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Abstract

One pressing issue facing parenting interventions for disruptive behaviors of young children is forecasting who will benefit from participation. The purpose of this study was to examine four personal and interpersonal predictors (i.e., parent depressive symptoms, parent education, coparent conflict, and marital status) of engagement (i.e., number of sessions attended) in and child outcome (i.e., problematic behavior) of a parenting group curriculum program targeting young children's disruptive behaviors. Participants were 39 parents (34 mothers and 5 fathers; $M = 38.6$ years) who expressed an interest in improving the behavior of their 3- to 6-year-old child (19 females and 20 males; $M = 4.50$ years). Findings indicated that one baseline personal variable, parent depressive symptoms, predicted change in child disruptive behavior at follow-up, and two baseline interpersonal variables, marital status and coparent conflict, predicted engagement in treatment (i.e., number of sessions attended). Implications and directions for future research are discussed.

Keywords

parenting education, child disruptive behaviors, predictors of outcome

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Introduction

Disruptive behaviors are among the most common reasons for the referral of young children to mental health clinics (Reyno & McGrath, 2006; Zisser & Eyberg, 2010). Although teaching parents how to address these types of problem behaviors through use of behavioral parenting skills (e.g., positive reinforcement, differential attention, clear instruction sequences, and consequences for inappropriate behavior) is recognized as the most effective intervention (for review, see Eyberg, Nelson, & Boggs, 2008; McMahon, Wells, & Kotler, 2006; Weisz & Gray, 2008), relatively less is known about who will benefit most from participating in such interventions. For example, Reyno and McGrath (2006) noted that although generally effective, not all families benefit from parent-training interventions. This has led to studies attempting to identify predictors of treatment outcome. However, as Eyberg et al. noted in their 2008 review of the literature, there is “little understanding of the variables that predict . . . change in behaviors” (p. 232) from these interventions. More recently, after a review of the literature, Gardner, Hutchings, Bywater, and Whitaker (2010) concluded that parent (e.g., depressive symptoms and single-parent status), but not child (e.g., gender), risk factors predict poorer outcomes of parenting interventions. These outcomes can include not only improvement in child behavior but parental engagement and retention in therapy (see Ingoldsby, 2010). As Ingoldsby (2010) notes, low engagement (i.e., many parents receive less than one half of the planned therapy) and retention (i.e., 20%-80% terminate prematurely) are major issues for family-based intervention programs, including behavioral parenting programs (Mah & Johnson, 2008; Nock & Kazdin, 2005).

Building on the work of Gardner et al. (2010) and Ingoldsby (2010), the purpose of the current study was to examine four parental risk factors (i.e., parent depressive symptoms, coparent conflict, parent education, and marital status) as predictors of engagement, retention, and child outcome of a group curriculum (GC) program for parents of young children displaying disruptive behaviors. This curriculum, which has been demonstrated to be effective in uncontrolled (Conners, Edwards, & Grant, 2007) and controlled (Forehand et al., in press) studies, is based on two evidenced-based interventions: a therapist-administered individual program for parents (Helping the Noncompliant Child; McMahon & Forehand, 2003) and a self-administered program for parents (*Parenting the Strong-Willed Child* [PSWC]; Forehand & Long, 2002, 2010; Forehand, Merchant, Long, & Garai, 2010).

Each of the four parent risk factors that was examined as predictors of outcome in the current study can be conceptualized as either a personal or an

interpersonal variable. Specifically, personal variables pertain to characteristics of the parent, whereas interpersonal variables involve relationships of the parent within the family (see Conger, 1981; Forehand, Wells, McMahon, Griest, & Rogers, 1982; McMahon & Forehand, 2003). Furthermore, within each of these two domains, variables can be characterized as structural or fixed (i.e., typically are not changed through psychological intervention) or psychological (i.e., can be changed through psychological intervention; Jones, Forehand, Brody, & Armistead, 2003; Sterrett, Jones, Forehand, & Garai, 2010). Based on the existing literature, we selected one structural (parent education) and one psychological (depressive symptoms) variable for study from the personal domain and one structural (marital status) and one psychological (coparent conflict) from the interpersonal domain.

