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The Interdependence of Adult Relationship Quality and Parenting Behaviours among African American and European Couples in Rural, Low-Income Communities

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Abstract

The present study extends the spillover and crossover hypotheses to more carefully model the potential interdependence between parent–parent interaction quality and parent–child interaction quality in family systems. Using propensity score matching, the present study attempted to isolate family processes that are unique across African American and European American couples that are independent of other socio-demographic factors to further clarify how interparental relationships may be related to parenting in a rural, low-income sample. The Actor–Partner Interdependence Model (APIM), a statistical analysis technique that accounts for the interdependence of relationship data, was used with a sample of married and non-married cohabiting African American and European American couples (n = 82 dyads) to evaluate whether mothers' and fathers' observed parenting behaviours are related to their behaviours and their partner's behaviours observed in a couple problem-solving interaction. Findings revealed that interparental withdrawal behaviour, but not conflict behaviour, was associated with less optimal parenting for fathers but not mothers, and specifically so for African American fathers. Our findings support the notion of interdependence across subsystems within the family and suggest that African American fathers may be specifically responsive to variations in interparental relationship quality.

Keywords

interparental withdrawal; harsh intrusive parenting; low-income families; African American fathers

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A hypothesis frequently raised by family researchers (e.g. Cox, Paley, & Harter, 2001; Schoppe-Sullivan, Schemerhorn, & Cummings, 2007) is that interparental disharmony leads to poor child outcomes through its association with the quality of the parent–child relationship. A large body of research has explored the associations between interparental relationship quality and child development and supports this linkage (Erel & Burman, 1995; Cowan, Cowan, Pruett, Pruett, & Wong, 2009). There is, however, limited research examining interparental relationship quality and parenting among a sample of married and cohabiting African American and European American couples living in rural communities. Moreover, extant research often focuses solely on interparental conflict behaviour (Grych & Fincham, 1990) and fails to focus on other aspects of the relationship such as withdrawal behaviour, which has also been associated with decrements in parenting quality (Cox et al., 2001; Katz & Gottman, 1996; Sturge-Apple, Davies, & Cummings, 2006).

This study attempts to expand existing literature on this topic in several ways. First, we include observations of both interparental conflict and withdrawal as well as observations of sensitive and harsh intrusive parenting behaviours for both mothers and fathers living in low-income, rural communities. With this sample, we use propensity score matching to identify a subsample of families in which we can isolate family processes that are unique across married and cohabiting African American and European American couples while also being independent of other socio-demographic factors such as maternal and paternal education. We also employ an actor–partner analytic approach to better understand how each partner's behaviour in couple interaction is associated with their own and their partner's behaviour in parent–child interaction. This approach accounts for the interdependence of the dyadic data and allows for the prediction of actor, partner and interaction effects as they are nested within families.

Family Systems Theory and the Interdependence of Parent–Parent and Parent–Child Relationships

The importance of this investigation is supported by a family system approach emphasizing that emotions and behaviours of family members occur in a broader family context influenced, in part, by the feelings, attitudes and behaviours of other members of the family system. Studies of the linkage between interparental relationships and parent–child relationships often fail to recognize these interdependencies. An assumption underlying conventional statistical methods (e.g.regression and ANOVA) is that the residuals (errors) are independent. This assumption is unsound in the case of dyadic or family data because, as cited by various researchers (see, for example, Sanford & Rowatt, 2004; Barnett, Marshall, Raudenbush, & Brennan, 1993), data from couple dyads (e.g. husbands and wives) are inherently non-independent. In interpersonal relationships, such as couple relationships, the emotions and behaviours of one partner affect those of the other partner. When data are interdependent in nature, using the individual as the unit of analysis may lead to inaccurate findings. Thus, when conducting investigations where non-independent observations are present, it may be more appropriate to treat the dyad as the unit of analysis (Cook & Kenny, 2005).

One domain in which the dyad should be treated as the unit of analysis is the study of interparental relationship quality and parenting behaviour. For example, large literature documents associations between positive aspects of the marital relationship and sensitive, warm and responsive parenting (e.g. Miller, Cowan, Cowan, Hetherington, & Clingempeel, 1993; Volling & Belsky, 1991), as well as associations between conflicted, discordant marriages with more problematic parent-child relationships. There are different processes that may explain the link between marital and parenting practices (Erel & Burman, 1995). The 'spillover hypothesis' is the notion that affect and behaviour generated in one relational setting transfer to other settings including parenting behaviour (Erel & Burman, 1995; Davies, Sturge-Apple, Woitach, & Cummings, 2009). In contrast, the 'crossover hypothesis' (Bolger, DeLongis, Kessler, & Wethington, 1989; White, 1999) proposes that rather than the *intrapersonal* transfer of affect and behaviour between subsystems, crossover effects pertain to *interpersonal* transfer, such as when a husband's withdrawal from marital interactions leads to a mother's hostile parenting of the child. These processes, spillover and crossover effects, may co-occur such that the transfer of affect and/or behaviours can take place across subsystems within one person and, at the same time, between parents (Bolger et al., 1989).

