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Caregiver Responsiveness to the Family Bereavement Program: What predicts responsiveness? What does responsiveness predict?

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Abstract

The study developed a multi-dimensional measure to assess participant responsiveness to a preventive intervention, and applied this measure to study how participant baseline characteristics predict responsiveness and how responsiveness predicts program outcomes. The study was conducted with caregivers who participated in the parenting-focused component of the Family Bereavement Program (FBP), a prevention program for families that have experienced parental death. The sample consisted of 89 caregivers assigned to the intervention condition in the efficacy trial of the FBP. Positive parenting, caregiver depression, and child externalizing problems at baseline were found to predict caregivers' use of program skills outside the group, and more child internalizing problems predicted more positive perceptions of the group environment. Higher levels of skill use during the program predicted increased positive parenting at the 11-month follow-up, whereas positive perceptions of the group environment predicted decreased caregiver depressive symptoms at follow-up. Caregiver skill use mediated the relation between baseline positive parenting and improvements in positive parenting at 11-month follow-up, and skill use and perceived group environment mediated changes in caregiver depression from baseline to 11-month follow-up.

Keywords

Implementation; Responsiveness; Family Prevention; Parenting; Parental Bereavement

For evidence-based prevention programs to benefit the public they need to be successfully implemented in community settings; thus, the scientific study of implementation has important practical implications. Reviews have identified numerous dimensions of implementation that influence program outcomes (Berkel, Maurizio, Schoenfelder, & Sandler, 2011; Dane & Schneider, 1998; Durlak & Dupre, 2008), including fidelity, quality, participant responsiveness, dosage, program differentiation, control/comparison conditions, program reach, and adaptation. This paper focuses on one dimension of implementation, participant "responsiveness," which Dane and Schneider (1998) define as "participant response to the program, which may include indicators such as levels of participation and enthusiasm" (p. 45). Although responsiveness has been conceptualized to include subjective experiences of the program as well as behavioral participation (Berkel et al., 2011), it has generally been measured with behavioral indicators such as attendance and home practice

completion. Using data from the Family Bereavement Program (FBP), a preventive intervention for families who have experienced the death of a parent, the current study identifies and tests a multi-dimensional measurement model of responsiveness. We then examine family characteristics that predict responsiveness and program outcomes that are predicted by responsiveness. Finally, we test a theoretical model of responsiveness as a mediator of relations between baseline family characteristics and changes in program outcomes 11 months following the program.

The Family Bereavement Program

The FBP is an evidence-based program that prevents mental health problems in parentally-bereaved youths, or youth who have experienced the death of a parent. Nearly 4% of American children experience parental death before age 18 (Social Security Administration, 2000). Parentally-bereaved children are at increased risk for mental health problems, including depression, anxiety, and behavior problems (Lutzke, Ayers, Sandler, & Barr, 1997; Melhem, Mortiz, Walker, Shear, & Brent, 2007; Worden & Silverman, 1996). The FBP consists of 12 separate group sessions for caregivers and youth plus two individual family sessions (see Methods for further description). In a randomized trial, the FBP has been demonstrated to improve the participant outcomes examined in this study, including positive parenting, and child and caregiver mental health (Sandler et al., 2003). This study will assess factors that influence caregiver responsiveness to the FBP and the relation of responsiveness to outcomes.

Participant responsiveness

Participant responsiveness to preventive interventions has been associated with program outcomes (e.g., Spoth & Redmond, 2000), although measurement has varied considerably across studies. Berkel and colleagues (2011) conceptualized responsiveness broadly to include behavioral indicators such as participants' active involvement with the program and subjective indicators of participants' experience of the program. We organize our discussion of implementation measures conceptually according to this framework and empirically test a measurement model of responsiveness using these dimensions.

Behavioral indicators

Behavioral indicators of responsiveness are conceptualized to include the things that participants do to be actively involved in the program. Attendance has been found to be a robust predictor of better outcomes for prevention program participants (e.g., August, Egan, Realmuto, & Hektner, 2003; Blake, Simkin, Ledsky, Perkins, & Calabrese, 2001; Brody, Murry, Chen, Kogan, & Brown, 2006), including improved parenting and reduced child behavior problems (e.g., Gross et al., 2009). Although some researchers have referred to attendance as "dosage," we agree with Berkel and colleagues' (2011) assertion that dosage refers to the amount of intervention delivered as controlled by the experimenters, whereas attendance is controlled by participants and is better conceptualized as part of responsiveness. The completion of program home practice assignments is also associated with greater program efficacy (e.g., Blake et al., 2001). One study of a parenting-focused prevention program found that attendance, percentage of home practices completed, and group leader ratings of members' verbal participation predicted improvements in parenting following the program (Baydar, Reid, & Webster-Stratton, 2003). This study expands on previous research by examining how multiple aspects of behavioral responsiveness relate to each other and to subjective indicators of responsiveness.