In a recent meta-analysis of predictors of two outcomes (i.e., behavior change and treatment dropout) resulting from behavioral parent training, Reyno and McGrath (2006) found that both personal (maternal depressive symptoms and parental education) and interpersonal (single-parent status) variables were associated with poorer child treatment outcome, with effect sizes in the small range. Interestingly, findings have not been homogeneous. For example, one study found that lower parental education was associated with better treatment outcome (Mackenzie, Fite, & Bates, 2004), a second found no relation between maternal depressive symptoms and child behavior change (Kazdin & Whitley, 2006), and a third study found that more depressive symptoms were associated with better treatment outcome (Gardner et al., 2010). Resistance from higher educated parents to structured behavioral intervention programs (Mackenzie et al., 2004) and higher pretreatment ratings of child disruptive behaviors by parents with high depressive symptoms (resulting in more opportunity for child behavior to change with intervention; Gardner et al., 2010) have been offered as possible explanations for some of these unexpected findings.

When an indicator of engagement, treatment dropout, was examined as the outcome variable in the Reyno and McGrath (2006) meta-analysis, one personal variable, lower parent education, but not maternal depressive symptoms, and one interpersonal variable, single-parent status, were associated with more dropouts, with effect sizes in the small range. More recently, Brotman et al. (2011) replicated these findings as single-parent status and lower parent education predicted attendance at a parenting group intervention. In general, findings across studies and reviews suggest that some variables forecast not only child outcome but also engagement, whereas other variables forecast specific outcome.

Based on Reyno and McGrath's (2006) meta-analysis findings and some of the demographics of our sample (highly educated with low levels of

depressive symptoms), which have yielded unexpected findings in prior studies (e.g., Gardner et al., 2010; Mackenzie et al., 2004), parent marital status is the one construct receiving sufficient support across child behavior outcome and parental engagement in therapy to offer a hypothesis: Single-parent status will be associated with poorer outcome for both child outcome and engagement. For two of the remaining construct variables we examined, parental education and parent depressive symptoms, we tested two competing hypotheses: lower education and more depressive symptoms will be associated with poorer treatment outcome (overall conclusion of Reyno & McGrath, 2006) versus with better treatment outcome as found by Gardner et al. (2010), Hartman, Stage, and Webster-Stratton (2003), and Mackenzie et al. (2004). Finally, due to the absence of research to guide a hypothesis, we do not offer a hypothesis for coparent conflict and its association with either of the outcomes assessed. Consistent with Reyno and McGrath's call for research that considers interrelationships among predictors, we not only examined the four predictors individually but also simultaneously to ascertain their relative contribution to child treatment outcome and engagement.

Method

Participants

Participants were 39 parents (34 mothers and 5 fathers; $M = 38.6$ years) from areas in and surrounding Burlington, Vermont who expressed an interest in improving their 3- to 6-year-old child's (19 females and 20 males; $M = 4.50$ years) behavior. Most parents had at least a college degree (84.6%), were European American (92.3%), were married (79.5%), and worked outside the home (74.4%). The sample was representative of the community from which it was drawn.

Eligibility requirements included the following: (a) having a 3- to 6-year-old child, (b) English as a first language, and (c) at least 50% legal custody with the child living with the parent at least 5 of the 7 days per week for the next 2.5 months.

Procedures

All procedures were approved by the Institutional Review Board (IRB) at the University of Vermont. The sample was recruited by flyers posted in public places and pediatric medical offices and by advertisements in community newspapers from September 2009 through March 2010. A total of 70 parents

contacted the project by phone and left a contact number. Of these parents, 61 were screened and 56 were eligible. Of these, 39 elected to participate and completed an initial in-person individual assessment in a private room in the psychology department. The parent was consented and completed a baseline packet of questionnaires.