Despite research on the spillover and crossover hypotheses linking interparental conflict and parenting behaviours, there is a significant gap in our understanding of the associations between interparental functioning and parenting. For example, although numerous studies have examined interparental functioning and parenting, few studies have examined within-group associations for European American versus African American families that are demographically comparable (Goodwin, 2003; McLoyd, Harper, & Copeland, 2001). Close attention to the role of race/ethnicity in relations between marital conflict and parenting is warranted for several reasons including the samples studied and methodologies employed. For example, a large and growing proportion of the US population is non-White, with 15.2% of the total population comprised of African Americans. Yet the majority of extant studies have focused exclusively on European American samples. Further, although numerous studies have examined differences in parenting behaviours across racial and ethnic groups, few have gone so far as to examine within-group processes that may better inform our understanding of cross-cultural patterns of findings (McLoyd, Cauce, Takeuchi, & Wilson, 2000). Such a within-group, process-oriented approach to understanding variations in parenting behaviours is particularly important for examining predictors of parenting behaviours in minority populations that often encounter higher levels of societal constraints and stress and disproportionately low levels of access to institutional supports and service (McLoyd, 1990; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Bryant, Wickrama, Bolland, Bryant, Cutrona, & Stanik, 2010).

In addition, studies establishing the relevance of father parenting to child outcomes have typically done so without considering the mother's concurrent influence on paternal behaviour or have adjusted for that influence in order to isolate the independent contribution of fathers (e.g. Black, Dubowitz, & Starr, 1999; NICHD Early Child Care Research Network, 2004). Research that accounts for both parents' behaviour in the interparental relationship may provide a more nuanced understanding of children's experiences in interaction with parents. Although the evidence for this perspective is growing (see, for

example, Klausi & Owen, 2011; Sotomayor-Petersona, Wilhelmb & Cardc, 2011), there are almost no studies of interparental relationship quality and parenting behaviours among low-income, rural and racially and structurally diverse couples with young children.

Furthermore, the ways in which the interparental relationship influences parenting may depend on the developmental age of the child. Infancy represents a time of transition and high demand on parents when supportive relationships may be especially important. The first year of life is described as a critical time for parents to respond to their child in a warm and sensitive manner to sooth distress, help infants learn to self-regulate (Crockenberg & Leerkes, 2004) and provide a strong foundation for children's later development (e.g. Ainsworth, Blehar, Waters, & Wall, 1978). Understanding the factors that might contribute to a parent's ability to respond to infant signals in a sensitive or harsh intrusive manner will strengthen interventions targeting distressed families.

Interparental Relationships Quality and Parenting Behaviour across Mothers and Fathers

Parent's gender has also been identified as a potentially important variable in the linkage between interparental relationships and parenting. Prior studies indicate that negative interparental relations are associated with negative relations in the father–child relationship more than in the mother–child relationship. Belsky, Youngblade, Rovine, and Volling (1991) found that fathers in deteriorating marriages were more negative during father–child interactions when compared to fathers in healthy/supportive/stable marriages; differences in negativity were not found for mother–child interaction when comparing marital health/stability. Possible explanations have been suggested to understand these findings. It may be that fathers' parenting role is less clearly scripted by social conventions than mothers', rendering fathering more vulnerable to levels of relationship instability (Doherty, Kouneski, & Erickson, 1998; Parke, 2002). Coiro and Emery (1998) speculated that women may make a sharper distinction between being a wife and being a mother than men make between being a husband and being a father (Thompson & Walker, 1989). In support of this view, Almeida, Wethington, and Chandler (1999) found father–child relationships more consistently related to the couple relationship than mother–child relationships.

Current family conceptualizations underscore the potential value of distinguishing between overt hostility and withdrawal in interparental relationships. Whereas overt conflict is commonly defined by displays of anger and hostility during parent–parent interactions, interparental withdrawal is typically characterized by expressions of detachment and avoidance. Despite differences in the fundamental properties of these two dimensions of interparental conflict, disagreement exists about the nature of differences between marital hostility and withdrawal in predicting family disturbances. Some models have proposed that marital hostility and withdrawal may have unique, deleterious consequences for the family system (Cox, Paley, Payne, and Burchinal, 1999; Katz & Gottman, 1996). Interpersonal antagonism underlying hostile parent–parent interactions may disrupt parental abilities to serve as socialization agents (Buehler & Gerard 2002). In contrast, partner withdrawal has been hypothesized to result in greater disengagement from parenting, as parents rely on similar coping strategies across family subsystems (Cox et al., 1999). Supporting this

assertion, Katz and Gottman (1996) reported that hostility in the interparental relationship was associated with negativity and power-assertive parenting by fathers while husband marital withdrawal predicted maternal rejection. Furthermore, studies examining the long-term stability of marriages have suggested that withdrawal may reflect a more destructive process than anger expression because withdrawal may prevent the resolution of serious marital problems and reflect psychological abandonment and detachment of partners (Christensen & Heavey, 1990). Extending this line of thinking, Cox et al. (1999) reported that withdrawal from interparental interaction as compared to overt hostility undermines parenting processes such that parents were found to be less sensitive and responsive to their infant during parent–child interactions. Moreover, additional research suggests that withdrawal in the interparental role might affect fathering more than mothering (Sturge-Apple et al., 2006), such that the harmful effects of interparental withdrawal may proliferate beyond the parent–parent subsystem by engendering broader patterns of paternal disengagement through diminished emotional availability with their children.

Research on Diverse Populations

Families are nested in larger cultural contexts, often defined by race and ethnicity. As such, there has been speculation that the associations between marital relationship quality and parenting behaviours may vary across family ethnicity. Scholars have posited that some racial/ethnic minority families may be less vulnerable than others to the negative effects of marital relationship dysfunction because they rely on extended family networks and cultural norms that inhibit the spillover of conflict within the family (e.g. McLoyd, Harper, & Copeland, 2001; Garcia-Coll, Meyer, & Brillon, 1995). However, recent findings by Gonzales, Pitts, Hill, and Roose (2000) found that low-income and minority families were not immune to the spillover phenomenon and reported that interparental conflict was related to less optimal parenting.

