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Linking Empirically Based Theory and Evaluation: The Family Bereavement Program[1]

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Evaluated the effects of a theoretically derived program to prevent mental health problems in children who had experienced the death of a parent. The program was designed to improve variables in the family environment which were specified as mediators of the effects of parental death on child mental health. The evaluation design involved the random assignment of families to either an intervention or control group. The program led to parental ratings of increased warmth in their relationships with their children, increased satisfaction with their social support, and the maintenance of family discussion of grief-related issues. The program also led to parent ratings of decreased conduct disorder and depression problems and overall problems in older children. Significant correlations between the family environment variables and child mental health problems provided further empirical support for the theory underlying the program. Implications for program redesign were derived by reconsidering the adequacy of the program components to change theoretically mediating variables.

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Parental death is an important life transition that is experienced by approximately 5% of children (Osterweis, Solomon, & Green, 1984). Early studies showed that bereaved children relative to comparison groups had higher rates of psychiatric problems (Rutter, 1966) as well as higher levels of anxiety, depression, and social withdrawal (Felner, Ginter, Boike, & Cowen, 1981; Felner, Stolberg, & Cowen, 1975). In an epidemiological survey, Van Eerdewegh, Bieri, Parrilla, and Clayton (1982) found that parents reported that their bereaved children were more depressed and had more deterioration in their school performance 1 month after the death than a comparison group. Moreover, while specific grief reactions decreased, the more general behavior problems did not change and possibly increased over time. Another epidemiologic study by Gersten, Beals, and Kallgren (1991) found significantly elevated levels of depressive symptomatology in bereaved children and that more bereaved (9.8%) than comparison (1.3%) children met DSM-III-R criteria for major depression. Prospective studies of Israeli children whose fathers were killed in war (Elizur & Kaffman, 1982; Kaffman & Elizur, 1983) have found a wide range of behavior problems, notably overanxious-dependent and unsocial-aggressive behaviors, with the rates of these disturbances showing little change in follow-ups over a 3.5-year period. Research with adults has shown that bereavement during childhood is associated with greater vulnerability to becoming depressed following the occurrence of major negative life events (Brown & Harris, 1978). These findings converge in identifying childhood bereavement as a significant risk factor for elevated levels of psychological symptomatology.

Despite the importance of childhood bereavement as a risk factor, few preventive interventions for bereaved children have been conducted and evaluated and only one study used even a quasi-experimental design (Cook & Campbell, 1979). Black and Urbanowicz (1985) used a randomized invitation design (Brewer, 1976) to evaluate an intervention utilizing six in-home family sessions focused on grief-related affect. Parents of children participating in the family sessions reported that their children had fewer and more transient behavior problems, fewer sleep disturbances, and greater ability to talk about the deceased than untreated controls at a 1-year follow-up. However, the authors reported significantly differential attrition rates in the intervention and comparison groups, but failed to probe the potential effects of attrition on their outcomes.

In contrast to previous interventions for bereaved adults and children, which were developed largely on the basis of clinical experience and intuition, Coie et al. (1991) articulated the importance of developing strong linkages between empirically based theory, intervention design, and program evaluation. Several authors (Cowen, 1982; Lorion, 1983; 1985; Lorion, Price, & Eaton, 1989; Price, 1985) have proposed models in which

theory and knowledge about the development of the mental health problems guide the development of preventive interventions. The evaluation of these interventions, in turn, feeds back to enrich knowledge about basic psychosocial processes. In these models, theory, research, and intervention mutually develop through an interactive process. Evaluation researchers have also pointed out the benefit of theory in the design, evaluation, and modification of programs (Chen, 1990; Chen & Rossi, 1980; Cook, Leviton, & Shadish, 1985; Lipsey, 1990; Sechrest, West, Phillips, Redner, & Yeaton, 1979).

Despite these calls for theory-based programs and evaluations, few examples of theory-guided preventive interventions exist in the literature. In previous papers (Sandler, Gersten, Reynolds, Kallgren, & Ramirez, 1988; West, Sandler, Pillow, Baca, & Gersten, 1991), we described the development of a preventive intervention program for bereaved children, the Family Bereavement Program. The development of this program has been guided by our basic psychosocial research and theorizing on the processes that lead to psychological symptomatology in this population. The present article reports an initial experimental trial of this prevention program.

The critical characteristic of theory-guided intervention is that it is based on a formally specified model of the causal processes underlying the development of the problem. The model should be based on prior empirical research supporting the plausibility of each of these putative causal processes. In the area of prevention, such research will normally utilize correlational techniques (e.g., structural equation modeling). While such research can rule out inadequate models, model confirmations only indicate that the theory is plausible. Consequently, manipulation of the putative causal processes within a randomized preventive trial is necessary to provide the most convincing evidence of the *causal* nature of these relations (Coie et al., 1991; Cook & Campbell, 1979; Higginbotham, West, & Forsyth, 1988; Judd & Kenny,1981).

Theory-guided interventions are designed to provide such a test by directly attempting to change the hypothesized mediating processes in the experimental group. Demonstrating that the intervention procedures do change the mediating variables, which, in turn, change the participant's level on the outcome variables (symptomatology), provides not only a strong test of the underlying theoretical model (Baron & Kenny, 1986; James & Brett, 1984) but also evidence for program effectiveness. Even when the program has *not* been successful, comparing the obtained results with those expected on the basis of the theoretical model can often identify components of the program or the theory in need of revision, providing a strong basis for redesign of the program.

THEORY-GUIDED DESIGN OF THE FAMILY BEREAVEMENT PROGRAM

The model upon which the intervention was based focuses on processes in the child's nuclear family. The literature supporting the development of the model and the initial statistical tests of the model are described in Sandler et al. (1988) and West et al. (1991). Only a brief summary is given here.

Studies of family variables influencing the child's likelihood of developing mental health problems after the death of a parent have implicated the quality of the relationship between the parent and the child (Brown, Harris, & Bifulco, 1986; Elizur & Kaffman, 1983), parental psychological symptomatology (Van Eerdewegh et al., 1982), and the lack of a stable family environment (Adams, Bouckoms, & Steiner, 1982). Other studies of children in a variety of high risk situations have emphasized the importance of children's negative life events in producing maladjustment (Johnson, 1982; Sandler, Wolchik, Braver, & Fogas, 1986).