The 39 parents were recruited in two cohorts with 20 and 19 parents in Cohorts 1 and 2, respectively. In each cohort, parents were randomly assigned to the GC intervention or a wait-list control group. Following 6 weeks, parents were reassessed (postassessment) and then the wait-list control parents received the GC intervention and another assessment. Finally, all parents initially assigned to the GC or to the wait-list control group completed a follow-up, 2 months after receiving the GC. With one exception, only the baseline and follow-up assessments were examined in the current study. The one exception involved also examining coparent conflict at the postassessment.

Group Curriculum (GC)

Group sessions were conducted in the psychology department and were led by two facilitators, an individual with a degree in social work and one of two advanced graduate students in clinical psychology. A licensed clinical psychologist served as the supervisor.

The GC (Long & Forehand, 2002) is based on the book PSWC (Forehand & Long, 2002, 2010). Parents were given a copy of the PSWC book (Forehand & Long, 2002). The GC program consisted of six 2-hr weekly sessions. Classes involved didactic instruction, discussion, and role-playing of parenting skills. In each session, parents were taught material that was covered in specific chapters in the PSWC book. At the end of each session, both facilitators and all parents completed fidelity checklists. These detailed checklists examined whether key components of the GC were covered. Both the facilitators and the parents reported that 91% of the content was covered.

Child management skills covered in the six sessions consist of skills intended to reduce negative parent-child interactions by increasing attending and verbal rewarding for desirable child behavior, ignoring undesirable child behavior, providing clear instructions to the child, and using time-out for noncompliance and positive reinforcement for compliance (see Forehand et al., 2011, for more details). Parents are given weekly homework assignments that focus on practicing the skills at home with their child. These homework assignments include reading selected chapters from PSWC.

Measures

Predictors

Demographic Questionnaire. Parents were asked to report their birth date, gender, race, educational level (reported on a 7-point scale), and marital status (recoded as not married or married) as well as the birth date and gender of the target child. The demographic variables of primary interest were educational level and marital status.

Parent depressive symptoms. Parent depressive symptomatology was measured using the Depression subscale of the Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982). Five of six items of the subscale were used, as IRB required not asking about suicide potential. Each item was rated on a 4-point Likert-type scale ranging from 0 (*not at all*) to 3 (*extremely*). Scores can range from 0 to 15, with higher scores indicating more elevated levels of depressive symptomatology. Coefficient alpha for the BSI in the current sample was .81.

Coparent conflict. This construct was assessed by two items from the Conflict subscale of the Parenting Convergence Scale (PC; Ahrons, 1981). The two items were completed in reference to a person who helps raise the child (e.g., spouse and child's grandparent). The two items ("When you and this other person [coparent] talk about how to raise this child, how often is the conversation hostile or angry?" and "Do you and this other person [coparent] have big differences of opinion as to how to raise this child?"), each of which are scored on a 5-point Likert-type scale (1 = *not at all* and 5 = *a lot*), were highly correlated ($r = .56, p < .01$), suggesting that they are measuring a common factor about parental conflict over child rearing.

Outcomes

Eyberg Child Behavior Inventory (ECBI). The ECBI is a 36-item parent-completed rating scale that assesses child disruptive behaviors (e.g., has temper tantrums and refuses to obey; Eyberg & Pincus, 1999). The measure has a 7-point Intensity scale (1 = *never* and 7 = *always*), which measures the intensity of each problem behavior, and a Problem scale, which identifies whether each behavior is perceived as a problem (0 = *no* and 1 = *yes*). The ECBI has substantial reliability and validity data (see Eyberg & Pincus, 1999). The Intensity scale total score can range from 36 to 252 and the Problem scale score can range from 0 to 36. Mean scores for the standardization sample for the two scales are 96.6 ($SD = 35.2$) and 7.1 ($SD = 7.7$; Eyberg & Pincus, 1999). A total score of 131 and above on the Intensity scale indicates significant psychopathology and a score of 15 and above on the Problem scale indicates significant

concern by the parent about the child's problem behavior (Eyberg & Pincus, 1999). The alpha coefficients for the Intensity and Problem scales in the current sample were .87 and .82, respectively, when each was averaged across baseline and follow-up assessments.

