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## Fathers' and mothers' attachment styles, couple conflict, parenting quality, and children's behavior problems: an intervention test of mediation

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### ABSTRACT

A diverse sample of 239 primarily low-income couples participated in a random controlled trial of the Supporting Father Involvement couples group intervention. In this report, we examined the value of adding measures of fathers' attachment style and parenting to mothers' measures in order to explain variations in children's behavior problems. We also tested the hypothesis that the link between intervention-induced reductions in couple conflict and reductions in anxious/harsh parenting can be explained by intervention effects on parents' attachment insecurity or on anxiety and depression. Fathers' attachment security and parenting behavior added significantly to mothers' in accounting for children's internalizing and externalizing problem behaviors. Fathers' anxious attachment style *and* anxiety/depression mediated the link between post-intervention reductions in parental conflict and anxious/harsh parenting. For mothers, only improvements in attachment security accounted for those links. The findings support the need for attachment researchers to consider the contributions of both parents to their children's development.

### KEYWORDS

Fathers; attachment; family systems; child behavior problems; mediation

A bedrock finding in the field of attachment research is that mothers' attachment security is correlated with measures of their warm and responsive parenting, which in turn is correlated with security of their children's attachment (van IJzendoorn, 1995). From van IJzendoorn's initial framing of the issue to the present day, researchers have noted that although models of

mothers' adult attachment → sensitive parenting → child outcomes

account for statistically significant amounts of variance in children's behavior, there is a "transmission gap" between what this model can and cannot explain. An obvious source of at least some of the unexplained variance would be contributed by the child's father. Dagan and Sagi-Schwartz (2018) argue that "the network of infant-mother and infant-father attachment relationships may predict developmental outcomes more strongly than either attachment relationship alone" (p. 116).

Recent reviews of correlational studies in the general parenting literature suggest that (a) despite some gains in including fathers in recent research, fathers continue to be relatively ignored (Panter-Brick, Grimon, Kalin, & Eggerman, 2015) and (b) adding fathers'

data to studies increases our ability to account for variance in their children's behavior. A small set of *intervention* studies published over the past 30 years points to the added value of fathers' participation in parenting interventions. Two teams of investigators in two countries found that when parenting interventions for mothers were not successful in reducing their children's aggression, there was high conflict between the parents. Once fathers in those families participated in the intervention, the parents' marital quality improved and their children's troubling behaviors decreased (Dadds, Schwartz, & Sanders, 1987; Webster-Stratton, 1989).

The data set for this study comes from a previously-published randomized clinical trial of a couples group intervention (Kline Pruett, Pruett, Cowan, Cowan, & Gillette, 2019), to which previously un-analyzed measures of mothers' and fathers' attachment style, anxiety, and depression have been added. The theoretical frame for this report comes from a chapter speculating about how this intervention can be understood in terms of attachment theory (P. A. Cowan, Cowan, Pruett, & Pruett, 2018). Here we test two hypotheses: (1) fathers' data add value to predictions of child problem behaviors, and (2) post-intervention reductions in mothers' and fathers' attachment insecurity function as mediating mechanisms, linking reductions in couple conflict with improvements in parent-child relationship quality.

### *Couple conflict and parenting quality*

When fathers are included in studies of child outcomes, it becomes possible to investigate *systemic* family contributions to children's development and well-being, by including father-child and mother-child relationships, but also by focusing on the relationship between the parents. Since the 1990s, studies outside the field of attachment research have shown consistent associations between high, unresolved conflict between parents and harsh or inconsistent parenting behavior by both mothers and fathers (Davies, Coe, Martin, Sturge-Apple, & Cummings, 2015; Harold & Sellers, 2018). Similarly, within the field of attachment research, Cowan, Cowan, and Mehta (2009) have shown that both fathers' and mothers' attachment security, measured by the Adult Attachment Interview (Main, Kaplan & Cassidy, 1985), is a risk factor for observed sadness, anger, and disagreement in a couple discussion, variables which are, in turn, associated with lower levels of warmth and structure in separate parent-child interactions.

The association between couple conflict and less effective parenting has usually been explained in terms of "spillover" (Erel & Burman, 1995; Sturge-Apple, Davies, Cicchetti, & Cummings, 2009). The referent of the spillover metaphor involves water flowing out of one full vessel into another. We suggest that the spillover construct does not account for how the "flow" occurs – how distress in the parental relationship becomes replicated in the parent-child relationships. For example, Cummings and Davies' theory of emotional security (2015) suggests that there are psychological mechanisms that intervene – threats to the couple relationship may arouse attachment and other anxieties that compromise a parent's ability to establish responsive, positive relationships with their children. One possibility is that when couple conflict is high, it may affect either or both parents' working models of intimate relationships, and thereby shape how they act and react in their relationship with their child.

According to Baron and Kenny (1986), in order to support the conclusion that the observed association between couple conflict (A) and parenting quality (C) is mediated by attachment style (B), we would have to show that couple conflict is correlated with the proposed mediating mechanism and the proposed mediating mechanism is correlated with parenting quality. We would also have to show that when these two variables are entered into a regression or structural equation model (SEM), the link between A and C is no longer statistically significant (i.e. equivalent to zero).