Based on this literature, a model was proposed that specifies causal paths from parental death to the putative mediators of parental demoralization, negative life events, parental warmth, and stable positive events in the family. Each putative mediator is in turn linked to measures of child symptomatology. This model was formally tested in a cross-sectional study of 92 bereaved children and 20 controls matched on age, gender, and neighborhood of residence. The model provided a good fit to the data using both parents' reports and children's reports for each of these variables (West et al., 1991). Inspection of the individual standardized path coefficients indicated significant paths between parental (spouse) death and demoralization of the surviving parent, parent report of poor family cohesion, and children's reports of stable positive events. Significant paths were also found between each of the hypothesized mediating variables and at least one of the measures of child symptomatology. Further supportive evidence was found in the failure of several other competing models to fit the data. The literature review coupled with these results supported the plausibility of the proposed model and led to its tentative acceptance as a basis for program design.

DESCRIPTION OF THE FAMILY BEREAVEMENT PROGRAM

Based on this model, the Family Bereavement Program was developed to explicitly target each of the four putative mediators for change. The program had two major phases, a family grief workshop and a family

adviser program.[3] Both phases contained components designed to enhance the putative mediating processes identified in the model and thus to reduce psychological symptomatology. The hypothesized links between each of the program components, the mediating variables, and psychological symptomatology are shown in Table I. Column 1 shows the session in which the component occurred. Column 2 gives the program component designed to affect the proximal family variables in the adjacent box of Column 3. Column 4 shows the symptomatology variables. To illustrate, program sessions on quality time are hypothesized to increase parental warmth and family cohesion, which in turn reduce symptomatology.

Family Grief Workshop

Phase 1 was a structured three-session workshop that was attended by up to 8 bereaved families per session. The workshop was designed to accomplish two objectives: (a) to fulfill the perceived needs of bereaved families to meet with other families who had similar experiences, and (b) to improve the warmth of the parent–child relationship. The workshop included a simple lecture on the nature of grief, exercises to facilitate the identification of grief-related feelings by the child and parent, and struc-

Table I. Model of the Components of the Family Bereavement Program, and the Mediators They Were Intended to Change

Program sessions[a]	Program component	Mediators	Psychological symptomatology
All	Parental support	Parental demoralization Parent's support satisfaction	
Workshop	Grief workshop	Increased grief discussion Parental warmth	
1P, 2F	Positive exchanges	Parental warmth	
3P	Quality time	Parental warmth	
4P, 5F	Communication	Parental warmth	Depression
6P, 7F	Communication	Parental warmth	Conduct disorder
8P, 9F	Planning of stable events	Stable positive events	
10P, 11F	Coping with child and	Negative events	
12F	family stress	Family coping	
13	Termination session		

[a]The letter P refers to sessions held with parents alone, and F refers to session held with the entire family.

[3]Manuals describing the Family Grief Workshop and the Family Advisor Program are available from the first author upon request.

tured exercises to facilitate discussion of grief-related feelings and experiences between parents and children and with other bereaved families. The first objective was identified in a consumer survey conducted with 10 bereaved parents and children prior to developing the program. The survey asked parents and children what kind of intervention they would find particularly helpful. All parents and children indicated that they wished to discuss their grief-related experiences with other family members and with other families who had similar experiences. The workshop activities also were intended to improve communication among family members about their grief experiences in order to positively change the warmth of the parent–child relationship.

Family Adviser Program

The second phase, a highly structured 12-session family adviser program, explicitly targeted for change the participants' levels on each of the four putative mediators identified in the model. The program description highlights the hypothesized links between each program component and the mediating processes in the theoretical model (see Table I).

Parental Demoralization. The program was delivered by trained family advisers who had at least a B.A. degree and who were selected for their warmth, maturity, and prior personal experience with a bereavement similar to that of the families (e.g., death of spouse, death of parent while they were children). The relationship between the family adviser and the parent was structured to be supportive of the parent, both personally and in their parental role. Six of the 13 sessions were individual sessions between the parent and family adviser in which the parent was taught a relationship skill and then helped plan how to teach this skill to the family. Family advisers were encouraged to become a confidant of the parent and thereby provide emotional support or task assistance in appropriate areas. We hypothesized that this support would help parents feel more satisfied with their social support, and more competent as persons and parents, and that these changes would decrease parent demoralization (see also Vachon & Stylianos, 1988).

Parental Warmth. Five sessions were devoted to teaching three family relationship skills hypothesized to increase the warmth of the parent–child relationship. Two sessions involved increasing positive exchanges between family members. Positive exchanges included recognizing and commenting on the special qualities and talents of family members and things they do that other family members like. The value of positive exchanges between family members and how it feels when others recognize your positive quali-

ties were discussed. In one exercise a family member introduced each of the other members of the family to the family adviser by describing one positive characteristic of that family member. Increasing quality time between the parent and child was addressed in one session. Quality time was defined as the time a parent spends with a child with the express purpose of getting to know and enjoy him/her better. The parent and family adviser discussed the concept of quality time and the parent was encouraged to implement quality time activities with his/her children outside the sessions. Communication skills were taught in four sessions using didactic discussion, modeling, and role-playing techniques, focusing on both effective listening and expression skills (Gordon, 1970).

Stable Positive Events. Two sessions were devoted to the planning of stable positive events. Stable positive events were defined as things that happen in the family on a routine schedule, that are seen as positive by both the parent and the children. They could be small interactions such as a *regular* bedtime talk or a *regular* family meal. The concept was presented to the family and barriers to implementing stable positive events in the family were discussed. Overcoming these barriers to implementing stable positive events was identified as a problem that the family could deal with by using a simple four-step problem-solving model. The model included defining the problem, developing alternative solutions, evaluating the solutions and selecting one and developing a plan to implement the selected solution.

Negative Stress Events. Three sessions were devoted to helping improve coping with stressful family events. The concepts of emotion-focused and problem-focused coping were introduced and coping methods that were helpful or unhelpful were discussed. The parent then selected one event that was stressful for him/her and the family used the four-step problem-solving technique to figure out how to reduce this stressor. In the subsequent session the child identified a stressful event and the family used the problem-solving technique to reduce this stressor. The final meeting (Session 13) summarized and reinforced what was learned in the program and had the family adviser and family say good-bye to each other.

METHOD

Design Overview

Families were randomly assigned to an immediate treatment (T) versus a 6-month delayed treatment control (C) condition. If more than one child in the family was 7 to 17 years old, one child was randomly selected

as the target child to be assessed. The parent and target child in each family were assessed on all variables prior to random assignment to conditions and 6 months later. The second assessment occurred after the completion of the program for the T group and prior to the beginning of the delayed program for the C group.

Participant Selection and Characteristics

Families were recruited from two sources. The first source was through letters to a random sample of surviving spouses of individuals ages 25–50 who had died within the prior 2 years. This group was identified through State Health Department Death Certificates and constituted the subsample of deaths that would be most likely to include a surviving child in the target age group of 7–17 years. Arizona death certificates do not list surviving children. Based on our earlier work (Gersten et al., 1991), we estimated that 22% of these survivors would have one or more children who met the age criterion. After permission to utilize these files was provided by the Department of Health Services, letters describing the program were mailed to surviving spouses with an invitation to participate if they had one or more children in the requisite age range. Follow-up telephone calls were made to all families whose telephone numbers could be located. Of the 866 families that were originally identified through death certificates, 272 could be contacted by phone. Of these 272 families 88 had at least one child in the target age group and 46 of these agreed to participate.

