

ABSTRACT

Emotional and Behavioral Sequelae of Child Sexual Abuse and the Comparison of Treatment Outcomes with Caregiver Groups or Animal-Assisted Therapy

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The purpose of the present study was to evaluate two adjunctive therapies (caregiver groups and animal-assisted therapy) available at the Dallas Children's Advocacy Center (DCAC) for child victims of sexual abuse and their families. The hypothesis was that either of these adjunctive therapies would provide additional benefit in reducing the child's presenting symptoms above and beyond child therapy alone. This retrospective study evaluated the children's presenting problems and their treatment outcomes by analyzing Child Behavior Checklist (CBCL) data that had been collected at baseline and post-treatment. Overall, the results suggested that children who completed therapy at DCAC experienced significant decreases in all symptom subscales of the CBCL from baseline to post-treatment. Results demonstrated significantly greater improvement in somatization symptoms of child victims when their caregivers participated in a caregiver intervention when compared to children whose caregivers did not participate in any such intervention. The results also revealed no significant

difference in symptom subscale scores between the children who participated in animal-assisted therapy with a therapy dog and those who participated in therapy as usual. The data suggest that animal-assisted therapy provided in an individual setting may have been more beneficial in reducing attention problems than animal-assisted therapy in a group setting. Small sample sizes for the treatment groups limited the statistical power to detect other differences that could have been significant. Further studies will need to be conducted to confirm the benefits provided by these adjunctive therapies for child victims and their caregivers.

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Child Treatment Outcomes with Caregiver Groups or Animal-Assisted Therapy

by

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The work in this dissertation is dedicated to my beautiful daughter, Emery,
whom I hope will always continue to pursue her dreams even if
they may, at times, seem impossible to achieve

In memory of
my mother and father, who left this world too soon

CHAPTER ONE

Introduction

Sexual Abuse: Definition and Incidence

Childhood sexual abuse (CSA) is one of the most prevalent health problems children¹ will experience, and has a very serious array of psychological consequences. CSA is defined by both state and federal laws. The Child Abuse Prevention and Treatment Act (CAPTA) is a federal legislation that provides states with minimum standards for defining child sexual abuse. CAPTA defines child sexual abuse as “the employment, use, persuasion, inducement, enticement, or coercion of any child to engage in, or assist any other person to engage in, any sexually explicit conduct or simulation of such conduct for the purpose of producing a visual depiction of such conduct; or the rape, molestation, prostitution, or other form of sexual exploitation of children, or incest with children” (U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau, 2011).

Sexual abuse of children has become a significant problem in the United States. The National Child Abuse and Neglect Data System (NCANDS) reported that 62,936 children (birth to 17 years of age) were alleged victims of sexual abuse in 2012 (U.S. Department of Health and Human Services, Administration for Children and Families, Children’s Bureau, 2013). A recent study estimated 1 in 4 females and 1 in 20 males will

¹ For the purposes of this study, “children” refers to children and adolescents, unless otherwise noted.

be sexually abused or assaulted before the age of 18 years (Finkelhor, Shattuck, Turner, & Hamby, n.d.). Alarming, experts agree that this number is likely well below the actual number of child victims since sexual abuse is one of the most underreported crimes. Despite widespread efforts to increase adults' symptom awareness of child victims, a large percentage of cases are not discovered, and for many reasons, a large number of children and adolescents choose not to disclose their victimization during childhood. In fact, one study estimated that as many as 2 out of 3 children who have been sexually abused will not disclose this information in childhood (London, Bruck, Ceci, & Shuman, 2005).

As the above definition implies, sexual abuse experiences can vary dramatically in terms of exposure and severity. Experiences range from sexual exposures in which the child victim may not necessarily be required to participate (e.g., showing a child pornography or masturbating in the presence of a child) to those experiences that involve some type of penetration (i.e., digital, oral, and/or anal). Finkelhor et al. (2014) reported that in a relatively large, pooled sample (n=708) of 17-year-old participants, the lifetime rate of sexual abuse or assault involving penetration was approximately 6% for females and <1% for males.

With such a large percentage of children being victims of sexual abuse, it is critical for clinicians to understand the potential impact of the experience on the child, and to employ effective therapeutic interventions to maximize improvement in psychological outcomes and prevent future re-victimization. The current study aims to explore the therapeutic benefit of two optional services available to affected families at

the Dallas Children's Advocacy Center (DCAC): caregiver education/support groups and animal-assisted therapy for child victims.

The Impact of Sexual Abuse on Social, Emotional, and Behavioral Functioning in Child Victims

The effects of CSA on a child's well-being and functioning differ dramatically between victims. Some children demonstrate no immediately apparent symptoms directly related to the abuse, while the majority of children exhibit symptoms ranging from mild symptomatology to debilitating psychological and behavioral effects. For those children who experience symptoms related to CSA, Finkelhor and Brown (1985) conceptualized the traumatic impact of the experience as arising from four components of the trauma: powerlessness, traumatization related to early sexualization, stigmatization, and betrayal. Taking these factors into account, it is not surprising that CSA often has a multitude of effects on social, behavioral, and emotional functioning (Browne & Finkelhor, 1986; Kendall-Tackett, Williams, & Finkelhor, 1993; Tyler, 2002).

Most studies summarizing the emotional and behavioral problems of CSA victims have found similar symptoms within groups based on the children's developmental stage (i.e., generally, early childhood, middle childhood, and adolescents). The most prevalent initial effects reported among early childhood victims of sexual abuse included inappropriate sexual behavior (Browne & Finkelhor, 1986; Friedrich, Beilke, & Urquiza, 1988; Gale, Thompson, Moran, & Sack, 1988; Putnam, 2003; White, Halpin, Strom, & Santilli, 1988) and more internalization of emotional problems than their age-matched, non-abused peers (Fagot, Hagan, Youngblade, & Potter, 1989; Friedrich, Urquiza, & Beilke, 1986). Some examples of emotional problems in these victims included

increased rates of fear, anger and hostility, anxiety, shame, depression, and low self-esteem (Browne & Finkelhor, 1986; Hebert, 2006; Kendall-Tackett et al., 1993; Quas, Goodman, & Jones, 2003; Wells, McCann, Adams, Voris, & Ensign, 1995). Middle childhood victims of sexual abuse also often exhibited similar emotional problems, as well as academic problems (Friedrich & Luecke, 1988; Jones, Trudinger, & Crawford, 2004), and inappropriate sexual behaviors such as sexual aggression (Friedrich & Luecke, 1988). In addition to these behavioral and emotional problems already mentioned in early childhood and middle childhood victims, sexually abused adolescents also exhibited symptoms requiring early intervention, including substance abuse (Chandy, Blum, & Resnick, 1996; Joseph M. Chandy, Blum, & Resnick, 1997; Harrison, Fulkerson, & Beebe, 1997; Kingston & Raghavan, 2009), suicidal ideation and behavior (Chandy et al., 1996; Chandy et al., 1997; Garnefski & Diekstra, 1997), delinquency (Chandy et al., 1996; Joseph M. Chandy et al., 1997; McGrath, Nilsen, & Kerley, 2011), eating disorders (Chandy et al., 1996; Smolak & Murnen, 2002), and risky sexual behaviors (Chen, Dunne, & Han, 2006; Griffiee et al., 2012).

Post-traumatic stress disorder (PTSD) and inappropriate sexual behavior were two commonly observed outcomes following sexual abuse victimization, regardless of the age or developmental stage at the time of victimization (Friedrich et al., 1986; Kingston & Raghavan, 2009; Tremblay, Hébert, & Piché, 2000; Tyler, 2002; Wolfe, Gentile, & Wolfe, 1989). Generally, inappropriate sexual behavior is sexual behavior that is advanced for the child's age or developmental stage, as demonstrated by either the presence of these behaviors in very young children or an increased rate of these behaviors when compared to their non-abused counterparts. In adolescents, inappropriate sexual

behavior may also be characterized as “risky”, or those behaviors which increase the risk of pregnancy or potentially endanger the health of the adolescent (e.g., unprotected intercourse, prostitution). Compared to adolescents with no history of CSA, CSA victims were reported to have higher rates of pregnancy and sexually transmitted diseases, earlier initiation of sexual activity, more frequent unprotected intercourse, higher numbers of reported sexual partners, and higher rates of sexual victimization after the age of 16 (Fergusson, Horwood, & Lynskey, 1997; Luster & Small, 1997b). A higher likelihood of prostitution and HIV risk behaviors has been found in adolescents and young adults who were sexually abused when compared to a non-abused sample (Cunningham, Stiffman, Doré, & Earls, 1994; Widom & Kuhns, 1996). Moreover, not surprisingly, CSA victims have been reported to have increased levels of sexual anxiety and sexual abuse fears when compared to their non-abused peers (Cohen, Deblinger, Maedel, & Stauffer, 1999).

Although many researchers have attempted to identify a standard “profile” of a child victim of sexual abuse, there does not appear to be a single predominant symptom pattern. The symptoms described above are some of the most common symptoms observed in CSA victims; however, symptomatic profiles across victims will vary widely. For example, one child may present with primarily internalizing symptoms such as depression and anxiety whereas another child may exhibit mostly externalizing symptoms such as aggression and conduct problems. Timely psychological interventions to alleviate these symptoms are critical in order to mitigate the long-term consequences of the trauma, which will be discussed next.

