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Protecting children from the consequences of divorce: A longitudinal study of the effects of parenting on children's coping processes

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Abstract

This study examined whether intervention-induced changes in mother-child relationship quality and discipline led to short-term (6 months) and long-term (6 years) changes in children's coping processes in a sample of 240 youth aged 9-12 years when assessed initially. Data were from a randomized, experimental trial of a parenting-focused preventive intervention designed to improve children's post-divorce adjustment. Three-wave prospective mediational analyses revealed that intervention-induced improvements in relationship quality led to increases in coping efficacy at 6 months and to increases in coping efficacy and active coping at 6 years. Tests of the mediated effects were significant for all 3 indirect paths. Results are discussed in terms of pathways to adaptive coping and implications for the implementation of preventive interventions targeting coping.

Keywords

Parenting; Coping; Divorce; Preventive Intervention

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It is well documented that psychosocial stressors constitute a significant, pervasive risk for children's mental health problems (e.g., Grant et al., 2006) and that coping processes mediate and moderate the relation between stressors and mental health problems (e.g., Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). The literature suggests that engagement coping efforts, or efforts oriented toward the stressor or one's emotional reaction, are generally associated with reduced mental health problems, whereas disengagement coping efforts, or efforts oriented away from the stressor or one's emotional reaction, are typically associated with higher mental health problems (Compas et al., 2001). Coping efficacy, the belief that one can deal with the demands of and emotions caused by stressful situations, has also been shown to negatively relate to mental health problems and to mediate the relations between active coping and mental health problems (Sandler, Tein, Mehta, Wolchik, & Ayers, 2000).

Identification of factors that affect the development of coping processes in childhood has implications for both developmental psychology and prevention science. An understanding of linkages between factors that are potentially modifiable and coping processes has

particular significance for the design of interventions for at-risk populations that are exposed to elevated levels of stressors, such as children from divorced families, parentally bereaved children and youth living in violent communities.

Although peers exert increasing influence on development starting in middle childhood, the family arguably is the most powerful context in which coping socialization occurs (Kliewer, Sandler, & Wolchik, 1994; Power, 2004). Kliewer and her colleagues (1994) discussed three ways in which the family may influence coping processes: coaching, modeling, and aspects of the family context such as parent-child relationship quality and family interaction patterns. The current study focused on the links between two aspects of the family context, mother-child relationship quality and effective discipline, and children's active coping efforts, avoidant coping efforts and coping efficacy. Active and avoidant coping efforts reflect aspects of engagement and disengagement coping respectively (Sandler et al., 2000; Smith et al., 2006).

Children who have warm, positive relationships with their mothers may be more likely to use more active coping and less avoidant coping and have higher levels of coping efficacy than children with less positive relationships for several reasons. First, positive relationships may promote a sense of security (Ainsworth, Blehar, Waters & Wall, 1978) which may reduce the threat of stressors (Gunnar, 2000; Kliewer et al., 1994), leading to a greater propensity to use active rather than avoidant coping efforts. Second, children who have positive relationships with their mothers may feel comfortable using mothers as a resource to solve problems, which may lead to more active coping and less avoidant coping. Third, positive emotions generated through contact with highly accepting mothers may counter negative emotions that interfere with active coping efforts. Fourth, high quality mother-child relationships likely include opportunities for instruction in and reinforcement of adaptive coping efforts, which in turn may increase coping efficacy (Causey & Dubow, 1993).

High levels of consistent and effective discipline may promote adaptive coping processes by enhancing children's sense of the predictability of their environments (Kliewer et al., 1994; Parkes, 1984). The consistent occurrence of expected consequences for misbehaviors may promote a sense of control, which could lead to higher levels of active coping and coping efficacy and lower levels of avoidant coping (Skinner & Wellborn, 1994). Also, a consistent, predictable environment may foster evaluation of the effectiveness of coping efforts (Kliewer et al., 1994). By creating an environment in which children evaluate their coping efforts and recognize coping successes and failures, consistent, effective discipline may enhance their coping efficacy.

A number of studies have examined links between aspects of the family environment and children's coping efforts (see Power, 2004 for a review). Overall, evidence shows that factors such as parental warmth, acceptance, support, family cohesion and firm rule enforcement are positively associated with engagement efforts and negatively associated with disengagement efforts. In contrast, very few researchers have examined links between parenting and children's coping efficacy. The limited research suggests that maternal support, paternal support, and maternal consistent discipline are positively associated with coping efficacy (Brook et al., 2002; Smith et al., 2006).

As Power (2004) noted, the literature on the relations between parenting and children's coping processes has increased markedly in the last few years. However, nearly all the research has been cross-sectional. To our knowledge, longitudinal designs have been used in only two studies. Studying children with spina bifida and matched controls, McKernon et al. (2001) found that maternal responsiveness, paternal responsiveness, and family cohesion each predicted problem-focused coping two years later for both groups of children. Neither

maternal nor paternal demandingness predicted subsequent coping. In a sample of adolescents, Johnson and Pandina (1991) found that parental hostility positively predicted the use of drugs and alcohol to cope and emotional outbursts three years later. The prospective relations between parental warmth and punishments of a psychological nature were not significant. These findings provide evidence of a longitudinal relation between parenting and children's coping efforts. However, the generalizability of the findings is limited because McKernon et al. (2001) used a very specific sample and Johnson and Pandina (1991) used a coping measure that included behaviors such as emotional outbursts that are often viewed as indicators of adjustment problems.