Subjective indicators

Subjective indicators of responsiveness are conceptualized as how participants experience the program. Although few preventive intervention studies report on participants' subjective experiences of the program (Berkel et al., 2011), satisfaction with clinical services has been linked to post-treatment gains following psychotherapy (e.g., Holcomb, Parker, Leong, Thiele, & Higdon, 1998; Pekarik & Wolff, 1996) and improved outcomes one year after a substance use prevention program (Carlson & Gabriel, 2001). Other mental health treatment studies, however, have failed to verify a link between satisfaction ratings and client outcomes (e.g., Lambert, Salzer, & Bickman, 1998; McLellan & Hunkeler, 1998).

Perceived group environment refers to participants' subjective perceptions of the processes and relationships cultivated within a group (Burlingame, Fuhrman, & Johnson, 2001). Three aspects of perceived group environment have been found to be associated with other measures of engagement and outcomes for preventive interventions: a sense of cohesiveness in the group, a perception that participants can express themselves openly, and perceived supportiveness of the provider. Behavioral indicators of these components, such as participant expressivity (Garvey, Julion, Fogg, Kratovil, & Gross, 2006; Orrell-Valiente et al., 1999) or leaders' empathetic statements (Forgatch, Patterson, & DeGarmo, 2005) have been associated with retention in or outcomes of prevention programs, but participants' subjective perceptions of each are likely to be even more influential. Dillman-Carpentier and colleagues (2007) found participants' perceptions of cohesion, leader supportiveness, and group expressiveness to be correlated with caregiver attendance within a family-based prevention program.

What factors predict responsiveness?

There is evidence that some characteristics of participants before they enter an intervention predict their responsiveness to the program. Families with more parenting difficulties and child behavior problems are found to have more responsiveness to preventive interventions as indicated by better attendance (August et al., 2003; Spoth & Redmond, 1995), more group participation (Garvey et al., 2006), and more consumer satisfaction (Garland, Aarons, Saltzman, & Kruse, 2000). On the other hand, Baydar and colleagues (2003) found associations between more positive parenting at baseline and more engagement. Caregiver reports of parenting difficulties and child problems may constitute a "perceived need for help" that motivates them to engage in interventions and leads them to find more utility in the program skills, but could also create barriers to responsiveness. Little is known about differential responsiveness for caregivers who are experiencing mental health problems. Parents with more mental health risk factors have been found to be more engaged in a parenting program, although parents with more depressive symptoms were less engaged (Baydar et al., 2003). Though grief does not constitute a mental health problem, it could also inhibit bereaved caregivers' engagement in the group environment and use of program skills.

The Present Study

The present study investigated what characteristics of caregivers and their families (positive parenting, caregiver depression and grief, and child mental health) predict their responsiveness to the FBP, what dimensions of responsiveness predict program effects on these variables, and whether responsiveness mediates the relations between family characteristics and the changes they show following participation in an evidence-based parenting program. An initial step in this study explores measurement models of the dimensional structure of responsiveness. However, given the relatively small sample size, power to test alternative measurement models is limited, so that this aspect of the study is

seen as exploratory. Our preliminary theoretical model proposes two dimensions of responsiveness: a behavioral dimension measured by attendance, home practice completion, and reported frequency of skill use, and a subjective dimension measured by perceived group environment, satisfaction with the program, and evaluation of the helpfulness of program skills.

Methods

Sample

Participants are caregivers who were randomly assigned to the intervention condition of an experimental trial of the FBP and their children. A full description of recruitment and eligibility criteria has been presented elsewhere (Sandler et al., 2003) and will only be briefly described here. Participants were recruited using media presentations and presentations to agencies that had contact with bereaved families. Eligibility criteria included: a) death of a biological parent or parent figure between four and 30 months prior to the beginning of the intervention, b) at least one youth in the family being between 8 and 16 years of age, and c) family members not currently receiving other mental health services. All families meeting the criteria were invited to participate. Caregivers and youth who scored above the clinical level on screenings of depression were excluded from the study and referred to more intensive services.