Similarly, fewer studies have explored the link between interparental relationship quality and parenting among low-income married and unmarried cohabiting couples (Carlson & McLanahan, 2006). This is a significant gap in the literature given that cohabiting relationships have been shown to be more common among low-income families than in middle-class samples and are also typically characterized by more conflict and instability than married families (Carlson, McLanahan, & England, 2004). Although some studies suggest the associations between the parent–parent subsystem and the parent–child subsystem operate in a similar fashion regardless of socioeconomic status (e.g. Graham, Kim, & Fisher, 2012), it is possible that the chronic stress associated with low-income environments may further deplete critical resources necessary for optimal parenting, thereby exacerbating the effects of interparental relationship quality on parenting. Moreover, because low-income families, when compared to more affluent families, typically encounter higher rates of cumulative stress, reside in more crowded environments and have fewer resources to buffer stress associated with interparental conflict (Conger, Wallace, Sun, Simons, McLoyd, & Brody, 2002; Evans, 2006; Vernon-Feagans, Garrett-Peters, Willoughby, & Mills-Koonce, 2012), they may be at even greater risk for concurrent disruptions in parenting relative to the middle-class families typically studied. Further, as some researchers have suggested, sampling considerations have complicated the

interpretations and generalizations of analyses that include low-income families from different family structures due to the unique challenges and circumstances that shape their views and practices (Tamis-LeMonda, Briggs, McClowry & Snow, 2008). For example, when researchers have described differences in parenting behaviour for lower-income families, it has been difficult to determine whether reported differences were associated with families' ethnic background, economic well-being or socioeconomic status.

To date, the most commonly used strategy for isolating independent associations between demographic variables and family process involves the use of statistical controls. Although regression is typically used to adjust for background differences and estimate causal effects in non-experimental studies, it relies heavily on modelling assumptions (e.g. linearity) that may not be valid and can be especially problematic if multiple groups differ significantly with respect to covariates, such as marital status or education. For example, research linking poorer outcomes among children from homes with interparental conflict highlights that demographic characteristics of the couples themselves are also considered risk factors, including lower levels of parental education, marital status and minority race/ethnicity (Aronson & Huston, 2004; Artis, 2007; Brown, 2002). Given that, in many cases, these characteristics predate relationship formation and child rearing, they can be considered selection factors that can obscure an understanding of more proximal processes that may help explain associations found between interparental conflict and parenting. The use of propensity score matching (explained in greater detail in the analysis section) is increasing in popularity among social and behavioural scientists because of its potential to allow researchers to better isolate associations or effects in non-randomized and non-experimental data. This method ‘balances’ multi-group samples across distributions of selected covariates and thus limits the potential of selection effects from biasing the interpretation of group differences.

The Present Study

In the present study, we utilize innovative methodological and analytic approaches to examine the spillover and crossover hypotheses with respect to the following: (i) multiple dimensions of parent–parent and parent–child interaction quality across mothers and fathers; (ii) potentially unique family processes within European American and African American families and whether these processes are unique to racial groups or to family structures; and (iii) known interdependencies within the family system. To accomplish these goals, we use observational assessments of both interparental conflict and withdrawal and independent observations of maternal and paternal sensitive and harsh intrusive caregiving behaviours; we use propensity score matching to examine family processes within African American and European American families independent of other socio-demographic factors; and we use Actor–Partner Interdependence Modelling to account for the nesting of relationships within families.

Towards this end, the present study forwards three hypotheses concerning associations between interparental conflict and parenting behaviours across family subsystems. First, we hypothesize that interparental withdrawal and conflict are independently associated with greater levels of harsh intrusive parenting and lower levels of sensitive parenting in parent–

child interactions. Second, based on extant research suggesting that fathers may be especially influenced by partner dynamics, we hypothesize that the effects of interparental withdrawal and conflict maybe more related to fathers' parenting compared to mothers' parenting. Lastly, given findings suggesting that African American parents' experiences of institutionalized and interpersonal race-related stressors may have heightened their susceptibility for contextual spillover effects into individual functioning, we hypothesize that interparental conflict and withdrawal may have greater implications for parenting among African American dyads than European American dyads even when controlling for socio-demographic factors.

Method

Participants

The data were drawn from the Family Life Project, a longitudinal program project that was designed to study families that lived in two of the four major geographical areas of high child rural poverty (Dill, 2001). Specifically, three counties in eastern North Carolina (NC) and central Pennsylvania (PA) were selected to be indicative of the Black south and northern Appalachia, respectively. The Family Life Project recruited 1,292 children and their families over a one-year period between the fall of 2003 and the fall of 2004. All families were formally enrolled in the study after the completion of a home visit when the target child was two months old. Please see Burchinal, Vernon-Feagans, Cox, and the Family Life Project (FLP) Key Investigators (2008) for additional information about the recruitment and sampling procedures. The sub-sample (n = 82) for this analysis is derived from the subset of families in the FLP that participated in a parent–parent interaction when the target child was six months old (n = 289). Details of the matching procedure can be found in the analysis plan.

Measures

Interparental conflict and withdrawal—Interparental conflict and withdrawal were assessed when the target child was six months old. Participants agreed on a topic for discussion after completing the Relationship Problem Inventory which presents a list of common relationship disagreements (Knox, 1971). Each member of the dyad was asked to separately fill out a checklist of common problems that may arise in family relationships (e.g. money, childcare, sex, family time together and household chores). After rating each disagreement on a scale ranging from 1 to 10, the higher number indicating a more severe problem, couples compared their results and decided on a source of shared disagreement. They were then given 12 minutes to discuss the problem and generate possible solutions. All interactions were videotaped for later coding using the Interactional Dimensions Coding System by a team of coders who were blind to other information about the families (Julien, Markman, & Lindahl, 1989). Codes were derived from trained observers' scores, rated from 1 (*extremely uncharacteristic*) to 9 (*extremely characteristic*). Each member of the dyad, mothers and fathers, was coded individually and each was assigned a separate score for conflict and withdrawal. This coding system assesses several dimensions of observed behaviour including conflict, positive and negative affect, withdrawal, animation and

defensiveness. For the present study, analyses focused on the constructs reflected in the behavioural codes of conflict and withdrawal for both mothers and fathers.