The second recruitment source was through referrals to the program by community agencies such as churches or mortuaries. A total of 26 families with one or more children in the target age range were recruited from these sources.

Demographic characteristics of study participants are presented in Table II. The sample consists primarily of mother-headed households, with children from ages 7 to 17, and is relatively heterogeneous in socioeconomic status. Gersten et al. (1991) presented a detailed comparison of the intervention sample recruited from death records with a representative sample of bereaved families used in a community survey.[4] They found that the intervention sample was not significantly different from the representative

[4]The bereaved families studied in the community survey sample were not significantly different from a sample of families who refused the interview on measures of ethnicity, neighborhood social class, time since the death, and cause of death. The bereaved families in the community survey sample were more likely to have experienced the death of a father than were the refusers. However, further analyses indicated that families who experienced parental versus maternal death did not differ on the measures of the mediating variables in the model or on measures of children's adjustment problems.

Table II. Participant Characteristics

Parent sex		
Male	10	13.8%
Female	62	86.1%
Parent age (years)		
M	40.5	
SD	5.8	
Child sex		
Male	37	51.4%
Female	35	48.6%
Child age (years)		
M	12.39	
SD	3.19	
Mdn	13.00	
Current annual family income before taxes		
Median	$20,000 to 25,000	
Range	< $5,000 to > $40,000	
Parent education		
Grade school	1	1.4%
Some high school	3	4.2%
High school	20	27.8%
Tech school	4	5.6%
Some college	30	41.7%
College graduate	7	9.7%
Grad school	7	9.7%
Median	Some college attended	
Parent occupation		
Homemaker	25	34.7%
Unemployed	2	2.8%
Student	3	4.2%
Other employment	29	40.3%
Parent's race		
White-Caucasian	59	81.9%
White-Hispanic	6	8.3%
Black	2	2.7%
Natice American	1	1.4%
Asian	1	1.4%
Other	3	4.2%
Parent's religious preference		
Catholic	23	31.9%
Protestant	34	47.2%
Mormon	6	8.3%
Jewish	1	1.4%
None	3	4.2%
Other	5	6.9%
Cause of death		
Heart disease	17	23.6%
Cancer	20	27.8%
Other illness	12	16.7%
Motor vehicle accident	8	11.1%
Other accident	6	8.3%
Homicide	3	4.2%
Suicide	6	8.3%
Time since death at first interview (months)		
M	15.45	
SD	7.39	

survey sample on either demographic variables, putative mediator variables, or measures of symptomatology.

The program was administered to four cohorts of families, with random assignment of families to conditions conducted within each of the four cohorts (Cohort 1: 8 T, 10 C; Cohort 2: 7 T, 7 C; Cohort 3: 15 T, 16 C: and Cohort 4: 5 T, 4 C; Total *N*: 35 T, 37 C; where T refers to treatment [preventive] and C to control subjects, respectively). The cohort design reflected the trickle flow of subjects from the recruitment sources, the group nature of the grief workshop, and the limited number of available family advisers. As part of their agreement to participate, families in the T group agreed not to participate in other psychological counseling programs during the experimental trial.

Process Evaluation

The family advisers were extensively trained and supervised to assure that the intended program was implemented as closely as possible. All program procedures are carefully described in the intervention manual. Process evaluation measures were designed to assess the extent to which the program sessions were administered to the family in accord with the protocol described in the program manual.

Fidelity of Implementation of Program Components. Program implementation was assessed as attendance at program sessions and the degree to which the activities for each session occurred as described in the program manual. Attending at least nine sessions of the family adviser program and one meeting of the grief workshop was the minimal criterion for designating participants as having received the program. These criteria ensured at least minimal exposure to activities designed to change each of the theoretical mediating processes. Of the 35 families, 16 completed all program sessions and an additional 8 met the criterion for minimum participation.

Session Content. The program manual specified precisely the program activities that constituted each session. For example, in Session 3 the parent and the family adviser met and engaged in 12 activities designed to increase the amount of quality time the parent spent with his/her children. The specific activities included reviewing the concept of quality time; asking parent to describe activities they have done that were most like quality time, asking parent to describe how quality time with their children has changed since the death of his/her spouse, asking the parent what quality time activities they would like to participate in with their children, asking the parent to discuss quality time with their children and negotiating a regular time for these activities. The parent and family adviser each completed a separate

checklist reporting whether each of these activities occurred as described in the manual. The checklist scores reflected implementation of activities within each program component. The number of items for each program component ranged from 2 to 18 for the parent checklists (43 items total) and from 5 to 40 for the family adviser checklists (107 items total). The family advisers independently completed a checklist after each session and wrote comments about the clinical efficacy of the components during the session. These notes were reviewed in weekly meetings of the family adviser with their clinical supervisor. The parent questionnaires were administered after Sessions 3, 7, and 13, were completed by parents in private, and were mailed to the program supervisor. The parent checklists were never seen by the family advisers.

Theoretical Mediating Variables

The original model which provided the theoretical basis for program development specified five variables as mediators of the effects of parental death on children's psychological symptomatology. Measures of these putative theoretical mediating variables are presented below. In addition, three supplementary measures were included to assess variables that were not part of the original model but were expected to be affected by the intervention program: family coping, discussion of grief-related issues, and satisfaction of parents and children with their social support.

Parental Demoralization. The PERI demoralization scale was used to assess parent's psychological symptomatology. Dohrenwend, Shrout, Egri, and Mendelsohn (1980) developed this scale to assess the common elements of symptomatology that occur across many different dimensions of psychopathology. The scale contains 25 items; coefficient $\alpha = .93$ in this sample.

Parental Warmth. Parental warmth was assessed using 24 items from the Children's Reports of Parental Behavior Inventory (CRPBI; Schaefer, 1965) that assessed the acceptance–rejection dimension. A parent form was developed by rewording the items from the children's report to be appropriate for single parents. Coefficient α was .88 for child report and .75 for parental reports in this sample.

Family Cohesion. Parent and child reports of family cohesion were obtained using 7 items which had the highest item-total correlation on this dimension from the Family Environment Scale in published reports (Moos & Moos, 1981). In this sample, coefficient α was .72 for the parent report and .77 for the child report.