One hundred and fifty-six families with 244 children ages 7–16 ($M = 11.4$, $SD = 2.4$) were randomly assigned to either the FBP (90 families: 90 caregivers, 135 children, 73 boys (50%)), which consisted of 12 caregiver and child/adolescent group sessions and two individual family sessions, or a self-study bibliotherapy program. Parental death occurred an average of 10.8 months ($SD = 6.4$) prior to initial data collection. Ethnicity in the overall sample was non-Hispanic Caucasian (67%), Hispanic (16%), African American (7%), Native American (3%), Asian or Pacific Islander (1%), and Other (6%). The current study uses data only from the 90 families assigned to participate in the FBP. Tests of the equivalence between families assigned to the intervention and control conditions on 30 variables found only two differences; caregivers assigned to the intervention condition evidenced more positive affective tone and attending skills at baseline ($p < .05$) (Sandler et al., 2003). Though 10 families had two caregivers participate in the FBP, only data from the surviving biological parent or identified primary caregiver was used. For child mental health variables, a target child from each family was selected at random.

Procedure

The FBP consists of 12 separate two-hour caregiver group sessions and child/adolescent group sessions that included four conjoint exercises involving caregivers and youth together. The caregiver group focused on improving positive parenting, teaching effective discipline strategies, decreasing caregiver mental health problems, and decreasing children's exposure to stressful events. If a caregiver missed a session, they were invited to attend a make-up session. The program utilized a number of techniques, handouts, and exercises that were found to improve parenting in a successful intervention for divorced families (Wolchik et al., 2000). Primary components of the program related to redefining family identity, family routines, listening skills, and discipline were retained; divorce-related components were eliminated and replaced with content focused on bereavement-related issues such as caregiver coping with grief and talking to children about grief. The child/adolescent version of the program focuses on improving youth positive coping strategies, coping efficacy and communication skills, and provides an outlet to discuss grief-related experiences and feelings. Eleven FBP caregiver groups were conducted.

Data for the current study were collected at three time points; Time 1 data were collected prior to randomization; Times 2 and 3 were collected three months (intervention posttest), and 14 months (11 months posttest) respectively, after Time 1. As described below, several measures of responsiveness were completed after each program session. Youths and caregivers were interviewed separately by trained interviewers at home or at the university. Adults signed informed consents and minors signed assent forms. Caregivers received \$40 compensation for Time 1, 2, and 3 interviews concerning one child, with \$30 offered for each additional child.

Measures

Attendance—The number of sessions attended by caregivers ranged from zero to 14. Attendance was defined as the percentage of sessions attended including make-up sessions.

Home Practice Completion—Caregiver participants completed a weekly worksheet reporting on their completion of home practice assignments for the previous week. Each worksheet listed three to eight assigned skills and caregivers checked “yes” or “no” as to whether they practiced each skill. If participants checked neither box, the skill was counted as not practiced. The percentage of skills practiced during each week was calculated. Overall, 62% of the worksheets were collected. Home practice completion was scored as 0% for missing worksheets. Home practice completion was averaged across all sessions.

Home Practice Fidelity—For between one and five skills per session, caregivers completed a checklist of the specific components of the skill that were completed to indicate the fidelity with which they practiced the skill. For the skills practiced, they indicated “yes” or “no” as to whether they had completed each component of the skill, with more “yes” checks indicating higher fidelity. For example, the questions about components of Family Time were: “Did the children choose the activity?” “Did you plan it in advance?” “Did it last two hours?” and “Was it inexpensive?” The percentage of components completed for each skill was calculated to establish the overall ‘fidelity’ with which the skill was practiced. These percentages were averaged together for each session to create an average ‘fidelity’ of home practice completion score. The average ‘fidelity’ of skills practices for each session was averaged across sessions to calculate an overall home practice fidelity score ($r = .87$). If caregivers did not complete the home practice sheet for a given session, home practice fidelity was considered to be “missing” for that session.

Home Practice Efficacy—For each practiced skill, caregivers rated “How well did it go?” on a scale from 1 (not well at all) to 5 (very well). Scores for all assigned skill were averaged to create average home practice efficacy for each session, and a summary score was created by averaging home practice efficacy across all sessions ($r = .67$).

Frequency of Skill Use—At posttest, participants completed a survey of how often they used the 27 primary program skills using a Likert scale from 1 (“not at all”) to 5 (“a lot”). Average frequency of skill use was calculated by averaging ratings across all skills ($r = .95$).

Program Satisfaction—At posttest, participants completed a 6-item scale evaluating the helpfulness of the program (5-point response format from 1 = “Not at all helpful” to 5 = “Very helpful”). Items included, “How helpful has the FBP been for your family?” An overall score was calculated as the mean across items ($r = .97$).

Perceived Skill Helpfulness—At posttest, participants rated the helpfulness of the 27 primary skills (e.g., “Family Time”) taught in the program (1 = “Not at all helpful” to 5

=“Very helpful”). Ratings were averaged across the skills to create a summary score ($\alpha = .97$).

