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Trauma-focused Involvement in Psychotherapy: Relations with Therapeutic Alliance and Symptoms of Post-Traumatic Stress Disorder

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TRAUMA-FOCUSED INVOLVEMENT IN PSYCHOTHERAPY: RELATIONS WITH THERAPEUTIC ALLIANCE AND SYMPTOMS OF POST-TRAUMATIC STRESS DISORDER

A Dissertation
Presented to
the Faculty of the Morgridge College of Education
University of Denver

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
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ABSTRACT

Childhood trauma is a risk factor for a wide range of psychopathology and other damaging outcomes later in life (Cohen, Mannarino, Murray, & Igleman, 2006; Saunders, 2003). Among the many treatment models developed for maltreated youth and their families, both specific and non-specific therapeutic factors such as developing a trauma narrative (e.g., trauma self-disclosure) and forming a strong therapeutic alliance have been identified as “active ingredients” that contribute to positive treatment outcome (Cohen & Mannarino, 1996a, 1998a; Friedrich, 1990). The current study used data from the Aurora-Adolescent Mood Project, a community based randomized controlled trial, which evaluated the effectiveness of a manualized cognitive behavioral treatment for adolescents with depression and prior interpersonal trauma experience. This study used the same participants from the Aurora-Adolescent Mood Project to evaluate an observational coding system (Trauma Involvement Rating scale – TIRS) for trauma-focused involvement within therapy sessions. The sample consisted of 29 participants between the ages of 12 and 18 with a primary diagnosis of a depressive disorder (Major Depressive Disorder (n = 23), Dysthymic Disorder (n = 2), or Depressive Disorder – Not Otherwise Specified (n=4). 142 segments that were flagged as having trauma-focused discussion from 29 cases were evaluated for level of involvement. It was hypothesized that the association between pre-treatment PTSD-Avoidance symptoms and trauma-
focused involvement in therapy would be moderated by the therapeutic alliance.
Hierarchical regression did not reveal a significant interaction between PTSD-Avoidance symptoms and therapeutic alliance in predicting mean trauma-focused involvement. In order to further explore adolescents’ involvement in trauma-focused discussion separate from the therapist contribution, TIRS item one (Does the adolescent initiate discussion or introduce topics related to his or her trauma experience) was examined individually.
Using linear regression, the Beck Depression Inventory (BDI) and PTSD-Avoidance symptoms significantly predicted adolescent initiation of trauma-focused discussion. These results indicate that the higher level of symptomatology and distress present at pre-treatment the more frequently adolescents are going to initiate discussion about interpersonal trauma they have experienced. Overall, this study was the first to investigate trauma-focused involvement using an observational coding system with a community sample of depressed adolescents who had experienced interpersonal trauma. Future research should continue to utilize observational coding methods to analyze trauma-focused involvement with a larger sample of youths who have experienced interpersonal trauma.
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Chapter 1

INTRODUCTION AND REVIEW OF THE LITERATURE

Childhood trauma is a risk factor for a wide range of psychopathology and other damaging outcomes later in life (Cohen, Mannarino, Murray, & Igleman, 2006; Saunders, 2003). Considerable progress has been made over the past two decades identifying effective treatment models for maltreated youth and their families (Cohen et al., 2006; Finkelhor, Ormrod, Turner, & Hamby, 2005). Among these treatment models, both specific and non-specific therapeutic factors such as developing a trauma narrative (e.g. trauma self-disclosure) and forming a strong therapeutic alliance have been identified as “active ingredients” that contribute to positive treatment outcome (Cohen & Mannarino, 1996a, 1998a; Friedrich, 1990). Although research on self-disclosure among adult clients has increased significantly over the past two decades, little empirical attention has been paid to child and adolescent client populations. Therefore evaluating the prevalence of trauma related self-disclosure in youth psychotherapy and specific factors that moderate youth self-disclosure could have significant implications for the treatment of victimized children and adolescents.

This study will evaluate the relationship between the therapeutic alliance and trauma-focused involvement in two forms of therapy for depressed adolescents with a history of childhood trauma. Specifically, this study will explore the impact of the
therapeutic alliance as a moderator between pre-treatment trauma avoidance symptoms and trauma-focused involvement in therapy. Chapter one will provide an overview of the literature on treatment models for trauma exposed children, as well as a review of the literature related to self-disclosure, involvement, and therapeutic alliance in youth psychotherapy. Chapter one concludes with the definition of terms, a summary and statement of the problem, as well as an overview of the hypotheses and research questions that will be tested in this study. Chapter two includes a review of the methods and procedures for the proposed study including detailed information about the participants, design, measures to be used, and statistical analyses to be conducted.

Trauma-Focused Psychotherapy Process Research

Trauma has been defined as sexual, physical, or emotional abuse, neglect, and exposure to domestic or community violence (Cohen et al., 2006; Saunders, 2003). Several recent studies have shown that exposure to trauma does not typically occur as a single episode, but rather as multiple incidents of the same type of trauma or multiple different traumas (e.g., physical abuse and exposure to domestic violence; Saunders, 2003; Slep & O’Leary, 2001). Among the many trauma categories, childhood trauma has received considerable attention over the years. In the past two decades alone, there has been considerable progress made in research concerning childhood trauma and treatments for maltreated children and families (Cohen et al., 2006; Cohen, Mannarino, Berliner, & Deblinger, 2000; Foa & Meadows, 1997; Saunders, 2003). Not only is childhood trauma a risk factor for a variety of problems that occur later in life, including psychological, social, behavioral, and medical problems (Saunders, 2003), but it is also associated with increased prevalence of Posttraumatic Stress Disorder (PTSD), depression, suicide,
substance abuse, and other risky behaviors (Cohen et al., 2006). Throughout this study, trauma, as associated with children, will be described as childhood sexual, physical, or emotional abuse, as well as neglect and exposure to domestic and community violence.

Over the years, a variety of treatment models have been developed for trauma exposed children. These models derive from a variety of theoretical frameworks, including: (a) Psychoanalytic treatment specifically designed for sexually abused children (Trowell et al., 2002); (b) Abuse-Focused Cognitive Behavioral Therapy (AF-CBT; Kolko & Swenson, 2002) designed to target physically abusive parents and physically abused children; (c) Child-Parent Psychotherapy (CPP; Lieberman et al., 2005) designed to address PTSD symptoms in children below the age of six; (d) Multisystemic Therapy (Brunk et al., 1987) focusing on improving parent-child interaction in addition to providing a parent training component; and (e) Trauma-Focused Cognitive Behavioral Therapy (TF-CBT; Cohen & Mannarino, 1996a, 1998a). Although each of these treatment models has demonstrated efficacy in one or more randomized controlled treatment trials (Brunk et al., 1987; Kolko & Swenson, 2002; Lieberman & Van Horn, 2005; Trowell et al., 2002), the most tested treatment for traumatized children currently is TF-CBT (Cohen et al., 2006).

As a result of such comprehensive studies, TF-CBT is currently the most empirically supported treatment for children and adolescents who have experienced trauma (Cohen, et al., 2006). Six randomized controlled trials have demonstrated the efficacy of the TF-CBT model (Cohen & Mannarino, 1996a, 1998a; Cohen & Eblinger et al., 2004; Deblinger et al., 1996; Deblinger et al., 2001; King et al., 2000), which was originally created to treat children who have experienced sexual abuse (Cohen &
Mannarino, 1993). However, the treatment model has been adapted more recently to treat children exposed to a variety of traumas. The model is specifically designed to target trauma-related symptoms, including PTSD, depression, anxiety, as well as trauma-related cognitions such as self-blame, shame, and worthlessness (Cohen et al., 2006; Cohen & Mannarino, 2008). In addition, TF-CBT integrates aspects of cognitive behavioral, interpersonal, and family therapy within the treatment model, in addition to trauma sensitive interventions (e.g., developing a trauma narrative) for maltreated children and parents.

Trauma-Focused Cognitive Behavioral Therapy has been tested in multiple randomized controlled trials against other active treatments such as client-centered therapy, treatment as usual, and a waitlist control condition (Cohen & Mannarino, 1996; Deblinger et al., 1996; Deblinger et al., 2001; King et al., 2000). These studies have included children from 3 to 17 years of age and have supported the efficacy of this model for decreasing PTSD, depression, and other emotional and behavioral difficulties. Cohen and Mannarino (1996) found children who received TF-CBT experienced significantly greater improvements in internalizing and externalizing PTSD symptoms than children who received client-centered therapy. In a subsequent study, Cohen, Deblinger, Mannarino, and Steer (2004) conducted a multisite outcome analysis for children who have been exposed to multiple traumas. Results of this study indicated greater improvement in PTSD, depression, anxiety, and shame for children receiving TF-CBT than for those receiving child-centered therapy (Cohen et al., 2004).

The treatment components of TF-CBT are summarized by the acronym PRACTICE: Parenting skills and Psychoeducation, Relaxation skills, Affective
modulation skills, Cognitive processing, Trauma narration, In vivo desensitization, Conjoint child-parent sessions, and Enhancing safety and future development (Cohen, et al., 2006). A core component to the TF-CBT model is the use of gradual exposure and the development of a trauma narrative (Cohen & Mannarino, 2008). Throughout the course of treatment, the child develops a trauma narrative by gradually telling the story of what took place during his or her trauma experience(s). Cohen and Mannarino (2008) demonstrated the importance of the trauma narrative in helping children overcome avoidance of traumatic memories and identifying cognitive distortions, which contribute to negative affective states such as low self-esteem, shame, and self-blame.

Creating a trauma narrative has also been referred to as gradual exposure and is one type of exposure technique that has proven to be efficacious in treating PTSD symptoms in both children and adult populations (Cohen & Mannarino, 1993; Deblinger & Heflin, 1996; Foa et al., 1998; March et al., 1998). In a critical review of psychosocial treatments for adults with symptoms of PTSD, Foa, Rothbaum, Riggs, and Murdock (1991) compared prolonged exposure, stress inoculation training, and supportive counseling in a treatment for women victims of sexual or nonsexual assault with a current diagnosis of PTSD. Participants who received stress inoculation training or prolonged exposure improved on all three clusters of PTSD symptoms (e.g., re-experiencing, avoidance/numbing, and increased arousal); however, all measures of symptomatology indicated prolonged exposure was the most successful (Foa et al., 1991). Exposure techniques have also been utilized in the treatment of children who have experienced sexual abuse (Cohen & Mannarino, 1996a, 1997; Deblinger et al., 2001), community
violence (Pynnoos & Nader, 1988), traumatic grief (Cohen et al., 2006) and single-
episode traumatic events (March et al., 1998).

Cohen, Mannarino, and Deblinger (2006) describe one of the main goals of
creating a trauma narrative is to separate thoughts or reminders of the traumatic event
from overwhelming negative affective states such as horror, extreme helplessness, or
shame. Creating a trauma narrative serves two main purposes. First, repeated reading,
writing, and discussion of what happened during the trauma desensitizes the participant
to traumatic reminders and decreases avoidance, along with physical and psychological
hyperarousal to such reminders (Cohen et al., 2006). Second, integrating the participants
thoughts and feelings related to the traumatic event enables the child or adolescent to
successfully integrate the trauma experience and its meaning into a more functional and
optimal self-concept (Cohen et al., 2006). As the child or adolescent patient is
encouraged to talk about the disturbing aspects of the traumatic event a small amount at a
time, the memories related to the traumatic event become less painful and overwhelming
over time (Cohen et al., 2006).

As with a number of other treatment models mentioned earlier, TF-CBT has been
found to be effective in decreasing multiple trauma-related symptoms (e.g. internalizing,
externalizing, and PTSD) in children and adolescents (Cohen & Mannarino, 1996a, 1997;
Cohen et al., 2006; Deblinger et al., 2001). Moving forward it is critical to examine
potential factors (demographic, familial, trauma-related, etc.) that might mediate or
moderate treatment response. One potentially important factor to evaluate is PTSD-
based avoidance and how this might interfere with the “active ingredients” in treatment
models such as TF-CBT (e.g. developing a trauma narrative). One would expect that
higher levels of PTSD-related avoidance would decrease the frequency and depth of trauma-related self-disclosure in therapy, which would negatively impact the client’s ability to develop a trauma narrative throughout treatment. The degree to which a child or adolescent engages in trauma self-disclosure during treatment can have a significant impact on the treatment outcome.

**Self-Disclosure**

Psychotherapy is a process in which a person has the opportunity to share thoughts, feelings, and experiences that are not easily expressed or articulated elsewhere. A variety of theoretical frameworks (i.e., CBT, Psychoanalytic, Client-Centered) contend that therapeutic success derives, in large part, from the client’s involvement in therapy and willingness to self-disclose and process problematic experiences (Chu & Kendall, 2004; Farber & Hall, 2002; Farber, 2003; Williams et al., 1999). Until recently, research on self-disclosure has focused primarily on the influence of the therapist’s self-disclosure within psychotherapy with minimal focus on the impact of client self-disclosure (Farber & Hall, 2002). Over the past 15 years, interest in research on client self-disclosure has increased considerably (Farber et al., 2004).

Within the adult psychotherapy literature, self-disclosure can be defined as verbally discussing personal information within therapy (Kahn et al., 2001) and as originally measured (Miller et al., 1983), refers to the disclosure of a wide range of aspects concerning the client including positive and negative emotions and experiences. More recently self-disclosure has focused on the disclosure of personally distressing information (Kahn & Hessling, 2001; Pennebaker, 1995; Williams et al., 1999), which requires the client to share unpleasant thoughts, feelings, and experiences, such as...
feelings of shame, past traumatic events, or a depressed mood. Research that has focused on both non-distressing disclosure (e.g., talking about a leisure activity) as well as distressing disclosure (e.g., talking about an embarrassing secret) has led to inconsistent findings (Kahn et al., 2001). For instance, research by Stiles and colleagues failed to reveal a relationship between the disclosure of subjective information (e.g., both non-distressing and distressing disclosures) and counseling outcome among adult clients (Stiles, 1995; Stiles & Shapiro, 1994). The discrepant findings on the benefits of disclosure in therapy is likely due to lumping the disclosure of personally distressing and non-distressing content together, rather than looking at them as separate constructs. One might imagine that frequent disclosures of non-distressing information that are not relevant to the client’s presenting issue may actually serve as a barrier to client progress in treatment. For that reason, this study focuses on the disclosure of personally distressing information, rather than the disclosure of non-distressing information (Kahn et al., 2001).

