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The Relations between Parent Training, Family Messages, Cognitive Triad, and Girls' Depressive Symptoms

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The Relations between Parent Training, Family Messages, Cognitive Triad, and Girls' Depressive Symptoms

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The Relations between Parent Training, Family Messages, Cognitive Triad, and Girls' Depressive Symptoms

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It is important to understand the development of depression, and how a family component to treatment affects early adolescent girls' depression given the association between depression and negative future outcomes. A potential vulnerability to depression is the cognitive triad, which encompasses beliefs about the self, world, and future and is shaped by early learning experiences. Research indicates that the vulnerability originates from parent-child relationships and family messages, which are important in the development of youth cognitive styles. Previous research also indicates that family variables are important factors to consider in the treatment of depression.

The purpose of the current study was to expand previous research by examining the roles of perceived family messages and the cognitive triad in the development of depression for early adolescent girls. The study also explored whether parent gender differentiated how family messages affect girls' cognitions and depressive symptoms. The study evaluated how the addition of a parent training component to a school-based,

group-administered CBT intervention affected change in the model's variables in comparison to group-administered CBT intervention alone and a monitoring control condition. Participants included early adolescent girls diagnosed with depression and caregivers in the parental treatment component. Girls were randomly assigned to a CBT, CBT+PT, or minimal contact control condition. Ratings of girls' perceptions of family messages, cognitions, and depressive symptoms were obtained at pre-treatment and post-treatment.

Results from structural equation modeling indicated significant effects from perceived family messages to girls' cognitions. Further, girls' cognitions mediated the relation between perceived family messages and girls' depressive symptoms at post-treatment for participants within the CBT and monitoring conditions. No significant differences were evident between parent gender and perceived messages. Results indicated that the addition of a parent component to the CBT intervention did not significantly differ from the CBT intervention alone in its effects on the variable relations within the model at post-treatment. Supplemental analyses highlighted parent attendance as a significant factor, with larger effects from the family messages on girls' cognitions appearing when parents attended majority (six or more) of the eight parent training sessions. Implications, limitations, and areas for further research are discussed.

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CHAPTER 1

Introduction

Depression can have extensive negative effects on a child or adolescent's ability to function and adjust to developmental changes. Depression during childhood and adolescence frequently puts youth at risk for recurrent Major Depressive Disorder (MDD) during adulthood (Jacobs, Reinecke, Gollan, & Kane, 2008), with 75% of adults with MDD reporting experiencing their first depressive episode during childhood or adolescence (Kim-Cohen, Caspi, Moffitt, Harrington, Milne, & Poulton, 2003). Depressed youth are also at increased risk of academic underachievement and failure, future school dropout, substance abuse, and suicide (Waslick, Kandel, & Kakouros, 2002). Important relationships with peers and family members are affected for youth struggling with depression (Garber & Horowitz, 2002).

Rates of depressive symptoms and disorders in prepubescent boys are equal to and sometimes higher than that of prepubescent girls (Anderson, Williams, McGee, & Silva, 1987; Nolen-Hoeksema, Girgus, & Seligman, 1992); however, gender differences in depression emerge in early adolescence (e.g., Angold, Erkanli, Silberg, Eaves, & Costello, 2002; Weissman, Warner, Wickramaratne, Moreau, & Olfson, 1997), with girls becoming much more likely to develop depression than boys. This pattern continues during throughout adolescence as more girls than boys are diagnosed with depression (Hankin & Abramson, 2002; Costello, Erkanli, & Angold, 2006). This gender difference highlights the importance of pre-puberty and early adolescence as a critical

developmental stage to research which mechanisms relate to the development and maintenance of depression in early adolescent girls.

Children's family interactions can serve as either a vulnerability or protective factor with regard to the development of depressive symptoms (Toth & Cicchetti, 1996). Hammen and colleagues (1999) suggested that one of the central developmental features of depression in youth is that children's depressive symptoms are intimately embedded within the family context. Several family factors are associated with youth depression, ranging from parental pathology, parenting styles, parent's cognitive styles, and family interactions (Sander & McCarty, 2005). Stark, Rouse, & Livingston (1991) noted that the family is the primary socializing factor for children and that children develop important cognitive processes within the family. This finding highlights the importance of considering the family when conceptualizing the development and treatment of depression in early adolescents.

Evidence also suggests that the association between family environment and family influences may vary as a function of gender (Kavanagh & Hops, 1994). Adolescence is a time when individuals become more interested in peers and start to separate from their families; however, girls gain this independence from their families more slowly than boys (Huston & Alvarez, 1990). As a result of this more gradual move to independence, the family may be a more significant developmental context for girls and may predict girls' sensitivity to the quality of the family relationships and interactions (Sheeber, Hops, Alpert, Davis, & Andrews, 1997). These findings suggest a greater focus on the family system for the development of depression in girls as well as

an important aspect to consider when conceptualizing effective interventions for early adolescent girls.

Stark and colleagues (1991) proposed a multidimensional model of childhood depression that emphasizes the reciprocal relations of cognitive, behavioral, family, and biochemical variables. Initial research designed to evaluate the model indicates that disturbances are evident in the cognitive, behavioral, and family domains of depressed girls, although cognitive distortions, especially the child's view of the self, world, and future (the depressive cognitive triad, Beck, 1967) appear to be of central importance (Stark, Schmidt, & Joiner, 1996). Beck (1967) defined cognitive vulnerability as the presence of maladaptive self-schema reflecting themes of helplessness and un-lovability that become activated and reinforced by negative life events or negative moods. Many cognitive vulnerability theories employ a vulnerability-stress paradigm (e.g., Abramson, Seligman, & Teasdale, 1978; Beck, 1967), in which cognitive factors interact with environmental stressors, such as family relationships and interactions, to increase the risk for emotional disorders, such as youth depression.

Prior research indicates that cognitive vulnerability to depression mainly originates from parent-child relationships and family messages (e.g. Alloy, Abramson, Tashman, Berrebbi, Hogan, Whitehouse, Crossfield, & Morrocco, 2001; Garber & Flynn, 2001; Hokoda & Fincham, 1995; Rudolph, Hammen, & Burge, 1994; Stark et al., 1996). Specifically, perceived messages from parents play a critical role in the development of cognitive styles in children and adolescents (Alloy et al., 2001; Stark et al., 1996). This finding is particularly salient when considering adolescent girls, as research has shown

that girls are more sensitive to family interactions (Sheeber, et al., 1997) and the development of negative cognitions related to the self, world, and future (Hankin & Abramson, 2002).

Results of a study examining the relationship between children's depressogenic thinking, children's depressive symptoms, parents' depressogenic thinking, and perceived parental messages about the self, world, and future indicate that there are relations between children's views of self, world, and future, perceived parental messages, and children's depressive symptoms (Stark, Schmidt, & Joiner, 1996). In a dissertation examining the relations between family variables and depressive outcomes for early adolescent girls, Graves (2007) noted a need for further research to better understand the differences in the relations between perceived paternal messages, and perceived maternal messages and their influence on depressive outcomes for early adolescent girls.

Approaches for treatment of youth depression vary between pharmacological agents and psychosocial interventions, or a combination of both. Cognitive-behavioral therapy (CBT) is often an effective treatment model as it specifically addresses the cognitive distortions experienced by youth with depression. CBT can be delivered in an individual or a group format, with each offering unique advantages. While the individual format provides the therapist with more flexibility to select and tailor in-session techniques to the client's presenting concerns (Lewinsohn & Clarke, 1999), the group format permits simultaneous treatment of multiple adolescents, which is both time-efficient and cost-effective. Additional benefits of a group format include opportunities for social facilitation, peer support, peer feedback, and practice using skills with group

members (Brown & Lewinsohn, 1984). Administering CBT in a group format is often viewed as more conducive to the provision of depression treatment in community settings because it allows for simultaneous treatment of multiple youth. This treatment format is also helpful for school settings in which space and time constraints result in a need to carefully consider the allocation of therapeutic resources.

Involving parents in CBT treatment for depressed girls may help produce sustained treatment effects because the family environment is a vital social and developmental context for early adolescent girls. Thus, exploring the role of the family in the development and treatment of depression in girls seems paramount in order to comprehensively understand depression and response to treatment for early adolescent girls. Familial relationships and family variables have been shown to be important factors in the treatment of depression (Kazdin & Weisz, 1998). To maximize treatment effects, it may be necessary to address parental and family issues within treatment (Kazdin & Weisz, 1998) specifically as they relate to altering cognitive constructs (Stark, Sander, Yancy, Bronik, & Hoke, 2000).

Little is known about how depression interventions specifically affect the way early adolescents alter their distorted information processing in relation to the messages they hear from their parents as well as their own thoughts about the self, world, and future. There has not been an adequate amount of research that included parents and evaluated treatment effects at a follow-up time point in order to evaluate the effect of perceived family messages on treatment outcomes (Weisz, McCarty, & Valeri, 2006). It

is possible that the effects of parental involvement in youth's treatment for depression are more pronounced over time. There is an important need to better understand how perceived messages from family members affect girls' maladaptive cognitions as well as their depressive symptoms.

A demonstrated need exists for effective treatment for the condition of long-term pathological depression in youth. Target treatments should focus on addressing acute symptoms of depression, as well as addressing and ensuring the maintenance of treatment effects over time due to the high levels of reoccurrence of youth depression. The increased rate of depression prevalence starting in early adolescence, as well as the rapidly increasing rate for girls after puberty implies that a focus on treatment for early adolescent girls is necessary. Finally, because the family comprises the primary social context in which early adolescent girls develop, the inclusion of family components in the treatment of youth depression should assist in the maintenance of treatment effects.

The purpose of the present study is to test a model of depression that combines distinct familial risk factors and vulnerabilities, such as girls' perceptions of family messages, with both girls' cognitive triad and depressive symptoms. Furthermore, the study will determine whether the addition of parent training to a school-based, group-administered CBT intervention for pre- and early-adolescent girls with depressive symptoms significantly assists in the affects of perceived family messages about the self, world, and future, thus indirectly affecting girls' depressive symptoms. To meet the objectives of the current study, the sample will be drawn from a larger depression intervention study and will include 9- to 14-year-old girls with a depressive disorder as

well as a primary caregiver for each girl (referred to as parent in this study). The girls were randomly assigned to a CBT only condition, a CBT plus parent training condition, or a minimal contact control condition. Ratings of girls' cognitive triad (thoughts of the self, world, and future), perceived family messages from each parent, and severity of depressive symptoms were obtained from the girls and their parents at pre-treatment, post-treatment, and annually for up to four years following treatment. The proposed study will examine a model of depression that combines these important theoretical constructs (i.e. perceived family messages, girls' cognitive triad, and girls' depressive symptoms) and examine how treatment interacts with the model. First, the perceived messages that parents communicate to their daughters regarding the cognitive triad will be explored to determine their relations to both the daughter's cognitions and the severity of the daughter's depressive symptoms. Specifically, the perceived messages that parents communicate to their daughters regarding the cognitive triad will be analyzed to determine both their direct and indirect effect (via daughter's cognitive triad) on the development of depressive symptoms in daughters both prior to receiving an intervention and after receiving an intervention. Second, the study will evaluate the how the addition of a parent training component to a school-based, group-administered CBT intervention affect perceived family messages, the girls' cognitive triad and depressive symptoms in comparison to group-administered CBT intervention alone and a maintenance group.

CHAPTER 2

Review of the Literature

Depression in Youth

Adolescent depression rates are the highest of all psychological disorders diagnosed during this developmental time frame (Hammen, 2009) associated with various difficulties and negative outcomes. Depressed youth are at a higher risk for the development of other psychological disturbances (Kovacs, Akiskal, Gatsonis, & Parrone, 1994) and for the development of depressive disorders later in their lives (Hammen & Rudolph, 2003). Typically, depressed children and adolescents experience significant impairment in academic functioning, peer relationships, and family functioning (Weisz, McCarty, & Valeri, 2006; Garber & Horowitz, 2002). Children and adolescents with depression display school attendance problems, academic underachievement, and academic failure (Hammen, Rudolph, Weisz, Rao, & Burge, 1999). Depressed youth also experience heightened chronic strain (e.g., more isolation and negativity, less reciprocity) and intense life stress (e.g., arguments, termination of relationships) in their peer and family relationships (Daley & Hammen, 2002).

According to the *American Psychiatric Association's Diagnostic and Statistical Manual of Disorders (4th ed.) Text Revision* (DSM-IV TR, 2000), there are three main disorders of unipolar depression (See Appendix A). Major Depressive Disorder (MDD) is marked by a single episode or recurrent episodes of depressed mood. Children and adolescents with MDD may demonstrate mood lability, low frustration tolerance, irritability, temper tantrums, somatic complaints, and/or social withdrawal instead of

verbalizing feelings of depression (American Academy of Child and Adolescent Psychiatry [AACAP], 1998). Dysthymic Disorder involves chronic disturbance of mood that presents as a low grade form of depression; for children and adolescents, this mood disturbance lasts at least one year. Dysthymic Disorder also involves at least two of the following symptoms: poor appetite or overeating, insomnia or hypersomnia, low energy or fatigue, low self-esteem, poor concentration or difficulty making decisions, and feelings of hopelessness (DSM-IV-TR, 2000). Depressive Disorder Not Otherwise Specified (NOS) is used to describe the presence of depressive symptoms that do not meet criteria for MDD or Dysthymic Disorder, but that still contribute to significant impairment for the individual (DSM-IV-TR, 2000).

Several studies have reported the prevalence of depression in children and adolescents. The reported occurrence of depression in these studies fluctuates depending on the method of diagnosis, measurement instruments used, and populations sampled (Poznanski & Mokros, 1994). The lifetime prevalence rate of depression in school-aged children is 3%, while the prevalence rate of depression dramatically jumps to 14% in adolescents (Lewinsohn, Rohde, Seeley & Fischer, 1993). Furthermore, about 5% of all adolescents are seriously depressed at a given point in time, with a large increase in depressive episodes during middle to late adolescence, between ages 14-18 (Blazer, Kessler, McGonagle, & Swartz, 1994; Cicchetti & Toth, 1998). The average length of an episode of MDD in children and adolescents is seven to nine months, with approximately 90% of episodes remitting within two years of onset and lasting for longer periods of time. Some 20% of youth by the age of 18, will have met criteria for a diagnosis of Major

Depressive Disorder at least once in their life (Biramher, Ryan, Williamson, Brent, & Kaufman, 1996). The early onset of depressive disorders can predict a more severe course of depression (Lewinsohn, Rohde, Klein, & Seeley, 1999). It is becoming more apparent that depression is a chronic and recurrent disorder (Keller, 2003), with 75% of adults with MDD reporting experiencing their first depressive episode during childhood or adolescence (Kim-Cohen et al., 2003). Relapse rates have been reported 12% within 1 year and 33% within 4 years (Lewinsohn, Clarke, Seeley, & Rohde, 1994). Research suggests that remitted depression can commonly include relapse (reemergence of symptoms from the same episode) and recurrence (emergence of symptoms after an interval of sustained recovery) for adolescents and adults (Simons, Rohde, Kennard, & Robins, 2005).

The course of depression can start early for individuals, with the mean age of onset for MDD in community samples is between 14 and 15 years old (Lewinsohn, Clarke, Seeley, & Rohde, 1994). Prevalence rates have shown a gradual increase with age until early adolescence, at which point the rate begins to increase rapidly (Nolen-Hoeksema, 1995; Petersen et al., 1993). The median length of a MDD episode is 1 to 2 months for community samples and about 8 months for clinic-referred youth (AACAP, 2007). One to two years after remission from a major depressive episode, 20% to 60% of youth experience another episode of depression. By 5 years after remission, this percentage rises to 70% (AACAP, 1998). Dysthymic Disorder has a protracted course with a mean duration of 3 to 4 years for community and clinic samples of youth (Kovacs, Akiskal, Gastonis, & Parrone, 1994). Dysthymic Disorder also puts youth at greater risk

of developing MDD. Youth with MDD with underlying Dysthymic Disorder, or "double depression," have a less promising track with shorter times between episodes of Major Depression (Kovacs et al., 1994).

There are no gender differences in rates of depressive symptoms and disorders between prepubescent boys and girls (Anderson, et al 1987; Nolen-Hoeksema & Girgus, 1994). However, from mid-adolescence through adulthood, females are twice as likely as males to experience symptoms of a Major Depressive Disorder or Dysthymic Disorder (Compas, Ey, & Grant, 1993; Weissman & Klerman, 1977). The risk of depression increases by a factor of 2 to 4 after puberty, particularly in females (Angold, Costello, Erkanli, 1999). This significant gender difference emerges between the ages of 13 and 15 (Petersen, Seligman, & Kennedy, 1991).

There is a need for effective treatment for the long-term pathological condition of youth depression. Target treatments should focus on addressing acute symptoms of depression, as well as addressing and ensuring the maintenance of treatment effects due to the high levels of reoccurrence. The increased rate of prevalence starting in early adolescence suggests a treatment focus on that critical time in development. The rapidly increasing depression rate for females after puberty implies that a focus on treatment for females is necessary. Further, a treatment beginning with early adolescent girls is warranted as this appears to be a critical time for the development of depression.

Assessment of Depression

There are several methods to assess depression in youth. Common approaches to assess depression include self-report questionnaires, parent and teacher rating scales, diagnostic interviews, observational methods, and projective techniques. An accurate assessment is important in determining the scope of the symptoms and the appropriate treatment for girls with depression. The best practice approach for assessment of depression involves the use of multiple raters and measurement methods (Fristad, Emery, & Beck, 1997).

A "multiple gate" strategy is recommended as an identification and diagnostic procedure for an appropriate assessment of depression (Kendall, Cantwell, & Kazdin, 1989). A multiple gate approach involves administering a measure, such as a questionnaire or rating scale, as a screening device to identify individuals who may be experiencing a clinically significant level of depression. Those who exceed a determined cutoff score on the rating scale are then selected for a second administration of the self-report rating scale. Kendall and colleagues recommend a second administration of the self-report rating scale; however, it is possible to substitute this measure for a relatively short diagnostic interview, such as the Diagnostic and Statistical Manual Brief Symptom Interview for Depression (DSM Interview). Both methods are brief and assist in identifying individuals who appear to be experiencing a depressive disorder. Individuals who exceed a cutoff score or who present with a clinically significant level of depressive symptoms on a short diagnostic interview are then selected for a more time-consuming and accurate diagnostic interview. The use of a multiple gate approach reduces the

number of false positives, or individuals who appear to be suffering from a depressive disorder but who in actuality are not, prior to engaging in a lengthy diagnostic interview. This makes the process time efficient and cost effective (Kendall, Cantwell, & Kazdin, 1989).

The Children's Depression Inventory (CDI; Kovacs, 1992) is the most commonly used rating scale that assesses youth depression for screening purposes (Timbremont, Braet, & Dreessen, 2004). The CDI has shown good reliability in several studies (Craighead, Smucker, Craighead, & Ilardi, 1998; Fundudis, Berney, Kolvin, Famuyiwa, Barrett, & Bhate, 1991; Kovacs, 1992). There is conflicting evidence on whether or not the CDI can discriminate between youth with a depressive disorder and youth with an anxiety disorder (Timbremont, et al., 2004; Myers & Winters, 2002). The discriminant validity of the CDI is moderated by the age of the children and adolescents. In a study examining youth from a community sample, anxiety and depression were more difficult to distinguish in 9- to 11-year-old children compared to adolescents between 12 and 17 years of age (Lonigan, Hooe, David, & Kistner, 1999). The CDI is designed to provide information about the presence and severity of depressive symptoms, but cannot by itself provide a psychiatric diagnosis (Sitarenios & Kovacs, 1999). Thus, it presents as an appropriate measure to use as a screener before using an interview as an assessment to determine a diagnosis of depressive symptoms.

Clinicians use different types of interviews, including unstructured clinical interviews, fully structured interviews, and semi-structured clinical interviews. Clinicians administering unstructured interviews often do not query about key aspects of

psychopathology, particularly if it is inconsistent with their initial diagnostic impressions (Angold & Fisher, 1999). Structured interviews provide specific questions, which can limit the clinician and restrict clinicians from gathering additional information or use their professional judgment, which may have diagnostic value. Semi-structured interviews allow the clinician to rate the criteria as accurately as possible, use all information at his or her disposal, and improvise additional questions or confront the respondent with inconsistencies when necessary. Such interviews are recommended as they are systematic and cover key areas of psychopathology, psychosocial functioning, and family history, which are important for diagnosing mental illnesses (Klein, Dougherty, & Olino, 2005).

The Schedule for Affective Disorders and Schizophrenia in School Age Children (K-SADS; Puig-Antich & Chambers, 1978) is a semi-structured diagnostic interview that is widely used (Klein et al., 2005). The K-SADS is the least structured of the semi-structured diagnostic interviews and requires a sufficient amount of clinical training to achieve adequate inter-rater reliability prior to administration by a clinician. There are several versions of the K-SADS that vary in what they measure. Some versions may measure a present state of psychopathology, with others measuring a present state as well as lifetime episodes of psychopathology (see Ambrosini, 2000, for comparisons of the versions). Selecting an appropriate version of the K-SADS depends on the particular information the clinician desires to obtain from the diagnostic interview.

When screening in a larger, general population setting, such as a school setting, the multiple gate approach is recommended to ensure an accurate identification and diagnosis of girls. Reynolds (1986) suggests using three stages of assessment for identifying depressed youths in schools. First, the use of a self-report measure of depression, such as the CDI, can be used in a wide-scale screening. Then, youth who scored above a predetermined cutoff score can be reassessed using the same measure or a brief semi-structured interview to further identify children and adolescents with clinical depressed symptoms. Finally, conducting semi-structured diagnostic interviews using the K-SADs with children and adolescents who report clinical levels of depression can assist in identifying youth with a diagnosis of depression so the youth can begin any necessary treatment.

Family Influence on Depression

There is a considerable amount of influence the family system contributes to the development of depression in youth (Costello, Pine, Hammen, March, Plotsky, Weissman, Biederman, et al., 2002). Family and marital conflict, coercive parenting practices, and persistent negative affect are risk factors associated with numerous childhood psychiatric disorders (Cummings, Davies, & Campell, 2000). Previous research identifies parent factors, parenting style, family environment and parenting practices as possible risk factors associated with youth depression (Sander & McCarty, 2005). Given the profound effect family life has on children and youth, parents and significant caregivers are important to consider when conceptualizing youth risk for depression and possible treatments.

Parent factors, including family psychiatric history and parental depression, primarily maternal depression, (Birmaher, Ryan, Williamson, Brent, & Kaufman, 1996; Burge & Hammen, 1991), have been associated with a child's risk for developing depression (Beardslee, Keller, Seifer, Lavori, Staley, Podorefsky, & Shera, 1996; Weissman & Jensen, 2002). Fendrich, Warner, and Weissman (1990) studied children and adolescents with and without a depressed parent. They examined several psychosocial factors, and concluded that parent depression was the most important risk factor for several types of youth psychopathology, including depression. While part of the family contribution to depression is attributable to genetic mechanisms, a substantial portion of variance in prediction is unexplained by genetic factors (Eley, Deater-Deckard, Fombonne, Fulker, & Plomin, 1998; Jacobson & Rowe, 1999; Strober, 1995). The findings regarding parent to child risk have evolved over time, moving from a focus on maternal depression and linear links to more complex interactive models including maternal, paternal, and other family factors (reviewed in Downey & Coyne, 1990; Goodman & Gotlib, 1999).

Research has also indicated that parent physical and emotional availability is also important to consider in the development of depression. Bowlby (1980) originally described attachment as the need for proximity to caregivers in times of stress. The lack of feeling security from caregivers would lead to increased distress (Bowlby, 1980). Research in the area of youth depression supports Bowlby's original beliefs. Shirk, Gudmundsen, and Burwell (2005) assessed 168 young adolescents, and their perceptions of maternal availability and youth support-seeking. According to Shirk and colleagues

(2005), in times of higher stress, mothers' availability was important as a buffer for depression in youth. In a 10-year follow-up investigation of depressed and non-depressed mothers and their children, Miller, Warner, Wickwamaratne, & Weissman (1999) reported that the risk for childhood depression was related to a combination of factors, including maternal depression, low maternal emotional availability, and high maternal control, along with low self-esteem in the children. This indicates that parent availability also contributes to the risk of childhood depression.

Parents may contribute to the development or maintenance of mood disorder in their children by not only passing on genetic vulnerability, but through the parenting practices they utilize (Alloy, Abramson, Smith, Gibb, & Neeren, 2006). A parenting style characterized by a lack of warmth and by negative psychological control, including criticism, guilt-induction, and intrusiveness has been hypothesized to be particularly likely to contribute to the development of depression in children (Parker, 1983). Studies examining depression in preadolescents have demonstrated that parents of depressed children display less positive, rewarding and responsive behaviors than do parents in families with children who are not depressed (Cole & Rehm, 1986; Messer & Gross, 1995). This type of parenting may contribute to depression in children through its effects on children's beliefs about themselves, their future, and how they interpret their life experiences (Alloy et al, 2006).

Increasing attention has been directed toward the role of family relationships and interactional processes as components relevant to understanding the development of depression in youth (Sheeber, Hops, & Davis, 2001). Disturbances in family functioning

may contribute to youth depression, which is supported by the fact that many depressed children are reared within a disturbed family environment (Stark & Brookman, 1992). Family environments of depressed youths have been found to have less cohesion, less communication, and less social recreational activity (Barrera & Garrison-Jones, 1992; Cole & McPherson, 1993; Jewell & Stark, 2003; Kaslow et al., 1988; Ostrander, Weinfurt, & Nay 1998; Stark et al., 1990). Similarly, families of depressed youths are characterized by conflict (Stark, Humphrey, Crook, & Lewis, 1990; Cole & McPherson, 1993; Sheeber & Sorensen, 1998), abuse, and neglect (Kashani, Ray, & Carlson, 1984). Healthy relationships between parents and children serve as protective factors (Peterson, Sarigiani, & Kennedy, 1991) and are associated with positive self-esteem and psychosocial coping resources among adolescents (Sheeber & Sorensen, 1998). Sheeber et al. (2007) reported that adolescents who had a good relationship with their parents and siblings were less likely to become depressed, develop problems, or consider suicide.

Parents' influence on their child's cognitive style is another area of potential influence of youth's risk of depression. Specifically, the risk of depression increases with negative attributions or negative views of the self, world, and future (Alloy, et al, 2006; Stark, Schmidt, & Joiner, 1996). Alloy et al. (2001) examined parental cognitive style, perceived parenting practices, college-age youth's cognitive style, and the youth's development of depressive symptoms over a 2.5-year period. Vulnerability towards youth depression was related to the cognitive style and parenting dimensions of both their mothers and fathers. Furthermore, Stark, Schmidt, & Joiner (1996) assessed youth

depression, parents' cognitive style, and youth cognitive style in 133 youth. Results indicated that controlling for anxiety, youth's negative perceptions of self, world, and future mediated the relation between parents' negative view of self, world, and youth's depressive symptoms. There is considerable evidence that parenting involving little warmth and negative psychological control is associated with dysfunctional attitudes and negative inferential styles. It is also suggested that cognitive patterns could mediate the association between maladaptive parenting and depression in youth (Alloy et al, 2006).

There are differences between mothers' and fathers' influence on adolescent development. In two parent families, mothers appear to engage in more frequent interactions (especially involving care taking and routine family tasks) with children than fathers do in middle childhood and adolescence (Lewis & Lamb, 2003). Most father-child interactions continue to involve play, recreation, and goal-oriented actions and tasks (see Lamb, 1997; Russell and Russell, 1987). A study examined the longitudinal reciprocal association among externalizing problems, internalizing problems, mother-adolescent relationship quality, and father-adolescent relationship quality over a 1-year period. Results suggested a longitudinal, reciprocal association between the quality of adolescents' relationships with their mothers and internalizing problems, but not father relationship quality, was associated with both internalizing and externalizing problems over time (Fanti, Henrich, Brookmeyer, & Kuperminc, 2008).

There are different findings about the relation between parent gender, cognitive style, and adolescent depressive symptoms. In a study examining gender differences in parenting of adolescents, Starrels (1994) found that daughters and sons appear to identify

more with their same-sex parent. Results from Stark, et al. (1996) assessment of youth depression, parents' cognitive style, and youth cognitive style suggested a more powerful relation between mothers' cognitive style, daughters' cognitive style and risk for depression in comparison to the relation between fathers' cognitive style, daughters' cognitive style and risk for depression. In a study examining whether negative parental attributions for adolescent behavior mediated the association between parental and adolescent depressive symptoms, Chen and colleagues found parental depressive symptoms and parental negative attributions about the adolescent's behavior made unique contributions to the prediction of depressive symptoms in adolescent females (Chen, Johnston, Sheeber, & Leve, 2009). When considering the differences between fathers and mothers, Chen and colleagues found that father's negative attributions explained 19% of adolescent daughter's depressive symptoms in comparison to the mother's negative attributions explaining 6% of the adolescent daughter's depressive symptoms once controlling for parental depression.

