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Improvements in Coparenting Conflict and Child Adjustment Following an Online Program for Relationship Distress

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Abstract

Many children never receive treatment for their mental health symptoms – and those that do often receive it only after years of delay. Given that relationship and parenting conflict is an identified mechanism of child mental health symptoms, reducing distress in the parents' romantic relationship may help reduce this unmet need. In the current study, 213 couples with one or more children between the ages of 3 and 17 (inclusive) were randomized to receive the web-based OurRelationship program or to a 2-month waitlist condition. Intervention couples were also assessed in the year following the program. Couples in the OurRelationship program experienced a significant decrease in coparenting conflict during the intervention (Cohen's $d = -0.27$) but also a significant increase in coparenting conflict in the following year, reducing the long-term effects of the intervention (within-group $d = -0.20$ at 1yr follow-up compared to baseline). Additionally, parent-reported children's externalizing (within-group $d = -0.40$) and internalizing (within-group $d = -0.27$) symptoms significantly decreased from baseline to the 1yr follow-up. As hypothesized, improvement in relationship satisfaction during the program was significantly associated with a decrease in coparenting conflict which, in turn, was associated with reduction in both externalizing and internalizing symptoms in the children. These results indicate that online relationship-focused interventions offer an important, adjunctive approach to meet society's need for reducing children's mental health symptoms. Furthermore, the improvements in child functioning strengthen the evidence suggesting the cost-effectiveness of these relationship-focused interventions.

Keywords

Coparenting; Child Adjustment; Internalizing; Externalizing; Couple Intervention; Online; Internet

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A robust literature has demonstrated that children exposed to interparental conflict and marital distress are at risk for a host of deleterious outcomes, including both internalizing and externalizing symptoms (e.g., Harold & Sellers, 2018; Rhoades 2008). For example, increases in parents' marital distress and conflict predicted subsequent changes in adolescents' emotional and conduct problems (Cui, Conger, & Lorenz, 2005). The pathways between interparental conflict and child outcomes likely occur at both the child and family level. At the child level, increased exposure to interparental conflict is associated with increases in children's self-blame (Goeke-Morey, Papp, & Cummings, 2013) and impaired emotion regulation in response to the conflict (e.g., Davies & Cummings, 1994). Indeed, cognitive, affective, behavioral, and physiological reactions to interparental conflict have all been linked to both internalizing and externalizing symptoms in children (Rhoades, 2008). At the family level, parents who fight with one another may also be more likely to fight with their children, leading to impaired parent-child relationships (Harold & Sellers, 2018). It also may be difficult for parents who are fighting to effectively coparent, interfering with the creation of a healthy parenting environment (Margolin, Gordis, & John, 2001).

Relationship Interventions Improve the Romantic Relationship

Fortunately, both couple therapy (Lebow, Chambers, Christensen, & Johnson, 2012) and relationship education (Hawkins, Blanchard, Baldwin, & Fawcett, 2008) have been shown to improve relationship functioning across couples in the general population. Furthermore, couple-focused interventions have been shown to improve relationship quality (Cowan, Cowan, Pruett, Pruett, & Wong, 2009; Doss, Cicila, Hsueh, Morrison, & Carhart, 2014; Petch, Halford, Creedy, & Gamble, 2012) and dyadic coping (Zemp, Milek, Cummings, & Bodenmann, 2017) in parents of younger children and relationship satisfaction in parents of older children (Lavner, Barton, & Beach, in press). Furthermore, improvements in communication resulting from these programs has been found to mediate the program's effects on parent-reported reduced arguing in front of the children (Beach et al., 2014) – itself a key mechanism of the negative effects of relationship distress on child functioning (Rhoades, 2008).

Relationship Interventions Improve the Coparenting Relationship

Less studied is the effect of couple interventions on the coparenting relationship. For new parents, a group-delivered relationship workshop reduced observed coparenting competition (Shapiro, Nahm, Gottman, & Content, 2011). Similarly, a brief 4-session couple intervention for new parents significantly improved mothers' self-reported coparenting, an effect that persisted for two years following birth. Furthermore, fathers in the couple intervention reported medium-sized gains in coparenting two years after birth relative to the control group; however, these effects were not statistically significant due to the small sample size (Doss et al., 2014).

Couple interventions can improve coparenting in couples with older children as well. Couples with children receiving behaviorally-oriented couple therapy reported reductions in coparenting conflict – improvements that were maintained for at least two years following treatment (Gattis, Simpson, & Christensen, 2008). Additionally, couples with children ages

2–12 receiving a relationship education program designed to improve dyadic coping, experienced significantly larger decreases in coparenting conflict during the intervention than couples in the Triple P Parenting program and couples in a no-treatment control group (Zemp et al., 2017). Additionally, couples with older children who received a relationship education workshop reported a significant decrease in coparenting conflict (Adler-Baeder, Calligas, Skuban, Keiley, Ketring, & Smith, 2013) and increases in parenting alliance at the end of the workshop relative to their baseline (Carlson, Barden, Daire, & Swartz, 2014) as well as relative to a control group (Lavner et al., in press). Furthermore, improvements in relationship functioning are significantly associated with improvements in coparenting by the end of the workshop (Adler-Baeder et al., 2013) and post-intervention levels of relationship satisfaction (relative to a control group) significantly mediated long-term improvements in coparenting (Lavner et al., in press).

Results of the effect of couple interventions on low-income couples' coparenting are more mixed, however, with intervention effects dependent on whether within- or between-group designs were used. Relationship education delivered to low-income African American couples resulted in a significant improvement in coparenting relative to a control group (approximate Cohen's $d = 0.11$ – 0.24 ; Barton et al., 2018; Lavner et al., in press). However, in a meta-analysis of relationship education programs – heavily weighted towards two large-scale national dissemination efforts–low-income couples failed to show a significant between-group effect on couples' coparenting (Cohen's $d = 0.03$; Hawkins & Erickson, 2015). In contrast, uncontrolled designs consistently show significant within-group improvements in low-income couples' coparenting / parental alliance (Adler-Baeder et al., 2013; Carlson et al., 2014). For example, the same meta-analysis previously described found a significant, small-sized intervention effect on coparenting (within-group $d = 0.251$; Hawkins & Erickson, 2015).

