COPING AND SOCIAL COMPETENCE AS PROCESSES OF RESILIENCE IN A FAMILY COGNITIVE-BEHAVIORAL PREVENTIVE INTERVENTION FOR CHILDREN OF DEPRESSED PARENTS

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ABSTRACT

The stress associated parental depression poses a significant risk factor to offspring of depressed parents. However, the availability of psychosocial resources, such as coping and social competence, may counteract or lessen the disruptive effects of living with a depressed parent. In a randomized clinical trial with parents with a history of major depressive disorder and their 9 –15-year-old offspring (n = 155), adolescents' coping and social competence were examined as moderators and mediators of the effects of a family group cognitive behavioral preventive intervention on adolescents' anxiety/depression and internalizing symptoms. Hypothesized moderators were measured at baseline, changes in hypothesized mediators were assessed at post-intervention (2 months) and after completion of 4 monthly booster sessions (6 months), and adolescent outcomes were measured at 12-month follow-up. Evidence emerged for a mediated model in which changes in adolescents' secondary control coping at 6 months accounted for the effects of the intervention on anxiety/depressive and internalizing symptoms. No support emerged for social competence as a mediator or any of the tested moderated models. Implications for the prevention of psychopathology in offspring of depressed parents are highlighted.

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CHAPTER I

INTRODUCTION

The high prevalence of depression in the general population represents a significant mental health problem in the United States. As reported in the National Comorbidity Survey Replication, Kessler et al. (2003) found the lifetime prevalence of Major Depressive Disorder to be 16.9%. Based on this prevalence rate, it is expected that as many as 45 million adults in the U.S. may experience an episode of depression over the course of their lifetime. Depression is also a highly recurrent disorder. Current estimates suggest that at least 60% of individuals who experience one episode will have a second, 70% of individuals who have undergone two episodes will have a third, and 90% of individuals with three episodes will have a fourth (American Psychiatric Association, 2000; Solomon et al., 2000). Moreover, research suggests that individuals who experience an episode of major depression continue to exhibit subclinical levels of depressive symptoms even when out of episode.

Women are significantly more likely than men to experience episodes of depression, and rates of depression in women are highest in young adulthood during childbearing years (Goodman, 2007; Kessler, 2006; Kessler et al., 2003). In a similar pattern, rates of depression are higher in males younger than age 45 than among men age 45 and older (Blazer, Kessler, McGonagle, & Swartz, 1994). As Kane and Garber (2004) note, a high proportion of men in this age group are also likely to have children. Thus, it is quite apparent that a significant number of children and adolescents are exposed to symptoms of depression—both when their parents are in and out of episode.

The significant number of mothers who experience clinical depression during their children's lifetimes is particularly problematic as maternal depression is linked to negative outcomes in children (e.g., Goodman, 2007; Goodman & Gotlib, 1999). Rates of depression in school-aged offspring of depressed mothers have been estimated to be as high as 41%, in comparison to an estimated lifetime prevalence rate between 10% and 15% in the general population of children and adolescents (Costello et al., 2003; Goodman, 2007; Lewinsohn, Hops, Roberts, Seeley & Andrews, 1993). Extensive research has documented the impact of maternal depression on children, but paternal depression has also been shown to strongly correlate with child and adolescent psychopathology (e.g., Billings & Moos, 1983; Connell & Goodman, 2002; Jacob & Johnson, 1997; Kane & Garber, 2004). Parental depression in both mothers and fathers affects child and adolescent adjustment in a variety of ways. For example, when compared to same-age children of nondepressed parents, offspring of depressed parents not only have higher rates of depression, but they also experience earlier onset of the disorder, greater functional impairment, and a higher likelihood of recurrence (Hammen, Shih, Altman, & Brennan, 2003; Keller et al. 1986; Warner, Weissman, Fendrich, Wickramarante, & Moreau, 1992). Moreover, children of depressed parents are at risk for a range of internalizing and externalizing symptoms and disorders (Warner et al.).

Through several risk processes, offspring of depressed parents are at increased risk for depression and other forms of psychopathology. However, research suggests that, even under the stressful circumstances of living with a parent with depression, some or even most children and adolescents are resilient and adapt successfully. Thus, for some children and adolescents, the effect of parental depression may be significant, while for others the effect may be negligible. Understanding factors that lead to healthy

adjustment rather than problem outcomes in offspring of depressed parents is the focus of this study. More specifically, the role of social competence and coping, and the relations between these two potential sources of resilience, were investigated as processes of resilience and potential protection from psychopathology in these at-risk youth.

In the current study, processes of resilience were examined prospectively within the context of a randomized clinical trial evaluating the efficacy of a cognitive-behavioral preventive intervention for parents with a history of depression and their children.

Parental Depression

Kraemer and colleagues (1997) refer to *risk* as the probability that an individual or population will experience a negative outcome and a *risk factor* as a feature of an individual or the environment that is related to the increased probability of a negative outcome. Growing up with a parent who has experienced depression poses a significant risk to developing children and adolescents (Anderson & Hammen, 1993; Beardslee, Keller, & Klerman, 1985). As noted above, exposure to parental depression is associated with increased rates of depression and depressive symptoms as well as elevated rates of other internalizing and externalizing problems in offspring of depressed parents. The adverse effects of parental depression are not surprising, given the recurrent nature of depression and the large proportion of adult depression that goes untreated. The course of depression suggests that many children of depressed parents are exposed to frequent and extended periods during which their parents are in an episode and face continued stress at other times when their parents are out of episode but experiencing subthreshold symptoms of depression (Hammen, 1997).

In addition to the identification of markers of risk, it is also important to consider the processes that link risk factors to negative outcomes in children and adolescents (Cowan, Cowan, & Schulz, 1996). Thus, in the case of parental depression, it is important to consider the processes through which children are adversely affected. Although the effects of parental depression on offspring are likely transmitted through multiple mechanisms, of particular importance to the current study is the stress associated with living with a depressed parent (Goodman & Gotlib, 1999). Symptoms of depression (e.g., sadness, irritability) significantly impair parents' ability to effectively provide structure, support, and nurturance to their children, leading to disruptions in parenting and contributing to a stressful family environment (Hammen et al., 2003). Specifically, studies have documented parental withdrawal (e.g., avoidance or unresponsiveness to their children's needs) and parental intrusiveness (e.g., irritability toward their children or excessive involvement in their children's lives) as characteristic of depressed parents in their interactions with their children (e.g., Cummings, DeArth-Pendley, DuRocher-Schudlich, & Smith, 2001; Gelfand & Teti, 1990; Malphurs, Field, Larraine, Pickens, & Palaez-Nogueras, 1996). For example, in a study examining the stress of living with a depressed parent, Langrock et al. (2002) found that current parental depressive symptoms in mothers and fathers were significantly related to increased parental withdrawal and intrusive behaviors.

Exposure to hostile, disengaged, and inconsistent parenting, as opposed to structured and nurturing parenting, contributes to a chronically stressful and unpredictable environment for children and tends to result in increased symptoms in offspring of depressed parents. Recent studies have shown that children and adolescents exposed to higher levels of parental intrusiveness/irritability, criticism, and withdrawal

have higher depressive and internalizing symptoms (e.g., Garber, 2005; Jaser et al., 2005; Langrock et al., 2002). Thus, it is important to identify factors that promote healthy adjustment in children exposed to the stress of parental depression.

Processes of Resilience

As pointed out by Cowan et al. (1996), even in the face of significant risk, not all individuals do poorly—or, in the case of offspring of depressed parents, despite exposure to significant stress, not all children and adolescents develop psychopathology themselves. Although children and adolescents of affectively ill parents are at an increased risk for depression and other forms of psychopathology, a number of studies have demonstrated that many offspring of depressed parents actually do quite well. These individuals, identified as *resilient*, exhibit the ability to respond positively to significant adversity. As defined by Luthar and Cicchetti (2000), *resilience* is a process wherein individuals display positive adaptation despite serious threats to adaptation or development.

Two potential processes of resilience are examined in this study: coping and social competence. The availability of psychosocial resources, such as coping and social competence, may counteract or moderate the disruptive influence of having a depressed parent. These protective processes may be especially pertinent in shielding against the effects of stress and psychosocial risk processes associated with parental depression.

Coping

The way in which individuals respond to and deal with stress plays a critical role in the effect that stress has on their emotional and psychological well-being. As

previously discussed, parental depression leads to increased stress within the family as a function of disrupted parenting, and the ways in which children and adolescents cope with this stress has a significant impact on their adjustment (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Skinner & Zimmer-Gembeck, 2007).

Defining coping. A critical first step in understanding coping in offspring of depressed parents is to define coping. However, a fundamental distinction in the conceptualization of coping is the contrast between responses to stress that are conscious and volitional and those that are automatic and involuntary (Compas et al., 2001). The current study was based on a multidimensional model of responses to stress that includes both controlled/voluntary and automatic/involuntary responses to stress and involve either engagement with or disengagement from a stressor and one's emotional reactions (Compas et al., 2001; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). Involuntary responses to stress are automatic processes that are not under volitional control and therefore are distinct from coping (Connor-Smith et al., 2000). Coping is defined as conscious volitional efforts to regulate the emotional, behavioral, cognitive, and physiological responses to stressful events or conditions (Compas et al., 2001). Confirmatory factor analytic studies (e.g., Connor-Smith et al., 2000; Wadsworth et al., 2004) conducted with diverse samples of adolescents experiencing a variety of different stressors have provided support for this model and indicated that coping responses can be categorized into three factors: primary control engagement coping, secondary control engagement coping, and disengagement coping.

Primary control engagement coping involves direct attempts to change the stressful situation or change one's emotions (e.g., problem solving, emotional expression), while secondary control engagement coping responses are efforts to adjust or

adapt to the stressful situation by changing one's emotions or cognitions (Compas et al., 2001). Secondary control coping reflects a process of accommodating to uncontrollable stress and includes acceptance (e.g., taking things as they are; going with the flow), positive thinking (e.g., telling oneself things will be all right), cognitive restructuring (e.g., telling oneself that things could be worse; thinking that something good will come from the situation), and distraction (e.g., keeping one's mind off the stressor by doing or thinking about something fun). Although prior studies demonstrate that both forms of engagement coping can be adaptive responses to family stress and are related to lower emotional and behavioral problems (Compas et al., 2001), research has also shown that primary control coping is most adaptive when responding to a stressful situation that is controllable while secondary control coping is most effective in uncontrollable stressful situations (Weisz et al., 1994). Given that stressors related to parental depression (i.e., high levels of withdrawal or intrusiveness) are likely beyond the child's direct control, adjusting oneself to such stressors through secondary control coping primary may be most adaptive.

Child coping and psychological adjustment. Research on children and adolescents' coping has been primarily devoted to identifying the link between individual differences in responding to stress and various indicators of psychological adjustment in hopes of identifying adaptive and maladaptive coping patterns (Skinner & Zimmer-Gembeck, 2007). Coping is critical to fully understand the effects of stress on children and adolescents, as it both identifies the active role children and adolescents can play in the presence of stressors in their lives and helps to predict how these experiences with adversity will shape future development (Compas et al., 2001; Skinner & Zimmer-Gembeck, 2007).

More specifically, the ways in which children and adolescents cope with the stress related to parental depression plays a significant role in their adjustment. Recent research has provided support for such an association by examining the link between children and adolescents' internalizing and externalizing symptoms and their coping in response to the stress of living with a depressed parent (Jaser et al., 2005, 2007, 2008; Langrock et al., 2002). Given the lack of control that children have over their parents' emotional state and behavior, in the context of parental depression, strategies that children use to regulate their own emotions and adapt to stress may be most adaptive. Several studies have revealed that children and adolescents' use of secondary control engagement coping is correlated with lower levels of anxiety/depression and internalizing symptoms (Jaser et al., 2005, 2007; Langrock et al., 2002). In other words, children and adolescents who used strategies aimed at adapting to the stress of living with a depressed parent (e.g., acceptance, cognitive restructuring, distraction) had fewer internalizing symptoms.

While identifying direct, first-order relations between coping and psychological adjustment is an important step, there are clear theoretical reasons to expect that the relations between coping and symptoms is more complex, whereby coping mediates the effects of stress on psychological adjustment (Jaser et al., 2008; Sandler, Tein, & West, 1994). Coping has been proposed as one of the primary processes through which resilient outcomes are achieved (Compas et al., 2002). In returning to the definition of coping—"conscious volitional efforts to regulate one's emotional, behavioral, cognitive, and physiological responses to events perceived as stressful"—it serves as a reminder that effective coping strategies might buffer the negative effects of parental depression by lessening the impact of the stress on children and adolescents. Children and adolescents'

success in coping with the negative interactions associated with parental depression may thereby have important implications for their mental health.

Social Competence

Social competence, particularly as reflected in relationships with peers, also plays a prominent role in resilience of at-risk youth. In the context of significant stress, such as stress associated with parental depression, access to social support and positive self-appraisals of social functioning may serve to buffer the impact of adversity and promote emotional and psychological well-being.

Defining social competence. Social competence is generally defined as the ability to achieve success in social or interpersonal situations (Chen & French, 2008; Waters & Sroufe, 1983). Although specific definitions of social competence differ, many descriptions highlight the active initiation, maintenance, and participation in social relations and the appropriateness of the behaviors in social settings (Chen & French, 2008; Rubin & Rose-Krasnor, 1992).

Interactions with peers is a fundamental part of human development (Chen & French, 2008), and peer groups, friendships, and romantic relationships comprise the major systems of interaction individuals engage in throughout much of their lifespan (Masten, 2005). Social competence has been identified as a distinct dimension of competence in both child and adolescent development and appears to have high stability over intervals of 1 to 2 years (Coie & Dodge, 1983), but shows more modest continuity over longer intervals (Masten et al., 1995). This suggests that the skills underlying social success in childhood may differ from those required for success in adolescence (Masten et al., 1995).