There is evidence that the nature and consequences of parenting differ by child gender (Leaper, 2002) and that girls and boys may prefer different coping efforts (Herman & McHale, 1993; Santiago & Wadsworth, 2009). The findings of the few studies that specifically examined the role of gender in the relations between parenting and children's coping processes, however, have been inconsistent (e.g., Herman & McHale, 1993; Kliewer, Fearnow & Miller, 1996).

The current study used data from the New Beginnings Program (NBP), a randomized experimental trial of a preventive intervention for divorced families, to examine the relations between program-induced changes in parenting and children's coping processes. This randomized trial provides a unique opportunity to experimentally test hypothesized pathways that may affect coping processes. In a passive prospective correlational study, relations between parenting and coping could be accounted for by third variables that are shared by both, such as shared genes between the parent and child. A randomized trial allows a test of whether experimentally-induced changes in parenting account for experimentally-induced changes in coping processes, thus strengthening the causal inference between these variables (Cole & Maxwell, 2003).

The NBP is a theory-based preventive intervention designed to improve children's post-divorce mental health problems. The conceptual model underlying our research on the prevention of post-divorce problems combines elements from a person-environment transactional framework and a risk and protective factor model. Derived from epidemiology (Institute of Medicine, 1994), the risk and protective factor model posits that the likelihood of mental health problems is affected by exposure to risk factors and the availability of protective resources. Person-environment transactional models posit that dynamic person-environment processes underlie individual development across time. Aspects of the social environment affect the development of problems and competencies in an individual, which in turn influence the social environment and development of competencies and problems at later developmental stages (Sameroff, 2000).

Cummings, Davies and Campbell's (2000) cascading pathway model integrates these two models into a developmental framework. From this perspective, stressful events, such as divorce, can lead to an unfolding of failures to resolve developmental tasks and increase susceptibility to mental health problems and impairment in developmental competencies. Parenting is viewed as playing a central role in facilitating children's successful adaptation, and the skills and resources developed in successful resolution of earlier developmental tasks are important tools for managing future challenges. In terms of the current study, this framework suggests that parenting is an important resource facilitating the use of adaptive coping processes in the post-divorce period, which in turn may lead to more positive outcomes over time.

Two randomized trials of the NBP tested a program for custodial mothers (Wolchik et al., 1993; 2000). The second trial also tested whether a child component strengthened program

effects by comparing the mother program only to a dual-component program that included a mother program and a child program. Analyses in both trials indicated that participation in the mother program significantly reduced child mental health problems and improved parenting at post-test compared to the control condition. The dual component condition did not produce additive effects on coping processes or mental health outcomes at post-test. Neither program improved active coping, avoidant coping or coping efficacy relative to the control condition at post-test. The child component led to few additive effects on other putative mediators and no additive effects on mental health outcomes at 6-month or 6-year follow-up (Wolchik et al., 2000; 2002).

Thus, in the second trial, the two active conditions were combined to provide a more parsimonious view of the program effects at the 6-year follow-up. At this follow-up, positive program effects occurred on a range of outcomes including internalizing and externalizing problems, symptoms of mental disorder, diagnosis of mental disorder, alcohol use, drug use, number of sexual partners, grade point average and self-esteem. For several effects, benefits were greater for those with higher baseline risk (Dawson-McClure, Sandler, Wolchik, & Millsap, 2004; Wolchik et al., 1993; 2000; 2002).

The present study examined whether intervention-induced changes in mother-child relationship quality and effective discipline at post-test led to short-term (6 months) and long-term (6 years) increases in active coping and coping efficacy, and short-term and long-term decreases in avoidant coping. Gender differences were examined; however, given the limited, inconsistent nature of the research on this topic, hypotheses were not made.

This study advances the research on the relation between parenting and children's coping in three ways. First, the use of a randomized, experimental design strengthens inferences about the causal nature of relations between parenting and coping over those that can be drawn from previous work which has been cross-sectional and correlational. Second, the sample is comprised of youth who had experienced parental divorce, a transition that occurs to 1.5 million youth in the U.S. each year (National Center for Health Statistics, 1995) and has been shown to elevate the risk for multiple problems across the life span (e.g., Amato, 2001; Chase-Lansdale, Cherlin, & Kiernan, 1995). Thus, the findings have implications for promoting the functioning of a large group of at-risk youth. Third, by examining short-term and long-term relations between mother-child relationship quality and effective discipline and three types of coping processes, this study addresses the possibility of differential contributions of these dimensions of parenting to various aspects of coping across developmental periods.

Method

Participants and Program Conditions

Participants were identified primarily through court records of divorce decrees in a large Southwestern metropolitan county (20% were recruited through media advertisements or word of mouth). Eligibility criteria, described in detail elsewhere (Wolchik et al., 2000), included the divorce occurring within the past two years; there being at least one child between 9 and 12 in the family; the mother being the primary residential parent; and the mother having not remarried, not having a live-in boyfriend, and not planning to remarry during the trial. Because of the preventive nature of the intervention and ethical concerns, families were excluded and referred for treatment if the child endorsed an item about suicidality or exhibited severe levels of depressive symptomatology or externalizing problems at pre-test. In families with multiple children in the age range, one was randomly selected to be interviewed.