Relationship Interventions Improve Child Functioning

Interventions focused exclusively on improving the romantic relationship have been mixed in their ability to improve child functioning. Couples in a relationship-focused workshop for parents of young children reported no improvements in their children's externalizing and internalizing problems in the 18 months following the intervention (Cowan, Cowan, Pruett, Pruett, & Wong, 2009). A study of behaviorally-oriented couple therapies demonstrated that parents of children aged 4–18 reported their child's adjustment (a mixture of internalizing and externalizing problems) significantly improved during the course of treatment (Gattis et al., 2008); however, these improvements were not maintained in the two years following treatment. However, in a third couples-focused intervention, couples reported significant within-group improvement in child behavior problems a year later (Bodenmann, Cina, Ledermann, & Sanders, 2008); furthermore, this improvement was mediated by mothers' reports of improvement in relationship quality and fathers' improvement in parenting (Zemp, Milek, Cummings, Cina, & Bodenmann, 2016).

Interventions that add a focus on coparenting/parenting have shown more consistent effects on child functioning. For example, a relationship/coparenting intervention for low-income African American families significantly reduced youth depressive symptoms; this reduction

was mediated by a decreases in parental report of arguments in front of the children (Barton et al., 2015). This same program has also been shown to reduce children's conduct problems – an effect that was partially mediated through youth-reported parenting behavior (Beach et al., 2016). Additionally, improvements in mother-rated marital conflict resolution and constructiveness resulting from an intervention with a focus on both the relationship and coparenting were linked with improvement in child adjustment (Cummings, Faircloth, Mitchell, Cummings, & Schermerhorn, 2008).

Coparenting as a Mediator of Improvements in Child Adjustment

The “spillover model” (Engfer, 1988) suggests that parents' relationship dysfunction creates conflict and lack of cooperation in the coparenting relationship, which in turn negatively impacts child adjustment. Studies have generally supported this model. For example, a decline in fathers' (but not mothers') relationship satisfaction predicts an increase in competitive coparenting and decreased parenting involvement (Christopher, Umemura, Mann, Jacobvitz, & Hazen, 2015). Similarly, an increase in love (Riina & McHale, 2015) and decrease in relationship conflict (Christopher et al., 2015; Riina & McHale, 2015) predict increased coparenting satisfaction, with some evidence that these associations are stronger for fathers than for mothers (Riina & McHale, 2015). Furthermore, these associations are bidirectional. Earlier supportive coparenting has been found to predict subsequent relationship satisfaction and earlier supportive coparenting buffered the negative effects of mother's parental stress on subsequent relationship satisfaction (Durtzchi, Soloski, & Kimmes, 2016).

Previous research also supports a link between coparenting and child functioning. In a meta-analysis of coparenting and child functioning (Teubert & Pinquart, 2010), the coparenting domains of cooperation, conflict, triangulation, and agreement were significantly but weakly related to children's externalizing ($|r| = .13$ to $.21$) and internalizing ($|r| = .13$ to $.23$) symptoms. Across all domains of coparenting and child functioning, these associations were not moderated by gender or age of the child or design of the study (cross-sectional versus longitudinal associations). Furthermore, there is some evidence to suggest that competitive or conflictual coparenting seems especially salient to child functioning. In the same meta-analysis (Teubert & Pinquart, 2010) conflictual coparenting explained a significantly greater proportion of variance in child externalizing symptoms than did triangulation. Furthermore, after controlling for cooperative coparenting and both parents' individual harsh parenting, competitive parenting at age two predicted children's ADHD and ODD symptoms at age 7. (Umemura, Christopher, Mann, Jacobvitz, & Hazen, 2015). Similarly, conflictual coparenting (but not supportive coparenting) mediated the effect of negative marital communication and their offspring's mental health as young adults (Shimkowski & Shroat, 2012).

Furthermore, a few studies have directly tested whether coparenting mediated the associations between relationship functioning and child outcomes. In a study of young children, observed triadic warmth significantly mediated the associations between marital functioning and children's externalizing and internalizing symptoms (Stroud, Meyers, Wilson, & Durbin, 2015). Additionally, although coparenting has not been tested as a

mediator of the effects of relationship interventions, negative coparenting (but not coparenting positivity) was found to partially mediate the impact of a coparenting intervention on children's externalizing symptoms in two separate samples (Feinberg & Jones, 2018; Solmeyer et al., 2014).

The Present Study

The overarching goal of the present study was to determine the effect of the online OurRelationship program on coparenting conflict and child adjustment as well to test whether improvement in coparenting conflict during the intervention was associated with improvement in child adjustment a year following the program. The OurRelationship program consists of approximately 7 hours of online content and 1 hour of calls with a staff coach. The program has been previously demonstrated to improve relationship functioning in several RCTs using nationwide samples (Doss et al., 2016; Roddy, Rothman, & Doss, 2018)

Based on previous studies of relationship-focused interventions, we hypothesized that couples in the OurRelationship program, relative to couples in the control group, would experience significantly greater reduction in coparenting conflict during the intervention. Second, although the existing literature on this topic is sparse, we hypothesized that couples in the OurRelationship intervention would report decreases in their children's externalizing and internalizing symptoms in the year following the intervention. Finally, we hypothesized that the reduction in coparenting conflict during the intervention would be associated with children's externalizing and internalizing symptoms.