Engagement. Two indicators of engagement were assessed: number of sessions attended and retention at follow-up. Number of sessions attended could range from 0 to 6 and retention was a dichotomous variable: completed or did not complete the follow-up assessment.

Results

Preliminary Analyses

Of the 39 parents, 36 (92%) were retained from baseline to follow-up. Analyses were conducted with the 36 participants who completed follow-up and, using intent-to-treat analyses, with the 39 parents who were enrolled. As the results did not differ, only the more stringent intent-to-treat analyses are reported.

Mean number of sessions attended by participants was 3.82. The percentage of participants attending sessions was as follows: 0 sessions = 12.8%, 1 session = 5.1%, 2 sessions = 7.7%, 3 sessions = 7.7%, 4 sessions = 12.8%, 5 sessions = 41.0%, and 6 sessions = 12.8%.

Mean scores at baseline and follow-up for the predictors and the two measures of child problem behavior are presented in Table 1. The baseline mean or percentage scores indicate that parents were, on average, relatively well educated, married, and had low levels of depressive symptoms and coparent conflict. Parents reported that the intensity of their child's problem behavior and their perceptions of this behavior as a problem approached the clinical cutoffs (131 and 15) delineated by Eyberg and Pincus (1999).

Child behavior changed in the expected direction with intervention: decreases in intensity of child disruptive behavior (baseline = 129.65, follow-up = 104.12, $t(38) = 6.42, p < .01$) and perception of the level of these behaviors as problems (baseline = 13.33, follow-up = 6.57, $t(38) = 7.52, p < .01$). The mean scores at follow-up were within normative levels (96.6 and 7.1) reported by Eyberg and Pincus (1999). Furthermore, although not targeted in the intervention, both parental depressive symptoms (baseline = 2.82, follow-up = 2.05, $t(38) = 2.05, p = .05$) and coparent conflict (baseline = 4.54, follow-up = 3.64, $t(38) = 3.14, p < .01$) decreased from baseline to follow-up.

Table 1. Mean Score at Baseline and Follow-Up for Predictor and Child Behavior Outcome Measures ($N = 39$)

Variable	Baseline			Follow-Up	
	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>
Predictor					
Parent education ^a	5.03	1.10	—	—	—
Marital status (% married)	—	—	79.5	—	—
Depressive symptoms ^b	2.82	2.85	—	2.05	2.10
Coparent conflict ^c	4.54	2.01	—	3.64	1.71
Outcome					
ECBI-Intensity ^d	129.65	24.21	—	104.12	23.33
ECBI-Problem ^e	13.33	5.71	—	6.57	4.94

Note: ECBI = Eyberg Child Behavior Inventory.

^a1- to 7-point scale with 1 = *less than high school* and 7 = *advanced degree*.

^b0- to 15-point scale with higher scores indicating more depressive symptoms.

^c2- to 10-point scale with higher scores indicating more coparent conflict.

^d36- to 252-point scale with higher scores indicating more intense behavior problems.

^e0- to 36-point scale with higher scores indicating more behaviors perceived as problems.

We examined correlations among predictor variables, the correlations among the three dependent variables, and the correlation of several demographic variables (e.g., child age and gender and parent age and gender) with the outcome measures. Correlations indicate that the following predictor variables were correlated with each other: parent depressive symptoms with parent education ($r = -.39, p < .05$) and coparent conflict ($r = .41, p < .01$). In terms of dependent variables, number of sessions attended was not related to either report of child problem behavior (Intensity: $r = .11, p = .50$; Problem: $r = -.07, p = .67$) by the parent, whereas the two measures of child problem behaviors were significantly related ($r = .63, p < .01$). As noted below, we did not examine retention as an outcome variable. None of the demographic variables examined were related to the outcome measures and, therefore, were not controlled in the primary analyses.