Research that has focused on the disclosure of distressing information, without the confounding influences of the disclosure of non-distressing content, has revealed promising results with adult populations (Khan, Achter, & Shambaugh, 2001). The term *distress disclosure* is a construct originally described by Coates and Winston (1987), and refers to a client’s tendency to disclose personally distressing information across time and situations. Research by Khan et al. (2001), has explored whether distress disclosure relates to “social support, personality, perceived stress, and psychological symptomatology” (p. 205) among an adult client sample. Their results indicated that clients who have a tendency to disclose personally distressing information reported
experiencing increased support from their environment, a more stable sense of well-being, and less susceptibility to experience negative emotions than did clients who have a tendency to conceal distress (Khan et al., 2001). More recently, Khan and Garrison (2009) examined the relationship between symptoms of emotional disorders and self-disclosure versus avoidance of emotion in therapy. They found that individuals with higher levels of symptomatology were less likely to disclose their emotions to others than were individuals with lower levels of symptomatology (Khan & Garrison, 2009). In addition, individuals with higher levels of depression were less likely to disclose emotion than were individuals with lower levels of depression (Khan & Garrison, 2009).

The theory of social sharing has also addressed the normative processes associated with distress disclosure and suggests that individuals seek out others with whom to share their feelings when they have experienced a distressing event (Rime, 1995). The fever model of disclosure also suggests that individuals who experience distress will be motivated to share their distress with others (Stiles, 1995). The fever model expects that the more distressed an individual is, the more he or she will disclose about the distress (Stiles, 1995). This theory has been supported by research demonstrating that individuals participate in more self-disclosure when describing an anxiety-provoking event than when describing a happy event (Stiles, Shuster, & Harrigan, 1992).

Research by Farber and Hall (2002) has investigated the extent to which adult clients disclose a wide range of personal information to their therapists and factors that affect client disclosure. This study found that the most frequent client disclosure was related to two themes, negative feelings and experiences of intimate relationships. This was in contrast to the observation that the least frequent client disclosure was related to issues of
sexuality and procreation (Faber & Hall, 2002). In addition, these results suggested that client proneness to feelings of shame does not appear to be associated with overall disclosure; however, the strength of the therapeutic alliance was found to be significantly associated with overall client disclosure (Farber & Hall, 2002). In a subsequent study by Farber, Berano, and Capobianco (2004), clients’ views of the process and outcome of disclosure in therapy were investigated, and the results of the study indicated that following disclosures of intimate issues, most participants reported a mixture of positive emotions such as feeling good and relieved and reported that their disclosures made future disclosures easier (Farber et al., 2004).

Although research on self-disclosure among adult patients has increased significantly over the past two decades, little empirical attention has been paid to child and adolescent patient populations. To date, research for children and adolescents has looked more at overall involvement in treatment as a variable, rather than specifically investigating self-disclosure (Chu & Kendall, 2004, 2009). Child involvement in treatment “includes the child’s willingness to behaviorally participate in therapy activities as well as the child’s willingness to self disclose, ask questions, and mentally engage the therapeutic material” (Chu & Kendall, 2004, p. 821). Chu and Kendall (2004) suggested that positive involvement is important for beneficial outcomes in both adult and child clients.

In an effort to code the level of child involvement or participation in a therapy session, the Child Involvement Rating Scale was developed (CIRS; Chu & Kendall, 1999). The CIRS contains four items of positive involvement (self-disclosure, initiates discussion, elaborates on points made by the therapist, demonstrates enthusiasm in therapy-related tasks) and two items of negative involvement (withdrawn, avoidant) (Chu
& Kendall, 2004). The six items are rated on a six-point scale from zero (not at all present) to five (a great deal present) (Chu & Kendall, 2004). The CIRS has demonstrated strong internal consistency ($\alpha = .73$) (Chu & Kendall, 2004, 2009), and the findings by Chu and Kendall (2004) indicated that greater levels of child involvement in therapy are significantly related to diagnostic improvement in impairment ratings.

**Concealment**

Theories of self-concealment have developed somewhat independently from theories of self-disclosure (Khan & Hessling, 2001). Self-concealment has been defined as one’s active concealment of highly intimate, negative personal information (Larson & Chastain, 1990), and has been found to relate to a variety of measures of psychological symptoms. Concealment research has focused on areas such as self-concealment, secret keeping, and avoidance (Khan et al., 2001; Williams et al., 1999). Larson and Chastain’s (1990) Self-Concealment Scale (SCS) has long been the standard for measuring self-concealment in therapy, and is used to assess both the concealment of specific secrets and the general tendency to conceal negative information (Khan et al., 2001). Although research has shown that self-concealment relates to a variety of psychological symptoms among non-clients (Kelly & Achter, 1995; Larson & Chastain, 1990), few studies have demonstrated these effects among therapy clients.

Often associated with self-concealment, secret keeping refers to significant life events, facts or emotions that clients do not tell their therapists (Hill et al., 1993). Outcome research related to relevant secret keeping in therapy has produced inconsistent findings. For example, Hill et al. (1993) found negative correlations between a range of secrets kept by clients, such as feelings of inadequacy and interpersonal alienation, and
client-rated satisfaction with counseling. However, a subsequent study by Kelly (1998) found that keeping relevant secrets was positively related to symptom improvement after controlling for client self-concealment and social desirability. This inconsistency of results may be due to the broad range of process variables that have been included under the category of client concealment, making it challenging to generalize across studies (Hill et al., 2000).

Research on patient concealment has also focused on avoidance behavior. Stiles et al. (1990) explored the avoidance of painful thoughts and emotions in therapy and the way in which problematic experiences fail to be processed. Results of this study emphasized that emotional processing of problematic experiences is a central feature of psychotherapy and developed an Assimilation model to account for this process (Stiles et al., 1990). The early stages of the Assimilation model describe two classes of problematic experiences that can be avoided in therapy, which are described as the “pain paradigm” and “panic paradigm” (Williams et al., 1999).

An inability to retrieve intensely painful life experiences on the one hand (pain paradigm) and catastrophic expectations about the consequences of recollecting or reporting the experiences on the other (panic paradigm) represent two possible ways in which a problematic experience can affect later psychopathology. (Williams et al., 1999, pp. 189-299)

The Assimilation model was developed as a helpful framework for therapists to use in navigating through therapy, specifically when working with clients with past trauma experience (Williams et al., 1999).

Self-disclosure, concealment, and client involvement in therapy are all variables that play a significant role in therapeutic process and treatment outcome. Specifically, self-disclosure of distressing information and high levels of client involvement in therapy
has been found to be significantly related to diagnostic improvement and functioning in the child and adolescent population (Chu & Kendall, 2004). With this knowledge, it is then important to address what therapeutic processes aid in facilitating self-disclosure and involvement in therapy, such as the therapeutic alliance.

*Therapeutic Alliance in Psychotherapy*

Research on youth alliance has often been described as the relational, emotional, and cognitive connection between the client and therapist (Karver et al., 2008). The results of these studies have highlighted the importance of youth clients experiencing their therapist as trusting, accepting, supportive, and responsive in order to facilitate collaboration and a positive working relationship (Karver et al., 2005; Shirk & Saiz, 1992; Shirk, Gudmundsen, Crisp, & McMakin, 2008). The importance of the therapeutic relationship between client and therapist has been one of the most consistent predictors of adult treatment outcomes across types of treatment (Horvath, 2001; Martin, Graske, & Davis, 2000). Although research on youth alliance has received less attention than research focused on the adult demographic, a growing number of studies have emerged exploring the relationship between therapeutic relationship variables and treatment outcomes in child and adolescent therapy.

Therapeutic alliance has been defined in numerous but similar ways. Most commonly, the alliance has been defined as a type of relational connection with the therapist and includes process variables referred to as bond, trust, acceptance, collaboration, and agreement on goals or tasks in therapy (Karver et al., 2005). Research investigating the relationship between youth therapeutic alliance variables and treatment outcome, typically conceptualized as a decrease in mental health symptom severity,
improved level of functioning, or decreased level of distress experienced (Salzer et al., 1997), has revealed a modest but reliable association, similar to those found in the adult literature (Karver, Handelsman, Fields, & Bickman, 2006; Shirk & Karver, 2003). A meta-analysis by Shirk and Karver (2003) included 23 studies that demonstrated significant correlations between the quality of the therapeutic relationship and treatment outcome in child and adolescent therapy. Their findings revealed a weighted mean correlation of .20 between relationship variables and treatment outcomes (Shirk & Karver, 2003). Similar to these findings, a more recent meta-analysis by Karver et al. (2006), including 10 studies directly measuring alliance in youth psychotherapy to treatment outcome, revealed a weighted mean correlation of .21.

Therapeutic alliance has not only been shown to influence treatment outcome, but it has also been shown to facilitate client involvement and client self-disclosure in therapy (Chu & Kendall, 2004; Farber & Hall, 2002; Karver et al., 2005, 2006; Shirk & Karver, 2006; Smith & Grawe, 2003). Karver et al. (2006) conducted a meta-analysis that examined 13 studies measuring youth participation in treatment, with a variety of therapeutic process variables, including therapeutic alliance, therapist empathy, and therapist flexibility. Across studies, youth participation in treatment had a mean correlation of 0.30 with therapeutic process variables (Karver et al., 2006), indicating that high levels of therapist empathy and flexibility and a strong therapeutic alliance, had a positive impact on youth treatment participation.

Further investigation of this relationship was explored in a recent study by Karver et al. (2008), where he examined the relationship between therapeutic alliance measures and client involvement scores in a randomized controlled trial for adolescents with depressive
symptoms. The results of this study revealed a strong significant correlation between therapeutic alliance and client involvement (.76) when measured across sessions, and across therapeutic approaches, using multiple informants (i.e., observational and self-report ratings; Karver et al., 2008). Smith and Grawe (2003) looked at a similar construct to client involvement, investigating clients’ responsiveness to interventions in therapy. Their findings revealed that the highest level of client responsiveness to interventions in therapy was predicted by the perceived competence of the therapist, a good therapeutic bond, and a highly motivated client (Smith & Grawe, 2003).

In addition to client involvement, therapeutic alliance also has been proven to facilitate client self-disclosure in therapy (Farber, 2003). In a series of studies, Farber and colleagues (Farber & Hall, 2002; Farber, 2003; Farber, Berano, & Capobianco, 2004) investigated the association between client self-disclosure and the strength of the therapeutic relationship. The results of these studies revealed that the stronger the therapeutic alliance, the greater the total disclosure (Farber & Hall, 2002). Most participants perceived the decision to disclose as positively influenced by the quality of the therapeutic relationship, specifically relating to the therapist’s ability to build an accepting, attentive, and affirming relationship with the client.

To date, research on the impact of the therapeutic alliance in psychotherapy has resulted in profound implications for treatment and practice. It is clear that forming a strong therapeutic alliance can facilitate participation and self-disclosure in therapy, which in turn can positively affect therapeutic outcome. However, the influence of client pre-treatment characteristics on self-disclosure and the development of a therapeutic relationship in therapy remains poorly understood. Of primary concern is the impact that
post-traumatic stress-related avoidance might have on self-disclosure in therapy and whether or not the therapeutic alliance moderates this effect.

*Trauma Symptoms and PTSD-Related Avoidance*

Children and adolescent responses to trauma vary greatly among a range of behavioral, emotional, cognitive, and physical difficulties that are directly related to the trauma experience (Cohen et al., 2006). Many of these difficulties typically correspond to Post-traumatic Stress Disorder (PTSD), and can include depressive, anxiety, or behavioral symptoms, emotion dysregulation, self-injury, substance abuse, and impaired interpersonal trust (Cohen et al., 2006). The *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000) listed a number of symptoms that are associated with the after effects of involvement in traumatic incidents and classified as PTSD. These symptoms include: fear, helplessness or horror, recurrent distressing images or thoughts of the event, intense psychological distress at exposure to cues that remind the individual of the event, persistent avoidance of feelings or situations that remind the individual of the event, and finally, persistent symptoms of increased arousal. Among these symptoms, avoidance related to PTSD is particularly important to consider in relation to the therapeutic process as one would posit that increased avoidance of painful memories would directly impact client involvement and self-disclosure in therapy. Although there appears to be a growing body of literature that has investigated the relationship between anxiety, mood symptoms, and self-disclosure of distressing events in therapy, to date, no research has examined the direct relationship between PTSD-related avoidance and trauma self-disclosure within therapy.
Campbell-Sills and Barlow (2007) explored the relationship between emotional avoidance and symptoms of anxiety and depression in developing their emotion dysregulation theory. The theory states that individuals with depression and anxiety tend to avoid their emotions, and this avoidance may restrict emotional self-disclosure in therapy (Campbell-Sills & Barlow, 2007). Furthermore, emotional avoidance among clients with mood and anxiety disorders is expected to take two forms. First, emotional experience, which is related to a subjective feeling such as sadness or anger, is avoided by the individual (Khan & Garrison, 2009). Strategies such as distraction (i.e., shifting attention away from an emotionally charged stimulus) and thought suppression (i.e., controlling thoughts associated with an emotion), have been identified as commonly used to avoid emotional experience (Kahn & Garrison, 2009). Research has supported this aspect of emotional avoidance and has shown that individuals with panic disorders are more likely to cope with their symptoms by suppressing negative emotions than non-disordered individuals (Baker, Halloway, Thomas, Thomas, & Owens, 2004). Second, clients with mood and anxiety disorders show a tendency to avoid the behavioral expression of emotions, including body posture and facial expression in response to an emotional cue (Campbell-Sills & Barlow, 2007). Expressive suppression of emotions does not imply that the emotional experience is being repressed; rather, it involves attempts to hide observable signs of what one is feeling from others (Khan & Garrison, 2009). In a study by Campbell-Sills, Barlow, Brown, and Hofmann (2006), both clinical and non-clinical participants were shown a video designed to elicit anxiety and dysphoria. Their findings revealed that participants with mood and anxiety disorders
engaged in more suppression of their emotional experience and expression than did non-clinical participants (Campbell-Sills et al., 2006).