The Long-Term Impact of Child Sexual Abuse

Given the low rate of disclosure among child victims of sexual abuse, a large number of victims continue throughout life suffering from the impact of CSA trauma. A substantial body of literature suggests that CSA has varied sequelae in adult survivors that may include psychological, behavioral, interpersonal, and physical health effects. Overall, adults who were CSA victims demonstrated higher average levels of mental health symptomatology than their non-abused peers (Young, Harford, Kinder, & Savell, 2007), and these significant findings were generally consistent across gender and observed in both clinical and nonclinical samples. More specifically, these adult CSA survivors were more likely to have histories of eating disorders, depression, alcohol abuse, suicide attempts, and more likely to have spent time in a psychiatric hospital when compared to control subjects who did not have a history of abuse (Browne & Finkelhor, 1986; Mullen, Martin, Anderson, Romans, & Herbison, 1996). They were also more likely to have sexual problems and poor self-esteem when compared to control subjects. A recent study also demonstrated that, even after controlling for a number of potentially confounding factors (e.g., extent of exposure to CSA, environmental factors, child factors), statistically significant increased rates of major depression, suicidal ideation and attempts, anxiety disorder, and substance dependence were still commonly found in adult CSA victims (Fergusson, McLeod, & Horwood, 2013). In addition, adult females who had been sexually abused as children were more likely to engage in risky sexual behaviors than females who had experienced other types of childhood maltreatment, such as physical abuse, psychological abuse, and/or neglect (Senn & Carey, 2010).

CSA victims also exhibited significant interpersonal distress and difficulties, particularly in marital and parenting relationships. Not surprisingly, a large number of CSA survivors have difficulties with or a fear of intimacy, experience great mistrust, lack an adequate sense of self-worth, and have difficulty relating to others (Davis & Petretic-Jackson, 2000). Likely related to these difficulties, studies have reported consistent evidence for marital dissatisfaction, poor quality of intimate relationships, and problems with sexual functioning (DiLillo, 2001; Finkelhor, Hotaling, Lewis, & Smith, 1989; Rumstein-McKean & Hunsley, 2001). Compared to women who had no history of sexual abuse, CSA victims reported poorer communication in intimate relationships, increased risk of infidelity, and higher rates of relationship disruption (e.g., walking out and divorce) (Colman & Widom, 2004; Davis & Petretic-Jackson, 2000). In terms of parenting, those parents who had reported a history of CSA were found to report more general parenting stress and have lower confidence in their parenting abilities when compared to parents who had not been sexually abused but had experienced other negative family experiences such as childhood physical abuse, neglect, or negative family relationships (Banyard, 1997). Additionally, CSA victims were more likely to demonstrate an aggressive parenting style, use physical punishment, and have a higher child abuse potential than parents who had a history of childhood physical abuse (Banyard, 1997; David DiLillo, Tremblay, & Peterson, 2000).

In addition to the psychological and interpersonal effects of CSA, the literature also suggests that victimization may lead to a number of long-term physical health problems including somatic complaints, problematic sexual functioning and behavior, and pregnancy-related problems (Bohn & Holz, 1996; Zwickl & Merriman, 2011).

Generally, these physical health problems tended to occur with more frequency and intensity than comparison groups with no history of CSA (Irish, Kobayashi, & Delahanty, 2010). Abuse survivors have been suggested to have “thick-chart syndrome”, which refers to patients who frequently present to a medical facility with vague and often medically unexplained symptoms. Medically unexplained conditions most frequently associated with CSA victims were chronic pain, gastrointestinal disorders, and non-epileptic or pseudoseizures. Overall, CSA victims tended to have more medical diagnoses and worse functional disability. In addition, the severity of the health problems tended to correlate with the severity of the abuse experience (Nelson, Baldwin, & Taylor, 2012).

In summary, the literature demonstrates that the experience of CSA can have persistent, long-term consequences that affect multiple aspects of a victim’s well-being and daily functioning. Whether or not a child victim experiences some of these more chronic, pervasive effects is dependent on a number of factors, including access to and willingness to participate in therapeutic interventions, and the presence of any risk and/or protective factors in the child’s life. Researchers have attempted to elucidate some of the variables that mediate these outcomes as a means to understand this heterogeneity in symptomatic profiles.

Mediating and Moderating Variables that Affect Symptomatic Profiles of CSA Victims

Three main models of sexual abuse traumatization have been proposed in the literature in an attempt to understand how traumatization occurs, and thus potentially explain the wide variability in symptomatic profiles across victims. Firstly, as mentioned earlier, Finkelhor and Browne (1985) proposed four trauma components, or “traumagenic

dynamics,” that explain the pattern of symptoms observed in CSA victims: traumatization related to early sexualization, betrayal, powerlessness, and stigmatization. In this conceptualization, the presenting emotional and behavioral symptoms are related to one or more of these factors, all of which distort the child’s self-concept, world view, and affective capacities. The authors hypothesize that the extent to which each of these factors plays a role depends on characteristics related to the abuse experience and/or the abuse perpetrator. A second model of traumatization is based on the hypothesis that factors related to both the sexual abuse as well as familial factors contribute to the presenting symptoms of CSA victims (Bhandari, Winter, Messer, & Metcalfe, 2011; Fassler, Amodeo, Griffin, Clay, & Ellis, 2005). Proponents of this theory believe that factors related to the family environment are more influential on the development of trauma symptoms than those related to the abuse itself. Thirdly, Kendall-Tackett et al. (1993) propose another model of traumatization in which abuse-related variables play an important role, but also postulate that the symptomatic profile of CSA victims is largely related to their pre-abuse level of functioning and areas of vulnerability, including intelligence, coping skills, and prior adjustment.

The mediating and moderating variables that have been hypothesized to affect the resultant symptomatic profile of a CSA victim as well as his/her treatment outcome can generally be categorized into three groups: child factors, familial factors, and abuse-specific factors (Yancey & Hansen, 2010). Child factors include, but are not limited to, characteristics such as the child’s age, developmental level, gender, and race. For example, although both male and female victims display a very similar set of emotional and behavioral symptoms following CSA, in general, some studies posit that male

victims are more likely to exhibit externalizing behaviors such as aggression, conduct problems, and substance abuse, and less likely than female victims to exhibit submissive behaviors and depressive symptoms (Kendall-Tackett et al., 1993; Young, Bergandi, & Titus, 1994). A more recent study, however, reported no differences in children's symptomatic profiles with regard to the gender of the child victim (Maikovich-Fong & Jaffee, 2010). With regard to the moderating variable of age, victims first abused in adolescence were more likely than victims first abused in childhood to report depressive symptoms and low self-esteem, while younger victims of CSA were more likely to experience clinically significant symptoms of PTSD (Feiring, Taska, & Lewis, 1999). Other child factors that have been hypothesized to play a role are a child's attributional style and coping strategies. For example, children with more negative and internal attributions about the abuse and the perpetrator tended to result in more internalizing and PTSD-related symptoms (Feiring, Taska, & Lewis, 2002; Kolko, Brown, & Berliner, 2002; Whiffen & MacIntosh, 2005). Moreover, victims who utilized primarily avoidance coping strategies following the CSA demonstrated poorer outcomes than victims utilizing other coping techniques (Hébert, Tremblay, Parent, Daignault, & Piché, 2006; Shapiro & Levendosky, 1999).

The family context has been shown to play a critical role in the symptomatic profile of CSA victims. In fact, some researchers even believe that factors related to the family environment can be more influential on the development of trauma symptoms and a victim's long-term well-being than those factors related to the abuse itself (Bhandari et al., 2011; Fassler et al., 2005). For example, Fassler et al. (2005) found that high family conflict was consistently correlated with poor psychological outcomes and that

characteristics such as family expressiveness and cohesion were consistently associated with better outcomes. Overall, the level of family stress (whether financial or relational) can influence a child's well-being and functioning following CSA, as the greater the level of stress a family experiences, the less support would be available to the child victim (Fassler et al., 2005; Hébert et al., 2006; Kendall-Tackett et al., 1993). Parent factors have also been proposed as mediators of children's symptoms following CSA (e.g., parental history of childhood sexual abuse, parental reactions to their child's disclosure of sexual abuse, and the parent's own mental health and coping strategies). With regard to family relationships, some studies implicate the role of the child's attachment to the caregiver, with insecure attachment styles predicting poorer symptomatic and treatment outcomes following sexual abuse (Alexander, 1993; Shapiro & Levendosky, 1999).

The impact of CSA on victims and treatment efficacy can also vary greatly depending on abuse-related characteristics such as the severity of sexual abuse, the duration of abuse, the relationship of the perpetrator to the victim, and a perpetrator's use of force (Brezo et al., 2008; Kendall-Tackett et al., 1993; Lacelle, Hébert, Lavoie, Vitaro, & Tremblay, 2012; Tremblay, Hébert, & Piché, 1999). The severity of the abuse can range from that involving no contact (e.g., exposure to pornography, masturbation, or sexual talk) to more severe forms of abuse involving penetration (e.g., oral, vaginal, and/or anal), with more severe abuse generally being correlated with poorer mental health symptomatology. The duration of the abuse can also have an impact on outcomes; generally, the longer the duration of CSA, the more severe the symptoms and the higher the risk for the development of PTSD (Kendall-Tackett et al., 1993; Wolfe, Sas, & Wekerle, 1994). Some research has also demonstrated a critical role of the relationship

between the perpetrator and the victim on a victim's symptom profile, with the closer relationship (e.g., intrafamilial as opposed to extrafamilial) leading to poorer functioning following the abuse (Kendall-Tackett et al., 1993). This is likely related to Finkelhor and Browne's conceptualization mentioned above in which abuse perpetrated by a close family member may lead to stronger perceptions of betrayal and powerlessness (1985).

It has been demonstrated that PTSD is more likely to develop in child victims of sexual abuse when compared to similar aged peers who had experienced other stressors, such as an accidental injury or chronic illness (Tremblay et al., 2000). PTSD is diagnosed by the presence of a constellation of symptoms which may include hyperarousal, re-experiencing, and avoidance. In child victims of sexual abuse, certain factors have been identified that indicate a higher prevalence of PTSD in victims; in general, the longer the abuse occurred, the greater the use of threat or forced compliance during the abuse, and the greater the child's reported feelings of guilt all contributed to a greater likelihood of the child victim meeting criteria for PTSD (Wolfe et al., 1994). In addition, the symptoms of PTSD were increased if the victim had a prior history of abuse (Boney-McCoy & Finkelhor, 1995).