Stable Positive Events. Parent and child reports of stable positive events were obtained for 12 events, 5 selected from the General Life Events Schedule for Children (Sandler, Ramirez, & Reynolds, 1986) and 7 selected from the Parent Death Events List (Beals, 1987). These events had all been previously rated as positive by a panel of 10 objective psychologist raters. The identical set of events were listed on both the parent and child checklists; these events were ones of which both parent and child could be aware (i.e., potentially observable). Each respondent was first asked whether the event had occurred in the past 3 months. For those events that were reported, respondents were asked whether this was more than usual, less than usual, or about the same as the usual rate. Previous research has found that positive events that were reported to occur at the same rate as usual were related to lower levels of symptomatology, whereas positive events that occurred at increased or decreased rates did not (Sandler, Wolchik, Braver, & Fogas, 1991).

Negative Events. Parent and child reports of negative events were obtained for 32 events, 20 events from the General Life Events Schedule for Children (GLESC; Sandler et al., 1987) and 12 events from the Parental Death Event List (Beals, 1987). Each event had been previously rated by 10 expert judges as negative. The same events appeared on both the parent and child checklists. Parents and children responded to each event, reporting whether or not it had occurred during the past 3 months. The child report negative events score from the GLESC has previously been found to have good test–retest reliability (r = .75) in a sample of high school students over a 2-week period (Gehring, 1986). Internal consistency is not appropriate for life events scales where the items are not assumed to represent the same underlying construct but to be reports of the occurrence of relatively independent events (Sandler & Guenther, 1985; West & Finch, in press).

Family Coping by Reframing. Parent and child reports of family coping was assessed using the reframing scale from the F-COPES (McCubbin, Olson, & Larsen, 1987). The 8-item scale assesses coping by seeing the family as strong and capable of handling its problems. In this sample, coefficient α was .83 (parent report) and .70 (child report).

Discussion of Grief-Related Issues. Discussion of grief-related issues in the home was assessed using a 10-item parent report scale (α = .87) and a parallel 10-item child report scale (α = .89). Items on this scale referred to frequency of discussions between the parents and children of grief-related issues.

Parent Perceptions of Support. Parents rated their satisfaction over the past 3 months with the support they had received in five areas: recreation, advice and information, goods and services, emotional support, and positive

feedback. A 10-point scale was used to rate their satisfaction with each type of support, with 1 indicating they were "as dissatisfied as they could be" and 10 indicating that they were "as satisfied as they could be." For this scale, coefficient α was .82 in this sample.

Children's Satisfaction with Family Support. Children rated their satisfaction over the past 3 months with the support they had received in five areas from members of their family: recreation, advice and information, goods and services, emotional support, and positive feedback. A 10-point scale was used to rate their satisfaction with each type of support, with a 1 indicating they were "as dissatisfied as they could be" and a 10 indicating that they were "as satisfied as they could be." For this scale, coefficient α was .86 in this sample.

Psychological Symptomatology

Depression. Child reports of depressive symptomatology were obtained using a shortened form of a structured diagnostic interview, the Child Assessment Schedule (CAS; Hodges, Kline, Stern, Cytryn, & McKnew, 1982). Twenty items on this scale assessed depressive symptomatology (α = .83 in this sample). The Child Depression Inventory (Kovacs, 1981) was used as a standardized checklist measure of depression and had a coefficient α = .80 in this sample. Parental report of depressive symptomatology of the children was obtained using 16 items from the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) which were independently judged by three clinical psychologists to be symptoms of depression (Gersten, Beals, West, & Sandler, 1987). These items had a coefficient α of .83 with this sample. Shortened versions of the CAS and the CBCL were used because of time limitations in the assessment battery and because they had shown good reliability and construct validity in our previous research (Gersten et al., 1987; West et al., 1991).

Conduct Disorder. Ten items from the CAS were used as a structured diagnostic interview measure of conduct disorder (α = .58 in this sample). Self-report of conduct disorder symptoms were also obtained using 28 items derived from the CBCL (Achenbach & Edelbrock, 1983); this scale had a coefficient α = .83 for this sample. Parent report of conduct disorder was obtained using 22 items from the CBCL which were judged by three clinical psychologists to represent this dimension (α = .88 in this sample).

RESULTS

Analysis of Attrition

Of the 35 participants assigned to the treatment group, 11 (31.4%) dropped out prior to the posttest, whereas 6 of the 37 participants (16.2%) dropped out from the control group. Chi-square analysis did *not* indicate a significant difference in the attrition rates, $\chi^2(1)$, = 1.54 ns, N = 72. Following the procedure of Jurs and Glass (1971), a series of 26 two-way (Treatment Condition × Attrition) analyses of variance were conducted on demographic, family process, and symptomatology variable *pretest* scores to assess whether attrition was occurring differentially as a function of program versus control status.[5] A Treatment Condition by Attrition status interaction indicates a potential threat to internal validity (Jurs & Glass, 1971).

Of the 26 analyses that were conducted, there were two significant Treatment Condition × Attrition interaction effects. Significant interaction effects were for the variables of parental level of education, $F(1, 68)$ = 4.90, $p < .05$, and parental discussion of bereavement issues, $F(1, 68)$ = 6.83, $p < .05$. Post hoc t tests (Winer, 1971) indicated that controls who attrited had higher education, $t = 2.38$, $p < .05$, and discussed bereavement issues less, $t = 2.18$, $p < .05$, than those who stayed. Similar post hoc t tests revealed no differences in the treatment group between completers and attriters, $t = 0.61$, ns, and $t = 1.44$, ns, respectively.

Integrity of Delivery of the Program

Attendance. Of the 24 participants who completed the program, 9 attended all three workshop sessions, 4 attended two sessions, and 11 did not attend the workshop. Those families who did not attend the workshop received an individualized makeup workshop by the family adviser. Sixteen participants completed all 13 sessions described in the manual for the family adviser program, 5 completed 10 sessions, while 3 completed 9 sessions.

Implementation of Program Content. The mean percentage of program activities reported as having occurred were calculated for the parent and family adviser reports. Parents endorsed items reporting the occurrence of each category of planned activities as follows: 79% of the quality time, 82% of the exchange of positives, 94% of the communication, 57% of the stable positive events, 52% of the coping with stress and 65% of

[5]This analysis is exploratory and seeks to identify *any* variables that are potentially related to attrition.

the parental support items. The mean overall level of implementation of components was 72%. Family adviser's reports of percentage program implementation indicated the following means across program components: 84% for quality time; 89% for exchange of positives; 81% for communication; 82% for stable positive events; 61% for coping with stress and 72% for parental support (overall M = 78%). To assess how much of the nonimplementation of the program components reflected participant nonattendance at program sessions, implementation percentages were calculated separately for the 16 full participants who completed all 13 sessions of the program. As expected, the results for the full participants indicated markedly increased implementation of the components that occurred towards the end of the program: stable positive events (parental report of 80% implementation, family adviser report of 89% implementation) and coping with stress (parental report of 72% implementation and family adviser report of 82% implementation). Overall, those parents who completed the entire program reported 83% program implementation across all program components and family advisers reported 84% program implementation for those parents across all components. Participants were also asked during posttest if the parent or target child had participated in any form of psychological counseling during the experimental period. None of the families in the T group and 2 of the families in the C group reported receiving psychological counseling.