### *Couple conflict and attachment insecurity (A-B)*

In couples with high levels of conflict, one or both partners are more likely to be classified as insecurely attached on the basis of either the Adult Attachment Interview or attachment style questionnaires (Cowan, Cowan, & Mehta 2009; Mikulincer & Shaver, 2013). So far, authors have interpreted both single-time and longitudinal correlations (e.g., Holland, Fraley, & Roisman, 2012) as suggesting that attachment security is an antecedent to couple relationship functioning (B-A). In the present study, we have an opportunity to examine whether a post-intervention reduction in couple conflict functions as an antecedent to changes in attachment style (A-B), as Johnson (2008) suggests in her studies of emotion-focused couples therapy.

### *Attachment insecurity and parenting quality (B-C)*

When mothers have insecure working models of attachment to their parents, their parenting is more likely to be insensitive, harsh or disengaged (Jones et al., 2018; van IJzendoorn, 1995). A recent meta-analysis in which 25 of 39 studies included both parents (Koehn & Kerns, 2018) showed that the link between avoidant attachment and responsive parenting was statistically significant for both parents, although the effect sizes for father-child relationships were significantly smaller.

In sum, there is evidence for the notion that couple conflict is related to partners' attachment styles (A-B), and that attachment style is related to parenting quality (B-C). We are not aware of any studies that investigated whether these two connections entered into a regression equation or structural equation model reduced the statistical significance of the couple conflict – parenting quality correlation (i.e. whether attachment security or insecurity is a mediating mechanism in the link between couple conflict and parenting quality). Here, we evaluated our hypotheses about mediation within the context of an intervention that produced direct effects on couple conflict (Pruett, Cowan, Cowan, Gillette, & Pruett, 2019 in press). This gave us an opportunity to go beyond correlational statements to make causal inferences about how couple relationship quality and parenting quality are linked.

### *An alternative mediation hypothesis*

An even more stringent test of our hypothesis that attachment style functions as a mechanism linking couple conflict and parenting quality would be to examine another possible psychological mediator. We tested an alternative hypothesis – that the mediating link is not specific to mothers' or fathers' insecurity of attachment, but rather to their general psychological distress (symptoms of anxiety and depression), aroused when conflict between them as a couple is unresolved. Evidence for this hypothesis derives from large national studies of the A-B connection showing that poor marital adjustment

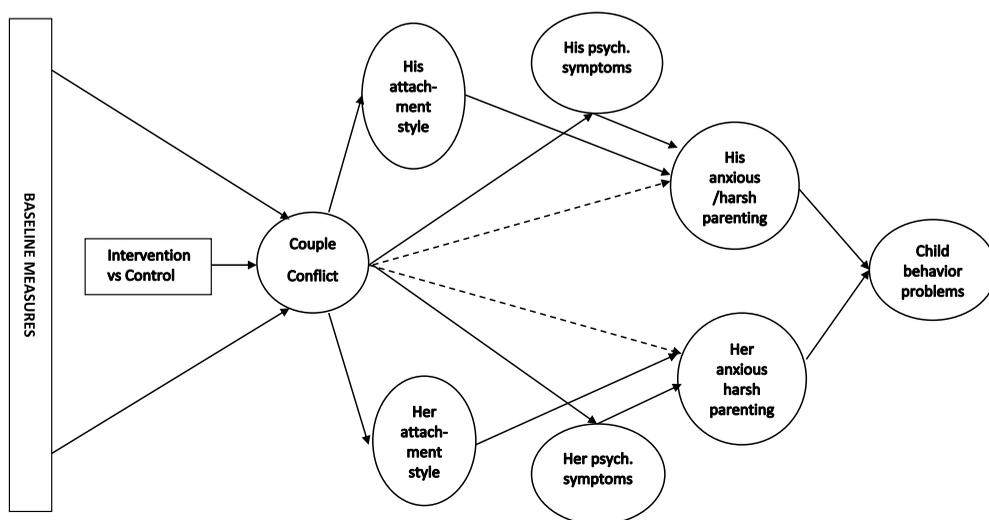
(high conflict, low satisfaction) is associated with depression and anxiety in men and women (McShall & Johnson, 2015; Whisman, Robustelli, & Labrecque, 2018). Completing the second leg of a mediation analysis B-C), studies show that parental depression and anxiety are consistently linked with parenting behavior that is harsh, intrusive, or distant (Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Teetsel, Ginsburg, & Drake, 2014). The question, then, is whether either or both of these two paths also explain links between high couple conflict and anxious or harsh parenting (A-C).

### *Anxious/harsh parenting and children's behavior problems*

We have focused so far on the links among couple conflict, parents' attachment styles, parents' anxiety and depression, and parent-child relationship quality. Our full model continues the path analysis to document the power of all these variables, within the context of an intervention design, to explain individual differences in children's level of externalizing and internalizing behavior problems. An extensive literature links parents' behavior with their children's well-being, adaptation, or problematic behavior (for examples, see the 4-volume Handbook of Parenting edited by Bornstein (2002).

### *Constructing the full model*

In constructing the full structural model describing pathways among the constructs described above, we were guided by the literature and by the results of our intervention study (Kline Pruett et al., 2019) – the source of the present data set. Figure 1 presents a schematic view of the model tested in the current analyses. The box labeled "Baseline measures" shows that all baseline constructs on the left were assessed with the same latent variable measures in the post-intervention model to the right. In effect, this means that the post-intervention constructs are measures of change from baseline. The dotted lines connecting couple conflict to his and her



**Figure 1.** Conceptual model of the paths linking variables in this study.

anxious/harsh parenting reflect our hypothesis that when the hypothesized mediators (attachment style, anxiety/depression) are included, the link between couple conflict and parenting is reduced to zero.

