Moderate Contact – Moderate Support and Low Contact – Moderate Conflict – Low Support groups with higher levels of children's adjustment problems. Prior research has extensively discussed theoretical processes for the influence of conflict and father involvement as individual variables (e.g., Fabricius et al., 2012), but have not addressed how profiles may influence children's adjustment. Research on how profiles of interparental conflict and father involvement develop following divorce and how they affect children's outcomes are critical next steps for research.

The current study has several important limitations. First, the pretest data were collected in 1992–1993. Over the past two decades, fathers in married and divorced households are normatively spending more time with their children (see Amato & Dorius, 2010; Fabricius et al., 2012; Parkinson, 2011) so that the current results may not represent present-day patterns of father post-divorce involvement. However, it is notable that more recently collected samples indicate patterns of father contact similar to those in the present study (Cheadle et al., 2010). This limitation is, of course, shared with all other studies of fathers' post-divorce involvement that are based on samples that divorced several decades ago (e.g., Braver, Griffin, & Cookston, 2005; Fabricius et al. 2012; Maccoby, Depner, & Mnookin, 1988). A second limitation is that the current sample consisted of families in which mothers and their children participated in an experimental trial of a program for divorced families that included multiple eligibility criteria, including primary maternal residence (Wolchik et al., 2000). Further, the sample was 88% non-Hispanic Caucasian. Finally, the measure of contact consisted of only two items which may not capture other ways in which father and child keep in contact. Future research should examine father profiles in more representative samples of recently divorced parents and include broader measures of contact.

The findings from this study contribute to, but do not resolve, current policy issues concerning shared parenting time after divorce (Pruett & DiFonzo, 2014). Although there is broad consensus in the literature that encouraging non-residential father post-divorce involvement is in the best interest of children and there is considerable evidence that children's adjustment is better in shared-parenting households than sole-custody households (Nielsen, 2013), there is a lack of consistent scientific evidence to guide policy concerning the level of parenting time that is optimal to promote child well-being, and how that may differ as a function of other family variables such as interparental conflict. Whereas the current study provided strong evidence that low levels of contact and support were prospectively related to worse child adjustment, a benefit was not found in either the concurrent or longitudinal analyses for groups characterized as High Contact – Moderate Conflict – Moderate Support as compared with the moderate contact groups. However, the level of contact in our "High Contact" group was relatively modest in comparison to the 35% time used in some recent analyses (Fabricius et al., 2012), and the 50% time advocated

by some (Parkinson, 2011). The finding that the profile high on interparental conflict was associated with higher child adjustment problems reinforces the importance of policies and practices that minimize children's exposure to interparental conflict. Few programs have demonstrated success in reducing levels of post-divorce conflict (e.g., Cookston, Braver, Griffin, De Luse, & Miles, 2007), so that developing ways to reduce conflict or minimize its effects on children's adjustment should be a high priority for future research.

Conclusion

This study makes an important contribution regarding the impact of non-residential fathers in the lives of adolescents. Using a person-centered approach the study found that children in the High Conflict – Moderate Support – Moderate Contact group had higher child mental health problems when these aspects of the family were assessed concurrently with child outcomes but that children in the group characterized by Low Contact – Moderate Conflict – Low Support had more problems over time. These results are consistent with prior evidence of the negative impact of interparental conflict on children's adjustment but also indicate the cost of low father involvement on children's post-divorce adjustment over time.

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Figure 1.
Standardized Means for Indicators across the Four Father Profiles

Table 1

Means and Standard Deviations of Continuous Indicators, Child Psychosocial Functioning, and Covariates.

	Mean	S.D.	Range
<i>Father Profile Variables</i>			
In-person Contact	4.55	5.08	0 – 30
Telephone Contact	7.62	7.90	0 – 40
Interparental Conflict	21.76	5.26	13 – 37
Father Support	13.22	3.69	5 – 20
<i>Covariates</i>			
Child Age	10.76	1.11	9.01 – 12.96
Child Gender	1.51	.50	1 – 2
Mother's Income	5.82	3.07	1 – 21
Mother Support	83.42	8.37	54 – 96
Mother's Remarriage	1.57	.62	1 – 4
<i>Child Outcomes</i>			
Child Internalizing (pre-test)	-.00	.77	-1.45 – 2.40
Child Externalizing (pre-test)	-.00	.80	-1.36 – 2.85
Child Internalizing (6-year follow-up)	-.37	.81	-1.54 – 3.46
Child Externalizing (6-year follow-up)	-.10	.87	-1.46 – 3.94

Table 2

Model Fit Comparisons

Number of Profiles	Adj. BIC	BLRT	Log-Likelihood
1	6475.08	-	-3219.06
2	2314.59	-1219.98**	-1137.72
3	2309.29	-1137.72*	-1124.71
4	2304.19	-1122.83ns	-1111.80
5	2230.44	-1069.01ns	-1064.56

* *Note.* $p < .06$,

** $p < .001$.

The four-profile model fit indices are bolded to indicate that this was the chosen solution. BIC = Bayes Information Criteria, BLRT = Bootstrapped Likelihood Ratio Test.

Table 3

Pairwise Wald Chi-square Comparisons among Indicators of Father Profile (Panel A) and Means, Standard Deviations, and Differences among Covariates and Child Outcomes across Father Profile (Panel B)

Panel A	High Contact – Moderate Conflict – Moderate Support (16.7%)	Low Conflict – Moderate Contact – Moderate Support (31.8%)	High Conflict – Moderate Contact – Moderate Support (24.3%)	Low Contact – Moderate Conflict – Low Support (27.2%)
In-person contact (days/month)	28.57% ^a	17.37% ^b	11.3% ^c	6.93% ^{abc}
Telephone contact (days/month)	25.40% ^{abc}	4.82% ^{ad}	6.00% ^{be}	3.28% ^{cde}
Interparental conflict	20.70 (3.98) ^{ab}	17.69 (2.98) ^{ac}	28.19 (3.25) ^{bcd}	21.23 (3.86) ^d
Father support	14.80 (3.06) ^a	15.23 (2.42) ^b	14.13 (2.57) ^c	8.81 (2.36) ^{abc}
Panel B				
Child age	10.63 (1.10)	10.69 (1.06)	10.77 (1.17)	10.90 (1.15)
Child gender (% boys)	30.0% ^a	67.6% ^a	61.4%	37.3%
Mother's income	\$30,000-\$35,000	\$20,000-\$25,000	\$25,000-\$30,000	\$25,000-\$30,000
Mother-child relationship quality	81.80 (10.12)	86.02 (7.31) ^a	79.89 (7.89) ^a	84.34 (7.70)
<i>Concurrent Child Outcomes</i>				
Internalizing	-.07 (.70) ^a	-.16 (.72) ^b	.28 (.79) ^{abc}	-.06 (.78) ^c
Externalizing	-.13 (.68) ^a	-.16 (.71) ^b	.34 (.88) ^{ab}	-.08 (.79)
<i>Predictive Child Outcomes 6-Years Later</i>				
Internalizing	-.32 (.82)	-.56 (.70) ^a	-.47 (.66) ^b	-.13 (.96) ^{ab}
Externalizing	.05 (.98)	-.11 (.94)	-.23 (.69) ^b	-.06 (.89) ^b

Note. Means (SDs) from sample variables are presented. Superscripts that are shared indicate significant differences between groups within a variable at $p < .05$. Units of measurement reported for profile indicators in Panel A are different from those in Figure 1.