The risk of depression is intensified for girls, as they are more likely than boys to become enmeshed in maternal depression and to imitate maternal depressed mood (Cummings & Davies, 1994). Girls demonstrate a tendency to respond to coercive family patterns in a more passive manner than boys, which can translate to more internalizing behaviors for girls in the face of family conflict (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003). It is suggested that stressful family environments may interact with the socialization of girls in ways that make them more vulnerable to depression (Kavanagh & Hops, 1994). Thus it is important to consider the family relationship and environment

when considering the development and maintenance of depression in pre-adolescent and adolescent girls.

The research reviewed in this section clearly highlights the importance of considering early relationships with caregivers, as well as other factors of family environment, when studying the onset and maintenance of childhood depression. Children's interactions with their family can serve as either a vulnerability or protective factor in regard to the development of depressive symptoms, particularly for young girls (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003). Additional research is needed to explore more specific pathways between family environment and depression for girls.

Cognitive Theories of Depression

An important aspect to consider is the nature of cognitive distortion or maladaptive thoughts in youth depression (Kendall, 1981, 1985). Results of a sequence of studies conducted by Kendall, Stark, & Adam (1990) suggest that depression in many children is associated with a distortion in information processing. Cognitive theories of depression attempt to explain differences in responses to stressful life events in terms of a set of maladaptive thinking patterns (Alloy, Abramson, & Francis, 1999). This indicates that the way individuals interpret their experiences may influence whether or not they become depressed or become vulnerable to recurrent or long-lasting depressive episodes. Currently two well-known cognitive theories of depression exist: Beck's Theory (Beck, 1967, 1987) and the Hopelessness Theory (Abramson, Metalsky, & Alloy, 1989; Alloy, Abramson, Metalsky, & Hartlage, 1988). Both theories propose that stable cognitive structures (dysfunctional attitudes in Beck's theory and attributions in the Hopelessness

Theory) create vulnerability for individuals to develop depression (Persons & Miranda, 1992). The proposed study will focus on cognitive vulnerability using Beck's Theory in order to test some of its hypotheses.

Beck's diathesis-stress theory of depression emphasizes cognitive structures as the critical elements in the development, maintenance, and recurrence of depression (Beck, 1967, 1983; Kovacs & Beck, 1978). Central to Beck's theory is the construct of schemata. Beck defines schemata as stored bodies of knowledge (i.e., mental representations of the self and prior experience) that interact with new information to influence selective attention and memory search (Williams, Watts, MacLeod, & Mathews, 1997). These schemata are hypothesized to develop from interactions with the environment, primarily during childhood (Beck, 1967/1972, 1987; Kovacs & Beck, 1978). When an individual is confronted with a situation, the schema most relevant to the situation is activated and subsequently influences how the individual perceives, encodes, and retrieves information regarding the situation (Abela & Sullivan, 2003). If a child experiences negative situations, schemas may develop that guide attention towards the negative rather than positive experiences and lead to an enhanced recall of those negative experiences (Scher, Segal, & Ingram, 2004).

Beck (1967, 1983) hypothesized that certain individuals possess depressogenic schema that serve as vulnerability factors to depression. He further hypothesized that the depressogenic schema are often organized as sets of dysfunctional attitudes, and that the activation of such schemata contributes to the onset of negative self-referent information processing. Systematic errors in thinking (i.e. overgeneralization, personalization,

magnification/minimization, etc) characterize schematic processing in vulnerable individuals (Abela & Sullivan, 2003). An individual with depressogenic schema might magnify the negative outcomes or implications of an event or interpret neutral stimuli in their environment as negative.

Beck (1963, 1987) suggests that depression is related to an individual's view of the self, the world, and the future. These negative distortions of experiences increase the likelihood of an individual developing a negative cognitive triad, which includes a negative view of the self, the world, and the future. Beck hypothesized the negative cognitive triad as a sufficient cause of depression. Therefore, if an individual developed the negative cognitive triad, it was likely that she would develop depression.

It is important to explore the developmental origins of cognitive styles to better understand how a negative cognitive triad develops. Several hypotheses for the developmental origins of cognitive styles exist. Cognitive styles can develop from the modeling of parents' own negative cognitive styles, negative inferential feedback from parents, and negative parenting practices (Alloy et al, 2001). To better understand the development of cognitive style, each pathway will be examined briefly.

Children can learn cognitive styles through observing and modeling significant others, such as parents (Abramson, Alloy, Hogan, Whitehouse, Donovan, Rose, Panzarella, & Raniere, 1999; Alloy, et al., 1999). If this pathway is appropriate, then evidence should support that children's cognitive styles should correlate with those of their parents, specifically their mothers and/or fathers. Research results have produced conflictual evidence regarding this hypothesis. A study examining the relationship of

parent's cognitive triad and children's cognitive triad found correlations between mother's cognitive style and children's cognitive style, but no correlations between fathers' and children's cognitions (Stark, Schmidt, & Joiner, 1996). Other studies have found significant associations between mothers' and children's attributional style (Seligman, Peterson, Kaslow, Tanenbaum, Alloy, & Abramson, 1984) and self-worth (Garber & Flynn, 2001). Alloy and colleagues (2001) found that mothers of potential cognitive high risk students had more negative inferential styles and dysfunctional attitudes than those of students with low risk. Other studies have found no significant correlations between either parent's and children's attributional style (Turk & Bry, 1992) or dysfunctional attitudes and self-schemata (Oliver & Berger, 1992). It is possible that differences in the composition and size of samples, as well as differences in cognitive measures could contribute to the discrepant findings (Alloy et al., 2001).

A second hypothesis is that parents communicate their own inferences about the causes and consequences of negative events in their children's life such that the child develops an inferential style consistent with the parental feedback (Alloy et al, 2001). The few findings consistently support this feedback hypothesis. Fincham and Cain (1986) reported that third-graders who attributed academic failure to external causes had parents who attributed the child's failures to the parents' own lack of effort, suggesting an external cause. Garber and Flynn (2001) reported a relation between mothers' attributions for events in the child's life and their child's attributions. As noted earlier, Alloy et al. (2001) examined parental cognitive style, perceived parenting practices, college-age youth's cognitive style, and the youth's development of depressive symptoms over a 2.5-

year period. Youth depression vulnerability was related to the cognitive style and parenting dimensions of both their mothers and fathers. In a longitudinal study following children from infancy to 5th grade, results indicated observed negative maternal feedback to child's failure significantly interacted with child's negative events to predict greater cognitive vulnerability in children (Mezulis, Hyde, & Abramson, 2006).

Negative parenting practices may also contribute to the development of negative cognitions and vulnerability to depression (Alloy et al, 2001). It is hypothesized that children's view of self, the world, and their future can be influenced by the quality of the relationships they have with their parents (e.g., Bowlby, 1988, Garber & Flynn, 1998). The two aspects of parenting that are most implicated in association with children's risk of developing depressive symptoms include parental lack of emotional warmth and parental negative control (Tashman, 1997). Koestner, Zuroff, and Powers (1991) found that parental rejection and restrictive control in childhood predicted subsequent self-criticism of their offspring in adolescence. Garber and Flynn (2001) found that low maternal care predicted their children's subsequent low self-worth, and high maternal psychological control predicted their children's depressive attributional style, even after controlling for maternal depression history. Alloy and colleagues (2001) reported that high risk students' fathers, but not mothers, were characterized as lower warmth and acceptance for their children.

Adolescent girls tend to have more negative perceptions of themselves than adolescent boys. This is especially evident in their view of physical appearance (e.g., Allgood-Merten, Lewinsohn, & Hops, 1990; Hankin, Roberts, & Gotlib, 1997). In a

study examining cognitive vulnerability to depression, girls' greater levels of general negative cognitive style, attributional style, and negative inferences about the self accounted for girls' elevated levels of depressive symptoms when compared to boys (Hankin & Abramson, 2002).

It is important to develop a better understanding of the role of parents' inferential messages and attributions of causality that they convey to their children in research and treatment studies. Specifically, this role should be examined for pre-adolescent and adolescent girls, as research indicates that girls are more passive to interactions with their family environment (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003). Similarly, evidence demonstrates that girls tend to have more negative perceptions of themselves (Allgood-Merten et al., 1990) as well as have more sensitive relationships between maladaptive cognitions and depressive symptoms (Hankin & Abramson, 2002).

Assessment of Cognitive Vulnerability in Youth

It is important to accurately assess cognitive vulnerability to depression. Cognitive vulnerability and style are usually assessed through self-report questionnaires. Beck's theory of depression explicitly states that depressed individuals possess distorted thoughts of themselves, their world, and their future. Some of the relevant instruments and issues in research assessing cognitive style and cognitive vulnerability to depression will be reviewed.

Research examining attributional style as a vulnerability factor among children and adolescents has used the Children's Attributional Style Questionnaire (CASQ; Kaslow, Tannenbaum, & Seligman, 1978) or the revised version (CASQ-R; Thompson,

Kaslow, Weiss, & Nolen-Hoeksema, 1998). Both of these assess the negative attributional style featured in the reformulated theory of learned helplessness (Hankin & Abramson, 2002). The CASQ-R demonstrates poor internal consistency reliability with a coefficient alphas typically ranging from .4 to .6 (Gladstone & Kaslow, 1995), indicating that the tool is not appropriate for research use (Hankin & Abramson, 2002). The Adolescent Cognitive Style Questionnaire (ACSQ), which is based on and similar to the adult cognitive style questionnaire (e.g., Metalsky & Joiner, 1992) can also be used to identify cognitive styles and vulnerability. It consists of 12 hypothetical negative event scenarios. The ACSQ has demonstrated realibility and internal consistency as a measure of the hopelessness theory for cognitive vulnerability among high school adolescents.

The Automatic Thoughts Questionnaire- Negative (ATQ-N; Hollon & Kendall, 1980) is a self-report instrument designed to measure the frequency of negative self-statements described in Beck's (1967; 1976) theory of depression. The ATQ-N has demonstrated good psychometric properties, specificity to depression, and sensitivity to changes in mood state (Dobson & Breiter, 1983; Hill, Oei, & Hill, 1989; Hollon & Kendall, 1980). Other instruments that assess these cognitive constructs include the Hopelessness Scale (Beck, Weissman, Lester & Traxler, 1974) for measuring views of the future and the Rosenberg Self-Esteem Scale (Rosenberg, 1965) for measuring views of the self. The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) has items that assess the three domains (views of self, world, and future) of the cognitive triad; however, it fails to evaluate the three domains in a systematic manner.

The Cognitive Triad Inventory (CTI; Beckham, Leber, Watkins, Boyer, & Cook, 1986) was specifically created measure the three distinct domains of the cognitive triad in adults. Similarly, Kaslow and colleagues (1992) created a modified version of the CTI for the purpose of assessing the cognitive triad of children (CTI-C; Kaslow, Stark, Printz, Livingston, & Tsai, 1992). Tests regarding the CTI-C's psychometric properties indicate high internal consistency and good concurrent validity (Kaslow et al, 1992). Furthermore, the 36-item questionnaire can be completed in a relatively short amount of time (Beckham et al., 1986; Kaslow et al., 1992). It has also demonstrated good discriminant validity (Greening, Stoppelbein, Dhossche, & Martin, 2005). The proposed study will utilize the CTI-C to assess depressogenic cognitions in girls.

In addition to understanding the child or adolescent's cognitions, it can be informative to assess the perceived messages the child receives from others in his or her immediate surroundings. The Family Messages Measure (FMM; Lux, 1989) is an instrument derived from the Cognitive Triad Inventory. It examines the child or adolescent's perceptions of the frequency of maladaptive and adaptive messages from a parent regarding the child's self, the world, and the child's future. Two parallel versions of the measure have been developed: perceived messages from mother (FMM-M), and perceived messages from father (FMM-F). The measure demonstrated acceptable internal consistency reliability for both mothers and fathers (Stark et al, 1996). The proposed study will use the FMM to assess the daughters' perceived negative messages from their parents.

Treatment of Depression in Youth

Approaches for treatment of youth experiencing depression include pharmacological agents, psychosocial interventions, or a combination of both. An antidepressant medication commonly prescribed to children and adolescents that has proven efficacious for the treatment of depression in this population is selective serotonin reuptake inhibitor (SSRI; Emslie, Heiligenstein, Wagner, Hoog, Ernest, Brown, Nilsson, & Jacobson, 2002). Currently, controversy exists about the use of antidepressants, including SSRIs, in treatment for youth with depression regarding the possible risks associated with the pharmacological treatment. Research indicates that taking an SSRI increases a youth's risk of suicide-related behavior and suicidal ideation as well as the development of a manic or hypomanic episode (Hammad, Laugren, Racoosin, 2006). Additional research highlights that the benefits of SSRIs compared to placebo are far greater than the risks from suicidal ideation and self-harming behaviors, particularly in short-term trials with children and adolescents (Bridge, Iyengar, Salary, Barbe, Birmaher, Pincus, et al., 2007). Longitudinal research is currently underway to better understand the benefits and risks of taking this type of medication for this particular age group (Leckman & King, 2007).

Psychosocial interventions are also an effective form of treatment for youth depression. Controversies surrounding pharmacological treatment have refocused attention towards alternatives such as psychotherapy. When considering psychosocial treatment, it is important to consider treatments that have been effective based on previous research, or evidence-based treatments. Cognitive behavioral therapy (CBT) is an effective treatment for depression in children and adolescents (Lewinson & Clark,

1999). CBT for depression among youth is problem-focused, active, collaborative, and time-limited (Reinecke & Ginsburg, 2008). Techniques used in CBT include teaching coping skills, problem-solving, and cognitive restructuring with the goal of individuals eventually being able to independently apply these techniques to their lives (Stark, 1990) and for the youth to feel empowered (Reinecke & Ginsburg, 2008). Stark and colleagues (2006) have described the several key components of CBT: affective education, goal setting, coping skills, problem-solving, and cognitive restructuring. Affective education teaches the youth about depression and how to manage it. Goal-setting allows the treatment to be collaborative and helps the individual identify her goals for therapy. Coping skills are techniques for enhancing mood when the individual is experiencing an unfortunate situation that cannot be changed. Problem-solving is a strategy for developing a plan for altering an undesirable situation. Last, cognitive restructuring involves changing negatively distorted thinking to more positive and realistic thinking.

CBT can be delivered in both individual and group formats, with both formats having certain benefits and disadvantages. The individual format allows for session techniques to be specifically tailored to the youngster's presenting concerns (Lewinsohn & Clarke, 1999) and allows for additional time that can be spent addressing an individual's particular needs. In contrast, individual CBT does not allow for the youngster to gain peer-related support or relief from interacting with others experiencing depression. Benefits of group CBT allow for the youth to recognize that other same-age children or adolescents experience depression, group generated solutions to problems, peer-generated coping behaviors, acquisition of social skills and building of friendships,

along with social and emotional support from peers. Disadvantages to group CBT include the smaller amount of time dedicated to any one group member, the possibility of disengagement of youngsters or possible conflict between group members (Stark et al, 2006). While each format allows for unique benefits, group CBT allows for a more efficient way to treat numerous youth in community settings, such as a school or mental health facility.

Research indicates that CBT has demonstrated efficacious in the treatment of youth depression. In a meta-analysis analyzing CBT and adolescent depression, Lewinsohn & Clarke (1999) reported an effect size of 1.27 and 63% of the participants demonstrating clinically significant improvement at the end of treatment when analyzing 12 studies examining treatment versus control. Although later meta-analyses (Reinecke, Ryan, & DuBois, 1998; Klein, Jacobs, & Reinecke, 2007) examining CBT and adolescent depression report smaller effect sizes; results reinforce that CBT may be effective for the acute treatment of depression among adolescents.

An additional approach to preventing relapse of depressive episodes is the use of booster sessions after symptom remission for youth. This approach originates from the CBT framework, in which the acquisition of skills and related changes in core beliefs and thoughts are considered important aspects to treatment. Occasional booster sessions can aid participants in continuing to practice learned skills and positive changes to their core beliefs and information processing. Support for the use of booster sessions is conflictual. In an uncontrolled pilot study using monthly booster sessions following a CBT treatment for adolescents resulted in a decreased relapse rate (Kroll, Harrington, Jayson, Fraser, &

Gowers, 1996), whereas monthly booster sessions following the treatment in a different study with adolescents did not change the effect of reoccurrence of depressive symptoms (Clarke, Rohde, Lewinsohn, Hops, & Seeley, 1999). However, in the second study described, booster sessions were not attended by all participants due to participants reporting a decrease in symptomology and therefore not feeling the need to attend sessions (Clarke, Rohde, Lewinsohn, Hops, & Seeley, 1999).

In a meta-analysis examining the effects of psychotherapy for depression in children and adolescents, Weisz and colleagues explored the permanence of treatment outcomes. Only five studies included follow-up at 1 year or beyond. Effect sizes at these follow-up periods of 1 year or longer showed no lasting treatment effect. This supports the potential value of booster sessions and continuation treatment (Clarke et al., 1999) in extending treatment benefit over time. This lack of research highlights the need for studies with longer term follow-up.

As previously discussed, components of family functioning and interactions are related to the presence in youth depression. Since the family environment is a primary social context where girls develop, it may be important to include a family or parent component in treatment for youth depression. Familial relationships and family variables have been shown to be important factors in the treatment of depression (Kazdin & Weisz, 1998). Thus, to maximize treatment effects, it may be necessary to address parental and family issues within treatment (Kazdin & Weisz, 1998) specifically as they relate to altering cognitive constructs (Stark et al., 2000).

Concepts for adding a family component to treatment can include a variety of methods. Less extensive involvement can appear in family or parent educational sessions that educate parents on depression, or as needed family educational sessions. These treatments can have cognitive, cognitive-behavioral, or interpersonal orientations (Weisz, et al., 2006). More explicit inclusion of parents and family members in the treatment process allows parents to receive a similar or equal dose of treatment as youth. This can range from 8 to 14 hours of intervention, where a parent can receive standard CBT curriculum, or family therapy sessions (Weisz, et al., 2006).

Weisz, McCarty, & Valeri (2006) applied rigorous analytic methods to the largest set of studies on youth depression to date, including dissertations. The final sample included 35 separate studies encompassing 44 treatments. To further quantify the extent to which parent involvement has been incorporated into clinical trials targeting depressive symptoms among youth, Sander & McCarty (2005) regrouped and analyzed the data from Weisz and colleagues' (2006) meta-analysis of outcome studies. While the vast majority (68%) of treatments examined for youth depression did not include parental involvement, 18 % included parents to provide education about youth depression, and 11% of the studies included parents in the treatment process. On average, treatments that provided parents with education yielded a weighted mean effect size of .25, with two of the treatments generating effect sizes greater than .50 (Sander & McCarty, 2005). For the treatments that included parents, parents would receive a similar or equal dose of treatment as youth. These treatments yielded a weighted mean effect size of .40, which was very close to youth only treatments, which yielded a weighted mean effect size of .45

(Sander & McCarty). While the effect sizes were similar, it is unclear from the data if the addition of parent components to treatment yield more positive outcomes for youth depression. However, there was not an adequate amount of studies that included parents and evaluated treatment effects at a follow-up time point (Weisz et al., 2006), and it is possible that the effects of parental involvement in youth's treatment for depression are more pronounced over time. The lack of this type of research suggests the need for studies of depression treatment for youngsters that contain follow-up assessment.

Statement of Problem and Purpose

Depression is a devastating mental illness that displays a dramatic increase in prevalence from childhood into adolescence, with several negative outcomes. Rates of depression increase drastically from early to late adolescence (Hankin & Abela, 2005), with an estimated 2.5% of children and up to 8.3% of adolescents suffering from a depressive disorder at any given point in time (Birmaher, Williamson, Dahl, Axelson, Kaufman, Dorn, & Ryan, 2004). Depression in youth is associated with various negative outcomes including decreased academic performance, school dropout, impairment in family and peer relationships, and increased risk for suicide (Weisz, McCarty, & Valeri, 2006; Waslick, Kandel, & Kakouros, 2002). Rates of depressive symptoms and disorders are similar for prepubescent boys and girls (Nolen-Hoeksema, Girgus, & Seligman, 1992); however, starting around the age of 13 to 15, (Wichstrom, 1999) girls become more likely to develop depression than boys (Hankin & Abramson, 2002; Costello, et al., 2002). The startling rate at which depression increases for girls around puberty (Hankin et al, 1998; Nolen-Hoekseam, 1990) suggests the need to better understand the

development of depression and create effective treatments for pre- to early adolescent girls.

Research has explored the multiple pathways that are associated with the development of depression in children and adolescents (for a review, see Stark et al., 2000). In particular, the family system contributes a considerable amount of influence to the development of depression in youth (Costello et al., 2002). Previous research has identified parent factors, parenting style, family environment, and parenting practices as possible risk factors associated with youth depression (Sander & McCarty, 2005). The relation between parent gender and adolescent depressive symptoms remains unclear with previous research providing conflictual findings. Given the profound effect the family has on youth, parents and significant caregivers are important factors to consider when conceptualizing and determining treatment for youth depression.

The development of beliefs about the self, world, and future (known as the cognitive triad) constitutes a potential cognitive vulnerability to depression (Beck, 1963). Depressed youngsters are reported to have a negative self-schema (Zupan, Hammen, & Jaenicke, 1987), a negative outlook of the world (Kaslow, Stark, Printz, Livingston, and Tsai, 1992), and negative expectations for the future (e.g., Kazdin, Rodgers, & Colbus, 1986). It has been suggested that these beliefs are formed through early learning experiences, such as those within the family (Beck, Rush, Shaw, & Emery, 1979; Freeman, 1986). Cognitive vulnerability to depression mainly originates from parent-child relationships and family messages (e.g. Alloy et al., 2001; Garber & Flynn, 2001; Stark et al., 1996). Specifically, direct messages from parents play a critical role in the

development of cognitive styles in youth (Alloy et al., 2001; Stark et al., 1996). Further, parents' negative attributions are related to adolescent girls' symptoms of depression (Chen et al., 2009).

Overall, research has supported the proposed model between perceived family messages, girls' cognitive triad, and depressive symptoms (e.g. Stark et al., 1996). This finding is consistent with an interactional model of depression (see Joiner & Coyne, 1999), which suggests that depressive symptoms arise and are maintained, at least in part, by problematic relational processes within both family and peer systems. As science is built on replication of findings, it is important to continue to examine the proposed model between perceived family messages, girls' cognitive triad, and depressive symptoms with a larger and more diverse sample. This is necessary in order to explore whether or not the model is valid with diverse samples. Further, because it was not included in prior research, less is known about the differences between mothers' and fathers' inferential feedback and girls' cognitive triad.

In addition to replicating previous findings and better understanding the development of depressive symptoms, it is important to explore the treatment of depression in youth and to identify factors that contribute to the maintenance of treatment effects. Meta-analyses have reported the effectiveness of using cognitive-behavioral therapy (CBT) in the treatment of youth depression (Compton et al., 1998; Lewinsohn & Clarke, 1999). CBT has received empirical support and is associated with moderate-to-large treatment effects at post-treatment and over short-term follow-up periods (e.g., Lewinsohn & Clarke, 1999; Michael & Crowley, 2002; Reinecke, Ryan, & Dubois,

1998). However, about 40% of children and adolescents do not respond to child-focused interventions, and a substantial number of treated youths experience relapse within 1 year of treatment (e.g., Birmaher et al., 2000).

Familial relationships and family variables are important factors in the treatment of depression (Kazdin & Weisz, 1998). Thus, to maximize treatment effects, it is important to address parental and family issues within treatment (Kazdin & Weisz, 1998), specifically as they relate to altering cognitive triad (Stark et al., 2000). Several goals of parent training improve the interactions within the family system. One goal of parent training is to change negative and coercive parenting strategies that might support or lead to negative messages about the self and world for the child. Another goal of parent training is to enhance communication between parents and children, in order to increase more empathetic listening and lessen negative communication. An underlying theory of treatment is that changes in these parenting aspects lead to positive change in girls' cognitive triad, which then affects their depressive symptoms. According to cognitive theory, successful treatment leads to changes in the girls' cognitions, which affect their core beliefs thus helping to create lasting change. Examining if the added component of parent training relates a positive change in both perceived family messages and the cognitive triad is a priority for the area of youth depression.

Recent research addresses the need to understand the multidimensional, interactional, and complex relations between youth depression and parent and family factors (Sander & McCarty, 2005). As the development of efficacious treatments for youth depression continues, there is a particular need for more research on parental

inclusion in treatment to determine if a positive change in parenting can contribute to treatment effects. More exploration of the proposed mechanisms of family treatment would provide a stronger empirical understanding of which treatment processes are actually contributing to change (Pinsof and Wynne, 2000). Given the dramatic numbers of youth impacted by depression, improved understanding of potential intervention strategies for girls' depression is critical.

Building on previous research of family and cognitions, the present study attempts to clarify further the complex relations between several variables. The purpose of the present study is to test a model of depression that combines distinct familial risk factors and vulnerabilities, such as girls' perceptions of family messages, with girls' cognitive triad and depressive symptoms. Furthermore, the study will determine whether the addition of parent training to a school-based, group-administered CBT intervention for pre- and early-adolescent girls with depressive symptoms assists in changing maladaptive cognitions and lessens the severity of depressive symptoms.

Research Questions and Hypotheses

Research Question 1

Do perceived family messages from maternal figures (family messages [M]) and perceived messages from paternal figures (family messages [F]) affect the severity of daughters' depressive symptoms (girls' depressive symptoms), and is this effect mediated by the daughters' cognitive triad (girls' cognitions)?

Hypothesis 1

After controlling for demographic variables including age of girl and ethnicity, girls' pre-treatment reports of family messages (M) and family messages (F) will directly affect the girls' pre-treatment cognitions' and the girls' pre-treatment depressive symptoms. Additionally, family messages (M) and family messages (F) will partially indirectly affect their depressive symptoms via girls' cognitions at pre-treatment. In this hypothesized model, the relation between girls' perception of family messages from both parent figures, and girls' depressive symptoms will at least be partially mediated by the girls' cognitions. Therefore, girls' perception of family messages will have both a direct and an indirect effect on the girls' depressive symptoms. See Figure 1 for proposed path model. It is also hypothesized family messages (M) will have a stronger effect on the girls' cognitions and severity of depressive symptoms than family messages (F).

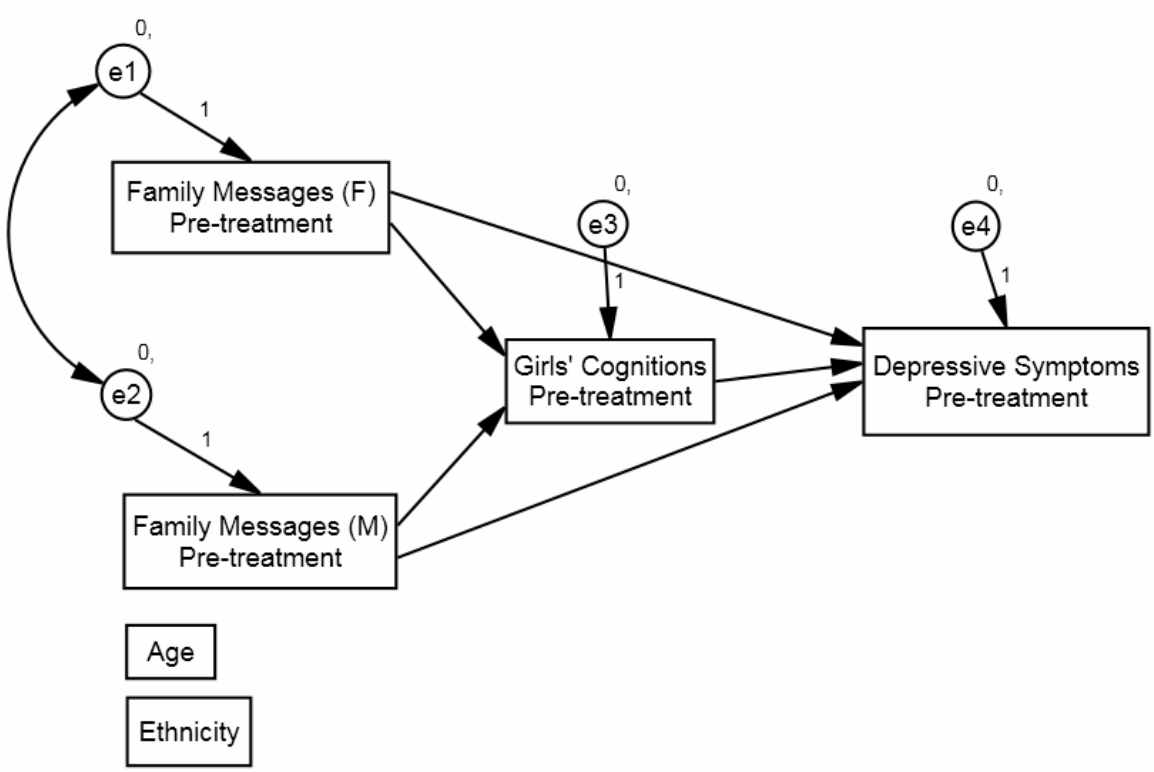


Figure 1. Proposed Model for Hypothesis 1.