### **The current study**

The intervention data in the current report are drawn from a Randomized Clinical Trial (RCT) of the Supporting Father Involvement couples group intervention (Kline Pruett et al., 2019). We found that low-income parents' participation in the intervention – a couples group meeting with clinically trained facilitators for 16 weeks – produced a significant reduction in couple conflict at two months post-intervention – a reduction still evident one year later. The intervention effect contributed to reductions in mothers' and fathers' anxious, harsh parenting and their children's internalizing and externalizing behavior problems. Our focus in the earlier analyses was on determining *whether* the intervention works for participants at risk because of poverty and/or involvement in the Child Welfare System. In the current study using data from the same families, we focus on identifying *how* the intervention works. Although measures of parents' adult attachment security and psychological symptoms had been collected, they were not included in earlier analyses, in which we combined fathers' and mothers' data in the latent variables measuring each construct. In the current report we examine attachment style and psychological symptoms as potential mediating links between couple conflict and negative parenting by looking separately at mothers' and fathers' [attachment style, anxiety/depression, and anxious/harsh parenting](#).

We used a Structural Equation Model (SEM) analytic strategy to test two hypotheses: (1) At baseline, fathers' data concerning attachment style and parenting behavior will add significant explanatory power to mothers' data in accounting for parents' descriptions of their children's behavior problems, and (2) Measures of couple conflict, parenting quality, and children's behavior problems at baseline, and again more than a year after they entered the study, will show that parents' attachment style functions as a mediator of the links between post-intervention reductions in couple conflict and decreases in negative parenting quality. We also tested an alternative mediation hypothesis, that parents' symptoms of anxiety and depression explain the couple conflict – parenting connection.

## **Method**

### **Participants**

In the earlier study that provided the data set for the current investigation, there were 239 heterosexual pairs of co-parents. The racial and ethnic composition of the sample was diverse: 53% of the fathers and 50% of the mothers were Hispanic (mostly Mexican American), 31% of the fathers and 36% of the mothers were European American, 9% of the fathers and 7% of the mothers were African American, 1% of both mothers and fathers were Asian American or Pacific Islander, 4% of the fathers and 3% of the mothers described themselves as "a combination" of races or ethnicities, and 2% of the fathers

and 3% of the mothers did not self-identify with any of these races or ethnicities (i.e. they placed themselves in an "other" category).

Almost half (49%) of the co-parenting pairs participating in the trial were married, 3% were separated, 1% were divorced, 43% were romantic partners who were not married, and 4% were non-romantic pairs (father–grandmother, father–sister, father–friend). Six percent of the separated or divorced couples and 11% of the never-married partners were living apart while raising their child together.

Median age for fathers and father figures was 31.5 (range: 18–71), for mothers and mother figures, 29.2 (range: 17–66). Median age of the youngest child (the focal child) was 2 years 11 months (range: 1 month–12 years). Median annual household income was \$24,000; in California, for a family of four during the years of the study, \$40,000 was twice the poverty line, a common estimate of family poverty.

One of the goals of the earlier study had been to compare community-recruited couples with couples who had been referred by Child Welfare System staff (CWS) because of prior child abuse/neglect or domestic violence. These referrals were screened by the CWS staff and again by the Supporting Father Involvement (SFI) staff to make sure that it would be safe to treat partners together in a group now. We found no differences at baseline between these subsamples on any of the measures – or on the impact of the intervention on the participants. Given no differences between these groups at baseline, we combined the samples of CWS-referred and community couples in our analyses. The sample for the current study, then, consists of couples at risk because of poverty and the fact that more than 40% of them had already come to the attention of the Child Welfare System.

## **Procedure**

Details of the recruitment, retention, and intervention procedures can be viewed in Kline Pruett et al. (2019). As described in earlier U.S. trials of SFI (Cowan, Cowan, Pruett, Pruett, & Gillette, 2014; Cowan, Cowan, Pruett, Pruett, & Wong, 2009), staff members for the present study were located within existing Family Resource Centers in five California counties – one urban, the other four primarily agricultural, all low-income communities. Staff at each site included a project director, two group leaders, case managers, a data coordinator, and a county health and human services liaison. Project staff recruited about half the participants (community couples) through direct referrals from within the Family Resource Centers and about half from referrals by Child Welfare Staff in each county.

A telephone screening by case managers determined couples' eligibility for participation. Inclusion criteria included: (a) raising a youngest child under 12 years of age together, regardless of marital or cohabiting status, (b) both parents or co-parent partners willing to participate, and (c) neither partner suffering from mental illness severe enough to interfere with daily functioning at home or at work.

After determining eligibility, interested couples were interviewed by the program's group leaders, with most sites offering Spanish or English options. The group leaders explained the intervention program and the research, including random assignment to (a) a couples group that would begin immediately or (b) a waitlist for a group that would begin in 6 months. The group leaders then read

the informed consent papers aloud and obtained signed consent from both partners. Next, the partners were invited into separate rooms, fathers/father figures with the male co-leader and mothers/mother figures with the female co-leader. The parents were asked about any violent behavior toward the partner or child, actual physical harm requiring treatment, attempts by one partner to limit and control the other, and any fears about what would happen on the way home after discussing these questions in the interview. In 3 of 305 couples who were initially interviewed to determine eligibility, the group leader interviewers contacted CWS with concerns that led to our referring the family outside of SFI for help with the identified problem. The remaining parent pairs were then reunited with both group leaders and after signing consent forms, randomly assigned to an immediate or waitlist control condition (6-month delay).