A subsequent study by Khan and Garrison (2009) identified two main limitations in the existing research on emotional avoidance and pre-treatment symptomatology. First, researchers have neglected to examine the patient's generalized tendency to disclose emotion versus emotional disclosure related to a specific event (Khan & Garrison, 2009). Second, avoidance of emotion experience and expression has not been assessed simultaneously with verbal emotional self-disclosure (Khan & Garrison, 2009). Khan and Garrison’s (2009) study addressed both of these limitations and found that individuals with heightened symptoms of depression were less likely to disclose their emotions to others than were individuals with fewer depressive symptoms. This held true in terms of generalized tendencies to self-disclose, and in the self-disclosure of a specific event (Kahn & Garrison, 2009). Extrapolating from the research findings of Campbell-Sills, and Barlow (2007), and their emotion dysregulation theory, individuals with heightened symptoms are expected to engage in greater avoidance of emotions than are individuals with fewer symptoms (Khan & Garrison, 2009).

These results have important implications for research and practice that are worth considering. First, when working with individuals with heightened symptomatology it may be important to place greater emphasis on the development of a strong therapeutic relationship, in order to develop the trust and collaboration needed for individuals to feel more comfortable disclosing distressful thoughts and feelings. Second, the presence of PTSD symptoms in addition to other heightened mental health symptoms may exacerbate avoidance within therapy, which again may place emphasis on the importance of the
therapeutic relationship to counteract these symptom effects. Lastly, these results stress the need for future research to investigate potential process variables that aid in moderating the effects of client symptom severity and avoidance in therapy.

Summary and Statement of the Problem

In the past two decades alone, there has been considerable progress made in research concerning childhood trauma and treatments for maltreated children and families (Cohen et al., 2006; Cohen, Mannarino, Berliner, & Deblinger, 2000; Foa & Meadows, 1997; Saunders, 2003). Not only is childhood trauma a risk factor for a variety of problems that occur later in life, including psychological, social, behavioral, and medical problems (Saunders, 2003), but it is also associated with increased prevalence of Posttraumatic Stress Disorder (PTSD), depression, suicide, substance abuse, and other risky behaviors (Cohen et al., 2006).

Over the years, a variety of treatment models have been developed for trauma exposed children; however, the most tested treatment for traumatized children today is TF-CBT (Cohen et al., 2006). TF-CBT has been tested in multiple randomized controlled trials against other active treatments such as client-centered therapy, treatment as usual, and a waitlist control condition (Cohen & Mannarino, 1996; Deblinger et al., 1996; Deblinger et al., 2001; King et al., 2000). A core component to the TF-CBT model is the use of gradual exposure and the development of a trauma narrative (Cohen & Mannarino, 2008). Cohen, Mannarino, and Deblinger (2006) describe one of the main goals of creating a trauma narrative is to separate thoughts or reminders of the traumatic event from overwhelming negative affective states such as horror, extreme helplessness, or shame. As the child or adolescent patient is encouraged to talk about the disturbing
aspects of the traumatic event a small amount at a time, the memories related to the traumatic event become less painful and overwhelming over time (Cohen et al., 2006).

In order for a client to benefit from a treatment such as TF-CBT, he or she must be willing to share personally distressing information with the therapist, or in other words, self-disclose in therapy. Research that has focused on the disclosure of distressing information in therapy has revealed promising results within the adult literature (Farber & Hall, 2002; Farber et al., 2004; Khan et al., 2001; Khan & Garrison, 2009); however, little empirical attention has been paid to child and adolescent patient populations. To date, research for children and adolescents has looked more at overall involvement in treatment as a variable, rather than specifically investigating self-disclosure (Chu & Kendall, 2004, 2009).

Child involvement in treatment “includes the child’s willingness to behaviorally participate in therapy activities as well as the child’s willingness to self disclose, ask questions, and mentally engage the therapeutic material” (Chu & Kendall, 2004, p.821). Findings by Chu and Kendall (2004) indicated that greater levels of child involvement in therapy are significantly related to diagnostic improvement and impairment ratings. With this knowledge, it is then important to address what therapeutic processes aid in facilitating self-disclosure and involvement in therapy, such as the therapeutic alliance.

Research investigating the relationship between youth therapeutic alliance variables and treatment outcome, typically conceptualized as a decrease in mental health symptom severity, improved level of functioning, or decreased level of distress experienced (Salzer et al., 1997), has revealed a modest but reliable association, similar to those found in the adult literature (Karver, Handelsman, Fields, & Bickman, 2006;
Therapeutic alliance has not only been shown to influence treatment outcome, but it has also been shown to facilitate client involvement and client self-disclosure in therapy (Chu & Kendall, 2004; Farber & Hall, 2002; Karver et al., 2005, 2006; Shirk & Karver, 2006; Smith & Grawe, 2003). Although it is clear that forming a strong therapeutic alliance can facilitate participation and self-disclosure in therapy, which in turn can positively affect therapeutic outcome, the influence of client pre-treatment characteristics on self-disclosure and the development of a therapeutic relationship in therapy remains poorly understood. Of primary concern is the impact that post-traumatic stress-related avoidance might have on self-disclosure in therapy and whether or not the therapeutic alliance moderates this effect.

Children and adolescents' responses to trauma vary greatly among a range of behavioral, emotional, cognitive, and physical difficulties that are directly related to the trauma experience (Cohen et al., 2006). Many of these difficulties typically correspond to Post-traumatic Stress Disorder (PTSD), and can include depression, anxiety, or behavioral symptoms, emotion dysregulation, self-injury, substance abuse, and impaired interpersonal trust (Cohen et al., 2006). Avoidance related to PTSD is particularly important to consider in relation to the therapeutic process, as one would posit that increased avoidance of painful memories would directly impact client involvement and self-disclosure in therapy. Although there appears to be a growing body of literature that has investigated the relationship between anxiety, mood symptoms, and self-disclosure of distressing events in therapy, to date, no research has examined the direct relationship between PTSD-related avoidance and trauma-focused involvement within therapy.
Research by Campbell-Sills et al. (2006) revealed that participants with mood and anxiety disorders engaged in more suppression of their emotional experience and expression than did non-clinical participants. In addition, a study by Khan and Garrison (2009) found that individuals with heightened symptoms of depression were less likely to disclose their emotions to others than were individuals with fewer depressive symptoms. These results have important implications for research and practice that are worth considering.

First, when working with individuals with more severe symptomatology it may be important to place greater emphasis on the development of a strong therapeutic relationship, in order to develop the trust and collaboration needed for individuals to feel more comfortable disclosing distressful thoughts and feelings. Second, the presence of PTSD symptoms in addition to other heightened mental health symptoms may exacerbate avoidance within therapy, which again may place emphasis on the importance of the therapeutic relationship to counteract these symptom effects. Lastly, these results stress the need for future research to investigate potential process variables that aid in moderating the effects of client symptom severity and avoidance in therapy.

In summary, the current study will evaluate the relationship between the therapeutic alliance and trauma-focused involvement in two forms of therapy for depressed adolescents with a history of childhood trauma. Specifically, this study will explore the impact of the therapeutic alliance as a moderator between pre-treatment trauma avoidance symptoms and trauma-focused involvement in therapy. The research questions for this study are provided below and hypotheses are specified.
Hypotheses

Therapeutic alliance has not only been shown to influence treatment outcome, but it has also been shown to facilitate client involvement and client self-disclosure in therapy (Chu & Kendall, 2004; Farber & Hall, 2002; Karver et al., 2005, 2006; Shirk & Karver, 2006; Smith & Grawe, 2003). Therefore the hypothesis that a strong therapeutic alliance will be positively associated with trauma-focused involvement will be tested for m-CBT and TAU treatment conditions. Although there appears to be a growing body of literature that has investigated the relationship between anxiety, mood symptoms, and self-disclosure of distressing events in therapy, to date, no research has examined the direct relationship between PTSD-related avoidance and trauma-focused involvement in therapy. Avoidance related to PTSD is particularly important to consider in relation to the therapeutic process, as one would posit that increased avoidance of painful memories would directly impact client involvement and self-disclosure in therapy. For this reason, the hypothesis that higher levels of pre-treatment PTSD-Avoidance symptoms will be negatively associated with trauma-focused involvement will be tested in m-CBT and TAU treatment conditions. Research by Campbell-Sills et al. (2006) revealed that participants with mood and anxiety disorders engaged in more suppression of their emotional experience and expression than did non-clinical participants. In addition, a study by Khan and Garrison (2009) found that individuals with heightened symptoms of depression were less likely to disclose their emotions to others than were individuals with fewer depressive symptoms. Therefore the hypothesis that higher levels of pre-treatment depressive symptoms will be negatively associated with trauma-focused involvement will be tested in m-CBT and TAU treatment conditions. Because the therapeutic alliance has
been shown to facilitate client involvement and client self-disclosure in therapy (Chu & Kendall, 2004; Farber & Hall, 2002; Karver et al., 2005, 2006; Shirk & Karver, 2006; Smith & Grawe, 2003), it is likely that a strong therapeutic alliance will act as a buffer between PTSD-related avoidance and trauma-focused involvement in therapy. For this reason, the hypothesis that a positive therapeutic alliance will increase trauma-focused involvement in therapy, when controlling for early symptoms of PTSD-Avoidance will be tested in m-CBT and TAU treatment conditions (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Measures</th>
<th>Statistical Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Higher levels of therapeutic alliance will be positively associated with greater trauma-focused involvement for a) m-CBT and b) TAU.</td>
<td>Therapeutic Alliance Scale for Adolescents (TASA) total score measured at session 2. Trauma Disclosure Coding Scale (TDCS) average score subsequent to session 2 will be used rather than the total score to account for the amount of trauma discussion time across all sessions.</td>
<td>A linear regression model will be used to test hypothesis one. TDCS will be the dependent variable and TASA will be the independent variable.</td>
</tr>
<tr>
<td>2. Higher levels of pre-treatment PTSD-Avoidance symptoms will be negatively associated with trauma-focused involvement for a) m-CBT, and b) TAU.</td>
<td>K-SADS PTSD Avoidance subscale (6 items) total score measured at pre-treatment. Trauma Disclosure Coding Scale (TDCS) average score subsequent to session 2 will be used rather than the total score to account for the amount of trauma discussion time across all sessions.</td>
<td>A linear regression model will be used to test hypothesis two. TDCS will be the dependent variable and K-SADS PTSD Avoidance will be the independent variable.</td>
</tr>
<tr>
<td>3. Higher levels of Beck Depression Inventory</td>
<td></td>
<td>A linear regression model</td>
</tr>
</tbody>
</table>
Depression will be negatively associated with trauma-focused involvement for a) m-CBT and b) TAU.

(BDI) total score measured at pre-treatment.

Trauma Disclosure Coding Scale (TDCS) average score subsequent to session 2 will be used rather than the total score to account for the amount of trauma discussion time across all sessions.

Will be used to test hypothesis three. TDCS will be the dependent variable and BDI will be the independent variable.

4. The association between pre-treatment PTSD-Avoidance symptoms and trauma-focused involvement will be moderated by the therapeutic alliance for a) m-CBT and b) TAU.

Therapeutic Alliance Scale for Adolescents (TASA) total score measured at session 2.

K-SADS PTSD Avoidance subscale (6 items) total score measured at pre-treatment.

Trauma Disclosure Coding Scale (TDCS) average score subsequent to session 2 will be used rather than the total score to account for the amount of trauma discussion time across all sessions.

Moderation tests will be performed with hierarchical regression. TASA and K-SADS PTSD Avoidance scores will be entered in the first step, and the centered interaction term (therapeutic alliance x PTSD-Avoidance) will be entered in step two.

**Definition of Terms**

Throughout this study, trauma, as associated with children, will be described as childhood sexual, physical, and emotional abuse in conjunction with neglect and exposure to domestic and community violence. According to Child Welfare Information Gateway (2008), the following descriptions define child emotional abuse and neglect in the United States:
Emotional abuse (or psychological abuse) is a pattern of behavior that impairs a child’s emotional development or sense of self-worth. This may include constant criticism, threats, or rejection, as well as withholding love, support, or guidance.

Neglect is a failure of a parent, guardian, or other caregiver to provide for a child’s basic needs. Neglect may be physical, medical, educational, and/or emotional (p. 2-3).

Research on youth alliance has often been described as the relational, emotional, and cognitive connection between the client and therapist (Karver et al., 2008). The results of recent studies have highlighted the importance of youth clients experiencing their therapist as trusting, accepting, supportive, and responsive in order to facilitate collaboration and a positive working relationship (Karver et al., 2005; Shirk & Saiz, 1992; Shirk, Gudmundsen, Crisp, & McMakin, 2008).

Self-concealment has been defined as one’s active concealment of highly intimate, negative personal information (Larson & Chastain, 1990), and has been found to relate to a variety of measures of psychological symptoms. Often associated with self-concealment is secret keeping, which refers to significant life events, facts or emotions that clients do not tell their therapists (Hill et al., 1993).

Self-disclosure can be defined as verbally discussing personal information within therapy (Kahn et al., 2001) and as originally measured (Miller et al., 1983), refers to the disclosure of a wide range of aspects concerning the client including positive and negative emotions and experiences. More recently self-disclosure has focused on the disclosure of personally distressing information (Kahn & Hessling, 2001; Pennebaker,
1995; Williams et al., 1999), which requires the client to share unpleasant thoughts, feelings, and experiences, such as feelings of shame, past traumatic events, or a depressed mood.
Chapter 2

METHODOLOGY

Design Overview

This dissertation study was part of the Aurora Adolescent Mood Project (A-AMP), a community based randomized controlled trial, which evaluated the effectiveness of a manualized cognitive behavioral treatment for adolescents with depression and prior trauma experience. Participants in A-AMP were randomized into either the modified cognitive behavior therapy (m-CBT) condition or treatment as usual (TAU). The m-CBT protocol retained the core structure of the original manual with a new emphasis on the implementation of mindfulness-based strategies around content specific to adolescents with childhood interpersonal trauma. The purpose of these mindfulness-based strategies was to teach clients to increase concentration; awareness of thoughts, feelings, bodily sensations; and attention to the present (as opposed to ruminating about past events). The TAU condition was an eclectic form of adolescent therapy that involved interventions from a number of approaches including supportive, dynamic, family, cognitive, and behavioral.

This dissertation study included the same participants as the A-AMP study but different data were used to evaluate an observational coding system for trauma-related disclosure within therapy sessions. Observational codes were piloted and refined using training cases from this sample. The observational measure was then used to code
trauma-related disclosure in treatment sessions.