Observed conflict behaviour included verbal and nonverbal demonstrations of tension, hostility and negative affect (Julien et al., 1989). Interparental withdrawal is defined as avoidance either of the interaction or of the problem being discussed in some way. The individual may evade the issue or may seem to 'pull him/herself out of' the interaction. They may seem to retreat emotionally, back off or try to displace the conversation. Withdrawal is described by both affect and content cues. Interrater reliability (ICC) for interparental conflict and withdrawal is 81 and 69 for mothers, and 79 and 64 for fathers.

Parental sensitivity and harsh intrusiveness—Parenting behaviours were assessed during parent–child interactions when the target child was six months old. Mothers and fathers were independently observed as they completed a free-play activity in which they were presented with a standard set of toys. Parents were instructed to interact with their children as they typically would if given some free time during the day. All interactions lasted 10 minutes and were video recorded for later coding by a team of coders who were blind to other information about the families. Using seven global rating scales (sensitivity/supportive presence, detachment/disengagement, intrusiveness, stimulation of cognitive development, positive regard, negative regard and animation; Cox & Crnic, 2002) adapted from those used by the NICHD Study of Early Child Care (NICHD ECCRN, 1999), coders rated parenting behaviours on a 5-point scale (1 = *not at all characteristic* and 5 = *very characteristic*). To inform compositing of variables, we conducted exploratory factor analysis with an oblique rotation (i.e.promax) separately for data from mothers and from fathers. The orthogonal factor analysis suggested the presence of two distinct, relatively independent composites for the behaviour of both parents, with factor loadings ranging from .73–.83 for the first factor (sensitive parenting) and .72–.83 for the second factor (harsh intrusive parenting).On the basis of these factors, we formed two composite parenting variables by calculating the mean of the scores for each relevant subscale. Parental sensitivity included five ratings: sensitivity (level of responsiveness to child's needs, gestures and expressions), detachment (emotional unavailability), positive regard (positive feelings expressed towards child), animation (level of energy) and stimulation of development (appropriate level of scaffolding of activities with child) along with harsh intrusive parenting scores (the mean of intrusiveness and negative regard). Intercoder reliability, which was determined by ICCs across each pair of coders, yielded reliabilities of .87 for maternal sensitivity, .85 for paternal sensitivity, .80 for maternal harsh intrusiveness and .72 for paternal harsh intrusiveness.

Control variables—Although maternal and paternal age, maternal and paternal education and marital status were used as covariates in the matching procedures, the actor–partner analysis additionally controlled for current household income-to-needs ratios and parental depression. At the 6-month home visit, mothers reported information on a variety of household demographic variables, including the total household income from all possible sources and the number of individuals living in the home. Income-to-needs ratios were calculated at each assessment time point by dividing the total household income from all

possible sources by the federally determined poverty threshold for the number of people living in the household for that year. Income-to-needs ratios above 1.0 indicate that a family is able to provide for basic needs, whereas values below 1.0 indicate that they are not. In addition, a large literature highlights the role of depression to parenting (see Lovejoy, Graczyk, O'Hare, & Neuman, 2000) and thus, depression was included as a control variable to account for parents' psychological adjustment (The Brief Symptom Inventory, BSI; Derogatis, 1993).

Analysis Plan

Propensity score matching (PSM)—Because one of the major limitations of previous research examining family processes across races/ethnicities is the difficulty in disentangling the associations across race, income and marital status, propensity score matching procedures were conducted to limit the pre-existing differences between African American and European American families who participated in this phase of data collection for the FLP. Following the methods developed by Rosenbaum and Rubin (1983), this technique involves several steps. The first step was the selection of appropriate covariates from which to create the comparison groups. The covariates for this study were chosen based on theoretical and empirical considerations based on previous research on interparental relationship and parenting behaviours (Ceballo & McLoyd, 2002; McLoyd, 1998) and include maternal and paternal age, maternal and paternal education and marital status.[1] For the second step, based on this set of covariates (i.e. maternal and paternal age, maternal and paternal education and marital status), the propensity score was estimated using logistic regression in which the group assignment is used as the outcome variable (African American or European American), and the selected covariates as predictors. Once the logistic model is established, the predicted score of each subject can be calculated; this is called the propensity score (PS) and is used to reduce selection bias by equating groups based on the selected covariates. Next, with the exact matching procedure, one family from the African American subsample is chosen as a ‘match’ for a family from the European American subsample based on the closeness of their propensity scores (i.e. how similar they are based on the selected covariates). The final step of PSM is to assess the quality of the match by examining the balance of covariates across groups.