Some aspects of social competence also involve internal structures or processes—in particular, individuals' perceptions of their own ability to successfully interact with others and to form and sustain social relationships. During middle childhood, children's self-appraisals undergo a major shift. An increase in cognitive capacity and the emergence of more complex cognitive structures result in two major changes that assist in the construction of self-image by providing children with new sources of information (Cole, Jacquez, & Maschman, 2001). First, children develop the capacity for social comparisons and become more motivated to judge themselves in comparison to others (Nicholls & Miller, 1983). Second, children develop the ability to see themselves as others perceive them (Eccles, Wigfield, Harold, & Blumenfeld, 1993). This provides them with self-information that affects their perception of their personal competencies.

Beginning around the age of 8 years, children's generalized sense of competence begins to differentiate into activity-specific domains that are salient to their daily lives (e.g., social and academic; Harter, 1982). As children then move into adolescence, their self-perceptions become more realistic and more consistent with others' appraisals of their abilities (Cole et al., 2001; Eccles et al., 1993). These are the first steps in the development of a sense of personal social competence.

Within the social domain, children evaluate themselves on dimensions such as having friends, being easy to like, and being an important member of one's school class (Harter, 1982). In adolescence, self-awareness, social comparison, and preoccupation with one's self-image increases dramatically, while self-esteem becomes more vulnerable, making self-perceptions of social competence even more salient during this developmental period (Harter, 1990; Harter & Whitesell, 1996).

Whereas social competence in childhood is only modestly linked to competence in adolescence (Masten et al., 1995), research has demonstrated that self-appraisals of social functioning become increasingly stable as a function of age. Towards the end of elementary school, children's self-appraisals of their social abilities begin to solidify and become an established component of their self-concept (Cole et al., 2001).

Operationalizing social competence. Two aspects of social competence reflected in many definitions and conceptualizations are social functioning and peer relationships. One feature of social functioning is sociability, which is considered to be a product of high motivation to approach social situations and is generally characterized by active engagement in interactions with peers and low levels of avoidance in social situations (Asendorpf, 1990, 1991). A second component of social functioning involves appropriate social behaviors or social skills (Weisz, Rudolph, Granger, & Sweeney, 1992). Social skills refer to an individual's knowledge of and ability to use a variety of social behaviors that are appropriate to a given social situation. The capacity to inhibit impulsive, egocentric, or negative social behavior is also a reflection of a child's social skills (Eisenberg, Zhou, Liew, Champion, & Pidada, 2006; Murphy & Eisenberg, 2002).

A major index of social competence in Western society is the ability to get along with peers and to establish and maintain peer relationships (Ladd, 2005; Masten et al., 1995; Rubin, Bukowski, & Parker, 2006). Interacting with peers is a fundamental developmental task that begins in early childhood and remains important throughout a person's lifetime. One aspect of success with peer relationships is finding acceptance by peers and being integrated into social networks (Chen & French, 2008). A second important aspect of peer relationships is the ability to establish close friendship bonds with others (Chen & French, 2008). The capacity for developing friendships has been

associated with psychological adjustment in Western cultures (French, Jansen, Riansari, & Setiono, 2003). The support of friends is an important mechanism in helping children and adolescents learn problem-solving skills and socially acceptable behaviors, while also developing confidence and a positive view of themselves (Chen & French, 2008; Rubin et al., 2006).

Child social competence and psychological adjustment. Research has shown that levels of social competence (as reported by peers, teachers, and parents) and self-perceptions of social competence (self-reported) are related to levels of child and adolescent depressive symptoms and other symptoms of internalizing and externalizing psychopathology (Cole, Martin, Powers, & Truglio, 1996; Frank, Blount, & Brown, 1997; Kistner, David, & White, 2003; Seroczynski, Cole, & Maxwell 1997; Weisz et al., 1992; Weisz, Sweeney, Proffitt, & Carr, 1993).

Research on the relationship between social competence and adjustment in children and adolescents has been primarily devoted to identifying how deficits in social competence contribute to the development of depression and other problems rather than identifying the link between social competence and indicators of positive adjustment (e.g., Cole et al., 1996). However, understanding how social competence contributes to depression in children and adolescents has important implications for how social competence can also promote healthy adjustment. For example, using longitudinal data, Cole and colleagues (1996) found support for a competence-based model of child depression in which social skills deficits put children at risk for subsequent depressive symptoms. Some theorists have suggested that social skills deficits advance the development of depression by undermining access to social contact and social support (Lewinsohn, 1974). In contrast, active participation of sociable children in social

interactions may play a significant role in promoting psychological adjustment. For example, higher levels of sociability in childhood have been associated with fewer internalizing symptoms in late adolescence (Chen et al., 2002).

Children and adolescents who successfully complete the developmental task of constructing a strong sense of social competence are also more likely to experience positive outcomes and may even experience protective effects from these positive self-thoughts (Cole et al., 2001). In a longitudinal study with third- and sixth-graders, Cole, Martin, and Powers (1997) revealed that children's perceptions of their social competence were inversely related to their depression symptoms, even after controlling for previously reported depression and ratings of competence. In other words, higher levels of self-perceived social competence were predictive of decreases in depression symptoms over time.

Although there is empirical support for a relation between child social competence and the development of depression and other internalizing disorders, the role of social competence in offspring of depressed parents has not been examined. However, youths' social competencies and their sense of self-competence may play important roles in contributing to resilience to stress caused by parental depression.

In the context of significant stress, specifically stress associated with parental depression, social competence may serve to counteract or buffer the impact of adversity and promote resilience. Especially for older children and adolescents, strong social connections independent of their caregivers may compensate for family difficulties (Masten, Best, Garmezy, 1990). Having close friendships may help children and adolescents feel supported when their parent is experiencing depression and thereby may reduce negative cognitive and emotional reactions to stressful interactions with a

depressed parent, dampen emotional and physiological responses to such stress, or alter maladaptive behavioral responses (Cohen, 1988; Cohen, Gottleib, & Underwood; 2000; Kamarck, Manuck, & Jennings, 1990). In addition, high levels of social competence may provide access to psychosocial resources needed to cope with stress (Cohen, 2004), which is especially important for offspring of depressed parents exposed to high levels of parental stress.

Self-perceived competence (and related constructs, including self-confidence and self-efficacy) has also been proposed as a potential source of protection from the adverse consequences of stress (Garmezy, 1993; Masten et al., 1990; Werner, 1990). A belief in one's competence has been demonstrated to function as a protective process, possibly by motivating attempts at adaptation (Bandura, 1982, 1986). Resilient children and adolescents may enter into situations more prepared for effective action by virtue of their self-confidence and perceptions of competence. Consequently, successful mastery of a difficult situation would serve to increase beliefs of competence and reinforce future efforts to take action (Masten et al., 1990).

There is also evidence that perceived availability of supportive social relationships buffers the effect of stress on psychological distress and, more specifically, depression (Cohen & Willis, 1985). The perception that others will provide appropriate assistance in the context of significant adversity may lead to a more benign appraisal of the situation, thereby preventing a cascade of subsequent negative emotional and behavioral responses. In that situation, perceptions of one's social competence may also function as a mediator that reduces the risk for depressive and other internalizing symptoms. When relating these findings to offspring of depressed parents, if children and adolescents have perceptions of high levels of social support and a strong sense of

self-perceived competence within the social domain, this may compensate for the lack of parental support and high levels of intrusive or withdrawn parenting they experience.

Relations Between Social Competence and Coping

Having discussed theory and research related to coping and social competence relatively separately, I now turn to the potential ways in which these concepts intersect. Competence and coping both reflect aspects of successful development and adaptation to stress and adversity (Compas et al., 2001). Compas and colleagues (2001) proposed that coping refers to processes of adaptation, competence represents characteristics and resources that are needed for successful adaptation, and resilience is reflected in outcomes for which competence and coping have been effectively put into action in response to stress and adversity. Coping can thus be considered as competence put into action. In other words, coping involves efforts to mobilize one's personal resources and competencies in response to stress, while resilience is the positive outcome of this process (Compas et al., 2001). For example, children and adolescents often actively seek out peers to distract themselves from problems, elevate their mood, or commiserate, all of which are coping strategies that draw upon social resources. Coping efforts involving social interactions do not always have positive results, but resilience occurs in a subset of individuals who are able to successfully mobilize their resources in response to stress (Compas et al., 2001).

Effect of coping on social competence. The coping skills children and adolescents employ in response to stress likely shape their social relationships. Successful coping may serve to enhance future social competence as mastery of a difficult situation may

increase self-perceived competence and reinforce efforts to take action in the future (Masten et al., 1990).

Coping strategies that involve productive engagement with stressors (e.g., problem solving) or with one's reactions to them (e.g., emotional expression) may increase aspects of social competence including confidence, interpersonal trust, and self-reliance (Skinner, Edge, Altman, & Sherwood, 2003). At the same time, prolonged use of disengagement coping behaviors (e.g., social isolation, avoidance, blaming others) can contribute to low social competence and interpersonal difficulties (Skinner et al., 2003). Additionally, if individuals respond to stress in an effective way, they may feel more competent and approach stressful situations differently in the future.

Effect of social competence on coping. Although coping refers to the ways that an individual attempts to manage and adapt to stress, coping is a process that is embedded in and draws on social relationships. Coping efforts include attempts to obtain information, emotional support, tangible forms of help, and guidance from others. Sources of support for adolescents include parents, siblings, peers, teachers, and other significant adults in their lives. Thus, coping is an important process that can lead to resilient outcomes, but it is not limited to the characteristics of individuals; coping is often a social process.

Coping is influenced and shaped by social relationships and contexts (Compas 1987; Maccoby 1983; Rutter, 1983; Skinner & Zimmer-Gembeck, 2007). Research on coping and social competence has thus far developed relatively independently, but the association between these constructs and their roles as protective processes in the relationship between stress and depression may have important implications. As Kliewer and Sandler (1993) have noted, since the use of different coping strategies often involves drawing upon one's social resources, judging the appropriateness of behavior, and

regulating affect, social competence likely has an impact on the effectiveness of coping efforts.

Adolescents' social competence may facilitate adaptation to a variety of stressors by facilitating access to social resources (e.g., support) as a means of coping with stress (Copeland et al., 2005; Frank et al., 1997). Active social participation of children and adolescents promotes the formation of interpersonal support systems that may, in turn, help them cope with stress (Chen & French, 2008). Social relationships provide resources and opportunities for coping behaviors, such as emotional expression to others, distraction from stress, and the receipt of support and empathy from others. Research on social competence and peer relationships has shown that the availability of social support and quality of relationships is related to children's physiological and psychological stress reactivity, regulation, and coping (Skinner & Zimmer-Gembeck, 2007). Access to peer relationships and the receipt of support in the context of significant adversity may help reduce the perceived importance of the stressor, thereby reducing the subsequent negative emotional, behavioral, and physiological responses (Cohen & Wills, 1985). Patterns and ways of coping emerge as long-term effects of differing combinations of stressors and social relationships.

Factors related to self-perceptions of social competence, such as feelings of self-efficacy and self-confidence, may also promote coping efficacy, or the belief that one can deal effectively with stressors that they may encounter (Sandler, Tein, Mehta, Wolchik, & Ayers, 2000). High levels of perceived competence may increase efforts at adaptation, sustain coping attempts in the face of difficulty and challenge, and increase the occurrence of effective action (Masten et al., 1990). Children and adolescents with a strong sense of personal competence may utilize efficient problem-solving strategies in

response to stressful situations, whereas individuals with low perceptions of their competence may be more likely to use avoidance and other ineffective responses to stress. The perception that one has access to social support via peer relationships may also bolster one's perceived ability to cope with demands (Cohen, 2004). Skills important to an individual's self-perception of social competence serve as resources, which one can draw upon to cope with stress.

Relatively little research has examined the relationship between children and adolescents' competencies and the ways that they cope with stress. A cross-sectional study conducted by Copeland, Wadsworth, and Compas (2005) investigated a model of the relations among adolescents' competence, coping, and symptoms of psychopathology in response to family and economic stress. Competence, comprised of social, activity, and academic competence, was predictive of greater use of secondary control coping in the context of both economic and family conflict stress. In addition, results of the regression analyses in that study indicated that the relationship between competence and adolescents' internalizing and externalizing symptoms were accounted for by secondary control coping in the context of family stress. Although the study was cross-sectional and causal relationships should not be inferred, the findings suggest that more competent adolescents may be able to engage in more effective types of coping, and the use of these coping strategies is a possible mechanism through which competence facilitates adaptation to stress and adversity.

I now examine parental depression, coping, and social competence in the context of preventive interventions.

Preventive Interventions

Interventions and Child Coping

Research has demonstrated that preventive interventions can be successful in helping children and adolescents develop effective coping skills (e.g., Gil et al., 2001; Hains & Szyjakowski, 1990; Rhode et al., 2004; Spence, Sheffield, & Donovan, 2003). Although not targeted at offspring of depressed parents, several programs aimed at preventing depression in children and adolescents have included coping skills training within the intervention and reported a significant effect on child symptoms (e.g., Horowitz, Garber, Ciesla, Young, & Mufson, 2007; Jaycox, Reivich, Gillham, & Seligman, 1994). The Penn Prevention Program provided direct training for children on coping with family conflict and other stressors, which included de-catastrophizing about potential outcomes of problems, distraction techniques, relaxation training, and ways to seek social support (Jaycox et al., 1994). However, although the intervention was successful in reducing depressive symptoms, the role of coping as a potential mediator of the intervention was not assessed.

In another cognitive-behavioral intervention aimed at preventing adolescent depression, adolescents were taught to identify and revise negative thoughts as well as to problem solve and cope with stressful events (Horowitz et al., 2007). At post-intervention, adolescents in the intervention had significantly lower composite depression scores than participants in the control group. Horowitz et al. (2007) examined rational active coping and emotion-based coping as potential mediators of the relation between the intervention and depression, but found no evidence for mediation. However, attributional style, which is similar to cognitive restructuring, partially mediated the

positive effect of the cognitive-behavioral intervention on depression.