**Participants**

Participants were 43 adolescents (n = 36 females, n = 7 males) between the ages of 12 to 18 (M = 15.48, SD = 1.53) with a primary diagnosis of depressive disorder (e.g., Major Depressive Disorder (n = 35), Dysthymic Disorder (n = 3), Depressive Disorder – Not Otherwise Specified (n = 5) who sought outpatient treatment through a large community mental health agency in Colorado. Adolescents were included in the study if they met the following criteria: (a) consent from a parent or legal guardian for participation, (b) a score of 16 or greater on the Beck Depression Inventory-Second Edition (*BDI-II*: Beck, Steer, & Brown, 1996), and (c) a reported history of childhood interpersonal trauma. Participants were excluded if they met any of the following criteria: (a) presence of psychotic symptoms or intellectual disability (i.e., IQ less than 70), (b) diagnostic criteria was met for a Bipolar disorder and/or a co-morbid substance dependence disorder, (c) presence of a chronic medical condition, (d) suicide attempt within the last three months, (e) self-injurious behavior or cutting that required hospitalization or emergency room treatment, and (f) adolescent was receiving concurrent psychological treatment for depression.

**Measures**

*Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS-PL; Kaufman et al., 1997)*. The K-SADS is a semi-structured diagnostic interview that generates DSM-IV diagnoses including Major Depressive Disorder, Dysthymic Disorder, Bipolar Disorder, Post-Traumatic Stress Disorder, and Substance Dependence. The K-SADS was administered by trained graduate students. The K-SADS was used to screen adolescents
for inclusion and exclusion disorders at pretreatment. In addition, the symptom endorsements within the Post-Traumatic Stress Disorder–Avoidance module was used to assess the severity of avoidance-related symptoms pre-treatment. The PTSD-Avoidance module included 6-items that measured the degree to which the participant persistently avoids stimuli associated with the trauma and experiences numbing of general responsiveness (DSM-IV; American Psychiatric Association, 2000). The K-SADS was administered at pre-treatment, post-treatment, and follow-up; however, this study only used K-SADS data collected at pre-treatment for analysis. PTSD-Avoidance items are rated on a 3-point scale (1- not present; 2- present/episodic, and 3- present/persistent). The six items have been added together to compute a PTSD-Avoidance score ranging from 6 to 18. Twenty-five percent (25/101) of pretreatment assessments were double-coded by graduate student raters for diagnostic reliability. Results demonstrated good reliability for specific type of depressive disorder (Kappa = 0.61). Regarding the presence or absence of a depression diagnosis, 92% agreement among raters was found.

Beck Depression Inventory—Second Edition (BDI-II: Beck, Steer, & Brown, 1996). The BDI-II is a 21-item self-report measure of depressive symptoms. BDI items are rated on a 4-point scale (0 to 3). Each item is a list of four statements arranged in increasing severity about a particular symptom of depression. The psychometric properties of the BDI-II has been well-documented and is a widely used dimensional measure of depression with adults. A significant body of research supports the use of the BDI-II with adolescents (e.g., Kumar, Steer, Teitelman, & Vallacis, 2002; Stapleton, Sander, & Stark, 2007). Participants completed the BDI at pretreatment and post-treatment assessments, as well as after completing Sessions 4, 8, and 12. For this study,
only BDI scores collected at pretreatment were used for analysis. Total BDI scores at pre-treatment range from 8 to 60.

*Therapeutic Alliance Scale for Adolescents (TASA; Shirk et al., 2003).* The TASA is a 12-item scale measuring adolescents’ and therapists’ perceptions of the therapy relationship. Six items refer to the emotional bond between client and therapist (e.g., “I feel like I can count on my therapist”), and six items refer to level of task collaboration (e.g., “My therapist and I have figured out a good way to work on my sad or angry feelings”). The TASA was created as an extension of the Therapeutic Alliance Scale for Children (Shirk and Saiz, 1992), which has demonstrated excellent internal consistency and good test-retest reliability in multiple studies (Creed and Kendall, 2005; DeVet, Kim, Charlot-Swilley, and Ireys, 2003; Shirk and Saiz, 1992). Item content remained consistent for the TASA (bond and task collaboration) across the adolescent and therapist scales and demonstrated strong internal consistency and test-retest reliability (Shirk, et al., 2008). TASA items are rated on a 6-point scale from 1 (*not true at all*) to 6 (*very true*). Only TASA scores collected after session two were used for analysis. Total TASA scores range from 12 to 72.

*Trauma Involvement Rating Scale (TIRS).* The TIRS is a 4-item measure used to evaluate clients’ trauma related self-disclosure in treatment. The items of the TIRS were based on a review of psychotherapy process literature on client involvement and self-disclosure. Items were adapted from the Client Involvement Rating Scale (CIRS; Chu & Kendall, 1999) and were modified for the coding of trauma-related content. The TIRS contains two items of positive involvement (i.e., behaviors that demonstrate an adolescent’s active participation in trauma-focused discussion) and two items of negative
involvement (i.e., behaviors that demonstrate and adolescent’s withdrawal from, or avoidance of, trauma-related discussion). TIRS items are rated on a 6-point scale from 0 (not at all present) to 5 (a great deal present). The two negative involvement items were reversed scored, and their sum was added to the sum of the positive involvement items to compute a TIRS involvement score. Total TIRS scores range from 0 to 20.

Coding items included: 1) Does the adolescent initiate discussion or introduce topics related to his or her trauma experience; 2) Does the adolescent offer information or elaborate about his or her past trauma experience (i.e., trauma self-disclosure); 3) Is the adolescent withdrawn or passive in relation to discussion of trauma experience (i.e., limited or vague responses, therapist working significantly harder than the adolescent to elicit verbal information about his or her trauma experience); 4) Is the adolescent avoidant in participating in trauma talk (i.e., refusing to talk about his or her trauma experience; “I don’t want to talk about that” or initiates topic outside of trauma content).

Based on initial feasibility analyses, two items were combined from the original CIRS (‘‘Does the child offer information about self;’’ and ‘‘Does the child elaborate on points made by the therapist or demonstrate understanding.’’) into one item (TIRS item two) to account for issues with coding reliability. One additional item was eliminated from the original CIRS (‘‘Does the child demonstrate enthusiasm in therapy-related tasks?’’) due to not aligning with the discussion of trauma related material (i.e., one would not likely demonstrate enthusiasm toward discussing trauma-related material).

**Treatment and Therapists**

Eligible participants were randomized into either the modified cognitive behavioral therapy (m-CBT) condition or treatment as usual (TAU). The m-CBT protocol
is based on a twelve-session, manualized cognitive behavior treatment for adolescents with depression and has been evaluated and proven to be effective by two studies (Rossello & Bernal, 1999; Shirk, Kaplinski, & Gundmundsen, 2008). The treatment retains the core structure of the original manual with a new emphasis on the implementation of mindfulness-based strategies around content specific to adolescents with childhood interpersonal trauma. In addition to including standard material related to monitoring thoughts and emotions, identifying and restructuring negative automatic thoughts, coping strategies, and behavioral activation, the m-CBT also implemented key mindfulness skills including observing, describing, and participating (Linehan, 1993; Segal et al., 2002). The purpose of these mindfulness-based strategies was to teach clients to increase concentration; awareness of thoughts, feelings, bodily sensations; and attention to the present (as opposed to ruminating about past events). Additionally, the m-CBT protocol included explicit instruction for therapists to identify trauma-related cognitions throughout treatment, particularly during the third module when focusing on interpersonal issues.

A stratified randomized sampling procedure was used to evaluate treatment fidelity from randomized adolescents who attended at least one therapy session. For those who attended fewer than five sessions (n = 18), two sessions were randomly selected for fidelity coding; for those who attended 6 or more sessions, three sessions were selected. A coding of 29% (42/143) of therapy sessions attended revealed that treatment was delivered with a high degree of fidelity, with 85% of prescribed components delivered.

TAU was an eclectic form of adolescent therapy that involved interventions from a number of approaches including supportive, dynamic, family, cognitive, and behavioral.
The Therapy Process Observational Coding System for Child Psychotherapy – Strategies Scale (TPOCS-S) was used to characterize psychotherapy delivered in TAU and to illustrate any differentiation between the treatments delivered in the m-CBT and TAU conditions.

TPOCS-S ratings revealed a variety of treatment strategies used in the TAU condition, including: cognitive, behavioral, psychodynamic, family, and client-centered strategies. Client-centered strategies revealed the highest TPOCS-S extensiveness ratings. TPOCS-S items are rated on a 7-point scale from 1 (not at all present) to 7 (a great deal present). TAU sessions were rated higher on client-centered (M = 5.33, SD = 0.97) than on cognitive (M = 1.46, SD = .91), behavioral (M = 1.56, SD = 1.07), psychodynamic (M = 2.03, SD = 1.09), and family (M = 1.41) strategies. Overall, TAU psychotherapy consisted of interventions employing strategies from multiple theoretical orientations at generally low levels of extensiveness, except for client-centered strategies.

The m-CBT condition was implemented by two therapists (one male, doctoral-level clinician, 28 years of experience; one female, masters-level clinician, 10 years of experience) who expressed interest in participating in the treatment study. Therapists in the TAU treatment condition were two female, doctoral-level clinicians (with 3 and 4.5 years of experience) who volunteered to participate in the TAU treatment condition. The therapists in the m-CBT condition completed a one-day workshop conducted by Drs. Roemer (Consultant), DePrince, and Shirk that provided review of basic CBT principles and taught components of m-CBT, mindfulness exercises, and treatment engagement strategies. Therapists in the m-CBT condition were supervised weekly by Dr. DePrince.
Therapists in the TAU condition were supervised by the clinic team leader, consistent with clinic policy.

**Procedures**

Prior to the initiation of the clinical trial, all procedures were approved by a university-based institutional review board and the community clinics. An intake clinician was hired to perform intake evaluations at the two community mental health clinics. The clinician was informed of the study inclusion/exclusion criteria and was asked to identify potential study participants through her routine intake appointments. When the clinician made an initial, primary clinical diagnosis of a depressive disorder, and the adolescent had a history of childhood interpersonal trauma, then the parent and adolescent were informed of their eligibility to participate in the research study. If the family consented to be contacted by research staff, participants and their parent/guardian were then invited to complete a pretreatment research assessment at the clinic with an independent evaluator who was naïve to treatment condition. If the adolescent met all the criteria for study inclusion, the adolescent was then randomized to the m-CBT or TAU condition. Respective clinicians then contacted participants within two weeks of the pretreatment research assessment to initiate treatment. Participants ineligible for the study were placed on the clinic waitlist, in line with clinic policy. All treatment sessions from both conditions were audio-recorded to allow for treatment fidelity and therapeutic process coding. Participants were asked to complete assessments and questionnaires throughout treatment, including a post-treatment assessment that was scheduled within one week of treatment completion (or after 16 weeks, whichever occurs first), and a follow-up assessment three months following the post-treatment assessment.
Figure 1
AAMP Participant Flow Chart

Approached (n = 109)
101: Agreed to be contacted
8: Declined to be contacted

Referred for pretreatment assessment (n = 101)
4: Families did not return calls
1: Adolescent ran away
3: Refused/changed minds
8: Declined to be contacted
Could not be scheduled/contacted (n = 8)
4: Families did not return calls
1: Adolescent ran away
3: Refused/changed minds

Assessed for eligibility (n = 93)
2: IQ exclusion
3: BDI exclusion
4: KSADS depression exclusion
3: KSADS psychosis exclusion
4: KSADS bipolar exclusion
1: KSADS substance use exclusion
2: No clear CIT
3: Recent suicide attempt/active suicidality
2: Refused to complete KSADS or other pretreatment measures
26: Multiple reasons (see above)
Excluded (n = 50)
2: IQ exclusion
3: BDI exclusion
4: KSADS depression exclusion
5: KSADS psychosis exclusion
4: KSADS bipolar exclusion
1: KSADS substance use exclusion
2: No clear CIT
3: Recent suicide attempt/active suicidality
2: Refused to complete KSADS or other pretreatment measures
26: Multiple reasons (see above)

Randomized to treatment (n = 43)

MCBT (n = 20)
15: Starters (≥ 1 session)
5: Nonstarters (no sessions attended)

Usual Care (n = 23)
21: Starters (≥ 1 session)
2: Nonstarters (no sessions attended)

Post assessments completed (n = 38)
4: Nonstarters (no treatment control group)
34: Starters
14: MCBT condition
20: UC condition

Follow-up assessments completed (n = 30)
4: Nonstarters (no treatment control group)
26: Starters
11: MCBT condition
15: UC condition
Coding of Therapeutic Process

Coding of involvement in trauma-focused discussion from all therapy sessions occurred in two phases. The first phase involved the identification of trauma-focused content; the second phase involved coding of these segments for involvement in trauma-focused discussion.

Phase 1: Identifying trauma-related content. The investigator developed a rubric for identifying trauma-focused content for coding by listening to 15 treatment sessions from m-CBT training/pilot cases. Identified segments were therapeutic discussions of: details of traumatic events experienced, emotional reactions following trauma (e.g., shame, blame, guilt), and/or trauma-related cognitions (e.g., “It’s all my fault,”). Research assistants were then trained by the investigator to identify trauma-focused content from both treatment conditions using these guidelines to: 1) identify the presence/absence of trauma-focused content in a session, and 2) identifying the start and stop points of discussions of trauma-focused content, within 60 seconds of points originally time-marked by the investigator. Assessment of reliability indicated 100% agreement with the investigator on both criteria. After initial training, research assistants participated in weekly coding meetings with the investigator to discuss and problem-solve identification issues until completion of this phase of treatment.

For identification purposes, treatment sessions were randomized by participant. Sessions were then listened to in sequential order, as verbal references by the therapeutic dyad were often linked to discussions that occurred in previous sessions. Research assistants were provided information regarding adolescents’ specific trauma history (i.e.,
trauma type, age of first/last exposure, frequency, relationships to perpetrator) to aid in the segment identification process.

**Phase 2: Coding involvement in trauma-focused discussion.** The TIRS scale was initially tested on identified segments from the m-CBT training/pilot cases to provide information on the level of coding difficulty, need for additional coding guidelines, and modification of coding items. Based on initial feasibility analyses (accounting for issues including potential for coding reliability, mean and modal length of identified segments in Phase 1), minimum “codable” segment length was set to 30 seconds; maximum length was set to 10 minutes. Segments of trauma-focused content greater than 10 minutes were further broken down into acceptable length (e.g., a 15-minute segment was separated into two smaller segments: 10 minutes, and 5 minutes, respectively). Identified segments were excluded from coding procedures if: a parent/guardian verbally participated in discussions, segments were less than 30 seconds in length, or therapeutic discussion was inaudible.