As outlined in this section, there are many factors that could potentially account for the heterogeneity of symptom profiles in child victims of sexual abuse. After decades of research in this area, experts now tend to agree that the aforementioned variables do not reliably predict symptomatic outcomes. Rather, it is much more likely that a complex interaction between individual child factors, environment, and abuse-related characteristics accounts for the large, unexplained individual differences in CSA outcome. This conclusion supports the need for a comprehensive individualized

assessment that will capture the particular symptomatic profile for each child, as a first step toward defining appropriate treatment options.

The Importance of Therapeutic Intervention for CSA Victims

For many children, the disclosure process can be almost as traumatic as the abuse itself. Many studies have sought to find ways to make both the investigative and medical examination processes as non-traumatic as possible; however, some children still perceive the disclosure aftermath as very distressing. Throughout this very difficult time, therapeutic intervention can help to alleviate some of these victims' distress. A retrospective study found that most children who had been seen by a counselor following the disclosure and investigation process had a positive perception of the counseling experience (Berliner & Conte, 1995).

In addition to the well-documented short- and long-term impacts of CSA, these victims are also at risk of future re-victimization (Boney-McCoy & Finkelhor, 1995). Although there is scant literature documenting the effects of psychotherapeutic intervention on the risk of further sexual abuse, one study demonstrated a decrease in the rate of re-victimization in patients who participated in group psychotherapy when compared to a wait-list no-treatment control condition (Classen, Koopman, Nevill-Manning, & Spiegel, 2001). Re-victimization has been suggested to be a product of the persistence of PTSD symptoms, the use of avoidant coping strategies, and the degree of self-blame (Filipas & Ullman, 2006; Fortier et al., 2009; Ullman, Najdowski, & Filipas, 2009), all of which are common targets of therapeutic intervention for the treatment of CSA victims.

Given the high incidence of CSA and its potentially debilitating psychological sequelae, early intervention is critical to reduce the impact of the trauma throughout the lifespan. It has been suggested that children who receive treatment following CSA are more likely to return to pre-abuse functioning sooner than those victims who did not receive treatment at all (Kendall-Tackett et al., 1993). In addition, studies have demonstrated repeatedly improvement in sexualized behaviors, emotional disturbances, behavioral problems, and PTSD symptoms following individual and/or group therapy (Bentovim, Boston, & van Elburg, 1987; De Luca, Boyes, Grayston, & Romano, 1995; Friedrich, Luecke, Beilke, & Place, 1992; Grayston & De Luca, 1995; Harvey & Taylor, 2010; Trask, Walsh, & DiLillo, 2011). Without intervention, children with symptoms related to the abuse at the time of disclosure will not only likely still have problems in the years following the abuse, but may also find a worsening of these symptoms with time (Calam, Horne, Glasgow, & Cox, 1998).

These short- and long-term consequences of childhood sexual abuse illustrate the sustained, debilitating effects of an untreated trauma, and highlight the need for immediate, effective interventions to mitigate these long-term negative outcomes. Child advocacy centers across the country are presented with the best opportunity for providing swift intervention, as they are typically intimately connected with the law enforcement agencies to whom these crimes are being reported. In general, at DCAC, therapy focuses on five general areas: (1) feelings identification and expression, (2) affirmation, normalization, and de-stigmatization (3) cognitive restructuring, (4) teaching healthy coping strategies, and (5) education and skills training to prevent future re-victimization (e.g., education on perpetrator “grooming,” assertiveness skills training). In addition, all

DCAC therapists are trained in Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), which is an evidence-based treatment demonstrated to be effective for improving PTSD, depression, behavioral problems, shame, and abuse-related attribution in sexually abused children (Cohen, Deblinger, Mannarino, & Steer, 2004).

The Role of Caregiver Support for Child Treatment Outcomes

Caregiver and environmental factors have been demonstrated repeatedly to be a strong predictor of children's outcomes following CSA disclosure (Barker-Collo & Read, 2003; Bick, Zajac, Ralston, & Smith, 2014; Gries et al., 2000; Spaccarelli & Kim, 1995; Testa, Miller, Downs, & Panek, 1992; van Toledo & Seymour, 2013). In fact, perceived caregiver support has been suggested to have a stronger impact on outcomes and healthy development than the mediating factors related to characteristics of the abuse (Bick et al., 2014; Tremblay et al., 1999). Those children who experienced more maternal support and protection following the disclosure of CSA (e.g., committed to the child and supportive, believed the child's allegations, and actively demonstrated disapproval of the perpetrator's behavior) had fewer psychological symptoms (e.g., depression), and exhibited higher self-esteem when compared to those children who did not receive such support (Everson, Hunter, Runyon, & Edelsohn, 1989; Gries et al., 2000; Kendall-Tackett et al., 1993; Testa et al., 1992). Luster and Small (Luster & Small, 1997a a, 1997b b) demonstrated that a caregiver's close monitoring of the child and a supportive relationship with at least one parent served as protective factors against some of the negative outcomes of CSA (i.e., binge drinking, tendency to have multiple sexual partners). Moreover, Roesler (1994) demonstrated that those children who disclosed their CSA in childhood and perceived a non-supportive reaction to the disclosure had

worse scores on PTSD symptomatology, general trauma symptoms, and dissociation than children who perceived a supportive reaction following disclosure. Importantly, evidence suggested that parental support had a greater positive effect on the adjustment of a child victim after CSA disclosure than peer support, indicating a strong impetus to ensure parents are equipped with as much knowledge and as many skills as possible so that they can be a strong support for their child during this very stressful time (Feiring, Taska, & Lewis, 1998). The types of support that child victims need most following the disclosure of a trauma such as sexual abuse include a caregiver's care, support, nurturing, and affection (van Toledo & Seymour, 2013).

Unfortunately, caregivers face huge challenges when confronted with a child's disclosure of sexual abuse that may interfere with their ability to respond in a supportive manner. Firstly, caregivers may have a difficult time believing their child's allegation of sexual abuse. Particularly with cases of intrafamilial abuse, the parent may struggle with denial and the desire to minimize the abuse experience or its impact on the child victim in the interest of keeping peace within the family. Secondly, for caregivers who do believe the child's allegations, the caregiver may simply be unaware of the most supportive way to respond to a child's disclosure of sexual abuse. Some parents fear the risk of re-traumatizing the child by talking to them about the details about the abuse, and may therefore end up falling on the low support end of the continuum, thinking that they are helping their child in the best way possible. Thirdly, caregivers themselves have been shown to experience significant distress following their child's disclosure of sexual abuse (Forbes, Duffy, Mok, & Lemvig, 2003; Newberger, Jeremy, Wateraux, & Newberger, 1993). A child victim's perception of their caregiver's emotions and cognitions in

response to the disclosure (e.g., fear, anger, sadness) can have lasting, and potentially devastating, effects on the child's cognitive appraisals, psychological well-being, and recovery following the traumatic event (Runyon, Spandorfer, & Schroeder, 2014).

Parents of CSA victims who themselves were sexually abused as children represent an even more challenging group with which to work. Studies have demonstrated that overall, parents with a history of CSA report a decreased ability to bond with their children, decreased parental involvement, less parental warmth, and a perceived lack of competence in their ability to set limits and communicate with their children when compared to parents with no history of CSA (Barrett, 2009; Paredes, Leifer, & Kilbane, 2001; Seltsman & Wright, 2013). For those parents who may not have received psychological treatment following their abuse, their child's CSA experience may re-traumatize them, further decreasing their perceived ability to support their child. These parents will likely benefit from increased therapist and peer support during this very difficult time.

A couple of recent studies reported that following their child's disclosure, caregivers of CSA victims have reported a need for more information, emotional support, support for their own victimization, and parenting assistance (van Toledo & Seymour, 2013, 2016). The types of information caregivers reported would be most helpful were education about the behaviors and emotions their children may display and the best ways to deal with them, as well as information regarding the investigation process, long-term consequences of CSA, and the impact of CSA on the family. Caregivers also reported emotional support needs for their own feelings of guilt, denial, anger, self-pity,

resentment, and fear that arise from the disclosure, as well as coping strategies to help them through their own feelings of powerlessness and betrayal.

A number of studies have demonstrated positive effects of a caregiver intervention on the caregiver's psychological adjustment and coping ability following a child's disclosure of CSA (Corcoran, 2004). In addition, a few studies have demonstrated significant improvements in child outcomes with parent-involved treatments for CSA, such as Trauma-Focused Cognitive Behavioral Therapy (TF-CBT; (Cohen & Mannarino, 1996; Cohen et al., 2004), in which the parent and child engage in conjoint sessions with the therapist. Other studies investigating caregiver interventions lacked adequate control groups for comparison (Deblinger, Stauffer, & Steer, 2001; Forbes et al., 2003; Winton, 1990) or a standardized measure with which to compare child treatment outcomes (Grosz, Kempe, & Kelly, 2000). To date, existing studies on the effects of caregiver interventions lacked adequate study design to definitively conclude that a caregiver's participation in these interventions positively impacted the child's presenting symptoms following CSA above and beyond what the child may experience with child therapy alone. Despite these limitations, studies have generally concluded that children benefit when caregivers are involved in their treatment, particularly with regard to internalizing symptoms (Corcoran & Pillai, 2008).

Both the format and the content of parental support and interventions following the child's disclosure can vary widely. Most studies have found significant benefit from working with caregivers in a group modality, as groups can offer peer support and the comfort in finding others with similar experiences (van Toledo & Seymour, 2013). Some of the topics commonly addressed through caregiver groups include dealing with

emotional responses, communication skills, parenting skills, assertiveness skills, handling legal matters, addressing one's own history of victimization, and understanding the dynamics of incest (Elliott & Carnes, 2001).