Several other programs targeting youth exposed to high-risk familial stressors (e.g., parental divorce, alcoholism), which is of particular relevance to the current study, have also demonstrated that coping can be altered through intervention (Roosa et al., 1989, 1990; Sandler et al., 2003). Tein et al. (2006) and Wolchik et al. (2002) reported follow-up analyses of the Family Bereavement Program, which targeted coping skills in children and adolescents who had experienced the death of a parent or parent figure (Roosa et al., 1989). Positive coping (a composite variable including both active coping and perceived coping efficacy) was examined as a potential mediator between intervention program effects and adolescent girls' depressive symptoms in a two-wave longitudinal design (Tein et al.). Results indicated that positive coping mediated the association between the preventive intervention and girls' reports of their internalizing and externalizing symptoms.

In combination, these results provide support to suggest that children and adolescents' coping skills are changeable through intervention and improvements in coping skills may serve as a mediator of intervention effects on child and adolescent symptoms.

Interventions and Child Social Competence

Research examining the effect of interventions on social competence in children has demonstrated that social skills can be improved (e.g., Caplan et al., 1992; CPPRG, 2004; Lynch, Geller, & Schmidt, 2004). For example, the Fast Track program is a preventive intervention designed to target the primary risk factors for aggressive behavior and conduct problems (e.g., ineffective social problem-solving and emotional coping skills, poor peer relations; CPPRG, 2004). Children's functioning in multiple domains,

including social competence, was examined prior to entry into first grade. When assessed after Grades 4 and 5, the program had a significant effect on children's social competence as compared to a control group. More specifically, the intervention group showed a significant increase in children's levels of social competence (CPPRG, 2004).

The Positive Youth Development Program is a preventive intervention that targeted older children and young adolescents (Caplan et al., 1992). This school-based social competence-training program was assessed in a sample of sixth and seventh graders drawn from both inner-city and suburban middle schools. The program included units focused on teaching social-problem-solving, increasing assertiveness, and identifying and utilizing social networks. Students that had participated in the program, relative to the control group, showed improvements in conflict resolution with peers and impulse control, behaviors that are related to social competence, as reported by their teachers.

Of particular relevance to the current study, the Penn Prevention targeted social competence as a way to reduce depression in children (Jaycox et al., 1994). The intervention included a social-problem-solving component designed to teach children perspective-taking, information gathering, generating alternatives for actions, and decision-making. Although findings indicated a significant reduction in depressive symptoms for children enrolled in the prevention project as compared to participants in a control condition, effects of the intervention on children's social-problem-solving were not measured. Therefore, it is difficult to determine if these positive changes occurred due to increased levels of social competence.

Although several studies have found evidence for changes in social skills, few included mediation analyses to determine whether changes in social competence

accounted for effects of the intervention on children and adolescents' symptoms. In one of the few studies to examine the role of social competence as a potential mediator of the effects of psychological interventions, Pössel and colleagues (2004) examined the effects of an intervention which provided social competence training, defined as enhancing adolescents' ways to create, improve, and maintain social contacts and networks. Pössel et al. reported evidence that the intervention led to increases in adolescents' size and frequency of use of their social networks and examined changes in social networks as a mediator of changes in depressive symptoms (Pössel et al., 2005). Results from these analyses, however, indicated that neither of the two social support components tested (network size or frequency of use) were significant mediators of the effects of the program on changes in depressive symptoms from pre-intervention to 3-month follow-up.

With regard to the role of social competence as a potential moderator of the effects of psychological interventions, in a search of the literature, only one study was found to examine this construct as a moderator in the context of an intervention. Tusaie and colleagues (2007) conducted a secondary analysis of the data from the first phase of a larger study by Puskar and colleagues (2003) that assessed the effects of an intervention on psychological symptoms and coping skills in rural adolescents. Tusaie et al. examined psychosocial resilience in the same sample of adolescents, aged 14 to 18 years old, and factors that might predict or moderate resilience. Psychosocial resilience was measured by a composite variable consisting of low levels of adolescent depression and substance use and high levels of cognitive coping. One of the potential moderators tested was perceived friend social support. Stepwise logistic regression was used to test this model, and perceived support of friends was found to moderate the level of psychosocial resilience by interacting with negative life events and age (Tusaie et al., 2007). More

specifically, perceived support of friends became more important for promoting resilience in older adolescents experiencing more negative life events. This indicates that perceptions of social competence and perceived support might help buffer the effects of negative events for older adolescents.

Although preventive interventions have focused on the development of social competence and have even targeted social skills as a way to reduce depression, there is a scarcity of studies that have examined social competence as mediators or moderators of preventive interventions.

Interventions with Offspring of Depressed Parents

A small but growing body of research indicates that the adverse effects of parental depression can be reduced or prevented through psychosocial intervention (Beardslee & Gladstone, 2001; Horowitz & Garber, 2006). Preventive interventions for children of depressed parents vary on at least two dimensions. First, interventions have either involved families (depressed parents and their children; Beardslee et al., 1996) or focused solely on the children who are at risk (Clarke et al., 2001). Second, prevention programs have emphasized cognitive-behavioral methods of intervention (Clarke et al., 2001), in contrast with a family education approach (Beardslee et al., 1993).

Beardslee and colleagues (1993) have developed a family-based intervention for families with a recent history of parental affective disorder, with the focus on preventing depression in early adolescents aged 8 to 15 years old. Their manual-based psychoeducational approach targeted strategies to address poor communication, feelings of guilt and blame, misunderstanding, and the recognition of depression. In addition, their intervention aimed to build support networks and outside activities for children, as

well as increasing shared family understanding (Beardslee, Wright, Gladstone, & Forbes, 2007). Initial findings suggest that this intervention increases child knowledge and understanding of their parent's disorder and leads to improvements in children's adaptive functioning post-intervention (Beardslee et al., 1993; 1997a; 1997b). These findings persisted through the sixth follow-up assessment point, approximately 4.5 years after enrollment, with increased reports of child functioning and decreased internalizing symptoms assessed on the Youth Self-Report for adolescents in both the family intervention and in an intervention that involved provision of information to parents in a lecture format (Beardslee et al., 2007). However, there were no significant group differences at that point between the family intervention and control condition.

Using a different intervention model, Clarke et al. (1995) adapted the Coping with Depression Program (Clarke et al., 1993), an empirically supported cognitive-behavioral program for treatment of adolescent depression, for use in a preventive intervention with a community sample of high-risk adolescents. This group-format intervention was designed to prevent the onset of depressive disorders in 13- to 18-year-olds who demonstrated elevated but subclinical depression symptoms and was compared to a "usual care" group. At a one-year follow-up, participants in the intervention group reported significantly fewer cases of MDD or Dysthymia than the control group (Clarke et al., 1995).

Clarke and colleagues extended these promising findings by comparing this intervention to a usual care condition among adolescent offspring of parents being treated for depression (Clarke et al., 2001). A component of the intervention focused on teaching cognitive restructuring to identify and change unrealistic or overly negative thoughts, with a specific focus on beliefs related to having a parent with depression. At

both posttreatment and at a 12-month follow-up, adolescents in the intervention had significantly lower symptoms of depression, as measured by the CES-D, compared to the treatment as usual group. However, the cognitive and behavioral skills taught in the intervention were not examined as potential mediators of changes in depressive symptoms, therefore making it difficult to determine if these positive changes occurred due to increased levels of coping. Nevertheless, this cognitive-behavioral intervention appears to be promising for the prevention of depression in high-risk adolescents.

Family-Based Cognitive Intervention for Offspring of Depressed Parents

Guided by previous research on risk and protective processes in children of depressed parents, the preventive intervention examined in the present study was designed to reduce stressful parent-child interactions that are associated with parental withdrawal and parental intrusiveness and to enhance children's and parents' use of secondary control engagement coping strategies to reduce the risk for symptoms and disorder in children in these families (Compas, Keller, & Forehand, in press). The intervention included several basic skills, including secondary control engagement coping (acceptance, cognitive restructuring, distraction through pleasant activities), and parenting skills (parental involvement, parental warmth, and family structure).

In an open trial examining pre- to post-changes in a sample of 50 families who participated in the intervention, significant changes were found in children's internalizing and externalizing symptoms, children's use of secondary control coping skills, and parental depressive symptoms. Initial findings have been reported from a randomized clinical trial in which this intervention has been compared with an information-only control condition (Compas et al., 2009). Analyses of covariance at 12-month follow-up

indicated that children in the intervention compared with controls reported lower levels of depressive symptoms and internalizing and externalizing symptoms, and parents in the intervention condition reported significantly lower levels of externalizing symptoms in their children at 6-month follow-up (Compas et al., 2009). Effect sizes for these outcomes were all medium in magnitude.

The current study examined the role of coping and social competence as potential mediators and moderators of the positive effects of this family cognitive-behavioral intervention. The intervention focused on teaching offspring of depressed parents more adaptive coping skills. Thus, coping may serve as a mediator between treatment and children's psychological adjustment. Although the intervention did not focus on changing children and adolescents' social competence, it may do so indirectly as children in the intervention were encouraged to increase their participation in social activities outside of the family as a method of distraction. In that case, it is possible that social competence may also function as a mediator of the program. To better understand how coping and social competence are related, they were tested sequentially in multiple mediated models. The findings of Copeland et al. (2005) suggest a model in which increases in social competence lead to improved coping and fewer symptoms. In contrast, it may also be that the intervention serves to increase children's coping, which, in turn, leads to higher levels of social competence and lower levels of symptoms.

Given that the preventive intervention examined in this study did not target adolescents' social competence and that social competence is a relatively stable construct, it is not as likely that social competence will function as a mediator of treatment. However, because competence may serve as a resource that benefits an individual's ability to cope, coping and competence may function in a moderated mediation model.

More specifically, coping may mediate the relationship between intervention and outcome, but only for adolescents with higher levels of social competence at the onset of treatment. In other words, adolescents who enter the intervention with better social skills and more positive perceptions of their relationships and social self-efficacy would be better able to effectively apply the coping skills introduced in the intervention, thereby reducing symptoms of depression. For adolescents with low levels of social competence, the intervention would be less effective in increasing their coping skills and, in turn, would not experience a decrease in symptoms.

Current Study and Proposed Hypotheses

The current study was conducted as part of a randomized trial to test a cognitive-behavioral family intervention for families of depressed parents. The cognitive-behavioral intervention was designed to reduce the incidence of internalizing symptoms and, more specifically, depressive symptoms, in children of depressed parents. The goals of the current research were to better understand the factors that are associated with resilience in offspring of depressed parents. More specifically, the role of coping and social competence, and the relations between these two potential sources of resilience, were investigated as processes of resilience and potential protection from psychopathology in these at-risk youth. In summary, the present study tested the following hypotheses:

Hypothesis 1—Efficacy of the Intervention

1-1. Compared to a self-study comparison condition, the family group intervention was expected to lead to significantly lower anxiety/depression and

internalizing symptoms.

1-2. It was hypothesized that social competence would increase significantly in a family cognitive-behavioral intervention as compared with children in a self-study condition.

1-3. It was expected that the use of secondary control engagement coping would increase significantly in children in a family cognitive-behavioral intervention as compared with children in a self-study control condition.

Hypothesis 2—Mediators of the Intervention

2-1. It was hypothesized that improvement in children's coping would mediate the effects of the family cognitive behavioral intervention on anxiety/depression and internalizing symptoms.

2-2. It was hypothesized that increases in children's social competence would mediate the effects of the family cognitive behavioral intervention on anxiety/depression and internalizing symptoms.

2-3. It was hypothesized that both coping and social competence would mediate the effects of the intervention on children's anxiety/depression and internalizing symptoms and would function together in one of two multiple-mediation models: (a) Social competence will mediate the effects of the intervention on children's symptoms, and secondary control coping will account for the relationship between social competence and symptoms. (b) Coping will mediate the effects of the intervention on children's symptoms, and social competence will account for the relationship between coping and symptoms.

Hypothesis 3—Moderators of the Intervention

3-1. It was hypothesized that social competence would moderate the effects of the intervention. In other words, for children with high levels of social competence, the intervention would lead to fewer anxiety/depression and internalizing symptoms.

3-2. It was hypothesized that social competence and coping would function in a moderate mediation model in which social competence would moderate the mediation effect of coping between the intervention and children's anxiety/depression and internalizing symptoms. In other words, for children with high levels of social competence, the intervention would serve to increase coping, which would lead to fewer symptoms. For children with low levels of social competence, the intervention would not result in an increase in coping and decrease in symptoms.

CHAPTER II

METHOD

Participants

Participants were drawn from a sample of families recruited to participate in a two-site randomized family-based, cognitive-behavioral intervention trial for children of depressed parents conducted at Vanderbilt University in Nashville, Tennessee and the University of Vermont in Burlington, Vermont. All randomization procedures, diagnostic interviews, and intervention sessions were matched across sites.

Participants included a total of 111 parents with current or past major depressive disorder during the lifetime of their child(ren) and 155 adolescent children of these parents living in the areas of Nashville, Tennessee and Burlington, Vermont. Target parents with a history of depression included 95 mothers (mean age of 41.2, SD = 6.8) and 16 fathers (mean age = 48.3, SD = 8.2).

Children enrolled in the study ranged in age from 9- to 15-years old and included 85 males (mean age of 11.3, SD = 2.0) and 70 females (mean age of 11.5, SD = 2.0). Seventy nine percent of the children were Caucasian, 8% African American, 3% Asian American, 1% Latino, 1% Native American, and 8% mixed heritage. Adolescents 9- to 15-years-old were targeted because the rate of depression increases significantly during the transition from childhood to adolescence, making this developmental period the optimal time for prevention of the onset of depression (Hankin et al., 1998). Children younger than 9-years-old were likely to be unable to benefit from the complex cognitive portions of the intervention, and adolescents older than 15 years of age were likely to

leave home during the 2-year follow-up period and therefore be less available for follow-up.