Actor–partner interdependence model—The Actor–Partner Interdependence Model was chosen for the present study to take into account the various factors both within and across parents which may be related to their parenting behaviours (Campbell & Kashy 2002; APIM; Kashy & Kenny, 2000). The Actor–Partner Interdependence Model (APIM) is uniquely suited to the present analysis because it allows for a concurrent examination of both parents' individual interparental conflict and withdrawal, as well as other theorized moderators of the association between interparental behaviours (conflict and withdrawal) and parenting behaviours. Campbell and Kashy (2002) note that when data is provided from members of a dyad, ‘a person’s independent variable score affects both his or her own

[1]***Note***: We initially included income in the matching procedures but found that there was not enough variation in this variable across groups to create a matched subsample with adequate power to test the proposed hypotheses. Therefore, we chose to control for household income in the final actor–partner model.

dependent variable score (known as the actor effect) and his or her partner's dependent variable score (known as the partner effect)' (Campbell & Kashy, 2002, p. 328). In the model (Figure 1), A_m represents the actor effect of mothers' interparental interaction behaviours on their own parenting behaviours, whereas P_m represents the partner effect of mothers' interparental interaction behaviours on fathers' parenting behaviours. Similarly, A_f represents the actor effect of fathers' interparental interaction behaviours on their own parenting behaviours, whereas P_f represents the partner effect of fathers' interparental interaction behaviours on mothers' parenting behaviours. In this type of analytic approach, which is a type of hierarchical linear modelling (Bryk & Raudenbush, 1987), each dyad is treated as a group of two individuals, so respondents are nested within their dyad. In the present analysis, separate models were run for each of the two domains of interparental relations (i.e. conflict and withdrawal) and for the two domains of parenting (i.e. sensitive and harsh intrusive).

The MIXED procedure in SAS allows for the estimation of actor and partner effects and between- and within-dyads effects and interactions. Proc mixed uses a random regression model to derive parameter estimates both within and across individuals (Singer, 1998). All factors in the model were treated as fixed (Nezlek, 2008), and proc mixed treats the unexplained variation within individuals as a random factor by default. One advantage of proc mixed is the ability to model appropriate covariance structures for the repeated measure assessments. Following the recommendations of Campbell and Kashy (2002), we modelled individuals within a dyad as a repeated measures factor which allowed us to examine the effects of actor and partner interparental conflict and withdrawal on parenting measures while controlling for the dependency in the data that exists within couples. To illustrate, the equation for analyses of sensitive parenting predicted by interparental conflict (excluding covariates) was as follows:

$$\begin{aligned}\text{sensitivity}_{ij} = {} & \beta_0 + \beta_1(\text{actor} \;\; \text{conflict})_{ij} \\ & + \beta_2(\text{partner} \;\; \text{conflict})_{ij} \\ & + \beta_3(\text{actor} \;\; \text{sex})_{ij} \\ & + \beta_4(\text{actor} \;\; \text{race})_{ij} \\ & + \beta_5(\text{actor} \;\; \text{conflict} \times \text{actor} \;\; \text{sex})_{ij} \\ & + \beta_6(\text{partner} \;\; \text{conflict} \times \text{actor} \;\; \text{sex})_{ij} \\ & + \beta_7(\text{actor} \;\; \text{conflict} \times \text{actor} \;\; \text{sex} \times \text{race})_{ij} \\ & + \beta_8(\text{partner} \;\; \text{conflict} \times \text{actorsex} \times \text{race})_{ij} \\ & + \beta_9(\text{error})_{ij}\end{aligned}$$

In this model, β_0 represents the average conflict intercept for dyad *j* as all measures were centred at their grand mean (see Singer, 1998); the coefficients β_1 and β_2 represent restricted maximum likelihood estimates of the effects of the actor and partner levels of conflict on the actor's sensitivity; β_3 represents the sex of the actor (identifying mothers versus fathers); β_4 represents the race of the actor (identifying African American versus European American); β_5 and β_6 represent the interaction effects testing whether the actor and partner effects differ

for mothers and fathers; and β_7 and β_8 represent the interaction effects testing whether the actor and partner effects differ by gender and race. The data organization and programming techniques required to fit the APIM using SAS have been documented by Campbell and Kashy (2002) and Cook and Kenny (2005).

Results

Preliminary Analyses

Matching results and descriptive statistics—The PSM procedure yielded a sample of 82 couples, 41 African American couples matched with 41 European American couples. A logistic regression, with race as the dependent variable and the matching covariates as the predictors, revealed that there were no significant differences between the European American and African American samples with regards to age or education of either parent. The dyad was also matched on marital or cohabiting status. The results of balance checking are shown in Table 1. The sample consisted of European American (n = 41) and African American (n = 41) couples with 27% married (n = 22) and 73% cohabiting (n = 60); and well balanced with male and female children, 38 and 44, respectively. The mean age for mothers was 26.7 (5.6) years and 29.6 (6.3) years for fathers. Mothers and fathers reported a mean of 14.4 (2.9) and 14.3 (2.6) years of education, respectively.

Bivariate correlations and means can be found in Table 2.The associations between variables were largely as expected. Maternal conflict was related to paternal conflict (r= .78, p < .01), maternal withdrawal (r = .37, p < .01), paternal withdrawal (r = .16, p <.05), as well as fathers' sensitive parenting and harsh intrusive parenting (r = .14, p<.01) and (r = .17, p <. 01), respectively. Paternal conflict had a similar pattern of associations and was related to maternal withdrawal (r =.29, p <.01) and paternal withdrawal (r = .25, p < .05), as well as fathers' harsh intrusive parenting (r = .23, p <.05).

T-tests revealed that there were no significant differences noted for mean values for. *interparental conflict* between mothers and fathers.There was, however, a significant difference between mean values for *interparental withdrawal* between mothers and fathers (t(81) = 1.16, p <.05). When we examined these relations for within-race differences, we found no significant differences between mean *interparental conflict* for African American and European American dyads. We did, however, find a significant difference between mean *interparental withdrawal* between European American dyads such that European American fathers were rated as higher in withdrawal than European American mothers (t(81) = 1.36, p <.05).