**Training independent raters.** Two, independent, graduate-level raters were trained to code for involvement in trauma-focused discussion from identified segments of trauma-focused content. Each coder first independently rated client involvement from six segments of trauma-focused content (included in the present study) to provide an initial estimate of coding reliability. Weekly coding meetings were held and coding adjustments were made through an iterative process until the criterion level of consistency (ICC > 0.80) was attained. Reliability analyses were computed after 25% of the identified segments were coded, and again prior to coding completion to avoid rater drift. Scale
analyses and descriptives of the coding of trauma-focused content are presented in the results section, below.
Chapter 3

RESULTS

This chapter presents the results of the statistical analyses associated with the current study. The results of the preliminary analyses are discussed, which are followed by the results of the primary analyses and then finally the exploratory analyses. As discussed in Chapter 2, the current study will use data from the Aurora-Adolescent Mood Project, a community based randomized controlled trial, which evaluated the effectiveness of a manualized cognitive behavioral treatment for adolescents with depression and prior trauma experience. The current study will use the same participants from the Aurora-Adolescent Mood Project to evaluate an observational coding system for trauma-focused involvement within therapy sessions.

Preliminary Analyses

Participant Demographics. Among the 43 adolescents randomized to treatment, the mean total score for the Beck Depression Inventory (BDI-II) was 31.14 (SD = 11.85; Range = 47), a score at the lower end of the severely depressed range. A majority (58%) of participants endorsed all three symptom criteria for PTSD (re-experiencing, avoidance, and arousal); 46% met full DSM-IV diagnostic criteria for Post-Traumatic Stress Disorder. Based on parent/guardian-reports on the Child Behavior Checklist DSM-IV Oriented Scales (CBCL DOS; Achenbach et al., 2001), 33% of the sample had clinically-significant levels of anxiety. Twenty-eight percent of the sample had scores falling within
the clinical range for Attention Deficit Hyperactivity Disorder, and 37% for Conduct Disorder. Forty-nine percent of the sample fell within the clinically-significant range on two CBCL DSM-IV Oriented Scales; 21% of the sample had clinically-significant symptoms on three or more scales. The sample of 43 consisted of 49% European-American and 51% ethnic minority youth. Hispanic (33%) and African American (38%) youth comprised the majority of the ethnic minority subset of the sample.

Of the 43 participants, 7 adolescents failed to initiate treatment following randomization. Five participants did not engage in any trauma-related discussion over the course of therapy and were therefore excluded from analyses. For this study, only trauma-related discussion that took place subsequent to session one were included in analyses, consequently two participants who had only engaged in trauma-related discussion in session one were excluded from analyses. Therefore the sample consists of 29 participants who met criteria for this study.

Independent-samples t-tests did not reveal a significant difference in age, gender, ethnicity, or diagnosis between the participants who met criteria for participation (n = 29) and those 14 participants excluded from the study for reasons described above. In addition, there was no significant difference in pre-treatment depression symptom severity or pre-treatment PTSD-related avoidance between the participants included and those excluded.

**Participant Demographics (n = 29).** The sample consisted of 25 females and 4 males between the ages of 12 and 18 (M = 15.48, SD = 1.48) with a primary diagnosis of a depressive disorder (Major Depressive Disorder (n = 23), Dysthymic Disorder (n = 2), or Depressive Disorder – Not Otherwise Specified (n=4). The mean total score for the
Beck Depression Inventory (BDI-II) was 30.90 (SD = 12.22; Range = 47). Fifty-five percent of the sample met full DSM-IV diagnostic criteria for Post-Traumatic Stress Disorder. Based on parent/guardian-reports on the Child Behavior Checklist DSM-IV Oriented Scales (CBCL DOS; Achenbach et al., 2001), 34% of the sample had clinically-significant levels of anxiety. Twenty-eight percent of the sample had scores falling within the clinical range for Attention Deficit Hyperactivity Disorder, and 31% for Conduct Disorder. Within this sample, 10 participants identified as European-American and 19 participants identified as ethnic minority youth. Hispanic (31%) and African American (41%) youth comprised the majority of the ethnic minority subset of the sample.

Measures of client involvement in trauma-focused discussion, PTSD avoidance symptoms, depressive symptoms, and therapeutic alliance were examined for outliers, normality, skewness, and kurtosis. Results are presented in Table 1. Skewness and Kurtosis z-scores for the BDI, TIRS, TASA and PTSD avoidance scale were all within +/- 2.58 (p = .01), indicating that the data are normally distributed with sufficient variability within the sample. Table 2 presents an overview of the measures used for analyses.

Table 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness (z-score)</th>
<th>Kurtosis (z-score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIRS</td>
<td>29</td>
<td>10.42</td>
<td>2.69</td>
<td>-0.76</td>
<td>-0.83</td>
</tr>
<tr>
<td>BDI</td>
<td>29</td>
<td>30.91</td>
<td>12.22</td>
<td>1.37</td>
<td>-0.47</td>
</tr>
<tr>
<td>PTSD avoidance</td>
<td>29</td>
<td>6.72</td>
<td>3.45</td>
<td>-1.64</td>
<td>-0.39</td>
</tr>
<tr>
<td>TASA</td>
<td>29</td>
<td>61.76</td>
<td>9.53</td>
<td>-2.35</td>
<td>1.02</td>
</tr>
</tbody>
</table>

Note. Descriptives for the TIRS were calculated using the 3-item scale, after item 4 was removed due to instability within the scale.
One-way analyses of variance examined differences in adolescent involvement in trauma-focused conversation among different gender and ethnic groups. There was a statistically significant difference for gender on level of involvement in trauma-focused conversation \((F(1,27) = 6.07, p = .02)\). Results showed that on average males had lower TIRS scores than females. There was no statistically significant difference between ethnic groups and level of involvement in trauma-focused conversation \((F(1,27) = 0.85, p = .37)\). A Pearson product-moment correlation was used to examine the association between age and adolescent involvement in trauma-focused conversation. Results indicated that a significant association exists between age and trauma-focused involvement, suggesting that involvement in trauma-focused conversation increases with age \((r = .42, p = .02)\). Based on these findings age and gender were used as control variables in the exploratory analyses.

One-way analyses of variance examined differences in TASA scores, BDI scores, and PTSD-Avoidance scores among different age, gender, and ethnic groups. There were no statistically significant differences in PTSD-Avoidance scores and BDI scores among different age, gender, and ethnic groups. There was a statistically significant difference between adolescents’ ethnicity and TASA scores \((F(1,27) = 4.25, p = .05)\). Results indicated that ethnic minority participants had higher therapeutic alliance earlier in treatment than European-American participants. Based on this finding ethnic minority status was used as a control variable in the exploratory analyses. There were no statistically significant differences in TASA scores among different age and gender groups. See Table 3 for a summary of ANOVA analyses.
<table>
<thead>
<tr>
<th>Group/Variable</th>
<th>Mean</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD-Avoidance (n = 29)</td>
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<td>0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 12 (N = 1)</td>
<td>5.00</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Age 13 (N = 3)</td>
<td>9.00</td>
<td>1.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 14 (N = 3)</td>
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<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 15 (N = 4)</td>
<td>5.75</td>
<td>4.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 16 (N = 11)</td>
<td>7.81</td>
<td>3.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 17 (N = 6)</td>
<td>5.83</td>
<td>4.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 18 (N = 1)</td>
<td>7.00</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>TASA (n = 29)</td>
<td></td>
<td></td>
<td>0.81</td>
<td>0.58</td>
</tr>
<tr>
<td>Age 12 (N = 1)</td>
<td>63.00</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Age 13 (N = 3)</td>
<td>51.33</td>
<td>16.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 14 (N = 3)</td>
<td>61.67</td>
<td>11.02</td>
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</tr>
<tr>
<td>Age 15 (N = 4)</td>
<td>60.50</td>
<td>9.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 16 (N = 11)</td>
<td>62.82</td>
<td>8.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 17 (N = 6)</td>
<td>64.33</td>
<td>8.71</td>
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</tr>
<tr>
<td>Age 18 (N = 1)</td>
<td>70.00</td>
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<td>-</td>
<td></td>
</tr>
<tr>
<td>BDI (n = 29)</td>
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<td></td>
<td>0.26</td>
<td>0.95</td>
</tr>
<tr>
<td>Age 12 (N = 1)</td>
<td>18.00</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Age 13 (N = 3)</td>
<td>31.33</td>
<td>5.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 14 (N = 3)</td>
<td>27.33</td>
<td>4.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 15 (N = 4)</td>
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<td>16.01</td>
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</tr>
<tr>
<td>Age 16 (N = 11)</td>
<td>32.91</td>
<td>12.86</td>
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<td></td>
</tr>
<tr>
<td>Age 17 (N = 6)</td>
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<td>16.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 18 (N = 1)</td>
<td>35.00</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>TIRS (n = 29)</td>
<td></td>
<td></td>
<td>3.64</td>
<td>0.01*</td>
</tr>
<tr>
<td>Age 12 (N = 1)</td>
<td>4.75</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Age 13 (N = 3)</td>
<td>11.04</td>
<td>0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 14 (N = 3)</td>
<td>7.42</td>
<td>2.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 15 (N = 4)</td>
<td>9.45</td>
<td>2.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 16 (N = 11)</td>
<td>11.01</td>
<td>2.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 17 (N = 6)</td>
<td>12.55</td>
<td>2.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 18 (N = 1)</td>
<td>8.00</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD-Avoidance</td>
<td></td>
<td></td>
<td>1.55</td>
<td>0.22</td>
</tr>
<tr>
<td>Male (n = 4)</td>
<td>4.75</td>
<td>3.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (n = 25)</td>
<td>7.04</td>
<td>3.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TASA</strong></td>
<td></td>
<td></td>
<td>0.08</td>
<td>0.79</td>
</tr>
</tbody>
</table>

44
Male (n = 4) | 63.00 | 9.93  
Female (n = 25) | 61.56 | 9.66

BDI | 0.004 | 0.95  
Male (n = 4) | 31.25 | 11.95  
Female (n = 25) | 30.84 | 12.51

TIRS | 6.07 | 0.02*  
Male (n = 4) | 7.59 | 3.05  
Female (n = 25) | 10.88 | 2.39

Ethnicity

PTSD-Avoidance | 0.13 | 0.72  
Ethnic Minority (n = 19) | 6.89 | 3.21  
Non-Minority (n = 10) | 6.40 | 4.06

TASA | 4.25 | 0.05*  
Ethnic Minority (n = 19) | 64.26 | 6.93  
Non-Minority (n = 10) | 57.00 | 12.16

BDI | 0.14 | 0.71  
Ethnic Minority (n = 19) | 31.53 | 12.45  
Non-Minority (n = 10) | 29.70 | 12.32

TIRS | 0.85 | 0.37  
Ethnic Minority (n = 19) | 10.09 | 3.05  
Non-Minority (n = 10) | 11.06 | 1.81

Note: BDI = Beck Depression Inventory; TASA = Therapeutic Alliance Scale for Adolescents; TIRS = Trauma Involvement Rating Scale.

One-way analyses of variance were used to examine differences in the BDI, TIRS, PTSD Avoidance, and TASA measures among treatment conditions. Results revealed no significant association with treatment assignment on any of the four measures. Based on this finding it was determined that the m-CBT and TAU treatment conditions could be combined and used as one sample for the primary analyses. A one-way analysis of variance revealed no significant therapist effects on involvement in trauma-focused discussion.
A randomized sampling procedure was used to evaluate inter-rater reliability from 142 segments that were identified as having trauma-focused content. Two graduate level research assistants coded 25% (36/142) of all the identified segments. An interclass correlation coefficient was calculated to assess reliability among raters on segment involvement scores for trauma-focused discussion. Inter-rater reliability indicated excellent agreement (ICC = .84, α = .91).

142 segments that were flagged as having trauma-focused discussion from 29 cases (range = 1-10 segments per case, M = 4.65) were evaluated for level of involvement. Means, standard deviations, minimum and maximum values, and the item-total scale score (with item deleted) correlations for the four TIRS items are presented in Table 4.

Table 4

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>ITS r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initiates discussion</td>
<td>142</td>
<td>3.07</td>
<td>1.47</td>
<td>0</td>
<td>5</td>
<td>.72</td>
</tr>
<tr>
<td>2. Self-disclosure/elaborates</td>
<td>142</td>
<td>3.14</td>
<td>1.41</td>
<td>0</td>
<td>5</td>
<td>.70</td>
</tr>
<tr>
<td>3. Withdrawn or passive</td>
<td>142</td>
<td>4.45</td>
<td>0.97</td>
<td>1</td>
<td>5</td>
<td>.54</td>
</tr>
<tr>
<td>4. Avoidance</td>
<td>142</td>
<td>4.45</td>
<td>1.13</td>
<td>0</td>
<td>5</td>
<td>.11</td>
</tr>
</tbody>
</table>

Note. Descriptives reported for all 142 segments (29 cases) were rated by independent raters. Means for Items 3 and 4 are the result of reverse scoring the original ratings. Min = minimum; Max = maximum; ITS r = item-total scale (with item deleted) correlation.

The TIRS had adequate internal consistency (α = .71), based on research by Clark and Watson (1995). The size of correlation coefficients was considered small if r was .20 to .39, moderate if r was .40 to .69, large if r was .70 to .89, and very large if r was .90 to 1.0 (Cohen, 1988). Mean item-total correlation was moderate (r = .52), with a range of item-total correlations from .11 to .72: (a) initiates discussion (r = .72), (b) self-discloses/elaborates (r = .70), (c) withdrawn or passive (r = .54), and (d) avoidant (r = .11).
Item 4 had a low item-total scale correlation and therefore it was removed from the TIRS in order to increase internal consistency and construct unidimensionality (Clark & Watson, 1995). After item four was removed, the TIRS demonstrated good internal consistency ($\alpha = .84$).

Due to the variability in frequency and length of trauma-focused involvement segments across participants, composite scores were created to use for analyses. In order to distinguish level of involvement from length of discussion, an average involvement score was computed across all segments and sessions. A Pearson correlation between total time discussing trauma experiences and average depth of involvement was not statistically significant ($r = .25, p = .17$). This suggests that the TIRS is not just measuring the amount of time the adolescent is involved in trauma-focused discussion but rather it is measuring the overall depth of his or her involvement in trauma-focused discussion. Quantity of discussion will be assessed separately as seconds of trauma-focused discussion.