Note. Paths will be drawn from demographic variables (age, ethnicity) to all variables and included in the model as control variables.

Rationale

Stark and colleagues (1996) examined early adolescent girls and reported that perceived parental messages about the self, world, and future were predictive of children's depression, but only as a function of their association with the children's sense of self, world, and future. Graves (2007) reported similar findings for early adolescent girls, reporting that perceived negative parental messages about the cognitive triad significantly predicted daughter's cognitive triad and had an indirect effect on daughter's depressive symptoms. These findings implicate parent's inferential feedback as a key factor in the presence of daughter's vulnerability to depressive symptoms. Research has also indicated that children learn their cognitive style by modeling the cognitive styles of their parents. This would indicate a relationship between the three variables. In determining parent gender differences in the relation, most studies testing this theory have found a correlation between a mother's cognitive styles and those of her children (e.g. Alloy et al., 2001). Stark and colleagues (1996) found that the relation between mothers' cognitive style, daughters' cognitive style and risk for depression was stronger than the relation between fathers' cognitive style, daughters' cognitive style and risk for depression. In a study examining gender differences in parenting of adolescents, Starrels (1994) found that daughters and sons appear to identify more with their same-sex parent. These findings suggest that girls' cognitive triad and depressive symptoms will be more related to their perception of messages about the self, world, and future from their mothers in comparison from the messages from their fathers.

Research Question 2

Is there a significant change in family messages (M) and family messages (F) from pre-treatment to post-treatment?

Hypothesis 2

It is hypothesized that there will be a significant change in family messages (M) and family messages (F) from pre-treatment to post-treatment for all three conditions (cognitive-behavioral intervention, cognitive-behavioral intervention plus parent training, maintenance condition). Specifically participants in all three conditions will report perceiving less negative messages from both their mothers and fathers. It is further hypothesized that family messages (M) and family messages (F) will show greater change pre-treatment to post-treatment for girls in the CBT+PT condition.

Rationale

As core components of the cognitive-behavioral intervention (CBT) included actively teaching and assigning homework for children to alter cognitive distortions, it is likely that the adolescents would begin to change how they perceive social interactions. Evidence has demonstrated that the initial knowledge of a diagnosis of adolescent depression changes how parents and the family environment, thus indicating that the girls in the maintenance (MCC) condition will also demonstrate some change. All conditions will demonstrate a change in girls' perception of family messages as evidence has demonstrated that once girls and family members learn of their depression, interactions

change, thus possibly altering what messages girls receive and family environment (Giroux, 2008). Further, the adolescents in the cognitive-behavioral intervention plus parent training (CBT+PT) condition have the added component of parents attending sessions in which they learn what the adolescents are learning and how to increase positive parent-child interactions, thus increasing the likelihood that the girls perceptions will show greater change from pre-treatment to post-treatment.

Research Question 3

How does type of treatment and change of family messages affect the severity of girls' cognitive triad, and the severity of girls' depressive symptoms?

Hypothesis 3

The family messages with the strongest effect from the path model used in hypothesis 1, be it from mother or father, will be included for the current hypothesis. At post test, treatment conditions (CBT + PT; CBT) will show a greater unstandardized path coefficients between family messages and the girls' cognitive triad, and the girls' depressive symptoms in comparison to the control condition (MCC) while controlling for previous levels of these variables, demographic information, and parent and child attendance. Participation in the CBT + PT condition will show a larger effect on perceived family messages and depressive symptoms than participation in the CBT only condition. It is important to note that the data used in this research will be nonexperimental in nature; there will be no (nor could there be) experimental manipulation of victimization to determine its subsequent effect on depression. As a

result, it should be understood that all statements that discuss the "effect" of one variable on another or that focus on variables that "explain" an outcome are dependent on the validity of the model. In other words, if the model is a reasonable representation of reality, the estimates resulting from the model indeed show the extent of the influence of one variable on another. If the model is not a reasonable representation of reality, the estimates are not accurate estimates of those effects. See Figure 2 for proposed path model used in multi-group analysis.

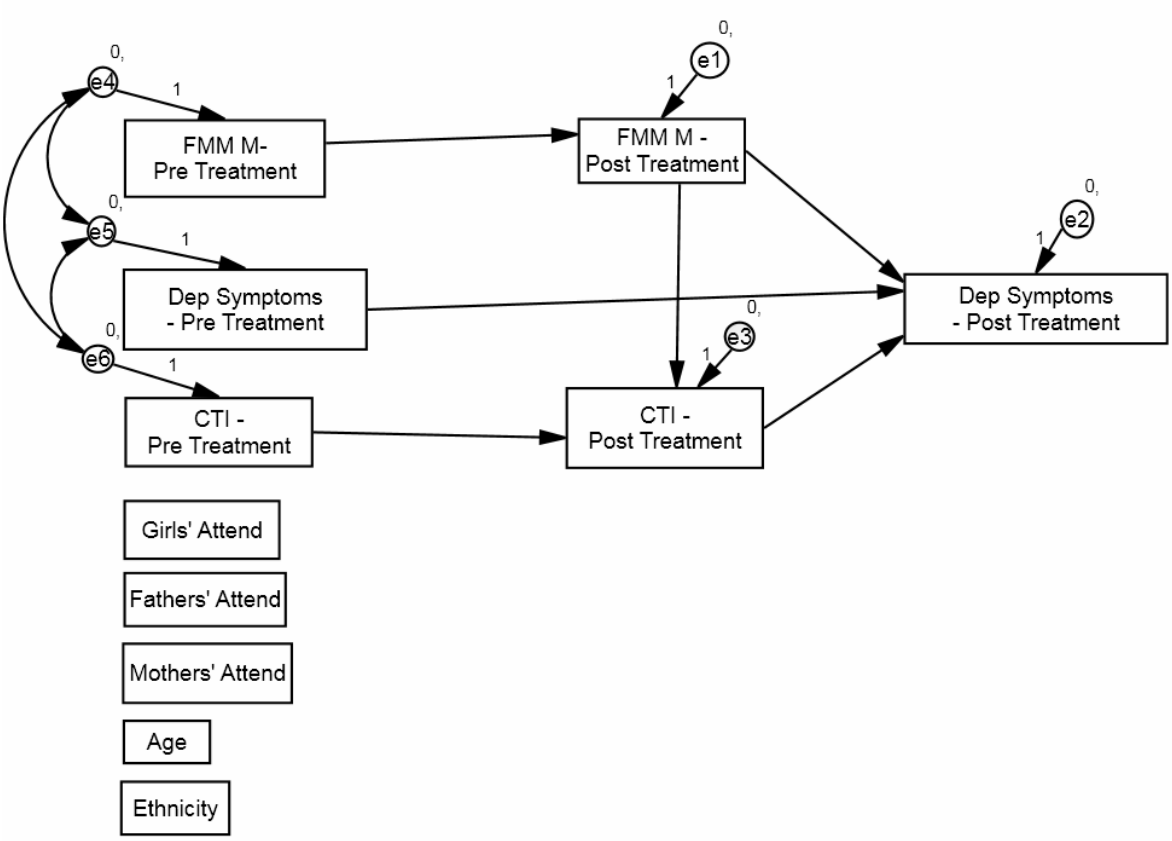


Figure 2. Path model for CBT+PT condition for Hypothesis 3

Note. Paths will be drawn from demographic variables (age, ethnicity) to all variables and included in the model as control variables. Paths will be drawn from attendance variables to all post-treatment variables in the model. The CBT condition will include the girls' attendance variable in the model, while the MCC condition will not include any attendance variables.

Rationale

Research demonstrates that parenting behaviors play a pivotal role in the development of childhood cognitive styles and, concurrently, in the development of depression (Ostrander & Herman, 2006). Parenting behaviors associated with child internalizing symptoms and negative self-beliefs include critical, unpredictable, inconsistent, or noncontingent parenting behaviors (Bruce et al., 2006; Chorpita et al., 1998; Ostrander & Herman, 2006; Rudolph, Kurlakowsky, & Conley, 2001). During the intervention parent training sessions, parents learned how to support their daughter's use of CBT skills and were therefore able to encourage continued application of these skills to new stressors in the girls' lives. Specifically, parents learned about cognitive restructuring, which may have influenced how they spoke to their daughters or tried to support their daughter in thinking differently about negative situations or experiences. In a meta-analysis reviewing the components of effective parent training, Kaminski, Valle, Filene, & Boyle (2008) found that two of the most robust predictors of positive outcomes included teaching positive interactions and emotional communication skills to parents which aims to enhance the overall quality of the parent-child relationship by increasing parental activity and positivity with the child, decreasing parental negativity, and teaching the parent to communicate in ways that promotes the child's emotional health and well-being. Kaminski and colleagues found that for child outcomes, larger effect sizes were observed for internalizing behaviors than for externalizing behaviors and cognitive or educational skills, thus suggesting a greater change in depressive symptoms. During PT, parents learned skills, such as conflict resolution, communication techniques,

and positive behavioral management strategies, which are expected to lead to improvements in how the daughters perceive messages they receive from their parents at post-treatment. When negative characteristics of the family interactions are modified through PT, families are hypothesized to more strongly contribute to the maintenance of long term depressive symptom reduction in girls through changes in the perceived family messages and the daughter's cognitive triad.

CHAPTER 3

Method

Data for this study are drawn from a larger longitudinal depression intervention study funded by the National Institute of Mental Health with Kevin Stark, Ph.D., as the Principal Investigator. The overall purpose of the larger investigation is to evaluate the efficacy of CBT with and without a parent-training component for pre- and early-adolescent girls with a depressive disorder. The participants, instrumentation, and procedure presented in this study design are a subset of those from the larger investigation.

Participants

Overview of participants

The total sample of participants included 151 girls and 141 primary caregivers who completed measures at pretreatment. Additional demographic information is reported from the caregivers of the 48 girls who were assigned to the CBT+PT condition since these 89 caregivers completed measures and had the opportunity to participate in the parent training component. Occasionally there were two caregivers who completed measures for a participant, but the one who completed measures during the most assessment periods was selected for data analysis and is referred to as the primary caregiver. When both caregivers completed measures an equal number of times, the maternal caregiver was chosen as the primary caregiver. For caregivers in the CBT+PT

condition, when there were two caregivers, both caregivers were included as participants because they had the opportunity to participate in treatment.

Eligibility for participation in the study required that girls were experiencing a depressive disorder as their primary psychological disturbance. Girls were excluded from the study if they had a primary diagnosis other than a depressive disorder (n = 44); the diagnosis of a psychotic disorder (n = 3); an IQ below 85 (n = 1); a learning disability that could interfere with valid completion of measures (n = 0); or active suicidal or homicidal ideation (n = 1).

At post-treatment, 18 girls had discontinued participation in the study for different reasons. Thus, the sample decreased from 151 to 133 at post-treatment. The final sample included 133 girls along with 126 primary caregivers who completed measures and 79 caregivers in the CBT+PT condition.

Pretreatment Sample of Girls

Child participants. Participants include 151 girls who ranged in age from 9 to 14 years old (M=10.67, S.D. = 1.29) and were enrolled in grades 4 through 7 (28% in fourth grade, 26.7% in fifth grade, 24% in sixth grade, and 21.3% in seventh grade) in two school districts in central Texas. Ethnicity of the girls was provided by self-report with 40.7% Caucasian Non-Hispanic, 37.3% Caucasian Hispanic, 10.7% African American, 2% Asian, 1% American Indian, and 8% Multi-Racial. One child did not report this information. Demographic characteristics of the girls are summarized in Table 1.

Table 1

Child Demographic Variables for Sample

Variable	n	Percent
Age		
9	35	23.3
10	38	25.3
11	33	22.0
12	31	20.7
13	12	8.0
14	1	0.7
Grade		
4	42	28.0
5	40	26.7
6	36	24.0
7	32	21.3
Ethnicity		
White Non Hispanic	61	40.7
White Hispanic	56	37.3
African American	16	10.7
Asian	3	2.0
American Indian	1	0.7
Multi-Racial	12	8.0
Unknown	1	0.7

Of the sample of child participants, 78.1% (n = 118) had MDD, 13.9% (n = 21) had DD, 2.0% (n = 3) had DDNOS, and 6.0% (n = 9) had DD and MDD. The mean level of depressive symptoms at pre-treatment, as measured by the total depression score on the K-SADS-P IVR, was 37.92 (*SD* = 8.53). Calculations of the prevalence of comorbidity in this sample indicated that 30.5% (n = 46) had 2 psychological disorders and an additional 23.2% (n = 35) had 3 or more diagnoses. The remainder of the girls (46.4%; n = 70) had one diagnosis. The following table lists comorbid diagnoses for girls with two and three or more psychological disorders along with the number of child participants from the original sample that met criteria for these comorbid diagnoses.

Table 2

Comorbidity of Child Participants

# of Diagnoses	Comorbid Diagnoses	n
2		
	Generalized Anxiety Disorder (GAD)	27
	Attention-Deficit/Hyperactivity Disorder (ADHD)	7
	Anxiety Disorder NOS	3
	Separation Anxiety Disorder	4
	Specific Phobia	3
	Panic Disorder	1
	Adjustment Disorder with Anxiety	1
	Oppositional Defiant Disorder (ODD)	1
3 or More		
	GAD, ADHD	8
	GAD, Specific Phobia	4
	GAD, Social Phobia	3
	GAD, Post-traumatic Stress Disorder (PTSD)	1
	Separation Anxiety, GAD	2
	Separation Anxiety, ADHD	1
	Separation Anxiety, Anxiety Disorder NOS	1
	ADHD, Anxiety Disorder NOS	1
	ADHD, Specific Phobia	1
	ADHD, ODD	1
	Specific Phobia, PTSD	1
	Specific Phobia, Social Phobia	1
	Specific Phobia, Separation Anxiety	1

Table 2 (continued)

# of Diagnoses	Comorbid Diagnoses	n
	Specific Phobia, GAD, ADHD	1
	PTSD, Eating Disorder	1
	PTSD, Specific Phobia, GAD	1
	PTSD, Social Phobia, ADHD	1
	PTSD, Social Phobia, GAD	1

Note. All child participants had a diagnosis of a depressive disorder.

Parent Education. The parent education for mother figures and father figures for each girl was determined by the report form filled out by caregivers. Parents (mothers and fathers) reported their education according to the following broad categories: less than high school, some high school, finished high school/GED, college/junior college, finished a four year college, and advanced degree. Table 3 and Table 4 list the descriptive information about the parent education level of mothers and fathers (respectively) of the child participants.

Table 3

Mother Education Level of Participants

Education Level	n	Percent
Less Than High School	1	0.7
Some High School	12	7.9
Finished High School/GED	27	17.9
College/Junior College	39	25.8
Finished 4-year College	17	11.3
Advanced Degree	6	4.0

Table 4

Father Education Level of Participants

Education Level	n	Percent
Less Than High School	1	0.7
Some High School	8	5.3
Finished High School/GED	22	14.6
College/Junior College	26	17.2
Finished 4-year College	13	8.6
Advanced Degree	7	4.6

Family structure. The family structure for each girl was determined by reviewing data files for child participants and recording family members reported as living in the

home. Based on this information, the following broad categories were generated to capture the varying family structures: intact family, stepfamily, single parent family, and multi-adult household. Multi-adult household is not a term currently used in the literature, but was created for this study to capture family structures that include at least one parent and numerous other adults. There were two types of multi-adult households, those with immediate and extended family members (e.g., aunts, uncles, and grandparents), referred to as relatives, living in the home and those with both relatives and non-related adults (e.g., mother's boyfriend and friends of the parents) living in the home. The family structure categories were further analyzed to provide additional descriptive information about each girl's living arrangement. Specifically, the intact families were headed by biological parents, grandparents, or other relatives (i.e., sister and brother-in law). The stepfamilies consisted of a biological parent and a stepmother or stepfather. The single parent families were separated into families including single mothers or single fathers. The multi-adult households were divided into families with only adult relatives living in the home and families with both relatives and non-related adults living in the home. In addition, the identification of whether other children lived in each household was determined for the different types of family structures. The other children comprised biological siblings, half siblings, step siblings, cousins, and non-related children. Table 5 lists the family structure for the child participants.

Table 5

Family Structure of the Child Participants

Family Structure	n	Percent
Intact Family	56	37.1
Biological Parents	52	92.9
Grandparents	3	5.4
Other	1	1.8
Additional Children		
Yes	47	83.9
No	9	16.1
Single Parent Family	29	19.2
Single Mother	21	72.4
Single Father	8	27.6
Additional Children		
Yes	22	75.9
No	7	24.1
Stepfamily	26	17.2
Stepfather	21	80.8
Stepmother	5	19.2
Additional Children		
Yes	20	76.9
No	6	23.1
Multi-Adult Household	37	24.5
Relatives	24	64.9

Table 5 (continued)

Family Structure	n	Percent
Relatives and Non-Related Adults	13	35.1
Additional Children		
Yes	30	81.1
No	7	18.9
Unknown	3	2.0

Caregivers in CBT+PT condition. The sample of caregivers in the CBT+PT condition included 89 caregivers with 54.0% maternal caregivers and 46.0% paternal caregivers. While all girls had a maternal caregiver (n = 48), 7 girls had no paternal caregiver (n = 41). Of the maternal caregivers, 97.9% were biological mothers and 2.1% were stepmothers. Of the paternal caregivers, 60.4% were biological fathers, 16.7% were stepfathers, and 8.3% were the mother's boyfriend. The ethnic composition of the caregivers was 43.8% White Non-Hispanic, 27.0% White Hispanic, 10.1% African American, and 4.5% Asian, and 14.6% unknown. Educational status of the caregivers ranged from less than high school to an advanced degree with 1.1% stopping before high school, 1.1% finishing some high school, 11.2% completing high school/GED, 23.6% finishing some college/junior college, 11.2% graduating from a 4-year college, 6.7% obtaining an advanced degree, and 44.9% unknown. The following table presents demographic information for the caregivers who were in the CBT+PT condition.

Table 6

Demographic Variables for the Caregivers in CBT+PT Condition

Variable	n	Percent
Caregivers		
Maternal Caregiver	48	54.0
Biological Mother	47	97.9
Stepmother	1	2.1
Paternal Caregiver	41	46.0
Biological Father	29	60.4
Stepfather	8	16.7
Mother's Boyfriend	4	8.3
Ethnicity		
White Non-Hispanic	39	43.8
White Hispanic	24	27.0
African American	9	10.1
Asian	4	4.5
Unknown	13	14.6
Educational Status		
Less than high school	1	1.1
Some high school	1	1.1
Finished high school/GED	10	11.2
Some college/junior college	21	23.6
Finished 4 year college	10	11.2
Advanced Degree	6	6.7
Unknown	40	44.9

Post-treatment Sample of Girls

Child participants. The post-treatment sample of child participants included 133 girls with a mean age of 10.68 years old (*SD* = 1.32) and 30.1% enrolled in fourth grade, 24.1% in fifth grade, 23.3% in sixth grade, and 22.6% in seventh grade. The ethnic composition of child participants was 40.6% White Hispanic, 38.3% White Non Hispanic, 11.3% African American, 1.5% Asian, and 8.3% Multi-Racial. Demographic information, comorbid diagnoses, and family structure for the girls at post-treatment is presented in Appendices B-D. Similarly, the demographic information for the sample of caregivers in the CBT+PT condition at post-treatment is listed in Appendix E.

Attendance during treatment. Data from the girls' attendance were collected at each treatment meeting and is reflected in Table 7. Data from girls' caregivers were also collected at each parent training meeting. Table 8 reflects the total attendance to the parent training meetings as all caregivers had the opportunity to attend the sessions. Table 9 reflects the attendance of at least one caregiver for each girl in the CBT+PT group.

Table 7

Child Attendance Data

Number of CBT Sessions Attended	CBT		CBT + PT	
	n	Percent of Girls	n	Percent of Girls
12	0	0	1	2.3
13	1	2.2	1	2.3
14	0	0	0	0
15	0	0	1	2.3
16	3	6.7	1	2.3
17	1	2.2	1	2.3
18	7	15.6	9	20.9
19	6	13.3	5	11.6
20	27	60.0	24	55.8

Table 8

Total Attendance for Primary Caregivers in CBT+PT Condition

Number of PT Meetings Attended	n	Percent of Primary Caregivers
8	8	10.1
7	13	16.5
6	6	7.6
5	6	7.6
4	6	7.6
3	3	3.8
2	4	5.1
1	5	6.3
0	28	35.4

Note. This table includes all primary caregivers who had the opportunity to attend the PT meetings.

Table 9

Attendance for Selected Primary Caregivers in CBT+PT Condition

Number of PT Meetings Attended	n	Percent of Primary Caregivers
8	9	20.9
7	10	23.3
6	4	9.3
5	5	11.6
4	6	14.0
3	2	4.7
2	0	0.0
1	2	4.7
0	5	11.6

Note. This table includes one primary caregiver for each girl in the CBT+PT condition who attended the most PT meetings.

Instrumentation

Measures of Depression

The Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present State (K-SADS-P IVR; Ambrosini & Dixon, 2000). The K-SADS-P IVR is a semi-structured diagnostic interview designed to assess the present state of symptom severity and to diagnose psychological disorders occurring within the preceding year for children and adolescents. The K-SADS-P IVR provides information about symptoms and psychological disorders in youth between the ages of 6 and 18, as prescribed by the DSM-IV TR. Disorders covered by the K-SADS-P IVR include: depressive disorders, mania, eating disorders, anxiety disorders, behavioral disorders, substance abuse, and psychosis. The interview is conducted by a trained clinician with the child and primary caregiver separately, and inquires about the presence of symptoms in each of the aforementioned areas. The interviews with the parent and child each last approximately 1.5 hours; however, administration time varies depending on range and severity of psychopathology. Ratings for each symptom are obtained from the child and parent. The symptoms are rated on either a four-point scale or a six-point scale with higher ratings indicating greater symptom severity. A rating of three or greater for each item is considered clinically significant. Summary ratings for each symptom are then determined by the interviewer based on all available sources of information. Each specific symptom is rated according to severity for the present episode (past 12 months) and for the week prior to date of administration. The summary ratings from the present episode and the last week are used to determine diagnoses according to DSM-IV TR criteria.

Measures of Cognition

Cognitive Triad Inventory for Children (CTI-C; Kaslow et al., 1992) is a downward revision of the Cognitive Triad Inventory (CTI; Beckham, Leber, Watkins, Boyer, & Cook, 1986). The measure consists of 36 items that comprise three 12- item scales: View of the Self, View of the World, and View of the Future (See Appendix F). A total score can be calculated by summing the scores for each scale. The wording of the original CTI items was simplified, double negatives were removed, and the content was changed to be more relevant and appropriate for children. The scale has demonstrated acceptable internal consistency reliability and solid convergent and discriminant validity (Kaslow et al., 1992). Internal consistency of the CTI as measured by coefficient alpha was reported to range from 0.71 to 0.87 with heterogeneous samples (Kovacs, 1992). Test-retest reliability coefficients for intervals of one to four weeks ranged from 0.38 to 0.87, whereas for intervals of six weeks they ranged from 0.54 to 0.67 (Kovacs).

Measures of Family Influence

The Family Messages Measure (FMM; Lux, 1989). This instrument is designed to assess children's and adolescents' perceptions of the messages they receive from their parents, and how those messages relate to the cognitive triad. The FMM was derived from the CTI and consists of 36 items that are comprised of three 12-item scales. It includes the child's perceptions of the frequency of maladaptive and adaptive messages from a parent regarding the child herself (e.g., My father tells me I can't do anything right), the world (e.g., My mother tells me that the world is a mean place), and the child's future (e.g., My mother tells me things aren't going to get any better). In addition, a total

score reflecting the total negative messages can be computed by summing the three scale scores. Two parallel versions of the measure have been developed: perceived messages from mother (FMM-M) and perceived messages from father (FMM-F). See Appendix G and Appendix H for both versions of the Family Messages Measure. Participants were asked to complete one FMM-M and one FMM-F, when applicable. Both the FMM-F (α = .90) and the FMM-M (α = .87) demonstrated strong internal consistency. Moreover, the subscales of the FMM were also found to have acceptable internal consistency (FMM-F Self, α = .81; FMM-F World, α = .65; FMM-F Future, α = .78; FMM-M Self, α = .76; FMM-M World, α = .57; FMM-M Future, α = .77).

Procedure

Ethical Considerations

This study complies with the ethical standards of research delineated by the American Psychological Association and the University of Texas at Austin. Before initiating the study, approval was granted by the Departmental Review Committee for the Department of Educational Psychology and by the Institutional Review Board at the University of Texas at Austin. Prior to the start of the larger depression intervention study, the superintendent of the selected school districts received a written proposal of the depression intervention study.

Recruitment of Participants

Letters requesting permission from parents for their daughters to participate in a multi-gate screening procedure for the depression intervention study were sent to parents

of girls attending public schools in the two selected school districts in central Texas (see Appendix I). If parental consent and child assent (see Appendix J) for girls' participation in the screening procedure were received, girls completed the CDI in a large group setting (see Appendix K). Graduate students were present during this time to ensure that girls completed the CDI independently, answer questions and translate the items for girls who did not speak English as their primary language. As a second gate of the screening procedure, girls with a score of 16 or greater on the CDI then completed an additional CDI one week later to determine whether they again scored above the cut-off. This second administration of the CDI was not efficient, and tended to over-identify girls. Thus, after the first year of the study, the second administration of the CDI was replaced with the DSM Interview as the second gate of the screening procedure. The DSM Interview (see Appendix L) was administered by a trained graduate student on the same day as the first CDI. A flow chart demonstrating the process and indicating the sample size at each gate is presented in Appendix M.

If girls exceeded the cut-off score on the second administration of the CDI during the first year of the study or reported enough symptoms during the DSM Interview during the remainder of the study that they reported experiencing a diagnosable depressive disorder, called the girl's primary caregiver to report the results of the interview and sent consent from parents (see Appendix N) and assent from daughters (see Appendix O) to participate in the K-SADS-P IVR. The K-SADS-P IVR was administered to girls and their parents by graduate students who were trained until they received an adequate level of diagnostic reliability (i.e., a minimum of 80% agreement). After completing the

KSADS-P IVR, the parents of girls with a primary diagnosis of a depressive disorder and who did not meet the exclusionary criteria were sent a letter describing the pre-treatment and post-treatment assessment, depression intervention, and Parent Training component of the study (see Appendix P). In the letter, girls and their parents were asked to provide assent and consent, respectively, to participate in the study.

Safety Concerns

If a girl reported suicidal ideation or intent during the CDI, DSM Interview, or K-SADS-P IVR, a graduate student trained in the assessment of suicidal risk determined the level of risk. If a girl presented with suicidal ideation or intent, she was supervised as necessary. All girls who reported suicidal ideation or intent completed a safety contract with the school counselor and a trained graduate student. The safety contract asked the girls to identify a person they could talk to if they were having suicidal thoughts and listed contact numbers of mental health professionals. If a girl was actively suicidal, a parent of the girl and the psychiatric consultant for the depression intervention study were contacted and appropriate action was taken. The parents of girls who were having suicidal thoughts but not actively suicidal (i.e., without intent or a specific plan), were notified and provided with contact numbers of mental health professionals should the level of risk increase.

Data Collection

Pre-treatment data collection. Following the recruitment of participants and the acquisition of consent and assent, girls and parents completed a number of measures in

small groups of approximately four girls. Graduate research assistants (GRAs) read the directions for the measures, answered questions and ensured that participants completed each item of every measure. Relevant to this investigation, the girls completed the FMM-M and FMM-F, and the CTI-C. Concurrently, the parents of the girls met in another room where GRAs provided directions for completing their measures and answered any questions that they had. If at least one of the girl's caregivers could not be present, the measures were completed at a convenient location for the parent, mailed to their home, or completed over the phone. If more than one parent completed the measures, they were asked to complete them independently.

Following completion of the pre-treatment assessment, an approximately equal number of girls were randomly assigned to the CBT only condition (n=51), the CBT+PT condition (n=48), and the MCC condition (n=52). Descriptions of the CBT, CBT+PT, and MCC conditions follow.

Post-treatment and follow-up data collection. Within 2 days of completing treatment, the girls and their primary caregivers completed a post-treatment K-SADS-IVR interview. The girls also completed a battery of post-treatment measures within 2 days of completing treatment. Graduate research assistants (GRAs) again read the directions for the measures, answered questions and ensured that participants completed each item of every measure. Relevant to this investigation, the girls completed the FMM-M and FMM-F, and the CTI-C. Within a week of their daughters completing treatment, the primary caregivers completed a battery of post treatment measures. The girls and their

parents were contacted to complete the same post-treatment measures and K-SADS-IVR interview annually during follow-up assessments for up to four years.

After girls in the CBT and CBT+PT conditions completed treatment and the post-treatment assessment, girls in the MCC condition participated in CBT. The caregivers of girls in all treatment conditions received telephone calls intermittently from trained graduate students to inquire about their daughters' participation in auxiliary treatment. If any girls were found to be receiving additional depression treatment, their data starting from when they began treatment were no longer considered valid. This study took place over approximately five years.