Method

All procedures were approved by the University of Miami institutional review board. Further, the broader randomized controlled trial was registered on [ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT03292692) (NCT03292692).

Participants

The current study used data from 213 couples (426 individuals) who had at least one child (of any age) currently living with them (71% of the full sample); all couples participated as part of a larger RCT of the OurRelationship program (OR; Doss et al., 2016). All couples were opposite-sex, the majority (85.4%) were married, 7% were engaged, and 7.5% were cohabiting and not married/engaged. Average relationship length was 10.29 years ($SD = 7.74$). Individuals were primarily in their mid-thirties ($M = 36.41$, $SD = 8.7$). The majority of participants were Caucasian/non-Hispanic (68.8%), followed by 20% identifying as African American, 8.9% as Hispanic, 2.6% as Asian/Pacific Islander, 1.4% as American Indian/Alaskan Native, and 4% as other. Highest level of education earned varied, with 32.1% of participants with a high school diploma or GED, 22.9% had an associate's degree or vocational training, 26.9% had a bachelor's degree, 12.5% had a master's degree, and 5.4% had a doctoral degree. Sixty percent of individuals were employed full-time, with 13.4% employed part-time, 14.1% as full-time homemakers, 5.2% as students, and 7% unemployed. Median household income was \$70,000.

Couples had a mean of 1.63 children ($SD = 1.52$) who lived with them. Those children were generally elementary school-aged ($M = 8.21$ years old, $SD = 4.30$; $Mdn = 7.50$ years old) and approximately equally distributed across sex (48% girls and 52% boys).

Procedures

To be eligible to participate in the larger study, couples had to be opposite-sex and either married, engaged, or cohabiting for greater than 6 months. Both partners were required to reside in the United States and be 21–64 years of age. Further, at least one partner needed to report a relationship satisfaction score within the distressed range (<1 SD below the population mean on the Couples Satisfaction Index-4, Funk & Rogge, 2007) or both partners needed to score <0.5 SDs below the population mean on the same scale. Couples were excluded from participation if either partner reported moderate-severe suicidal ideation, fear or injury due to intimate partner violence within the previous 3 months, an ongoing affair, concrete plans to divorce, lack of access to high-speed Internet, or ongoing participation in couple therapy or refusal to refrain from attending couple therapy for the next three months (see Doss et al., 2016 for more information).

Eligible couples completed an initial assessment of all measures and were randomized to intervention (112 couples) or the waitlist condition (101 couples). Couples in both conditions completed assessments of relationship satisfaction at the middle and end of the intervention and coparenting conflict at the end of the intervention. Additionally, couples in the intervention group completed measures of relationship satisfaction, coparenting conflict, and child functioning five and 14 months after randomization (approximately 3 and 12 months following the end of the intervention). However, the waitlist control couples were not included in the follow-up assessments because they were provided the intervention two months after randomization.

Our Relationship Program Description

In the OR program, partners completed activities separately from one another through three phases: Observe, Understand, Respond. Partners came together at the end of each section to engage in a program-facilitated joint conversation during which partners shared with another what each had learned and completed. In the “Observe” phase, partners viewed feedback on the status of their relationship functioning, strengths, and problem areas; this feedback was designed to help couples select one or two topics of concern that they wanted to focus on throughout the program. The majority of couples chose a relationship problem as their focus (e.g., communication, intimacy) but only four percent of couples chose to focus on coparenting concerns (Roddy, Rothman, Cicila, & Doss, *in press*). During the “Understand” phase, partners worked to develop a “DEEP” understanding of the selected problem; specifically, they identified important *Differences*, *Emotions*, *External stressors*, and *Patterns* of communication that contribute to or exacerbate problem. Finally, in the “Respond” phase, couples learned about acceptance, self-change, healthy communication and problem solving strategies. The core program did not include any material specific to parenting or coparenting. Couples also met, via video teleconference or telephone, with a coach for four 15-minute appointments throughout the program. These appointments occurred at the start of the program in order to provide the couple with an orientation to the website, and at the

end of each of the three phases to review the couples' progress and respond to couples' questions (see Doss et al., 2016 for more information). In the current sample, 92% of participants completed the entire program.

Measures

Relationship Satisfaction.—The Couples Satisfaction Index (CSI; Funk & Rogge, 2007) was used to measure partners' global relationship satisfaction. Sample items from the CSI include “In general, how satisfied are you with your relationship?” and “I have a warm and comfortable relationship with my partner”. In the current study, the subscale demonstrated good reliability (Cronbach's alpha = .95 at baseline). On average, both mothers ($M = 7.02$, $SD = 4.14$) and fathers ($M = 8.74$, $SD = 4.29$) were below the clinical cutoff for relationship distress at baseline (13.5; Funk & Rogge, 2007).

Coparenting conflict.—The 5-item conflict subscale from the Coparenting Questionnaire (Margolin, Gordis, & John, 2001) was used to measure coparenting conflict. Items assess the frequency of conflict around different standards and rules in parenting, arguments regarding lack of support in parenting, and issues regarding undermining one another's parenting choices. The subscale has good reliability within both parents of preschool (Cronbach alpha = .84–.87) and pre-adolescent (Cronbach alpha = .85–.87) samples of children (Margolin et al., 2001). In the current study, the subscale demonstrated good reliability (Cronbach's alpha = .84 at baseline). At baseline, fathers ($M = 8.28$, $SD = 3.12$) and mothers ($M = 9.16$, $SD = 3.02$) reported, on average, they “rarely” to “sometimes” experienced coparenting conflict.

Child functioning.—Children's emotional symptoms and conduct problems were assessed via parental report using the 5-item Emotional Problems (internalizing) and the 5-item Conduct Problems (externalizing) subscales of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001). The SDQ is one of the most commonly utilized screening instruments for child problems (Stone, Otten, Engels, Vermulst, & Janssens, 2010) and has been shown to have good reliability and validity across numerous studies for children in the 4–12 year old age range (Stone et al., 2010) and in adolescents (Koskelainen, Sourander, & Koljonen, 2001).