The sample consisted of 240 families that were randomly assigned to one of three conditions: (a) a mother-only group-format program (MP) ($n = 81$), (b) a dual-component mother program plus child program (MPCP) (separate, concurrent groups for mothers and children, $n = 83$), or (c) a literature control condition ($n = 76$). Comparison of families that agreed to participate in the intervention study during an initial recruitment session and those that refused participation in the intervention study but agreed to complete the pre-test interview indicated that acceptors had higher incomes and education and fewer children than refusers (Wolchik et al., 2002). The three intervention conditions did not differ on demographic variables or child mental health problems at pre-test. All participants assigned to condition completed the post-test. Comparisons of the control, mother, and mother plus child groups on the demographic variables at the 6-year follow-up revealed no significant group differences. Analyses found no significant interactions between group membership and attrition status at follow-up on the mental health outcomes of externalizing or internalizing problems.

The mother program targeted four empirically-supported correlates of post-divorce mental health problems: mother-child relationship quality, effective discipline, father's access to the child, and interparental conflict. The program consisted of 11 group sessions (1.75 hr.) and two individual sessions (1 hr). Five group sessions focused on mother-child relationship quality, three focused on effective discipline. The program employed multiple empirically-supported behavior change strategies based on social learning and cognitive behavioral theories. The groups, which consisted of 8 to 10 mothers, were co-led by two Master's-level clinicians. More details are provided in Wolchik, Sandler, Weiss and Winslow (2007).

The 11-session child program focused on increasing effective coping, reducing negative thoughts about divorce-related stressors, and improving mother-child relationship quality. Several clinical methods derived from social learning and social cognitive theory were used. Children were taught to recognize and label feelings (Stark, 1990) and use deep-breathing relaxation (Weissberg, Caplan, & Bennetto, 1988). The program also included segments on effective problem solving (e.g., Weissberg et al., 1988), positive cognitive reframing (Meichenbaum, 1986), challenging common negative appraisals (Stark, 1990), and giving "I-messages" (Guerney, 1978). Skills were introduced through presentations, videotapes, or modeling by group leaders. Children practiced the skills through games, role-plays, or, for communication skills, in a conjoint session with their mothers. The groups were co-led by two Master's-level clinicians.

Both mothers and children in the literature control condition were sent three books on divorce adjustment and syllabi to guide their reading over a 6-week period.

At pre-test, the average age of the children was 10.4 ($SD = 1.1$); 49% were girls. Mothers' mean age was 37.3 years ($SD = 4.8$); 98% had at least a high school education. Mother's ethnicity was 88% Caucasian, non-Hispanic; 8% Hispanic; 2% African American; 1% Asian/Pacific Islander; and 1% other. Families had been separated and divorced for an average of 2.2 years ($SD = 1.4$) and 1.0 year ($SD = 0.5$), respectively. At 6-year follow-up, adolescents ranged from 15 to 19 years ($M = 16.9$ years; $SD = 1.1$); 80% and 11% lived with their mothers and fathers, respectively; 9% lived independently.

Procedure

Families were interviewed on five occasions: pre-test (T1), post-test (T2), and 3-month (T3), 6-month (T4), and 6-year (T5) follow-up. The current study used data from T1, T2, T4, and T5. T3 data were excluded given concerns about alpha inflation had both T3 and T4 been included in the analyses of short-term effects.

Trained staff conducted separate home interviews with parents and youth. Confidentiality was explained and parents and youth signed consent/assent forms. Families received \$45 compensation at T1, T2, and T4; parents and youth each received \$100 compensation at T5. All 240 families completed assessments at T1 and T2; at T4 and T5, 98% (234 of 240) and 91% (218 of 240) of families participated, respectively.

Measures

Mother-Child Relationship Quality—Mothers completed the 16-item acceptance and 16-item rejection subscales of a revised version of Schaefer's (1965) Child Report of Parenting Behavior Inventory, (CRPBI; Teleki, Powell, & Dodder, 1982; acceptance T2 $\alpha = .83$, actual range = 32.0-48.0; rejection T2 $\alpha = .78$, actual range = 30.0-38.0). Due to concerns about the length of the child battery, children completed reduced versions of the acceptance (10 items) and rejection (10 items) subscales of the revised CRPBI (acceptance T2 $\alpha = .83$, actual range = 16.0-30.0; rejection T2 $\alpha = .82$, actual range = 13.0-30.0). Reductions were based on psychometric analyses of mothers' reports of the CRPBI in a previous study of divorced families (Program for Prevention Research, 1993). Sample items include "You almost always spoke to (child) with a warm and friendly voice" and "Your mother wasn't very patient with you" for acceptance and rejection, respectively. Mothers and children completed the open family communication subscale (10 items) of the Parent-Adolescent Communication Scale (Barnes & Olson, 1982; child report T2 $\alpha = .87$, actual range = 18.0-50.0; mother report T2 $\alpha = .75$, actual range = 30.0-50.0). A sample item is "(child) discussed his/her beliefs with you without embarrassment." Mothers completed an abbreviated 7-item version of the Family Routines Inventory (Jensen, Boyce, & Hartnett, 1983; T2 $\alpha = .63$, actual range = 11.0-21.0). These seven items were selected because they reflected dyadic interactions between the mother and child. A sample item is "You regularly talked about things that happened each day." Mother and child reports on all measures were standardized and averaged to create a multi-measure, multi-report composite.