Treatment Protocol

Cognitive-behavioral therapy condition. The CBT was delivered using a small group format of between two and six girls. The treatment was conducted by a GRA who received extensive training and supervision from the PI. The intervention consisted of 20 group meetings and two individual meetings designed to be delivered over 11 weeks with 2 meetings completed per week (see Appendix Q for session-by-session descriptions of treatment components and objectives). Meetings typically lasted 45 to 75 minutes. The therapists could complete additional meetings when necessary to ensure that all of the material for each meeting in the treatment manual was completed and understood by the participants.

The CBT intervention was manualized to increase treatment fidelity and was based on a model of self-regulation and skills training. The ultimate goal was to help girls

learn to identify negative thoughts and feelings and to use the acquired CBT skills to enhance their mood. Case conceptualizations were developed for each girl to individualize the group treatment. The core treatment components were affective education, coping skills training, problem solving training, and cognitive restructuring. Affective education assisted girls in identifying their emotional experiences and in understanding the connection between their thoughts, emotions, and behavior. Girls learned to engage in coping activities to improve their mood when they were experiencing a negative situation that could not be changed. A systematic problem solving approach was taught to the girls for use when they were experiencing a negative situation that could be altered. Cognitive restructuring involved teaching girls to recognize their negatively distorted thoughts and change them to more positive and realistic ones. The didactic presentations of the core treatment components were designed to be engaging and interactive. Girls were given the opportunity to practice the CBT skills they learned in session, so therapists could monitor girls' use of the skills. In addition, practicing the skills in session was expected to increase the likelihood that girls would apply these skills outside of treatment as they would experience the beneficial impact on mood after enacting the skill. Girls were assigned therapeutic homework in order to further practice skills independently and continue to utilize the skills they were learning in session. Therapists would also give the girls quizzes on the skills they were being taught in order to measure what the girls were learning. All sessions were recorded and reviewed for integrity.

Each semester after completing CBT, girls participated in three booster sessions. The booster sessions were conducted in the original treatment groups over three consecutive weeks. The purpose of the booster sessions was to review coping skills the girls were taught and to facilitate the application of learned skills to new stressors faced by the girls as a part of the normal developmental process. During the booster sessions, girls also identified evidence that supported a positive sense of self and were assisted in integrating this information into their sense of self. Skills for establishing and maintaining healthy interpersonal relationships were discussed as well.

Parent training condition. The PT component was a hybrid of traditional parent training and cognitive-behavioral family therapy. Each PT group was led by the same student therapist who conducted the CBT meetings with the parents' daughters, and included the primary caregivers (referred to as parents) of the girls in that CBT group. PT consisted of 8 small group meetings and two individual family meetings completed over the same 11 weeks that the girls were participating in the CBT intervention. The girls attended half of the PT meetings (i.e., every other week). The meetings took place in the girls' school after hours and lasted approximately 90 minutes. A bilingual GRA was present at all meetings in order to translate for parents who did not speak English. In order to encourage parents' attendance, daycare, food, and transportation were provided when necessary.

PT was intended to support the girls' treatment by teaching parents to help their daughter employ the therapeutic skills learned during CBT (i.e., coping skills, problem

solving and cognitive restructuring) and to reinforce their daughter's use of the skills. The parents learned about the girls' goals set for therapy and discussed how they could help their daughters achieve their goals. Parents were taught the same problem-solving strategy as the girls and to catch and restructure negative thoughts. Parents were encouraged to use these skills themselves. In addition, during PT, girls and their parents learned skills to ameliorate disturbances in family functioning and the family environment through holding family meetings to resolve conflicts. Parents were taught a more positive approach to parenting. Specifically, parents were taught to increase positive reinforcement and the use of rewards for desirable behavior. They were also taught to decrease punitive, coercive strategies, as well as the use of excessive punishment. Parents were taught how to manage their daughter's behavior in ways that foster a positive affective environment and that relay encouraging messages to the girls about themselves. In particular, parents were instructed to set realistic limits and appropriate expectations. Furthermore, parents were taught numerous communication skills (e.g., empathic listening) and conflict resolution skills. Similarly the parents were taught to initiate conversations with the girls whenever they sensed that the girls were upset. Specific strategies were taught to the parents on how they could clear their mind and listen to the girls in order to become an active listener. Role playing by the parents and families, and coaching from the therapists were used throughout the PT sessions in order for the parents to learn these skills. Participation in recreational activities as a family also was promoted during PT to improve relationships.

Each semester following the completion of PT, parents participated in booster sessions, in which they met weekly for three consecutive weeks with the student therapist who originally conducted their PT group. The booster sessions involved a review of what was learned during PT as well as practice applying conflict resolution skills, communication skills, and family problem solving to new situations that arose.

Minimal contact control condition. During the 11 week intervention, girls in the MCC condition individually completed a DSM Interview with a trained GRA every other week. On the other weeks they completed the BDI-Youth version (See Appendix N). While meeting with each girl, the GRA listened to and empathized with the girls, but did not provide advice or initiate treatment activities. The GRA also observed each of the girls for 15 minutes during a free period and assessed the extent of social withdrawal and the child's mood as evident through her behavior and interactions with peers. Teachers were asked to monitor girls' behavior and mood in the classroom. The GRA would alternate interviewing primary caregivers and teachers in order to assess their perception of the girl's mental health each week. Specifically, the first week the GRA would interview the parent, the next week the GRA would interview the teacher, continuing that pattern throughout the 11 weeks. Following the 11 week intervention and post-treatment assessment, girls in the MCC condition received CBT.

Training for Study Procedures

Training of measures administrators. The project coordinator of the larger depression intervention study trained doctoral level graduate students in Educational

Psychology to administer and score the paper-and-pencil measures and to conduct the DSM Interview. Each graduate student had one year or more of experience on the research project. During the administration of measures, at least one graduate student had prior training on the assessment of suicidal ideation and intent.

Training of interviewers. The K-SADS-P IVR was conducted by doctoral level graduate students in Educational Psychology who had completed relevant coursework in child psychopathology and formulation of psychiatric diagnoses. Each interviewer underwent approximately 50 hours of diagnostic training in the administration and scoring of the K-SADS-P IVR over a period of six months. This training was led by an advanced doctoral student with expertise on semi-structured diagnostic interviewing, who was supervised by the principal investigator of the larger depression intervention study. The training process involved rating at least six audio recorded interviews, practicing the diagnostic interview with volunteers, attending meetings in which general interview skills and differential diagnoses were discussed, and observing a live K-SADS-P IVR interview conducted by an experienced interviewer.

Before conducting interviews independently, each interviewer in training had to demonstrate competence in providing reliable symptom ratings for the K-SADS-P IVR. This was established once the graduate students could listen to an audio taped interview and accurately determine the absence, presence, and severity of mental illnesses assessed by the interview. Interviewers who had difficulty were provided with additional training until their competence in administration and scoring of the K-SADS-P IVR was

established. New interviewers then administered their first interview with live supervision from a more experienced interviewer with feedback provided following the interview. All interviewers participated in weekly group supervision on administration and scoring of the interviews. Individual supervision was provided on an as-needed basis.

Training of therapists. Nineteen doctoral level graduate students in Educational Psychology acted as therapists for the CBT and PT groups. Fifteen students fully completed the training and four students were part way through the training when the study ended. Student therapists began by completing a one year course on cognitive-behavioral therapy that included a semester of practicum experience during which time the student worked with three or four children who had a variety of disorders. Specific training to deliver the manualized CBT and PT components for this study was conducted over six months by the principal investigator, who has extensive expertise in child psychology and CBT to treat children and adolescents with depression. Therapists received approximately 1500 hours of training prior to individually leading therapy groups. The first stage of training involved didactic sessions about the treatment manual, specific therapeutic techniques embedded in the manual and other issues related to implementing the treatment protocol. In the second stage of training, each doctoral student observed a more advanced therapist deliver the entire treatment protocol (i.e., 20 sessions) to a group of participants. Following, the therapist-in-training acted as a co-therapist with a more advanced therapist and delivered the 20-session treatment protocol to another group of participants. After co-leading a group, doctoral students led a group under close supervision from the principal investigator. The therapists received weekly

supervision with the principal investigator to review taped sessions and discuss case-related issues. They also participated in bi-monthly group supervision with all therapists on the research project. The bi-monthly group supervision meetings were conducted by the principal investigator, project coordinator, or an advanced therapist.

CHAPTER 4

Statistical Analyses

The current investigation was designed to test a model of depression that combines family messages, the girls' cognitive triad and their depressive symptoms, and to understand how the model is affected by different types of intervention. Three main research questions were investigated with analyses conducted using statistical software PASW Statistics 18.0 (released in 2010) and AMOS 18.0 (released in 2010), a statistical software program designed for structural equation modeling.

Preliminary Analyses

Descriptive Statistics

Prior to the testing of hypotheses, descriptive statistics including means and standard deviations were computed to provide an overview of the data. Correlations between all variables were also computed and examined for all composite variables used in the analyses. This information was computed for the total sample and also examined at the treatment condition level. The correlations between variables for the total sample is shown in Table 10, and tables with correlations separated by the three treatment conditions can be found in Appendix R.

Significant correlations existed between several variables of interest in the total sample. Family messages (M), family messages (F), and girls' cognitions showed significant correlations between their pre-treatment and post-treatment variables. Girls' severity of depressive symptoms pre-treatment and girls' severity of symptoms post-

treatment were significantly correlated to post-treatment ratings of family messages (M), family messages (F), and girls' cognitions.

Table 10

Pearson Product-Moment Correlations, Means, and Standard Deviations for Variables for 151 Participants

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	1	-.073	-.231*	-.277	.032	.024	-.048	.124	.130	-.159	.002	.152	-.028
2	Ethnicity	-.073	1	.006	.231	.048	.001	.011	.025	-.054	-.010	-.156	.050	.123
3	Attend CBT	-.231*	.006	1	.151	-.159	.111	-.034	.173	.050	-.092	-.126	-.126	.023
4	Attend PT Mother	-.277	.231	.151	1	.086	.054	-.176	-.043	-.197	-.179	-.228	-.058	-.038
5	Attend PT Father	.032	.048	-.159	.086	1	-.292	-.238	-.293	-.191	.187	.081	.232	.020
6	Fam Mess F (T1)	.024	.001	.111	.054	-.292	1	.465**	.551**	.495**	-.408**	-.243**	-.013	.163
7	Fam Mess F (T2)	-.048	.011	-.034	-.176	-.238	.465**	1	.339**	.539**	-.225**	-.352**	-.018	.209*
8	Fam Mess M (T1)	.124	.025	.173	-.043	-.293	.551**	.339**	1	.586**	-.513**	-.378**	.127	.149
9	Fam Mess M (T2)	.130	-.054	.050	-.197	-.191	.495**	.539**	.586**	1	-.261**	-.520**	-.021	.260**

Table 10 (continued)

		1	2	3	4	5	6	7	8	9	10	11	12	13
10	Girls' Cogn (T1)	-.159	-.010	-.092	-.179	.187	-.408**	-.225**	-.513**	-.261**	1	.473**	-.183*	-.197*
11	Girls' Cogn (T2)	.002	-.156	-.126	-.228	.081	-.243**	-.352**	-.378**	-.520**	.473**	1	-.056	-.428**
12	Depressive (T1)	.152	.050	-.126	-.058	.232	-.013	-.018	.127	-.021	-.183*	-.056	1	.102
13	Depressive (T2)	-.028	.123	.023	-.038	.020	.163	.209*	.149	.260**	-.197*	-.428**	.102	1
	M	10.66	2	18.95	4.67	1.84	16.69	14.93	14.91	13.43	48.82	57.14	40.65	26.76
	SD	1.29	1.14	1.69	2.77	2.99	9.13	10.07	8.69	9.21	13.02	12.29	9.38	8.76
	N	151	151	88	43	43	146	134	148	137	150	137	150	138

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Note. Fam Mess F = family messages (F); (T1)= pre-treatment; (T2)= post-treatment; Fam Mess M = family messages (M); Girls' Cogn= girls' cognitions; Depressive= girls' depressive symptoms.

Assumptions for Statistics used in Main Analysis

The data were examined for violation of assumptions as required for the statistical procedures used to test the main analyses including paired *t*-tests, repeated measures analysis of variance, and SEM. It is important for observations within each sample to be random and independent of one another. As the current study randomly assigned subjects to the different treatment groups, it is safe to assume that this particular assumption has not been violated (Mertler & Vannatta, 2005). The homogeneity of variance is an assumption that must be met when using analysis of variance. Levene's test of equality of error variances was conducted to determine whether or not the assumption of homogeneity of variance was met. For all variables of interest, Levene's Test was not significant, indicating that the assumption of homogeneity of variance was met for each variable of interest.

In order to accurately analyze data for all of the statistical procedures, data must meet the assumption of normality. In order to test for this assumption, the data were examined visually for outliers using histograms and scatterplots. The skewness and kurtosis for each of the variables was also examined. Two possible outliers for different variables (family messages (M), family messages (F)) were visually identified when reviewing histograms and scatterplots of the data at pretreatment. However, upon further examination the outliers did not appear to influence the data excessively and were included in the main analyses.

SEM assumes linear relations between the independent and dependent variables. To examine whether or not the variables met the assumption of linearity, scatterplots

were created for all variables and visually examined for linear relations between independent and dependent variables. All variables used as independent and dependent variables met the assumption of linearity.

Traditional maximum likelihood methods of SEM assume that the continuous variables in the model are multivariately normally distributed (Arbuckle, 2009). The assumption of normality was assessed by examining the skewness and kurtosis for each of the variables. All of the following variables: family messages (M), family messages (F), girls' cognitions, and depressive symptoms, demonstrated a normal distribution, with skewness values within a range of -1 and +1 and kurtosis values within a range of -3 and +3, indicating that the data were normally distributed.

Missing Data

In order to make use of all available data, values were calculated for missing item level data points on self-report measures. Mean substitution on a subscale level was used to impute a plausible value for data that were missing on measures. Missing values were imputed with the participant's mean value of the particular subscale of which the particular item belonged. This allowed the data to be comparable to the participant's response pattern for the subscale. The percentage of item level data missing for each subscale ranged from 0% to 33%.

The computer program Amos, which stands for Analysis of Moment Structures, was used to analyze the data to test hypotheses (Arbuckle, 2009). Amos utilizes full-information maximum likelihood (FIML) estimation when analyzing datasets with incomplete data. The FIML process utilizes information from all observed data to estimate the means and covariances of the variables with missing data by maximizing

with respect to first and second order moments (Wothke, 2000). Kline described the process as involving the division of all cases into subsets with the same patterns of missing observations. All available statistical information is extracted from each subset, and all cases are kept in the analysis (2005, p. 56). The FIML process has been found to be superior to pairwise deletion, listwise deletion and mean imputation for handling missing data (Wothke, 2000). In order to take full advantage of Amos' capability to analyze the data used in this study, it was necessary to impute values for the missing data. Current research suggests the use of maximum likelihood-based imputation methods to handle missing data (Graham, 2009). The percentage of data missing for each measure ranged from 0% to 11%.

Tests of Research Questions

Different types of analyses were conducted to test the research questions. *t*-tests and path analyses were conducted to test different hypotheses. An alpha level of 0.05 indicated statistical significance for the analyses.

In order to assist in answering questions regarding mediating effects for research questions in which SEM was utilized, the Sobel test (Sobel, 1982, 1986), or the product-of-coefficients approach was used to examine the statistical significance of indirect and total effects. This approach consists of computing the ratio of the mediation path to its estimated standard error (*SE*). A *p* value for this ratio is computed in reference to the standard normal distribution, and significance supports the hypothesis of mediation (Preacher & Hayes, 2008). This technique was used instead of bootstrapping to adjust for the appropriate missing data for some participants (i.e. perceived messages from a maternal/paternal figure if no maternal/paternal figure is present in family). It is

important to note that the Sobel test works best with a large sample as the sampling distribution of the mediation path is normal only in large samples (Preacher & Hayes, 2008).

The fit of the path models was assessed using several different statistics including: chi-square ($\chi 2$), root mean square error of approximation (RMSEA), and comparative fit index (CFI). A small, non-significant $\chi 2$ suggests a model that may approximate or explain reality. Due to problems with $\chi 2$ as a measure of fit, there is a need to consider other fit statistics of models (Keith, 2006). An absolute fit index, RMSEA assess how well a model reproduces the sample data without comparison to a reference model, whereas an incremental fit index like the CFI compares the target model to a more restricted baseline model (Hu & Bentler, 1999). A RMSEA value of .05 or below suggests that the model is a good fit, while values between .05 and .08 suggest an adequate fit. Values above .95 for the CFI suggest a good fit, while values between .90 and .95 suggest adequate fit. Model comparisons were conducted using $\chi 2$ difference ($\Delta \chi 2$) tests.

The symbols used in the models for the current study follow the typical standards for those used in SEM. See Figure 1 for an example. The variables enclosed in rectangles are measured items (i.e., the measures discussed in Chapter 3). The smaller circles, labeled e1, e2, and so on, are latent variables and represent disturbances, or all other influences on the outcomes other than those in the model. For each variable, this unique and error variance represents the portion of the measured variable not accounted for by the measured variables. Because unmeasured variables do not have a scale of measurement, one must be established in order to estimate the model. In this study, the

scale of measurement was established by setting the paths from the disturbances (i.e., e1, e2, etc.) to the measured variables to equal 1.0, which communicates to the SEM program that the latent variables should have the same scale as the measured variable (Keith, 2006, p. 255). The straight arrows, or paths, between the measured variables reflect the proposed influence of one variable on another. The curved, double-headed arrows reflect correlations between variables. These paths, which represent the hypothesized relationships among the variables, comprise the structural model.

Research Question 1

Research question 1 asked whether family messages (M) and family messages (F affected girls' depressive symptoms and whether that effect was mediated by girls' cognitions. It was hypothesized that family messages (M) and family messages (F) would directly affect both girls' cognitions and depressive symptoms pre-treatment after controlling for demographic variables (age and ethnicity). It was hypothesized that family messages (M) and family messages (F) would indirectly affect depressive symptoms via girls' cognitions. Finally, it was hypothesized that family messages (M) would have a larger effect on girls' cognitions and depressive symptoms than family messages (F). The path model with standardized results for Hypothesis 1 is presented in Figure 3.

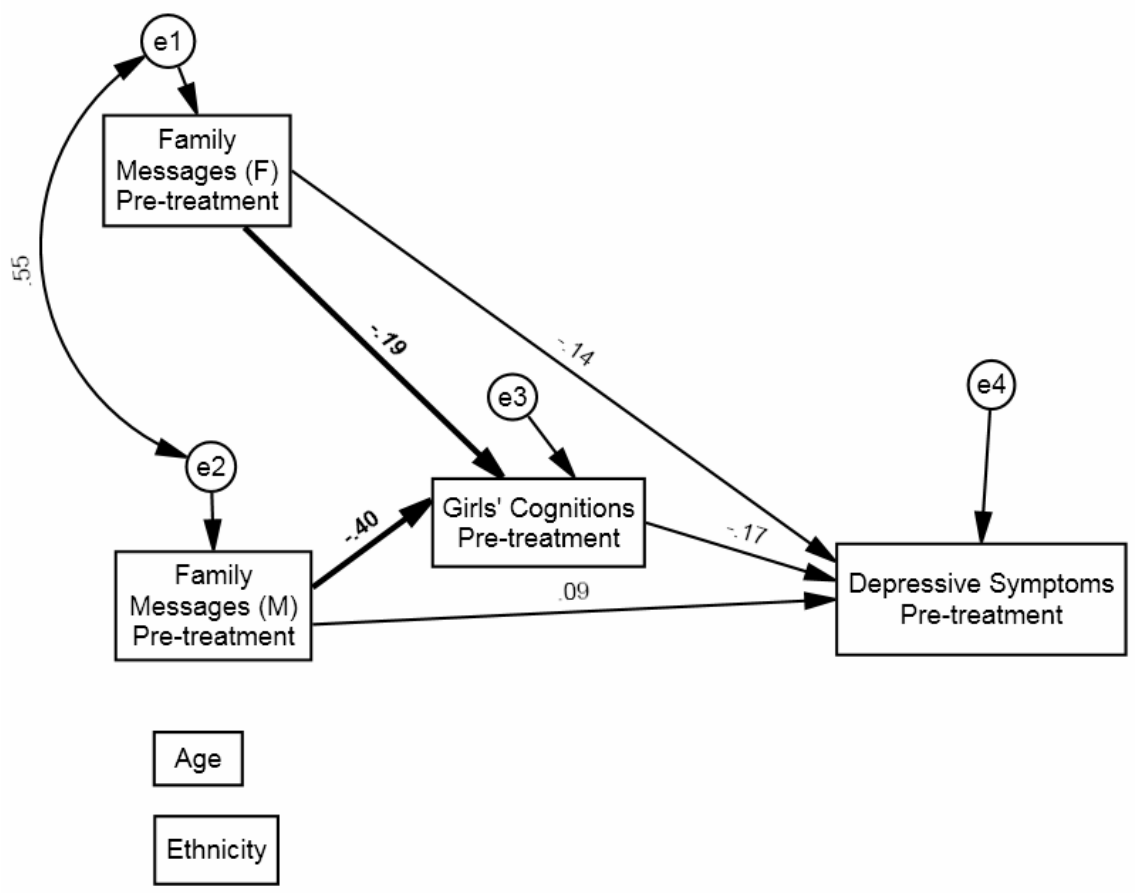


Figure 3. Path model with standardized estimates for hypothesis 1.

Note. Paths were drawn from demographic variables (age, ethnicity) to all variables and included in the model as control variables. These paths are not included in the current figure as the paths were not significant and are not paths of interest. Values shown are standardized estimates. Bolded paths denote statistically significant estimates.

Due to the number of parameters being freely estimated, the model had only one degree of freedom. With only one degree of freedom, the test of model fit is not particularly strong. Thus, indicators of the model's fit should be interpreted with caution. The χ^2 was not significant [χ^2 (1, N=151) =.794, n.s.], the RMSEA was below .05 (.000), and the CFI was acceptably large (1.0).

The model demonstrated significant negative effects from both family messages (M) and family messages (F) to the girls' cognitions. See Table 11 for a list of results for the paths of interest. The table lists the standardized coefficients (β), unstandardized coefficients (*b*), the standard error for the unstandardized coefficients (SE), and the probability associated with each coefficient (*p*).

Table 11

Regression Coefficients for Paths of Interest from the Model used in Research Question 1

Path	β	*b*	SE	*p*
Family Messages(F)→ Girls' Cognitions	-.186	-.266	.119	.026
Family Messages(F)→ Depressive Symptoms	-.144	-.149	.101	.141
Family Messages(M)→ Girls' Cognitions	-.396	-.595	.125	<.001
Family Messages(M)→ Depressive Symptoms	.095	.103	.112	.360
Girls' Cognitions→ Depressive Symptoms	-.172	-.124	.068	.070

Direct effects from all independent variables (family messages (M), family messages (F), and girls' cognitions) to the girls' depressive symptoms were non-significant. Indirect effects, calculated using the Sobel test, showed non-significant indirect effects from both the family messages (M; t=1.70, n.s.) and the family messages (F; t=1.41, n.s.) to the severity of the girls' depressive symptoms via the girls' cognitions.

Both paths from family messages to girls' cognitions were constrained to be equal to test if the difference in the significant negative path coefficient from family messages (M) to the girls' cognitions (b=-.595) was significantly larger than the significant negative path coefficient from the family messages (F) to the girls' cognitions (b=-.149). This resulted in a $\Delta\chi^2$ that was not statistically significant [$\Delta\chi^2$ (1, N=151) =2.35, p=.126], suggesting that the two paths were not significantly different.

The results of this analysis provide partial support to the original hypothesis. Part of the hypothesis, which indicated that family messages from parental figures would affect the girls' cognitions, was supported. However, the hypothesis that family messages and cognitions would affect girls' depressive symptoms, and that the effects from family messages (M) would be larger than family messages (F) was not supported.

Research Question 2

Research question 2 asked whether family messages (M) and family messages (F) changed from pre-treatment to post-treatment for all conditions. It was hypothesized that there would be a change in family messages (M) and family messages (F) from pre-treatment to post-treatment for all three conditions. It was further hypothesized that family messages (M) and family messages (F) would show greater change pre-treatment to post-treatment for girls in the CBT+PT condition.

Paired *t*-tests were conducted to determine the change in means from pre-treatment to post-treatment for each treatment condition. See Table 12 for results.

Table 12

Change in Perceived Family Messages Scores across all Three Conditions from Pre-treatment to Post-treatment

Group		Pre Treatment	Post Treatment	*t*	*df*
CBT only					
	Family Messages (F)	17.43 (8.46)	16.72 (10.58)	.457	45
	Family Messages (M)	15.69 (8.41)	12.73 (8.87)	2.478*	47
CBT+PT					
	Family Messages (F)	14.74 (8.72)	13.72 (10.88)	.813	42
	Family Messages (M)	13.64 (7.59)	11.98 (8.93)	1.337	43
MCC					
	Family Messages (F)	17.43 (9.65)	14.16 (8.66)	2.047*	43
	Family Messages (M)	14.74 (8.56)	15.51 (9.83)	-.710	42

Note. * = $p < .05$. Standard deviations appear in parentheses below means.

Results from the paired *t*-tests indicated a significant difference in the pre-treatment and post-treatment mean scores for the family messages (M) in the CBT-only condition. The girls in the CBT-only condition reported perceiving fewer negative messages from their maternal figures at post-treatment in comparison to their pre-treatment reports. There was also a significant difference in the pre-treatment and post-treatment mean scores for the perceived family messages (F) in the monitoring control

condition (MCC). Girls in MCC reported perceiving fewer negative messages from their paternal figures post-treatment. There were no other significant changes across the mean scores from pre-treatment to post-treatment. Paired *t*-test results only partially supported the hypothesis with only the family messages (M) in the CBT condition and the family messages (F) in the MCC condition showing significant change. The hypothesis that all conditions would demonstrate significant changes was not supported as CBT+PT did not demonstrate significant change in the paired *t*-test.

A repeated measures analysis of variance was conducted to investigate differences in the perception of family messages (M) and the perception of family messages (F) among the different treatment conditions. Results, presented in Table 13, showed nonsignificant main effects for treatment condition for both family messages (M), ($F(2,130)= .987$, $p=.375$), and family messages (F), ($F(2,128)=1.36$, $p=.261$). The Bonferroni post hoc test was conducted to determine if any of the conditions were significantly different. Results, presented in Table 14, revealed that none of the treatment conditions demonstrated a significant difference in family messages.

Table 13

Repeated Measures Analysis of Variance for Family Messages (M) and Family Messages (F) from Pre-treatment to Post-treatment

Measure	Effect	*SS*	*df*	*F*	*p*
Family Messages (M)					
	Treatment Condition	238.32	2	.987	.375
Family Messages (F)					
	Treatment Condition	359.91	2	1.36	.261

* $p < 0.05$

Table 14

Bonferroni Comparison between Conditions for Family Messages (M) and Family Messages (F)

Comparison of Conditions	Family Messages	Mean Score Difference	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
CBT v CBT+PT					
	M	1.40	1.62	-2.53	4.15
	F	2.84	1.73	-1.35	7.04
CBT v MCC					
	M	-.92	1.63	-4.88	5.62
	F	1.28	1.72	-2.89	5.45
CBT+PT v MCC					
	M	-2.32	1.67	-6.36	3.04
	F	-1.56	1.75	-5.80	2.67

Note. M= Family Messages (M), F= Family Messages (F) * $p < 0.05$

Results from the repeated measure analysis of variance did not support the original hypothesis that participants in the CBT+PT condition would demonstrate a greater change in perceived family messages (M) and family messages (F) than the CBT and MCC conditions.

Research Question 3

Research Question 3 asked how the type of treatment condition and family messages at post-treatment affected the girls' cognitions and depressive symptoms. It was decided that the perceived family messages from the parental figure with the larger standardized effect from the path model used in hypothesis 1, family messages (M), would be included for the current hypothesis. Therefore, at post treatment, it was hypothesized that both treatment conditions (CBT + PT and CBT-only) would show larger unstandardized path coefficients between family messages (M) and the girls' cognitive triad, and family messages (M) and their depressive symptoms, in comparison to the minimal contact control condition (MCC) while controlling for previous levels of these variables and demographic information. Further, it was hypothesized that girls participating in the CBT + PT condition would show a larger effect from family messages (M) on both the girls' cognitions and depressive symptoms than those who are participating in the CBT only and MCC conditions.

Results for the current hypothesis will be presented in three stages. First results of the freely estimated models for each treatment condition will be described. Then the multi-group analysis model will be analyzed for fit. Lastly, a model in which paths of interest will be constrained across all three conditions in order to determine if the specific

path coefficients are significantly different across conditions before the results will be summarized to determine how much the results supported the proposed hypothesis.