In the current study, the internalizing ($\alpha = 0.75$) and externalizing ($\alpha = 0.71$) subscales demonstrated adequate reliability at baseline. If couples had only one child within the measure's age range (3–17 years old), both parents reported on the same child. If couples had more than one child in this age range, we used an assessment approach that ensured that which parent reported on which child was not confounded with sex or age of the parent or child. Specifically, the parent whose birthday fell earlier in the calendar year reported on the child who was born first in the calendar year and the parent who was born later in the calendar year reported on the child who was born last in the calendar year. Each parent reported on the same child at every assessment point. If couples had more than two children, we only collected data on the two children that met the inclusion criteria previously described. Clinical cut-offs were determined using national norms from caregiver reports of children aged 4–17 included in the National Health Interview Survey (and available at www.sdqinfo.com). At baseline, parents reported, on average, slightly elevated internalizing

($M = 2.18$, $SD = 2.28$; T-score = 53.2) and externalizing problems ($M = 2.15$, $SD = 2.06$; T-score = 55.3).

Analyses

All analyses were conducted in Mplus in a structural equation modeling framework. Data were collected at the individual level and nested within couples. Fathers and mothers were modeled separately but simultaneously and the free residuals of the indicators for each were correlated in order to account for the nested nature of these data.

For coparenting analyses comparing the treatment group to the waitlist group, as data were only collected at pretreatment and post treatment, a latent change score model was used (McArdle & Nesselroade, 2003). The pre-treatment score on the latent change score was constrained equal across fathers and mothers, as was the effect of treatment condition on the latent change score, in order to estimate the average effect for the couple (Figure 1).

With respect to coparenting conflict, only treatment couples were assessed over follow-up. Latent growth models were tested with either a linear or non-linear parameterization of time for three or four timepoints, respectively. Dropout was included as an auxiliary variable to account for missingness, as previous analyses demonstrated that couples who did not complete the program were less likely to complete follow-up assessments (Doss, Roddy, Nowlan, Rothman, & Christensen, 2019). For both fathers ($p = .006$) and mothers ($p = .024$), the quadratic term was significant and significantly improved the models [fathers $\chi^2(1) = 13.44$, $p < .05$; mothers $\chi^2(1) = 17.99$, $p < .05$] and was retained in all analyses for coparenting conflict over follow-up. Models were combined constraining the father's and mother's mean linear and quadratic terms equal in order to estimate the average effect for the couple (Figure 1).

A linear trajectory of child functioning was constructed using data collected at pretreatment, three-month follow-up, and twelve-month follow-up for intervention couples. We specified a two-group model with parents reporting on the same and different children in distinct groups. For couples reporting on the same child, the intercept of child functioning was constrained equal across parents. For all couples, the variances of the intercept and slope of child functioning were constrained equal between mothers and fathers, separately by group. Across all parents and children, the slope of child functioning was constrained equal across groups and parents in order to present an average effect (Figure 2).

Latent growth curve models for relationship satisfaction were specified separately but simultaneously for men and women with variances of the slope constrained equal. The mean of the slopes of relationship satisfaction were constrained equal across men and women to present an average change.

Model fit was assessed according to the following criteria (Kline, 2015): root mean square error of approximation (RMSEA) $< .06$, comparative fit index (CFI) $> .95$, and standardized root mean square residual (SRMR) $< .08$. As the chi-squared test of model fit is highly dependent on sample size, we chose to focus on RMSEA, CFI, and SRMR. Because we are reporting very specific effects (e.g. averaging across mothers and fathers for a combined

estimate of slope), additional model fit is omitted below. The association models were developed by combining previously tested models; therefore, additional fit statistics are not reported.

Results

Aim 1: Changes in Coparenting Conflict

Change in coparenting conflict was modeled using a latent change score structural equation model to assess differences between pre- and post-treatment scores ($N = 213$ couples). The coparenting model had close fit to the data [$\chi^2(8) = 20.90, p = .007$; RMSEA = 0.087; CFI = .957; SRMR = 0.085]. There was a significant decrease in coparenting conflict during the intervention ($b = -0.282, SE = 0.040, p < .001$), and there was a significant effect of condition ($b = -1.201, SE = 0.376, p = .001$), such that couples in the treatment group reported a significantly greater decrease in coparenting conflict from pretreatment to post-treatment than did control couples (Cohen's $d = -0.274$; see Table 1 and Figure 3). Across mothers and fathers, there was a 65% reduction from baseline to post-treatment in the number of couples who reported that they “usually” or “always” experienced coparenting conflict.

Change in coparenting conflict through 12-month follow-up was only available for intervention couples ($N = 112$ couples). The quadratic latent growth curve model fit the data [$\chi^2(12) = 15.08, p = .24$; RMSEA = 0.048; CFI = .991; SRMR = 0.054]. Within the intervention group, parents significantly initially decreased self-reported coparenting conflict ($b_{linear} = -0.407, SE = 0.104, p < .001$); however, there was a significant positive quadratic term indicating that these improvements were partially lost over follow-up ($b_{quadratic} = 0.027, SE = 0.007, p < .001$; within-group $d = -0.198$ at 14-month follow-up relative to baseline; Figure 3). As a result, parents did not report significantly less coparenting conflict a year following the intervention than they did at the beginning of the intervention [$F(1,45.149) = 2.892, p = 0.094$]. However, the number of couples “usually” or “always” experiencing coparenting conflict decreased by 55% from baseline to 14-month follow-up.

Aim 2: Change in Children's Emotional and Conduct Problems

Change in children's emotional and conduct problems from pre-treatment to 12-months follow-up was only available from the 85 couples in the intervention group who also had children in the age range of the measure (3–17 years of age). Forty-four couples reported on the same child and 41 couples reported on different children ($n = 126$ children).