Discipline—Mothers and children completed the eight-item inconsistent discipline subscale of Teleki et al.'s (1982) adaptation of the CRPBI (Schaefer, 1965, child report T2 $\alpha = .73$, actual range = 9.0 - 24.0; mother report T2 $\alpha = .80$, actual range = 14.0-24.0). A sample item is "You soon forgot a rule you had made." Mothers also completed the appropriate discipline strategies subscale (nine items; T2 $\alpha = .77$, range = 1.44-3.67) and inappropriate discipline strategies subscale (five items; T2 $\alpha = .59$, range = 1.00-3.60) from the Oregon Discipline Scale (Oregon Social Learning Center, 1991); these items were used to compute the ratio of appropriate-to-inappropriate discipline. Sample items are "When (child) misbehaved, how often did you get him/her to correct or make up for the problem or do a payback?" and "When (child) misbehaved, how often did you slap or hit him/her with your hand?" for appropriate and inappropriate discipline, respectively. Mothers completed the follow-through subscale (11 items; T2 $\alpha = .76$, actual range = 2.63-5.0) from the Oregon Discipline Scale. A sample item is "How often have you felt that you couldn't give discipline all the attention you would like to?" These four scales were standardized and averaged to create a composite.

Coping Processes—At each wave, two of the four factor-analytically derived subscales of the Children's Coping Strategies Checklist – Revised (CCSC-R; Ayers, Sandler, West, & Roosa, 1996) were used to assess active and avoidant coping efforts. These two dimensions were selected based on previous literature indicating links between active and avoidant coping and youth mental health problems, and on theoretical links between parenting and these types of coping efforts. Confirmatory factor analyses of the eight subdimensions that assessed active and avoidant coping were conducted in a previous study that included all current participants and a subgroup that completed the pre-test but did not participate in the

intervention. The results showed that the two-factor model provided an adequate fit to the data (Sandler et al., 2000).

The CCSC-R is a dispositional coping measure; it asks youth about the coping strategies they generally used when faced with a problem in the past month. The active dimension (24 items) includes multiple engagement efforts and is comprised of six subdimensions tapping behavioral actions and cognitive strategies to fix the problem and cognitive engagement strategies that reduce the threatening implications of the stressor. The six subdimensions are direct problem solving (e.g., “You tried to make things better by changing what you did”), cognitive decision making (e.g., “You considered consequences before you decided what to do”), positivity (e.g., “You reminded yourself that you are better off than a lot of other kids”), optimism (e.g., “You told yourself that things would get better”), control (e.g., “You reminded yourself that you knew what to do”), and seeking understanding (e.g., “You thought about what you could learn from the problem”). Avoidant coping (12 items) included three subdimensions: repression (e.g., “You tried to ignore it”), avoidant actions (You avoided the people who made you feel bad”), and wishful thinking (e.g., “You wished that bad things wouldn't happen”). Items on each of the two subscales were averaged to create two scale scores (i.e., active coping, avoidant coping); higher scores indicate greater endorsement of the coping type.

Children completed a seven-item Coping Efficacy Scale that has been shown to have a one-dimensional factor structure and to relate negatively to children's mental health problems (Sandler et al., 2000). A sample item is “Overall, how well do you think that the things you did during the last month worked to make the situation better?” Alphas for active coping, avoidant coping, and coping efficacy were .94, .81, and .83, respectively for T4, and .92, .77, and .82, respectively for T5; actual ranges are presented in Table 1.

Analytical Procedure

Mediation was tested using a three-wave prospective design in which the intervention preceded assessment of the mediator (T2; post-test), and assessment of the mediator preceded assessment of the outcomes (T4; 6-month follow-up; T5; 6-year follow-up) (Cole & Maxwell, 2003). Short-term and long-term effects of intervention-induced changes in parenting on coping processes were assessed given evidence to suggest that program effects of preventive interventions may not be immediately detectable, and may strengthen rather than diminish over time (e.g., Vitaro et al, 2001).

Structural Equation Modeling (SEM) with Mplus software (Version 5.1 Muthén & Muthén, 1998-2007) was used to examine the mediational models. Separate models were tested for short-term and long-term effects. The models included both mediators (mother-child relationship quality, discipline) and all coping variables (active coping, avoidant coping, coping efficacy) simultaneously. The Mplus feature for Full Information Maximum Likelihood estimation with missing data (FIML) was used to account for missing scale scores. FIML procedures directly estimate the parameter values of interest that best fit all the available raw data, and have been shown to be superior to traditional missing data techniques (see Schafer & Graham, 2002).

In both mediation models, the program effect on the mediators was represented by the T2 mediator variable controlling for the pre-test mediator. The program effects on T2 coping were included, controlling for pre-test coping. T2 coping was partialled out when examining the effects from the T2 mediators to T4 and T5 coping. Initial models controlled for the program x pre-test mediator interactions given previous analyses have shown both main and interactive program effects on parenting (Wolchik et al., 2002; Zhou, Sandler, Millsap,

Wolchik, & Dawson-McClure, 2008). These interaction terms were dropped if they were not found to significantly predict the T2 mediators.

Correlations were computed in the full sample between age, gender, time since separation and the two parenting and three coping variables to identify potential covariates. Covariates were selected for inclusion in the initial models if they were significantly related to one or more of the mediators (i.e., mother-child relationship quality, discipline) or outcome variables (i.e., T4 and T5 coping variables). These covariates were again evaluated in the full structural equation model and nonsignificant paths between the covariates and mediators/outcomes were dropped.