In summary, the role of the non-offending caregiver in providing a supportive environment for the CSA victim appears to be important for enhancing positive outcomes following disclosure of abuse. Caregiver groups at DCAC cover several of the above-mentioned factors, including education on the common reactions to CSA victimization, support for the caregiver's own emotional distress to the disclosure of the abuse, assistance in helping caregivers to understand the most effective ways to be a strong support for their child, and to create a supportive familial and social environment for their child. Caregivers who attend these groups are therefore better equipped with knowledge on how to provide their child with the best chance for favorable treatment outcomes.

Animal-Assisted Therapy

The health benefits of pet ownership have long been touted in the popular news. Over the last couple of decades, within a field now known as animal-assisted therapy, an increasing number of research studies have documented the beneficial effects of including animals in health settings as a means of alleviating patient distress and enhancing health outcomes. Animal-assisted therapy (AAT) describes approaches to psychotherapy in which an animal is an integral part of the treatment process. Therapy dogs, in particular, have been the focus of a majority of AAT studies, and have demonstrated social, emotional, and physiological benefits with a multitude of clinical populations. For example, animal-assisted psychotherapeutic interventions have been shown to alleviate mental health difficulties associated with autism (Fung, 2015;

Maujean, Pepping, & Kendall, 2015; Solomon, 2010), anxiety (Barker & Dawson, 1998; Hoffmann et al., 2009), depression (Folse, Minder, Aycock, & Santana, 1994), dementia (Majić, Gutzmann, Heinz, Lang, & Rapp, 2013; Walsh, Mertin, Verlander, & Pollard, 1995), and learning disabilities (Limond, Bradshaw, & Cormack, 1997). In addition, AAT dogs increased attention and positive behaviors in children with pervasive developmental disorders (Martin & Farnum, 2002). Most importantly for a client population with a high proportion of anxiety, acute stress, and PTSD, dogs have been shown to moderate the autonomic stress response during stressful task performance (Allen, Blascovich, Tomaka, & Kelsey, 1991; Barker, Knisely, McCain, Schubert, & Pandurangi, 2010), and in children in a hospital setting (Tsai, Friedmann, & Thomas, 2010) or undergoing a medical procedure (LeAnn Havener, Lisa Gentes, Barbara, 2001; Nagengast, Baun, Megel, & Leibowitz, 1997). In addition, several studies have demonstrated that dogs facilitate social communication and interactions, enhance a sense of emotional connection to others, and encourage the child's participation in activities (Limond et al., 1997; Prothmann, Bienert, & Ettrich, 2006; Solomon, 2010). In a population of children undergoing inpatient psychiatric treatment, Prothmann et al. (2006) demonstrated that after just five weekly 30-minute sessions in which the child interacted freely with a dog, the researchers found increased alertness and attention, more openness and desire for social contact and exchange, and a tendency for the child to become more psychologically well-balanced, as measured by a unique construct they referred to as "state of mind."

A few different lines of research illustrate the potential means by which therapy dogs confer therapeutic benefit to psychotherapy clients. Studies have shown that the

presence of a therapy dog can decrease blood pressure and alter several neurochemicals to promote feelings of pleasure and attachment, and an alleviation of pain. For example, interaction with a friendly dog has been demonstrated to increase levels of β -endorphin, oxytocin, prolactin, phenylacetic acid, and dopamine, and to significantly lower cortisol levels (Barker, Knisely, McCain, & Best, 2005; Odendaal, 2000). Additionally, some authors have suggested that a therapy dog can serve as an attachment figure in the child's life and can help the child to learn healthier relationship behaviors and patterns, since the dog is likely to be experienced as a safe haven and secure base (Parish-Plass, 2008; Zilcha-Mano, Mikulincer, & Shaver, 2011). It is hypothesized that through this relationship with the therapy dog, the child can experience a sense of security in what may otherwise be experienced as a threatening new environment. Because the animal is nonjudgmental, it can enhance the child's sense of self-esteem and promote the expression of feelings. Subjective experiences by children following AAT interventions include reports of the dog having a calming effect, promoting a sense of safety and openness, as well as making sessions more fun (Lange, Cox, Bernert, & Jenkins, 2007).

To date, there is only one study that has examined treatment outcomes following the use of AAT with sexually abused children (Dietz, Davis, & Pennings, 2012). A recent study conducted at a Child Advocacy Center examined the effects of a group treatment with a population of sexual abuse victims ages 7 to 17 years. The authors compared outcomes between a control group in which no therapy dogs were present, and two experimental groups in which therapy dogs were present for an introductory activity during the initial 10 to 15 minutes of each session. One of the AAT groups followed a treatment protocol very similar to the control group, whereas the second experimental

AAT group incorporated a slight variation on the treatment protocol (i.e., storytelling). The authors found that both AAT group treatment protocols resulted in statistically significant decreases in subscales measuring children's anxiety, depression, anger, PTSD, and dissociation when compared to the control group. The only subscale that showed statistical significance in the storytelling AAT group, but not the other AAT group, when compared to the control group was that involving sexual concerns.

As mentioned earlier, CSA victims may experience a great deal of psychological distress not only from the abuse experience itself, but also from the disclosure process. In light of this consideration along with the research demonstrating how animals can help to moderate the autonomic stress response in stressful situations, the case for using therapy animals in child advocacy centers is very compelling. In this population, animal-assisted therapy could potentially help to facilitate the therapeutic process by fostering the therapist-client relationship, enhancing the child's openness and willingness to participate in therapy, and by alleviating the stress usually associated with the disclosure of details about the abuse (Chandler, 2011; Reichert, 1998).

Animal-assisted therapy (both individual and group modalities) is an option available to all children presenting for psychotherapy at DCAC; however, it is not an option that is utilized regularly or encouraged unless the child expresses an interest in animals or the therapist thinks that a particular child could benefit from what AAT offers. More evidence is needed on the types of symptoms that are most successfully alleviated with AAT, as well as treatment outcomes that can be expected with AAT protocols. The current study aims to explore in more detail the therapeutic implications of using AAT in

a CSA population in the hopes of extending research on how to maximize therapeutic benefit in CSA victims.

Significance of the Proposed Study

The overall goal of the proposed study is to enhance our knowledge of the emotional and behavioral problems facing child victims of CSA and to explore therapeutic effects of optional services available to those victims presenting for therapy at the DCAC. Caregiver education/support groups and animal-assisted therapy are two optional, and potentially very helpful, services offered to DCAC clients as a part of their treatment plan; however, the literature lacks evidence regarding the effectiveness of these services in helping mitigate some of the negative consequences of CSA. By examining the potential therapeutic benefits of these services, any knowledge gained may help to inform best practices for the treatment of CSA in order to improve both short-term and long-term psychological well-being in this sensitive population of child victims.

Specific Aims and Hypotheses

Specific Aim 1: Conduct a detailed analysis of parent-reported social, emotional, and behavioral problems in children ages 4 through 17 who have reported sexual abuse and have been referred for therapy at the Dallas Children’s Advocacy Center (DCAC).

Specific Aim 2: Investigate whether or not there are further improvements in social, emotional, and/or behavioral functioning following treatment in children whose caregivers have also participated in a group caregiver intervention.

- a. It is hypothesized that children will require less time in therapy to experience a reduction in problematic symptoms and/or will experience greater improvement

in symptomatic profiles when their caregivers also participate in a group caregiver intervention when compared to children who participate in therapy but whose caregivers do not participate in a group intervention.

Specific Aim 3: Investigate whether or not there are further improvements in social, emotional, and/or behavioral functioning following treatment in children who have utilized individual or group AAT as a part of their treatment plan when compared to non-AAT subjects.

- a. It is hypothesized that children who have participated in animal-assisted therapy in either modality (individual or group) will experience greater overall improvement in symptomatic profiles, particularly on the anxiety subscale of the CBCL, when compared to children who participated in non-AAT sessions.
- b. The literature demonstrates significant benefit to an individual's health due to direct interaction with pets or therapy dogs. For the purposes of this study, it is hypothesized that much of the physiological and mental health benefits of utilizing AAT with CSA victims are due to the child-animal bond and the role the therapy dog may take as an attachment figure for the child. Therefore, it is hypothesized that children participating in individual AAT will experience greater benefit than children who participate in group AAT since children in group therapy do not have the benefit of building a one-on-one relationship with the therapy dog. In order to account for differences between groups solely based on the different therapy modality (i.e., individual versus group therapy), initial analyses will include an examination of significant differences between all

subjects in individual therapy (AAT and non-AAT) and all subjects in group therapy (AAT and non-AAT).

CHAPTER TWO

Methods

Subjects

Subjects were children who had been referred to the Dallas Children's Advocacy Center (DCAC) for therapy following allegations of sexual abuse. DCAC is a nonprofit organization that is part of a coordinated, multi-agency approach to the investigation, intervention, and treatment of child sexual and physical abuse. This organization works closely with the Child Abuse Unit of the Dallas Police Department and Child Protective Services. The following inclusion criteria were required for consideration in this study: the child being between the ages of three and 17 years, having completed a therapy intake during the calendar years 2011, 2012, or 2013 and being enrolled in therapeutic services at DCAC, having at least two parent-completed Achenbach Child Behavior Checklists (CBCLs), and having completed therapeutic services. All subjects had completed a forensic interview during which time they reported being a victim of sexual abuse. The sample size included 205 subjects.

Data Collection

Data were collected from an existing database of information at the DCAC, including forensic interview summaries, intake information, therapist summaries of each session, and all collected Child Behavior Checklists (CBCLs). CBCLs were collected from each client as part of the standard DCAC intake process. In addition, CBCLs were collected throughout treatment at therapist discretion to monitor treatment progress and at

the end of treatment (if client completed treatment). In order to maintain compliance with HIPAA, no study documents contained potentially identifying information (e.g., name, birth date, specific details of the abuse).