In the 16 weeks of group meetings, clinically trained male-female leaders used open-ended segments, and a curriculum of brief presentations, games, role plays, clips from popular movies, and structured exercises to stimulate reflective discussions about parents' symptoms, couple communication, relationships with their children, considerations about what to carry over or change from their families of origin, outside-the-family stressors and how to enlist supports to help cope with them.

Questionnaire assessments occurred at three time periods: baseline (before the group meetings began), Post 1 (2 months after the intervention ended for immediate groups; 6 months post-baseline for the waitlist controls), and Post 2 (18 months after couples in either condition entered the study). Except for the variables assessing couple conflict at Post 1, where the direct effects of the SFI intervention were found, all the measures in the current analyses were gathered from baseline and Post 2 assessments. Because Post 1 waitlist controls had not yet had an opportunity to participate in a couples group, they were essentially a no-treatment condition at that point in the study.

### **Retention**

Overall, the retention rate for this low-income, relatively high-risk sample over 18 months was 68%, not much different from the 71% and 74% retention rate of our two earlier intervention studies of low-income parents (Cowan et al., 2009; Cowan et al., 2014) There were no statistically significant differences in the retention of fathers or mothers in the community or CWS-referred samples as a function of age, marital status, ethnicity, being born in the United States, having a high school diploma, or involvement in paid work during the previous 2 weeks.

### **Measures**

The measures described in this section were grouped in 5 latent variables at the pre-intervention baseline and again at Post 2 (18 mos. after baseline): couple relationship conflict, parents' attachment style, symptoms of anxiety and depression, anxious/harsh parenting quality, and children's behavior problems. Based on findings from the earlier study, a dummy latent variable (immediate intervention vs waiting list delay) was included at Post 1. In our description of the measures, we include

composite reliabilities for latent variables comprised of multiple measures, and single-measure reliabilities when only one manifest variable was included in the latent variable measure.

### **Couple conflict**

Because both partners were providing perspectives on their relationship, the latent variable of couple conflict included both partners' descriptions of total amount of conflict in the couple relationship, conflict about parenting, and violent problem-solving strategies. Composite reliabilities for the measures included in this latent variable at baseline, Post 1, and Post 2 were .86, .89, and .94.

**Relationship conflict.** From the Couple Communication Questionnaire (C. Cowan & Cowan, 1990), we used a 13-item scale that asks about how much conflict each topic elicits between partners. Example items include "the way we communicate with one another" and "the division of workload in the family". Response options for each item range from *none* (scored as 0) to *a lot* (6), and response scores were summed. Higher scores correspond with more conflict.

**Co-parenting conflict.** Three items from the Couple Communication Questionnaire (Cowan & Cowan, 1990) about typical child-focused disagreements assessed the amount of parenting conflict the couple experienced. Specifically, the items addressed were "ideas about raising children," the "children's schooling," and "how to discipline" the child(ren). Each partner indicated the amount of disagreement or conflict about each item on a scale from *none* (0) to *a lot* (6); response scores were summed so that higher scores correspond with more conflict.

**Violent problem-solving.** The Couple Communication Questionnaire (C. Cowan & Cowan, 1990) also includes a 16-item scale derived from the Conflict Tactics Scale (CTS; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Respondents are prompted with: "When you and [partner] attempt to solve a marital or family problem, which of the following strategies do you tend to use?" Each partner identified all of the items that apply, such as "I yell or insult my partner," "I push, grab, or shove my partner," and "I slap or try to hit my partner." In contrast with the CTS, study respondents in SFI were also asked to describe the partner's behavior toward them on each item. The score for violent problem-solving was total number of endorsed items.

### **Attachment style**

As a measure of attachment security we chose the Adult Attachment Scale (AAS, Collins & Read, 1990) for conceptual, methodological, and practical reasons. The conceptual advantage of the AAS is that it assesses current adult intimate relationships (a target of the conflict reduction strategies in the intervention), rather than relationships with parents as the Adult Attachment Interview does. Methodologically, it produces continuous measures of anxiety and avoidance rather than categories of secure or insecure attachment, and this fits better within an SEM analytic approach. A practical consideration was that this study included 239 couples (478 individuals) to be assessed at baseline

and again 18 months after they entered the study, so that conducting and coding lengthy interviews was far beyond the resources of our research team.

The Adult Attachment Scale consists of 18 items concerning the participant's feelings about close relationships (e.g., "I find it relatively easy to get close to others"). An orthogonal factor analysis of the data in the current study yielded two factors, anxiety and avoidance, consistent with analyses of many questionnaire measures of attachment style (Brennan, Clark, & Shaver, 1998). Because these dimensions were expected and found to be orthogonal, the latent variable that included both did not show statistically significant composite reliability at baseline or Post 2 for fathers or mothers.