**Power Analysis**

Using G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007), a sensitivity power analysis was conducted to determine the effect size that would be detectable with a sample of 29. With an alpha level of .05 and a beta (power) of .80 for the fixed model linear regression analyses in hypotheses one, two, and three with one predictor variable, G*Power indicated that a detectable effect size is .29. With an alpha level of .05 and a beta (power) of .80 for the fixed model multiple regression analysis in hypothesis four with three predictor variables, G*Power indicated that a detectable effect size is .42. Based on these results, a small to moderate effect size is needed in the following analyses.
to obtain statistical significance.

**Primary Analyses**

This section reviews the main analyses used to test the four hypotheses of this study. A review of additional exploratory analyses will follow.

**Hypothesis 1.** It was hypothesized that higher levels of therapeutic alliance would be positively associated with greater involvement in trauma discussions. This hypothesis was assessed using linear regression to evaluate the relationship between total TASA scores and average trauma-focused involvement scores collected immediately following the completion of session 2. Therapeutic alliance was not significantly associated with trauma-focused involvement over the course of treatment ($B = .09$, $p = .65$).

**Hypothesis 2.** It was hypothesized that higher levels of Pre-treatment PTSD-Avoidance symptoms would be negatively associated with trauma-focused involvement. This hypothesis was assessed using linear regression to evaluate the relationship between PTSD-Avoidance severity scores and overall trauma-focused involvement score. To make analyses comparable with Hypothesis 1, trauma-focused involvement scores were included subsequent to session one in both treatment conditions. PTSD-Avoidance severity was not significantly associated with trauma-focused involvement over the course of treatment ($B = .25$, $p = .19$). In addition, the Beta showed a positive association rather than negative association, which ran counter to the original hypothesis.

**Hypothesis 3.** It was hypothesized that higher levels of pre-treatment depression symptom severity would be negatively associated with trauma-focused involvement. This hypothesis was assessed using linear regression to evaluate the relationship between depression symptom severity scores and overall trauma-focused involvement scores.
Although this association revealed a moderate effect size ($B = .36$), it failed to attain statistical significance. Similar to the findings discussed above, the positive direction of the effect in this analysis ran counter to the original hypothesis.

_Hypothesis 4._ It was hypothesized that the association between pre-treatment PTSD-Avoidance symptoms and trauma-focused involvement in therapy would be moderated by the therapeutic alliance. This hypothesis was assessed using hierarchical regression. PTSD-Avoidance and TASA scores were entered in the first step, and the centered interaction term (therapeutic alliance x PTSD-Avoidance) was entered in step two. Trauma-focused involvement was the dependent variable. There was no significant interaction between PTSD-Avoidance and therapeutic alliance in predicting mean trauma-focused involvement ($B = -.13, p = .54$). In other words, the therapeutic alliance did not significantly affect the direction or strength of the relationship between PTSD-Avoidance and trauma-focused involvement. Regression coefficients and standard errors can be found in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE(B)</th>
<th>$\beta$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD-Avoidance</td>
<td>0.21</td>
<td>0.15</td>
<td>0.27</td>
<td>0.17</td>
</tr>
<tr>
<td>TASA</td>
<td>0.04</td>
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<td>0.13</td>
<td>0.51</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD-Avoidance</td>
<td>0.25</td>
<td>0.17</td>
<td>0.32</td>
<td>0.14</td>
</tr>
<tr>
<td>TASA</td>
<td>0.04</td>
<td>0.06</td>
<td>0.15</td>
<td>0.46</td>
</tr>
<tr>
<td>PTSD-Avoidance x TASA</td>
<td>-0.01</td>
<td>0.02</td>
<td>-0.13</td>
<td>0.54</td>
</tr>
</tbody>
</table>

_Note:_ PTSD-Avoidance and TASA were centered at their means for computation of the interaction.
Exploratory Analyses

Research by Campbell-Sills et al. (2006) and Khan and Garrison (2009) revealed that participants with mood disorders and heightened symptoms of depression were less likely to disclose their emotions to others than were individuals with fewer depressive symptoms. Because the therapeutic alliance has been shown to facilitate client involvement and client self-disclosure in therapy (Chu & Kendall, 2004; Farber & Hall, 2002; Karver et al., 2005, 2006; Shirk & Karver, 2006; Smith & Grawe, 2003), it is likely that a strong therapeutic alliance will act as a buffer between heightened depressive symptoms and trauma self-disclosure in therapy. For this reason, an additional analysis explored whether pre-treatment depression symptoms and trauma-focused involvement in therapy would be moderated by the therapeutic alliance using hierarchical regression. BDI and TASA scores were entered in the first step, and the centered interaction term (therapeutic alliance x BDI) was entered in step two. Trauma-focused involvement was the dependent variable. There was no significant interaction between pre-treatment depressive symptoms and therapeutic alliance in predicting trauma-focused involvement ($B = -.16, p = .49$). In other words, the therapeutic alliance did not significantly affect the direction or strength of the relationship between pre-treatment depressive symptoms and trauma-focused involvement. Regression coefficients and standard errors can be found in Table 6.
Table 6
Summary of Hierarchical Regression Analysis (BDI and TASA)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE( B)</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI</td>
<td>0.08</td>
<td>0.04</td>
<td>0.35</td>
<td>0.06</td>
</tr>
<tr>
<td>TASA</td>
<td>0.02</td>
<td>0.05</td>
<td>0.07</td>
<td>0.72</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI</td>
<td>0.10</td>
<td>0.05</td>
<td>0.44</td>
<td>0.06</td>
</tr>
<tr>
<td>TASA</td>
<td>0.02</td>
<td>0.05</td>
<td>0.08</td>
<td>0.67</td>
</tr>
<tr>
<td>BDI</td>
<td>-0.04</td>
<td>0.01</td>
<td>-0.16</td>
<td>0.49</td>
</tr>
</tbody>
</table>

Note: BDI and TASA were centered at their means for computation of the interaction.

The association between PTSD-Avoidance and trauma-focused involvement was not statistically reliable and surprisingly the direction of the effect was opposite of what was originally predicted. Therefore it was explored further in order to better understand the unexpected positive association. Correlations among pre-treatment ratings of adolescents’ (a) depressive symptoms (BDI), (b) total PTSD symptoms, (c) physiological arousal, (d) emotional arousal, and (e) cognitive ability (WISC IV – Similarities Subscale) were examined. Physiological arousal and emotional arousal are two factors taken from the Responses to Stress Questionnaire (RSQ: Connor-Smith, et al., 2000), which was used in the original A-AMP study. The RSQ assesses a range of cognitive and behavioral responses employed by adolescents when adapting to negative events.

Correlations among these measures can be found in Table 7.

Table 7
Correlations Among Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PTSD-Avoidance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. PTSD-Total</td>
<td>.43**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. BDI</td>
<td>.49**</td>
<td>.69**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Physiological Arousal</td>
<td>.02</td>
<td>.54**</td>
<td>.51**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Emotional Arousal</td>
<td>.24</td>
<td>.45**</td>
<td>.47**</td>
<td>.77**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Similarities</td>
<td>.19</td>
<td>.24</td>
<td>.23</td>
<td>.29</td>
<td>.32*</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05.  ** p < .01.

Note: PTSD-Total excludes the avoidance items.
PTSD-Avoidance was significantly related to the BDI ($p < .01$) and total PTSD symptoms ($p < .01$). No statistically significant association was found between Similarities, an index of cognitive ability and PTSD-Avoidance suggesting that avoidance scores were not a function of verbal ability. In addition, self-reported PTSD-Avoidance was not significantly related to observed avoidance in sessions (Item four on the TIRS) ($r = -.20, p = .31$). Based on the moderate positive correlations between the BDI, PTSD total score (with the avoidance subscale removed), and PTSD-Avoidance, it appears that the PTSD-Avoidance scale may lack specificity and may be an index of symptom severity rather than a specific measure of avoidance. In other words, adolescents who reported higher symptoms of avoidance also reported higher symptoms of depression, PTSD, and emotional arousal.

To evaluate the association between pretreatment symptoms, the therapeutic alliance (TASA), and trauma-focused involvement after controlling for age and gender, a set of simultaneous regressions was conducted with pretreatment symptoms (BDI and PTSD-Avoidance), therapeutic alliance (TASA), gender, and age as the predictors and trauma-focused involvement (TIRS) as the dependent variable. Pre-treatment depression symptom severity was significantly associated with trauma-focused involvement after controlling for age and gender ($B = .33, p = .05$). This indicates that there is a unique effect of depression symptom severity on trauma-focused involvement, after accounting for age and gender. Regression coefficients and standard errors can be found in Table 8.
Table 8  
Regression Analyses Predicting TIRS (Controlling for Age and Gender)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD-Avoidance</td>
<td>0.19</td>
<td>1.08</td>
<td>0.29</td>
</tr>
<tr>
<td>Gender</td>
<td>0.26</td>
<td>1.34</td>
<td>0.19</td>
</tr>
<tr>
<td>Age</td>
<td>0.32</td>
<td>1.71</td>
<td>0.10</td>
</tr>
<tr>
<td>TASA</td>
<td>0.01</td>
<td>0.07</td>
<td>0.95</td>
</tr>
<tr>
<td>Gender</td>
<td>0.31</td>
<td>1.60</td>
<td>0.12</td>
</tr>
<tr>
<td>Age</td>
<td>0.29</td>
<td>1.43</td>
<td>0.17</td>
</tr>
<tr>
<td>BDI</td>
<td>0.33</td>
<td>2.04</td>
<td>0.05</td>
</tr>
<tr>
<td>Gender</td>
<td>0.33</td>
<td>1.90</td>
<td>0.07</td>
</tr>
<tr>
<td>Age</td>
<td>0.24</td>
<td>1.36</td>
<td>0.19</td>
</tr>
</tbody>
</table>

Note: BDI = Beck Depression Inventory; TASA = Therapeutic Alliance Scale for Adolescents.

To evaluate the association between therapeutic alliance (TASA) and trauma-focused involvement after controlling for ethnicity, a linear regression was conducted with therapeutic alliance (TASA) and ethnicity as the predictors and trauma-focused involvement (TIRS) as the dependent variable. Therapeutic alliance was not significantly associated with trauma-focused involvement after controlling for ethnicity ($B = .18, p = .39$). Regression coefficients and standard errors can be found in Table 9.

Table 9  
Regression Analysis Predicting TIRS (Controlling for Ethnicity)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>TASA</td>
<td>0.18</td>
<td>0.87</td>
<td>0.39</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-0.24</td>
<td>-1.17</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Note: TASA = Therapeutic Alliance Scale for Adolescents.

In order to further explore adolescents’ involvement in trauma-focused discussion separate from the therapist contribution, TIRS item one (Does the adolescent initiate discussion or introduce topics related to his or her trauma experience) was examined individually. Although depth or duration of involvement is likely to be a function of both adolescent and therapist, initiation is more directly a function of the adolescent. In other words, adolescents’ only received high scores on item one (initiation) if they introduced a
topic related to his or her trauma experience and pursued this topic throughout the
segment with little or no prompting from the therapist. As in previous analyses item one
TIRS scores were averaged across all sessions and the average score for each participant
was used for the following analyses. Hypotheses one through three were repeated using
parallel linear regression analyses to evaluate the relationship between the therapeutic
alliance (TASA), PTSD-Avoidance, and depressive symptoms (BDI) with item one from
the TIRS scale. Regression coefficients and standard errors can be found in Table 10.

Table 10
Regression Analyses Predicting TIRS Item One

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD-Avoidance</td>
<td>0.38</td>
<td>2.15</td>
<td>0.04</td>
</tr>
<tr>
<td>TASA</td>
<td>0.17</td>
<td>1.34</td>
<td>0.37</td>
</tr>
<tr>
<td>BDI</td>
<td>0.44</td>
<td>2.54</td>
<td>0.02</td>
</tr>
</tbody>
</table>

*Note: BDI = Beck Depression Inventory; TASA = Therapeutic Alliance Scale for Adolescents.*

As shown in Table 9, both the BDI and PTSD-Avoidance significantly predicted
adolescent initiation of trauma-focused involvement. These results indicate that the
higher level of symptomatology and distress present at pre-treatment the more frequently
adolescents are going to initiate discussion about interpersonal trauma they have
experienced.

Hypothesis four was also repeated using hierarchical regression to evaluate
whether the association between pre-treatment PTSD-Avoidance symptoms and
adolescent initiation of trauma-focused involvement would be moderated by the
therapeutic alliance. PTSD-Avoidance and TASA scores were entered in the first step,
and the centered interaction term (therapeutic alliance x PTSD-Avoidance) was entered
in step two. Item one from the TIRS was the dependent variable. There was no
significant interaction between PTSD-Avoidance and therapeutic alliance in predicting
mean adolescent initiation of trauma-focused involvement \( (B = -0.17, p = 0.41) \). Regression coefficients and standard errors can be found in Table 11.

Table 11

*Summary of Hierarchical Regression Analysis Predicting TIRS Item One (PTSD-Avoidance and TASA)*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE( B)</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD-Avoidance</td>
<td>0.13</td>
<td>0.06</td>
<td>0.42</td>
<td>0.03</td>
</tr>
<tr>
<td>TASA</td>
<td>0.03</td>
<td>0.02</td>
<td>0.23</td>
<td>0.21</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD-Avoidance</td>
<td>0.16</td>
<td>0.06</td>
<td>0.48</td>
<td>0.02</td>
</tr>
<tr>
<td>TASA</td>
<td>0.03</td>
<td>0.02</td>
<td>0.26</td>
<td>0.17</td>
</tr>
<tr>
<td>PTSD-Avoidance x TASA</td>
<td>-0.01</td>
<td>0.01</td>
<td>-0.17</td>
<td>0.41</td>
</tr>
</tbody>
</table>

*Note:* PTSD-Avoidance and TASA were centered at their means for computation of the interaction.