Description of Measures

The Child Behavior Checklist (CBCL) is a widely used, standardized, parent-report questionnaire designed to assess a child's level of functioning in several areas. There are two forms for children: one for preschool children 1.5-5 years of age, and one for school-aged children 6-18 years of age. The forms consist of 99 problem items on the preschool form and 113 items on the school-aged form. All problem items are scored on a Likert scale from 0 to 2 with higher scores indicating more problem behaviors. Both forms yield subscales for Externalizing Problems, Internalizing Problems, and Total Problems domains, as well as the following syndrome subscales: Anxious/Depressed, Withdrawn, Somatic Complaints, Attention Problems, and Aggressive Behavior. In addition, the preschool form has unique syndrome subscales for Emotionally Reactive and Sleep Problems; the school-aged form also has unique syndrome subscales for Social Problems, Thought Problems, and Rule-Breaking Behavior. The questionnaire is designed to assess the caregiver's view of the child's behavior at the time of administration and for the preceding six months. The preschool and school-aged measures were normed on 700 and 1,753 non-referred children, respectively, and both measures have high reliability and validity (Achenbach & Rescorla, 2000, 2001). In addition, the psychometrics of the CBCL have been researched in different cultures, with the measure found to be valid and reliable in different racial and ethnic groups (Achenbach & Rescorla, 2007; Ivanova et al., 2007, 2010).

Other variables collected included subject demographics (i.e., age at time of therapy intake, gender, race), the type of therapy the child received (AAT vs non-AAT), the number of therapy sessions the child attended, whether or not the child's caregiver attended a group intervention (CGI vs non-CGI), and whether or not the child completed therapy. In order to minimize confounding variables, only subjects who completed treatment were included in the statistical analyses for this study.

Statistical Analyses

Aim 1

Demographic data were analyzed using descriptive statistics. Continuous data (i.e., age) were categorized to evaluate different developmental stages. More specifically, the data were grouped into the following age categories: 3 to 5 years (early childhood), 6 to 12 years (middle childhood), and 13 to 17 years (adolescence). For a rough estimate of the distribution representing how long children attended therapy in each respective group, the summary statistics regarding duration of therapy were grouped into the following categories: 5 to 12, 13 to 24, 25 to 40, and 41+ sessions attended. Categorical data were summarized by the *n* and percentages. As a preliminary analysis, a one-way ANOVA with Tukey's multiple comparison post-hoc test was used to determine whether or not any significant differences existed between the demographic groups (i.e., gender, age, race, or duration of therapy) at baseline. Paired t-tests were utilized to identify any significant changes from baseline for each subscale and alpha was corrected using the Benjamini-Hochberg method to control for the false discovery rate (Benjamini, Drai, Elmer, Kafkafi, & Golani, 2001).

Differences between groups in CBCL subscale improvement from baseline were analyzed using repeated measures ANOVA models which included the within-subjects variable of improvement across time (baseline versus post-treatment CBCL subscale scores). The following between-subjects variables were also included: gender, race (Black, Hispanic, White, other), and age (3 to 5, 6 to 12, 13 to 17 years). To assess the effect of these demographic variables on improvement of symptoms, the two-way interaction (i.e., demographic variable x improvement across time) was evaluated at an alpha of .05. Significant omnibus F tests were further analyzed by Fisher's LSD posthoc tests to determine significance.

Aim 2

Improvement across time was analyzed for subjects who participated in individual therapy¹ and whose caregivers either attended a caregiver intervention (CGI) or did not attend an intervention (non-CGI). Each group was analyzed separately to assess for any clinically significant differences between baseline and post-treatment using paired t-tests and alpha was corrected using the Benjamini-Hochberg method to control for the false discovery rate.

It was hypothesized that children would experience greater improvement in symptomatic profiles when their caregivers also participated in a group caregiver intervention as compared to children who participated in therapy but whose caregivers

¹ Note: Since the completion criteria differed between the children who attended individual and group therapy (i.e., for individual therapy, children completed treatment with subjective improvement in symptoms; for group therapy, children completed treatment when they successfully attended at least 75% of the scheduled group therapy sessions), children who attended group therapy were excluded from this analysis so that this confounding variable could be removed from the data interpretation.

did not participate in any type of intervention. This hypothesis was tested using a set of repeated measures ANOVA models - one for each CBCL subscale. The within-subjects variable was improvement across time and the between-subjects variable was caregiver participation (vs. non-participation). The two-way interaction (i.e., caregiver participation x improvement across time) was evaluated at an alpha of .05.

In order to test whether or not any significant differences existed between CGI and non-CGI groups based on gender, age, race, or length of therapy, 11 repeated measures ANOVAs were used - one for each CBCL subscale. In addition to the within-subjects variable (i.e., improvement across time) and the between-subjects variable of caregiver participation, a third variable (i.e., the demographic variable of interest) was included in each set of models. To determine whether the demographic variable of interest moderated the relationship between caregiver participation and improvement across time, the three-way interaction (i.e., demographic variable x caregiver participation x improvement across time) was evaluated at an alpha of .05.

Aim 3

Improvement across time was analyzed for children who participated in individual AAT and children who did not utilize AAT in their individual therapy². Each group was analyzed separately to assess for any clinically significant differences between baseline and post-treatment using paired t-tests and alpha was corrected using the Benjamini-Hochberg method to control for the false discovery rate.

² Note: Children who participated in AAT in a group therapy setting were excluded from this part of the analysis for the same rationale as for Aim 2.

It was hypothesized that children who participated in animal-assisted therapy would experience greater overall improvement in symptomatic profiles when compared to children who participated in non-AAT sessions. This hypothesis was tested using a set of 11 repeated measures ANOVAs - one for each CBCL subscale. The within-subjects variable was improvement across time and the between-subjects variable was type of therapy (AAT vs. non-AAT). The two-way interaction (i.e., treatment group x improvement across time) was evaluated at an alpha of .05.

It was also hypothesized that children who participated in individual animal-assisted therapy sessions would experience greater overall improvement than children who participated in group animal-assisted therapy sessions. To account for differences due to the modality (i.e., individual versus group settings), improvement across time was analyzed for all subjects (both AAT and non-AAT) who participated in individual therapy and group therapy. Each group was analyzed separately to assess for any clinically significant differences between baseline and post-treatment using paired t-tests and alpha was corrected using the Benjamini-Hochberg method to control for the false discovery rate. In order to assess whether or not there were any significant differences in subscale improvement from baseline between subjects who participated in individual and group modalities, a series of repeated measures ANOVAs were conducted with the within-subjects variable of improvement across time (baseline versus post-treatment CBCL subscale scores) and the between-subjects variable of therapy modality (individual or group). The two-way interaction (i.e., treatment modality x improvement across time) was evaluated at an alpha of .05.

The hypothesis regarding individual AAT versus group AAT was then explored using a series of paired t-tests for within-group differences between baseline and post-treatment and alpha was corrected using the Benjamini-Hochberg method to control for the false discovery rate. Between-group differences were analyzed using a set of 11 repeated measures ANOVAs - one for each CBCL subscale. The within-subjects variable was improvement across time and the between-subjects variable was modality (individual vs. group AAT). The two-way interaction (i.e., modality x improvement across time) was evaluated at an alpha of .05.

CHAPTER THREE

Results

Aim 1: Description of Baseline Data

CBCL Baseline Scores

Demographic data are summarized in Table 1. Baseline scores did not differ across gender, race, or duration of therapy (Table 2); however, there were significant interactions for age and the following baseline CBCL subscales: Internalizing Problems ($p < .001$), Total Problems ($p = .011$), Withdrawn/Depressed ($p < .001$), Somatic Complaints ($p < .001$), and Thought Problems ($p = .01$) scores differed across age groups. As shown in Table 2, children between 13 and 17 years old had significantly higher Internalizing Problems scores than children between 3 and 5 years old ($p = .001$) and children between 6 and 12 years old ($p = .002$). Children between 13 and 17 years old had significantly higher Total Problems scores than children between 6 and 12 years old ($p = .013$). Additionally, children between 13 and 17 years old had significantly higher Withdrawn/Depressed scores than children between 3 and 5 years old ($p = .003$) and children between 6 and 12 years old ($p = .011$). A similar pattern was observed in terms of differences in Somatic Problems: children between 13 and 17 years old had significantly higher scores than children between 3 and 5 years old ($p < .001$) and children between 6 and 12 years old ($p < .001$). Children between 13 and 17 years old had significantly higher Thought Problems scores than children between 6 and 12 years old ($p = .006$).

Table 1 Summary of Demographic Data

Variable	Overall (n=205)		Ind Tx (n=146)		Group Tx (n=39)		CGI (n= 29)		Non-CGI (n= 176)		Ind AAT (n=8)		Group AAT (n=12)	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Gender														
Female	179	(87)	122	(84)	39	(100)	26	(90)	152	(87)	7	(88)	11	(92)
Male	26	(13)	24	(16)	0	(0)	3	(10)	23	(13)	1	(12)	1	(8)
Age														
3-5 years	27	(13)	24	(16)	1	(3)	3	(10)	24	(14)	2	(25)	0	(0)
6-12 years	106	(52)	83	(57)	17	(43)	12	(41)	93	(53)	3	(38)	3	(25)
13-17 years	72	(35)	39	(19)	21	(54)	14	(48)	58	(33)	3	(38)	9	(75)
Race														
Black	35	(17)	28	(19)	5	(13)	0	(0)	35	(20)	1	(13)	1	(8)
Hispanic	133	(65)	87	(60)	29	(74)	26	(90)	106	(60)	6	(75)	11	(92)
White	27	(13)	24	(16)	2	(5)	3	(10)	24	(14)	1	(13)	0	(0)
Other	10	(5)	7	(5)	3	(8)	0	(0)	10	(6)	0	(0)	0	(0)
Number of sessions														
5-12 sessions	85	(41)	44	(30)	31	(79)	5	(17)	80	(45)	0	(0)	10	(83)
13-24 sessions	76	(37)	65	(45)	8	(21)	12	(41)	64	(36)	1	(12)	2	(17)
25-40 sessions	29	(14)	25	(17)	0	(0)	5	(17)	23	(13)	4	(50)	0	(0)
41+ sessions	15	(7)	12	(8)	0	(0)	7	(24)	8	(5)	3	(38)	0	(0)
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Duration of therapy	18	(11)	20	(11)	11	(2)	22	(12)	16	(9)	33	(12)	10	(2)