Primary Analyses

The high retention rate at follow-up (36 of 39 parents) precluded examining retention as an outcome. Therefore, the ECBI-Intensity scale, ECBI-Problem scale, and one measure of engagement (i.e., number of sessions attended) served as the three outcomes.

Regression analyses were conducted for the two measures of child problem behaviors by entering the following variables: baseline measure of the dependent variable (i.e., ECBI-Intensity or ECBI-Problem) and one predictor variable (i.e., parent depressive symptoms, coparent conflict, marital status, or parent education). This analysis allowed us to predict change from baseline to follow-up for each independent variable entered separately into a regression equation. The results, which are summarized in Table 2, indicated that one personal variable, parent depressive symptoms, predicted change from baseline to follow-up in both parent perceptions of intensity of problem behaviors ($\beta = -.32, p < .05$) and whether the behavior was perceived as a problem ($\beta = -.32, p < .05$). Direction of the effect indicated that, after controlling for baseline levels of child problem behavior, higher levels of depressive symptoms were associated with lower levels of child problem behaviors at follow-up. The remaining three independent variables did not predict change from baseline to follow-up for either measure of child outcome. When all predictor variables were entered simultaneously into a regression equation, parent depressive symptoms continued to predict change from baseline to follow-up in intensity of problem behaviors ($\beta = -.37, p < .05$) and parent perceptions of child behavior as problems ($\beta = -.36, p < .05$). In both analyses, after controlling for baseline levels of child problem behaviors and the other three independent variables, higher levels of parent depressive symptoms at baseline predicted lower levels of child problem behavior at follow-up.

Number of intervention sessions attended was examined next by regression analyses, where each predictor variable was entered separately into a regression equation. The results, which are summarized in Table 2, indicated that the two interpersonal variables significantly predicted engagement in the group intervention: marital status ($\beta = -.37, p < .05$) and coparent conflict ($\beta = -.48, p < .01$). The direction of the effects indicated that parents who were married and who reported less conflict attended more sessions. When all predictor variables were entered simultaneously into a regression equation, coparent conflict was significant ($\beta = -.42, p = .05$) and marital status approached significance ($\beta = -.30, p = .08$). The direction of the effect was the same as when each predictor was entered individually.

Exploratory Analyses

We next conducted several sets of exploratory analyses. First, we examined Gardner et al.'s (2010) explanation for the finding that higher levels

Table 2. Summary of Regression Analyses Predicting Child Outcomes and Parental Engagement ($N = 39$)

Dependent variable	Predictors	Block	β
ECBI-Intensity	ECBI-Intensity baseline	1	.45**
	Education ^a	2	.07
	Marital status ^a	2	.01
	Coparent conflict ^a	2	.002
	Depressive symptoms ^a	2	-.32*
ECBI-Problem	ECBI-Problem baseline	1	.45**
	Education ^a	2	.04
	Marital status ^a	2	.17
	Coparent conflict ^a	2	.09
	Depressive symptoms ^a	2	-.32*
Sessions attended	Education ^b	1	.16
	Marital status ^b	1	-.37*
	Coparent conflict ^b	1	-.42**
	Depressive symptoms ^b	1	-.17

Note: ECBI = Eyberg Child Behavior Inventory.

^aEach of these variables was entered in a separate regression equation in the second block.

^bEach of these variables was entered in a regression equation in the first block.