The freely estimated model for the CBT condition demonstrated a significant negative effect from family messages (M) to the girls' cognitions (see figure 4). Results also indicated a significant negative effect from the girls' cognitions to their depressive symptoms. See Table 15 for the multigroup analysis paths of interest on page 99. The direct path from the family messages (M) to the girls' depressive symptoms was not significant. The Sobel test was used to determine the presence of a statistically significant indirect effect of family messages (M) on the depressive symptoms via the girls' cognitions. Results indicated that the girls' cognitions significantly mediated the effect of family messages (M) on the depressive symptoms in the CBT condition (t= 2.03, p < .05).

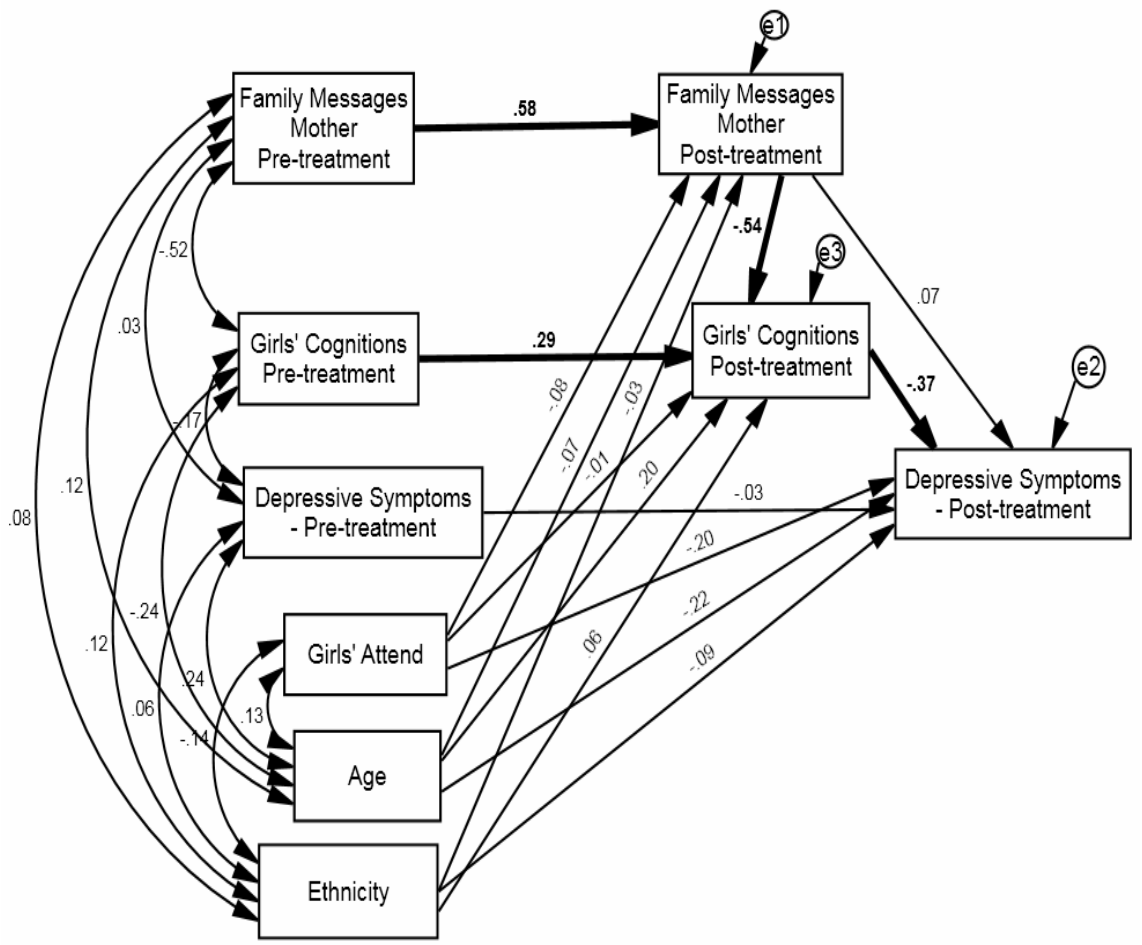


Figure 4. Freely estimated path model for CBT condition with standardized estimates from multi-group analysis for Research Question 3.

Note. Values shown are standardized estimates. Bolded paths denote statistically significant estimates.

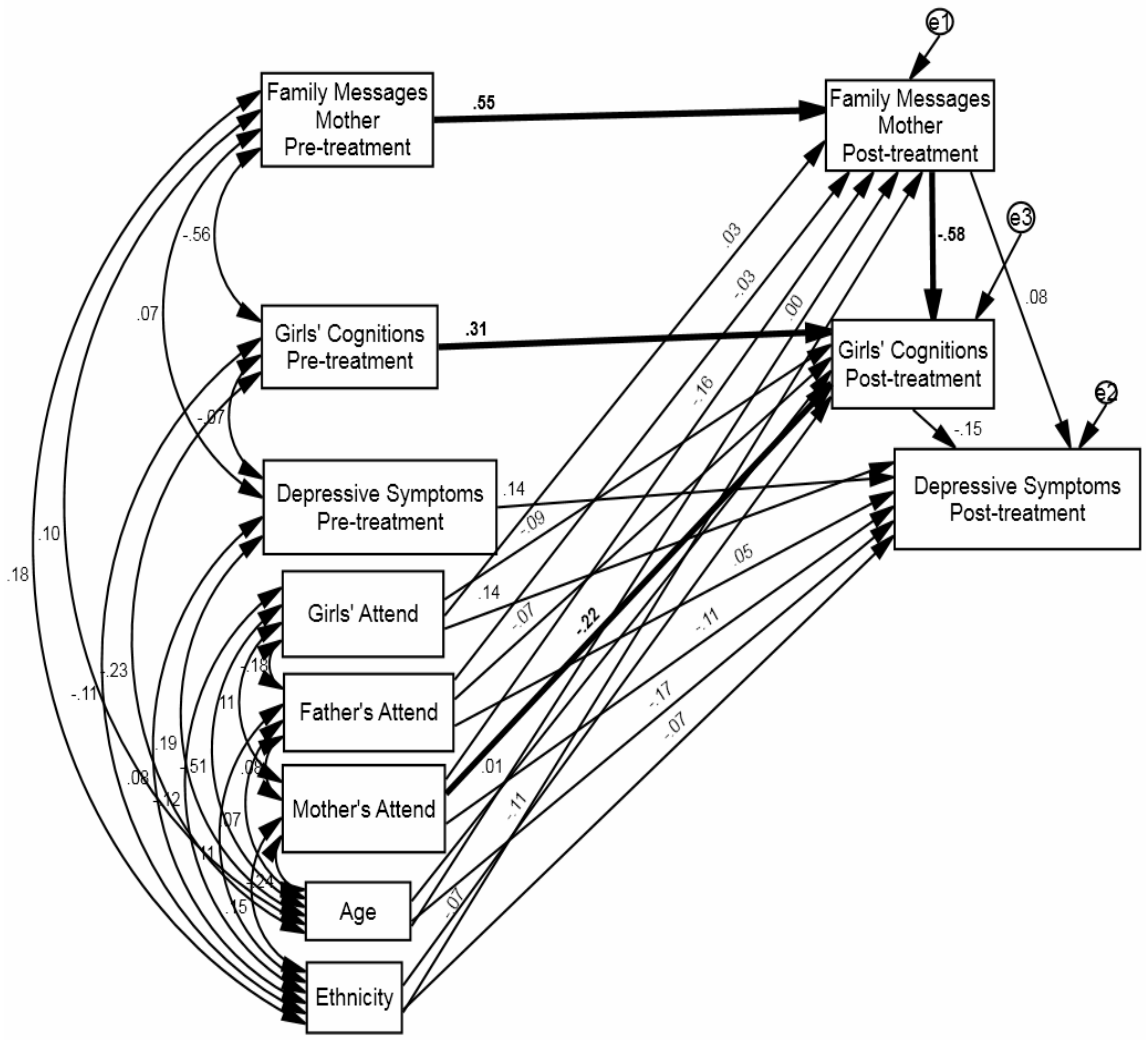


Figure 5. Freely estimated path model for CBT+PT condition with standardized estimates from multi-group analysis for Research Question 3.

Note. Values shown are standardized estimates. Bolded paths denote statistically significant estimates.

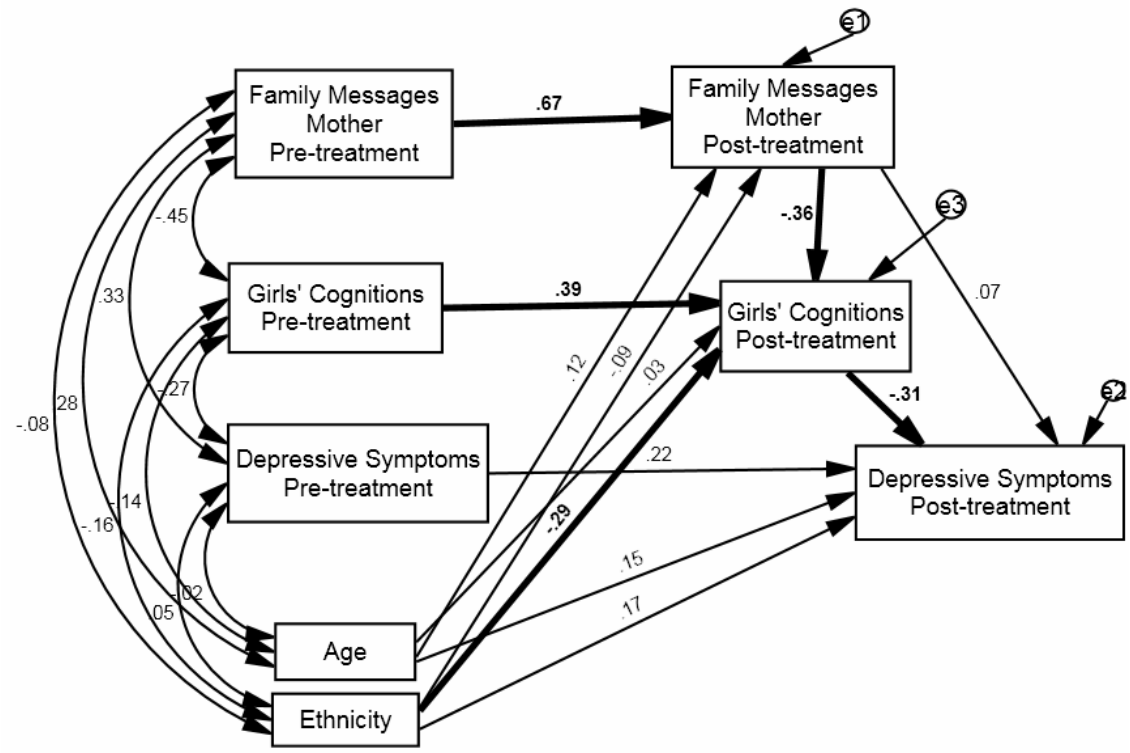


Figure 6. Freely estimated path model for MCC condition with standardized estimates from multi-group analysis for Research Question 3.

Note. Values shown are standardized estimates. Bolded paths denote statistically significant estimates.

Table 15

Regression Coefficients for Paths of Interest in Multigroup Model used in Hypothesis 3

Path	CBT-only			CBT+PT			MCC		
	β	*b*	SE	β	*b*	SE	β	*b*	SE
Girls' Attend.→									
FMM-M	-.07	-.42	.73	-.02	-.09	.62	-	-	-
CTI-C	-.01	-.80	.95	-.09	-.41	.48	-	-	-
Dep. Symptoms	-.20	-1.06	.67	.13	.48	.54	-	-	-
Mother's Attend.→									
FMM-M	-	-	-	-.16	-.52	.42	-	-	-
CTI-C	-	-	-	-.22	-.73*	.33	-	-	-
Dep. Symptoms	-	-	-	-.12	-.29	.38	-	-	-
Father's Attend.→									
FMM-M	-	-	-	-.02	-.06	.39	-	-	-
CTI-C	-	-	-	-.07	-.21	.30	-	-	-
Dep. Symptoms	-	-	-	.05	.12	.33	-	-	-
FMM-M →									
CTI-C	-.54	-.80**	.16	-.59	-.59**	.10	-.36	-.51*	.17
Dep. Symptoms	.08	.07	.14	.07	.05	.15	.07	.07	.17
CTI-C →									
Dep. Symptoms	-.36	-.22*	.10	-.16	-.12	.15	-.31	-.24*	.12

Note. * indicates $p<.05$, ** indicates values $p<.001$.

Results of the freely estimated model for the CBT+PT condition (figure 5) demonstrated a significant negative effect from mother's attendance to the girls' cognitions. This finding suggests that mothers' attendance at parent training sessions significantly affected girls' cognitions. The model showed non-significant paths from both family messages (M) and the girls' cognitions to the depressive symptoms. The Sobel test was used to determine the presence of a statistically significant indirect effect from family messages (M) to the depressive symptoms via the girls' cognitions. Results indicated that the girls' cognitions did not significantly mediate the effect of family messages (M) on the depressive symptoms (t= .76, n.s.).

A freely estimated model for the MCC condition (figure 6) demonstrated a significant negative effect from family messages (M) to the girls' cognitions. Results also indicated a significant path from the girls' cognitions to the depressive symptoms and a significant path from girls' ethnicity to girls' cognitions. The direct effect from the family messages (M) to the depressive symptoms was not significant. The Sobel test was used to determine the presence of a significant indirect effect from family messages (M) to the depressive symptoms via the girls' cognitions. Results indicated that the girls' cognitions did not significantly mediate the indirect effect of family messages (M) on the depressive symptoms (t= 1.63, n.s.).

The χ_2 for the multigroup model where all paths were freely estimated was non-significant [χ_2 (33, N=138) =40.57, p=.171], which indicated a good fit to the data. The RMSEA indicated a good fit (.040), and the CFI was acceptably large (.958), indicating that the model was a good fit to the data.

In order to test the differences in paths of interest across different conditions, certain paths (family messages (M) to depressive symptoms, family messages (M) to girls' cognitions) were constrained to be equal and the difference in χ^2 was examined. Each constraint was added and examined independently, and comparisons were made between two conditions at a time in order to better understand possible differences across conditions. First, a model where paths from family messages (M) to depressive symptoms in both the CBT condition and MCC condition were constrained to determine if there was a difference between the CBT treatment condition and the comparison group (MCC). The change in χ^2 was non-significant, indicating no significant difference in the effect size of that parameter between the two conditions. See Table 16 for results. A model with paths from family messages (M) to girls' cognitions in both the CBT condition and MCC condition were constrained to determine if there was a significant difference between the CBT treatment condition and the comparison group. The change in χ^2 was non-significant, indicating no significant difference in the effect sizes for family messages (M) to girls' cognitions between the two conditions.

Similar constraints were placed on the same paths to compare the CBT+PT model with the MCC model, as well as the CBT+PT versus the CBT model. For all model comparisons, the change in χ^2 was non-significant, indicating no significant difference in the effect sizes of those paths (family messages (M) to depressive symptoms, and family messages (M) to girls' cognitions) between the two conditions being compared.

Table 16

Change in χ^2 for Path Models with Constrained Paths of Interest

Model	Path Constrained	$\Delta \chi^2$	*df*	*p*
CBT v. MCC	Family Messages (M) →Depr. Symp.	.001	1	.270
CBT v. MCC	Family Messages (M) → Cognitions	1.215	1	.974
CBT+PT v. MCC	Family Messages (M) →Depr. Symp.	.010	1	.734
CBT+PT v. MCC	Family Messages (M) → Cognitions	.115	1	.922
CBT+PT v. CBT	Family Messages (M) →Depr. Symp.	.005	1	.327
CBT+PT v. CBT	Family Messages (M) → Cognitions	.960	1	.945

Results from the analyses conducted for Research Question 3 do not support the proposed hypothesis that at post treatment, both treatment conditions (CBT + PT and CBT-only) would show larger standardized path coefficients between family messages (M) and the girls' cognitive triad, and family messages (M) and their depressive symptoms in comparison to the maintenance control condition (MCC). Although differences in standardized path coefficients were evident across the three conditions, comparisons of the models with constrained paths indicated the differences of the paths of interest (family messages (M) to girls' cognitive triad; family messages (M) to depressive symptoms) were not statistically significant.

Supplemental Analyses

The main analyses demonstrated some support for select research hypotheses. Results indicated a significant relation between select independent variables (perceived family messages (M) and family messages (F)) with the girls' cognitive triad at pre-treatment. Similarly, both the CBT and MCC conditions demonstrated significant relations between girls' cognitive triad and their depressive symptoms at post-treatment. However, several hypotheses were not supported through the main analysis results, thus supplemental analyses for each research question were conducted to better understand and extend findings for the relation between the variables, data, and proposed hypotheses.

Supplemental Analysis for Research Question 1

The main analysis results for Research Question 1 only partially supported the original hypothesis through the significant effect from both family messages (M) and family messages (F) to girls' cognitions. It did not demonstrate significant relations between the girls' cognitive triad and their depressive symptoms, as earlier hypothesized. The supplemental analysis for Research Question 1 was aimed at better understanding why certain paths in the model that were significant in previous research (Stark, et al., 1996) were not significant in the current study.

All of the participants included in the sample for Research Question 1 were identified due to a diagnosis of depression, and thus, represented a relatively restricted sample of girls in the early adolescent age range. In order to further test the suggested model on a less restricted sample of participants, 49 girls within the same age range who volunteered to participate in the study as a control sample were included in the

supplemental analysis sample, creating a larger sample of 200 girls. These volunteers better represented the normal population within the selected age range, as they were not restricted to the inclusion criterion of having a diagnosis of depression and were not recruited to participate in the treatment. For information regarding the volunteers' demographic information, see Table 17. It was hypothesized that including these participants in the sample would create a more normal distribution, which would provide a better sample to test the original hypothesis in Research Question 1.

Table 17

Child Demographic Variables for Voluntary Sample of 49 Girls

Variable	n	Percent
Age		
9	5	10.2
10	11	22.4
11	14	28.6
12	10	20.4
13	7	14.3
14	2	4.1
Grade		
4	3	6.1
5	17	34.7
6	10	20.4
7	18	36.7
8	1	2.0
Ethnicity		
White Non Hispanic	6	12.2
White Hispanic	22	44.9
African American	9	18.4
Asian	2	4.1
American Indian	0	0.0
Multi-Racial	8	16.3
Unknown	1	2.0

Table 17 (continued)

Variable	n	Percent
Primary Diagnoses		
Major Depressive Disorder	3	6.1
Generalized Anxiety Disorder (GAD)	1	2.0
Eating Disorder	1	2.0
Panic Disorder	1	2.0
Specific Phobia	2	4.1
Oppositional Defiant Disorder (ODD)	1	2.0
Attention Deficient Disorder	1	2.0
Dysthymia Disorder	1	2.0
Other	3	6.1
No Diagnosis	35	71.4

The path model with the new sample of 200 girls showed significant negative effects from both family messages (M) and family messages (F) to the girls' cognitions. See Table 18 for a list of results for the paths of interest and figure 5 for the path model. The negative path coefficient from family messages (M) to the girls' cognitions (*b*=-.665) was larger than the negative path coefficient from the family messages (F) to the girls' cognitions (*b*=-.367). Both paths from family messages to girls' cognitions were constrained to be equal to test if the difference in the effects was significant. This resulted in a $\Delta \chi^2$ that was not significant [$\Delta\chi^2$ (1, *N*=200) =2.49, p=.115], suggesting that the path coefficients were not significantly different from each other. A significant negative effect (β=-.452) from girls' cognitions to the severity of their depressive symptoms was also

present. Direct effects from both family messages (family messages (M), family messages (F)) to the girls' depressive symptoms were non-significant. The indirect effects, calculated using the Sobel test, showed significant indirect effects from both the family messages (M; t=4.17, p<.05) and the family messages (F; t=3.00, p<.05) to the severity of the girls' depressive symptoms via the girls' cognitions.

Table 18

Regression Coefficients for the Paths of Interest from the Path Model with Volunteers Included in Sample

Path	β	*b*	SE	*p*
Family Messages(F)→ Cognitions	-.245	-.367	.104	>.001
Family Messages(F)→ Depressive Symptoms	.013	.017	.105	.141
Family Messages(M)→ Cognitions	-.421	-.665	.109	>.001
Family Messages(M)→ Depressive Symptoms	-.011	-.015	.115	.360
Cognitions→ Depressive Symptoms	-.452	-.395	.069	>.001

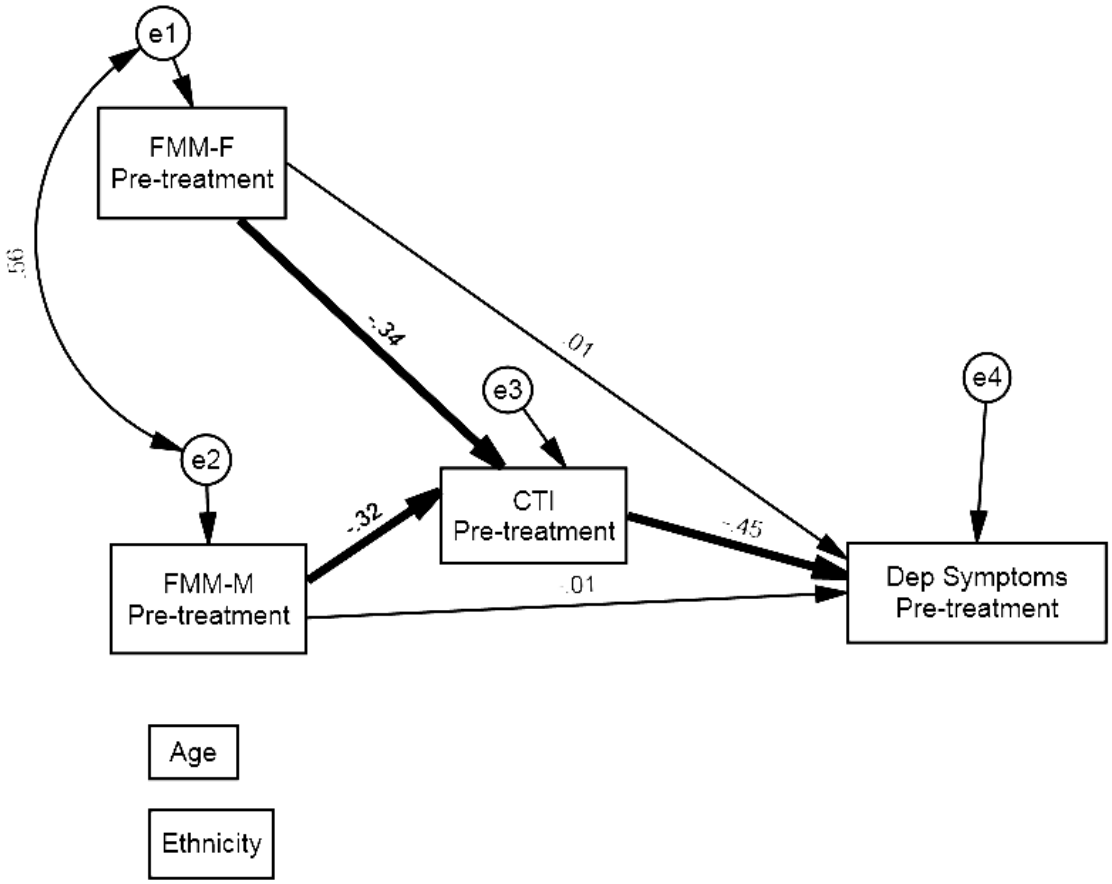


Figure 7. Path model with standardized estimates for supplemental analysis for hypothesis 1.

Note. Paths were drawn from demographic variables (age, ethnicity) to all variables and included in the model as control variables. Values shown are standardized estimates. Bolded paths denote statistically significant estimates.

As noted previously in the main analysis, having only 1 degree of freedom in the model is not a particularly strong fit. The χ^2 for the path model was non-significant [χ^2 (1, *N*=200) =1.59, p=.207], the RMSEA indicated an acceptable fit (.054), and the CFI was acceptably large (.997).

The results of this supplemental analysis provided additional support to the original hypothesis. The hypothesis that family messages from parental figures would affect the girls' cognitions was supported when the sample was less restrictive. Similarly, the hypothesis that girls' cognitions would significantly mediate the relation between family messages and depressive symptoms was supported. However, the hypothesis that family messages would directly affect depressive symptoms, and that the effects from family messages (M) would be larger than family messages (F) was still not supported with the larger and more normally distributed sample.

Supplemental Analysis for Research Question 2

The results in the main analyses for Research Question 2 did not indicate that the CBT+PT condition demonstrated hypothesized significant change in perceived family messages. Parent attendance for the CBT+PT parent training sessions varied. Parents who did not attend all sessions could not benefit from receiving full treatment, and therapists reported that the lack of parent attendance affected the participants who still attended the PT sessions without their parents present. Previous research examining differences in treatment conditions and outcomes using the same data as the current study indicated that significant treatment gains across time in the CBT+PT condition were evident for

participants whose parents attended six or more of the eight parent training sessions (Krumholz, 2010).

When the CBT+PT attendance was examined, there were 23 participants from the CBT+PT group of 43 participants that had either one or two parents who attended at least 6 or more sessions of the parent training. Supplemental analyses were conducted with the CBT+PT condition including only these 23 participants in order to explore how girls with parents who attended a majority of the parent training sessions demonstrated change in their perceptions of family messages from pre-treatment to post-treatment.

Results of a paired *t*-test, listed in Table 19, for the select 23 participants indicated a significant change in perceived family messages (M) and perceived family messages (F).

Table 19

Change in Perceived Family Messages Scores for Participants with 6 or More PT Attendance from Pre-treatment to Post-treatment

Group		Pre Treatment	Post Treatment	*t*	*df*
CBT+PT					
	Family Messages (F)	13.32 (8.46)	11.23 (8.34)	2.173*	21
	Family Messages (M)	12.22 (6.47)	9.87 (6.29)	2.191*	22

Note. * = $p < .05$. Standard deviations appear in parentheses below means.

A repeated measures analysis of variance was also conducted to investigate differences in the perception of family messages (M) and the perception of family messages (F) among the different treatment conditions, with the CBT+PT condition including only the 23 participants. Results, presented in Table 20, showed nonsignificant main effects for treatment condition for both family messages (M), ($F(2,111)= 2.197$, $p=.116$), and family messages (F), ($F(2,109)=2.835$, $p=.063$). Bonferroni post hoc tests were conducted to determine whether the conditions had significantly different changes in family messages. Results, presented in Tables 19, revealed that none of the treatment conditions demonstrated a difference in perceived family messages.

Table 20

Repeated Measures Analysis of Variance for Family Messages (M) from Pre-treatment to Post-treatment

Measure	Effect	*SS*	*df*	*F*	*p*
Family Messages (M)					
	Treatment Condition	514.08	2	2.197	.116
Family Messages (F)					
	Treatment Condition	690.73	2	2.835	.063

* $p < 0.05$

Table 21

Bonferroni Comparison between Conditions for Family Messages (M) and Family Messages (F)

Comparison of Conditions	Family Messages	Mean Score Difference	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
CBT v Subsample CBT+PT					
	M	3.17	1.94	-1.55	7.88
	F	4.80	2.02	-.115	9.72
CBT v MCC					
	M	-.92	1.61	-4.82	2.98
	F	1.28	1.65	-5.28	2.72
Subsample CBT+PT v MCC					
	M	-4.08	1.98	-8.89	.72
	F	-4.80	2.02	-9.72	.115

Note. M= Family Messages (M), F= Family Messages (F) * $p < 0.05$

Results from the supplemental repeated measures analysis of variance for Research Question 2 did not provide any further support for the original hypothesis that the CBT+PT condition would demonstrate a greater change in family messages (M) and family messages (F) than the other conditions even though the subsample in the supplemental analysis included only those girls from the CBT+PT condition whose parents attended more than 6 parent training sessions.

Supplemental Analysis for Research Question 3

As noted above, previous findings about parent attendance from research using the same data (Krumholz, 2010) indicated significant gains for the CBT+PT participants whose parents attended 6 or more parent training sessions. Based on this research, the purpose of the supplemental analysis for Research Question 3 was to test for a possible differential effect. Data regarding parent attendance in the CBT+PT condition were coded into two new groups: those participants whose parents attended 6 or more sessions, and those participants whose parents attended 5 or fewer sessions. This new dichotomous variable was used to further examine the relations between the variables of interest post-treatment in the CBT+PT condition.

The first possible differential effect of interest was the differential effect of parent attendance at 6 or more sessions on the effect of family messages (M) on girls' cognitions. Scatterplots were first conducted to visually examine how parent attendance at 6 or more sessions interacted with the relation between family messages (M) and girls' cognitions. See Figure 6 for a scatterplot demonstrating the interaction of parent attendance with the relation of family messages (M) on girls' cognitions.