### *Anxiety and depression*

Two questionnaires assessed psychological symptoms – the Brief Symptom Inventory (BSI, Derogatis & Melisaratos, 1983) and the Center for Epidemiological Studies in Depression Scale (CES-D; Radloff, 1977). On the BSI, parents indicated which of 53 symptoms they had experienced in the past 4 weeks, as well as how much discomfort that problem caused, using ratings from 0 (*not at all*) to 4 (*extreme*). The current analysis includes only the scale for anxiety (5 items, including "suddenly scared for no reason"). On the CES-D, parents indicated which of 20 symptoms of depression applied to them in the past week, with intensity ranging from 0 (rarely or none of the time/less than 1 day) to 3 (most or all of the time/5–7 days). The total CES-D score was used as an index of the severity of each parent's self-reported symptoms of depression. The composite reliabilities of this latent variable at baseline and Post 2 were .90 and .98 for fathers and .91 and .98 for mothers.

### *Anxious/harsh parenting quality*

Two measures of the parent–child relationship were included in the latent variable assessing parenting quality, separately for fathers and mothers: parenting anxiety/stress, and harsh parenting.. Baseline and Post 2 composite reliabilities were .77 and .95 for fathers and .77 and .90 for mothers.

***Parenting stress.*** Each parent's level of stress associated with parenting their youngest child was assessed with a 38-item version of the Parenting Stress Index (PSI, Abidin, 1997). Parents indicated the extent of their agreement or disagreement with 38 statements describing themselves as anxious, their child as difficult to manage, or a lack of fit between the child they envisioned and the child they had. The scale has been validated by comparing parents who do and do not have known childrearing stressors (i.e. parents of children with developmental delays, oppositional defiance, or difficult temperaments). Response options to each statement range from 1 to 5, with higher summed scores corresponding with more parenting anxiety and stress.

***Harsh parenting.*** The Alabama Parenting Questionnaire (APQ) measures ideas about parenting practices that are related to maladaptive child behaviors (Frick, 1991). Its 32 items are scored in five domains: positive parenting, poor monitoring, inconsistent discipline, involvement, and corporal punishment. In this report we used the 7 corporal punishment items (e.g., "A good spanking lets children know parents mean business" and "Strict discipline is the best way to raise children,"), which we refer to as *harsh*

*parenting*. Response options range from *never* (1) to *always* (5), with higher summed response scores corresponding with harsher parenting ideas.

### *Child outcome (behavior problems)*

Each parent completed a 54-item adaptation of the 106-item Child Adaptive Behavior Inventory (P. Cowan, Cowan, & Heming, 1995). We factor analyzed the scale scores into four dimensions, two externalizing (aggression and hyperactivity) and two internalizing (shy/withdrawn and anxiety/depression). Gottman and Katz (1989) reported that inter-item consistencies of these composite dimensions filled out by teachers were high (as in the .80s and .90s) and those filled out by parents were moderate (as in the .60s and .70s). Two different latent variables in the measurement model described children's externalizing and internalizing behavior problems. Fathers' and mothers' scales describing their youngest child's aggression, hyperactivity, anxiety/depression, and shy/withdrawn behaviors were included in a single latent variable representing a combined view of the child's behavior. Composite behavior problem reliabilities were .87 and .92.

### *Data analyses*

Our family systems SEM assessed the connections among parents' anxiety/depression, insecure attachment, couple conflict, anxious/harsh parenting, and perception of children's behavior problems. In contrast with our analyses of earlier studies, we created separate latent variables for fathers' and mothers' attachment style, symptoms of anxiety and depression, and negative parenting (parenting stress, harsh and anxious parenting style). All analyses were conducted with SmartPLS (Hair, Tomas, Hult, Ringle, & Sarstedt, 2017). Tests of intervention effects were constructed by including a dummy moderator variable (immediate vs. waitlist-control) to determine whether participation in the intervention affected changes in couple conflict from baseline to Post 1, before the comparison group was offered the intervention.