Procedure

At both sites, families were primarily recruited via mental health clinics and practices. Brochures or posters were placed in appropriate waiting rooms and mental health specialists were educated about the intervention and provided with referrals accordingly. Other methods of recruitment were implemented as necessary and included advertising through the television, radio, newspapers, and through mass email mailing lists. A total of 554 parents contacted the research teams. These individuals learned of the study from the following sources: 31% (n = 177) from mental health care settings (e.g., community mental health centers, outpatient psychiatry clinics); 9% (n = 54) from general medical practices; and 53% (n = 302) from media and public settings (e.g., newspaper and magazines, employee emails); 7% (n= 41) of contacts could not recall how they learned about the study.

Potential participants contacted the research staff and participated in a 30-45 minute diagnostic phone-screen interview to determine eligibility criteria. To meet inclusion criteria for the current study, at least one parent in the family had to meet criteria for at least one episode of major depressive disorder (MDD) or dysthymia (DY), either currently or during the lifetime of the child(ren) within the designated age range. Recent research has shown that current parental depressive symptoms are a strong predictor of quality of parent-child interactions and current child adjustment among parents with a history of depression, suggesting that parenting and other factors continue to place children at risk even when parents are out of episode (Jaser et al., 2005). Parents

who met criteria for major depression either currently or during the lifetime of her/his child(ren) moved to the next stage of the screening process if the following criteria were met: (a) parent had no history of bipolar I, schizophrenia, or schizoaffective disorder; (b) children had no history of autism spectrum disorders, mental retardation, bipolar I disorder or schizophrenia; and (c) children did not currently meet criteria for conduct disorder or substance/alcohol abuse or dependence.

In addition, eligible families in which a participating family member was acutely suicidal were temporarily placed on-hold, as were families in which any participating child was currently depressed. Such families were deemed unsuitable for the intervention at that time and were assisted in obtaining appropriate mental health services in the community. If any parent was currently depressed, the family was permitted to participate as long as extreme functional impairment (i.e., GAF < 50, or unable to attend work or take care of their children) or active suicidal ideation was not present. Families who are placed on hold were eligible to participate when parents no longer met criteria for being extremely functionally impaired or acutely suicidal and children were no longer in a Major Depressive episode.

Upon completion of this initial screening, families who were ineligible were informed of their status, provided with treatment referrals if needed, and asked if they would like to be recontacted for future studies. Deferred families were offered the opportunity to be re-screened every 2 months (if deferred for suicidality or child depression) or every 6 months (if deferred for alcohol or drug problems), until they screened eligible and could be invited to the next stage of recruitment. The 180 parents who screened eligible were invited to participate with their child(ren) in an in-person baseline interview to confirm their eligibility.

Potential participants who came into the laboratory for further interviews were consented and asked to participate in an extensive battery of assessments, including diagnostic interviews, questionnaires, and observations of parent-child interactions. In addition to providing demographic data, parents were asked to complete a measure of their current depressive symptoms, a measure of their child's coping and social competence, and a measure of their child's functioning. Children were asked to complete measures of their own anxiety/depression and internalizing symptoms; a measure of their coping behaviors; and measures of their perception of their social competence.

After completing the screening process, 111 families met criteria for the study and were randomized in blocks of 8 families to the family cognitive-behavioral intervention (56 families with 80 children) or to the information-only condition (55 families with 75 children). The order of randomization was determined by a random number generator and the assignment order was kept in a series of sealed envelopes that were opened by research assistants who were blind to assignment until the envelopes were opened for each family. Of the 111 families who were randomized, 64% (n = 71) learned about the study from media and public settings, 27% (n = 30) from mental health settings, 5% (n = 6) from general medical practices, and 4% (n = 4) could not recall how they learned of the study.

For families enrolled in the study, assessment sessions were repeated after the acute phase of the intervention (2-months), at post-intervention (6-months), and at 12-month follow-up. Parents and children were each offered $10-40 in monetary compensation at each assessment point, depending on the amount of time involved in each assessment.

Measures

Demographic information. Demographic information was obtained from a questionnaire completed by the parent regarding level of education and occupation, ethnicity, and marital/partner status.

Parental depressive symptoms. The Beck Depression Inventory-II (BDI-II; Beck et al., 1996) was used to assess current parental depressive symptoms. This measure is a standardized and widely used self-report checklist of depressive symptoms with adequate internal consistency (α =.73 to .92), reliability and validity (Beck et al., 1988). Internal consistency in the current sample was α = .93.

Children's anxiety/depression and internalizing symptoms. The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) was given to parents to assess symptoms of anxiety/depression and total internalizing problems in children and adolescents. These scales were selected to represent the range of problems that have been identified in children of depressed parents. The CBCL is an 118-item checklist of problem behaviors that parents rate as not true (0), somewhat or sometimes true (1), or very true or often true (2) of their child in the past 6 months. Children completed the Youth Self-Report (YSR; Achenbach & Rescorla, 2001), the self-report version of the CBCL, to provide their own perceptions of their functioning. The CBCL and YSR have strong test-retest reliability (r = .79 to .95), and criterion-related validity has been established. Internal consistency in the current sample ranged from .76 to .90 for these scales. Although the YSR is for adolescents ages 11- to 18-years-old, 9 and 10-year-old children completed the YSR to allow for complete data on all measures. The internal consistency for the YSR scales was adequate with this younger age group in the current sample (all $\alpha \geq .80$). Raw scores were used in all analyses to maximize variance.

Children's coping and stress responses. The parental depression version of the Responses to Stress Questionnaire (Connor-Smith et al., 2000; Langrock et al., 2002) was given to both children and parents to assess children's coping in response to stressors associated with parental depression that occurred within the past 6 months. The RSQ has been shown to have good reliability and validity, including internal consistency (α = .73 to .85), test-retest reliability over 2-weeks (r = .69 to .81), convergent validity in reports of parents and children, and construct validity as reflected in results of confirmatory factor analyses (Connor-Smith et al., 2000). Factor analyses of the RSQ have identified five primary factors (Connor-Smith et al., 2000): *primary control engagement coping* (problem solving, emotional expression, emotional modulation), *secondary control engagement coping* (cognitive restructuring, positive thinking, acceptance, distraction), *disengagement coping* (avoidance, denial, wishful thinking), *involuntary engagement* (e.g., emotional arousal, intrusive thoughts), and *involuntary disengagement* (e.g., cognitive interference, escape). The first 3 factors reflect voluntary coping processes, and the latter 2 reflect involuntary stress responses. In particular, this study focused on secondary control coping strategies, and this factor was utilized in subsequent analyses. The internal consistency for this sample was α = .82 for children's self-reports of secondary control coping and α = .75 for parent reports of children's coping.

To control for individual differences in base rates of item endorsement (e.g., gender differences in response rates, overall endorsement of coping items), proportion scores were used for all analyses. Proportion scores were calculated by dividing the total score for secondary control coping by the total number of responses endorsed on the RSQ. Proportion scores provide an index of the relative degree to which each response category was used (see Connor-Smith et al., 2000).

Children's social competence. Multiple methods were used to assess children's social competence. Harter's (1985) Self-Perception Profile for Children (SPPC) is a measure of children's self-evaluations of their personal competence. This self-report inventory contains 6 subscales, including a global self-worth scale and 5 competence scales. However, only the Social Competence subscale was used in the current study as a measure of social competence. Each item presents children with two descriptive statements regarding their competence (e.g., *some kids are popular with others their age* but *others kids are not very popular*). Children decide which of the two statements are most like them, and then, for that statement, rate whether it is *really true* or *sort of true* for them. This results in a possible range of 1 to 4 (higher scores reflect more positive perceptions of competence). Evidence for test-retest reliability and criterion validity of this measure is well documented (e.g., Cole, 1991; Harter, 1982). The internal consistency for this sample was $\alpha = .75$.

The social competence scales on the Child Behavior Checklist (CBCL; Achenbach, 1991) and Youth Self-Report Inventory (YSR; Achenbach, 1991) were adapted to provide additional measures of child social functioning. Items on this scale include the child's involvement in organizations and teams, number and frequency of contact with friends, and a rating of how well the child is able to get along with others relative to peers. However, for the current study, items involving participation in sports and in other activities/hobbies were included. These items were added to the social competence scale for several reasons. First, these items are relevant to the current intervention as children are taught to engage in enjoyable activities (e.g., sports, hobbies) as a strategy for distracting from stress in their family related to parental depression. Second, participation in activities outside the family that would provide opportunities for social interaction is beneficial for offspring of depressed parents. In addition, in this sample, the internal consistency was inadequate for YSR social competence ($\alpha = .56$) and for CBCL social competence ($\alpha = .52$). However, when items involving participation in sports and other activities were included, the internal consistency was much stronger for both the YSR ($\alpha = .72$) and CBCL ($\alpha = .62$).

Intervention Conditions

Family cognitive-behavioral intervention. The 12-session manualized intervention program was designed to teach coping skills to children who have a parent with a history of depression in a small family group format. Each group was co-led by a doctoral or masters-level mental health professional and a doctoral student in clinical psychology. The program was designed for participation by both parents and children. Goals were to educate families about depressive disorders, increase family awareness of the impact of stress and depression on functioning, help families recognize and monitor stress, facilitate the development of adaptive coping responses to stress, and improve parenting skills.

Information was presented to group members during sessions, practice and discussion of skills were facilitated during the sessions, and all members were given weekly home practice exercises. The intervention was designed to address one of the hypothesized mediators in the current study—children's coping with and reactivity to stressors associated with parental depression. In addition, the current research expanded the focus of this aspect of the project by examining the effects of the intervention on children's social competence.

The first three sessions (sessions 1-3) provided an introduction to the nature of depression, the effects of parental depression on children, and an introduction to skills which were proven to help children effectively cope with both family stress specific to depression and general, everyday stress. During the first 3 sessions, both parents and children of all families met together as a group, and an emphasis was placed on increasing family activities. During the next 5 sessions (sessions 4-8), parents and children met separately for the majority of the time, only coming together during the last few minutes as a family to share what they had learned.

During these sessions, children and adolescents were taught secondary control coping skills including acceptance, distraction, fun activities, and positive thinking. Each coping skill was the focus of a separate session for the children, to insure adequate time for them to learn and understand how to use each skill independently. Once children understood each skill, the possibility of using more than one skill when faced with a stressor was explored (e.g., first accept that the situation is uncontrollable, then use distraction or positive thinking).

Parents learned basic parenting skills, with an emphasis on areas that are likely to be impacted by depression such as consistency, structure, parental responsiveness, parent-child communication, and involvement in family activities. Finally, 4 monthly follow-up booster sessions (sessions 9-12) were included to provide additional practice and support in the continued development and refinement of the skills learned in the initial eight sessions.

Written information self-study comparison condition. The comparison condition was modeled after a self-study program used successfully by Wolchick et al. (2000) in their preventive intervention trial for families coping with parental divorce. Families were provided with written materials that were carefully selected by a team of clinicians within the project. Parents and children were each provided with three separate reading booklets over the course of 8 weeks to educate them about the nature of depression, the effects of parental depression on families, and signs of depression in children/adolescents and loved ones. Following the method used by Wolchick et al., families were provided with a schedule for reading these materials and research assistants called the families every other week to check how much of the material they had read. During the consenting process, participants agreed (if they were assigned to the self-study condition)

to spend approximately one hour per week for eight weeks reading these materials.

Statistical Power

For the current study, power calculations were based on the table of empirical estimates of sample sizes needed for .8 power to detect mediation (Fritz & MacKinnon, 2007). Assuming partial mediation, when both the path from the treatment to the mediator and the mediator to the outcome are small in size, a sample size of 158 participants is needed to detect an effect for mediation. When the path from the treatment to the mediator and the mediator to the outcome are medium in size (again assuming partial mediation), the sample size needed to detect the effect is 75 participants. This suggests that the current sample size of 155 children was sufficient to detect mediation in the proposed pathways. For moderation analyses, Maxwell (2000, p. 454, Table 5) used Monte Carlo simulation data to show that to achieve power at a level of .8 with 2 continuous predictors and an alpha level of .05, a sample size of 141 would be required; thus, the current study likely had power sufficient for detecting interactions.

Creation of Composite Variables

To avoid problems with multicollinearity and reduce the number of measures used in subsequent analyses, multiple measures of the same constructs (i.e., anxiety/depression, internalizing symptoms, coping, social competence) from different informants were combined to create composite variables. To create composite scores, parent and child scores were converted to *z*-scores and the mean of the *z*-scores were used in subsequent analyses.

For each composite variable, intraclass correlations (ICCs) were calculated to test

the independence vs. non-independence of children from the same families. ICCs were calculated to ensure that there were no significant differences as a function of some parents completing a set of questionnaires on multiple children (a possible violation of independence of informant) and for children from the same family completing the YSR, RSQ, and SPPC. Four one-way models were conducted on each of the critical variables assessed (symptoms of anxiety/depression, internalizing symptoms, coping, and social competence) to calculate the average ICCs (Shrout & Fleiss, 1979). A significant *F* statistic would indicate that the magnitude of associations between scores within a family was significantly different from the magnitude of associations across different families, suggesting that the source of the information was not independent.

Anxiety/depression symptom composite. A composite of child anxiety/depression symptoms (α = .84) was created using parent report on the anxiety/depression subscale of the CBCL and child report on the YSR. The intraclass correlation was non-significant and small in magnitude for the composite anxiety/depression symptoms variable (*ICC* = .08, *p* = .32).

Internalizing symptom composite. A composite of child internalizing problems (α = .90) was created using parent and child report on the internalizing subscale of the CBCL and YSR, respectively. The intraclass correlation was non-significant and small in magnitude for the composite internalizing symptoms variable (*ICC* = .19, *p* = .12).

Coping composite. A composite of parent and child reports on the RSQ were combined to assess secondary control coping (α = .79). The intraclass correlation was non-significant and small in magnitude for the composite of coping (*ICC* = .17, *p* = .15).