Evaluation of Program Effects on Theoretical Mediating Variables

The effects of the program on the putative mediating (family environment) variables were tested using a three-way Treatment (T vs. C) × Time (pre vs. post) × Age of Child (younger = 7–11 years; older = 12–17 years) repeated measures analysis of variance. Because of the wide age range of participants in the program (ages 7–17) it was important to include age as a factor in the analysis and test for differential program effects across age. Each of the family environment variables was analyzed separately in this initial study to assess the success of the program in changing each of the targeted putative mediators.

Table III presents the means and tests of significance for each of the three variables for which there were significant Treatment × Time interaction effects: (a) The program increased parental reports of the warmth of their relationship with their children relative to the control group, $F(1, 48) = 5.23$, $p < .05$; (b) parents in the program reported increased satisfaction with their social support relative to parents in the control group, $F(1, 51)$

= 8.21, $p < .01$; and (c) parents in the control group reported a greater decrease in discussion of grief-related issues from Time 1 to Time 2 than did parents in the treatment group, $F(1, 48) = 5.54$, $p < .05$. The only significant Treatment × Time × Age of Child interaction effect was on parents' reports of the occurrence of negative events, $F(1, 48) = 5.37$, $p < .05$. Post hoc comparison of cell means (Winer, 1971) indicated that significant decreases in the occurrence of negative events were reported for younger children in the control group, $t = 4.07$, $p < .01$, and that marginal decreases were reported for older children in the treatment program, $t = 1.75$, $p < .10$. No evidence of change was found for older children in the control group, $t = 1.19$, ns, or younger children in the treatment group, $t = 0.02$, ns.

We also investigated the effect of two variables for which the Jurs & Glass (1971) procedure showed evidence of differential attrition. Using the SAS general linear models procedure (SAS Institute, 1990), the pretest and posttest scores were adjusted separately for the effect of the two attrition-related variables. The adjusted scores were then subjected to a Treatment × Time × Age of Child ANOVA. The results for the Treatment × Time interaction effects closely paralleled those reported above: Fs = 4.62, 5.40, 4.57, ps < .05, for parental reports of warmth of the relationship, satisfaction with social support, and discussion of grief-related issues, respectively. The Treatment × Time × Age of Child interaction for negative events was only marginally significant, $F = 3.18$, $p = .08$. These results suggested that differential attrition did not substantially account for the observed results on the putative mediators.[6]

Program Effects on Measures of Psychological Symptomatology

Each child's score on the parent report measures of depression and conduct disorder problems were first converted to z scores (using the respective pretest mean and standard deviation) and the mean z score was computed as a composite measure of symptomatology. The effect of the program on children's adjustment problems was assessed using three-way

[6]This procedure is presented as consisting of two steps for ease of explanation only. In fact, the analysis is executed in a single step. For discussion of grief-related issues dependent variable, adjustment could only be made for parental level of education. An alternative analysis strategy to prove the effects of attrition is analysis of covariance in which parental level of education, discussion of grief-related issues, and the pretest level of the dependent variable are used as covariates. The effects of the program on parental report of warmth and satisfaction with social support were both significant, Fs = 4.56, $p < .05$. However, the effect of the program on discussion of grief-related issues, controlling for baseline level of discussion and for parental education, was no longer statistically significant, $F = 2.01$, ns.

Table III. Repeated Measures Analysis of Effects of Program on Parent Report of Mediating Variables[a]

		Pre		Post			
Scale	*N*	*M*	*SD*	*M*	*SD*	Change	Treatment × Time *F*
Warmth							
Control	29	2.49	0.27	2.54	0.33	0.05	5.23[b]
Program	23	2.45_a	0.28	2.64_a	0.24	0.19	
Grief discussion							
Control	29	2.37_b	0.65	2.03_b	0.66	−0.34	5.54[b]
Program	23	1.95	0.50	1.98	0.74	0.03	
Parent support satisfaction							
Control	29	7.38	2.08	6.87	2.32	−0.51	8.21[c]
Program	23	6.75_c	1.89	7.93_c	1.72	1.18	

[a]Pretest and posttest means that share a common subscript are significantly different from each other on post hoc *t* test comparisons (Winer, 1971). *F* tests of Treatment × Time interactions are identical to *t* tests comparing change.
[b]$p < .05$.
[c]$p < .01$.

(Treatment × Time × Age of Child) repeated measures analysis of variance on the composite measure of symptomatology. As shown in Table IV, the Treatment × Time × Age of Child interaction was significant for the composite measure, $F(1, 50) = 6.13, p < .05$.

Follow-up three-way ANOVAs were then performed separately on the parent report measures of depression and conduct disorder problems. Both of the three-way interactions were significant: Child depression, $F(1, 50) = 5.08, p < .05$; children's conduct disorder problems, $F(1, 50) = 5.09$, $p < .05$. Post hoc cell comparisons indicated significant improvements for older children who received the treatment on conduct disorder problems, $t = 3.07, p < .01$, and depression, $t = 2.68, p < .05$. Younger children in the comparison group showed significant improvement over time on the measure of conduct disorder, $t = 2.90, p < .01$, but did not show a similar improvement for depression, $t = 1.33$, ns. No program effects or program by age interaction effects were found for the child self-report measures of child adjustment problems.

We also investigated the effect of possible differential attrition on the results of the analyses of parent reported symptomatology. Following the same procedure as with the putative mediators, the SAS general linear models procedure was used to separately adjust the pretest and posttest scores for the effect of the two attrition-related variables. The results of the tests of the Treatment × Time × Age effect closely paralleled those

Table IV. Repeated Measures Analysis of Effects of Program and Age on Parent Report of Child Symptomatology[a]

Symptom measure	Younger group				Older group				Treatment × Time $F(1, 50)$	Treatment × Time × Age $F(1, 50)$
	n	Pre	Post	Change	n	Pre	Post	Change		
Composite	13	0.35	−0.07	−0.42	18	−0.04	0.10	0.14_a	ns	6.13^b
Control		1.12	1.09			0.87	1.17			
Program	11	−0.27	−0.35	0.08	12	0.06	−0.49	-0.55_a		
		1.02	0.86			0.90	0.79			
Depression										
Control	13	0.58	0.46	−0.12	18	0.49	0.56	0.07_c	ns	5.08^b
		0.43	0.45			0.33	0.44			
Program	11	0.37	0.35	−0.02	12	0.59_b	0.35_b	-0.24_c		
		0.35	0.28			0.31	0.20			
Conduct Disorder										
Control	13	0.56_b	0.43_b	-0.16_c	18	0.41	0.45	0.04_e	ns	5.09^b
		0.34	0.30			0.31	0.40			
Program	11	0.38	0.35	-0.03_c	12	0.39_d	0.27_d	0.12_e		
		0.31	0.32			0.35	0.34			

[a]For the composite measure, scores refer to mean z scores on the scales computed using the pretest mean and standard deviation. For the Depression and Conduct Disorder measures, scores refer to mean item scores on the scales. Pretest and posttest means within age groups within rows that share a common lower case subscript are significantly different from each other on post hoc t-test comparisons (Winer, 1971). Change score means within each age group that share a common upper case subscript are significantly different from each other on post hoc t-test comparisons.