Hierarchical regression was also used to explore whether pre-treatment depression symptoms and adolescent initiation of trauma-focused involvement would be moderated by the therapeutic alliance. BDI and TASA scores were entered in the first step, and the centered interaction term (therapeutic alliance x BDI) was entered in step two. Item one from the TIRS was the dependent variable. There was no significant interaction between pre-treatment depressive symptoms and therapeutic alliance in predicting adolescent initiation of trauma-focused involvement \( (B = -0.23, p = 0.30) \). Regression coefficients and standard errors can be found in Table 12.
Table 12
Summary of Hierarchical Regression Analysis Predicting TIRS Item One (BDI and TASA)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE(B)</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI</td>
<td>0.04</td>
<td>0.02</td>
<td>0.43</td>
<td>0.02</td>
</tr>
<tr>
<td>TASA</td>
<td>0.02</td>
<td>0.02</td>
<td>0.15</td>
<td>0.41</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD-Avoidance</td>
<td>0.05</td>
<td>0.02</td>
<td>0.56</td>
<td>0.01</td>
</tr>
<tr>
<td>TASA</td>
<td>0.02</td>
<td>0.02</td>
<td>0.16</td>
<td>0.36</td>
</tr>
<tr>
<td>BDI x TASA</td>
<td>-0.003</td>
<td>0.002</td>
<td>-0.23</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Note: BDI and TASA were centered at their means for computation of the interaction.

Additional analyses were examined to assess the quantity (i.e., total time in seconds) of trauma-focused involvement separate from the depth of involvement measured by the TIRS. The number of seconds for each segment of trauma-focused involvement was summed across all sessions, creating a total time score for each participant, which was used for the following analyses. Hypotheses one through three were repeated using parallel linear regression analyses to evaluate the relationship between the therapeutic alliance (TASA), PTSD-Avoidance, and depressive symptoms (BDI) with total time discussing trauma experiences. There were no statistically significant associations between PTSD-Avoidance, TASA, and BDI and total time discussing trauma across treatment. Regression coefficients and standard errors can be found in Table 13.

Table 13
Regression Analyses Predicting Total Time (Seconds of Trauma-Focused Discussion)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD-Avoidance</td>
<td>0.25</td>
<td>1.52</td>
<td>0.14</td>
</tr>
<tr>
<td>TASA</td>
<td>0.09</td>
<td>0.51</td>
<td>0.61</td>
</tr>
<tr>
<td>BDI</td>
<td>-0.07</td>
<td>-0.41</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Note: BDI = Beck Depression Inventory; TASA = Therapeutic Alliance Scale for Adolescents.
In order to assess a more proximal indicator of trauma-focused involvement, TIRS scores were averaged across sessions two, three, and four creating an average score for the beginning phase of treatment for each participant. The average trauma-focused involvement score for the beginning phase of treatment was used for the following analyses. Hypotheses one through three were repeated using parallel linear regression analyses to evaluate the relationship between the therapeutic alliance (TASA), PTSD-Avoidance, and depressive symptoms (BDI) with the average trauma-focused involvement score for the beginning phase of treatment. There was no statistically significant association between PTSD-Avoidance, TASA, and BDI and average trauma-focused involvement score for the beginning phase of treatment. In other words, symptoms of PTSD-Avoidance and depression or the therapeutic alliance did not predict involvement in trauma-focused discussion either in the beginning phase or later phase of treatment. Regression coefficients and standard errors can be found in Table 14.

Table 14

Regression Analyses Predicting TIRS Beginning Phase of Treatment (Sessions 2, 3, & 4)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD-Avoidance</td>
<td>0.32</td>
<td>1.61</td>
<td>0.12</td>
</tr>
<tr>
<td>TASA</td>
<td>0.21</td>
<td>1.05</td>
<td>0.31</td>
</tr>
<tr>
<td>BDI</td>
<td>0.37</td>
<td>1.93</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Note: BDI = Beck Depression Inventory; TASA = Therapeutic Alliance Scale for Adolescents.

Lastly, analyses were run by treatment condition to assess for treatment condition effects on Hypotheses one through three. Hypotheses one through three were repeated using parallel linear regression analyses to evaluate the relationship between the therapeutic alliance (TASA), PTSD-Avoidance, and depressive symptoms (BDI) with average trauma-focused involvement for both m-CBT and TAU treatment conditions. There was no statistically significant association between PTSD-Avoidance, TASA, and
BDI and average trauma-focused involvement in m-CBT or TAU treatment condition.

Regression coefficients and standard errors can be found in Table 15.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>m-CBT (N = 17)</th>
<th>TAU (N = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>t</td>
</tr>
<tr>
<td>PTSD-Avoidance</td>
<td>0.29</td>
<td>0.95</td>
</tr>
<tr>
<td>TASA</td>
<td>-0.21</td>
<td>-0.68</td>
</tr>
<tr>
<td>BDI</td>
<td>0.12</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Note: BDI = Beck Depression Inventory; TASA = Therapeutic Alliance Scale for Adolescents.

Summary

Of the original 43 persons who met criteria to participate in the Aurora-Adolescent Mood Project, only 29 met additional inclusion criteria to participate in this study. Independent-samples t-tests did not reveal a significant difference in age, gender, ethnicity, diagnosis, depression symptom severity, or PTSD-related avoidance between the participants in the study (n = 29), compared to the 14 participants excluded from the study.

The TIRS was evaluated for inter-rater reliability and internal consistency. Results demonstrated excellent inter-rater reliability (ICC = .84, α = .91) and adequate internal consistency (α = .71). Item 4 had a low item-total scale correlation and therefore it was removed from the TIRS in order to increase internal consistency and construct unidimensionality (Clark & Watson, 1995). After item four was removed, the TIRS demonstrated good internal consistency (α = .84).

Four hypotheses were tested, none of which had statistically significant findings. Hypothesis two (association between PTSD-Avoidance and trauma-focused involvement) was not statistically reliable and surprisingly the direction of the effect was opposite of
what was originally predicted. Therefore it was explored further in order to better understand the unexpected positive association. Based on the moderate positive correlations between the BDI, PTSD total score (with the avoidance subscale removed), and PTSD-Avoidance, it appears that the PTSD-Avoidance scale may lack specificity and may be an index of symptom severity rather than a specific measure of avoidance. In other words, adolescents who reported higher symptoms of avoidance also reported higher symptoms of depression, PTSD, and emotional arousal.

Further exploratory analyses used item one of the TIRS to evaluate adolescents’ involvement in trauma-focused discussion separate from the therapist contribution. Hypotheses one through three were repeated using parallel linear regression analyses to evaluate the relationship between the therapeutic alliance (TASA), PTSD-Avoidance, and depressive symptoms (BDI) with item one from the TIRS scale. Both the BDI and PTSD-Avoidance significantly predicted adolescent initiation of trauma-focused involvement. These results suggest that the higher level of symptomatology and distress present at pre-treatment the more frequently adolescents are going to initiate discussion about interpersonal trauma they have experienced. Chapter 4 will discuss the implications of the results of this study.
Chapter 4

DISCUSSION

A growing body of evidence indicates that trauma disclosure and attention to traumatic events are critical for recovery from PTSD and associated emotional problems among victimized youth (Cohen & Mannarino, 1996a, 1997; Cohen et al., 2006; Deblinger et al., 2001). Although the precise mechanisms of change have not been identified, for example whether habituation, re-appraisal or other processes are pivotal, there is consensus that it is essential to directly address traumatic experience in therapy.

The primary goal of this study was to evaluate trauma-focused involvement in youth psychotherapy and identify specific factors that contribute to or moderate youth trauma-focused involvement. Specifically, it was hypothesized that (a) higher levels of therapeutic alliance would be positively associated with greater involvement in trauma discussions, (b) higher levels of pre-treatment PTSD-Avoidance symptoms would be negatively associated with trauma-focused involvement, (c) higher levels of pre-treatment depression symptom severity would be negatively associated with trauma-focused involvement, and (d) the association between pre-treatment PTSD-Avoidance symptoms and trauma-focused involvement in therapy would be moderated by the therapeutic alliance.

Results from this study were not consistent with the foregoing hypotheses. Exploratory analyses with subgroups, alternative control variables, and an alternative
measure of involvement (initiation) failed to further explain the results for hypotheses (a) and (d); however, using an alternative measure of involvement (initiation) did lead to significant findings for hypotheses (b) and (c).

**PTSD-Avoidance, Depression, and Trauma-Focused Involvement**

Research by Campbell-Sills et al. (2006) revealed that participants with mood and anxiety disorders engaged in more suppression of their emotional experience and expression than did non-clinical participants. In addition, a study by Khan and Garrison (2009) found that individuals with heightened symptoms of depression were less likely to disclose their emotions to others than were individuals with fewer depressive symptoms. Therefore it was surprising that both avoidance and depression symptoms showed a statistically significant positive association, rather than negative association, with adolescents’ initiation of trauma-focused discussion, indicating that adolescents’ who experience greater symptom severity and distress prior to the first session of treatment will initiate discussion about their past trauma experience more frequently than adolescents’ who are less distressed. These results suggest that pretreatment symptoms were not simply a signal for therapists to focus on trauma content, but actually contributed to adolescents’ initiation and involvement in trauma content. Nevertheless, the positive association between PTSD-Avoidance, depressive symptoms and trauma-focused involvement were unexpected. These results can be interpreted in a number of ways. First, it appears that the PTSD-Avoidance measure taken from the K-SADS may lack specificity and may be an index of symptom severity rather than a specific measure of avoidance. This measure was derived from a diagnostic interview and included items related to feelings of detachment, diminished responsiveness, and anhedonia. Although
the items within this measure are consistent with the DSM-IV criteria for PTSD-Avoidance, they appear to only partially overlap with “experiential avoidance,” which may be more applicable to the context of therapy. The fact that self-reported avoidance was not related to observed avoidance in sessions raises some concern about the validity of this scale. In other words, adolescents who reported higher symptoms of avoidance also reported higher symptoms of depression, other PTSD symptoms, and emotional arousal.

Second, these results are consistent with past research related to the fever model of self-disclosure, which suggests that individuals who experience distress will be motivated to share their distress with others (Stiles, 1995). Research supporting this theory has demonstrated that individuals participate in more self-disclosure when describing an anxiety-provoking event than when describing a happy event (Stiles, Shuster, & Harrigan, 1992). Consistent with the findings from this study, the fever model expects that the more distressed an individual is, the more he or she will disclose about the distress (Stiles, 1995).

A third interpretation for these unexpected findings is that a third variable accounts for the association between symptom reports and trauma-focused involvement. It is possible that adolescents who report higher levels of symptoms on self-reports are more open or less defensive than those who report lower levels. Individuals who are more open or less defensive may be more willing to talk about sensitive or painful experiences in therapy (Hessling & Khan, 2000; Khan, Achter, & Shambaugh, 2001), that is, both contexts involve self-reported experiences and variations in openness may account for their consistency across contexts.
Therapeutic Alliance and Trauma-Focused Involvement

Although adolescent-reported therapeutic alliance did not predict trauma-focused involvement at a statistically significant level, the association was in the predicted direction. Two important points are associated with this finding. First, this finding suggests that alliance may be a facilitator of involvement in trauma-focused discussion but low power restricted the ability to detect a statistically significant effect. In fact, when examining the association between therapeutic alliance and initiation of trauma-focused involvement, the effect size remained in the predicted direction and increased in size ($B = .17$), suggesting that the more adolescents’ feel like they have a strong bond and collaborative relationship with their therapist, the more often they will initiate discussion about their past trauma experience. This suggests that with a larger sample and increased power, therapeutic alliance may have predicted the frequency adolescents’ initiate trauma-focused discussion at a statistically significant level.

Second, the magnitude of association between alliance and initiation is comparable to other studies of alliance and outcome or therapeutic process. In a series of studies by Farber and colleagues (Farber & Hall, 2002; Farber, 2003; Farber, Berano, & Capobianco, 2004) who investigated the association between client self-disclosure and the strength of the therapeutic relationship, results revealed that the stronger the therapeutic alliance, the greater the total disclosure (Farber & Hall, 2002). The effect size obtained in this analysis is similar to the results found in two recent meta-analyses investigating the relationship between alliance and outcome in youth psychotherapy (Shirk, Karver, & Brown, 2011; McLeod, 2011). Results from Shirk, Karver, and Brown (2011) revealed a weighted mean correlation of .22 between alliance and outcome and an
even smaller correlation of .14 was found in McLeod’s (2011) study. In the adult literature, studies have linked alliance and outcome or therapeutic process in the treatment of PTSD (Cloitre, Stovall-McClough, Miranda, & Chemtob, 2004; Keller, Zoellner, & Feeny, 2010). Results from Cloitre et al., (2004) revealed a moderate to large effect (-.46) between alliance and PTSD symptoms at the end of treatment. In a study by Keller, Zoellner, and Feeny (2010), results indicated a significant association between alliance and adherence to prolonged exposure therapy ($r = .32$) and overall treatment completion ($r = .19$).

**Therapeutic Alliance as a Moderator Variable**

Based on the results from this study, a moderation model was not supported. Therapeutic alliance did not affect the strength or direction of the relationship between PTSD-Avoidance and trauma-focused involvement, nor did it affect the strength or direction of the relationship between depression and trauma-focused involvement. In some ways this is not surprising given the unexpected positive association between both avoidance and depression and trauma-focused involvement. It was expected that a strong alliance might offset the negative impact of avoidance, yet both avoidance and alliance were positively associated with involvement, the latter at a non-significant level. In brief, it appeared that the distress associated with high symptom severity was sufficient to propel active involvement regardless of strength of alliance.

**Gender and Age Predicting Trauma-Focused Involvement**

Results showed that trauma-focused involvement varied by gender. Findings indicated that on average males engaged less extensively in trauma-focused discussion than females. This result could not be attributed to lower verbal intelligence among
males, or to different types of trauma experiences across the two genders. Although more recent studies in the adult literature have suggested substantial overlap between men and women in regard to self-disclosure in therapy, past research has found that women tend to disclose more than men in both same-sex and cross-sex therapeutic dyads (Dindia & Allen, 1992). This finding, along with the findings from the current study, is supported by the extensive adult literature on gender differences and interpersonal relationships. For instance, theory and research have indicated that women are more socialized to dyadic relationships and accept the psychotherapy process more readily than men (Gilbert & Scher, 1999; Faidly & Leitner, 1993). In addition, the adult literature has shown that men tend to feel more exposed and vulnerable than women when self-disclosing their emotions (Ferguson, Eyre, & Ashbaker, 2000). Findings from this study suggest that this pattern may pertain to adolescents as well as adults. Further investigation is needed to explore the role of gender in trauma-focused involvement and identify treatment components that may facilitate greater male involvement.