## **Results**

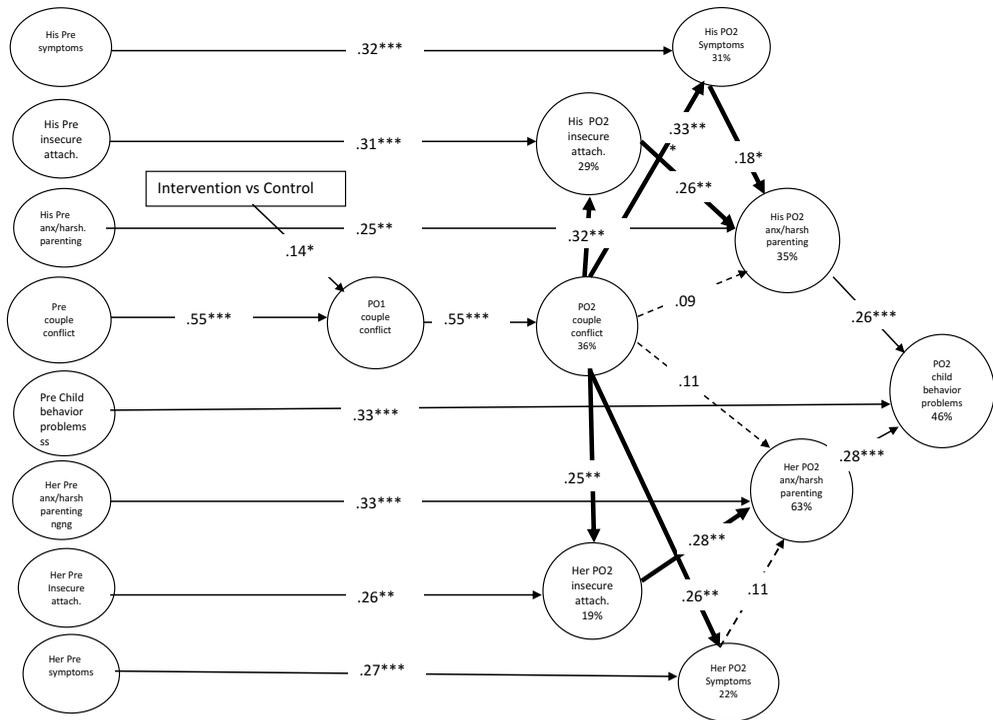
### *Assessing the measurement model*

The adequacy of the measurement models was tested by establishing whether the manifest variables were statistically associated with their designated constructs (couple conflict, attachment style, anxiety/depression, anxious/harsh parenting, child behavior problems). In all, 57 of 59 manifest variables showed statistically significant connections with their latent constructs, with *t*-values ranging from 2.47 to 65.28, all with *p*-values < .001. As noted in the method, composite reliability estimates for each latent variable at each assessment period ranged between .77 and .98 (mdn = .90).

### *Assessing the structural model*

#### *Statistically significant paths*

Figure 2 presents the results of the baseline to Post 2 SEM, with the statistical significance of path weights indicated by asterisks. It includes a latent dummy variable



**Figure 2.** Baseline to Post 2: Full model of intervention and mediation.

representing the contrast between participants in the couples groups and control participants assigned to a wait-list delay. As we expected, all 7 paths linking baseline with Post 2 measures of the same construct were statistically significant (mdn  $t = 5.03$ ,  $p < .001$ ). The baseline-Post 1, and Post 1-Post 2 paths tracing couple conflict over time were also statistically significant (baseline to Post 1,  $t = 14.1941$   $p < .001$ ; Post 1 – Post 2,  $t = 11.58$   $p < .001$ ). In order to facilitate understanding of the results, the paths involved in the mediation hypothesis are bolded. In the entire model, of 22 path links tested, only three were not statistically significant. Two of these validated our hypotheses – the absence of a statistically significant link between the couple’s conflict and both fathers’ and mothers’ negative parenting, once the expected mediators are entered (shown by the dotted arrow lines in Figure 2). The third non-significant path, from mothers’ psychological symptoms (anxiety and depression) and parenting is also relevant to the analysis of mediation effects.

### Model fit

The overall Goodness of Fit index, standardized root mean square residual (SRMS) was .06, in which 0.00 represents a perfect fit, and a very conservative estimate of .08 or less represents a well-fitting model (Hair et al., 2017). Our expectation that there would be a systemic set of connections among the latent variables was supported by the data.

### *Explained variance in child behavior problems*

Because each latent variable at Post 2 was preceded by an identical latent variable at baseline, the Post 2 measures can be interpreted as reflecting change over 18 months of the study. Overall, a combination of latent variable measures (fathers' and mothers' attachment style and symptoms, couple conflict, and fathers' and mothers' negative parenting), explained 46% of the variance in baseline to Post-2 changes in a combined parental measure of their child's externalizing and internalizing problem behaviors. The explanation of such a large proportion of variance in children's outcomes is a product of (a) changes in parents' couple conflict, attachment style, psychological symptoms, and negative parenting, but also of (b) autoregression effects (scores on measures of parenting quality and child behavior problems at baseline).

### **Hypothesis 1: Fathers' data on attachment, symptoms, and parenting style added to mothers' data will enhance predictions of children's outcomes.**

To test the hypothesis that fathers' attachment and parenting data account for variation in children's behavior over and above mothers' data, we focused on latent variable measures of attachment style, anxious/harsh parenting, and child behavior problems, all measured at baseline so that the connections among constructs would not be confounded with intervention effects (SEM not shown in Figure 2). Data from mothers' latent variable measures of attachment insecurity and anxious/harsh parenting at baseline explained a statistically significant 42% of the variance in baseline child behavior problems ( $t = 7.95, p < .001$ ). Adding fathers' attachment insecurity and negative parenting increased the proportion of variance in child behavior problems to 52% – a statistically significant increase of 10% ( $F_{2/233} = 25.0, p < .001$ ).

### **Hypothesis 2: Fathers' and mothers' attachment style functions as a mediator of the connection between post-intervention reductions in couple conflict and decreases in anxious/harsh parenting quality.**

Recall that we are placing the analysis of mediation effects within the context of an intervention designed to improve family relationships. The intervention dummy variable in the SEM equation was scored so that the immediate intervention condition was coded 1 and the waitlist-control was coded 2 to be consistent with the other latent variables in the model in which high scores were negative. In our earlier intervention study sample (Kline Pruett et al., 2019), we had predicted and found a direct intervention effect on the change from Pre to Post 1 couple conflict, and, because we are analyzing the same data set here, we found this effect in the current sample ( $\beta = .14, t = 3.05, p < .001$ , equivalent to small to medium effect size of  $d = .4$ ). In the current analyses, the effect of participation in the couples group intervention groups was the only statistically significant direct effect. However, the SmartPIs program is able to evaluate the statistical properties of indirect intervention effects. We found statistically significant indirect paths from the intervention dummy variable through couple conflict at Post 2 ( $t = 2.89, p = .002, d = .38$ ), showing that

the intervention effect on couple conflict at Post 1 was maintained over the next year. Furthermore, there were statistically significant indirect effects demonstrating that the intervention advantage for couples reducing their conflict at Post 1 and Post 2 extended to lower scores on the AAS questionnaire measure of parents' attachment insecurity (fathers;  $t = 2.42$ ,  $p = .008$ ,  $d = .31$ ; mothers;  $t = 2.08$ ,  $p = .019$ ,  $d = .27$ ). Finally, there were statistically indirect intervention effects on fathers' ( $t = 2.25$ ,  $p = .013$ ,  $d = .29$ ) but not mothers' psychological symptoms of anxiety/depression.