[b]$p < .05$.

obtained in the previous analyses: Fs = 6.56, 5.00, and 5.82, ps < .05, for composite symptomatology, depression, and conduct disorder problems, respectively.

Probing the Theory of the Intervention

The theory upon which this program was based posited a causal relationship between the family environment mediating variables and children's adjustment problems. Three analyses were conducted to further probe this theoretical model using the data from the program evaluation: (a) analysis of the cross-sectional relations between the theoretical mediating variables and psychological symptomatology at pretest; (b) analysis of the relations between time two mediators and change in symptoms from Time 1 to Time 2; and (c) analysis of mediation of the effects of the program to reduce psychological symptomatology.

Cross-Sectional relations. The total composite parent- and child-rated symptomatology scores were calculated as the mean of the standardized depression and conduct disorder scores for each reporter. The measures of psychological symptomatology were highly correlated within the parent (mean r = .68) and child (mean r = .57) reporters and no differential predictions were made for each type of symptomatology. The initial set of analyses assessed the zero-order correlations between the hypothesized mediating variables and composite symptomatology scores at pretest for the full sample (N = 72). As can be seen in Table V, parental reports of psychological symptomatology were significantly correlated with parent reports of the warmth of the parent–child relationship, negative events, stable positive events, family cohesion, parent demoralization and parents' support satisfaction. Four of the parent-reported mediators (stable positive events, family cohesion, family coping, and parent support satisfaction) were correlated with child-reported symptomatology. Children's reports of parental warmth, negative events, stable positive events, family cohesion, family support satisfaction, and family coping by reframing were all significantly correlated with children's reports of symptomatology, although none of the child-reported mediators related to parent reports of children's symptoms. As in West et al. (1991), significant differences in the correlations between mediator and symptoms were not found between the older and younger children. Because nonbereaved comparison families were not included in the sample, a replication of the structural equation analysis reported in West et al. (1991) could not be performed. Multiple regression analyses were conducted to assess the prediction of parent- and child-reported symptoms from all putative mediators considered simultaneously (see Table V).

Table V. Correlations Between Hypothesized Mediators and Child Symptomatology Scores for the Full Pretest Sample[a]

Variable	Child ratings of symptoms	Parent ratings of symptoms
Child ratings of mediators		
Parental warmth	−.50[d]	−.16
Negative events	.51[d]	.04
Stable positive events	−.53[d]	−.07
Family cohesion	−.48[d]	−.12
Family support satisfaction	−.43[d]	−.04
Grief discussion	−.13	.08
Family reframing coping	−.33[c]	.03
	R^2 = .52[d]	R^2 = .06
Parent ratings of mediators		
Parental warmth	.02	−.35[d]
Negative events	.15	.44[d]
Stable positive events	−.29[c]	−.21[b]
Family cohesion	−.32[c]	−.54[d]
Grief discussion	.01	.15
Family reframing coping	−.25[b]	−.11
Parent demoralization	.15	.43[d]
Parent support satisfaction	−.19	−.26[b]
	R^2 = .22[b]	R^2 = .48[c]

[a]Tabled entries are Pearson *r*s.
[b]$p < .05$.
[c]$p < .01$.
[d]$p < .001$.

Parent-reported mediators accounted for 48% of the variance in parent ratings of symptoms, $F = 7.52$, $p < .01$, and 22% of the variance in child-reported symptoms, $F = 2.26$, $p < .05$. Child reports of mediators accounted for 52% of the variance of child-reported symptoms, $F = 10.12$, $p < .01$, but did not significantly predict parent-reported symptoms.

Predicting Time 2 Symptomatology. A second series of regression analyses were conducted for each of the putative mediators. In these analyses the total parent- and child-reported symptomatology score at Time 2 was regressed on the total symptomatology score at Time 1 and separately on each of the putative mediators at Time 2. For the child-report measures, the results of the series of regression analyses show significant effects for the child's report of the warmth of the parent–child relationships (CRPBI), $\beta = -.22$, $p = .05$, and the child's report of negative events, $\beta = .26$, $p < .02$. For the parent-report measures, the series of regression analyses showed effects of children's negative events, $\beta = .29$, $p < .01$, stable positive events, $\beta = -.20$, $p = .05$, family coping, $\beta = -.28$, $p < .01$, family cohesion, $\beta = -.36$, $p < .01$, and nonspecific parental psychological symptomatology

(PERI), $\beta = .19$, $p = .08$. All of the relationships obtained were in the direction predicted by our small theory (West et al., 1991). These results, using the Time 2 data and adjusting for Time 1 levels of symptomatology, largely corroborate the results of the cross-sectional analyses reported in the previous section.

Mediation of Significant Treatment Effects. The strongest potential evidence for a causal relation between the mediating variables and symptomatology in a theoretically driven randomized trial is provided by a procedure outlined by Kenny and his associates (Baron & Kenny, 1986; Judd & Kenny, 1981). In this procedure, three separate effects must all be shown: (a) a direct effect of treatment on the outcome measure, here symptomatology; (b) a direct effect of treatment on the hypothesized mediator(s); and (c) a finding that the mediator(s) account for a significant portion of the variance in the effect of the treatment on the outcome measure. Since our earlier analyses of program effects found a direct effect of the program on parent reports of symptomatology only for the older children, our analyses were limited to this subgroup. First, a multiple regression analysis was conducted for the older children in which the composite parent-rated symptomatology variable at Time 2 was regressed on the Time 1 parent-rated symptomatology variable and the program condition (dummy coded). The effect of the program variable was significant, $t = 2.48$, $p < .02$, thus satisfying the first criterion of the mediational model for this subgroup. Second, separate multiple regression analyses were performed in which the Time 2 score on each mediator was regressed on the Time 1 score on the mediator and the dummy-coded program variable. Significant program effects were found for two potential mediating variables, parent reports of the warmth of the parent–child relationship, $t = 3.01$, $p < .01$, and parent's satisfaction with the support they received, $t = 2.48$, $p < .02$. Third, following a recommendation by Batson (1975), the Time 2 parent ratings of child symptomatology score was regressed on the program condition variable (dummy coded) and the Time 2 mediator. Consistent with a mediational model, the effect of the program was no longer significant, $t = 1.64$, ns, when the parent warmth score was entered in the equation. The test of parental support satisfaction showed no similar evidence consistent with mediation in a parallel analysis, $t = 2.42$, $p < .03$, for the treatment when the parental support satisfaction variable was also entered. These tests provide some evidence consistent with mediation for parental warmth, but not for parental support satisfaction. Models in which the effects of the mediators were examined simultaneously were precluded by the small sample.