Perceived Group Environment—The 9-item Cohesion ($\alpha = .75$), Leader Support ($\alpha = .66$), and Expressiveness ($\alpha = .64$) subscales of the Group Environment Scale (GES; Moos, 1994) were administered at posttest. Items include statements such as “Members of this group feel close to each other” for Cohesion, “The leader goes out of his/her way to help members” for Leader Supportiveness, and “It’s ok to say whatever you want to in this group” for Expressiveness. The original scale asks participants to indicate their agreement with statements with “yes” or “no,” but the response format was changed to a Likert scale of 1 (“Not at all true”) to 4 (“Very true”).

Caregiver Grief—Caregiver grief was assessed using the 13-item “Present Feelings” scale of the Texas Revised Inventory of Grief (TRIG; Faschingbauer, 1981) at Times 1 and 3. Caregivers rated their agreement with statements such as “I can’t avoid thinking about my [deceased]” on a scale of 1 (completely true) to 5 (completely false). Two items with high skewness or kurtosis were dropped, leaving 11 items with $\alpha = .89$ and $.93$ in our sample at Time 1 and 3, respectively.

Caregiver Depression—Caregiver depression was assessed using the 21-item Revised Beck Depression Inventory (BDI, Beck & Steer, 1984) at Times 1 and 3, with $\alpha = .90$ at T1.

Caregiver-Reported Youth Internalizing and Externalizing Problems—The internalizing problems ($\alpha = .86$) and externalizing problems ($\alpha = .92$) subscales of the Child Behavior Checklist (CBCL; Achenbach, 1994) were administered at Times 1 and 3. The CBCL is a 134-item parent-report survey of child mental health. Children’s behavior over the past month was rated using a 3-point scale (0 = “Not true, as far as you know”, 1 = “Somewhat or sometimes true”; 2 = “Very true or often true”). T-scores were calculated for each target child based on age and gender norms.

Positive Parenting—A composite variable of caregiver-report, child-report, and observational measures of parenting behaviors based on a confirmatory factor analysis (Kwok et al., 2005) were used to measure positive parenting at Times 1 and 3. The variable includes parallel caregiver- and child-report versions of the Acceptance and Rejection subscales from the Child Report of Parental Behavior Inventory (CRPBI; Schaefer, 1965), the Dyadic Routines subscale from the Family Routines Inventory (Jensen, Janes, Boyce, & Hartnett, 1983), the Positive Events subscale from the General Life Events Schedule for Children (Sandler & Guenther, 1985), and an 8-item abbreviated version of the Parent Perception Inventory (Hazzard, Christensen, & Margolin, 1983). Children completed the 10-item Sharing Emotions with Parents scale (Ayers, Sandler, Twohey, & Haine, 1998), and caregivers completed the 6-item Talk with Reassurance subscale of the Parent Expression of Emotion Questionnaire (Jones & Twohey, 1998). Behavioral observation coding of parental warmth was conducted on 12-minute videotaped segments in which the child and caregiver discussed two issues from the Parent Issues Checklist (Prinz, Foster, Kent, & O’Leary, 1979). The videos were coded for positive affect tone (IRR = .77) and attending, comprised of back channeling (IRR = .83) and head nods (IRR = .80). Consistent discipline was measured by child- and caregiver- report versions of the Inconsistent Discipline subscale of the CRPBI and the 6-item caregiver-report Follow-Through subscale of the Oregon Discipline Scale (OSLC, 1991). Index scores at T1 and T3 created from the Kwok et al. (2005) measurement model were used.

Results

Analyses proceeded in two stages. In the first stage, a measurement model of the theoretical dimensions of responsiveness was developed, based initially on the proposed behavioral and subjective dimensions. The second stage consisted of testing models in which the baseline characteristics of caregivers and their families (positive parenting, caregiver depression and grief, child mental health) predicted the dimensions of responsiveness (*a* path); the dimensions of responsiveness predicted these same outcome variables 11 months following the program (*b* path); and responsiveness constituted a mediator of change in participant characteristics from baseline to 11-month follow up. The Mplus program Version 5.2 (Muthén & Muthén, 2008) was used for all analyses.

Examination of descriptive statistics (Table 1) indicated elevated skewness and kurtosis for several implementation variables; therefore, Maximum Likelihood – Robust (MLR) standard errors and the chi-square fit statistic were used to account for non-normality of the data. The percentage of missing data ranged between 0% and 24% for each variable¹, and Full Information Maximum Likelihood (FIML) was used to account for missing data. Intra-class correlations (ICCs) were calculated to determine whether a substantial proportion of score variance was accounted for by clustering of participants within intervention groups. As seen in Table 1, the ICCs for four of the measures and one index variable created from the measures exceeded .05, indicating potential effects of group membership or “clustering” on estimates of standard errors and test statistics. An MPlus software feature that accounts for participant clustering was used to correct standard errors and test statistics in path models. The sample size precluded adjustment for clustering in the factor analyses due to insufficient degrees of freedom in those models.