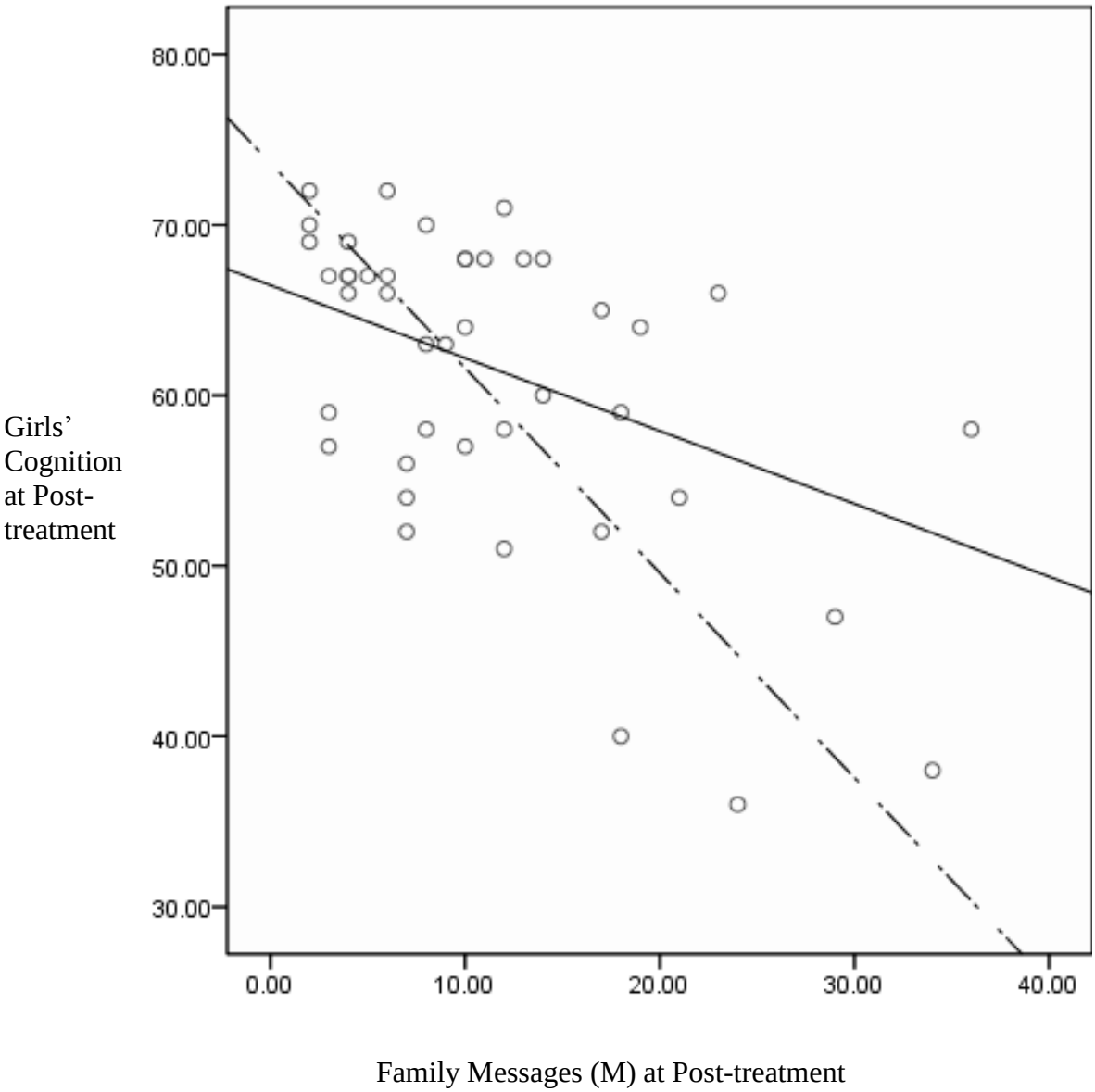


Figure 8. Scatterplot with the interaction of parent attendance with the effect of family messages (M) on girls' cognitions.

Note. Dashed line indicates regression line for participants with parents attending 6 or more sessions. Solid line indicates regression line for participants with parents attending 5 or fewer sessions.

The interaction was examined in a regression model where girls' cognitions was first regressed on family messages (M) and the dichotomous parent attendance variable. Next, the family messages variable was centered and a cross-product term (family messages x parent attendance) was added to the model to test the possible interaction between family messages and parent attendance in their effects on girls' cognitions.

Together, family messages (M) and parent attendance accounted for 3.47% of the variance in the girls' cognitions (F [1,45]=.305, p=.584). The interaction of family messages (M) and parent attendance was statistically significant (ΔR^2= .101, F [1,45]=7.166, p<.05), suggesting that family messages (M) does not have the same effect on girls' cognitions for girls' whose parents attended more than 6 sessions versus girls whose parents attended fewer than 6 sessions of parent training.

A second possible differential effect of interest was the differential effect of parent attendance at 6 or more sessions on the effect of girls' cognitions on girls' depressive symptoms. Scatterplots were first conducted to visually examine how parent attendance at 6 or more sessions interacted with the relation between girls' cognitions and girls' depressive symptoms. See Figure 7 for a scatterplot demonstrating the interaction of parent attendance with the effect of girls' cognitions and girls' depressive symptoms.

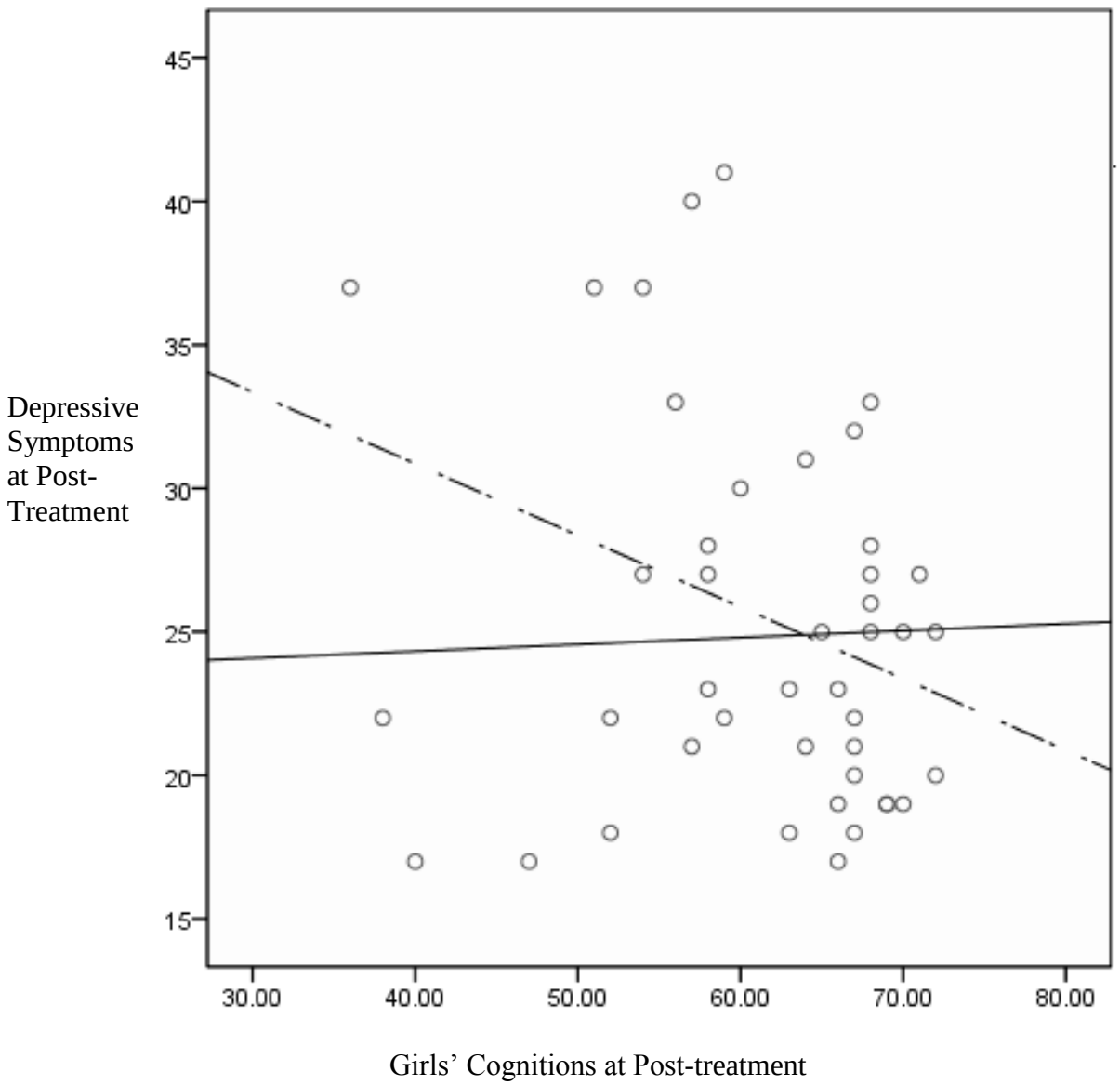


Figure 9. Scatterplot showing the interaction of parent attendance with the effect of girls' cognitions and girls' depressive symptoms

Note. Dashed line indicates regression line for participants with parents attending 6 or more sessions. Solid line indicates regression line for participants with parents attending 5 or fewer sessions.

The interaction was examined in a regression model where girls' depressive symptoms was first regressed on girls' cognitions and the dichotomous parent attendance variable. Next, the girls' cognitions variable was centered, and a cross-product term (girls' cognitions x parent attendance) was added next to the model to test the possible interaction between girls' cognitions and parent attendance in their effects on girls' depressive symptoms.

Together, girls' cognitions and parent attendance accounted for .037% of the variance in the girls' depressive symptoms (F [1,45]=.003, p=.718). The interaction of girls' cognitions and parent attendance was not statistically significant (ΔR^2= .034, F [1,45]=1.446, p=.236), suggesting that girls' cognitions have the same effect on girls' depressive symptoms regardless of how many sessions of parent training the parents attend.

The supplemental analyses for Research Question 3 provided some pertinent information about how the parents' attendance to the parent training sessions interacted with the model. Specifically the supplemental analyses identified an interaction that may interfere with the level of significance the paths of interest in the CBT+PT freely estimated model in Research Question 3.

Overall, the supplemental analyses for each research question provided additional information to better understand the data. The supplemental analysis for Research Question 1 demonstrated a significant relation between the girls' cognitions and their depressive symptoms and a significant indirect relation between family messages and girls' depressive symptoms via the girls' cognitions. Supplemental analyses for Research

Question 2 while not proving significance, did demonstrate a possible subsample to investigate in the CBT+PT condition. Finally, supplemental analyses for Research Question 3 identified a significant interaction between parent attendance to six or more sessions of parent training and the relation between family messages and girls' cognitions.

CHAPTER 5

Discussion

This study investigated a proposed model for the development and maintenance of childhood depression, in which perceived family messages affect the severity of girls' depressive symptoms both directly and indirectly via the girls' own cognitive triad. The study aimed to expand research on depression in early adolescent girls and provide a better understanding of how different types of treatment would affect the proposed model.

Summary of Results

There were three main hypotheses: (1) girls' perceptions of family messages from mothers, and perceptions of family messages from fathers would directly and indirectly affect girls' depressive symptoms via the girls' cognitive triad, (2) there would be a change in the perception of family messages in all treatment conditions (CBT, CBT+PT, MCC) from pre-treatment to post-treatment, with the CBT+PT condition showing the most significant change after treatment, and (3) the CBT+PT condition would demonstrate the largest effects for the effect of the girls' perceptions of family messages on the girls' cognitions, and the effect of the girls' perceptions of family messages on the severity of girls' depressive symptoms. It was also hypothesized within the first hypothesis that family messages from mothers would display a larger effect on the girls' cognitions and depressive symptoms in comparison to family messages from fathers.

Results for the main analyses provided several significant findings. First, results demonstrated that girls' perception of family messages significantly affected the girls' cognitive triad. For the CBT and MCC treatment conditions, the girls' perception of

family messages significantly indirectly affected the girls' depressive symptoms via the girls' cognitive triad at post-treatment. However, family messages had no direct effect on the severity of girls' depressive symptoms and there were no significant differences between the effects of family messages from mothers compared to family messages from fathers. The hypothesis that all conditions would demonstrate significant changes in family messages from pre-treatment to post-treatment was not supported as the CBT+PT condition did not demonstrate significant change in family messages. Similarly, there were no significant differences in effects from family messages (M) on both the girls' cognitions and depressive symptoms among the treatment conditions.

Supplemental analyses for all research questions were conducted in order to explore possible reasons as to why several hypotheses were not statistically supported. For Research Question 1, a small sample of voluntary participants was added to the original sample size in order to create a more normal distribution of participants. This addition of voluntary participants to the pre-treatment sample of depressed girls allowed for a significant relation between girls' cognitions and depressive symptoms and a significant indirect relation between both family messages from mothers and family messages from fathers to girls' depressive symptoms via girls' cognitions at pre-treatment. Supplemental analyses for Research Questions 2 and 3 focused on exploring the CBT+PT condition in order to better understand why it was not demonstrating significant changes in family messages and significant paths in the proposed model. Recent research using the same data highlighted the importance of exploring the effects of parent attendance on treatment outcomes for the participants in the CBT+PT condition (Krumholz, 2010), which influenced the decision to examine the effect of parent

attendance on changes in family messages and the proposed model. Participants whose parents attended a majority (6 or more sessions) of the PT sessions displayed a significant change in family messages and a larger effect of perceived family messages from mothers on girls' cognitions in comparison to participants whose parents attended less PT sessions. Several key findings emerging from the study's results are next explored.

Overview of Key Findings

Role of Girls' Cognitions

Girls' cognitions play an essential role in the proposed model tested in this study. For all analyses examining the proposed model, the girls' perception of family messages from both mothers and fathers significantly affected the girls' cognitive triad. Specifically, the messages the girls perceived their mothers and fathers presented about the self, world, and future affected the girls' own views of the self, world and future. This significant effect was evident in both pre-treatment and at post-treatment assessment (for family messages from mothers) across all treatment conditions. The proposed model confirmed that perceived family messages affect daughters' interpretations and beliefs regarding the self, world, and future. This finding provides further support to previous research exploring the relation between the family messages girls receive and girls' development of their own views and cognitions (Alloy et al., 2001; Stark et al., 1996).

Further, the girls' cognitive triad played an important mediating role in the relation between family messages and the severity of the girls' depressive symptoms. The research found that family messages did not have a direct effect on girls' depressive symptoms. However, family messages affected the girls' depressive symptoms indirectly via the girls' cognitive triad in the CBT condition, MCC condition and the supplemental

analyses completed for the expanded pre-treatment sample. This indicates that the girls' thoughts on the self, world, and future mediate the relation between their perceptions of messages they receive from their parents and the severity of their own depressive symptoms. These findings are consistent with Beck's theory of cognitive vulnerability to depression. Such results provide further support for the previously reported research indicating that girls are sensitive to interactions with their family environment (Compton, et. al., 2003), as well as girls having strong relations between maladaptive cognitions and depressive symptoms (Hankin & Abramson, 2002).

Findings demonstrating the critical role of the cognitive triad provide further support for Beck's diathesis-stress theory of depression (Beck, 1967, 1983; Kovacs & Beck, 1978). Beck emphasizes cognitive structures as critical elements in the development and maintenance of depression. Further, in Beck's theory, schemata are developed from interactions with the environment, primarily during childhood. Results from the current dissertation support aspects of this theory. It appears that the messages the girls perceived from their family (environment) may have influenced how the girls formed schema for related situations. The current findings suggest that the family messages appear to affect the origins of cognitive styles. This lends evidence to previous research suggesting that a possible process through which children ultimately develop depression is through interactions with others and the associated the development of a depressogenic style of thinking (Stark, et al., 1996, Alloy, et. al., 2001). The current study provides information about how the messages the girls perceive from their family can contribute to a negative cognitive triad, which then influences the girls' development of depressive symptoms.

It is important to consider that the measure used to capture family messages (FMM) was administered to the participants about their perceptions of the family messages they receive from their mother or father about the self, world, and future. Thus, it is possible that the participants' own cognitions about the self, world, and future may have influenced how they perceived the messages they received from others in their environment. For example, if an adolescent is already experiencing negative thoughts about herself or the world around her, and an adult in her environment makes a neutral comment within a certain context, it is possible that the adolescent could interpret that neutral message in a negative fashion. Still, previous research on this reverse hypothesis determined that the relationship between perceived family messages and children's cognitive triad was not due to their depressive symptoms (Stark, et al., 1996).

The importance of girls' cognitions not only reinforces previous research (Stark, et al., 1996; Alloy, et al., 2001), but also provides suggestions for future treatment. Specifically, the role of how adolescents think about the self, world, and future should be considered when planning effective treatments that lessen depressive symptoms in adolescents through cognitive restructuring skills within the child treatment and include a strong parent training component. The findings reinforce that treatment for youth depression should include a cognitive component in order to restructure negative cognitions, and that the inclusion of a parent component to child treatment focusing on skills training and positive communication skills could be beneficial in diminishing the negative cognitions that girls develop. Thus, to maximize treatment effects, it may be necessary to address parental and family issues within treatment (Kazdin & Weisz, 1998) specifically as they relate to altering cognitive constructs (Stark et al., 2000). Child

treatment should provide the adolescent with education about the cognitive component of depression and allow time within session for the adolescent to work on restructuring negative thoughts. Parent components should focus on increasing the parents' awareness of their role in the adolescent's life and development and provide parents with skills training on how to model appropriate thoughts, and reinforce the skills the adolescent is learning in treatment, with the specific goal of altering cognitive constructs. This type of integrative intervention should create a larger support for the adolescent in adhering to skills practice outside of treatment.

Further research is needed to clarify and extend the findings related to the important role of cognitive triad. To better understand the specific mediating role of the cognitive triad in the relation between family messages and depressive symptoms, it may be helpful to explore the subscales of the CTI-C. A better understanding of how the subscales focusing on cognitions related to the self, cognitions related to the world, and cognitions related to the future mediate the relation between family messages and the severity of depressive symptoms would be beneficial to conceptualizing depression and planning effective treatment. This knowledge could provide clinicians with a sense of which messages, whether about the self, world, or future, to target within parent training sessions and which cognitions have the strongest connection with depressive symptoms to target within the child treatment.

Further, it would be beneficial to attempt to reproduce similar findings using a different measure of family messages or family environment. As previously mentioned, it would be interesting to explore this relation with a more objective rating of family

messages or environment. This would eliminate the possible distortion that could be in place as the depressed participants are the ones reporting their perceptions of the messages and it is unclear if those are accurate or distorted perceptions of the messages they are receiving from family figures. Having a more objective understanding of the messages provided by family members would allow researchers to have a better sense of the effect of family messages on the development of girls' cognitions and depressive symptoms. These types of extensions of the research would provide more clarification and support for the significant mediating role of the girls' cognitive triad in the relation of family messages and the girls' depressive symptoms.

Importance of Parent Attendance

No significant differences in the effects of interest (family messages on girls' cognitions; family messages on depressive symptoms) were evident among the different treatment conditions (CBT, CBT+PT, MCC). As previously mentioned, it was expected that the CBT+PT condition would demonstrate greater effects from the family messages as the parents were expected to attend PT sessions to provide additional support for the participants. To better understand the unexpected insignificant results, supplemental analyses focused on looking at parent attendance as a possible influence on the CBT+PT condition's post-treatment outcomes. Recent research using the same data demonstrated that parent attendance at PT meetings explained the rate of change of girls' depressive symptoms over time (Krumholz, 2010). While girls whose caregivers attended the majority of PT meetings on average had a slight increase in depressive symptoms following post-treatment, they generally experienced a decline in depressive symptoms as time progressed. In contrast, girls whose caregivers attended fewer PT meetings on

average experienced a slight decrease initially in depressive symptoms, but then generally suffered an increasingly greater rise in depressive symptoms over time with each additional meeting the caregivers were unable to attend (Krumholz, 2010).

A similar breakdown of parent attendance was used in the current study to explore how it affected the proposed model of depression. Results indicated that parent attendance interacted with the effect of family messages from the mother on girls' cognitions. The relation between family messages and the girls' cognitive triad depended on the parents' attendance at the PT sessions. Specifically, when parents attended most (6 or more) of the PT sessions, there was a stronger effect from the perceived family messages (M) on the girls' cognitions. It is possible that for participants whose parents attend fewer (5 or less) PT sessions, a meta-message is sent to the daughter that lessens the relation between her perceived family messages and her own thoughts about the self, world, and future. It is important to consider that the parent component for the treatment was designed as a hybrid of traditional parent training and cognitive-behavioral family therapy with the participants attending half of the small group PT meetings (i.e., every other week). For those participants whose parents attended less than a majority of the sessions, there are several different meanings the participants can create for the parents' lack of attendance at the majority of the sessions.

The idea of a meta-message stems from Bateson's (1951) concept of different levels or functions of communication. He explored the concept of metacommunication, and the nonverbal process that occurs in addition to verbal communication. According to Bateman, there is a difference between verbal messages and nonverbal messages. No

research exploring the concept of meta-messages and treatment participation was found. However, a proposed example of how this concept might influence treatment is as follows: if parents give a verbal message, “You are important,” and attend PT sessions, that may provide the adolescent with the same nonverbal (or meta) message, “You are important.” However, if parents give the verbal message, ”You are important,” and do not attend the PT sessions consistently, the nonverbal or meta communication may be perceived to be, “You are not important” which lessens the importance of the verbal communication.

It is likely that the parents’ failure to attend most of the parent training sessions sends a nonverbal message to the adolescents that the adolescents’ treatment, health, and self are not important enough for the parents to make the commitment to attend all of the PT sessions. Inconsistent attendance may also suggest to the participant that the parents do not believe in the treatment which undermines the participant’s belief in treatment and therefore undermines treatment itself. Another powerful interpretation for the participant (who already has a negative outlook) is that her parents do not care about her. The daughter may read her parents’ lack of participation as her parents caring more about work or the other obligations that are keeping them from the attending all of the PT sessions. This meta-message then affects the girls’ perceptions of family messages causing the messages to become less influential on the girls’ own views of the self, world, and future. It is also possible that the parents who attend fewer PT sessions are less involved or engaged in the girls’ everyday life, thus having less of an effect on their cognitive development. These findings provide more evidence for the importance of metacommunication and suggest clinicians must pay close attention to

metacommunication that can occur within family systems. It is important for clinicians to discuss the need for consistent parent attendance in such sessions, and inform parents about the metamessages a lack of attendance can send to the adolescents.

Currently, there is insufficient evidence to conclude whether the involvement of family in girls' treatment for depression has added benefits as parent components in treatment have rarely been incorporated into clinical research studies of treatment for child and adolescent depression (Sander & McCarty, 2005). While the inclusion of primary caregivers in treatment seems beneficial, it is unclear whether parental involvement in youth's depression treatment yields significant additional benefits beyond those gained by solely treating youth with depression (Sander & McCarty, 2005). The current research demonstrated the connection between family messages and the girls' cognitions. This influence from family, specifically parents, is important to consider when planning child treatment and begs for the consideration of a family or parent component. Further, the current study demonstrated that the addition of a parent component is not sufficient in demonstrating significant change, and the importance lies within encouragement of and increased parent attendance and adherence to the PT sessions.

In order to successfully provide treatment for children with an added parent component, it is critical to focus treatment on skills built around restructuring distorted cognitions and providing children with appropriate verbal and nonverbal messages. The current study's findings demonstrated the importance of parent attendance in order to make significant strides in treatment related to the relation between changing family

messages and girls' cognitions. When parents attend a majority of the PT sessions, the connection between family messages and girls' cognitions becomes stronger. Regular attendance provides the parents with more opportunities to affect the girls' cognitions in a positive manner and demonstrate a good model for participating in treatment and practicing those skills outside of treatment. Further, consistent parent attendance allows the verbal and nonverbal communication within the family to become more aligned for girls. Clinicians need to consider all possible barriers to parent attendance and actively work to reduce those barriers. Parents must be encouraged to attend all parent training sessions in order to gain the most effective experience from the family component.

In order to increase appropriate support for the child outside of treatment, it is critical that parents attend PT sessions not only to gain knowledge and understanding of the skills adolescents are building but also to model the value that attending and adhering to treatment is necessary for positive treatment outcomes. Most evidence-based treatments for youth are directive, skills-based approaches that require active child and primary caregiver attendance throughout the course of treatment (Nock & Ferriter, 2005). Parents who consistently attend PT sessions learn skills to provide support for their child and send an important metamessage about the importance of both the child and the treatment.

It is important to note a limitation within the current study's exploration of parent attendance and how it affects different proposed relations within the model. Additional recoding of the parent attendance variable allowed for the creation of a dichotomous variable of parents who attended a majority (6 or more of the 8 sessions) of the PT

sessions in comparison with parents who attended five or less of the PT sessions. The dichotomous variable was created and the analysis was conducted based on the results from previous research using similar data (Krumholz, 2010); however, it would be interesting to explore the relationship of the continuous raw data of PT attendance and the effects of interest. Examining the continuous data of PT attendance would perhaps demonstrate a better understanding of the minimum number of sessions needed to demonstrate an effect on the family messages and girls' cognitions relation. More specifically, it could inform future research and treatment planning by demonstrating the appropriate dose of PT needed to affect treatment outcomes for family messages, girls' cognitions, and depressive symptoms.

Future research should extend the current examination of parent attendance in several ways. Although attendance is an essential aspect of psychotherapy, there are few controlled, clinical trials that have assessed techniques for enhancing attendance in child treatment. Based on a review of current studies evaluating attendance enhancing strategies (Nock & Ferriter, 2005), it is important that additional research continues to identify key factors that predict and explain treatment attendance and that additional research involves the development and evaluation of approaches to enhancing treatment attendance. In a study examining parents' beliefs about treatment credibility and effectiveness on subsequent treatment participation, Nock, Ferriter, & Holmberg (2007) found that beliefs parents have about treatment very early on in the process can have a significant impact on treatment participation and outcomes. This suggests that future adherence to treatment and attendance can be influenced by initial experiences and sessions. It may also be beneficial to explore the necessary number of sessions required

to effectively provide parents with the needed skills to ensure higher attendance. Having a better understanding of how many sessions are sufficient to create an appropriate dosage effect will help establish more meaningful and efficient parent training treatments. As a result, clinicians will be able to save money by holding less sessions and planning more effective sessions; while parents will have less sessions to fit into their busy schedules; and child participants will benefit because parents will hopefully attend more (if not all) sessions.

Influence of Mothers versus Fathers

Another interesting, albeit non-significant, result from the current study is the possible parent gender differences between the family messages on girls' cognitive triad and girls' depressive symptoms. It was hypothesized in Research Question 1 that family messages from mothers would demonstrate a larger effect on girls' cognitions and depressive symptoms than family messages from fathers. However, results from the current study did not find significant differences between the influence of family messages from mothers and family messages from fathers on girls' cognitions and depressive symptoms.

A better understanding of the differences between mothers' and fathers' contributions to adolescent functioning is needed in order to plan more effective treatments. The current findings on the differences between mothers and fathers add little to the already differential findings of previous research. Several studies have found the effect of mothers and fathers on girls' depressive symptoms to be significantly different (Stark, et al., 1996; Chen, et al., 2009). Stark and colleagues (1996) reported a stronger relation between mothers' cognitive style, daughters' cognitive style and risk for

depression, while Chen and colleagues found that after controlling for parental depression fathers' negative attributions explained more of adolescent daughters' depressive symptoms in comparison to the mothers' negative attributions. The differences in findings suggest the need for more research examining if and how the relation between mothers and daughters, and fathers and daughters is different. Further research exploring this possible difference among mothers and fathers and their influence on girls' depression would assist clinicians in better understanding how to create effective parent components that target specific aspects related to mothering and fathering adolescents in child treatment.

The present study's exploration of the differences between the effects of mothers and fathers on the girls' cognitions and depressive symptoms present several aspects that should be considered when attempting to understand the results. As previously mentioned, the family variables were based on self-report measures where the girls reported their perception of family messages from the parent. There could be factors that influence this report, specifically, the relationship and frequency with which the girls interact with the parental figure (mother or father) was not accounted for in the current investigation. In addition, the participants had the opportunity to choose which parental figure to consider when filling out the FMM. This created a variety of responses as the participants reported choosing a range of different paternal figures (biological fathers, mothers' boyfriends, step-fathers, etc) and maternal figures (biological mothers, step-mothers, etc). The results speak to the variety of family compositions existent in the population; however, this variety also creates a more diverse sample to tease apart and understand when attempting to interpreting results.

Thus, additional research is needed to better understand how mothers and fathers affect girls' cognitions and depressive symptoms. Important factors to take into account when conducting analyses for additional research might include measuring the closeness or importance of the relationship with the parental figure or exploring differences among different types of maternal and paternal figures. A better understanding of the differences between the relationships between mothers and daughters and fathers and daughters would allow treatment to be planned considering the different roles each parent may play for the adolescent's development of cognitions and emotional well-being. Similarly, the focus of treatment can become more specific for two-parent, single-parent, or step-parent families depending on which parent gender is predominantly present in the family. As the diversity of family composition continues to grow, it is important to better understand the influences mothers and fathers have on the development of cognitions and depressive symptoms.