Analyses also revealed a statistically significant association between adolescents’ age and involvement in trauma-focused conversation, suggesting that the extensiveness of involvement in trauma-focused conversation increased with age. Again, this finding did not result from differences in verbal intelligence or differences in types of trauma. It is possible that increasing cognitive maturity allows older adolescents to reflect on their experiences and discuss them in greater depth than less cognitively mature younger adolescents. Previous studies of involvement in adolescent therapy have failed to detect variations across different age groups (Chu & Kendall, 2004; Panichelli-Mindel, Flannery-Schroeder, Kendall, & Angelosante, 2005). However, in a recent study by
Tobon et al. (2011), investigating a group cognitive-behavioral treatment for children with anxiety, results revealed a significant correlation between age and early involvement \( (r = .46) \), with older children displaying higher levels of early involvement in therapy.

One possible interpretation of this finding might be that older adolescents experience more autonomy and independence from adult figures than younger adolescents and may feel more empowered to share past experiences. In contrast, younger adolescents may feel more vulnerable sharing past trauma experiences, especially if the perpetrator is a part of their family and continues to play a role in the adolescents’ life. It is noteworthy that the inclusion of age and gender in models linking symptoms and alliance to involvement did not reveal suppression effects. The same patterns of relationships held when these variables were included in predictive models.

**Limitations of the Study**

There are a number of limitations in this study that need to be taken into account when interpreting the results. The most critical is the small sample size. Consequently, power to detect associations was limited in many cases, even when there were moderate (correlations greater than .3) effect sizes, suggesting Type II error may have occurred. On the other hand, given the small sample size and the multiple statistical tests computed some results may have occurred by chance (Type I error). In light of this limitation, it is important to consider the challenges that were faced in obtaining referrals and recruiting participants in a community setting, rather than in a controlled lab setting. First, with the overwhelming caseloads that community clinicians bare, it became quickly apparent that asking them take on the additional responsibility of referring clients to the study was not feasible request. In order to recruit participants, an additional clinician was hired to
complete intake evaluations and initial trauma screening forms. Even after the intake clinician was hired, referrals to the study were inconsistent. It is noteworthy, however, that over one hundred adolescents were referred over a two year period, at rate that is consistent with most large scale clinical trials. Second, finding participants who met criteria for the study proved to be a challenge. Over 50 percent of participants referred to the study were excluded due to the presence of a comorbid condition such as bipolar disorder or psychotic disorder, below average intellectual ability, or sub-threshold depressive symptoms. Regardless of these challenges, given that trauma-focused involvement has never been observationally coded and the labor-intensive process involved in this coding, pilot research with small samples is valuable for hypothesis development for future larger studies. Furthermore, research evaluating interventions within real-world settings such as community mental health centers is critical to understand whether promising treatments will operate as effectively when delivered to referred youth with multiple, co-morbid problems by clinic therapists with heavy caseloads.

In addition to small sample size, this sample largely consisted of low-income families who accessed treatment through public insurance. Individuals within this sample experienced profound adversity and severe trauma, with majority of the sample having experienced more than one traumatic event in their lifetime. Although this is an important group to study from a public health perspective, youth in this sample did not represent the population of adolescents in the U.S. Furthermore, selection bias may have been present between the sample originally recruited for the Aurora-Adolescent Mood Project and the sample used in the current study. The current study selected cases based
on the presence of codable trauma-focused discussion. Those who chose to initiate trauma-focused discussion may have differed in other important ways from those who did not discuss trauma, such as the age of first trauma, number of trauma experiences, and association with identified perpetrator.

The findings are also limited by the small sample of therapists. With only four therapists involved in the study, detecting therapist effects on trauma-focused involvement was not possible.

Another limitation involves the use of audio recordings, rather than video recordings, which eliminated the ability to detect nonverbal behaviors indicative of trauma-focused involvement. Specifically, it made it more challenging to code the negative items on the TIRS (i.e., behaviors that demonstrate and adolescent’s withdrawal from, or avoidance of, trauma-focused discussion), as these items tend to have less verbal expression and likely more nonverbal behavior (i.e., adolescent looking away from the therapist, slumped over in the chair, or starring at the floor when the therapist attempts to elicit information about his or her trauma experience). There has been some evidence indicating that nonverbal behaviors are important in detecting emotional avoidance among individuals with mood an anxiety disorders (Campbell-Sills and Barlow, 2007; Gross and John, 2003). Nevertheless, not measuring nonverbal behavior does not negate the involvement in trauma-focused discussion detected in this study.

It may be noted that this study used an unpublished coding system without known reliability and validity that was adapted from the Client Involvement Rating Scale (CIRS; Chu & Kendall, 1999) and was modified for the coding of trauma-related content. However, the results of this study demonstrate evidence of psychometric soundness of
this coding system in that high inter-rater reliability and good internal consistency were found.

An additional limitation concerns the PTSD-Avoidance measure. The PTSD-Avoidance subscale used in the K-SADS appeared to lack specificity and may be an index of symptom severity rather than a specific measure of avoidance. Items appear to tap avoidance, but they do not focus on experiential avoidance, a construct that might be more consistent with avoidance of painful topics in therapy.

**Recommendations for Future Research**

A next step in this area of research would be to evaluate a larger sample of youths who have experienced interpersonal trauma, receiving treatment from a broader range of therapists. In addition to larger sample sizes in future studies, statistical techniques such as hierarchical linear modeling could be used to test the hypotheses presented in this study. Future research should continue to utilize observational coding methods to analyze trauma-focused involvement in youth psychotherapy. And an important contribution of this research was the initial evaluation of an observational coding system. In order to evaluate the contribution of client avoidance, measures of avoidant coping or experiential avoidance are recommended for future studies.

Interestingly, this study found that of all the sessions completed by participants, only about 60 percent of the sessions contained discussions of trauma-content and some of the discussions were as short as one minute in length. If research has indicated that trauma disclosure and attention to traumatic events in therapy are critical for recovery from PTSD and associated emotional problems among victimized youth, then future studies should implement treatment models that specifically address trauma-focused
content more frequently, and perhaps earlier on in treatment to allow for sufficient time to process these distressing experiences.

In the future it will be helpful to continue to explore gender differences in trauma-focused involvement and identify specific factors that may influence greater trauma-focused involvement from males. Since research has shown that men tend to feel more exposed and vulnerable than women when self-disclosing their emotions (Ferguson, Eyre, & Ashbaker, 2000), it may be useful to spend more time developing a strong therapeutic alliance with male clients before encouraging them to discuss difficult topics such as past interpersonal trauma.

Conclusions

This study was the first to investigate trauma-focused involvement using an observational coding system with a community sample of depressed adolescents who had experienced interpersonal trauma. Consistent with past research, this study showed that adolescents’ who were more distressed, were more likely to initiate disclosure of trauma-focused material than adolescents’ who were less distressed (Stiles, 1995). While the therapeutic alliance did not predict trauma-focused involvement at a statistically significant level, the effect was in the predicted direction and similar in strength to other findings of alliance – treatment process association.

While this study did have limitations due to a small sample size consistent with many previous community based randomized controlled trials, the present study did add to the research in the field by providing an in depth and meticulous analysis of psychotherapy process and by evaluating an observational coding system to strategically analyze involvement in trauma-focused discussion.
References


Appendix A: Trauma Involvement Rating Scale (TIRS; Simpson, 2011)

**Trauma Involvement Rating Scale**

Rater Name: _________________ 0 = Not at all present
Participant Number: ___________ 1 = A little present
Session Number: _______________ 2 = Some present
Date Coded: _________________ 3 = Moderately present
                  4 = To a large extent present
                  5 = A Great Deal present

_Items of positive trauma-related involvement:_

1) Does the adolescent initiate discussion or introduce new topics related to his or her trauma experience?

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2) Does the adolescent offer information or elaborate about his or her past trauma experience (trauma self-disclosure)?

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_Items of negative trauma-related involvement:_

4) Is the adolescent withdrawn or passive in relation to discussion of trauma experience?

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5) Is the adolescent avoidant in participating in trauma talk?

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Appendix B: PTSD-Avoidance Module (Kiddie-Schedule for Affective Disorders and Schizophrenia; Kaufman et al., 1997).

PTSD Supplement Avoidance

**Efforts to avoid activities that remind of trauma**
*When activities remind you of the stress event, such as going certain places or doing certain things, do you try to avoid or get out of doing those things?*

0 – No information 1 – Not present 2 – Present

**Inability to recall an important aspect of the event**
*Do you remember everything that happened or does it seem like parts are gone from your mind? For example, details you just can’t possibly remember?*

0 – No information 1 – Not present 2 – Present

**Diminished interest in activity**
*Have you been feeling bored a lot? Like things aren’t as fun anymore because of the stressful event?*

0 – No information 1 – Not present 2 – Present

**Feelings of detachment or estrangement**
*Do you feel far away from other people or alone even when you’re with people – as if you’re not connected to friends or family that you used to like being around?*

0 – No information 1 – Not present 2 – Present

**Restricted Affect**
*Do you have trouble feeling happy when good things happen and sad when bad things happen, almost like you’re a robot?*

0 – No information 1 – Not present 2 – Present

**Sense of foreshortened future**
*Do you have trouble imagining getting older? Like maybe you won’t get a chance to grow up?*

0 – No information 1 – Not present 2 – Present


Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness
   0 I do not feel sad.
   1 I feel sad much of the time.
   2 I am sad all the time.
   3 I am so sad or unhappy that I can’t stand it.

2. Pessimism
   0 I am not discouraged about my future.
   1 I feel more discouraged about my future than I used to be.
   2 I do not expect things to work out for me.
   3 I feel my future is hopeless and will only get worse.

3. Past Failure
   0 I do not feel like a failure.
   1 I have failed more than I should have.
   2 As I look back, I see a lot of failures.
   3 I feel I am a total failure as a person.

4. Loss of Pleasure
   0 I get as much pleasure as I ever did from the things I enjoy.
   1 I don’t enjoy things as much as I used to.
   2 I get very little pleasure from the things I used to enjoy.
   3 I can’t get any pleasure from the things I used to enjoy.

5. Guilty Feelings
   0 I don’t feel particularly guilty.
   1 I feel guilty over many things I have done or should have done.
   2 I feel quite guilty most of the time.
   3 I feel guilty all of the time.

6. Punishment Feelings
   0 I don’t feel I am being punished.
   1 I feel I may be punished.
   2 I expect to be punished.
   3 I feel I am being punished.

7. Self-Distaste
   0 I feel the same about myself as ever.
   1 I have lost confidence in myself.
   2 I am disappointed in myself.
   3 I dislike myself.

8. Self-Criticalness
   0 I don’t criticize or blame myself more than usual.
   1 I am more critical of myself than I used to be.
   2 I criticize myself for all of my faults.
   3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes
   0 I don’t have any thoughts of killing myself.
   1 I have thoughts of killing myself, but I would not carry them out.
   2 I would like to kill myself.
   3 I would kill myself if I had the chance.

10. Crying
    0 I don’t cry anymore than I used to.
    1 I cry more than I used to.
    2 I cry over every little thing.
    3 I feel like crying, but I can’t.
### Beck Depression Inventory

**11. Agitation**
- 0: I am no more restless or wound up than usual.
- 1: I feel more restless or wound up than usual.
- 2: I am so restless or agitated that it's hard to stay still.
- 3: I am so restless or agitated that I have to keep moving or doing something.

**12. Loss of Interest**
- 0: I have not lost interest in other people or activities.
- 1: I am less interested in other people or things than before.
- 2: I have lost most of my interest in other people or things.
- 3: It's hard to get interested in anything.

**13. Indecisiveness**
- 0: I make decisions about as well as ever.
- 1: I find it more difficult to make decisions than usual.
- 2: I have much greater difficulty in making decisions than I used to.
- 3: I have trouble making any decisions.

**14. Worthlessness**
- 0: I do not feel I am worthless.
- 1: I don't consider myself as worthwhile and useful as I used to.
- 2: I feel more worthless as compared to other people.
- 3: I feel utterly worthless.

**15. Loss of Energy**
- 0: I have as much energy as ever.
- 1: I have less energy than I used to have.
- 2: I don't have enough energy to do very much.
- 3: I don't have enough energy to do anything.

**16. Changes in Sleeping Pattern**
- 0: I have not experienced any change in my sleeping pattern.
  - 1a: I sleep somewhat more than usual.
  - 1b: I sleep somewhat less than usual.
  - 2a: I sleep a lot more than usual.
  - 2b: I sleep a lot less than usual.
  - 3a: I sleep most of the day.
  - 3b: I wake up 1-2 hours early and can't get back to sleep.

**17. Irritability**
- 0: I am no more irritable than usual.
- 1: I am more irritable than usual.
- 2: I am much more irritable than usual.
- 3: I am irritable all the time.

**18. Changes in Appetite**
- 0: I have not experienced any change in my appetite.
  - 1a: My appetite is somewhat less than usual.
  - 1b: My appetite is somewhat greater than usual.
  - 2a: My appetite is much less than before.
  - 2b: My appetite is much greater than usual.
  - 3a: I have no appetite at all.
  - 3b: I crave food all the time.

**19. Concentration Difficulty**
- 0: I can concentrate as well as ever.
- 1: I can't concentrate as well as usual.
- 2: It's hard to keep my mind on anything for very long.
- 3: I find I can't concentrate on anything.

**20. Tiredness or Fatigue**
- 0: I am no more tired or fatigued than usual.
- 1: I get more tired or fatigued more easily than usual.
- 2: I am too tired or fatigued to do a lot of the things I used to do.
- 3: I am too tired or fatigued to do most of the things I used to do.

**21. Loss of Interest in Sex**
- 0: I have not noticed any recent change in my interest in sex.
- 1: I am less interested in sex than I used to be.
- 2: I am much less interested in sex now.
- 3: I have lost interest in sex completely.
Appendix D: Therapeutic Alliance Scale for Adolescents (TASA; Shirk et al., 2003)

TASA

The following statements concern your views about your therapy at this time. Please rate each statement according to how strongly you feel it is true or not true for you. No one involved in your treatment will see this form.

1. I feel like my therapist is on my side and tries to help me.

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2. I feel uncomfortable talking about my thoughts and feelings with my therapist.

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3. I find it hard to trust my therapist.

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4. I use my time with my therapist to make changes in my thoughts and behavior.

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5. I feel like I can count on my therapist.

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6. I find it hard to work with my therapist on things that bother or upset me.

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7. My therapist really understands what bothers or upsets me.

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8. My therapist and I have figured out a good way to work on my sad and angry emotions.

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9. I don’t get much support from my therapist.


10. My therapist and I work well together on things that bother or upset me.


11. I want the sessions to end quickly when I’m with my therapist.


12. I would rather not work on my problems or issues with my therapist.