### *Attachment style as a mediator*

An analysis not shown here, using an SEM model that omitted the latent variable measures of attachment and psychological symptoms, showed that the paths linking couple conflict to fathers' and mother's parenting were statistically significant ( $\beta$  for fathers = .22,  $t = 3.27$ ,  $p < .001$ ;  $\beta$  for mothers = .20,  $t = 2.78$ ,  $p = .003$ ). In Figure 2, the dotted arrow paths linking couple conflict with fathers' and mothers' anxious/harsh parenting were not statistically significant. The fact that the inclusion of attachment and psychological symptoms measures reduced the conflict-parenting connection means that we can then use a Baron and Kenney (1986) paradigm for testing potential mediation effects.

The beta weights of the A-B paths from couple conflict to insecure attachment (.32) and the B-C paths from insecure attachment to anxious/harsh parenting (.26) were both statistically significant for fathers and mothers (.25) and (.28). The fact that the A-C direct links between couple conflict and parenting were now no longer statistically significant supports our hypothesis that for both mothers and fathers, attachment style functions as a mediator, accounting for the association between couple conflict and negative parent-child relationships. That is, the increase in security of attachment following the reduction in couple conflict (a statistically significant effect of the intervention) helps to bring about a reduction in anxious/harsh parenting.

### *Anxiety/depression as mediator*

Our alternative mediation hypothesis was based on the possibility that the mediating mechanism linking couple conflict and anxious/harsh parenting was a reduction in more general anxiety rather than a specific reduction in attachment anxiety. For fathers, the beta weights on the A-B path from couple conflict to parents' psychological symptoms of depression and anxiety (.33) and the B-C path from psychological symptoms to negative parenting (.18) were statistically significant, while the A-C path was not statistically significant. Thus, reductions in fathers' self-reported anxiety and depression also helped to explain how post-intervention reductions in couple conflict were associated with reductions in parenting stress and harsh parenting. By contrast, although couple conflict was linked with mothers' symptoms of anxiety and depression (the A-B  $\beta = .26$ ), these symptoms were not significantly associated with their parenting stress and harsh/anxious parenting (the B-C path). Thus, attachment insecurity *and* psychological symptoms functioned as mediating links for fathers, but only attachment style served that role for mothers.

## Discussion

This report capitalized on data from an earlier evaluation of a couples group intervention for low-income families. The expanded data set that we created here, including measures of parents' attachment style and anxiety/depression, fit the SEM model very well, and provided new information about the role of mothers' attachment security within a family systems framework. First, adding measures of fathers' attachment style and parenting to a baseline data SEM containing identical measures from mothers resulted in a statistically significant increase in the explanation of variance in children's behavior, supporting our first hypothesis.

Before we added measures of attachment style and psychological symptom measures to the baseline-to-Post 2 SEM, reductions in post-intervention couple conflict were significantly associated with reductions in both fathers' and mothers' self-reported parenting stress and harsh or anxious parenting behaviors. Supporting our second hypothesis, we found that attachment style functioned as a mediator for both mothers and fathers, linking reductions in couple conflict with reductions in negative parenting. An alternative possibility, that parents' psychological symptoms of anxiety and depression mediated this link was found for fathers, but not for mothers.

### *The family system context of adult attachment style*

Our hypothesis that fathers' attachment style and negative parenting scores obtained before the intervention would add significantly to mothers' scores in explaining variations in the children's behavior problems was supported for these families. This finding buttresses our argument (Cowan et al., 2018) that when there are two parents, studies that include only mother-child dyads necessarily limit the power of the investigation to account for children's adaptive and maladaptive behavior. A second argument for the importance of paying attention to fathers is that when we do, we can see that beyond fathers' direct contribution to the quality of the father-child relationship, their experiences as partners and co-parents are also connected to their children's well-being and distress.

The family systemic view of attachment was reinforced by the intervention results. In a previous paper (Kline Pruett et al., 2019), we reported that in comparison with comparable wait-list controls, participants in the SFI couples group showed a reduction in the couples' overall conflict, arguments about the children, and violence during disagreement, all measured at Post 1 (2 months after the intervention) and extending until Post 2 (18 months after they entered the study). In the current investigation, we found that the post-intervention reductions in parents' conflict had an effect on reducing attachment insecurity (dimensions of anxiety and avoidance) for both mothers and fathers. We can conclude that couple conflict is not only correlated with attachment insecurity, but also that changes in couple conflict *affect* attachment insecurity. We speculate that when parents experience lower levels of conflict and violence in their relationship with each other, they have less anxiety about the potential loss of their relationship (also see Johnson, , 2008) and firmer expectations that their partner will support them in times of stress. It would make sense that this enables them to be attentive to their child(ren) in a supportive, responsive way. The

present analyses also found indirect intervention effects on father's anxiety and depression, increasing his ability to be attuned to his children; this was not true for mothers.