Social competence composite. To assess child social competence, a composite of parent report of social competence on the CBCL and child report of social competence on

the YSR (α = .76) was created. However, a significant intraclass correlation was found for the social competence composite comprised of the YSR and CBCL social scales (*ICC* = .34, *p* = .022). When looking at the individual measures of social competence, the intraclass correlations were non-significant and small in magnitude for the YSR social competence scale (*ICC* = .13, *p* = .21) and SPPC (*ICC* = -.13, *p* = .77), but were significant for the CBCL social competence scale (*ICC* = .61, *p* < .001). Given the independence of the data on child-reported indices of social competence, in order to maximize statistical power and use multiple children within a family for analyses, a composite of social competence was created using child-reports on the YSR and SPPC (α = .80). The intraclass correlation was non-significant and small in magnitude for the composite of child-reported social competence (*ICC* = .01, *p* = .50).

Data Analytic Approach

Data analyses were conducted in several stages. First, descriptive statistics (i.e., central tendency, variability, skewness, kurtosis) were examined for all study variable distributions, and any multivariate outliers were identified and removed. Second, bivariate Pearson correlations among demographic variables (e.g., race, parental education) and study variables were examined; demographic factors that were significantly associated with the study variables were controlled in analyses. Next, bivariate Pearson correlations were conducted using the baseline, 2-, 6-, and 12-month follow-up scores as a first step in examining the relationships among coping, social competence, and child adjustment.

Next, to test the first set of hypotheses that examine the effect of condition (Family Group Intervention vs. Self-Study) on children's mental health symptoms,

coping, and social competence, a series of analyses of covariance (ANCOVAs) were conducted. For anxiety/depression and internalizing symptoms, analyses were conducted at the 12-month time point to assess changes in symptoms at follow-up between the two groups. For secondary control coping and social competence, analyses were conducted at the 6-month time point to examine changes in coping and social competence post-intervention between the two groups.

Finally, to test potential mediators (i.e., coping and social competence) and moderators (i.e., social competence) of the relationship between the intervention and anxiety/depression and internalizing symptoms, a series of linear multiple regression analyses were conducted.

Missing data was handled by imputing the participants' score from their previous adjacent time point for their missing time point. This is a conservative approach to estimating missing data points. To generate the maximum sample size and statistical power, and because the ICCs for the variables used in the analyses were small in magnitude, multiple children from several families were included in the present analyses. The details of the analytic procedure used for each hypothesis are detailed below.

CHAPTER III

RESULTS

Preliminary Analyses

First, children and families assigned to the intervention and to the comparison condition were compared on several demographic variables in a series of *t*-tests and chi-square analyses (see Table 1). Children randomized to the cognitive-behavioral and self-study conditions did not differ significantly in age, sex, or race/ethnicity, nor were there differences in parent age, race, marital status, education, or annual household income.

Second, children and families in the two conditions were compared on symptom and diagnostic measures at baseline. The percentage of parents currently in an episode of MDD did not differ for the two conditions (20% of parents in the intervention, 29% of parents in the comparison condition; chi-square non-significant). The percentage of children without a prior history of MDD was also comparable (87% of those in the intervention and 77% of those in the comparison condition; chi-square non-significant).

Third, *T*-scores on the YSR and CBCL at baseline were examined to provide a normative reference point for the current sample (Achenbach & Rescorla, 2001). Mean *T*-scores on the YSR and CBCL were, respectively, 55.9 and 59.2 for Anxiety/Depression symptoms and 54.0 and 58.4 for Internalizing symptoms. The percentage of children in the clinical range on anxiety/depression (i.e., *T*-score $\geq$ 70) was 6.8%, as reported on the YSR, and 13.4%, as reported by the CBCL (based on normative data, 2% would be expected to exceed the cut-off). The percentage of children in the clinical range on the internalizing scale (i.e., *T*-score $\geq$ 64) was 21.6% on the YSR, and 34.9% on the CBCL (10% would be expected to exceed this cut-off). As expected, this is a high-risk sample,

which is reflected by moderately elevated *T*-scores and an incidence of clinically elevated symptom scores 2 to 6 times greater than would be expected given the normative data.

Table 1.

Parent and Child Demographic Characteristics at Baseline of Families in the Family Group Intervention and in the Self-Study Condition

	Family Intervention		Self-Study		Significance Test	
	M	*SD*	*M*	*SD*	*t* or χ^2	*p*
Parent Age	43.20	7.26	42.38	7.50	.58	.56
Child Age	11.61	2.06	11.23	1.90	1.21	.40
Child Gender (% female)	46.3%	—	44.0%	—	.08	.78
Parent Race/Ethnicity					3.99	.55
Euro-American	85.7%	—	87.3%	—		
African-American	3.6%	—	7.3%	—		
Asian-American	1.8%	—	0.0%	—		
Hispanic-American	3.6%	—	1.8%	—		
Mixed Ethnicity	5.3%	—	3.6%	—		
Child Race/Ethnicity					4.51	.61
Euro-American	78.8%	—	78.7%	—		
African-American	7.5%	—	8.0%	—		
Asian-American	2.5%	—	4.0%	—		
Hispanic-American	2.5%	—	0.0%	—		
Mixed Ethnicity	8.7%	—	9.3%	—		
Parent Marital Status					4.75	.31
Married	57.1%	—	70.9%	—		
Widowed	1.8%	—	1.8%	—		
Divorced	28.6%	—	14.5%	—		
Separated	1.8%	—	5.5%	—		
Never Married	10.7%	—	7.3%	—		
Parent Education					8.08	.089
Less Than High School	3.6%	—	10.9%	—		
High School	5.3%	—	10.9%	—		
Some College	28.6%	—	34.5%	—		
College Degree	37.5%	—	16.4%	—		
Graduate Education	25.0%	—	27.3%	—		
Family Income					8.53	.48
Less than $25,000	19.6%	—	28.3%	—		
$25,000 to $59,999	44.6%	—	26.4%	—		
$60,000 to $89,999	16.1%	—	26.4%	—		
Greater than $90,000	17.9%	—	18.9%	—		

Correlations Between Coping, Social Competence, and Symptoms

Analyses were conducted with measures of the key constructs to gain a better understanding of how the variables of interest were related prior to the intervention and at each follow-up assessment. First, bivariate Pearson correlations were conducted to test the relationship between child coping and child symptoms. The composite measure of child secondary control coping was significantly correlated with the composite measures of anxiety/depression and internalizing symptoms within and between all time points (*r*'s ranged from -.31 to -.53, all $p < .001$; see Table 2). Second, correlations were examined between levels of social competence and child symptoms. Similar to coping, the composite score for child social competence showed significant correlations with the composite measures of anxiety/depression and internalizing symptoms within and between all time points (*r*'s ranged from -.17 to -.44, all $p < .05$). The composite scores for coping and social competence were also significantly and positively correlated with each other, $r = .20$, $p = .027$, at baseline. However, coping and social competence were not significantly correlated with each other at any of the follow-up points. These data suggest that both child coping and social competence were strongly correlated with child symptoms at baseline and postintervention and were moderately correlated with each other prior to the intervention.

Table 2.

Correlations Among Composites Scores of Child Coping, Social Competence, and Symptoms at Baseline, 2-months (Time 2), 6-months (Time 3), and 12-months (Time 4)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14
Time 1														
1. Coping	—													
2. Social Competence	.20*	—												
3. Anxiety/ Depression	-.53***	-.41***	—											
4. Internalizing Sx	-.52***	-.44***	.90***	—										
Time 2														
5. Coping	.65***	.07	-.40***	-.39***	—									
6. Social Competence	.11	.74***	-.30***	-.41***	.00	—								
7. Anxiety/ Depression	-.43***	-.32***	.81***	.74***	-.48***	-.19*	—							
8. Internalizing Sx	-.42***	-.36***	.72***	.78***	-.47***	-.27**	.92***	—						
Time 3														
9. Coping	.50***	.01	-.31***	-.28**	.74***	-.03	-.39***	-.34***	—					
10. Social Competence	.13	.58***	-.22**	-.31**	.09	.74***	-.22**	-.29***	.11	—				
11. Anxiety/ Depression	-.33***	-.24**	.74***	.66***	-.42***	-.17*	.77***	.70***	-.46***	-.17*	—			
12. Internalizing Sx	-.34***	-.24**	.66***	.71***	-.43***	-.23**	.72***	.77***	-.46***	-.28**	.90***	—		
Time 4														
13. Anxiety/ Depression	-.31***	-.21*	.65***	.60***	-.36***	-.17*	.68***	.62***	-.46***	-.20*	.89***	.81***	—	
14. Internalizing Sx	-.31***	-.18*	.59***	.66***	-.40***	-.20*	.66***	.70***	-.45***	-.27**	.82***	.90***	.91***	—

Note: Secondary Control Coping is a *z* score from parent and child report of coping; Social Competence is a *z* score from child report of competence on the YSR and SPPC; Anxiety/Depression and Internalizing symptoms are *z* scores from the CBCL and YSR. Scores for Coping and Social Competence were not included at Time 4 because they were not measured at the 12-month follow-up assessment.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Efficacy of the Intervention

Table 3 provides means and standard deviations for all of the child variables (i.e., composite measures of anxiety/depression symptoms, internalizing symptoms, coping, and social competence) at baseline and each of the 3 follow-up assessments, the significance of the effect of the intervention on the dependent variables at each time point, and the effect sizes (Cohen's *d*, the difference between the means divided by the pooled standard deviation at each time point).

Hypothesis 1-1: *Intervention Effects on Child Symptoms*. It was expected that the family group intervention would lead to significantly lower child symptoms than in the self-study condition. Two levels of child internalizing problems were assessed: a composite of child- and parent-reported anxiety/depression symptoms (YSR & CBCL syndrome scale) and a composite of child- and parent-reported internalizing problems (YSR & CBCL broadband scale). At baseline, the two groups were not significantly different in either of these outcome measures (see Table 3). Controlling for baseline symptom scores, analyses of covariance (ANCOVAS) revealed a significant main effect for intervention group at 12-months on anxiety/depression symptoms ($p = .047$, $d = .33$) and internalizing symptoms ($p = .018$, $d = 0.24$). These effect sizes were small to medium in magnitude.[1]

[1] These effects are consistent with findings reported by Compas et al. (2009), who also reported significant intervention effects on child anxiety/depression and internalizing symptoms. However, the effect sizes reported by Compas et al. were larger in magnitude (medium in size). These discrepancies may be due to different approaches to missing data imputation. Compas et al. used full information maximum likelihood to impute missing data, which is a more sensitive and accurate method of data imputation than the conservative approach used in the current study.

Hypothesis 1-2: *Intervention Effects on Child Coping.* It was expected that the family group intervention, as compared to the self-study condition, would lead to significant increases in children's use of secondary control coping. At baseline, the two groups were not significantly different on composite child coping (see Table 3). Controlling for baseline levels of secondary control coping, ANCOVAS revealed significant group differences at the 6-month follow-up for child coping ($p = .003$, $d = .33$). The effect size was medium in magnitude. Thus, the family group intervention was more effective than the written information condition in increasing children's use of secondary control coping at the 6-month follow-up.

Hypothesis 1-3: *Intervention Effects on Child Social Competence.* It was expected that the family group intervention, as compared to the self-study condition, would lead to significant increases in child social competence. At baseline, the two groups were not significantly different on composite child social competence (see Table 3). Controlling for baseline levels of social competence, ANCOVAS revealed no group effect on post-intervention social competence levels. This finding indicates that the intervention condition was no more effective in increasing levels of child social competence than the self-study.

Table 3.

ANCOVAs of Group Differences in Children's Anxiety/Depression and Internalizing Symptoms, Coping, and Social Competence at Baseline (Time 1), 2-months (Time 2), 6-months (Time 3), and 12-month (Time 4)

	Family Intervention		Self-Study			
Time	*M*	*SD*	*M*	*SD*	*F* Value	Cohen's *d*
Anxiety/Depression Symptoms Composite						
1	-0.03	0.84	0.02	0.83	—	0.06
2	-0.10	0.82	0.10	0.83	3.77+	0.24
3	-0.13	0.77	0.15	0.89	5.48*	0.33
4	-0.13	0.79	0.15	0.90	4.02*	0.33
Internalizing Symptoms Composite						
1	0.04	0.84	-0.06	0.79	—	-0.13
2	-0.03	0.81	0.03	0.85	2.80+	0.07
3	-0.07	0.77	0.08	0.92	4.79*	0.18
4	-0.10	0.82	0.11	0.93	5.77*	0.24
Secondary Control Coping Composite						
1	-0.07	0.85	0.09	0.64	—	-0.21
2	0.01	0.85	0.00	0.64	1.18	0.01
3	0.12	0.82	-0.13	0.68	9.07**	0.33
4	—	—	—	—	—	
Social Competence Composite						
1	0.01	0.81	0.10	0.90	—	-0.12
2	-0.07	0.86	0.13	0.75	1.16	-0.25
3	-0.03	0.86	0.10	0.79	0.52	-0.16
4	—	—	—	—	—	

Note: Anxiety/Depression and Internalizing symptoms are *z* scores from the CBCL and YSR; Secondary Control Coping is a *z* score from parent and child report of coping; Social Competence is a *z* score from child report of competence on the YSR and SPPC.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Mediators of the Intervention

Similar to Tram and Cole's (2000) test of mediation in a longitudinal study and Tein et al.'s (2004) examination of mediation in a preventive intervention, the analyses here were based on Baron and Kenny's (1986) recommendations. Establishing secondary control coping and social competence as mediators of the intervention effects involved four statistical criteria: (a) an intervention effect on child symptoms (i.e., anxiety/depression, internalizing); (b) an intervention effect on coping and social competence; (c) significant effects of changes in coping and social competence on child symptoms after controlling for the intervention; and (d) the association between the intervention and child symptoms is significantly reduced after accounting for the effects of changes in coping and social competence.