With regard to parenting behaviours, *t*-tests revealed significant differences between mothers and fathers with regard to sensitive and harsh intrusive parenting, (t(81) = 1.05, p <. 05) and (t(82) =1.03, p < .05), such that mothers had higher mean sensitivity scores and harsh intrusive scores when compared to fathers. When these associations were examined for within-race differences, we found a significant difference between African American mothers and fathers with regards to sensitive parenting such that African American mothers were rated as being more sensitive than African American fathers (t(81) = 1.04, p < .05). There was no significant difference noted between African American mothers and fathers

with regards to harsh intrusive parenting. This pattern of associations varied for European American dyads such that no differences were noted for sensitive parenting between mothers and fathers, but there was a significant difference in harsh intrusive parenting with European American mothers rated as higher when compared to European American fathers ($t(81) = 1.01$, $p < .05$).

Actor–Partner Interdependence Model

The initial model was one in which the two predictors (interparental conflict and interparental withdrawal) of fathers and mothers predicted sensitive and harsh intrusive parenting behaviours as shown in the conceptual model (Figure 1). Within-person predictions are considered actor effects (i.e. mothers' conflict and mothers' parenting), whereas across-person predictions (i.e. mothers' conflict with fathers' parenting) are considered partner effects (e.g. Cook & Kenny, 2005; Kenny & Cook, 1999). In the first model, we found no evidence of the spillover or crossover hypothesis for mothers' or fathers' interparental conflict and parenting behaviours. Neither mothers' conflict nor fathers' conflict was associated with mothers' sensitive parenting, nor was mothers' conflict or fathers' conflict associated with mothers' harsh intrusive parenting. A similar pattern emerged for fathers' parenting behaviours in relation to interparental conflict. When we examined the sample for actor and partner effects regards to interparental withdrawal, we found a main effect of parent gender for both sensitive and harsh intrusive parenting as well as a main effect of parent race for harsh intrusive parenting (Table 3).

We ran four 3-way interactions examining the interrelations including partner (or actor) withdrawal, gender and race and partner (or actor) conflict, gender and race. We noted a trend for partner withdrawal, gender and race, $p = .06$; seeing this trend, especially in light of our small sample size, which limited power to detect 3-way interactions that may reflect true differences in associations between groups, we decided to stratify by race and gender to probe this further. There were no additional significant 3-way interactions noted. When we examined the models more closely stratified by parent gender and race, we did find significant actor effects of withdrawal for African American and European American fathers. The actor effect is evidenced by their own withdrawal behaviours being negatively associated with their sensitive parenting ($\beta = -.21$, $p < .01$, and $\beta = -.20$, $p < .01$, respectively).

We also found support for the crossover hypothesis for interparental withdrawal and harsh intrusive parenting behaviours for African American fathers, such that their partner's withdrawal in the interparental relationship was positively related to harsh intrusive parenting in fathers ($\beta = .14$, $p = .04$). In sum, African American fathers' sensitive parenting was negatively associated with their own levels of withdrawal from their partner, but their harsh intrusive parenting was positively associated with their partner's levels of withdrawal. Although not quite significant, we noted an actor effect among African American mothers for interparental withdrawal and decreased harsh intrusive parenting behaviours ($p = .09$). Further, although we found no evidence of the spillover or crossover hypothesis for mothers' or fathers' interparental *conflict and parenting behaviours* in our initial models, when we stratified these models by gender and race, we noted a trend for actor and partner effects

among European American mothers for interparental conflict and harsh intrusive parenting behaviours (p =.07 and p =.06, respectively).

Discussion

The current findings extend prior research by examining associations between observations of multiple dimensions of interparental relationship quality and observations of maternal and paternal sensitive and harsh intrusive parenting behaviours. The findings from this study support the spillover hypothesis for fathers as compared to mothers, and the crossover hypotheses for African American fathers. These findings were primarily limited to withdrawal behaviours.

Methodologically, this study has several strengths. The use of independent observational assessments of mothers and fathers' conflict and withdrawal behaviours in an interparental interaction context, as well as maternal and paternal parenting behaviours in parent–child interaction contexts, increases the internal validity of the measurement of these constructs and interpretations of the current findings. Although widely used, self-report methodologies are vulnerable to conscious or unconscious respondent biases, and, as such, responses are often influenced by social desirability. In a recent study of multiple assessments of parenting, Zaslow and colleagues' (2006) reported observational measures of parenting were the strongest and most consistent predictors of children's later outcomes, lending support for the use of observational techniques in behavioural sciences whenever possible. In addition, the current study was able to examine family processes within a racially diverse sample of low-income families living in rural communities, a population that is largely understudied in the family literature (Garrett-Peters, Mills-Koonce, Zerwas, Cox, & Vernon-Feagans, 2011). Lastly, the use of propensity score matching allowed us to attempt to identify family processes within African American and European American families that are independent of other socio-demographic factors, and use of Actor–Partner Interdependence modelling allowed us to test these hypotheses while appropriately accounting for the nesting of parent–parent and parent–child subsystems within the larger family system.

In the present study, we focused on parenting behaviours in infancy because a large literature highlights the importance of early care giving behaviours to subsequent child development. Early responsive, sensitive parenting is thought to provide a foundation that allows children to maintain self-regulation (Grossmann & Grossmann, 1991; Belsky, 1984) and to develop a basic trust of their caregivers and their environment (Ainsworth et al., 1978). Thus, supportive marital processes may be particularly important during infancy.