Table 2 Descriptive Statistics for the Baseline CBCL Subscale Scores for the Whole Sample and across Age Groups

CBCL Subscale	Whole Sample		3 to 5 Years		6 to 12 Years		13 to 17 Years		<i>df</i>	<i>F</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Internalizing Problems	56.77	12.02	51.78	13.65	55.09	11.37	61.10	11.10	2, 202	8.62	***
Externalizing Problems	54.03	11.17	52.52	14.02	53.83	11.30	54.89	9.81	2, 202	.47	
Total Problems	55.82	11.31	53.74	14.15	54.17	11.10	59.03	9.79	2, 202	4.64	*
Anxious/Depressed	57.98	9.57	58.00	12.26	56.54	8.37	60.08	9.86	2, 202	3.00	
Withdrawn/Depressed	59.37	6.78	55.41	6.92	58.31	8.95	62.42	10.25	2, 202	7.15	**
Somatic Complaints	58.36	8.79	54.56	7.74	56.93	7.65	61.89	9.60	2, 202	10.66	***
Social Problems ¹	57.74	7.53	54.00	--	57.06	7.06	58.78	8.14	2, 175	1.24	
Thought Problems ¹	57.23	8.11	50.00	--	55.82	6.97	59.39	9.20	2, 175	4.72	*
Attention Problems	57.52	7.92	56.22	7.89	56.99	8.04	58.78	7.68	2, 202	1.52	
Rule Breaking Behavior ¹	56.01	6.55	59.00	--	55.87	6.36	56.17	6.88	2, 175	.15	
Aggressive Behavior	57.33	8.66	56.89	10.98	57.34	8.88	57.49	7.41	2, 202	.05	

¹ Only one child in the 3- to 5-year-old age group had a score; * $p < .05$, ** $p < .01$, *** $p < .001$

Improvement in Symptom Scores Following Treatment

The baseline and post-treatment CBCL subscale scores are summarized in Table 3. All subscale scores significantly decreased at post-treatment indicating improvement across time. This improvement across time did not significantly differ across gender, race, or age.

Table 3 Descriptive Statistics and Paired t-test Results for the Baseline and Post-treatment CBCL Subscales

CBCL Subscale	Baseline		Post-treatment		<i>df</i>	<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Internalizing Problems	56.77	12.02	51.65	12.11	203	7.20 *
Externalizing Problems	54.03	11.17	50.08	10.61	203	6.17 *
Total Problems	55.82	11.31	50.75	12.03	202	7.75 *
Anxious/Depressed	57.98	9.57	55.21	7.22	204	5.41 *
Withdrawn/Depressed	59.37	6.78	56.17	7.68	204	5.80 *
Somatic Complaints	58.36	8.79	56.02	7.65	204	4.15 *
Social Problems	57.74	7.53	55.39	6.36	177	4.84 *
Thought Problems	57.23	8.11	55.21	6.96	177	3.80 *
Attention Problems	57.52	7.92	55.58	6.80	204	4.44 *
Rule Breaking Behavior	56.01	6.55	54.67	5.81	177	3.07 *
Aggressive Behavior	57.33	8.66	54.62	6.80	204	5.56 *

*significantly different from baseline using the Benjamini-Hochberg correction for alpha

Aim 2: Relationship Between Caregiver Participation and Improvement

It was hypothesized that children would experience greater improvement in symptomatic profiles when they participated in individual therapy and their caregivers also participated in a group intervention when compared to children who participated in individual therapy but whose caregivers did not participate in a group intervention. Initial analyses investigating differences between baseline and post-treatment of each group separately revealed that children whose caregivers attended an intervention experienced significant improvement in scores from baseline on the following subscales: Internalizing Problems, Externalizing Problems, Total Problems, Anxious/Depressed, Somatic Complaints, Social Problems, and Thought Problems (Table 4). Children whose caregivers did not attend any intervention experienced significant improvements from baseline on every CBCL subscale at post-treatment (Table 4).

The findings in Table 4 also revealed that improvement significantly differed across caregiver conditions on only one symptom subscale (i.e., Somatic Complaints; $p = .009$), with the children in the CGI condition experiencing more symptom improvement than the children in the non-CGI condition (Figure 1). Baseline scores for Somatic Complaints between these two groups were not significantly different [$t(22) = 1.96$, $p = .063$]. In addition, gender, age, and race did not moderate the relationship between caregiver participation and improvement. Interestingly, as shown in Figure 2, the children whose caregivers did not attend any intervention were in therapy, on average, for a significantly fewer number of sessions, $t(22) = 4.75$, $p < .001$, when compared to children whose caregivers attended a caregiver intervention.

Table 4 Descriptive Statistics for the CBCL Subscale Scores across Time as a Function of Caregiver Intervention (Individual Modality)

CBCL Subscale	No Caregiver Intervention				Caregiver Intervention				<i>df</i>	<i>F</i>
	Baseline		Post-treatment		Baseline		Post-treatment			
	M	SD	M	SD	M	SD	M	SD		
Internalizing Problems	55.65	12.23	50.19 [^]	11.79	59.21	12.99	50.63 [^]	12.54	1, 151	1.52
Externalizing Problems	53.95	11.49	49.11 [^]	10.35	54.95	9.73	48.00 [^]	10.83	1, 151	.88
Total Problems	55.45	11.54	49.60 [^]	11.71	57.16	10.72	48.16 [^]	12.92	1, 150	1.74
Anxious/Depressed	57.43	9.42	54.42 [^]	7.02	60.47	10.39	55.79 [^]	7.45	1, 152	.91
Withdrawn/Depressed	58.93	8.77	55.35 [^]	7.32	57.74	9.21	54.37	5.38	1, 152	.01
Somatic Complaints	57.24	8.71	55.41 [^]	7.13	62.16	10.42	55.16 [^]	6.09	1, 152	7.03 ^{**}
Social Problems	57.91	7.40	54.80 [^]	5.62	58.38	6.82	53.94 [^]	4.89	1, 126	.72
Thought Problems	57.04	7.81	54.77 [^]	6.68	59.06	10.02	53.38 [^]	4.02	1, 126	3.78
Attention Problems	57.50	7.84	55.14 [^]	6.44	55.89	6.26	53.74	4.97	1, 152	.02
Rule-Breaking Behavior	56.28	6.43	54.57 [^]	5.50	55.25	6.58	53.13	5.86	1, 126	.08
Aggressive Behavior	57.14	8.73	53.80 [^]	6.00	57.79	9.24	53.89	5.29	1, 152	.10

* significant interaction effect between treatment groups: $p < .05$. ** $p < .01$. *** $p < .001$

[^]significantly different from baseline using paired t-tests and the Benjamini-Hochberg correction for alpha

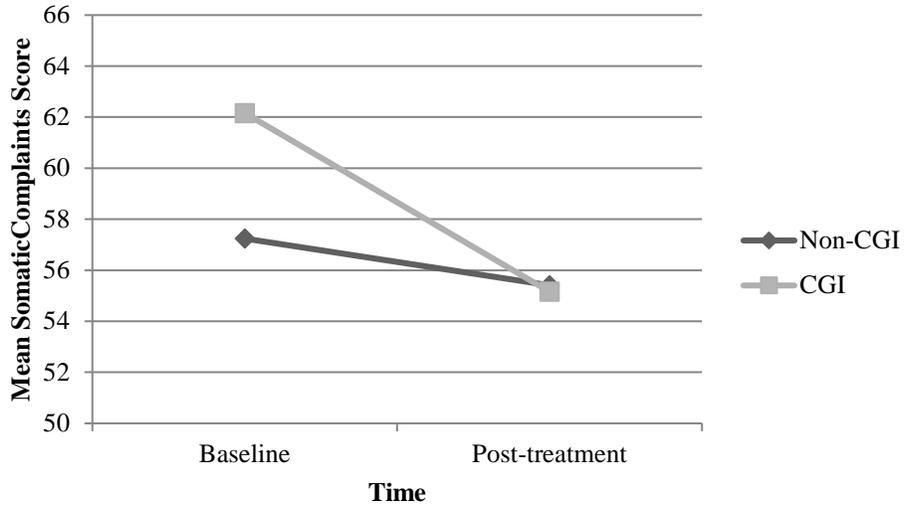


Figure 1 Mean Somatic Complaints scores for non-CGI and CGI subjects

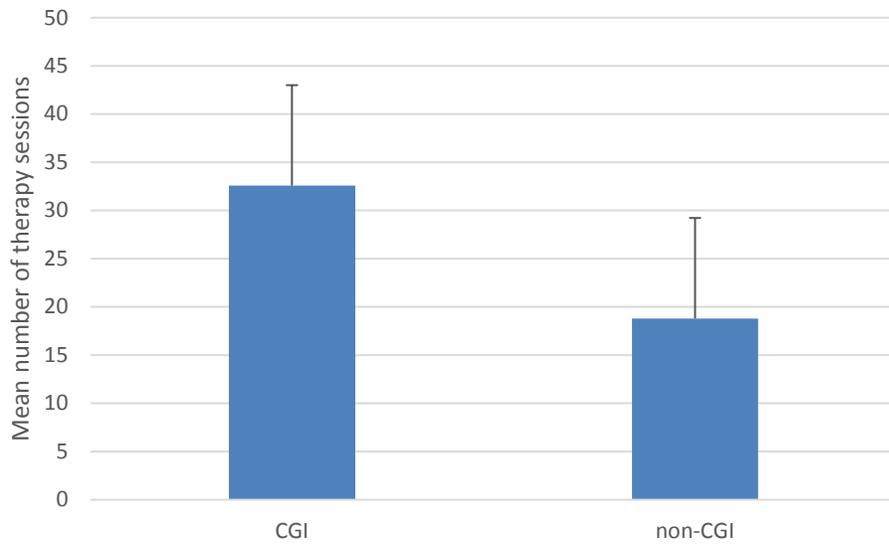


Figure 2 Mean number of therapy sessions for non-CGI and CGI subjects

Aim 3: The Relationship Between Type of Therapy and Improvement

It was hypothesized that children who participated in animal-assisted therapy would experience greater overall improvement in symptomatic profiles, particularly with regard to anxiety-related symptoms on the CBCL, when compared to children who participated in non-AAT sessions. Initial analyses investigating differences between baseline and post-treatment of each group separately revealed that although children who participated in AAT experienced average decreases in all symptom subscale scores, none of these decreases were statistically significant (Table 5). Children who participated in individual or group therapy that did not include AAT experienced significant improvement on every CBCL symptom subscale (Table 5). Improvement did not differ across type of therapy for any of the CBCL symptom subscales.