Support for the first two conditions for secondary control coping as a potential mediator of the effects of the intervention is described above. Although the intervention did not have a significant effect on social competence (and therefore social competence could not meet the full Baron and Kenny criteria for mediation), exploratory analyses were conducted to determine if social competence met the third and fourth criteria in the Baron and Kenny approach (i.e., these exploratory analyses examined whether social competence was related to symptoms at the 12-month follow-up independent of the intervention). A series of hierarchical multiple regression equations were calculated in which changes in the secondary control coping composite and social competence composite were independently examined as mediators between treatment condition and children's composite anxiety/depression and internalizing symptoms. Treatment condition was entered in the first step of each equation along with baseline levels of child symptoms, followed by changes in either secondary

control coping or social competence (see Tables 4 and 5, respectively). Change scores in coping and social competence obtained from baseline to the 2-month follow-up and from baseline to the 6-month follow-up were used in separate analyses to determine their effect on symptoms at 12-months.

MacKinnon and Fritz (2007) have noted that the fourth step suggested by Baron and Kenny is often overly conservative, as it requires either very large effects (i.e., changes in the beta as a result of adding the mediator to the test of the effects of the intervention) or very large sample sizes. Therefore, the analytic plan included examination of the magnitude of the difference in the betas with and without the mediator in the equation even if this change was not statistically significant.

Hypothesis 2-1: *Coping as a Mediator.* Children's secondary control coping was first tested as a mediator of anxiety/depression symptoms (Table 4). When including change in coping from baseline to 2-months, the overall model predicting children's anxiety/depression symptoms was significant ($p < .001$) and explained approximately 46% of the variance in children's anxiety/depression scores ($R^2 = .46$). In the first equation, after controlling for baseline levels of anxiety/depression symptoms, treatment condition was significant as a predictor of symptoms at 12-months ($\beta = .12$, $p = .051$).[2] When change in child secondary control coping from baseline to 2-months was entered in the second step, coping reached significance as a predictor ($\beta = -.16$, $p = .014$) and the effect for condition was no longer significant ($\beta = .10$, $p = .10$).

[2] The strength of the intervention effect on symptoms in the regression analyses are reduced from what was reported in Hypothesis 1-1 due to smaller sample size as a result of higher rates of missing data at baseline for coping than for symptoms.

Similarly, when including change in coping from baseline to 6-months, the overall model predicting children's anxiety/depression symptoms was significant ($p < .001$) and explained approximately 51% of the variance in children's symptoms ($R^2 = .51$). When change in child coping at 6-months was entered in the second step, it also reached significance as a predictor ($\beta = -.28$, $p < .001$) and the effect for condition was no longer significant ($\beta = .05$, $p = .448$). As an additional test of mediation, the Sobel test was conducted (Sobel, 1982), which indicated that the relation between the intervention and anxiety/depression symptoms at 12-months was not mediated by change in child coping from baseline to 2-months ($z = 0.99$, *ns*) but was fully mediated by change in child coping from baseline to 6-months ($z = 2.51$, $p = .012$).

Children's secondary control coping was also tested as a mediator of internalizing symptoms (Table 4). When including change in coping from baseline to 2-months, the overall model predicting children's internalizing symptoms was significant ($p < .001$) and explained approximately 49% of the variance in children's internalizing scores ($R^2 = .49$). After controlling for baseline levels of symptoms, when treatment condition was entered in the first equation, it was a significant predictor of internalizing symptoms at 12-months ($\beta = .15$, $p = .018$). When change in child secondary control coping from baseline to 2-months was entered in the second step, coping reached significance as a predictor ($\beta = -.20$, $p = .001$), and the effect for condition remained significant but decreased in magnitude ($\beta = .12$, $p = .041$).

Similarly, when including change in coping from baseline to 6-months, the overall model predicting children's internalizing symptoms was significant ($p < .001$) and explained approximately 53% of the variance in children's symptoms ($R^2 = .53$). Change in child

coping from baseline to 6-months, when entered in the second step, also reached significance as a predictor of 12-month internalizing symptoms ($\beta = -.30$, $p < .001$) and the effect for condition was no longer significant ($\beta = .07$, $p = .220$). The Sobel (1982) test revealed that the relation between the intervention and internalizing symptoms at 12-months was not mediated by change in child coping at 2-months ($z = 1.03$, *ns*) but was fully mediated by change in child coping at 6-months ($z = 2.57$, $p = .01$).

Table 4.

Regression Equations Predicting Child Symptoms at 12-months from Baseline Symptoms, Intervention Condition, and Child Secondary Control Coping

Outcome and Predictor	β	sr^2	R^2	Overall *F*
Anxiety/Depression Symptoms				
Step 1: R^2 change = .44***				*F* (3, 143) = 40.47***
Baseline Anxiety/Depression	.65***	.42		
Condition	.12+	.03	.44	
Step 2: R^2 change = .02*				
Baseline Anxiety/Depression	.67***	.45		
Condition	.10	.02		
Change in Coping at Time 2	-.16*	.04	.46	
Step 1: R^2 change = .44***				*F* (3, 143) = 48.90***
Baseline Anxiety/Depression	.65***	.42		
Condition	.12+	.03	.44	
Step 2: R^2 change = .07***				
Baseline Anxiety/Depression	.71***	.49		
Condition	.05	.00		
Change in Coping at Time 3	-.28***	.13	.51	
Internalizing Symptoms				
Step 1: R^2 change = .45***				*F* (3, 143) = 46.40***
Baseline Internalizing Symptoms	.67***	.45		
Condition	.15*	.04	.45	
Step 2: R^2 change = .04**				
Baseline Internalizing Symptoms	.70***	.48		
Condition	.12*	.03		
Change in Coping at Time 2	-.20**	.07	.49	
Step 1: R^2 change = .45***				*F* (3, 143) = 54.16***
Baseline Internalizing Symptoms	.67***	.45		
Condition	.15*	.04	.45	
Step 2: R^2 change = .08***				
Baseline Internalizing Symptoms	.73***	.52		
Condition	.07	.01		
Change in Coping at Time 3	-.30***	.14	.53	

Note: β = standardized beta; sr^2 = partial correlation squared; Anxiety/Depression and Internalizing symptoms are *z* scores from the CBCL and YSR; Secondary Control Coping is a *z* score from parent and child report of coping. Effects of the intervention on symptoms were decreased from what was reported in Hypothesis 1-1 due to missing data for coping.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Hypothesis 2-2: *Social Competence as a Mediator*. Although social competence did not meet the second of Baron and Kenny's (1986) criteria for mediation, exploratory analyses were conducted to examine the relations of social competence and symptoms in the context of the intervention.

Children's social competence was first tested in the models predicting anxiety/depression symptoms (Table 5). When including change in social competence from baseline to 2-months, the overall model predicting children's anxiety/depression symptoms was significant ($p < .001$) and explained approximately 40% of the variance in children's anxiety/depression scores ($R^2 = .40$). In the first equation, after controlling for baseline levels of anxiety/depression symptoms, treatment condition was not significant as a predictor of symptoms at 12-months ($\beta = .10$, *ns*).[3] Change in social competence from baseline to 2-months also did not reach significance as a predictor ($\beta = -.04$, *ns*). When including change in social competence from baseline to 6-months, the overall model predicting children's anxiety/depression symptoms was significant ($p < .001$) and explained approximately 41% of the variance in children's symptoms ($R^2 = .41$). Change in child coping from baseline to 6-months, when entered in the second step, approached significance as a predictor ($\beta = -.13$, $p = .069$).

Children's social competence was then tested in the models predicting internalizing symptoms (Table 5). When including change in social competence from baseline to 2-months, the overall model predicting children's internalizing symptoms was significant (*p*

[3] The strength of the intervention effect on symptoms in the regression analyses are reduced from what was reported in Hypothesis 1-1 due to smaller sample size as a result of higher rates of missing data at baseline for social competence than for symptoms. There was a significant amount of missing data for the social competence composite at baseline due to children inaccurately completing the SPPC, thus significantly reducing the sample size ($N = 126$).

< .001) and explained approximately 44% of the variance in children's anxiety/depression scores (R^2 = .44). In the first equation, after controlling for baseline levels of internalizing symptoms, treatment condition was not significant as a predictor of symptoms at 12-months (β = .11, *ns*). When added to the model, change in child social competence from baseline to 2-months was not significant as a predictor (β = -.05, *ns*). When including change in social competence from baseline to 6-months, the overall model predicting children's internalizing symptoms was significant (p < .001) and explained approximately 48% of the variance in children's symptoms (R^2 = .48). Change in social competence from baseline to 6-months, when entered in the second step, reached significance as a predictor (β = -.20, p = .004). The Sobel (1982) test was nonsignificant (z = -0.69, *ns*). Therefore, changes in social competence from baseline to 6-months accounted for a significant portion of the variance in changes in symptoms from baseline to 12-months, but these changes were unrelated to the effects of the intervention.

Table 5.

Regression Equations Predicting Child Symptoms at 12-months from Baseline Symptoms, Intervention Condition, and Child Social Competence

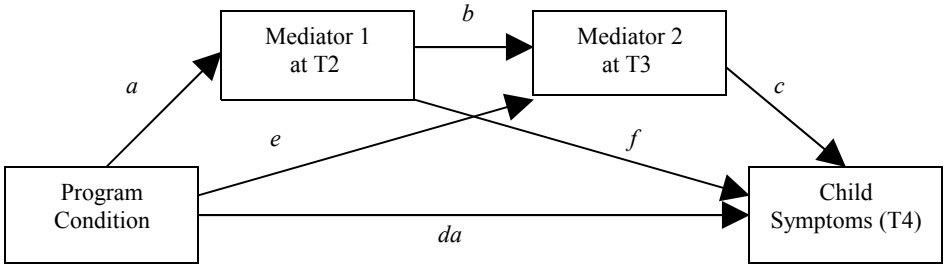
Outcome and Predictor	β	sr^2	R^2	Overall *F*
Anxiety/Depression				
Step 1: R^2 change = .39***				*F* (3, 121) = 26.37***
Baseline Anxiety/Depression	.61***	.38		
Condition	.10	.02	.39	
Step 2: R^2 change = .01				
Baseline Anxiety/Depression	.62***	.38		
Condition	.10	.02		
Change in Social Competence at Time 2	-.04	.01	.40	
Step 1: R^2 change = .39***				*F* (3, 121) = 28.07***
Baseline Anxiety/Depression	.61***	.38		
Condition	.10	.01	.39	
Step 2: R^2 change = .02+				
Baseline Anxiety/Depression	.64***	.40		
Condition	.10	.02		
Change in Social Competence at Time 3	-.13+	.03	.41	
Internalizing Symptoms				
Step 1: R^2 change = .44***				*F* (3, 121) = 31.69***
Baseline Internalizing Symptoms	.66***	.43		
Condition	.11	.02	.44	
Step 2: R^2 change = .01				
Baseline Internalizing Symptoms	.66***	.44		
Condition	.12+	.02		
Change in Social Competence at Time 2	-.05	.01	.44	
Step 1: R^2 change = .44***				*F* (3, 121) = 36.50***
Baseline Internalizing Symptoms	.66***	.43		
Condition	.11	.02	.44	
Step 2: R^2 change = .04**				
Baseline Internalizing Symptoms	.68***	.46		
Condition	.12+	.03		
Change in Social Competence at Time 3	-.20**	.07	.48	

Note: β = standardized beta; sr^2 = partial correlation squared; Anxiety/Depression and Internalizing symptoms are *z* scores from the CBCL and YSR; Social Competence is a *z* score from child report of competence on the YSR and SPPC. Effects of the intervention on symptoms were decreased from what was reported in Hypothesis 1-1 due to missing data for social competence.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Multiple Mediation

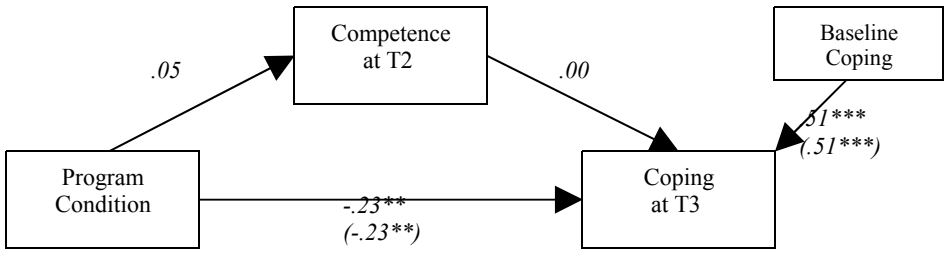
Social competence and coping were hypothesized to function in one of two mediated models (see Figure 1) in which: (1) secondary control coping (at T3) would mediate the effects of the intervention on child symptoms and social competence (at T2) would mediate the effects of the intervention on coping; or (2) social competence (at T3) would mediate the effects of the intervention on child symptoms and coping (at T2) would mediate the effects of the intervention on social competence.

Figure 1. *Model Reflecting Multiple Mediators of Intervention Effects on Child Symptoms*



Hypothesis 2-3a: *Effect of Intervention on Competence, Effect of Competence on Coping, and Effect of Coping on Symptoms.* Before testing the entire model, the first step was to determine if social competence at 2-months mediated the effects of the intervention on coping at 6-months (see Figure 2). Hierarchical regression analyses were conducted to determine if changes in social competence from baseline to 2-months had a significant effect on child coping at 6-months (see Table 6). However, change in social competence from baseline to 2-months was not significant as a predictor of coping at 6-months ($\beta = .00$, *ns*).