* $p < .05$. ** $p < .01$.

of parent depressive symptoms are associated with lower child disruptive behaviors at follow-up: Parents with high levels of depressive symptoms will rate their child as more disruptive at baseline, resulting in more opportunity to change as a result of intervention. Baseline levels of parent perceptions of intensity of child problem behavior, and subsequently, whether the child behavior was perceived as a problem, were regressed on baseline parent depressive symptoms. Baseline depressive symptoms were not a significant predictor of either measure of child behavior ($\beta = .25$ and $.06$), suggesting that higher baseline levels of child disruptive behavior resulting from parent depressive symptoms cannot explain the findings.

Second, we conducted exploratory analyses to examine if our indicator of treatment engagement, number of sessions attended, may serve as

an indirect pathway through which coparent conflict and parent marital status relate to change from baseline to follow-up in child behavior. Analyses conducted, thus far, indicated that coparent conflict and parent marital status are related to engagement. To examine the second pathway, we regressed intensity of child problems at the 2-month follow-up on baseline intensity scores and number of sessions attended. The beta coefficient for number of sessions attended was not significant ($\beta = .21$), suggesting that number of sessions attended is not related to change in the intensity of child problem behavior from baseline to follow-up. A similar analysis was conducted with parent perceptions of child disruptive behaviors as the dependent variable. Again, the beta coefficient for number of sessions attended was not significant ($\beta = .05$).

Third, to examine how marital status and coparent conflict may operate together to influence session attendance, we examined the role of coparent conflict as both a mediator and a moderator of the relationship between parent marital status and number of sessions attended. For these analyses, we took the average of coparenting conflict that occurred at baseline and postassessment (6 weeks after baseline following completion of the group) to estimate conflict that occurred over the course of the intervention sessions. We followed Baron and Kenny's (1986) four-step process to test mediation. Single-parent status appeared to operate through coparent conflict to influence the number of sessions attended, as each of the four steps received support. There was a significant relation between coparent conflict and number of sessions attended ($\beta = .47, p < .01$; Step 1), between single-parent status and both coparent conflict ($\beta = .34, p < .05$; Step 2) and number of sessions attended ($\beta = -.37, p < .05$; Step 3); and the last relation was reduced to a nonsignificant p value when coparent conflict was taken into account ($\beta = -.23$; Step 4). The final step demonstrated the significance of the indirect effect of the independent variable (parent marital status) on the dependent variable (number of sessions attended) via the mediator variable (coparent conflict). Findings are summarized in Figure 1.

Beyond mediation, evidence for moderation also emerged as we entered an interaction term (single-parent status by coparent conflict) into a regression equation with the main effect for each of the two variables. The interaction term was significantly related to sessions attended ($\beta = -.53, p < .01$). We explicated the interaction by conducting median splits on coparent conflict and plotting the average number of sessions attended by each of the four groups: married/low conflict, married/high conflict, single/low conflict, and

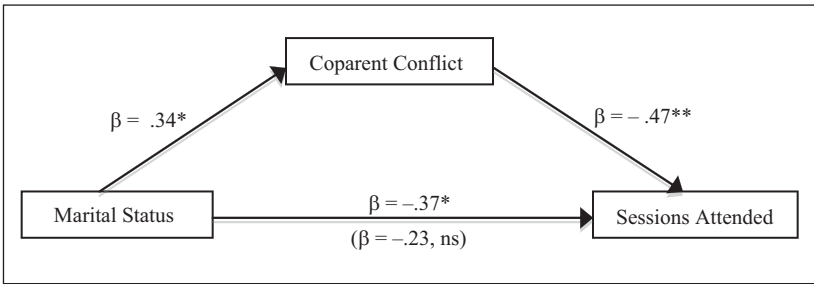


Figure 1. Coparent conflict mediates the relation of single-parent status and number of sessions attended

Note: Beta coefficient in parentheses is after accounting for coparent conflict.

* $p < .05$. ** $p < .01$.

single/high conflict. As is evident in Figure 2, parents who were married and had low coparent conflict attended the most sessions, whereas single parents with high coparent conflict attended the fewest sessions.