The latent growth curve model for child emotional problems fit the data according to some indexes [$\chi^2(29) = 20.80, p = .87$; RMSEA = 0.000; SRMR = 0.168]. Children significantly decreased in parent-reported emotional problems from pre-treatment to 14-month follow-up ($b = -0.043, SE = 0.015, p = .004$), with a within-group effect size in the small range ($d = -0.267$). The percentage of children classified in the elevated range (a T score > 59) of internalizing symptoms fell from 24.7% at baseline to 5.9% at follow-up, a 76% reduction.

Likewise, the latent growth curve model for child conduct problems had close fit to the data according to some indexes [$\chi^2(32) = 35.81, p = .29$; RMSEA = 0.053; SRMR = 0.194]. Children significantly decreased in parent-reported conduct problems from pre-treatment to 14-month follow-up ($b = -0.059, SE = 0.016, p < .001$), with a within-group effect size in the medium range ($d = -0.395$). The percentage of children classified in the elevated range (a T score >59) of clinical symptoms fell from 36.5% at baseline to 10.6% at follow-up, a 71% reduction.

Aim 3: Associations between Change in Satisfaction, Coparenting Conflict, and Child Functioning

First, we tested if change in relationship satisfaction, the direct target of the intervention, was related to change in coparenting conflict. The latent growth curve model of relationship satisfaction fit the data [$\chi^2(48) = 86.45, p < .001$; RMSEA = 0.097; CFI = 0.941; SRMR = 0.088], and couples increased relationship satisfaction over the course of the program ($b = 0.581, SE = 0.056, p < .001$).

We then combined the latent growth curve model for relationship satisfaction and the latent change score model of coparenting conflict from Aim 1. The slope of relationship satisfaction was related to the latent change score of coparenting conflict such that an increase in satisfaction was significantly related to a decrease in coparenting conflict ($b = -2.727, SE = 0.940, p = .004$).

To test whether change in coparenting conflict was associated with change in child functioning, we combined the latent change score model of coparenting conflict from Aim 1 and the latent growth curve models of child functioning from Aim 2. Results indicated that a decrease in coparenting conflict was associated with a decrease in emotional problems ($b = 0.022, SE = 0.004, p < .001$). Likewise, change in coparenting conflict was related to change in child conduct problems such that decrease in conflict was associated with decrease in conduct problems ($b = 0.017, SE = 0.005, p < .001$)¹.

Discussion

The current study demonstrated that a brief, relationship-focused couple intervention had significant effects on coparenting conflict and child functioning for at least a year following the intervention. As expected, improvement in relationship satisfaction was significantly associated with a decrease in coparenting conflict which, in turn, was significantly associated with improvement in children's internalizing and externalizing symptoms.

Program Effects on Coparenting Conflict

On average, couples in the intervention condition experienced significant, but small-sized (Cohen's $d = 0.27$), decreases in coparenting conflict during the program. The significant decrease in coparenting conflict during the intervention replicates previous studies of

¹We also attempted to directly test the mechanism of relationship satisfaction on child functioning through coparenting conflict; however, building three latent growth models separately for two parents in a two group design (12 models simultaneously) was too complex for the sample of 85 couples. Therefore, statistical tests of mediation were not conducted.

couple-focused interventions (Adler-Baeder et al., 2013; Barton et al., 2018; Carlson et al., 2012; Doss et al., 2014; Gattis et al., 2008; Lavner et al., in press) in demonstrating that focusing on strengthening the romantic relationship can have spillover effects into the coparenting domain. Indeed, direct tests of this hypothesis revealed that improvement in relationship satisfaction – the target of the intervention – was associated with improvement in coparenting conflict.

Furthermore, the effect of the OR program on self-reported coparenting conflict is broadly comparable to those achieved by interventions that directly target coparenting. For example, the largest study of the Family Foundations coparenting intervention did not yield a significant effect on self-reported coparenting at post-test compared to a control group (Feinberg, Jones, Hostetler, Roettger, Paul, & Ehrental, 2016). The initial trial of the same intervention revealed a significant program effect on self-reported coparental support (Cohen's $d = 0.45$) but not on coparental undermining (the construct closest to that used in the present study; Feinberg & Kahn, 2008). Intriguingly, despite not finding differences on self-reported coparenting measures, the coparenting intervention had significant effects on several domains of *observed* coparenting (Cohen's $|d| = 0.22-0.37$), raising the possibility that the OR program's effect on observed coparenting could be even larger than that documented by the self-reported coparenting measure.

Unfortunately, in the year following the program, intervention couples reported significant relapse in those initial gains such that, by a year after finishing the program, couples did not experience less coparenting conflict than when they began the program (within-group $d = -0.20$). This relapse stands in contrast to previous studies of intensive couple therapy (Gattis et al., 2008) or couple interventions during the transition to parenthood (Doss et al., 2014). However, in the present study, only nine percent of couples reported that they “usually” or “always” experienced coparenting conflict before starting the program; in contrast, a year after the end of the program, only three percent reported that same elevated level of coparenting conflict. Therefore, while coparenting conflict was not a common problem for most couples, the program seems to have been effective in reducing that conflict for couples with initial difficulties in those areas.

Program Impacts on Child Adjustment

In the 14 months after starting the program, parents reported that their children experienced significant but small-sized reductions in both internalizing and externalizing symptoms. Furthermore, the program was effective in decreasing symptoms in children with higher initial symptoms levels at baseline; indeed, there was a 71–76% reduction in the number of children who had elevated (T score >59) internalizing symptoms (25% to 6%) and externalizing symptoms (37% to 11%) from baseline to 14 months later. These results add to the growing literature indicating that interventions focused exclusively on improving the relationship can have spillover effects on child functioning. For example, parent-reported child behavior problems decreased in the year following a relationship-focused intervention (Bodenmann et al., 2008) – and this decrease was mediated in part by mothers' reports of improvement in relationship quality (Zemp et al., 2016). In contrast, other couple-focused

interventions failed to find a significant improvement in child adjustment one to two years after the intervention (Cowan et al., 2009; Gattis et al., 2008).