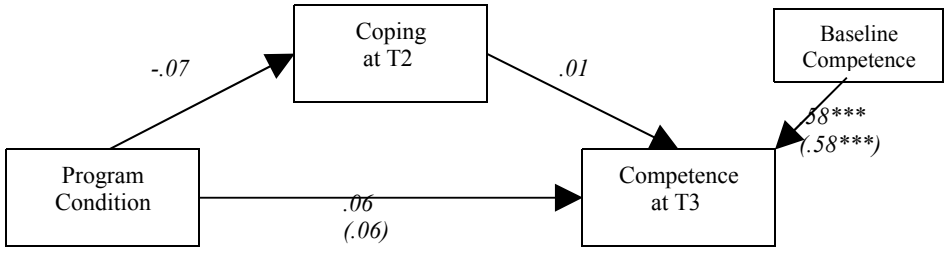
Figure 2. *Model Predicting Coping at 6-months from Intervention and Changes in Social Competence from Baseline to 2-months*



*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Hypothesis 2-3b: *Effect of Intervention on Coping, Effect of Coping on Competence, and Effect of Competence on Symptoms.* In the first step of examining this model, coping at 2-months was tested as a mediator of the effects of the intervention on social competence at 6-months (see Figure 3). Hierarchical regression analyses were conducted to determine if changes in coping from baseline to 2-months had a significant effect on child social competence at 6-months (see Table 6). However, when change in child coping from baseline to 2-months was entered into the model, it failed to predict social competence (β = .01, *ns*).

Figure 3. *Model Predicting Social Competence at 6-months from Intervention and Changes in Coping from Baseline to 2-months*



*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Table 6.

Regression Equations Predicting Child Coping at 6-months from Intervention Condition and Child Social Competence and Predicting Child Social Competence at 6-months from Intervention and Child Coping

	B	sr^2	R^2	Overall *F*
Coping				*F* (3, 120) = 15.55***
Step 1: R^2 change = .28***				
Baseline Coping	.51***	.26		
Condition	-.23**	.07	.28	
Step 2: R^2 change = .00				
Baseline Coping	.51***	.26		
Condition	-.23**	.06		
Change in Social Competence at Time 2	.00	.00	.28	
Social Competence				*F* (3, 120) = 20.96***
Step 1: R^2 change = .34***				
Baseline Social Competence	.58***	.34		
Condition	.06	.01	.34	
Step 2: R^2 change = .00				
Baseline Social Competence	.58***	.34		
Condition	.06	.01		
Change in Coping at Time 2	.01	.00	.34	

Note: β = standardized beta; sr^2 = partial correlation squared; Secondary Control Coping is a *z* score from parent and child report of coping; Social Competence is a *z* score from child report of competence on the YSR and SPPC.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

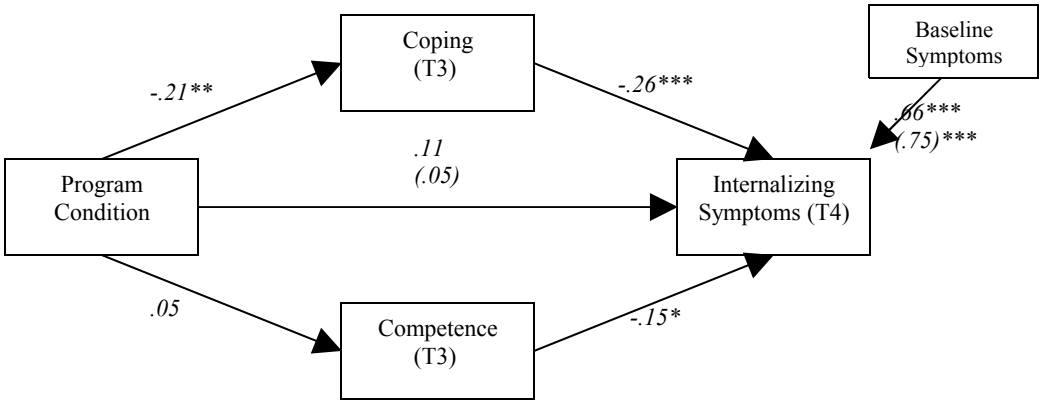
Because competence did not play a role in either of the sequential mediation models, exploratory analyses were conducted in which coping and social competence were examined concomitantly as mediators of the intervention. Although social competence did not meet the second of Baron and Kenny's (1986) criteria for mediation, exploratory analyses were conducted to examine a model in which secondary control coping and social competence were simultaneously examined as mediators between treatment condition and children's anxiety/depression and internalizing symptoms. Treatment condition was entered in the first

step of each equation along with baseline levels of child symptoms, followed by change in both secondary control coping and social competence from baseline to 6-months (see Table 7).

When both social competence and coping were included, the overall model predicting children's anxiety/depression was significant ($p < .001$) and explained approximately 46% of the variance in children's anxiety/depression symptoms ($R^2 = .46$). Change in coping from baseline to 6-months reached significance as a predictor ($\beta = -.26$, $p = .001$) even when social competence was included in the model. Change in social competence, however, did not reach significance as a predictor ($\beta = -.09$, *ns*).

When both social competence and coping were included, the overall model predicting children's internalizing symptoms was significant ($p < .001$) and explained approximately 53% of the variance in children's internalizing symptoms ($R^2 = .53$). Both change in coping from baseline to 6-months ($\beta = -.26$, $p < .001$) and change in social competence ($\beta = -.15$, $p = .023$) reached significance as predictors (see Figure 4).

Figure 4. *Model Predicting Internalizing Symptoms from Child Coping and Social Competence*



*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Table 7.

Regression Equations Predicting Child Symptoms at 12-months from Intervention Condition, Child Social Competence and Child Coping

	β	sr^2	R^2	Overall *F*
Anxiety/Depression Symptoms				*F* (4, 119) = 25.79***
Step 1: R^2 change = .39***				
Baseline Anxiety/Depression	.61***	.38		
Condition	.10	.02	.39	
Step 2: R^2 change = .07**				
Baseline Anxiety/Depression	.70***	.45		
Condition	.02	.00		
Change in Social Competence at Time 3	-.09	.01		
Change in Coping at Time 3	-.26**	.09	.46	
Internalizing Symptoms				*F* (4, 119) = 33.75***
Step 1: R^2 change = .44***				
Baseline Internalizing	.66***	.43		
Condition	.11	.02	.44	
Step 2: R^2 change = .09***				
Baseline Internalizing	.75***	.52		
Condition	.05	.00		
Change in Social Competence at Time 3	-.15*	.04		
Change in Coping at Time 3	-.26***	.11	.53	

Note: β = standardized beta; sr^2 = partial correlation squared; Anxiety/Depression and Internalizing symptoms are *z* scores from the CBCL and YSR; Secondary Control Coping is a *z* score from parent and child report of coping; Social Competence is a *z* score from child report of competence on the YSR and SPPC. Effects of the intervention on symptoms were decreased from what was reported in Hypothesis 1-1 due to missing data for social competence and coping.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Moderators of the Intervention

Hypothesis 3-1: *Social Competence as a Moderator.* It was expected that children's levels of social competence upon entering the study would moderate the effects of the family cognitive behavioral intervention. To examine whether the family intervention had a larger effect for individuals who possessed higher levels of social competence at baseline, hierarchical regression models were used to test for interactions between levels of baseline social competence and intervention condition as predictors of symptoms at 12-month follow-up.

Intervention condition was entered in the first step along with baseline levels of child symptoms; next baseline social competence was added; followed by the Intervention Condition x Social Competence interaction. Controlling for pre-intervention child outcome measures, no effect was detected for the Intervention Condition x Social Competence interaction in predicting anxiety/depression or internalizing symptoms at 12-month follow-up (see Table 8).

Table 8.

Regression Equations Predicting Child Symptoms at 12-months from Intervention Condition, Child Social Competence, and Interaction of Intervention and Social Competence

	β	Sr^2	R^2	Overall *F*
Anxiety/Depression Symptoms				F (4, 120) = 20.23***
Step 1: R^2 change = .39***				
Baseline Anxiety/Depression	.61***	.38		
Condition	.10	.02	.39	
Step 2: R^2 change = .00				
Baseline Anxiety/Depression	.63***	.35		
Condition	.10	.02		
Baseline Social Competence	.04	.00	.40	
Step 3: R^2 change = .01				
Baseline Anxiety/Depression	.63***	.36		
Condition	.09	.01		
Baseline Social Competence	.03	.00		
Condition X Social Competence	-.09	.01	.40	
Internalizing Symptoms				F (4, 120) = 24.85***
Step 1: R^2 change = .44***				
Baseline Internalizing	.66***	.43		
Condition	.11	.02	.44	
Step 2: R^2 change = .01				
Baseline Internalizing	.71***	.42		
Condition	.11	.02		
Baseline Social Competence	.12	.02	.45	
Step 3: R^2 change = .01				
Baseline Internalizing	.72***	.43		
Condition	.10	.02		
Baseline Social Competence	.12	.02		
Condition X Social Competence	-.06	.01	.45	

Note: β = standardized beta; sr^2 = partial correlation squared; Anxiety/Depression and Internalizing symptoms are *z* scores from the CBCL and YSR; Social Competence is a *z* score from child report of competence on the YSR and SPPC. Effects of the intervention on symptoms were decreased from what was reported in Hypothesis 1-1 due to missing data for social competence.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Hypothesis 3-2: *Moderated mediation*. The regression analyses reported above provide support for secondary control coping as a mediator of the effects of the intervention on children's anxiety/depression and internalizing symptoms from baseline to 12-months. An additional set of hierarchical regression analyses were calculated to determine if social competence moderated the mediation effect.

Social competence was first tested as a moderator of the relationship between the intervention and coping (see Figure 5). In other words, testing whether the effect of the intervention on children's coping varied as a function of children's social competence. To test this model, baseline coping and intervention were entered in the first step, followed by baseline social competence, and then the Intervention Condition x Baseline Social Competence interaction (see Table 9). Controlling for preintervention levels of coping, no main effect for social competence or social competence by intervention condition interaction were detected for coping.

Social competence was then tested as a moderator of the relationship between coping and child symptoms (see Figure 6). In other words, testing whether the effect of coping on symptoms varied as a function of children's social competence. Controlling for baseline symptom levels, there were main effects detected for change in coping at 6-months for anxiety/depression ($\beta = -.25$, $p < .01$) and internalizing symptoms ($\beta = -.27$, $p < .001$). However, no social competence by coping interactions were detected for either anxiety/depression or internalizing symptoms (Table 10). Similar to the analyses reported above, because of the reduced sample size in these analyses due to missing data on the social competence measure at baseline, the initial effect of the intervention was not statistically significant.

Figure 5. *Moderated Mediation Model 1*

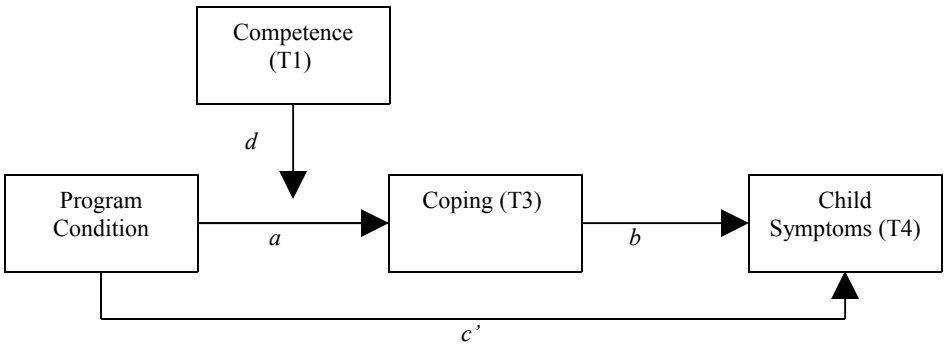


Figure 6. *Moderated Mediation Model 2*

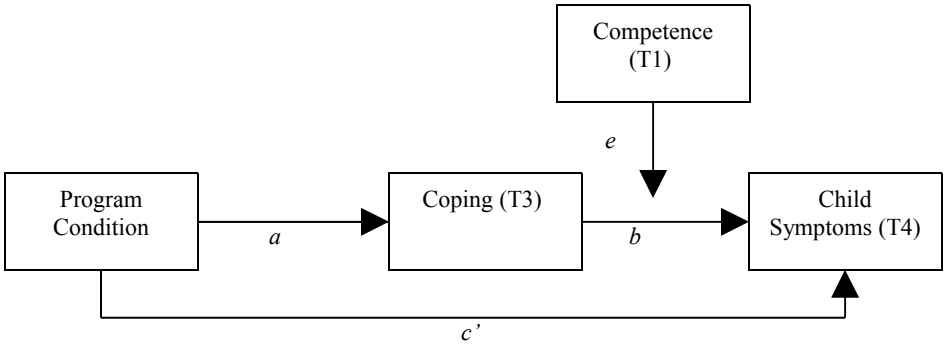


Table 9.

Regression Equations Predicting Child Coping at 6-months from Intervention Condition, Child Social Competence, and Interaction of Intervention and Social Competence

	β	Sr^2	R^2	Overall *F*
Coping				F (4, 119) = 11.94***
Step 1: R^2 change = .28***				
Baseline Coping	.51***	.26		
Condition	-.23**	.07	.28	
Step 2: R^2 change = .01				
Baseline Coping	.52***	.27		
Condition	-.22**	.06		
Baseline Social Competence	-.08	.01	.29	
Step 3: R^2 change = .00				
Baseline Coping	.52***	.26		
Condition	-.22**	.06		
Baseline Social Competence	-.08	.01		
Condition X Social Competence	.02	.00	.29	

Note: β = standardized beta; sr^2 = partial correlation squared; Secondary Control Coping is a *z* score from parent and child report of coping; Social Competence is a *z* score from child report of competence on the YSR and SPPC.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

Table 10.