According to guidelines outlined by MacKinnon, Krull, and Lockwood (2000), support for two sets of hypotheses is necessary to establish mediational pathways: a) the independent variable should predict the hypothesized mediators and b) the mediators should predict the outcomes after controlling for the direct program effect. The significance of the mediation effect was tested for each significant mediational pathway using the PRODCLIN asymmetrical confidence limits procedure (Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002; Mackinnon, Lockwood, & Williams, 2004). In their review of the most common tests of mediation, Fritz and Mackinnon (2007) reported that this procedure provides a more powerful method of testing mediation than more traditional approaches, such as Baron and Kenny (1986).

In the PRODCLIN method, the significance of the mediational pathway (product of the path from the independent variable to the mediator, and path from the mediator to the outcome variable) is tested by forming asymmetric confidence limits using upper and lower critical values from the distribution of the product of two normal random variables (Meeker, Cornwell, & Aroian, 1981). If zero does not fall in the 95% confidence interval (CI) of the upper and lower critical values, the mediation effect is considered significant. Given that the distribution of the product of two normal random variables is not normal, Mackinnon et al. (2004) argue that it is more accurate to employ these asymmetric confidence intervals rather than intervals based on the standard normal distribution.

Results

Preliminary Analyses

To ensure that the two active intervention conditions, MP and MPCP, could be combined into a single group for the current analyses, a Box's M analysis was performed on all study variables. The Box's M analysis is a stringent omnibus test of the equality and symmetry of variance/covariance matrices in two groups (Winer, 1971). If the test is nonsignificant, the two variance/covariance matrices are equivalent, implying that the regression paths, variances and residual variances in the SEM are invariant and the relations among the variables do not differ in the two groups. Results revealed that the variance/covariance matrices were not significantly different (Box's M = 153.26; $F(136) = 1.01$, $p = .35$; $\chi^2(136) = 138.03$, $p = .44$). All remaining analyses treated the MP and MPCP conditions as a single intervention group.

To minimize measurement error and to ensure the breadth of the parenting constructs were fully represented (Epstein, 1983), the parenting measures were combined into two composite variables, mother-child relationship quality and discipline, using mother and child reports of multiple measures. These composites were sensitive to intervention effects in previous evaluations of the NBP (Wolchik et al., 2000; Zhou et al., 2008). To confirm the appropriateness of creating the composite variables across informants and measures, confirmatory factor analyses (CFA) were conducted on the two T2 parenting constructs. As

suggested by Cole and Maxwell (2003), the error variances of measures within the same reporter were permitted to correlate to capture shared method variance when this action improved model fit. The two factor model fit the data adequately [$\chi^2(23) = 35.36, p = .05$; CFI = .98; RMSEA = .05; SRMR = .04]. All loadings were significant and loaded on the hypothesized factor.

To confirm that the same parenting constructs applied to male and female children, measurement invariance of the factor model was tested. Results indicated that all factor loadings, factor variances, factor covariances, and intercepts were invariant across gender [constrained model $\chi^2(63) = 81.44, p = .06$; CFI = .97; RMSEA = .05; SRMR = .12]. The difference between the constrained model and unconstrained model was not significant [chi-square difference, $\Delta\chi^2 = 9.855$; df difference, $\Delta df = 10, p = .45$]. These results indicate that the composites functioned equivalently for boys and girls.

Because previous analyses have demonstrated that the NBP had a significant program effect on T5 active coping for youth who were high in baseline risk (Wolchik et al., 2007), tests were conducted to determine whether the mediated or indirect effects differed by baseline risk. Risk was operationalized as a composite of baseline measures that were the most consistent predictors of mental health problems at T5 (Dawson-McClure et al., 2004): child externalizing problems and a composite of environmental stress (i.e., negative events that occurred to the child, interparental conflict, maternal distress, reduced contact with father, and per capita income). Using a median split, a cross-group comparison of the mediation models between youth with baseline risk scores above the median and those with scores below the median was conducted. The results showed that the fully constrained model (i.e., constrained path coefficients, variance, and covariance) provided adequate fit to the data [$\chi^2(114) = 143.92, p = .03$; CFI = .96; RMSEA = .05; SRMR = .08]; there were no significant differences between the fully unconstrained model and fully constrained model ($\Delta\chi^2 = 29.60$; $\Delta df = 32, p = .59$). Consequently, the primary mediation analyses were conducted with the full sample.

Cross-group comparisons of the mediation models were also conducted by gender. The fully constrained model fit the data adequately at T4 [$\chi^2(113) = 163.15, p = .001$; CFI = .95; RMSEA = .06; SRMR = .08] and at T5 [$\chi^2(114) = 149.77, p = .01$; CFI = .96; RMSEA = .05; SRMR = .08]. No significant differences between the fully unconstrained and fully constrained models were found at T4 ($\Delta\chi^2 = 42.51$; $\Delta df = 33, p = .12$) or T5 ($\Delta\chi^2 = 36.69$; $\Delta df = 32, p = .26$). These results indicated that the mediational models did not differ for boys and girls; thus, the primary mediation analyses were not conducted separately for boys and girls.