Previous research has documented that interparental conflict and hostility are linked to diminished parenting behaviour (Katz & Gottman, 1993). In the present study, interparental withdrawal during a conflict discussion task was related to parenting behaviours for fathers. This finding is consistent with previous reports suggesting that withdrawal from the interparental interaction may be more damaging to the parenting subsystem than overt conflict (Cox et al., 1999). We did not find evidence for a spillover or crossover effect from interparental conflict for mothers or fathers in our sample. We did, however, note a trend

towards significance for actor and partner effects for European American mothers, such that their own conflict and their partners' conflict were related to harsh intrusive parenting.

Broadly, our results are consistent with the hypothesis offered by Belsky et al. (1991) that men may develop ‘a general pattern of relating’ (p. 488) that is applied to their relationships with their wives or partners and their children. Fathers who experience interparental disharmony in their romantic relationships may engage in similar patterns of behaviour with their children. Our findings of actor effects of interparental withdrawal spilling over into sensitive parenting for fathers is in keeping with prior research that suggests that withdrawal from the interparental relationship may result in greater disengagement from parenting, as parents rely on similar coping strategies across family subsystems (Almeida et al., 1999). Given that parental sensitivity is the ability to recognize and respond both effectively and promptly to the distress and needs of one's child (Cox & Harter, 2003), it may be as Cox et al. (2001) posited, that the frustration and disengagement underlying interparental withdrawal may expand to the broader family system and limit the resources parents are willing or able to dedicate towards their parenting responsibilities. Given that withdrawal from the couple relationship was associated with less sensitive parenting, it could be argued that not engaging with children when one is distressed might be beneficial. On the other hand, however, children benefit from warm sensitive caregiving from fathers, and so children, especially low-income children, whose fathers are not positively engaged, might be at a further disadvantage.

Study findings further reveal that African American fathers, in particular, may be responsive to variations in interparental relationship quality. In the present study, we found evidence of the crossover hypothesis for interparental withdrawal and harsh intrusive parenting among African American fathers. This finding is in keeping with other investigations noting that spouses' withdrawal during marital conflict was associated with greater hostility and intrusiveness for fathers with their children (e.g.Katz & Gottman, 1996). As posited by other family scholars (e.g. Doherty et al., 1998), fathering is influenced by family and community factors to a greater degree than is mothering and may be dependent on several external factors including mother's attitudes towards and support for the father. It is likely that partner's withdrawal may leave men feeling unsupported, thereby rendering them more vulnerable to levels of relationship instability. This may be especially so for African American fathers. Minority stress theory posits that chronically high levels of stress faced by members of minority groups may be related to numerous domains of adult functioning including interpersonal relationships (Clark, Anderson, Clark, & Williams, 2002; Bryant et al., 2010). Exposure to multiple distal stressors (i.e. prejudice and discrimination) in this sample of African American fathers living in rural communities may impact more proximal processes of interpersonal functioning (i.e. romantic relationships and parenting).

These findings have important implications for child well-being given that studies have shown that fathers' positive engagement with their children is related to children's language and cognitive skills (Black et al., 1999; Tamis-LeMonda et al., 2008). Although family scholars have posited that some racial/ethnic minority families may be less vulnerable to the negative effects of interparental relationship dysfunction due to the reliance on extended kin

networks, the findings from the present study would suggest otherwise. The families in the current study were not immune to the spillover or the crossover phenomenon.

That we would find actor effects for sensitivity but partner effects for harsh intrusiveness may be explained by the way we measure sensitive and harsh intrusive parenting. Subscales of our sensitive parenting measures capture a broad range of parenting behaviour, including detachment and disengagement in the context of a parent–child interaction. Thus, a father who is withdrawn from the interparental relationship may be likewise detached and less responsive to his child. Similarly, subscales of our harsh intrusive parenting measures capture coercive and negative behaviour including roughness, negative voice when correcting and abruptness. The anger and frustration men may feel from their partners' withdrawal may spillover into their interactions with their children, making them harsh and intrusive in their caregiving.

Despite no evidence of the spillover or crossover hypothesis for mothers' or fathers' interparental conflict and parenting behaviours in our initial models, in our stratified models, we noted a trend towards significance for both actor and partner effects for European American mothers and harsh intrusive parenting ($p = .07$ and $p = .06$, respectively). The partner effect ($p = .06$) is similar to early findings by Katz and Gottman (1996) that partner's withdrawal was related to maternal rejection. Further, Krishnakumar, Buehler, and Barber (2003) reported a spillover of interparental conflict to parenting was significant for European American mothers but not for African American mothers. Family stress models highlight that parents who experience interparental conflict may lack the energy or motivation to interact effectively with their child (Magnuson & Duncan, 2002; McLoyd, 1998). Similarly, parents may be unable to shield their child from intense negativity in the interparental relationship and may become coercive and rejecting with their child.

The findings of this study call particular attention to the value of alerting parents to the possibility that interparental withdrawal may affect their roles as responsive parents. Practitioners may help parents to understand that engaging in problem-solving with the romantic partner, rather than avoidance of anger and hostility, may play a key role in enhancing parenting practices, thus improving the quality of life for their children.

Implications

The findings of this study highlight the importance of distinguishing between specific types of interparental conflict to better understand family processes. Our findings are in keeping with other research reports (Cox et al., 2001) highlighting the significance of interparental withdrawal as being disruptive to parenting behaviour. Thus, interventions with distressed families, whether married or cohabiting, may benefit from expanding their models to focus on increasing positivity and engagement between parents, thereby improving the quality of parenting. Given that we found actor and partner effects for parenting behaviour, it would be productive and well warranted to consider the whole family system when creating interventions for mothers' and/or fathers' caregiving behaviour (Knox, Cowan, Cowan, & Bildner, 2011). An ecological family systems approach would suggest that interventions need to focus on reducing the multiple risks and enhancing protective factors associated with mother and father engagement with their children. In addition, findings from this study

highlight the importance of continuing to understand the differences and similarities across race/ethnic groups in order to guide program and policy development aimed at promoting positive father involvement.