Note that we are not attributing all the changes in measures of family functioning to intervention effects. The size of the direct effect of the intervention was .40, while the indirect effects ranged between .27 and .38, all in the range designated as small. Yet it is also worth noting that these intervention effects are higher than the average effects of couples group [interventions](#) reported in reviews and meta-analyses of intervention studies (Cowan & Cowan, 2014; Hawkins & Fackrell, 2010).

### ***Mediators of the connection between couple conflict and negative parenting quality***

Consistent with our hypothesis, reductions in parents' attachment security mediated the connection between reduced couple conflict and reductions in negative parenting. That is, the attachment security measure explained the previously-found direct association between reduced couple conflict and reductions in negative parenting over the 18 months of the study for mothers and fathers. What has been described as "spillover" from couple to parent-child relationship quality appears to involve an effect of the improved interaction between the parents on their inner working models of intimate adult relationships, which in turn shapes their expectations and reactions toward their child. The shift [toward security](#) in a parent's working model of intimate relationships opens the door to more responsiveness, and presumably to their ability to set age-appropriate limits in relating to the child (Trumbell, Hibell, Mercado, & Posada, 2018). Thus, a systemic model of interacting variables at individual, couple, and parent-child levels appears to be operating, in which parents' attachment style plays an important part.

Anxiety/depression functioned as a mediator of the couple conflict-parenting connection for fathers but not for mothers. This finding raises a question about whether for fathers, attachment security as measured by the AAS questionnaire in this study, is an index of working models of intimate relationships or whether it represents a more general measure of anxiety. In either case, we found that anxiety/depression functions as a mediator, so that reductions in couple conflict alleviate anxiety/depression, which enables fathers to be less anxious and harsh in their relationships with their children.

For mothers, only the reduction in attachment insecurity following participation in the intervention can be interpreted as a mechanism that links couple conflict to anxious/harsh parenting. One possible interpretation of the pattern of results, then, is that couple conflict triggers symptoms of anxiety and/or depression in fathers, and attachment insecurity in mothers. This interpretation is consistent with the fact that post-intervention reductions in couple conflict affected the latent variable measure of anxiety/depression in fathers, but not in mothers.

### ***Limitations***

One limitation in interpreting the results of this study has to do with the fact that data concerning parents and children came from parents' self-reports, so the amount of

variance explained by the models in child behavior problems are almost certainly inflated. Nevertheless, we believe that in the context of a longitudinal study of an intervention, the results concerning the added value of fathers' contribution to attachment studies and the identification of attachment style and anxiety/depression as potential mediators of reduced couple conflict and more effective parenting styles for men deserves recognition.

As our measure of adult attachment security, we chose the Adult Attachment Scale (Collins & Read, 1990), in part because it focuses on current adult interpersonal relationships, in contrast with the interview tradition of measuring adult attachment (e.g., AAI), which focuses on recalled relationships with parents. While these are quite different approaches to the assessment of attachment security, we believe, as Roisman and colleagues do (2007), that despite the fact that correlations between developmental and social psychological measures of attachment security are low, both types of measures predict outcomes that are synchronous with attachment theory. Further research is needed to determine whether attachment insecurity measured in terms of relationship with one's parents also mediates the connection between conflict as a couple and parent-child relationship quality.

The effect sizes that we identified in our analyses accompanied consistent, statistically significant support for our hypotheses, and exploratory analyses were all within the range that Cohen (1988) defined as "small effects." Nevertheless, although small, the effects were generally larger than those found in intervention studies of couple relationship interventions (Cowan & Cowan, 2014). The pattern of findings suggests that there may be other mediators and moderators that affect the links between couple conflict and parent-child relationships, to be identified in future research.

### *Clinical implications of these findings*

Two of us have written elsewhere (Cowan & Cowan, 2018) about the need to break down the separate silos in current systems that offer health and mental health services separately to children, mothers, and fathers. We are not advocating that fathers always be included in interventions designed to prevent or reduce behavior problems in children. In some cases, this is not possible, and in others it may be inappropriate because of the potential danger of family violence. However, in this study in which more than 40% of the participants were referred by Child Welfare System staff because one or both parents had been suspected of or involved in earlier child abuse, neglect, or domestic violence, we found that the CWS-referred low-income parents were not significantly different from a low-income sample from the same communities – and they made equivalent positive gains after participating in the couples group intervention. The intervention also offered an opportunity to affect change in attachment security and in fathers' anxiety/depression, which bolstered their ability to provide for the child's safety and well-being.

We know that it has been possible – though difficult – to design interventions that lead to changes in attachment security (see Steele & Steele, 2018 for a compendium of successful attempts). One of the difficulties may be that most of the interventions have been directed to mothers and excluded fathers. Our results suggest that there is added value for the whole family when fathers are active participants, even in higher risk family situations. In addition to their contribution to the parent-child relationship, the presence of fathers in an intervention makes it possible to pay direct attention to the relationship between the parenting partners. The findings from the present study also

suggest that interventions attempting to reduce couple conflict should pay attention to internal issues of parents' attachment security and symptoms of anxiety and depression in order to facilitate the transfer from improvement in couple communication and parents' psychological distress to more effective parent-child relationships and child outcomes.

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