Correlations of all study variables are presented in Tables 1 and 2. As stated above, age, gender, and time since separation were examined as potential covariates. Age and gender were significantly correlated with T4 avoidant coping; younger children and males reported more avoidant coping (age: $r = -.21, p = .001$; gender: $r = .14, p = .03$). None of the potential covariates was significantly related to the T2 parenting variables, T4 active coping, T4 coping efficacy, or T5 coping variables. Age and gender were included as covariates in the initial model predicting T4 avoidant coping. However, neither path was significant in the full structural equation model so these paths were dropped.

Both the short-term and long-term models were tested with and without the use of FIML; all paths were in the same direction and at the same significance level regardless of the treatment of missing data. Results of the FIML models are reported. All variables measured at the same time point were permitted to correlate with one another. In addition, to improve

the model fit, a path was added from T1 avoidant coping to T4 avoidant coping in the short-term model.

Short-term mediation model

Results revealed that the model provided acceptable fit to the data: $\chi^2(40) = 68.44, p = .003$, RMSEA = .05, SRMR = .06, CFI = .97. As shown in Figure 1, paths from program condition to T2 relationship quality and T2 discipline were significant (relationship quality: standardized path coefficient, $\beta = .16, p = .001$; discipline: $\beta = .21, p < .001$) indicating that participation in the intervention was significantly associated with improved relationship quality and discipline at T2. The path from T2 relationship quality to T4 coping efficacy was significant ($\beta = .15, p = .05$). The paths from T2 relationship quality to T4 active coping ($\beta = .07, p = .37$) and to T4 avoidant coping ($\beta = .01, p = .94$) as well as those from T2 discipline to T4 active coping ($\beta = -.01, p = .92$), T4 avoidant coping ($\beta = .01, p = .90$), and T4 coping efficacy ($\beta = .01, p = .93$) were non-significant. There were no significant program effects on any of the T2 coping variables.

Significance tests were performed for the mediational effects of mother-child relationship quality to coping efficacy; this test reached significance (95% CI: .0061, .3849). These findings suggest that intervention-induced improvements in mother-child relationship quality led to improvements in coping efficacy at the 6-month follow-up.

Long-term mediation model

Results revealed that the model fit the data well: $\chi^2(41) = 55.54, p = .064$, RMSEA = .04, SRMR = .05, CFI = .98. Path coefficients are presented in Figure 2. The paths from program condition to T2 relationship quality and to T2 discipline were significant (mother-child relationship quality: $\beta = .16, p = .001$; discipline: $\beta = .21, p < .001$). T2 relationship quality was significantly associated with T5 active coping ($\beta = .19, p = .03$) and coping efficacy ($\beta = .17, p = .05$). Similar to the findings with the short-term mediation model, the paths from T2 relationship quality to T5 avoidant coping ($\beta = -.06, p = .46$) and from T2 discipline to T5 active coping ($\beta = -.05, p = .55$), avoidant coping ($\beta = -.08, p = .33$), and coping efficacy ($\beta = .01, p = .93$) were non-significant.

Significance tests were performed for the mediational effects of relationship quality to T5 active coping and coping efficacy. Significance was achieved for active coping (95% CI: .0123, .2889) and coping efficacy (95% CI: .0007, .4272). These findings suggest that the intervention-induced improvements in mother-child relationship quality led to improvements in active coping and coping efficacy at the 6-year follow-up.

Discussion

The current findings advance our understanding of aspects of parenting that affect children's coping processes. Program-induced improvements in mother-child relationship quality led to significantly higher levels of coping efficacy 6 months after program completion and significantly higher levels of coping efficacy and active coping 6 years after the program. Tests of the mediated effects were significant for all three indirect paths. There was no support for links between effective discipline and active coping or coping efficacy, or between either aspect of parenting and avoidant coping. There was no evidence that the relations among parenting and coping processes differed by youth gender or baseline risk status.

Although not examined in the study, it is interesting to speculate about the mechanisms through which high quality mother-child relationships promote adaptive coping. High quality relationships may help youth feel less threatened by stressful events, encourage them

to use mothers as resources to help handle stressors, or decrease negative arousal that may interfere with using active coping efforts. Similarly, such relationships may create opportunities for the mother to reinforce the use of effective coping and identify coping successes, leading to increases in youth's beliefs that they have coped successfully in the past and are likely to succeed in stressful situations in the future. Research that identifies the mechanisms through which high quality parenting influences active coping efforts and coping efficacy would be valuable.

The finding that coping efficacy and active coping did not increase concurrently with the program changes in mother-child relationship quality, but showed lagged program effects is consistent with Cummings et al.'s (2000) cascading pathways model. This framework identifies high quality parenting as an important resource for children that facilitates their adaptation after divorce. Dynamic interactions between children's successful adaptation, the resources available to them, and the acquisition of relevant skills are believed to trigger a cascade of positive outcomes in multiple domains over time. By improving one of children's most salient interpersonal resources, the NBP led to increases in coping efficacy and active coping across time and developmental periods.

The current findings indicated that timing of program-induced effects on mother-child relationship quality differed for coping efficacy and active coping. According to Lazarus and Folkman (1984), prior to engaging in coping behaviors, individuals first appraise the threat value of a stressful event and then evaluate whether there is something they can do in response. The belief that there is something they can do about the event is hypothesized to lead to a greater likelihood of actually engaging in adaptive coping behaviors. A similar pattern unfolded in the current study. High quality mother-child relationships led to improved coping efficacy and to improved active coping, with the positive effects of mother-child relationship first occurring through building children's sense of efficacy in their ability to do something in response to stressful events.