Exploratory Analyses of Death-Related Moderator Variables

Reviewers of this paper have raised issues as to whether the nature of the parental death or the time since death are potential moderators of the grief experience. These issues were explored using data from two separate samples of bereaved families: (a) our original community survey of (N = 92) bereaved families (West et al., 1991) and (b) the full pretest data (N = 72) from the present study. Using Box's (1949) M statistic, we compared the covariance matrix of the measures of the putative mediators and symptomatology separately in the two samples as a function of (a) maternal versus paternal death and (b) gender of child. No differences were found as a function of either of these potential moderators. A final pair of Box's M tests was used to compare the covariance matrices separately in the two samples for families in which the cause of death was classified as "sudden" (accidents, suicides, homicides) with those in which it was classified as "lingering" (cancer). Once again, no differences were found. Thus, we did not detect any major differences in the relationships among the measures of the putative mediators and symptomatology as a function of these potential moderator variables.

We also correlated time since death with each of the reported pretest measures of symptomatology. In the community sample (West et al., 1991), time since death was not significantly correlated with any of the six child-reported or three parent-reported measures of symptomatology (CBCL-based depression, anxiety, conduct disorder). For the pretest of the present sample, time since death was significantly correlated with the parent-reported CBCL-based measures of depression and conduct disorder, rs = -.23 and -.25, respectively, both ps < .05, but not with any of the four child-reported measures of depression and conduct disorder.[7]

DISCUSSION

The Family Bereavement Program was found to increase parental perceptions of the warmth of their relationship with their children, increase parental satisfaction with their social support and to prevent a decrease in parent reports of grief discussions (but see Footnote 6). There were also significant program effects to reduce parent reports of depression and conduct disorder problems for the older children. No significant program ef-

[7]The community survey was a largely representative sample of families selected from state death records (see Gersten et al., 1991), whereas the present sample included families that had been referred as well as families selected from state death records.

fects were found for children's reports of family environmental variables or of their adjustment problems. These results, although somewhat encouraging, fall short of full attainment of the program objectives. Below, we focus on several issues raised by the results of this initial preventive trial.

One important issue is to understand why program effects were obtained for parent but not for child reports. The use of multiple parent and child reports in the present investigation represents one implementation of Cook's (1985) call for critical multiplism in research. A review of the literature on multiple reporters of children's adjustment problems (Achenbach, McConaughy, & Howell, 1987) found a mean correlation of .25 between child and parent reports of children's adjustment problems across 14 studies, suggesting that the present results are not atypical. The divergent perspective provided by the child and parent reports in the present study leave us with an empirical puzzle for which we do not presently have a definitive answer. It is possible that the child's behavior changes most in the home setting which parents weigh more heavily in their judgments. Or, the parent and child may have different thresholds for judging that a specific class of behaviors has occurred (cf. Jones & Nisbett, 1971; Moskowitz, 1986). Future research using reports from teachers, peers, and systematic observation of parent–child interaction are necessary to probe the sources of discrepancy between the parent's and child's reports. Nonetheless, the parent's perspective has important implications for the child. This perspective strongly influences the parent's response to the future behavior of the child (Bugenthal & Shennum, 1984; Sameroff & Fiese, 1990) including referral of the child to psychological services (Griest, Forehand, Wells, & McMahon, 1980).

Alternatively, the discrepancy between parent and child reports may reflect the parent's desire to please the researcher (Orne, 1962; Scheier, 1978). although this interpretation cannot be completely ruled out, it is not fully plausible given the present design and pattern of results. The interviewer was blind to the respondent's treatment condition and no connection was made between the interviewer and the family adviser. The parent was also aware that the child was also being simultaneously interviewed on similar topics, a measurement condition that minimizes bias in responding (Aiken & West, 1990). Parent reports indicated positive effects on some but not all (e.g., family cohesion, stable positive events) intervention-related measures. Finally, the results were obtained for the older but not the younger children. These considerations are not consistent with interpretations of the results based on attempts by the parents to please the researchers.

A second important issue is why parent reports of decreased behavior problems were found for the older but not the younger children. Perhaps

the best explanation for this result is that the behavior change techniques used in the program have primarily been used to improve relations between parents and adolescents (Guerney, 1977; Robin, 1979, 1981). Alternatively, parents with multiple children may have focused on the issues of the older, presumably more verbal child thus reducing the impact of the program for the younger children. A further age-related puzzle is provided by the finding of decreased parent perceptions of conduct disorder problems in the younger control but not treatment groups. These findings and interpretations strongly suggest that age-appropriate interventions that differ in format rather than the targeted mediating processes are necessary for preadolescent and adolescent children. There was no evidence in the prior correlational results in West et al. (1991) or the present study that the strength of the relations between the putative mediators and symptomatology differ between preadolescent and adolescent children.

A third issue is to reconsider the validity of the theory upon which the program was based. If links in this theory are misspecified, then improvement in the technology to change these processes still cannot result in the desired decrease in child symptomatology. The original small theory (West et al., 1991) upon which the program was based specified that changing family processes (i.e., parent demoralization, parental warmth, family cohesion, negative family events, and stable positive events) would lead to decreased symptomatology in the children. What have we learned to shed further light on this theoretical model?

The cross-sectional correlations between the mediators and child symptomatology on the pretest data replicate the correlations found in the original epidemiological sample (Sandler et al., 1988; West et al., 1991). The finding that Time 2 scores on the mediators predicted Time 2 symptomatology controlling for Time 1 symptomatology allows us to rule out several alternatives to the interpretation of a causal effect of the mediators on symptomatology. These relations cannot be accounted for by the effects of a stable third variable (e.g., child-rearing history, social class, parent personality) on the symptoms. The fact that approximately 50% of the variance in parent-reported and child-reported symptomatology was accounted for by the mediators in the pretest sample as well as the epidemiological sample confirms that these are strong relationships and that, if the causal links are as hypothesized, a program that changed these mediators could have considerable impact on child symptomatology.