Regression Equations Predicting Child Symptoms at 12-months from Intervention Condition, Child Social Competence, Child Coping, and Interaction of Coping and Social Competence

	β	sr^2	R^2	Overall *F*
Anxiety/Depression				F (5, 118) = 20.80***
Step 1: R^2 change = .39***				
Baseline Anxiety/Depression	.61***	.38		
Condition	.10	.02	.39	
Step 2: R^2 change = .06**				
Baseline Anxiety/Depression	.70***	.41		
Condition	.02	.00		
Baseline Social Competence	.02	.00		
Change in Coping at Time 3	-.27***	.10	.46	
Step 3: R^2 change = .01				
Baseline Anxiety/Depression	.70***	.41		
Condition	.01	.00		
Baseline Social Competence	.05	.00		
Change in Coping at 6-months	-.25**	.09		
Coping X Social Competence	-.11	.02	.47	
Internalizing Symptoms				F (5, 118) = 26.47***
Step 1: R^2 change = .44***				
Baseline Internalizing	.66***	.43		
Condition	.11	.02	.44	
Step 2: R^2 change = .08***				
Baseline Internalizing	.78***	.49		
Condition	.03	.00		
Baseline Social Competence	.10	.02		
Change in Coping at Time 3	-.29***	.13	.52	
Step 3: R^2 change = .01				
Baseline Internalizing	.78***	.50		
Condition	.02	.00		
Baseline Social Competence	.13+	.03		
Change in Coping at 6-months	-.27***	.11		
Coping X Social Competence	-.10	.02	.53	

Note: β = standardized beta; sr^2 = partial correlation squared; Anxiety/Depression and Internalizing symptoms are *z* scores from the CBCL and YSR; Secondary Control Coping is a *z* score from parent and child report of coping; Social Competence is a *z* score from child report of competence on the YSR and SPPC. Effects of the intervention on symptoms were decreased from what was reported in Hypothesis 1-1 due to missing data for social competence.
*+ p < .10, * p < .05, ** p < .01, *** p < .001*

CHAPTER IV

DISCUSSION

It is well established that the stress associated parental depression poses a significant risk factor to offspring of depressed parents. However, the availability of psychosocial resources, such as coping and social competence, may counteract or lessen the disruptive effects of living with a depressed parent. These protective processes may be especially pertinent in shielding against the effects of stress and psychosocial risk processes associated with parental depression. In the context of a randomized clinical trial aimed at promoting positive adjustment in offspring of depressed parents, the present study tested various mediated and moderated models of the relations among children's coping, social competence, and anxiety/depression and internalizing symptoms. This is the first study to examine the role of coping and social competence longitudinally in offspring of depressed parents.

Correlations Between Coping, Social Competence, and Symptoms

Relatively little research has examined the relationship between children's competencies and the ways that they cope with stress. As a first step in understanding how these constructs are related to each other and how they each relate to adjustment in offspring of depressed parents, correlational analyses were conducted at baseline and at the 3 follow-up assessment points (i.e., 2-, 6-, and 12-months) to gain a better understanding of how the variables of interest were related prior to the intervention and postintervention. Greater use of secondary control coping at baseline was significantly associated with fewer symptoms of

anxiety/depression and internalizing symptoms at the 2-, 6-, and 12-month follow-ups. Although prior research has found evidence for the relation between secondary control coping and positive adjustment in offspring of depressed parents, all the research to date has involved cross-sectional studies (Jaser et al., 2005, 2007; Langrock et al., 2002). The current study provides the first evidence that coping is related to future adjustment. Similar to coping, social competence at baseline was significantly negatively associated with anxiety/depression and internalizing symptoms at both baseline and the 2-, 6-, and 12-month follow-ups. This is the first evidence in offspring of depressed parents that higher levels of social competence are associated with fewer symptoms. In addition, at baseline, social competence and coping were significantly positively correlated, suggesting that prior to any intervention, children who utilized more secondary control coping were more socially competent. However, baseline levels of coping were not correlated with social competence scores at 2- or 6-months, and the same was true for baseline levels of social competence and follow-up assessments of coping. In addition, social competence and coping were not significantly correlated with each other at any of the follow-up assessments. These findings imply that over the course of the intervention, coping and social competence changed in ways that were not related.

Effects of a Cognitive-Behavioral Intervention

Social competence and coping were then examined prospectively to understand how these constructs functioned in a preventive intervention. Before testing the effects of the intervention on social competence and coping, the present study first examined the efficacy of a family group cognitive-behavioral preventive intervention in reducing symptoms in

offspring of depressed parents. The findings reported in the current study are consistent with those reported by Compas et al. (2009) and indicate that relative to a self-study condition, the family group intervention produced reductions in children's anxiety/depression and internalizing symptoms 12 months after the initiation of the intervention. However, unlike Compas et al. (2009) who looked at effects of the intervention on child and parent reports of child symptoms separately, the current study included composite scores that combined parent and child reports. These findings build upon the seminal work conducted by Clarke et al. (2001) and Beardslee et al. (2007) and contribute to evidence that offspring of depressed parents can benefit from intervention. Prior studies, however, did not find significant effects on parental report of child symptoms; therefore, these findings extend upon past research by demonstrating significant intervention effects on child symptoms as reported by both children and parents.

In the first analyses of the effects of the intervention on children's coping, the current findings indicate that the family group intervention was effective in increasing the use of children's secondary control coping. Secondary control coping, which focuses on adapting and adjusting to stress, was taught to children in the current intervention because previous research had established a relation between secondary control coping and lower levels of symptoms in offspring of depressed parents (e.g., Jaser et al., 2005, 2007). Evidence for the intervention's efficacy in changing coping is consistent with other intervention programs that have been successful in improving children's coping (e.g., Sandler et al., 2003; Tein et al., 2006). However, this is the first evidence that the ways in which children cope specifically with the stress associated with parental depression can be improved through intervention.

Although the family intervention in the current study did not directly target children's social competence, it was hypothesized that children's social competence might be indirectly affected as the intervention promoted participation in activities outside of the family, many of them social in nature, as a method of distraction. However, the intervention did not result in significant changes in child social competence, indicating that in spite of encouraging children to engage in social activities outside of the family, the intervention was not effective in altering children's social competence. Other interventions that have shown success in improving children's social competence involved intervention components aimed directly at changing aspects of social competence, such as improving social problem solving, social skills education and training, and building social networks (August et al., 2004; Caplan et al., 1992; CPPRG, 2004). The current study did not include any such training in social skills.

Mediation Effects

To understand how social competence and coping contributed to the effects of the intervention, both constructs were tested as mediators of the relation between the intervention and symptoms. Support emerged for a fully mediated model in which coping accounted for the effects of the intervention on anxiety/depressive and internalizing symptoms. More specifically, changes in coping after the acute phase (2 months) of the intervention did not mediate the intervention effects, but changes in coping after the monthly booster sessions (6 months) did show support as a mediator. This is in keeping with the focus of the intervention, which included teaching children to accept their inability to control parental mood and behavior, identifying negative cognitions and generating more adaptive cognitive reappraisals of their parents' depression, and engaging in enjoyable activities to distract

themselves from stress associated with parental depression. This is consistent with other studies that have found that changes in cognitions and behaviors related to coping (e.g., challenging negative beliefs and attributions) mediated the effect of cognitive interventions on depressive and internalizing symptoms (Horowitz et al., 2007; Tein et al., 2006). The fact that the beneficial effects of the intervention were completely accounted for by children's responses to stress related to parental depression points toward the importance of coping as a way to offset the stress associated with having a depressed parent and to facilitate better adjustment. It also identifies a key component of the intervention and a critical construct for other interventions targeting offspring of depressed parents.

Significant effects were not found, however, for social competence as a mediator of the effects of the intervention. Given that social competence was not changed by the intervention, it did not meet the criteria set out by Baron and Kenny (1986) for mediation. However, changes in social competence from preintervention to the 6-month follow-up for the whole sample were predictive of lower internalizing symptoms at 12-months and were marginally significant for predicting anxiety/depressive symptoms at 12-months. These findings indicate that social competence played a role in predicting children's symptoms, but did so independently of the intervention. Thus, although the current intervention did not promote social competence, improvements in social competence over time may play a role in reducing internalizing symptoms in offspring of depressed parents. This is consistent with the work of Cole and colleagues (1996) who demonstrated that levels of social competence were predictive of changes in adolescents' depressive symptoms over time. The current study extends those findings to offspring of depressed parents.

Coping and social competence were also tested sequentially in mediation models. Based on the findings presented by Copeland et al. (2005), which suggested that the relationship between competence and symptoms was accounted for by coping, coping was examined as a mediator of the relationship between social competence and child symptoms in the context of the intervention. In addition, social competence was also examined as a mediator between coping and child symptoms. However, no support was found for either model. When social competence and coping were tested simultaneously as mediators, both reached significance as predictors of internalizing symptoms at 12-months. This indicates that social competence and coping may serve as predictors of children's internalizing symptoms but do so independently of each other. Therefore, social competence and coping appear to have beneficial effects on the adjustment of offspring of depressed parents but contribute to children's adjustment in unique and different ways.

One possible explanation for the independence of social competence and coping in the proposed models may be the behavioral nature of social competence and the fact that the coping behaviors assessed in the current study are primarily cognitive. The aspect of social competence that was hypothesized to be important for promoting coping was involvement in social activities. Although such behaviors are related to the distraction subscale on the RSQ (Connor-Smith et al., 2000), the majority of items on the RSQ assess cognitive, individually-based coping strategies (i.e., acceptance, cognitive restructuring, positive thinking). Therefore, it is not surprising that as children moved through the intervention, the social competence and coping scales were not related.

Moderation Effects

No longitudinal support emerged for any of the tested moderated models. Specifically, it was hypothesized that the intervention would be more effective in reducing symptoms for those children that had higher levels of social competence coming into the intervention. In addition, social competence was tested in a moderated mediation model in which social was expected to identify the subgroups for which coping served as a mediator of the intervention effects. Contrary to expectation, the efficacy of the intervention was not affected by children's levels of social competence at preintervention, nor did social competence affect children's ability to learn and effectively use secondary control coping skills. Therefore, the examination of children's social competence as a moderator did not result in identification of any subgroups for which the intervention which the intervention was more or less effective. However, these analyses could not fully test the moderation models because the effects of the intervention on symptoms were not significant when using the reduced sample size ($N = 126$) that resulted from missing data for social competence.

Holmbeck (1997) has noted that significant moderator effects are difficult to detect statistically. Although the sample size was deemed adequate to detect moderate effects (Maxwell, 2000), there was a significant amount of missing data for the social competence composite due to mistakes in completion of the measure of self-perceptions of competence (Harter, 1985). As a result, the sample was underpowered for the moderator analyses.

In the work conducted by Tram and Cole (2000), self-perception of competence was tested as a moderator between negative events and adolescent depressive symptoms. Similar to the current findings, they did not find evidence for perceived competence as a moderator of the relationship between stressful events and depressive symptoms. Tram and Cole

proposed that self-perceived competencies are still under construction during late childhood and early adolescence; therefore, their moderating effects may not be consistent until later adolescence or early adulthood. In addition, the role of peer relationships and social competence become increasingly important through adolescence. Peers would be expected to play less of a role in the regulation of affect among older children than they do among adolescents, who spend more time in the company of peers, form deeper relationships, and have stronger romantic feelings and interests (Masten, 2005). Therefore, it is possible that social competence may serve as a moderator only for the older adolescents in the sample. However, the current study was underpowered to test for interactions of age, competence, and the effects of the intervention.

In addition, the importance of different aspects of social competence may vary for the different ages in the current sample. It is possible that for older adolescents in the sample, different aspects of social competence are more relevant (e.g., romantic relationships) than for the younger portion of this sample. Harter's (1985) Self-Perception Profile for Children was used as a measure of self-perceptions of social competence, but the adolescent version may have been more appropriate for the current sample.

The current study focused on children's social competence. However, it is possible that children and adolescents overall competence in multiple areas (e.g., academic, athletic) may be important. The findings reported by Copeland et al. (2005) used a composite of competence that included social, academic, and activity competence. Children and adolescents may not only draw upon their social resources to help them cope, but may also rely on other aspects of competence. In addition, models that have found evidence of perceptions of competence as mediators of child depression have included self-perceived

competence in several domains, not just social competence (e.g., Jacquez et al., 2004; Tram & Cole, 2000).

An important methodological strength of the study is the use of a prospective longitudinal model, which provided the temporal precedence between the predictors, mediators, and outcomes needed to draw inferences about the direction of effects. In addition, parent and child reports were used to obtain multi-informant assessments of child symptoms and coping, thereby controlling for shared method variance.

Limitations

In spite of the overall promising findings, the current study has several limitations. First, although the ethnic make-up of the current sample was representative of the regions from which the sample was drawn, the majority of the current sample was Euro-American and thus the findings may have somewhat limited generalizability. Second, follow-up data are reported at 12-months; as such, the longer-term effects of the intervention have not been evaluated. Third, although the indicators of symptoms and coping used in the study were multi-informant, they were still all based on questionnaire data. And fourth, analyses used the last observation carried forward method for handling missing data. This is a rather conservative approach to imputing missing data and may have reduced the ability to detect significant effects.

The composite measure of social competence used in the current analyses assessed only children's own report of their competence. However, when considering the hypothesis that social competence would provide social resources that children could draw upon to help them cope, it may be that perceptions of competence aren't as important as the actual social

resources and competence children possess. Therefore, the inclusion of parent, teacher, and peer report in future research would help to answer this question. Although parent-report was gathered in the current study, it was not used in the analyses due to the lack of independence of parent reports for multiple kids per family.

Implications for Future Research

In terms of intervention implications, the current findings support the findings of other preventive interventions (e.g., Beardslee et al., 2007; Clarke et al., 2001) that demonstrated decreased symptoms in offspring of depressed parents, but extend the findings by identifying mechanisms by which positive psychological adjustment were achieved. Future treatment and prevention programs for children and adolescents who have experienced parental depression should target increasing adaptive coping.

Although the intervention did not change children's social competence, there are still implications for interventions targeting offspring of depressed parents to facilitate competence. Increases in social competence were predictive of lower symptoms, which suggests that improving children's social competence may help improve psychological adjustment in this at-risk population. Much remains to be known about how social competence affects children's responses to stressful circumstances and the competence-coping relationship might be particularly important for continued study.

In summary, this study provides evidence of the efficacy of a family group intervention in improving children's coping and reducing anxiety/depressive and internalizing symptoms in children of depressed parents. The findings highlight the important role that coping plays in the psychological adjustment of children exposed to high

levels of parental stress. This work builds on previous studies of interventions with this high-risk group of children and provides further evidence of the promise for the reduction of symptoms and disorders in families of parents who suffer from depression.

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