The significant decreases in internalizing and externalizing symptoms in the present study are especially notable for two reasons. First, the OurRelationship intervention did not include the children; furthermore, the program also did not include any content pertaining to coparenting or children's internalizing/externalizing problems. Most interventions targeting couples have included a focus on both coparenting and relationship topics and many have also include the child/youth in the intervention (Barton et al., 2015; Beach et al., 2016; Cummings et al., 2008). By focusing exclusively on the relationship, the present study provides stronger evidence for the spillover from the relationship domain to child functioning.

The significant decrease in children's symptoms is also notable because, although improvement in child functioning was significantly associated with a reduction in coparenting conflict, the improvement in child outcomes persisted over follow-up despite relapses in coparenting conflict. This differential maintenance suggests that improved coparenting does not fully explain reductions in children's internalizing and externalizing symptoms. So, what else could be accounting for these differences? One possibility is reductions in parental conflict brought about by improvements in relationship satisfaction, which have been shown to maintain in the year after the intervention in this same sample (Doss et al., 2019), reduced children's mental health symptoms. Parental conflict has been shown repeatedly to be related to children's internalizing and externalizing symptoms (e.g., Harold & Sellers, 2018; Rhoades 2008) and arguments in front of the children mediate the effects of relationship education on adolescents' depressive symptoms (Barton et al., 2015). A second possibility is that improvements in parents' mental health yielded decreases in children's mental health symptoms. Indeed, in this same sample, the OurRelationship program significantly improved couples' perceived stress and both anxious and depressive symptoms (Doss et al., 2016); these gains were either maintained or strengthened in the year following the program (Doss et al., 2019). Furthermore, mother's depressive symptoms and fathers' stress have both been found to impact children's internalizing and externalizing symptoms (Feinberg & Jones, 2018). A third possibility is that the program improved parenting in addition to coparenting. Although parenting was not measured in the present study, mother's positive parenting has been shown to improve following a couple-focused intervention (Morrill, Hawrilenko, & Cordova, 2016). Furthermore, youth-reported change in parenting behavior following a relationship intervention partially mediated the effect of that intervention on adolescents' conduct problems (Beach et al., 2016).

On first glance, the magnitude of changes in internalizing (within-group $d = -0.27$) and externalizing (within-group $d = -0.40$) symptoms in the present study appear roughly equivalent to the follow-up effects of psychotherapy for children's depression (between-group $d = 0.22$) and conduct problems (between-group $d = 0.44$; Weisz et al., 2017). However, comparisons of children in this study to children receiving psychotherapy for their psychological problems are problematic because our control group was not retained through the follow-up assessments. As a result, our estimates of change include both the effect of the intervention as well as any natural remission that may have occurred (i.e., within-group

effect sizes). In contrast, effect sizes from the child therapy literature (Weisz et al., 2017) rely on comparisons to control groups, which isolate the effect of treatment.

Limitations and Future Directions

There are three important limitations that should be considered in interpreting results from the present study. First, although it was possible to make causal statements about the intervention's effect on coparenting conflict at the end of the intervention, causal statements about the program's effects on coparenting a year later were not possible because the waitlist control group received the intervention after two months. Additionally, because child functioning was not assessed at post-intervention, all estimates of the program's effect on child functioning involved change from baseline rather than group differences resulting from random assignment.

Second, we relied solely on parent reports of child symptomology. Parent reports are a reliable source of information and, even when parents are directly involved in a child's treatment (e.g., in parent training or family therapy), intervention effects using parent and child report yield similar effect sizes (Weisz et al., 2017). However, parent reports may have been somewhat biased in the current study. Specifically, parent report may have shown greater change than would have child or teacher reports given that relationship satisfaction, depression, and other aspects of parents' lives were also improved by the intervention (Doss et al., 2019), unlike what would be expected in child-focused treatments. While it is possible that improvement in parents' relationship and individual functioning created objective improvement in child functioning, it is also possible that they also improved parents' subjective impressions of their children.

A third limitation of the present study is that we were not able to perform statistical tests of mediation because of sample size limitations and the complexity of our statistical models. Although gain in relationship satisfaction attributable to the intervention was significantly associated with decrease in coparenting conflict – and the decrease was significantly associated with improvement in child functioning – we were not able to provide a statistical test of that indirect effect controlling for the direct effect of change in relationship satisfaction.

Future studies examining the impact of relationship interventions on child functioning should utilize larger samples, data from several reporters, and maintain the control group for longer periods of time (instead of providing the intervention at post-treatment) so that fully-causal pathways can be tested. Additionally, moderators of the intervention effects – especially child age, gender, and relationship length/type – should be examined. Finally, given that child mental health symptoms are more common in disadvantaged populations, future studies should seek to extend these findings into underrepresented samples.

Implications

Our results indicate that a program narrowly focused on improving the romantic relationship can have spillover effects resulting in improvements in children's internalizing and externalizing symptoms as well as couples' coparenting conflict. As a result, relationship-focused interventions appear to have systemic effects that may also address children's

symptoms, even when the children are not a direct focus of services. These spillover effects are important given that parental conflict has been shown repeatedly to be related to children's internalizing and externalizing symptoms (e.g., Harold & Sellers, 2018; Rhoades 2008).