Zero-order correlations were positive between positive parenting and home practice completion, home practice efficacy, and frequency of skill use ($p < .05$) and negative between child externalizing problems and home practice efficacy ($p < .01$). Caregiver depression was correlated with perceived leader support ($p < .01$) and nearly all other outcome variables ($p < .05$), while caregiver grief was correlated with caregiver depression ($p < .001$) and child internalizing outcomes ($p < .01$). Caregiver depression and grief were therefore included as covariates in all path models. Amongst the behavioral indicators of responsiveness, home practice completion and frequency of skill use were correlated with all other behavioral indicators ($p < .05$). Amongst subjective indicators, the three subscales of the group environment were intercorrelated ($p < .01$), perceived skill helpful was correlated with all other subjective variables except group expressiveness ($p < .01$), and program satisfaction was correlated with group cohesion and leader supportiveness ($p < .001$).

Confirmatory factor analysis (CFA) was used to test a two-dimensional model of responsiveness, which included a behavioral dimension comprised of attendance, home practice completion, home practice fidelity, and frequency of skill use, and a subjective dimension comprised of the three group environment subscales, program satisfaction, perceived skill helpfulness, and home practice efficacy. The ten responsiveness variables were each forced to load on one of the two factors. The results of the two-factor CFA indicated that the model was a poor fit for the data: $\chi^2(19) = 88.40$, $p < .001$; $RMSEA = .20$; $SRMR = .18$.

Analyses then continued in an exploratory vein with exploratory factor analysis (EFA) to determine whether a different number of factors would better fit the data. The results of the

¹Prior analyses using the data found that families with missing data did not differ from those with complete data on demographic variables (Kwok et al., 2005).

EFA indicated that a two-factor model was a poor fit for the data ($X^2(26)=56.86$, $p<.001$; $RMSEA = .12$), whereas a three-factor model was a better fit ($X^2(18)=28.04$, $p=.06$; $RMSEA = .06$)². Based on the EFA indications that a three-factor model was a better fit for the data, the authors tested a theoretical three-factor structure of responsiveness that conceptualizes responsiveness as occurring within three different program contexts: a “Skill Use” dimension including the four variables related to use of the skills outside of sessions (home practice completion, efficacy, and fidelity, and frequency of skill use); a “Group Environment” factor including subjective evaluation of experiences within the group sessions (cohesion, leader supportiveness and expressiveness), and a “Program Liking” dimension including the three subscales believed to reflect the degree to which participants liked the program as a whole (program satisfaction, attendance, and perceived skill helpfulness). A CFA of this three-factor model revealed poor fit: $X^2(32)=71.05$, $p<.001$; $RMSEA = .12$, $SRMR=.28$. The home practice completion variable was found to have a modification index (MI) of 7.3 with the “group environment” factor and 6.9 with the “program liking” factor, values that were significantly higher than the MIs for any other variable; thus, home practice completion was dropped from the analyses and the three-factor CFA was conducted with the nine remaining variables (see Figure 1). The RMSEA fit index for this CFA indicated good fit while the Chi square value and SRMR indicated marginal fit: $X^2(24)=38.00$, $p=.04$; $RMSEA = .08$, $SRMR=.24$. The three dimensions of responsiveness were moderately to highly correlated. Although several of the fit indices were only marginally acceptable, we proceeded with this three-factor model because it is consistent with theory and we have no theory to justify further modifications to the factor structure. The home practice completion variable was excluded from further analyses, given that it was not found to fit within the three theoretical dimensions of responsiveness and was uncorrelated with outcome variables.

To test the predictions concerning the relations between family characteristics and responsiveness and responsiveness with outcomes, index scores were created for each of the three dimensions identified in the CFA in the following manner: the 9 responsiveness variables were converted by z-scores to provide a standardized metric, and then the z-scores for the three variables within each dimension were averaged together to create an index score (see Table 1 for index score descriptive statistics). The use of index scores rather than latent factors allowed for the use of MPlus software features to account for caregiver clustering within intervention groups.