Discussion

The purpose of this study was to examine four parental predictors of two outcomes of a GC-based behavioral parenting intervention: child behavior change and engagement (i.e., number of sessions attended). We conceptualized these variables as personal and interpersonal. The findings indicated that a personal variable, parental depressive symptoms, predicted child behavior change from baseline to follow-up, whereas two interpersonal variables, parental marital status and coparent conflict, predicted number of sessions attended. These findings provide partial support for the hypotheses we proposed.

In behavioral parent-training programs, the primary outcome is child behavior change. Previous research indicated that, relative to a control group, the GC intervention examined in this study does lead to decreases in parent reports of child disruptive behavior (Forehand et al., 2011). Although a control group was not included in the current investigation, the findings suggested that child disruptive behaviors decreased to near-normative levels. Of importance for the goals of this study, parental depressive symptoms at baseline predicted these changes in child disruptive behavior from baseline to

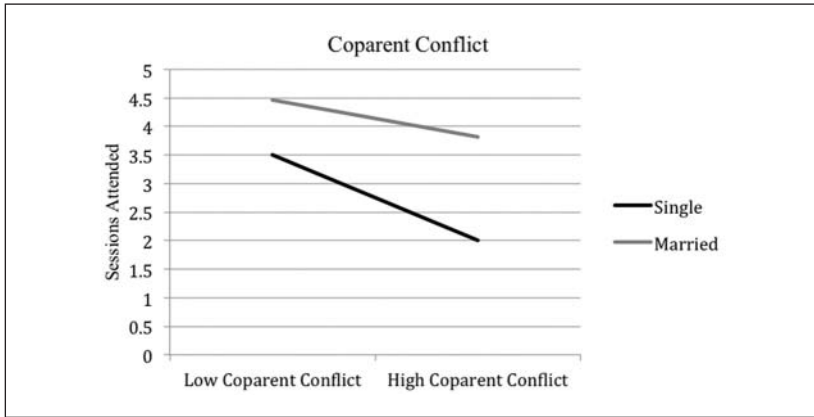


Figure 2. Explication of marital status by coparent conflict interaction with number of sessions attended serving as the dependent variable

follow-up: higher levels of parent depressive symptoms predicted lower levels of child disruptive behavior at follow-up. Although these findings are counter to the ones reported in the meta-analysis by Reyno and McGrath (2006), they are consistent with the findings that emerged from a recent study by Gardner et al. (2010). In explaining their findings, these investigators found that higher levels of parental depressive symptoms were related to higher parent ratings of child problem behaviors at baseline, which they proposed allowed for more opportunity for child problem behaviors to decrease with intervention. As a consequence, higher levels of parental depressive symptoms at baseline predicted larger decreases from baseline to follow-up in child problem behaviors. We examined whether parental depressive symptoms and child behavior at baseline were related and did not find support for an association. Thus, our findings do not appear to be a function of higher initial child problem behaviors when parents experience more depressive symptoms.

One potential explanation for our findings is based on the low levels of parental depressive symptoms that occurred at baseline in our sample. Somewhat elevated, but not incapacitating, levels of parental depressive symptoms may signify a level of distress that motivates parents to change child disruptive behaviors. This may be, particularly, the case if the mild levels of parental depressive symptoms are a consequence of their child's behavior. Our findings, discussed later, are congruent with this explanation as

parent depressive symptoms decreased from baseline to follow-up as child disruptive behaviors decreased.

In contrast to child disruptive behavior as an outcome, the two interpersonal variables that we examined, single-parent status and coparent conflict, each predicted fewer treatment sessions attended. Both of these interpersonal variables can impose daily life stressors that interfere with the ability to attend sessions. For example, in a single-parent home, lack of another person to provide child care during intervention sessions or handle other family responsibilities may result in attendance difficulties. Similarly, disagreement about child rearing may result in a parent not receiving encouragement and support, both instrumental and emotional, from the coparent for attending intervention sessions or for the changes in parenting behaviors that are occurring as a result of program participation.