Additionally, improvements in child functioning strengthen the evidence suggesting the cost-effectiveness of couple interventions (Georgia Salivar, Rothman, Roddy, & Doss, in press; Madsen, Tomfohr, & Doss, 2017). As hypothesized by a family systems approach, improving couples' romantic relationship has important trickle-down effects across a broad number of domains. This study provides further evidence that improvement in child functioning can be added the growing list of replicated, long-term effects of couple-focused interventions – a list that already includes relationship functioning, mental health, physical health, and job functioning.

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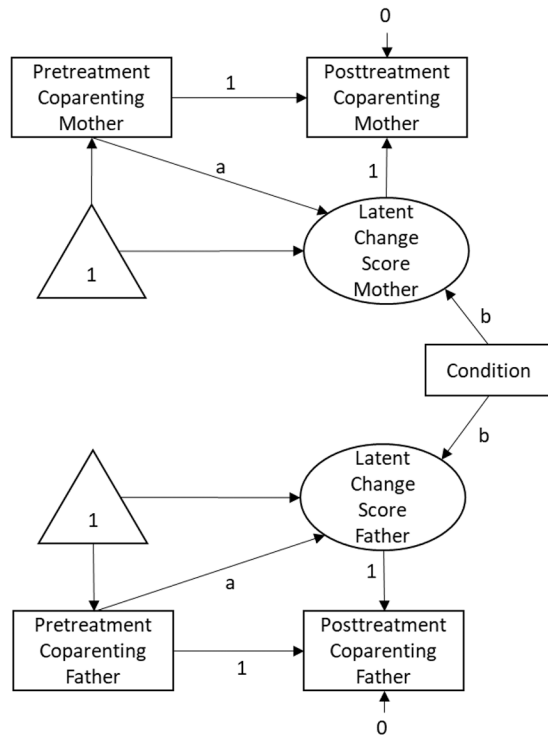
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Latent Change Score Model for Pre to Post Coparenting



Latent Growth Model for Pre to Follow-up Coparenting

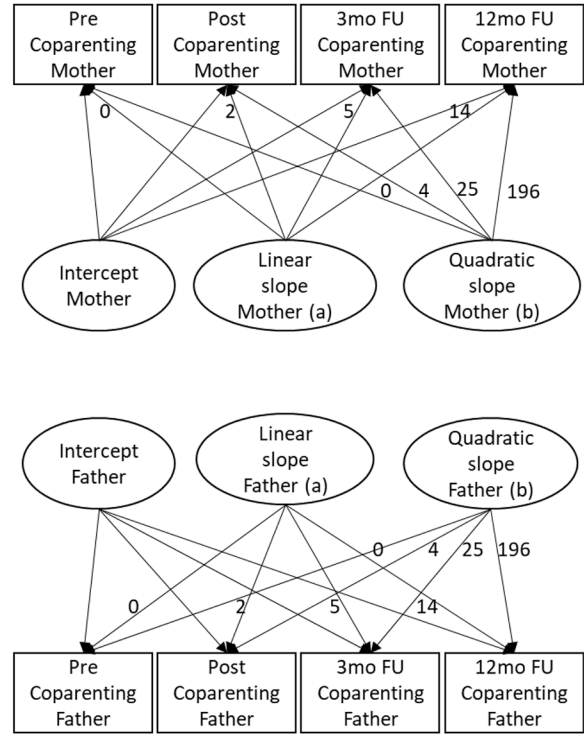


Figure 1:

The left shows the pre to post latent change score model used for Aim 1. The right shows the pre to follow up latent growth curve model used for Aim 1; all loadings on the intercept were set to 1 but omitted from figure for simplicity. Linear and quadratic slopes were constrained equal across mothers and fathers to present an average effect.