Furthermore, it was hypothesized that children who participated in individual AAT would experience greater improvement than children who participated in group AAT. Initial analyses investigated differences between individual and group settings in general. These results revealed that all subscale scores decreased significantly for children who participated in individual therapy (Table 6); however, children who participated in group therapy experienced a significant improvement from baseline only on the Internalizing Problems subscale, $t(50) = 2.22, p = .031$. All other subscales for the group therapy subjects were not significantly different from baseline (Table 6). Further analyses revealed that individual therapy subjects experienced a significantly greater improvement than group therapy subjects on the following subscales: Externalizing Problems ($p = .003$), Total Problems ($p = .008$), Social Problems ($p = .001$), Thought Problems ($p = .030$), and Aggressive Behavior ($p = .012$) (Table 6).

Table 5 Descriptive Statistics for the CBCL Subscale Scores in AAT versus non-AAT Treatment Groups (Individual Modality)

CBCL Subscale	Non Animal-Assisted Therapy				Animal-Assisted Therapy				<i>df</i>	<i>F</i>
	Baseline		Post-treatment		Baseline		Post-treatment			
	M	SD	M	SD	M	SD	M	SD		
Internalizing Problems	56.24	12.46	50.49 [^]	11.84	53.38	10.34	45.75	11.62	1, 151	.25
Externalizing Problems	53.79	11.32	48.92 [^]	10.53	59.13	9.45	49.88	7.53	1, 151	1.73
Total Problems	55.39	11.56	49.37 [^]	11.95	61.29	5.85	50.43	9.61	1, 150	1.64
Anxious/Depressed	57.94	9.74	54.63 [^]	7.12	55.38	4.87	53.88	6.31	1, 152	.48
Withdrawn/Depressed	58.97	8.89	55.38 [^]	7.19	55.50	6.46	52.50	4.65	1, 152	.05
Somatic Complaints	58.01	9.24	55.53 [^]	7.09	55.00	3.63	52.63	4.21	1, 152	.00
Social Problems	57.86	7.30	54.80 [^]	5.56	60.17	7.71	52.50	4.68	1, 126	3.60
Thought Problems	57.32	8.14	54.63 [^]	6.28	56.67	7.97	53.83	9.39	1, 126	.00
Attention Problems	57.16	7.69	54.99 [^]	6.40	59.88	7.08	54.63	3.62	1, 152	1.95
Rule-Breaking Behavior	56.11	6.46	54.45 [^]	5.58	57.00	6.39	53.17	5.04	1, 126	.87
Aggressive Behavior	57.02	8.74	53.85 [^]	5.95	60.88	8.87	53.13	5.28	1, 152	3.27

* significant interaction effect between treatment groups: $p < .05$. ** $p < .01$. *** $p < .001$

[^]significantly different from baseline using paired t-tests and the Benjamini-Hochberg correction for alpha

Table 6 Descriptive Statistics for the CBCL Subscale Scores across Time as a Function of Treatment Modality

CBCL Subscale	Individual Therapy				Group Therapy				df	F
	Baseline		Post-treatment		Baseline		Post-treatment			
	M	SD	M	SD	M	SD	M	SD		
Internalizing Problems	56.09	12.34	50.24 [^]	11.84	58.76	11.01	55.86 [^]	12.02	1, 202	3.27
Externalizing Problems	54.07	11.26	48.97 [^]	10.38	54.04	11.08	53.59	10.69	1, 202	9.25 ^{**}
Total Problems	55.66	11.42	49.42 [^]	11.83	56.86	10.70	54.73	11.87	1, 201	7.23 ^{**}
Anxious/Depressed	57.81	9.56	54.59 [^]	7.06	58.49	9.70	57.08	7.44	1, 203	2.34
Withdrawn/Depressed	58.79	8.80	55.23 [^]	7.10	61.14	11.19	59.02	8.70	1, 203	1.27
Somatic Complaints	57.85	9.05	55.38 [^]	6.99	59.90	7.81	57.98	9.16	1, 203	.179
Social Problems	57.97	7.30	54.70 [^]	5.52	57.14	8.13	57.42	7.99	1, 176	12.27 ^{**}
Thought Problems	57.29	8.10	54.59 [^]	6.41	57.07	8.22	56.90	8.13	1, 176	4.77 [*]
Attention Problems	57.30	7.66	54.97 [^]	6.28	58.18	8.70	57.41	7.95	1, 203	2.42
Rule-Breaking Behavior	56.15	6.43	54.39 [^]	5.54	55.64	6.89	55.50	6.35	1, 176	2.97
Aggressive Behavior	57.22	8.76	53.81 [^]	5.90	57.67	8.43	57.08	8.61	1, 203	6.44 [*]

* significant interaction effect between treatment groups: $p < .05$. ** $p < .01$. *** $p < .001$

[^]significantly different from baseline using paired t-tests and the Benjamini-Hochberg correction for alpha

Analyses investigating differences between baseline and post-treatment of individual AAT versus group AAT subjects separately revealed that children who participated in individual AAT experienced significant improvement in scores from baseline on the Total Problems [$t(6) = 2.52, p = .045$] and Attention Problems subscales [$t(7) = 2.75, p = .028$] (Table 7). Children who participated in group AAT did not experience significant improvements from baseline on any CBCL subscale at post-treatment (Table 7).

As shown in Table 7, children who participated in individual AAT sessions experienced a greater improvement when compared to group AAT for the following subscales: Total Problems, Social Problems ($p = .010$), Attention Problems ($p = .023$), and Aggressive Behavior ($p = .023$). The significant differences between individual and group AAT modalities are illustrated in Figure 3.

Table 7 Descriptive Statistics for the CBCL Subscale Scores Across AAT Treatment Modality

CBCL Subscale	Individual AAT				Group AAT				<i>df</i>	<i>F</i>
	Baseline		Post-treatment		Baseline		Post-treatment			
	M	SD	M	SD	M	SD	M	SD		
Internalizing Problems	53.38	10.34	45.75	11.62	57.67	9.15	56.58	11.45	1, 18	1.71
Externalizing Problems	59.13	9.45	49.88	7.53	56.75	10.91	56.92	10.06	1, 18	3.94
Total Problems	61.29	5.85	50.43 [^]	9.61	58.00	9.77	58.67	9.74	1, 18	7.09*
Anxious/Depressed	55.38	4.87	53.88	6.31	57.17	7.18	57.00	6.88	1, 18	.20
Withdrawn/Depressed	55.50	6.46	52.50	4.69	57.83	8.41	57.75	7.63	1, 18	.83
Somatic Complaints	55.00	3.63	52.63	4.21	60.00	8.39	59.25	40.86	1, 18	.24
Social Problems	60.17	7.71	52.50	4.68	58.25	8.74	60.00	8.21	1, 18	8.58*
Thought Problems	56.67	7.97	53.83	9.39	56.58	7.73	56.58	8.46	1, 18	.39
Attention Problems	59.88	7.08	54.63 [^]	3.62	58.17	7.23	58.08	5.02	1, 18	6.23*
Rule-Breaking Behavior	57.00	6.39	53.17	5.04	56.58	6.65	56.25	5.79	1, 18	1.30
Aggressive Behavior	60.87	8.87	53.13	5.28	59.25	8.07	60.25	9.24	1, 18	6.20*

* significant interaction effect between treatment groups: $p < .05$. ** $p < .01$. *** $p < .001$

[^]significantly different from baseline using paired t-tests and the Benjamini-Hochberg correction for alpha