General Limitations

There are several limitations to consider for the current study. The use of previously collected data limited the available sample size. The total number of girls who originally agreed to participant in the study, as well as how many girls completed the treatment and post-treatment assessments was previously determined and could not be changed. Both the pre-treatment and post-treatment sample sizes are considered small when using SEM to analyze data. Kline (2005) recommends a ratio of 10:1 or 20:1 in terms of the number of participants for one parameter in a model to have an adequate sample size to interpret significant results. The current study had 151 participants at pre-

treatment and 133 participants at post-treatment to use in the analyses, which was well below the number of participants Kline (2005) suggests.

The last research question utilized a multi-group analysis path model to determine the presence of significant differences. When comparing the treatment conditions, the sample size for each group was under 50 participants. The lack of adequate sample size limits the power behind each analysis, and makes it more difficult to determine whether or not the lack of significant results is an accurate portrayal of reality, or rather a result of having an insufficient sample size. It is important to consider that the smaller sample size could have affected the ability of the model to demonstrate significant effects. While the overall sample size is impressive for clinical research, it limits the ability to interpret the results as confidently. The limited sample size indicates that the results for the current study must be interpreted with caution.

Other limitations stemmed from the sample itself. For the child participants, only early adolescent females were included in the present study. Therefore, findings from this study may not be generalizable to male youth. It is very possible that the proposed family model of depression would have very different results for male youth. In addition, a few girls in this study were prescribed anti-depressant medication by the study's treating psychiatrists while they were participants, as described in the Method section. Their data were included with the other girls who did not receive medication. That some participants received medication while others did not is a confounding factor that must be acknowledged.

Using previously collected data also restricted how the variables in the present study were operationalized using the available measures. The most obvious restriction

involved was the measure used for the family variable. Since the model was aiming to explore how family messages influenced the girls' cognitions and depressive symptoms, the Family Messages Measure seemed appropriate. However, it is important to consider that the measure was a self-report, completed by the participants about their perceptions of parental messages. Thus, the family messages in the current study reflect the girls' perceptions, and not necessarily the reality of the messages they were receiving from their family.

These limitations raise questions about the accuracy of the results of the current study. The nonsignificant results may reflect an accurate depiction of how the perception of family messages affects depressive symptoms in early adolescent girls, and how type of treatment affects the proposed model, but the restriction of available data may also have affected the analyses' ability to discover accurate significant results.

Implications

Despite the aforementioned limitations, the findings from this study contribute useful information to the understanding of the development and maintenance of depression for girls with depression that can be used to inform future studies as well as clinical practice. Implications for future research and clinical care are discussed in light of the limits of this particular study.

Future Research

There are several directions for future research to move towards better understanding the relation between family messages, girls' cognitions, and the severity of their depressive symptoms. Perhaps the most obvious direction for future research is the inclusion of family messages from the father in post-treatment analyses. The current

study only examined the family messages from the parent figure which displayed the larger standardized effect from the pre-treatment analyses (mothers). This limited the exploration of how the different parent figures affect the girls' cognitions and depressive symptoms post-treatment. Having a better understanding of family messages from fathers' effects on girls' cognitions and depressive symptoms (in addition to family messages (mothers) effects) would broaden the model and allow researchers and clinicians a better understanding of the family system's interactions as a whole.

It would be interesting to explore this model longitudinally across time. While the current investigation attempted to explore the model across time with the pre-treatment and post-treatment included in the model, it would be interesting to further investigate how the model may change longitudinally as the girls develop. This would provide researchers and clinicians with more information about how family messages affect girls' cognitions and girls' depressive symptoms across time. Specifically, it could demonstrate whether messages are consistent across time, and how those messages affect girls' cognitions later or perhaps how the influence may change as the girls develop.

Another direction for future research is exploring the difference between positive and negative messages the girls perceive to receive from their parent figures. The current study did not separate out negative messages from positive messages, and it would be interesting to explore how different (positive versus negative) messages might affect the girls' cognitive triad and depressive symptoms. This would provide further information about which types of messages appear to have stronger relations with girls' cognitions and depressive symptoms. It would also provide clinicians with more information about

how to provide skills-training to parents related to positive and negative communication with their daughters.

Similarly, this investigation did not control for the relationship between parents and daughters. It seems possible that the messages a daughter receives from a parent she is close to might have a stronger impact on the development of her own beliefs. Further, perceived messages received from a parent who a girl is presently residing with may also have a greater influence. Future research is needed to explore the variables that may heighten or lessen the impact of perceived parental messages about the self, world, and future. This could inform future clinicians more information about who is important to include when planning treatment or interventions.

Clinical Practice

The current study provided relevant information to consider for future clinical practice with adolescent depression. As previously mentioned, findings reinforced the importance of a cognitive component in child treatment. Child treatment should provide the adolescent with education about the cognitive component of depression and allow time within session for the adolescent to practice restructuring negative thoughts. Further, results highlighted the importance of addressing family messages, specifically in how they relate the adolescent's development of cognitions. The inclusion of a parent component to child treatment focusing on skills training and positive communication skills could be beneficial in diminishing the negative cognitions that girls develop. If included in treatment, parent components should focus on increasing the parents' awareness of their role in the adolescent's life and provide parents with skills training on how to model appropriate thoughts, and reinforce the skills the adolescent is learning in

treatment, with the specific goal of altering cognitive constructs. Further, parent components should place importance on both verbal and nonverbal communication, highlighting the importance of attending treatment as nonverbal communication.

Conclusions

The primary goal of this study was to investigate a proposed model of depression in early adolescent girls. The study explored a model proposing a relation between family messages, girls' cognitions, and their depressive symptoms, and compared how different types of treatment (child only, child +parent, monitoring) affected the proposed model. Analyses provided several significant findings, including a significant effect of family messages on girls' cognitions, the girls' cognitions mediating the relation between family messages and girls' depressive symptoms, and parent attendance moderating the relation between family messages and girls' cognitions. While findings related to the comparisons of treatment type were nonsignificant, the findings of this study nevertheless have implications for continued research and future clinical practice with depressed youth.

The current study is relevant to the conceptualization and treatment of depression in pre-adolescent girls. Results provide further support for the importance of the family as both a risk and protective factor in early adolescent depression. Current findings confirm previous research that highlights cognitive-behavioral therapy as an appropriate and effective treatment for adolescent depression (Lewinson & Clark, 1999). Results from this study provided less definitive information about the addition of a parent training component in treatment of childhood depression. Previous findings related to parent attendance and treatment outcomes for girls' depression did not demonstrate significant differences at post-treatment, but instead over time (Krumholz, 2010). It is possible that

these differences among treatment conditions would become more relevant at follow-up data collection points during the maintenance period as the girls' continue to develop and parents continue to use strategies learned in the PT sessions. Future research is needed to further clarify this possible trend.

The interesting findings related to parent attendance interfering with the relation between family messages and girls' cognitions suggests a need for future treatments with family components to focus on strategies to improve parent attendance to treatment. Based on a review of recent studies by Nock and Ferriter (2005) evaluating attendance enhancing strategies as well as the present state of the literature on parent attendance for child treatment, it is clear that additional research is needed. It is important for research to continue to identify key factors that predict and explain treatment attendance and that involves the development and evaluation of approaches to enhancing treatment attendance (Nock & Ferriter, 2005).

Overall, this study expanded the research base for youth depression by providing important information about the development and treatment of depression in early adolescent girls. The findings of this study provided additional support to the critical role of girls' cognitions as the mediator between girls' family environment and their depressive symptoms. Further, results demonstrate the critical component of considering attendance when planning treatment for families of early adolescent girls. The findings of the current study support the need for additional research in family influences on youth depression and in increasing family attendance to treatment to better plan future treatment for youth depression.

Appendix A

DSM-IV TR Diagnostic Criteria for Depressive Disorders

DSM-IV TR Criteria for Major Depressive Disorder

A. Five (or more) of the following symptoms must be present during the same 2-week period and represent Presence of a one or more Major Depressive Episodes (to be considered separate episodes, there must be an interval of 2 consecutive months in which criteria are not met for a Major Depressive Episode).
B. Major Depressive Episode is not better accounted for by Schizoaffective Disorder and is not superimposed on Schizophrenia, Schizophreniform Disorder, Delusional Disorder, or Psychotic Disorder Not Otherwise Specified.
C. There has never been a Manic Episode, Mixed Episode, or Hypomanic Episode.

DSM-IV Criteria for Major Depressive Episode

A. Five (or more) of the following symptoms must be present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood, or (2) loss of interest or pleasure.

1. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). **Note: in children and adolescents, can be irritable mood**.

2. markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others).

3. significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. **Note: in children, consider failure to make expected weight gains**.

4. insomnia or hypersomnia nearly every day.

5. psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).

6. fatigue or loss of energy nearly every day.

7. feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).

8. diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).

9. recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

B. The symptoms do not meet criteria for a Mixed Episode.
C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).
E. The symptoms are not better accounted for by Bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

DSM-IV TR Criteria for Dysthymic Disorder

A. Depressed mood for most of the day, for more days than not, as indicated either by subjective account of observation by others, for at least 2 years. **Note: In children and adolescents, mood can be irritable and duration must be at least 1 year.**
B. Presence, while depressed, of two (or more) of the following:

1. Poor appetite or overeating
2. Insomnia or hypersomnia
3. Low energy or fatigue
4. Low self-esteem
5. Poor concentration or difficulty making decisions
6. Feelings of hopelessness

C. During the 2-year period (1 year for children or adolescents) of the disturbance, the person has never been without the symptoms in Criteria A and B for more than 2 months at a time.
D. No Major Depressive Episode has been present during the first 2 years of the disturbance
E. There has never been a Manic Episode, a Mixed Episode, or a Hypomanic Episode, and criteria have never been met for Cyclothymic Disorder.
F. The disturbance does not occur exclusively during the course of a chronic Psychotic Disorder, such as Schizophrenia or Delusional Disorder.
G. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).
H. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

DSM-IV TR Criteria for Depressive Disorder Not Otherwise Specified

A. A mood disturbance, defined as follows:

1. At least two (but less than five) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (a) or (b):

a. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). **Note: in children and adolescents, can be irritable mood**.

b. markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others).

c. significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. **Note: in children, consider failure to make expected weight gains**.

d. insomnia or hypersomnia nearly every day.

e. psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).

f. fatigue or loss of energy nearly every day.

g. feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self reproach or guilt about being sick).

h. diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).

i. recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

2. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

3. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).

4. The symptoms are not better accounted for by Bereavement.

B. There has never been a Major Depressive Episode, and criteria is not met for Dysthymic Disorder.

C. There has never been a Manic Episode, a Mixed Episode, or a Hypomanic Episode, and criteria are not met for Cyclothymic Disorder.

D. The mood disturbance does not occur exclusively during Schizophrenia, Schizophreniform Disorder, Schizoaffective Disorder, Delusional Disorder, or Psychotic Disorder Not Otherwise Specified.

Appendix B

Child Demographic Variables for Girls in Post-treatment Sample

Variable	n	Percent
Age		
9	33	24.8
10	31	23.3
11	28	21.1
12	29	21.8
13	11	8.3
14	1	0.8
Grade		
4	40	30.1
5	32	24.1
6	31	23.3
7	30	22.6
Ethnicity		
White Non Hispanic	51	38.3
White Hispanic	54	40.6
African American	15	11.3
Asian	2	1.5
Multi-Racial	11	8.3

Appendix C

Comorbidity for Post-treatment Sample of Child Participants

# of Diagnoses	Comorbid Diagnoses	n
2		
	Generalized Anxiety Disorder (GAD)	23
	Attention-Deficit/Hyperactivity Disorder (ADHD)	7
	Anxiety Disorder NOS	3
	Separation Anxiety Disorder	3
	Specific Phobia	2
	Panic Disorder	1
	Adjustment Disorder with Anxiety	1
	Oppositional Defiant Disorder (ODD)	1
3 or More		
	GAD, ADHD	7
	GAD, Specific Phobia	4
	GAD, Social Phobia	3
	GAD, Post-traumatic Stress Disorder (PTSD)	1
	Separation Anxiety, GAD	2
	Separation Anxiety, ADHD	1
	Separation Anxiety, Anxiety Disorder NOS	1
	ADHD, Anxiety Disorder NOS	1
	ADHD, Specific Phobia	1
	ADHD, ODD	1
	Specific Phobia, PTSD	1
	Specific Phobia, Social Phobia	1
	Specific Phobia, Separation Anxiety	1

PTSD, Eating Disorder	1
PTSD, Specific Phobia, GAD	1
PTSD, Social Phobia, ADHD	1

Note. All child participants had a primary diagnosis of a depressive disorder.

Appendix D

Family Structure for Child Participants in Post-treatment Sample

Family Structure	n	Percent
Intact Family	53	39.8
Biological Parents	49	92.5
Grandparents	3	5.7
Other	1	1.9
Additional Children		
Yes	45	84.9
No	8	15.1
Single Parent Family	26	19.5
Single Mother	20	76.9
Single Father	6	23.1
Additional Children		
Yes	20	76.9
No	6	23.1
Stepfamily	21	15.8
Stepfather	17	81.0
Stepmother	4	19.0
Additional Children		
Yes	17	81.0
No	4	19.0
Multi-Adult Household	31	23.3
Relatives	20	64.5
Relatives and Non-Related Adults	11	35.5

Additional Children		
Yes	26	83.9
No	5	16.1
Unknown	2	1.5

Appendix E

Demographic Variables for Post-treatment Sample of Caregivers in CBT+PT Condition

Variable	n	Percent
Caregivers		
Maternal Caregiver	43	54.4
Biological Mother	42	97.7
Stepmother	1	2.3
Paternal Caregiver	36	45.6
Biological Father	26	60.5
Stepfather	6	14.0
Mother's Boyfriend	4	9.3
Ethnicity		
White Non Hispanic	37	46.8
White Hispanic	22	27.8
African American	9	11.4
Asian	2	2.5
Unknown	9	11.4
Educational Status		
Some high school	1	1.3
Finished high school/GED	8	10.1
Some college/junior college	20	25.3
Finished 4 year college	9	11.4
Advanced Degree	6	7.6
Unknown	35	44.3

Appendix F

Cognitive Triad Inventory for Children

Instructions: Circle the answer which best describes your opinion. Choose only one answer for each idea. Answer the items for what you are thinking RIGHT NOW. Remember fill this out for how you feel today.

1. I do well at many different things.	Yes	Maybe	No
2. Schoolwork is no fun.	Yes	Maybe	No
3. Most people are friendly and helpful.	Yes	Maybe	No
4. Nothing is likely to work out for me.	Yes	Maybe	No
5. I am a failure.	Yes	Maybe	No
6. I like to think about the good things that will happen for me in the future.	Yes	Maybe	No
7. I do my schoolwork okay.	Yes	Maybe	No
8. The people I know help me when I need it.	Yes	Maybe	No
9. I think that things will be going very well for me a few years from now.	Yes	Maybe	No
10. I have messed up almost all the best friendships I have ever had.	Yes	Maybe	No
11. Lots of fun things will happen for me in the future.	Yes	Maybe	No
12. The things I do every day are fun.	Yes	Maybe	No
13. I can't do anything right.	Yes	Maybe	No
14. People like me.	Yes	Maybe	No
15. There is nothing left in my life to look forward to.	Yes	Maybe	No
16. My problems and worries will never go away.	Yes	Maybe	No
17. I am as good as other people I know	Yes	Maybe	No
18. The world is a very mean place.	Yes	Maybe	No
19. There is *no* reason for me to think that things will get better for me.	Yes	Maybe	No
20. The important people in my life are helpful and nice to me.	Yes	Maybe	No
21. I hate myself.	Yes	Maybe	No
22. I will solve my problems.	Yes	Maybe	No
23. Bad things happen to me a lot.	Yes	Maybe	No
24. I have a friend who is nice and helpful to me.	Yes	Maybe	No
25. I can do a lot of things well.	Yes	Maybe	No
26. My future is too bad to think about.	Yes	Maybe	No
27. My family doesn't care what happens to me.	Yes	Maybe	No
28. Things will work out okay for me in the future.	Yes	Maybe	No
29. I feel guilty for a lot of things.	Yes	Maybe	No
30. No matter what I do, other people make it hard for me to get what I need.	Yes	Maybe	No

31. I am a good person.	Yes	Maybe	No
32. There is nothing lo look forward to as I get older.	Yes	Maybe	No
33. I like myself.	Yes	Maybe	No
34. I am faced with many difficulties.	Yes	Maybe	No
35. I have problems with my personality.	Yes	Maybe	No
36. I think that I will be happy as I get older.	Yes	Maybe	No

Appendix G

Family Messages Measure- Mother

Instructions: Carefully read each item below and indicate how often you hear these kinds of messages in your home.

1. My mother tells me that I'm good at different things.	Never	Sometimes	Always
2. My mother says that schoolwork is just something that must get done.	Never	Sometimes	Always
3. My mother believes that most people are friendly and helpful.	Never	Sometimes	Always
4. Nothing I do seems to satisfy my mother.	Never	Sometimes	Always
5. My mother tells me that I'm a failure.	Never	Sometimes	Always
6. When I talk with my mother about the future, it looks bright.	Never	Sometimes	Always
7. I hear my mother say that I do well at school.	Never	Sometimes	Always
8. My mother tells me that she will help me whenever I need it.	Never	Sometimes	Always
9. My mother tells me that I will do well in the future.	Never	Sometimes	Always
10. My mother wonders how anyone could be friends with me.	Never	Sometimes	Always
11. My mother tells me that being grown up is no fun.	Never	Sometimes	Always
12. My mother tells me that I can have an enjoyable future.	Never	Sometimes	Always
13. My mother tells me that I can't do anything right.	Never	Sometimes	Always

14. My mother wonders how anyone could like me.	Never	Sometimes	Always
15. My mother tells me that I have a limited future.	Never	Sometimes	Always
16. My mother tells me that my problems and worries will never go away.	Never	Sometimes	Always
17. My mother tells me that I'm as good as or better than my friends.	Never	Sometimes	Always
18. My mother tells me that the world is a mean place.	Never	Sometimes	Always
19. My mother tells me that things aren't going to get any better.	Never	Sometimes	Always
20. My mother is helpful and nice to me.	Never	Sometimes	Always
21. My mother tells me that you shouldn't like people who aren't good at most things.	Never	Sometimes	Always
22. My mother tells me that I am incapable of solving my own problems.	Never	Sometimes	Always
23. My mother wonders why so many bad things happen to me and nobody else.	Never	Sometimes	Always
24. My mother tells me that I have nice and helpful friends.	Never	Sometimes	Always
25. My mother tells me that I can do a lot of things well.	Never	Sometimes	Always
26. My mother tells me that unless I change, my future is bleak.	Never	Sometimes	Always
27. My mother tells me to do whatever I want because it doesn't matter to her.	Never	Sometimes	Always
28. My mother tells me that I can always work things out.	Never	Sometimes	Always
29. My mother tells me that I should be ashamed of myself for doing bad things.	Never	Sometimes	Always

30. My mother says that no matter what I do, other people will get in my way.	Never	Sometimes	Always
31. My mother tells me that I am a good person.	Never	Sometimes	Always
32. My mother tells me that it is no fun being an adult.	Never	Sometimes	Always
33. My mother tells me that I am a likeable person.	Never	Sometimes	Always
34. My mother says that if there wasn't something wrong with me, I would have more friends.	Never	Sometimes	Always
35. My mother tells me that I have some personality problems.	Never	Sometimes	Always
36. My mother tells me that I will continue to be happy as I get older.	Never	Sometimes	Always

Appendix H

Family Messages Measure- Father

Instructions: Carefully read each item below and indicate how often you hear these kinds of messages in your home.

1. My father tells me that I'm good at different things.	Never	Sometimes	Always
2. My father says that schoolwork is just something that must get done.	Never	Sometimes	Always
3. My father believes that most people are friendly and helpful.	Never	Sometimes	Always
4. Nothing I do seems to satisfy my father.	Never	Sometimes	Always
5. My father tells me that I'm a failure.	Never	Sometimes	Always
6. When I talk with my father about the future, it looks bright.	Never	Sometimes	Always
7. I hear my father say that I do well at school.	Never	Sometimes	Always
8. My father tells me that he will help me whenever I need it.	Never	Sometimes	Always
9. My father tells me that I will do well in the future.	Never	Sometimes	Always
10. My father wonders how anyone could be friends with me.	Never	Sometimes	Always
11. My father tells me that being grown up is no fun.	Never	Sometimes	Always
12. My father tells me that I can have an enjoyable future.	Never	Sometimes	Always
13. My father tells me that I can't do anything right.	Never	Sometimes	Always

14. My father wonders how anyone could like me. Never Sometimes Always

15. My father tells me that I have a limited future. Never Sometimes Always

16. My father tells me that my problems and worries will never go away. Never Sometimes Always

17. My father tells me that I'm as good as or better than my friends. Never Sometimes Always

18. My father tells me that the world is a mean place. Never Sometimes Always

19. My father tells me that things aren't going to get any better. Never Sometimes Always

20. My father is helpful and nice to me. Never Sometimes Always

21. My father tells me that you shouldn't like people who aren't good at most things. Never Sometimes Always

22. My father tells me that I am incapable of solving my own problems. Never Sometimes Always

23. My father wonders why so many bad things happen to me and nobody else. Never Sometimes Always

24. My father tells me that I have nice and helpful friends. Never Sometimes Always

25. My father tells me that I can do a lot of things well. Never Sometimes Always

26. My father tells me that unless I change, my future is bleak. Never Sometimes Always

27. My father tells me to do whatever I want because it doesn't matter to him. Never Sometimes Always

28. My father tells me that I can always work things out. Never Sometimes Always

29. My father tells me that I should be ashamed of myself for doing bad things. Never Sometimes Always

30. My father says that no matter what I do, other people will get in my way. Never Sometimes Always

31. My father tells me that I am a good person. Never Sometimes Always

32. My father tells me that it is no fun being an adult. Never Sometimes Always

33. My father tells me that I am a likeable person. Never Sometimes Always

34. My father says that if there wasn't something wrong with me, I would have more friends. Never Sometimes Always

35. My father tells me that I have some personality problems. Never Sometimes Always

36. My father tells me that I will continue to be happy as I get older. Never Sometimes Always

Appendix I

Parent Consent Letter and Form for Screening

Dear Parent,

[insert name of school here]is teaming up with Kevin Stark, Ph.D. from the University of Texas to evaluate a coping skills training program for girls called ACTION. The ACTION program is designed to teach girls how to manage their emotions and stress, solve problems, and think more positively about themselves. While we believe that all students could benefit from this program, currently, only girls who are experiencing high levels of distress will be able to participate. We are asking for permission from all parents of girls in grades [insert grade numbers of school here] for their daughters to participate in a screening that will help identify girls who are experiencing distress. Girls who participate in the screening will fill out a questionnaire that takes approximately 10 minutes to complete. Doctoral psychology students with appropriate training will supervise the completion of the questionnaires. At this time we do not anticipate any discomfort in completing the ACTION questionnaire.

Girls who report having more than a typical number symptoms of distress will be interviewed about specific symptoms of depression to determine if they are experiencing high levels of distress. The brief symptom interview will be conducted by trained graduate students or project staff under the supervision of Dr. Stark. If a girl in the study is reporting distress on the questionnaire or brief symptom interview, the parents will be contacted by phone to ensure the girl's well-being. ACTION staff or the school counselor may discuss your child's further participation in this research project at that time. For all girls who complete the questionnaire or interview and do not show significant symptoms of distress, parents will receive a letter stating those findings.

The purpose of the project is to determine whether the ACTION coping skills program is more effective than no counseling, and whether parent participation makes the program more effective. In addition, we are trying to learn whether adding follow-up meetings prevents future distress. The benefits to participants include possible participation in the ACTION program and helping advance our understanding of how to best help young girls manage emotions and stress, solve problems and feel better about themselves.

Participation in the project will not cost you anything and there will not be any financial compensation for participation. There are not any risks of harm from completing the questionnaire. There are no anticipated risks from completing the brief symptom interview. In fact, the procedure is designed to quickly identify and assist children who are in distress. All materials and forms will be stored in locked file cabinets in a secure office at UT to protect confidentiality.

If a child reports that she is at risk of hurting herself or others, her parents would be immediately informed and she would immediately talk with her school counselor. In

addition, she would be evaluated by one of the consulting psychiatrists at no cost to the family.

If you choose to participate, you or your daughter may stop participation at any time. Participation in the study is entirely voluntary. You are free to say that you do not want to participate by returning this form indicating on the back of this page that you do not want to participate. You can refuse to participate without penalty or loss of benefits to which you and your daughter are otherwise entitled. It will not affect your relationship with your child's school or the University of Texas.

Researchers are required by Texas state law and professional ethics codes to report to Child Protective Services (or other appropriate regulatory agency) all instances of alleged child abuse and neglect. Please note that if your child completes the screening questionnaire or interview and is believed to be at risk for emotional, psychological or possible physical harm or neglect, then the investigator will report this information to the attending physician, Child Protective Services, and any other necessary regulatory agencies. Please note when a child reports neglect or being harmed, participants cannot stop the referral of their child's case to the authorities and any subsequent actions taken.

If you have any questions about the study, you can call Kevin Stark, Ph.D. at (512) 471-0267, your school counselor, or principal.

If you have questions about your rights as a participant, please contact Lisa Leiden, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 471-8871.

Sincerely,

_____

Researcher's Signature

_____

Principal's Signature

_____

Date

PLEASE KEEP THIS LETTER FOR YOUR RECORDS

Please check the appropriate box indicating that **YES** you have read this letter and are giving permission for your daughter to participate in the ACTION project at your child's

school by completing the screening questionnaire and brief symptom interview, or **NO**, you have read this letter and you do not want your daughter to complete the questionnaire or interview. Regardless of your decision, please sign this form and return it to your child's teacher.

PLEASE RETURN THIS FORM TO YOUR CHILD'S SCHOOL WITH YOUR PREFERENCE NOTED BELOW:

_____YES I **give my permission** for my daughter to participate by completing the screening questionnaire and brief symptom interview.

_____NO I **do not give my permission** for my daughter to participate by completing the screening questionnaire or brief symptom interview

_____ _____

Parent's Signature Date

_____

Child's Name (please print)

We will provide feedback for all participants. Please provide information below if your child will be participating.

Parent/adult guardian name(s): _____

Mailing address: _____ City/ZIP:_____

Parent phone number(s) in case we need to reach you with a concern about your child:

Home_____cell_____work_____

Appendix J

Youth Assent Form for Screening

I agree to complete a questionnaire and possibly also an interview about my thoughts, feelings, and behaviors. This questionnaire has been explained to my parent or guardian and he or she has given permission for me to participate. I may decide at any time that I do not wish to participate and that it will be stopped if I say so. My specific responses will not be shared with anyone. However, general information about how I am doing and feeling may be shared with my parent.

When I sign my name to this page I am indicating that I read this page and that I am agreeing to participate.

_____ _____

Your Signature Date

_____

Please Print your Name

Date of Birth _____

Month Day Year

School: _____

Ethnicity:

_____ Hispanic or Latino
_____ Not Hispanic or Latino

Race:

_____ Black/African American
_____ American Indian/Alaska Native
_____ Asian
_____ Native Hawaiian/other Pacific Islander
_____ White
_____ *I do not wish to disclose this information.*

Appendix K

Children's Depression Inventory

Kids sometimes have different feelings and ideas.

This form lists the feelings and ideas in groups. From each group of three sentences, pick one that describes you **best** for the past two weeks. After you pick a sentence from the first group, go on to the next group.

There is no right answer or wrong answer. Just pick the sentence that best describes the way you been recently. Put a mark like this X next to your answer. Put the mark in the box next to the sentence you pick.

1. I am sad once in a while.
   I am sad many times.
   I am sad all the time.

2. Nothing will ever work out for me.
   I am not sure if things will work out for me.
   Things will work out for me O.K.

3. I do most things O.K.
   I do many things wrong.
   I do everything wrong.

4. I have fun in many things.
   I have fun in some things.
   Nothing is fun at all.

5. I am bad all the time.
   I am bad many times.
   I am bad once in a while.

6. I think about bad things happening to me once in a while.
   I worry that bad things will happen to me.
   I am sure that terrible things will happen to me.

7. I hate myself.
   I do not like myself.
   I like myself.

8. All bad things are my fault.
   Many bad things are my fault.
   Bad things are not usually my fault.

9. I do not think about killing myself.
   I think about killing myself but I would not do it.

I want to kill myself

10. I feel like crying every day.
    I feel like crying many days.
    I feel like crying once in a while.

11. Things bother me all the time.
    Things bother me many times.
    Things bother me once in a while.

12. I like being with people.
    I do not like being with people many times.
    I do not want to be with people at all.

13. I cannot make up my mind about things.
    It is hard to make up my mind about things.
    I make up my mind about things easily.

14. I look O.K.
    There are some bad things about my looks.
    I look ugly.

15. I have to push myself all the time to do my schoolwork.
    I have to push myself many times to do my schoolwork.
    Doing schoolwork is not a big problem.

16. I have trouble sleeping every night.
    I have trouble sleeping many nights.
    I sleep pretty well.

17. I am tired once in a while.
    I am tired many days.
    I am tired all the time.

18. Most days I do not feel like eating.
    Many days I do not feel like eating.
    I eat pretty well.

19. I do not worry about aches and pains.
    I worry about aches and pains many times.
    I worry about aches and pains all the time.