In secondary analyses, we examined whether number of sessions attended was an indirect pathway through which interpersonal variables relate to child behavior change at follow-up. However, number of sessions attended was not related to child disruptive behavior at follow-up, failing to provide evidence for the second link in the indirect pathway. Although some evidence for an association between these two outcome variables emerged in the Reyno and McGrath (2006) review, Kazdin and Wassell (1999) and Nix, Bierman, and McMahon (2009) failed to find such a relationship. One potential explanation for our findings is that parents were given the book, PSWC (Forehand & Long, 2002), on which the GC intervention was based and, when they missed sessions, parents were encouraged to read the material that was missed and to complete homework assignments. This may have attenuated the relationship between number of sessions attended and child disruptive behavior at follow-up as reading PSWC, without any individual or group therapeutic contact, has been found to be associated with fewer child problem behaviors (Forehand et al., 2010).

In addition, it is important to note that treatment engagement is “a complex process” (Staudt, 2007) and our measurement of this variable, number of sessions attended, is only one indicator of the construct and a crude one at best. For example, as noted above, Nix et al. (2009) failed to find that attendance related to parent perceptions of child behavior after participating in an intervention that included a behavioral parenting program; however, quality of parent participation in sessions, another indicator of engagement, did relate to parent perceptions of child behavior after treatment. In sum, the absence of an association between number of sessions attended and child behavior change at follow-up may have occurred for any of several reasons. By no means do we discount the importance of session attendance in parenting interventions; however, we believe that it is also important for researchers

to continue to explore the association of engagement and child behavior change, including using more sensitive indicators of engagement.

We also examined the role of coparent conflict as a mediator and moderator of the association between single-parent status and number of sessions attended. Support emerged for both of these roles of coparent conflict. These findings suggested that when examining the link between marital status and parental engagement in treatment, coparent conflict should not be ignored; it qualifies how the association between the two variables relates and accounts for their association. These findings must be viewed with caution due to a small sample size of single parents, especially in the case of moderation.

Beyond examining the role of parent depressive symptoms and coparent conflict (in addition to other variables) as predictors of outcome of our GC, we also examined whether the group parenting intervention was associated with change in these two variables. Although the absence of a control group limits the conclusions that can be reached, our findings indicate decreases occurred for both of these variables from baseline to follow-up. This suggests that a reciprocal process may be operating. For example, although higher initial levels of parental depressive symptoms predicted more change in child disruptive behavior resulting from implementation of the intervention, the intervention was also associated with a reduction in parent depressive symptoms. Although directionality of effects cannot be inferred from our data, the findings do suggest the importance of assessing child disruptive behavior and family variables, as well as changes in both of these areas, when implementing a behavioral parenting intervention as they may reciprocally impact each other.

The current study had several limitations that should be noted; all data were based on parent report and the measures of family variables were constituted by only a few items. The sample characteristics deserve further mention, as the sample was predominantly well educated, married, and White. These characteristics limit generalization of the findings to other samples. There also were several strengths, which should be noted: a high retention rate at follow-up; the measurement of two outcomes (child behavior and parental engagement), which were differentially predicted by (personal versus interpersonal) variables; and, although limited, the inclusion of fathers.

One implication of the current study is that it is important to assess both parent personal and interpersonal variables in conducting group interventions for parents of young disruptive children; variables from the two domains of predictors differentially predicted the two categories of outcome (child behavior and parental engagement). These variables have the potential to inform us about participation in and outcome of the intervention. Furthermore, without directly intervening on these personal and interpersonal variables,

our findings suggest that they may change with implementation of the intervention, which potentially may lead to maintenance of child behavior change. Identifying how these family variables operate as predictors is an important area of research for future investigations.

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Declaration of Conflicting Interests

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