Contrary to hypotheses, the relations between effective discipline and coping efforts and coping efficacy were non-significant. The null findings are inconsistent with previous research on the relations between parental discipline and children's coping (e.g., Power, 2004; Smith et al., 2006). The discrepancy may be due to demographic differences in the samples (e.g., child age, ethnicity, risk factor), variation in the aspects of discipline measured, or the use of a longitudinal design rather than cross-sectional design. It is also possible that the low reliability of one of the measures of discipline may have contributed to the null findings.

Neither aspect of parenting was significantly related to avoidant coping. Although contrary to the hypotheses, these results are not entirely unexpected given Power's (2004) conclusion that the findings of studies on the relations between parenting and children's avoidant coping are inconsistent. It is possible that avoidant coping may be better predicted by individual difference factors such as temperamental approach-withdrawal tendencies (Derryberry, Reed, & Pilkenton-Taylor, 2003) than by social-environmental factors, such as parenting. Further, no differences were found by baseline risk status or child gender in the current sample. Additional research is necessary to further clarify the role of child gender, baseline risk, and other potentially important moderators of the relations between parenting and children's coping processes.

The current study has several limitations that suggest directions for future research. First, the sample consisted of youth in divorced families. Examination of these research questions with other at-risk groups as well as youth who have not recently experienced major life events is a valuable direction for future research. Second, the families were nearly

exclusively non-Hispanic Caucasian and middle-class. Larger, ethnically-diverse samples are needed to test whether ethnicity, socioeconomic status or both moderate the relations between parenting and coping processes. Third, although randomization to the experimental and control conditions reduces concerns regarding the role of third variables, such as biological and economic factors, in explaining the changes in parenting, it does not fully eliminate the possibility of the influence of third variables that may confound the relations between parenting and coping (Pearl, 2000). Fourth, youth in this study were pre- to early-adolescents at pre-test. Future work could examine the relations between aspects of parenting and coping at other developmental levels. Finally, the current study examined two aspects of the family environment, mother-child relationship quality and effective discipline. An important direction for future research involves attention to how other family variables such as father-child relationship quality and interparental conflict shape coping processes.

Raising Healthy Children: Implications for Policy and Practice

One major contribution of this study is that it allows stronger causal inferences about the effects of parenting on coping processes to be drawn as compared to prior studies. Both the three-wave longitudinal design, which provided temporal precedence between each link in the hypothesized chain, and the examination of relations between program-induced improvements in parenting and subsequent changes in youth's coping processes strengthen the inference that high quality parenting led to more active coping efforts and higher coping efficacy. The paucity of longitudinal studies and the absence of prior experimental work in this area highlight the importance of this contribution.

Given that coping efforts and coping efficacy are related to a wide range of mental health outcomes and are believed to be important for adaptation across the life-span (Compas et al., 2001), the current findings have significance for programs and policies that affect children's development. Although many preventive interventions targeting children's coping efforts intervene through direct instruction with children, the current findings suggest that coping efforts can be modified in an indirect manner. A practical implication of the current findings for the dissemination of preventive interventions is that a parenting intervention may be sufficient to improve youth's coping. Given the substantial difference in costs of single- and dual-component programs, research that examines the effect of other parent-focused programs on youth's coping processes has important public policy implications. Also, practitioners working with divorced families to improve children's coping efforts might consider incorporating parent training into the treatment. By improving the quality of the mother-child relationship, practitioners could facilitate increases in active coping efforts and coping efficacy.

The current findings emphasize the importance of follow-up assessments in evaluations of interventions for at-risk youth. Previous evaluations of the NBP and other prevention programs have demonstrated that the magnitude and breadth of intervention-induced improvements in parenting and youth mental health problems grow rather than diminish over time (Sandler et al., 2008, Wolchik et al., 2007). The current study complements these findings by indicating that the magnitude of the effects of intervention-induced improvements in parenting on children's active coping efforts grew over time. One possible mechanism by which the NBP has long-term effects on youth's mental health problems is by enhancing their ability to cope effectively with the stressors they experience. Testing such multi-linkage mediational models is necessary to elucidate the processes by which prevention programs promote resilience resources and reduce mental health problems over time.

This study has implications for the future work on transporting the NBP from a university setting into community settings. An important step in dissemination is the identification of

core elements of the program that are essential to achieve positive program effects and therefore must be retained and implemented with high levels of fidelity when the program is delivered in community settings (Price & Lorion, 1989; Wolchik, Sandler, Winslow, & Smith-Daniels, 2005). This study extends previous investigations of the effects of the NBP (Wolchik et al. 2000; 2002; Tein, Sandler, MacKinnon & Wolchik, 2004; Zhou et al., 2008), which have shown that mother-child relationship quality accounted for program effects on mental health outcomes by demonstrating that improvements in active coping and coping efficacy were also accounted for by change in this family-level resource. The current findings add support for viewing the parts of the program that target mother-child relationship quality as core components.

Summary

The current study demonstrated that by increasing one of children's most important interpersonal resources, mother-child relationship quality, the NBP improved youth's coping efficacy and active coping. This finding permits stronger causal inferences regarding the relations between parenting and children's coping processes relative to previous work in this area and identifies mother-child relationship quality as an important modifiable predictor of children's coping processes. This study also illustrates the contribution that experimental trials of preventive interventions can make to developmental models. By demonstrating that children's coping processes can be modified through parenting programs, the current findings have important implications for the design, evaluation, dissemination, and cost-effectiveness of preventive interventions as well as general clinical practice targeting divorced families.