Separate structural equation models were tested for each of five caregiver or family characteristic variables described previously. As seen in Table 2, the scores on each of these caregiver/family variables at baseline constituted the independent variable (IV) and the same variable at 11-month follow-up constituted the dependent variable (DV). The *a* path in the mediational model tested whether the caregiver/family variable predicted dimensions of caregiver responsiveness, and the *b* path tested whether the responsiveness variable predicted outcomes on the caregiver/family variable at 11-month follow-up controlling for the effects of the baseline score on the family variable (*c* path). Mediation was represented by equations for the *a* and *b* paths (MacKinnon, 2008), and the significance of the mediated effect was determined by multiplying the *a* and *b* path coefficients and then using the standard error to calculate confidence limits (MacKinnon & Dwyer, 1993; Sobel, 1982). Caregiver depression and grief at baseline were included as covariates in the models; for

²Loadings for the 3-factor EFA indicated that home practice completion loaded on its own factor. The other variables related to the use of program skills (home practice efficacy, fidelity, frequency of skill use, and perceived skill helpfulness) loaded on a second factor, whereas variables associated with liking of the program and its environment (attendance, program satisfaction, and group environment subscales) loaded on a third factor.

models testing either depression or grief as the IV and DV, the other variable was included as a covariate.

As seen in Table 2, four of the fifteen *a* paths were significant: more child externalizing problems and caregiver depression were related to lower Skill Use, more child internalizing problems were related to more positive Perceived Group Environment, and more positive parenting was related to more Skill Use. Three of the fifteen tests of the *b* paths from the responsiveness variables to outcomes at 11-month follow-up were significant: more Skill Use was associated with more positive parenting and more caregiver depressive symptoms at 11-month follow-up, and more positive Perceived Group Environment was associated with lower caregiver depressive symptoms at 11 months. The *c* paths from the baseline variable to the same variable at 11-month follow-up were highly significant ($p < .0001$) for all five models.

Three significant mediational pathways were identified (see Figure 2). Skill Use was found to mediate the relationship between positive parenting at baseline and at 11 months (95% CI: .01, .17), and the relation between caregiver depression at baseline and at 11 months (95% CI: -.12, -.01); Perceived Group Environment was found to mediate the relation between caregiver depression at baseline and 11 months (95% CI: .004, .10). Because the 95% confidence intervals for the mediated effects did not contain zero, the mediated effects are significant.

For the significant mediational models, further analyses disassembled the index scores and ran each responsiveness variable alone as a mediator to determine which components of the index scores might be responsible for the mediated effects. The three variables comprising the Skill Use Index (home practice efficacy, home practice fidelity, and frequency of skill use) each significantly mediated the relation between positive parenting at baseline and at 11-month follow up when tested in separate models; 95% confidence intervals ranged from .02 to .17, .01 to .19, and .04 to .18, for the three mediators, respectively. Additionally, the Skill Use Index score remained a significant mediator of the relation between positive parenting at baseline and 11-months, even when controlling for the home practice completion variable. Frequency of skill use significantly mediated the relation between caregiver depression at baseline and 11 months (95% CI: .01, .19), whereas home practice efficacy and fidelity did not. None of the three subscales of the Perceived Group Environment Index significantly mediated the relation between caregiver depression at baseline and 11-months when tested in separate models.

Discussion

The most important findings from this study were 1) the development of provisional support for a three-dimensional model of responsiveness; 2) the identification of caregiver characteristics that predicted responsiveness and of responsiveness variables that predict change in caregivers; and 3) the identification of mediators of change in caregiver and family variables from baseline to 11 months following participation in the Family Bereavement Program.

The first finding of this study concerns the measurement model of responsiveness. No previous studies have examined theoretical dimensions of responsiveness, and this portion of the study was therefore exploratory. The best-fitting model consisted of three dimensions corresponding to three contexts in which participants are exposed to the program. “Skill Use” refers to responsiveness to program components that take place outside of sessions. “Perceived Group Environment” characterizes participants’ subjective experiences of the program environment. Participant “Liking” of the program refers to participants’ satisfaction

and responsiveness to the program as a whole. Although measurement modeling did not confirm our two original proposed dimensions of responsiveness, behavioral and subjective, the three dimensions identified do indicate a distinction between behavioral and subjective aspects of responsiveness. The Skill Use dimension captures behavioral engagement in the program, and both Liking and Perceived Group Environment capture participants' subjective responses to the program. Given the limited sample size and marginal fit of the model, future research with a larger sample will be necessary to replicate and further refine the multi-dimensional measure of responsiveness to a group-based parenting prevention program.

The evidence to support the three distinctive yet related dimensions of responsiveness has implications for the future study of responsiveness to preventive interventions. From a theoretical perspective, these findings indicate that responsiveness occurs within multiple contexts, including within the relationships that occur in the group and participants' use of program principles outside of sessions. Consistent with our original proposal, it includes both behavioral and subjective components. Multiple measures of responsiveness are therefore needed to fully capture the construct. For example, attendance, program satisfaction, and home practice completion are measures that have been used frequently in prior research, but were not predictive of outcomes in this study. Studies that only assess these variables may not be assessing the aspects of responsiveness with the most important implications for program outcomes.