The major limitation of these analyses is that the strongest effects are obtained for the relations between mediators and symptoms as reported by the same source. The only cross-reporter relations are for parent reports of stable positive events, family cohesion, and support satisfaction which were related to children's reports of symptomatology. It is notable that simi-

lar mediators of the effects of bereavement on children are obtained from other studies using diverse methods to assess the putative mediators and symptoms (Breier et al., 1988; Brown et al., 1986; Elizur & Kaffman, 1983). It should also be recognized that cross-reporter analyses may seriously *un-der*estimate the effect size because of the nonshared method (Campbell & O'Connell, 1982). This latter problem is particularly severe in the present case because children and their parents may have access to different information, combine information in different ways, and may report on measures that do not assess the information using parallel items (Funder & West, in press; Kenny, 1991).

The most convincing evidence of the causal effect of the mediators on children's symptoms would be that program effects on the mediators in fact accounted for significant program effects on children's symptoms. Unfortunately, because of the relatively small N and the program's success in affecting symptomatology only for the older children, formal tests of mediation (Baron & Kenny, 1986) could only be done for two potential mediators and only with the older children. The finding that the parental warmth variable met the criterion for mediation strengthens the interpretation that this variable is causally related to children's symptomatology.

A final issue is the strength of the program (Sechrest et al., 1979): Were the behavior change techniques used adequate to bring about the intended changes? The design of the intervention specified the techniques that were directed at changing each of the putative mediators. The program was most successful in changing the parental warmth variable. A review of the program content shows that more sessions were devoted to teaching skills believed to be related to this construct (exchange of positives, quality time, listening and expression skills) than any of the other constructs. These sessions also were concentrated in the beginning of the program, before some of the families attrited.

Changes in several of our other putative mediators were not achieved. The finding from our correlational analysis of significant relations between these variables and children's symptoms suggests that it is important to understand how the program might be redesigned to more effectively change these variables.

Although the family was taught the importance of stable positive events and implemented new positive family activities, these activities may not have been perceived as stable because they had not been maintained for a sufficient amount of time prior to the posttest assessment. Program components that help maintain these positive events as a stable part of the family routine are needed to effect a perceived change in this mediator. The failure to decrease negative events is not surprising because many of the most frequently occurring events on this checklist (e.g., parent being

sad and upset; conflicts between the parent and other relatives; financial problems) involved events that may not be fully under the control of the parent and the child. It may be necessary to further enhance this component of the program to promote effective emotion-focused coping with these events through techniques such as positive cognitive restructuring (Meichenbaum, 1985) to see the family as strong and able to handle its problems. The potential importance of teaching such emotion-focused coping skills is supported by the finding that the family coping by reframing scale was correlated with lower levels of child symptomatology (see Table V). Findings that enhancing children's coping with other family stressors (i.e., parental divorce) reduces children's symptomatology (Pedro-Carroll & Cowen, 1985) provides further encouragement for the development of such programs for bereaved children.

The lack of program effects to improve parent demoralization may reflect the focus of the program on the parenting role rather than the parent's own mental health. The family advisers did attempt to provide general support for the parent; indeed, parents in the intervention conditions reported increased satisfaction with the support they received from their social network, and it is plausible that this reflects a positive evaluation of the support provided by the family adviser. Yet, the parent's demoralization undoubtedly derives from sources that were not addressed by the program (Stroebe, Stroebe, & Domitner, 1988; Vachon & Stylianos, 1988), requiring more intensive assistance than could be given in the present program.

Issues of Program Acceptability and Attrition

The acceptability of this intervention to the eligible population is comparable to that of similar education and support programs for families experiencing stressful disruptions. Our 52% acceptance rate is lower than the 72% acceptance rate reported for a prior program for bereaved families (Black & Urbanowicz, 1985), but is higher than the 24% acceptance rate reported for a program for divorced families (Stolberg & Garrison, 1985). A second index of acceptability is the rate of attrition for families who have begun the program. The 31% attrition rate from our intervention was similar to the 33% attrition reported for a six session in home family bereavement program (Black & Urbanowitz, 1987). Nevertheless, the potential of the intervention as a prevention strategy is mitigated by the fact that only approximately one third (52% acceptance × 69% completion) of the invited eligible participants can be expected to complete the program.

Identification of factors that contribute to program acceptability may facilitate the design of future programs for the eligible population of be-

reaved families. The program was quite demanding of the participants' time involving 26 hours of in-home contact and 12 hours of workshop participation (lasting a total of 4 to 6 months). Although the family advisers provided support, the family adviser program did not provide contact with other bereaved children and parents, a feature described as highly desirable by families in our prior consumer survey of bereaved families (Sandler et al., 1988). Use of a somewhat shorter program with a parent group and child group format might improve the acceptability of future interventions, although the decreased number of sessions might weaken program impact.

Differential attrition from the program and control groups can potentially compromise the internal validity of any randomized trial. Consequently, we followed the procedure recommended by Cook and Campbell (1979) and Jurs and Glass (1971) to probe the effects of attrition in the present experiment. The attrition rate was modestly but not significantly higher in the intervention (31.4%) than in the control group (31.4% vs. 16.2%, $p > .20$). Indeed, if we assume that the attrition rates observed in our sample are precisely equal to the attrition rates that would be observed in the population, a total of 244 subjects would be required to detect an effect of this magnitude at $\alpha = .05$ two tailed and power = .80 (Cohen, 1988). Testing of the Treatment Condition × Attrition interactions for all variables (26) measured at pretest identified only 2 (7.7% vs. 5% expected by chance) that attained statistical significance. Using the SAS GLM procedure, we then adjusted our estimates of treatment effects on the putative mediators and on symptomatology for these two pretest differences. The results did not change appreciably. Thus, to the extent we were able to probe for the effects of differential attrition, this potential threat to internal validity did not account for the data. Nonetheless, our analyses were limited by the variables that were actually measured and by the relatively small sample.

CONCLUSION

We have illustrated how our "small theory" (Lipsey, 1990) of bereavement guided the development and evaluation of a preventive intervention for bereaved children. Our small theory, based on prior empirical research, enabled us to identify family processes that appeared to mediate the effects of parental death on child mental health. Our intervention was designed to attempt to change these processes. The evaluation of our experimental trial of the intervention assessed changes on these processes as well as the more distal mental health outcomes. The experimental trial showed somewhat encouraging results, in terms of the program's ability to modify the

warmth of the parent–child relationship and to decrease symptomatology in the adolescent children. We also obtained further empirical support for our underlying theoretical model. Finally, implications for redesign of the program were derived from assessing the adequacy of the program components to change each of the mediators in the theoretical model.

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