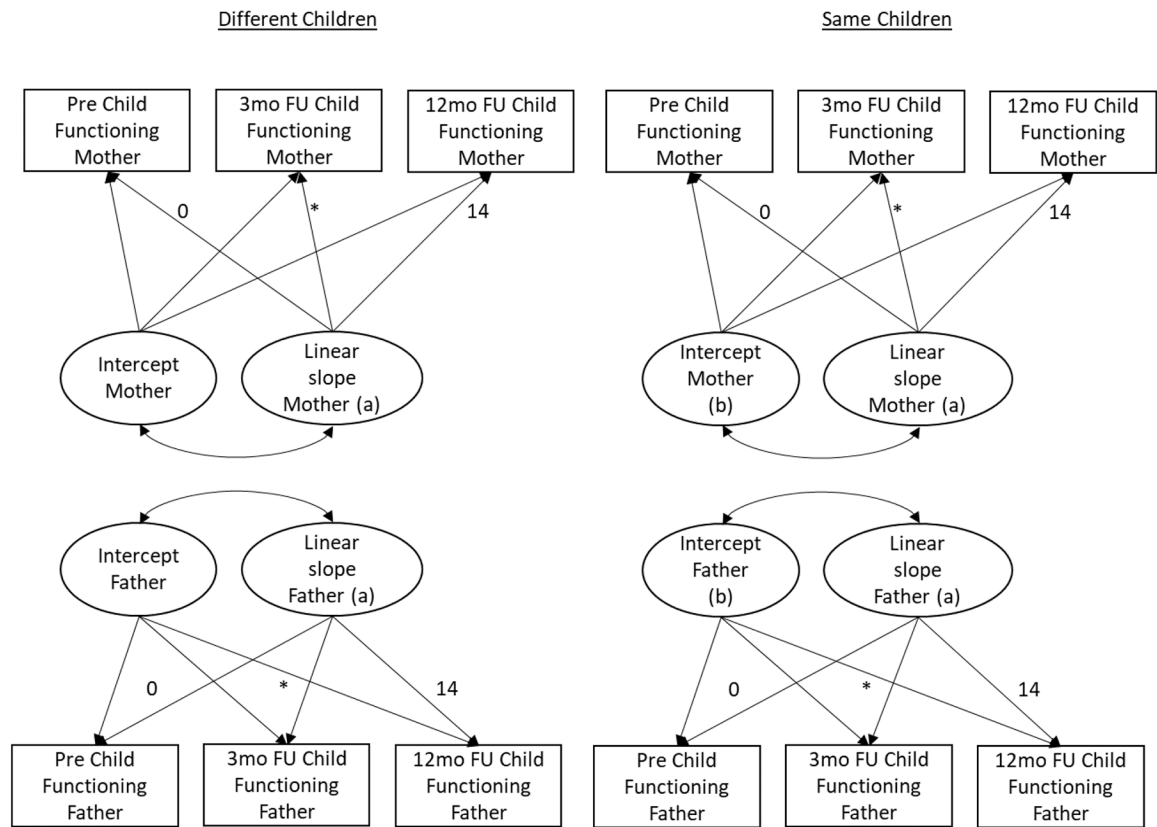


Figure 2: The two group design employed for Aim 2. All loadings on the intercepts were set to 1 but omitted here for simplicity. Intercepts were constrained across mothers and fathers in the Same group; Slopes were constrained across mothers and fathers as well as across Same and Different groups. * = loadings left free to vary.

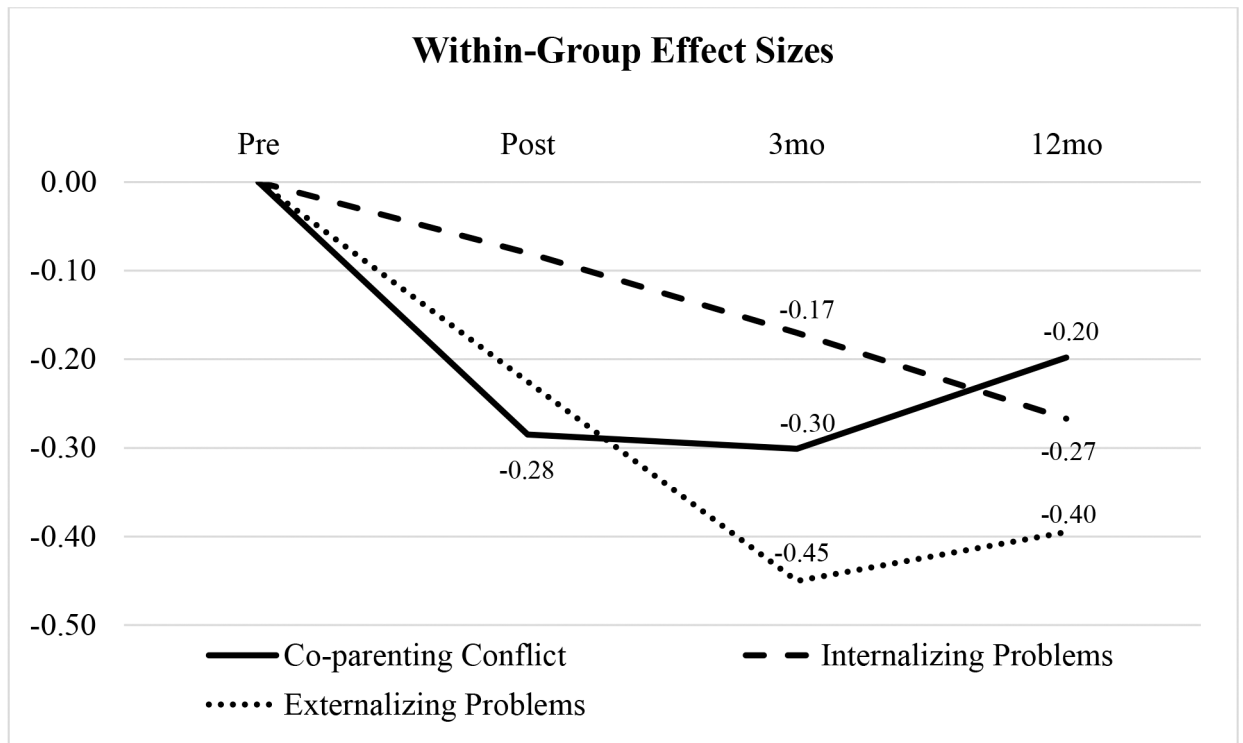


Figure 3:
Within-Group Changes Over Time

Table 1

Descriptive Statistics

	Pretreatment		Post treatment		3 mo Follow-up		12 mo follow-up	
	M (SD)	Above Cutoff	M (SD)	Above Cutoff	M (SD)	Above Cutoff	M (SD)	Above Cutoff
<i>Intervention Group</i>								
Fathers								
Co-parenting	7.61 (4.06)	5.4%	6.47 (3.93)	2.7%	6.41 (4.01)	1.8%	6.77 (3.57)	1.8%
Internalizing Problems	2.00 (2.04)	23.5%			1.72 (2.14)	8.2%	1.70 (2.04)	7.1%
Externalizing Problems	2.06 (1.87)	30.6%			1.26 (1.48)	10.6%	1.28 (1.63)	9.4%
Mothers								
Co-parenting	8.40 (4.60)	12.5%	7.07 (4.22)	3.6%	6.99 (4.77)	6.3%	7.19 (4.27)	6.3%
Internalizing Problems	2.23 (2.36)	25.9%			1.75 (1.92)	14.1%	1.20 (1.82)	4.7%
Externalizing Problems	2.41 (2.01)	42.4%			1.46 (1.82)	12.9%	1.76 (2.07)	11.8%
<i>Waitlist Group</i>								
Fathers								
Co-parenting	7.60 (4.03)	6.9%	7.97 (4.47)	5.0%				
Mothers								
Co-parenting	8.08 (4.47)	7.9%	8.02 (4.95)	7.9%				

Note: Cutoff for co-parenting was ≥ 15 ; for internalizing ≥ 3.4 ; for externalizing ≥ 2.9 .