Two features of these measures of responsiveness make them particularly useful for monitoring implementation of prevention programs in community settings. First, the dimensions are not specific to the content of the FBP and are applicable to any group parenting program. Second, caregiver-report measures provide a feasible alternative to monitoring implementation through reports of the group leaders, who may be motivated to report positive implementation, or behavioral observation measures, which are expensive and effortful. The measures used in this study could be utilized as practical and resource-efficient measures to monitor the quality of implementation in parenting-focused programs as they are disseminated into the community.

The findings regarding relations between baseline variables and caregiver responsiveness revealed that families with fewer difficulties at baseline, including less caregiver depression and child externalizing problems and more positive parenting practices, used the program skills better. Although these findings are inconsistent with evidence of more attendance by higher-risk families (August et al., 2003; Garvey et al., 2006), it makes sense that caregiver depression and child behavior problems would present barriers to implementing the program skills effectively and consistently. In addition, caregivers who reported more child internalizing problems at baseline perceived the group environment more positively. This finding indicates that caregivers with concerns about children's emotional functioning responded well to the group context and likely felt supported to discuss concerns about their children with the other bereaved caregivers.

Interesting findings emerged regarding the relations of responsiveness to program outcomes for families. Program skill use by caregivers was predictive of improved positive parenting 11 months following the program, indicating that use of program skills leads to lasting improvements in parenting as rated by caregivers, children, and observers. The finding that caregivers who perceived the group environment more positively reported fewer depressive symptoms at 11-month follow-up may indicate potential therapeutic benefits of engaging in the group environment and feeling supported by the group leader and other group members. This finding points to a potential advantage of delivering prevention programs, particularly for bereaved families, in a group format and fostering a positive group environment.

The finding that more use of the program skills outside of sessions was associated with increased caregiver depressive symptoms across 11-months seems counterintuitive. However, further analysis revealed that only the frequency of skill use variable predicted higher depression, while quality and efficacy of skill use were not predictive. It may be that using program skills ineffectively or without receiving the satisfaction that the skills are working leads to increased depression. The implication is that it is critical that parents learn to use the skills well and attribute positive consequences from skill use to their own efforts.

A third important set of findings concerned the three significant mediational pathways. Caregivers who reported more positive parenting practices at baseline used the program skills better and more often, and in turn, evidenced greater increases in positive parenting practices at the 11-month follow-up. It is notable that the program effect to improve positive parenting as compared to the literature control condition was previously found to be stronger for those with less initial positive parenting (Sandler et al., 2003). Thus it appears that even though parents who begin with poorer parenting skills have a harder time practicing the skills, they still benefit from learning the skills. Even more limited use of these skills may represent a greater change from their normal parenting than other parents, and may still lead to significant changes in child outcomes. These findings indicate the need to provide additional support for caregivers with more initial difficulties to use skills correctly and effectively. The finding that depressed participants use skills less frequently but thereby experience improvements in depressive symptoms is difficult to explain. That the quality and efficacy of home practice completion were not significant in this model indicates the importance of helping caregivers use skills in the manner they are intended and to feel efficacious in doing so.

A third mediation finding implicates perceptions of the group environment as a mechanism associated with reductions in caregiver depressive symptoms 11 months after the intervention, especially for caregivers with fewer depressive symptoms at baseline. This finding may indicate that engaging in the group environment has therapeutic effects to reduce depression, but does not indicate that depressed caregivers benefitted less. Although they may not have perceived the group environment as positively as their less-depressed counterparts, participation may have still been impactful on the well-being of depressed caregivers. This finding underscores the importance of helping participants with mood concerns relate to other group members and their leader and feel comfortable expressing themselves in the group.

It is interesting to speculate on why most of the hypothesized pathways between responsiveness and outcome variables were not significant. It may be that the relation between responsiveness and change in children's internalizing and externalizing problems were indirect through effects on variables such as parenting. In support of this explanation, a prior study found that the effects of the FBP on these child mental health variables are mediated through parenting (Tein, Sandler, Ayers, & Wolchik, 2006). It may also be that there is specificity of effects of different aspects of the program on different outcomes; for example, program effects on caregivers' mental health may be due to the group support they receive, while effects on parenting may be derived from their effective use of program skills. Future research may examine which specific aspects of responsiveness are related to specific program effects. Furthermore, the lack of significant relations between program "Liking" and outcomes supports prior research that failed to find associations between consumer satisfaction ratings and program outcomes (e.g., Lambert, Salzer, & Bickman, 1998; McLellan & Hunkeler, 1998). Routine program satisfaction measures therefore do not sufficiently capture aspects of subjective responsiveness that influence program outcomes.