20. I do not feel alone.
    I feel alone many times.
    I feel alone all the time

21. I never have fun at school.
    I have fun at school only once in a while.

I have fun at school many times.

22. I have plenty of friends.
    I have some friends but I wish I had more.
    I do not have any friends.

23. My schoolwork is alright.
    My schoolwork is not as good as before.
    I do very badly in subjects I used to be good in.

24. I can never be as good as other kids.
    I can be as good as other kids if I want to.
    I am just as good as other kids.

25. Nobody really loves me.
    I am not sure if anybody loves me.
    I am sure that somebody loves me.

26. I usually do what I am told.
    I do not do what I am told most of the times.
    I never do what I am told.

27. I get along with people.
    I get into fights many times.
    I get into fights all the time.

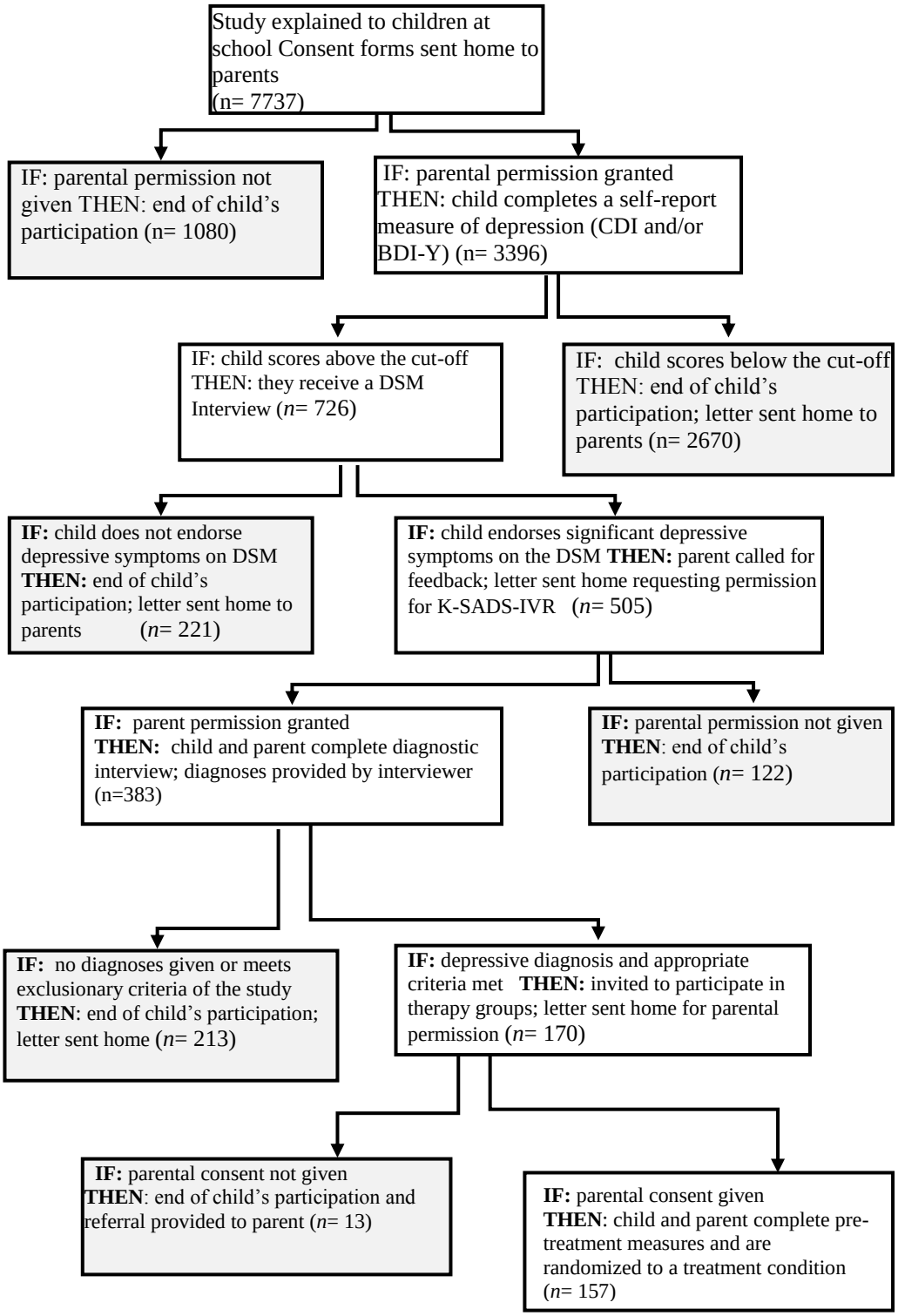
Appendix L

Diagnostic and Statistical Manual Brief Symptom Interview for Depression

Symptoms: Ask about symptoms being present most days for THE LAST TWO WEEKS, INCLUDING TODAY.	**Symptom IS present (√)**	**Symptom NOT present (√)**
1. Have you been feeling sad, unhappy, blue, or down in the dumps for a lot of the day?	❒	❒
2. Have you been feeling irritable, cranky, or easily annoyed for a lot of the day	❒	❒
3. Have you been less interested in doing things like hobbies or sports?	❒	❒
4. Have you been enjoying hobbies or interests less that you did in the past?	❒	❒
5. Have you noticed a change in your appetite (eating more or less than usual)? Has your weight changed or do your clothes fit differently?	❒	❒
6. Have you had any trouble with your sleep, such as falling asleep, waking up at night, or waking too early?	❒	❒
7. Have you been having trouble with your sleep, in that you are sleeping a lot more than usual lately?	❒	❒
8. Do you feel like you still need sleep or rest, even if you got a full night's sleep?	❒	❒
9. Do you feel like you have no energy, or not as much energy as usual?	❒	❒
10. Do you feel restless or fidgety, that you have a hard time sitting still?	❒	❒
11. Have you felt slowed down, like you are moving in slow motion or your movements are not as quick as usual?	❒	❒
12. Have you had trouble concentrating or paying attention, like your mind is "in a fog?" Or trouble making decisions?	❒	❒
13. Have you felt guilty about things lately?	❒	❒
14. Have you felt hopeless, like things won't work out for you, or that you will always feel bad?	❒	❒
15. Have you felt worthless, inadequate, or like you are no good lately?	❒	❒
16. Have you had thoughts of death or dying?	❒	❒
17. Have you had thoughts of wanting to hurt yourself? (or someone else)	❒	❒
18. Have you done anything to hurt yourself, such as make a mark on your skin?	❒	❒
TOTAL "PRESENT" Items 1-18		

Appendix M

Multiple Gate Procedure and Sample Size at Each Time



Appendix N

Parent Consent Letter and Form for K-SADS-P IVR

Dear Parent,

Per our contact with you regarding your daughter's responses to the screening questionnaire and brief symptom interview, we are requesting permission for you and your daughter to complete a more comprehensive interview that will help us determine more accurately whether she is experiencing serious emotional concerns or whether she was not feeling well on the days that she completed the questionnaire and brief interview. The interviews will be conducted by trained doctoral psychology students under the supervision of Kevin Stark, Ph.D., licensed psychologist. The interview of your daughter will be completed in a room at school that will protect her privacy. It takes 45 to 90 minutes to complete and asks specific questions about how your daughter is feeling, thinking and behaving and a range of experiences she may have encountered. The interview with you will cover the same topics and can be conducted in person or over the phone if that is preferable, at a time that is convenient for you. Participation in the interview will not cost you anything and there will not be any financial compensation for participation. Completed interviews will be stored in locked file cabinets in a secure office at UT to protect confidentiality. If she is, she may be eligible for participating in the ACTION program. If this wouldn't be the best program for her, we will provide you with possible resources from within the school and the community.

If a child reports that she is at risk of hurting herself or others, her parents would be immediately informed and she would immediately talk to her school counselor. In addition, she would be interviewed by Kevin Stark, Ph.D., a licensed psychologist, or one of the consulting psychiatrists at no cost to the family. If a child reports that she is being hurt, the school's standard procedures for reporting such instances to the relevant state agency would be followed.

The purpose of the project is to determine whether the ACTION coping skills program is helpful, and whether parent participation makes the program more effective. In addition, we are trying to learn whether adding follow-up meetings prevents future distress. If you have any questions about the study, you can call Kevin Stark, Ph.D. at (512) 471-0267 your school counselor, or principal.

If you choose to participate, you or your daughter may stop participation at any time. Participation in the study is entirely voluntary. You are free to say that you do not want to participate by returning this form indicating that you do not want to participate. You can refuse to participate and this decision will not affect your relationship with your child's school or the University of Texas.

Researchers are required by Texas state law and professional ethics codes to report to Child Protective Services (or other appropriate regulatory agency) all instances of alleged child abuse and neglect. Please note that if your child completes the screening questionnaire or interview and is believed to be at risk for emotional, psychological or possible physical harm or neglect, then the investigator will report this information to the attending physician, Child Protective Services, and any other necessary regulatory agencies. Please note when a child reports neglect or being harmed, participants cannot stop the referral of their child's case to the authorities and any subsequent actions taken.

If you have questions about your rights as a participant, please contact Lisa Leiden, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512-471-8871). Let him know that you are enquiring about the study entitled "Helpfulness of the ACTION Coping Skills Program with and Without Parent Participation."

Please check the appropriate box indicating that **YES** you have read this letter and are giving permission for you and your daughter to participate by completing the interview, or **NO** you do not want to complete the interview nor do you want your daughter to complete the interview. Regardless of your decision, please sign this form and return it to your child's teacher. You will be given a copy of this permission letter to keep for your records.

☐ **YES** I give my permission for my daughter and I to participate by completing the interview.

☐ **NO** I do not give my permission for my daughter and I to participate by completing the interview.

_____ _____

Parent's Signature Date

_____ _____

Researcher's Signature Date

_____ _____

Principal's Signature Date

Appendix O

Youth Assent Form for K-SADS-P IVR

I agree to participate in an interview about my thoughts, feelings, and behaviors. It has been explained to me that this interview will help to determine whether the ACTIION counseling program may be helpful for me. This interview has been explained to my parent or guardian and he or she has given permission for me to participate. The interview will be stopped if I say so. Specific things that I say during the interview will not be shared with anyone. However, general information about how I am doing and feeling may be shared with my parent for the sake of talking about what to do to help me.

I will be asked to complete an interview about my current feelings, behaviors, and thoughts. By signing this form I am giving permission for the interview to be audio-taped for the purpose of being sure that the interview was conducted correctly. These tapes will be erased as soon as the ACTION program is completed.

It is okay if I decide to stop my participation in this interview at any time. When I sign my name to this page I am indicating that this page was read to me and that I am agreeing to participate.

Child/Adolescent Signature	Date
Staff/Researcher Signature	Date

Appendix P

Parent Consent and Youth Assent for Pre-treatment Assessment and Treatment

Dear Parent,

Based on results of the screening and interview that you and your daughter have participated in so far, we are requesting permission for you and your daughter to continue and participate in the evaluation of the ACTION coping skills program. If you give your permission for your daughter to participate, she will be randomly assigned to one of three groups: (1) ACTION coping skills program, (2) ACTION coping skills program plus parent participation, or (3) wait to receive the program in about 12 weeks.

If your daughter is randomly assigned to the ACTION coping skills program, she will meet 20 times over the next twelve to sixteen weeks with a group of girls to participate in a counseling program that is designed to teach her problem solving, coping skills for managing her emotions and stress, and strategies for thinking more positively about herself and things in general.

If your daughter is randomly assigned to the counseling plus parent participation, she will meet 20 times over the next twelve to sixteen weeks with a group of girls to participate in a counseling program that is designed to teach her problem solving, coping skills for managing her emotions and stress, and strategies for thinking more positively about herself and things in general. In addition, you would be asked to attend a total of 10 meetings over this period that will last about an hour and a half. The parent meetings will be held at school after hours and daycare and refreshments will be provided at no expense. During these meetings parents will have a chance to learn the skills that their daughter is learning, and parents will learn strategies for helping their daughter to use the skills.

The girls will meet in a small group during an elective class. Each meeting will last one class period. Steps have already been taken to ensure that she will receive any class materials that she misses. The group meetings will be led by a trained doctoral psychology student or Ph.D. level therapist and a counselor from your daughter's school. The group leaders will be supervised by Kevin Stark, Ph.D. It is not expected that your daughter will experience any discomfort or risks from participating in the ACTION coping skills program. In fact, past experience with the program indicates that the girls enjoy participating and benefit from it.

If your daughter is randomly assigned to wait to receive counseling in about 12 weeks, we will take the following steps to ensure that she is okay. A doctoral psychology student will meet with her each week to monitor how she is doing, she will be discreetly observed in school at lunch or recess for about fifteen minutes per week, and the staff member will check-in with her teacher each week. In addition, every other week, the staff member will

check with you to see if you have any concerns. At the end of the waiting period, she will have the opportunity to participate in the coping skills program. If at any point during this waiting period she reports feeling worse or you would like to seek counseling elsewhere, we will provide you with information about community and school resources. You have the option at anytime to seek additional services including consultation with one of the project's consulting psychiatrists at no cost to you.

We will be monitoring each girl's progress and report this information to two psychiatrists who are being paid by us to oversee each child's welfare. If a participant is not improving as a result of the program, then parents will be informed and we will meet with you to discuss other options for providing your daughter with help. If you would like information about medications that might be of assistance, the psychiatrists are available to meet with you and discuss these options at no cost to you.

To determine whether the ACTION coping skills program is helpful, we are asking you and your daughter to complete some questionnaires that help guide, and evaluate the effectiveness of the ACTION program. The questionnaires will take your daughter about one hour to complete. It will take you about 30 minutes to complete your questionnaires. We are asking you to complete the questionnaires so that we can determine whether participation in the ACTION program also benefits you and your family. The questionnaires have been completed by other children and adults without any discomfort. In order to assess the potential benefits of ACTION on school performance, our staff collects the following general education information: grades from reporting periods, attendance, and discipline information for participants.

For one year after completion of the ACTION program, your daughter will have the opportunity to meet with her group and apply the skills to the new problems and stresses that she faces as she grows up and navigates her way through the many difficulties of being a teenager. The groups will meet three times a semester over the rest of the course of the study. In addition, to determine if your daughter needs additional help, once a year, we will ask you and your daughter to complete the interview and the questionnaires to determine whether we have achieved the goal of preventing the difficulties from recurring. Each time in the future that you and your daughter are asked to complete the measures, you will be paid $25.00 and your daughter will be paid $20.00.

If a participant reports at any time that she is feeling like she would like to hurt herself or someone else, then, she would be immediately interviewed by a trained staff member and the school counselor. In addition, if there is concern about a child's safety, the staff member would immediately contact the parents and Kevin Stark, Ph.D. or one of the consulting psychiatrists. If at all possible, the psychiatrist on call would be available to meet with the girl and her parents to further evaluate the situation and to provide you with information about resources from within the community that could be of help. If it is not possible to immediately meet with one of the mental health professionals, then it would be recommended that the child and parents pursue the conventional procedure of driving to the

emergency room of a local hospital. If a participant reports that she is being hurt, then the staff member and school counselor would follow the school's standard procedures for reporting such instances to the relevant state agency.

All of the services that we provide are available to you at no cost to your family.

The benefits to you and your daughter are that she may learn skills and strategies that will help her to be happy and healthy throughout adolescence. Similarly, you may learn strategies for helping her to successfully make it through adolescence. The benefit to society is that it will help us to determine whether teaching girls who are experiencing depression these skills helps to reduce the depression and whether it is even more helpful to involve parents. Furthermore, since girls are at very high risk for becoming depressed between the ages of 13 to 15, the results of this study will help us learn whether there is a procedure for preventing this from occurring.

The ACTION program meetings are audiotaped for quality assurance purposes. To ensure confidentiality, the following steps will be taken: (a) the cassettes will be coded so that no personal identifying information is visible on them; (b) they will be kept in a locked file cabinet in a secure office at UT; (c) they will be reviewed only for research purposes by the relevant research staff; and (d) they will be erased after they are checked and the study has been completed. Identifying information will be removed from all of the assessment materials completed during the study and the materials will be stored in a locked file cabinet in a locked research office at UT.

Participation in the ACTION coping skills program is entirely voluntary. You are free to refuse to be in the study, you are free to discontinue participation for any reason at any time, and your refusal or discontinuation will not influence current or future relationships with The University of Texas at Austin or your child's school district

Researchers are required by Texas state law and professional ethics codes to report to Child Protective Services (or other appropriate regulatory agency) all instances of alleged child abuse and neglect. Please note that if your child is believed to be at risk for emotional, psychological or possible physical harm or neglect, then the investigator will report this information to the attending physician, Child Protective Services, and any other necessary regulatory agencies. Please note when a child reports neglect or being harmed, participants cannot stop the referral of their child's case to the authorities and any subsequent actions taken.

If you have any questions about the study, you can call Kevin Stark, Ph.D. at (512) 471-4407, your school counselor, or principal. You may also contact the project coordinator, Jennifer L. Hargrave, Ph.D., with questions, concerns, or to withdraw from the study at any time at (512) 471-0218.

If you have questions about your rights as a participant, please contact Lisa Leiden, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 471-8871. Let her know that you are enquiring about the study entitled "Helpfulness of the ACTION Coping Skills Program with and Without Parent Participation."

Please check the appropriate box indicating that **YES** you have read this letter and are giving permission for you and your daughter to participate in the ACTION coping skills program and to complete the questionnaires, or **NO** you do not want to participate in the ACTION coping skills program and you do not want to complete the questionnaires. Regardless of your decision, please sign this form and return it to your child's counselor. With this permission letter, you should have received a copy to keep for your records.

NOTE: TWO COPIES OF THIS LETTER ARE PROVIDED; ONE IS TO KEEP FOR YOUR RECORDS

PLEASE RETURN ONE COPY OF THIS PORTION TO THE SCHOOL COUNSELOR

☐ **YES** I give my permission for my daughter, _____, and me to participate in the ACTION coping skills program and to complete the questionnaires. **This includes permission for ACTION staff to access report card information, discipline referrals, and attendance records during participation.**

☐ **NO** I do not give my permission for my daughter, _____, to continue any further with the ACTION project.

_____ _____

Parent's Signature Date

_____ _____

Kevin D. Stark, Ph.D. Date

*****PLEASE RETURN THIS FORM TO YOUR SCHOOL COUNSELOR*****

Child/Adolescent Assent Form

I agree to participate in a study that is interested in evaluating the relationship between thoughts, feelings, and interpersonal behaviors in children and adolescents. I understand that this study has been explained to my parent or guardian and that he or she has given permission for me to participate. I understand that I may decide at any time that I do not wish to continue this study and that it will be stopped if I say so. Information about what I say and do will not be given to anyone else unless I say so.

I understand that I will be asked to complete an interview about my current feelings, behaviors, and thoughts as well as a number of questionnaires about myself and my family. I understand that by signing this form I am giving permission for the interview to be audio-taped for research purposes and that these tapes will be erased as soon as the study is completed.

I understand that it is all right if I decide to stop my participation in this study at any time. When I sign my name to this page I am indicating that this page was read to me and that I am agreeing to participate in this study. I am indicating that I understand what will be required of me and that I may stop my participation at any time.

_____ _____

Child/Adolescent Signature Date

_____ _____

Staff/Researcher Signature Date

Appendix Q

Descriptions of Primary Child Treatment Components and Objectives for Meetings

Meeting #	Primary Child Treatment Component	Objective by Meeting
1	Introductions and discussion of pragmatics	Discuss parameters of meetings, Introduce counselors and participants, Establish rationale for treatment, Discuss confidentiality, Establish group rules, Build group cohesion, Establish within group incentive system
2	Affective education and introduction to coping	Introduce participants to chat time and agenda setting, Establish pragmatics of completing homework, Introduce mood meter and Take ACTION List, Complete within session coping activity
3	Affective education and coping skills	Discuss importance of thinking about meetings and doing practice, Introduce clients to various therapeutic components including: focusing on the positive, affective education, and coping strategies
4	Extend group cohesion, review participant goals, application of coping skills	Extend group cohesion, Review participant goals and strategies, Discuss application of coping strategies, Complete coping skills activity within session
5	Extend coping skills, introduction to problem solving	Experience impact of coping skills activity within session, Introduction, extension and application of problem solving, Introduction to brainstorming

step of problem solving

Meeting #	Primary Child Treatment Component	Objective by Meeting
6	Cognition and emotion, introduction to cognitive restructuring	Demonstrate the role of cognition in emotion and behavior, Introduce connection of thoughts to feelings, Enactment of coping skills activity within session
7	Apply problem solving	Apply problem solving to real life situations, Practice brainstorming activity, Experience coping skills activity within session
8	Apply problem solving	Apply problem solving to teasing, Experience coping skills activity within session
9	Apply problem solving	Apply problem solving to interpersonal problems, Experience coping skills activity within session
10	Prepare for cognitive restructuring and introduction to cognitive restructuring	Prepare for cognitive restructuring, Experience coping skills activity within session, Practice cognitive restructuring
11	Cognitive restructuring	Introduce how perceptions are constructed, Illustrate how depression distorts thinking, Provide rationale for changing negative thoughts
12	Cognitive restructuring and Self-Maps	Practice identifying negative thoughts of group members, Introduce client strengths through a Self-Map, Practice

cognitive restructuring

Meeting #	Primary Child Treatment Component	Objective by Meeting
13	Cognitive restructuring and Self-Maps	Practice identifying negative thoughts, Continue identifying strengths for the self-maps, Practice cognitive restructuring with questions using alternative interpretations
14	Cognitive restructuring and Self-Maps	Continue identifying negative thoughts, adding strengths to the self-maps, and practicing cognitive restructuring
15	Cognitive restructuring and Self-Maps	Continue identifying negative thoughts and adding strengths to the self-maps, Introduce examining evidence as a tool for cognitive restructuring
16	Cognitive restructuring and Self-Maps	Continue identifying negative thoughts and adding strengths to the self-maps, Practice cognitive restructuring, Prepare for termination
17	Cognitive restructuring and Self-Maps	Continue adding strengths to the self-maps, Integrate and apply cognitive restructuring, Continue preparing for termination
18	Cognitive restructuring and Self-Maps	Continue adding strengths to the self-maps, Integrate and apply all of the learned skills, Continue preparing for termination
19	Cognitive restructuring and Self-Maps	Draw conclusions from self-maps, Empowerment activity for clients to

		continue using skills on their own, Prepare for group termination
20	Bring it all together and termination activity	Say goodbye to the group, Say goodbye to negative thoughts and feelings, Terminate

Appendix R

Pearson Product-Moment Correlations, Means, and Standard Deviations for Indicators for CBT condition.

		1	2	3	4	5	6	7	8	9	10	11
1	Age	1	-.030	.128	.018	-.048	.130	.005	-.246	.117	.230	-.315*
2	Ethnicity	-.030	1	-.115	.055	.249	.055	.091	.131	.032	.067	-.047
3	Attendance CBT	.128	-.115	1	.077	-.230	.154	.037	-.002	-.038	-.072	-.182
4	Fam Mess F (T1)	.018	.055	.077	1	.393**	.435**	.554**	-.290*	-.102	-.267	.082
5	Fam Mess F (T2)	-.048	.249	-.230	.393**	1	.166	.482**	-.067	-.382*	-.150	.171
6	Fam Mess M (T1)	.130	.055	.154	.435**	.166	1	.542**	-.524**	-.307*	.032	-.031
7	Fam Mess M (T2)	.005	.091	.037	.554**	.482**	.542**	1	-.236	-.587**	-.028	.307*
8	Girls' Cogn (T1)	-.246	.131	-.002	-.290*	-.067	-.524**	-.236	1	.376**	-.171	-.056
9	Girls' Cogn (T2)	.117	.032	-.038	-.102	-.382*	-.307*	-.587**	.376**	1	-.047	-.487**
10	Depressive (T1)	.230	.067	-.072	-.267	-.150	.032	-.028	-.171	-.047	1	-.058
11	Depressive (T2)	-.315*	-.047	-.182	.082	.171	-.031	.307*	-.056	-.487**	-.058	1
	M	10.53	1.93	19.07	17.08	16.72	15.51	12.73	45.60	56.41	41.76	25.60
	SD	1.15	1.00	1.51	8.34	10.58	8.83	8.87	13.36	12.90	10.24	8.02
	N	55	55	45	53	46	55	48	55	47	54	48

Note. *. Correlation is significant at the 0.05 level; **. Correlation is significant at the 0.01 level (2-tailed); Fam Mess F = family messages (F); (T1)= pre-treatment; (T2)= post-treatment; Fam Mess M = family messages (M); Girls' Cogn= girls' cognitions; Depressive= girls' depressive symptoms.

Pearson Product-Moment Correlations, Means, and Standard Deviations for Indicators for CBT+PT condition.

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	1	-.348*	-.501**	-.277	.032	.030	.013	.001	.022	-.130	.115	.261	-.164
2	Ethnicity	-.348*	1	.112	.231	.048	.064	-.170	.114	-.121	-.029	-.110	.033	-.013
3	Attendance CBT	-.501**	.112	1	.151	-.159	.127	.112	.183	.059	-.153	-.212	-.214	.201
4	Attend PT Mother	-.277	.231	.151	1	.086	.054	-.176	-.043	-.197	-.179	-.228	-.058	-.038
5	Attend PT Father	.032	.048	-.159	.086	1	-.292	-.238	-.293	-.191	.187	.081	.232	.020
6	Fam Mess F (T1)	.030	.064	.127	.054	-.292	1	.666**	.818**	.450**	-.585**	-.395**	.127	.316*
7	Fam Mess F (T2)	.013	-.170	.112	-.176	-.238	.666**	1	.563**	.725**	-.315*	-.364*	.093	.268
8	Fam Mess M (T1)	.001	.114	.183	-.043	-.293	.818**	.563**	1	.514**	-.554**	-.532**	.056	.325*
9	Fam Mess M (T2)	.022	-.121	.059	-.197	-.191	.450**	.725**	.514**	1	-.291	-.603**	.068	.201
10	Girls' Cogn (T1)	-.130	-.029	-.153	-.179	.187	-.585**	-.315*	-.554**	-.291	1	.521**	-.062	-.106
11	Girls' Cogn (T2)	.115	-.110	-.212	-.228	.081	-.395**	-.364*	-.532**	-.603**	.521**	1	.033	-.204
12	Depressive (T1)	.261	.033	-.214	-.058	.232	.127	.093	.056	.068	-.062	.033	1	.103
13	Depressive (T2)	-.164	-.013	.201	-.038	.020	.316*	.268	.325*	.201	-.106	-.204	.103	1
	M	10.69	2.06	18.84	4.67	1.84	15.09	13.84	14.21	12.13	52.87	60.84	39.60	25.29
	SD	1.307	1.08	1.86	2.77	2.99	9.08	10.79	8.87	8.89	12.76	8.97	8.43	6.86
	N	48	48	43	43	43	46	44	47	45	47	45	48	45

*. Correlation is significant at the 0.05 level (2-tailed); **. Correlation is significant at the 0.01 level (2-tailed)

Pearson Product-Moment Correlations, Means, and Standard Deviations for Indicators for MCC condition.

		1	2	3	4	5	6	7	8	9	10
1	Age	1	.068	.035	-.092	.272	.321*	-.155	-.174	-.013	.238
2	Ethnicity	.068	1	-.066	.002	-.058	-.114	-.171	-.331*	.050	.285
3	Fam Mess F (T1)	.035	-.066	1	.333*	.416**	.472**	-.351*	-.221	.124	.107
4	Fam Mess F (T2)	-.092	.002	.333*	1	.312*	.480**	-.274	-.361*	.015	.277
5	Fam Mess M (T1)	.272	-.058	.416**	.312*	1	.711**	-.455**	-.348*	.325*	.201
6	Fam Mess M (T2)	.321*	-.114	.472**	.480**	.711**	1	-.257	-.420**	-.079	.209
7	Girls' Cogn (T1)	-.155	-.171	-.351*	-.274	-.455**	-.257	1	.532**	-.272	-.397**
8	Girls' Cogn (T2)	-.174	-.331*	-.221	-.361*	-.348*	-.420**	.532**	1	-.104	-.441**
9	Depressive (T1)	-.013	.050	.124	.015	.325*	-.079	-.272	-.104	1	.258
10	Depressive (T2)	.238	.285	.107	.277	.201	.209	-.397**	-.441**	.258	1
	M	10.72	2	17.89	14.16	15.00	15.56	48.49	54.20	40.30	29.47
	SD	1.41	1.35	10.06	8.66	8.56	9.72	12.12	13.76	9.36	10.59
	N	47	47	46	44	45	44	47	45	47	45

Note. *. Correlation is significant at the 0.05 level (2-tailed); **. Correlation is significant at the 0.01 level (2-tailed); Fam Mess F = family messages (F); (T1)= pre-treatment; (T2)= post-treatment; Fam Mess M = family messages (M); Girls' Cogn= girls' cognitions; Depressive= girls' depressive symptoms.

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