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Figure 1. Short-Term Mediation Model: Program Condition to T2 Mediators to T4 coping variables. All variables measured at the same time point are permitted to correlate with each other. For simplicity, those paths are not presented. † $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Figure 2. Long-Term Mediation Model: Program Condition to T2 Mediators to T5 coping variables. All variables measured at the same time point are permitted to correlate with each other. For simplicity, those paths are not presented. * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Table 1

Correlations between Demographic and Study Variables and Descriptive Statistics for All Variables

Measure (Wave)	1.	2.	3.	4.	Mean	Standard Deviation	Actual Range	Skew	Kurtosis
1. Group	--	.05	.04	-.04	--	--	0.00 – 1.00	--	--
2. Age of Child	--	--	.10	.02	10.35	1.12	9.00 – 12.00	.25	-1.13
3. Gender of Child	--	--	--	.09	--	--	1.00 – 2.00	--	--
4. Months since separation	--	--	--	--	26.88	17.23	2.00 – 144.00	2.69	11.85
5. Relationship Quality (1)	-.08	-.11	-.05	.00	.01	.59	-2.12 – 1.10	-.42	.10
6. Discipline (1)	-.04	.03	-.05	-.05	.00	.67	-2.57 – 1.57	-.41	.34
7. Relationship Quality (2)	.10	-.09	-.07	-.06	.29	.56	-1.17 – 1.38	-.29	-.81
8. Discipline (2)	.18**	.02	.00	-.07	.43	.63	-1.48 – 1.91	-.38	-.15
9. Active Coping (1)	.02	-.10	-.03	-.01	10.34	1.84	5.50 – 15.00	-.05	-.32
10. Avoidant Coping (1)	-.02	-.21***	.14*	.05	10.28	1.79	5.33 – 14.00	-.23	-.25
11. Coping Efficacy (1)	.05	.01	-.07	.00	20.35	3.08	9.00 – 28.00	-.20	.39
12. Active Coping (2)	-.04	-.00	.02	.01	10.82	2.16	4.67 – 17.67	.10	-.36
13. Avoidant Coping (2)	.00	-.16*	.17*	.09	9.84	2.11	5.00 – 15.67	.29	-.36
14. Coping Efficacy (2)	-.04	-.04	.02	-.01	21.81	3.17	12.00 – 28.00	-.12	-.16
15. Active Coping (4)	-.04	-.02	.03	-.10	10.35	2.19	4.83 – 15.83	.27	-.07
16. Avoidant Coping (4)	.02	-.16*	.15*	.03	9.39	2.06	4.67 – 15.67	.35	.14
17. Coping Efficacy (4)	-.11	.00	.00	.06	21.71	3.32	10.00 – 28.00	-.25	.12
18. Active Coping (5)	-.04	.13	.00	-.01	11.80	2.03	7.33 – 15.83	-.03	-.83
19. Avoidant Coping (5)	.01	.09	.06	.12	9.46	1.87	4.33 – 14.33	.04	-.16
20. Coping Efficacy (5)	-.02	-.02	-.04	.04	21.87	3.18	14.00 – 58.00	.06	-.46

Note. Group: 0 = Control; 1 = Intervention. Gender of child: 1 = female; 2 = male. Sample size for correlations ranged from 199 to 240.

*
 $p \leq .05$

**
 $p \leq .01$

 $p \leq .001$

Table 2

Zero-Order Correlations: Parenting Composites and Coping Processes

Measure (Wave)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
Parenting																
1. Rel Qual (1)	--	.59***	.70***	.37***	.20***	.00	.33***	.18**	.06	.29**	.14*	.03	.24***	.14	-.13	.20***
2. Disp. (1)		--	.44***	.62***	-.04	-.10	.17*	.03	-.06	.13	-.03	-.13*	.05	.10	-.13	.12
3. Rel Qual (2)			--	.56***	.15*	-.09	.24***	.27***	.05	.36***	.16*	.02	.27***	.17*	-.10	.22***
4. Disp (2)				--	-.02	-.15*	.11	.06	-.10	.13*	.05	-.06	.12	.05	-.14*	.13
Coping																
5. Active (1)					--	.43***	.53***	.43**	.18**	.31**	.36***	.26***	.29***	.13	-.14*	.16*
6. Avoid (1)						--	.12	.18**	.56**	.11	.11	.43***	-.06	.02	.11	-.01
7.Efficacy (1)							--	.23**	-.01	.37**	.22***	.07	.31***	.14*	-.18**	.24***
8. Active (2)								--	.40**	.54**	.45**	.26**	.31**	.13	.07	.14
9. Avoid (2)									--	.09	.21**	.51**	.00	-.05	.24**	-.13
10.Efficacy(2)										--	.27**	-.13	.40**	.20**	.06	.23**
11. Active (4)											--	.59***	.59***	.23**	-.13	.21**
12. Avoid (4)												--	.27***	.10	.17*	.02
13.Efficacy(4)													--	.16*	-.15*	.24**
14. Active (5)														--	.09	.68***
15. Avoid (5)															--	-.16*
16.Efficacy(5)																--

Note. Sample size for correlations ranged from 200 to 240. Rel Qual = Mother-Child Relationship Quality; Disp = Discipline.

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$