This study has several limitations. First, the sample size is relatively small, which limits the ability to find significant effects. Second, some indices implied that the fit of the measurement model was good while others indicated marginal fit. Further research is needed with larger samples to replicate both the measurement model and the predictive relations. Third, the majority of the measures, with the exception of session attendance and aspects of positive parenting, were caregiver reports, and reporting bias may influence the findings. Fourth, the FBP consisted of parallel child and adult groups, and it is possible that changes in outcomes could be accounted for by the child component. Fifth, certain aspects of responsiveness may be more salient for families who are experiencing bereavement as opposed to other stressors, or may differ for programs that utilize different approaches. It will be important to replicate these findings using other types of preventive interventions and populations.

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Figure 1.
Standardized Loadings and Residual Variances for 3-Factor Confirmatory Factor Analysis
of Implementation Variables.
Fit Statistics: $\chi^2(24)=38.00$, $p=.04$; $RMSEA = .08$, $SRMR=.24$

Figure 2. Responsiveness Index Scores as Mediators Between Family Variables at Baseline and 11-Month Follow-Up, Controlling for Caregiver Grief and/or Depression.

$p<.05$ *, $p<.01$ **, $p<.001$ ***

Grey arrows = covariate pathways (all non-significant)

Table 1

Descriptive statistics and intraclass correlations (ICC) within treatment groups.

Variable	N	Mean	Std. Deviation	Skewness	Kurtosis	ICC
Attendance	89	.85	.27	−2.18	3.89	.04
Home Prac. Completion	89	.50	.30	−.28	−1.05	.14
Home Practice Fidelity	79	.82	.12	−1.00	.89	0
Home Practice Efficacy	79	3.25	.73	−1.26	1.91	.02
Program Satisfaction	69	4.40	.77	−2.00	5.20	.06
Freq. of Skill Use	69	3.74	.64	−.85	3.63	0
Overall Skill Helpfulness	68	4.21	.68	−1.59	5.84	0
Group Cohesion	69	3.57	.42	−1.82	3.42	.11
Leader Supportiveness	69	3.67	.40	−1.91	4.14	0
Group Expressiveness	69	2.94	.46	−.50	.37	.09
Skill Use Index	82	−.04	.95	−1.52	4.07	0
Program Liking Index	89	−.12	1.02	−2.01	4.04	0
Group Environ. Index	69	−.18	.74	−1.40	1.85	.06
T1 Caregiver Depression	89	11.44	7.86	.48	−.63	0
T1 Caregiver Grief	88	3.27	.90	−.48	−.25	0
T1 Child Internalizing	89	57.72	11.43	.17	−.24	0
T1 Child Externalizing	89	55.25	10.81	.12	−.73	0
T1 Positive Parenting	89	−.02	.50	−.27	−.31	.06
T3 Caregiver Depression	77	5.63	5.71	1.09	.45	.05
T3 Caregiver Grief	75	2.83	.69	.11	.37	0
T3 Child Internalizing	73	50.82	10.72	.57	1.31	.07
T3 Child Externalizing	74	49.45	12.17	.33	−.91	0
T3 Positive Parenting	77	.17	.45	−.60	.23	.02

“T1” = Time 1; “T3” = Time 3

Table 2

Standardized path coefficients (standard error) and 95% confidence intervals for the mediated effects of responsiveness index scores.

IV/DV	Mediator	<i>a</i> path (SE)	<i>b</i> path (SE)	95% CI
Child Internalizing	Skill Use	.06(.14)	.05(.10)	-.02 to .03
	Group Environment	.27(.13) *	.14(.18)	-.05 to .16
	Program Liking	.17(.12)	-.02(.12)	-.05 to .04
Child Externalizing	Skill Use	-.25(.12) *	-.07(.12)	-.04 to .09
	Group Environment	.14(.14)	.16(.12)	-.02 to .09
	Program Liking	.02(.12)	-.10(.14)	-.03 to .02
Caregiver Depression	Skill Use	-.24(.10) *	.22(.09) *	-.12 to -.01
	Group Environment	-.22(.04)	-.21(.10) *	.004 to .10
	Program Liking	-.05(.10)	-.01(.10)	-.01 to .01
Caregiver Grief	Skill Use	.14(.14)	.05(.07)	-.01 to .04
	Group Environment	.06(.12)	-.12(.09)	-.04 to .02
	Program Liking	.02(.13)	-.08(.09)	-.03 to .02
Positive Parenting	Skill Use	.23(.11) *	.33(.10) **	.01 to .17
	Group Environment	.11(.11)	.06(.10)	-.02 to .04
	Program Liking	.12(.10)	-.08(.14)	-.06 to .02

[†]
p<.10

*
p<.05

**
p<.01

p<.001

p<.0001