Limitations

In addition to the strengths of this study, there are also limitations to be acknowledged. First, the current study is cross-sectional in nature using a small sample size of 82 dyads. Further, by stratifying the sample by race or gender, we were no longer working with a sample of 82; thus, issues relating to power are likely. Longitudinal work with larger samples is necessary to determine the continuity and discontinuity of these patterns of interactions over time. Furthermore, the degree to which our findings with a rural, low-income sample are generalizable to families with higher incomes is unknown. Along these same lines, because the study focused solely on data from intact families, be they married or cohabitating, results may not generalize as well to individuals from other family structures. Also, interparental relationship quality is associated with multiple contextual factors for the family; the relationship between interparental relationship quality and parenting behaviours may vary as a function of numerous family, dyadic and individual-level variables. In addition, given that we were interested in the spillover or crossover of parent– parent relationship into a style of parenting directed towards the child broadly, we did not examine the associations of the counterbalancing of the tasks in the study. Future research should include additional dimensions of interparental relationship quality as well as additional mediators and moderators of the association between the parent–parent and parent–child subsystems.

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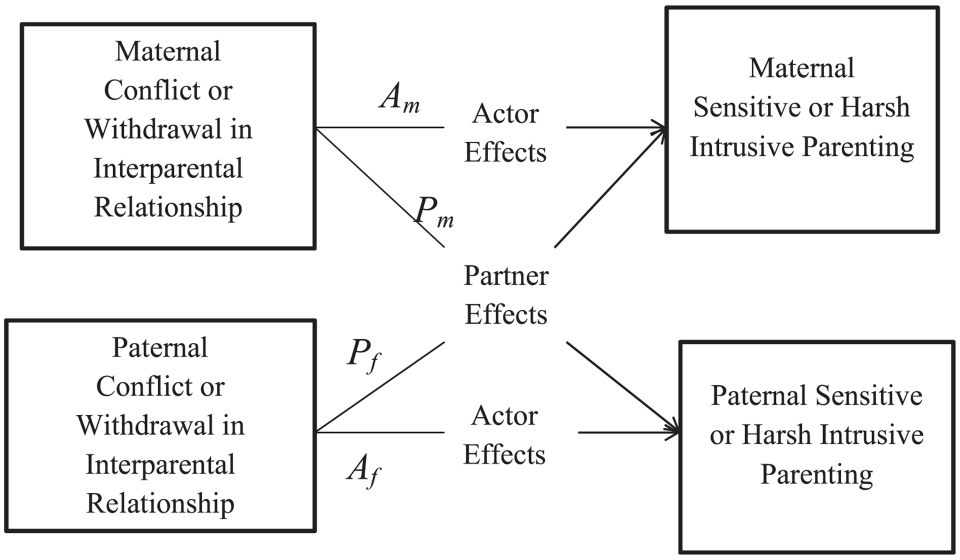

Figure 1.
Actor–partner interdependence model (Cook & Kenny, 2005).

Table 1

Logistic regression analysis predicting race from the covariates after matching

Covariates used in matching	B	SE	β	Sig
Maternal age	−.00	.02	−.03	.86
Paternal age	−.01	.01	−.10	.59
Maternal education	.04	.03	.12	.88
Paternal education	.04	.03	.12	.17

Table 2

Descriptive statistics and bivariate correlations (*n* = 82)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Maternal interparental conflict	—										
2. Paternal interparental conflict	.78[b]	—									
3. Maternal interparental withdrawal	.37[b]	.29[b]	—								
4. Paternal interparental Withdrawal	.16[a]	.25[a]	.15[a]	—							
5. Maternal sensitive parenting	.097	.01	−.22	−.05	—						
6. Maternal intrusive parenting	.000	.07	.06	.07	−.13[a]	—					
7. Paternal sensitive parenting	.14[a]	.04	−.17[b]	−.32[b]	.16[a]	−.03	—				
8. Paternal intrusive parenting	.17[a]	.23[a]	.13[a]	.14[a]	−.17[b]	.29[a]	−.08[a]	—			
9. Income-to-needs ratios	−.18	−.16	−.20	−.02	.23[a]	−.07	.31[b]	−.11	—		
10. Maternal depression	.23[a]	.27[a]	.27[a]	.1	−.1	.08	−.1	.15	−.18	—	
11. Paternal depression	.07	.06	−.05	.18	−.07	−.05	−.14	.10	−.14	.20	—
Mean (SD)	5.0 (2.2)	4.9 (2.1)	3.2 (1.7)	3.7 (1.8)	2.8 (.86)	2.5 (.85)	2.7 (.83)	2.2 (.69)	.74 (.44)	45.7 (6.8)	47.2 (98.3)

[a] $p < .05$.

[b] $p < .01$.

Table 3

Actor–partner models for interparental withdrawal and parenting behavior[^]

	Sensitive parenting			Harsh intrusive parenting		
Variable	**B**	**SE**	***p***	**B**	**SE**	***p***
Actor withdrawal	−.11	.04	.004	−.04	.03	.19
Partner withdrawal	−.05	.04	.20	−.03	.03	.31
Actor conflict	.03	.05	.47	.07	.04	.10
Partner conflict	.003	.05	.94	−.001	.04	.98
Gender	.27	.13	.03	.21	.11	.04
Race	−.20	.14	.15	.28	.12	.02

[^]Models are additionally adjusted for household income and actor's depression.