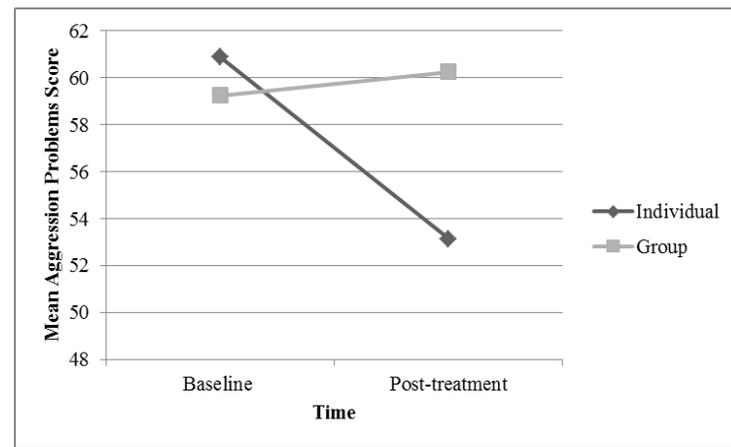
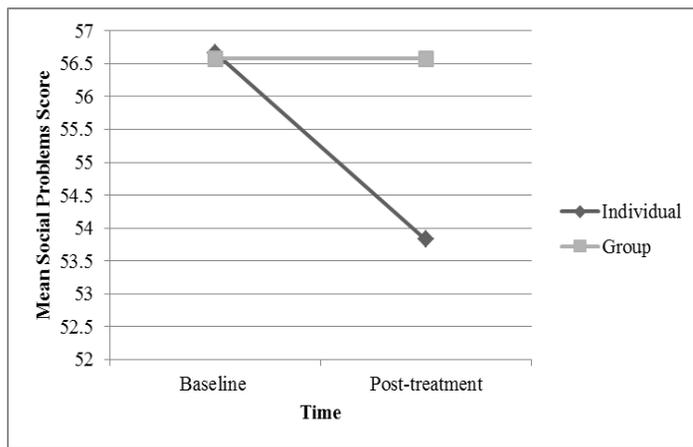
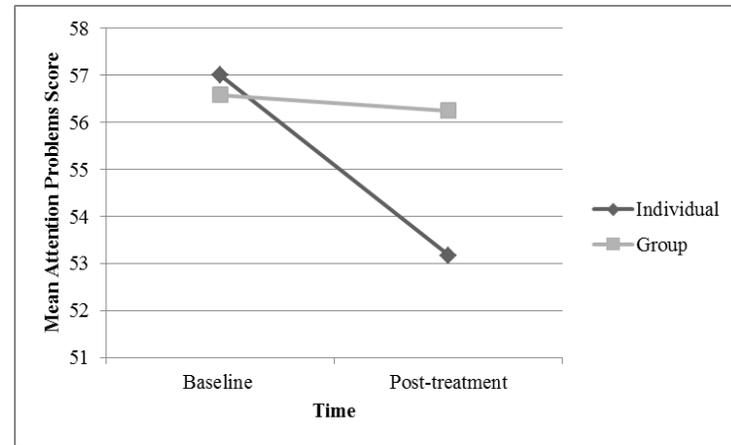
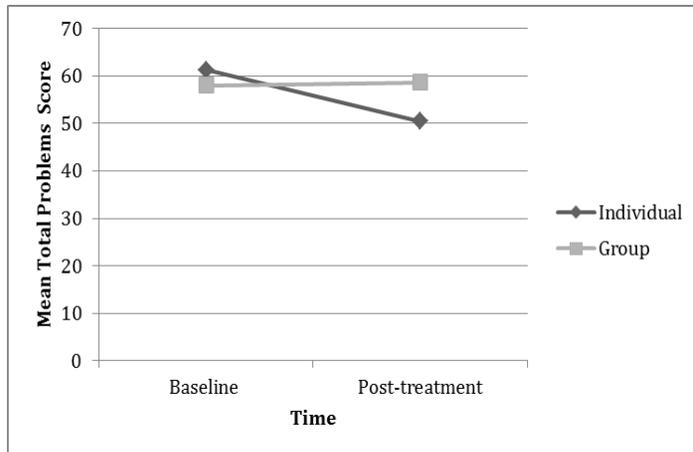


Figure 3. CBCL subscales that decreased significantly more in individual AAT when compared to group AAT

CHAPTER FOUR

Discussion

The study first aimed to identify the presenting problems of the population of children who had received therapy services at the Dallas Children's Advocacy Center between the years of 2011 and 2013. Results from the CBCLs suggested that there were no significant differences between any of the baseline CBCL subscales based on the subjects' gender, race, or duration of therapy. The results revealed that adolescents between the ages of 13 and 17 years presented with higher internalizing problems overall when compared to younger children, and a higher level of total problems when compared to children ages 6 to 12 years. More specifically, adolescents presented with higher withdrawn/depressed symptoms and somatic problems when compared to younger children, and higher thought problems when compared to children ages 6 to 12 years. Withdrawal/depression symptoms and somatization have been hypothesized to be linked in the research literature. Increased symptoms are consistent with studies demonstrating more internalizing problems such as depression and low self-esteem in CSA victims and some studies have found differences based on the age of the child victim (Gries et al., 2000; Tyler, 2002; Yancey & Hansen, 2010). It has been hypothesized that the level of cognitive development of the child plays a critical role in the development of these symptoms. For example, Quas et al. (2003) found that older children who had been sexually abused tended to have more negative self-concepts whereas younger children tended to have more self-blame. They hypothesized that the understanding of the social

stigmatization of sexual abuse increases with age, and that in older children, this may lead to more social withdrawal and negative self-perceptions (i.e., internalizing symptoms).

Additionally, the results suggested that adolescents experienced more somatic symptoms at baseline than the other two age groups. This is consistent with research investigating the effects of sexual abuse on adolescents in particular (Bonvanie, van Gils, Janssens, & Rosmalen, 2015). Research has demonstrated that sexual abuse predicts higher levels of somatic symptoms in adolescence and that this is likely linked to comorbid anxiety and depression. Adolescence is a sensitive period during which time the child is developing a sense of identity and is more vulnerable to threats to self-esteem. Experiencing sexual abuse during this time can have a significant impact on these important self-discovery processes, and can lead to more internalizing and somatization symptoms than younger children who are at an earlier level of cognitive development. All of these factors (i.e., cognitions and attributions) likely contribute to the results demonstrating higher thought problems in adolescent victims as well; thus, it is not surprising that children with a more developed cognitive level experience more problems related to thoughts.

The results of this study demonstrated significant decreases in all symptom subscales from baseline to post-treatment, indicating an average overall improvement for children who completed their therapeutic services at DCAC. These improvements in symptoms were not affected by the subject's gender, race, or age. It should be noted that children who withdrew from therapy for any reason were excluded from the study; therefore, no conclusions can be drawn about the whole population of children receiving

therapeutic services at DCAC since it is possible that some children who withdrew from therapy were not experiencing therapeutic benefits.

The current study also investigated whether or not child victims experienced greater improvement in symptoms when their caregivers participated in a caregiver intervention. Given the research base regarding the importance of social and parental support with psychological outcomes following child abuse, it was hypothesized that children whose caregivers attended a group caregiver intervention (CGI) would have better treatment outcomes (above and beyond improvements from child therapy alone) than children who participated in therapy but whose caregivers did not participate in an intervention (non-CGI). Within-group comparisons revealed significant improvements on all CBCL subscales in the group of children whose caregivers did not participate in a group caregiver intervention. Significant improvement was observed on seven of the 11 CBCL subscales in the children whose caregivers participated in a group caregiver intervention; however, the four symptom subscales that did not show a significant improvement from baseline to post-treatment were not significantly different from the non-CGI group, indicating no effect of the treatment group on these differences. The between-group comparisons of the CGI versus non-CGI children demonstrated a significant difference between groups for only the Somatic Complaints subscale, with the CGI group experiencing more improvement in these symptoms from baseline to post-treatment when compared to the non-CGI group. As mentioned earlier, existing research on caregiver interventions has lacked appropriate study designs to make definitive conclusions on whether or not caregiver interventions provided additional therapeutic benefit to the child victims above and beyond what the children experience with child

therapy alone. The results from the current study suggest that children may experience significantly more improvement with somatization problems when their caregivers also participate in a caregiver intervention. This finding is consistent with the results from a meta-analysis summarizing the effects of caregiver involvement and participation in their children's treatment following CSA, in which they found that the strongest evidence with respect to child outcomes was on the children's internalizing symptoms (Corcoran & Pillai, 2008). It is also consistent with other studies whose authors found that CSA victims experience less internalizing symptoms when they feel supported by their caregivers (Feiring, Coates, & Taska, 2001; Gries et al., 2000).

Furthermore, the results suggested that children in the non-CGI group, on average, completed therapy in fewer sessions when compared to children in the CGI group. The hypothesis for the current study was that a superior treatment condition could be identified by either a greater reduction in presenting problems or a quicker reduction in presenting symptoms (e.g., resulting in completion of therapy in a shorter time frame than the comparative treatment condition). Therefore, it was unexpected to find that children whose caregivers participated in an intervention took longer to reach criteria for therapy completion than children whose caregivers did not participate in an intervention. However, this result could potentially be explained by the types of caregivers who chose to participate in an intervention. For example, caregivers who are more likely to participate in an intervention may be experiencing more distress (e.g., less family or social support, personal histories of sexual abuse), which may make it more difficult for the caregiver to provide the necessary support to their child even despite attending these treatment groups. It is also possible that children whose caregivers attended an

intervention were in therapy longer simply because they remained in therapy until their caregivers had completed their intervention rather than when the children experienced symptomatic improvement (e.g., for more logistical rather than clinical reasons). The current study lacked the data to account for this possibility since outcome measures were only analyzed at baseline and post-treatment.

Lastly, the current study aimed to draw conclusions about the effectiveness of AAT with child victims of sexual abuse. Since the difference in modality (i.e., individual versus group setting) was not of primary interest for the first part of Aim 3, the confounding variable introduced by the different completion criteria between individual and group therapy subjects was removed by only including children who participated in individual therapy. Results from the initial analyses demonstrated that children who participated in non-AAT individual therapy experienced significant improvements from baseline to post-treatment on each CBCL symptom subscale. Children who participated in individual AAT therapy experienced improvements from baseline to post-treatment on each symptom subscale; however, none of these changes were statistically significant. Despite the lack of significance in the within-group analyses for the AAT group, between-group analyses revealed no overall significant differences in treatment outcomes between the AAT and non-AAT groups; therefore, it cannot be concluded that either treatment group was superior to the other in terms of symptom improvement from baseline for any of the subscales.

One could draw a couple of conclusions from these results. First, there is a possibility that AAT does not provide any additional therapeutic benefit above and beyond child therapy alone – at least with regard to symptom reduction. It is possible

that AAT may not result in lower symptom scores at post-treatment when compared to non-AAT. Due to limitations in this study with regard to unequal sample sizes and very small sample sizes for the treatment group of interest, however, further studies would need to be conducted in order to more definitively conclude this as a possibility. A close look at the differences between baseline and post-treatment scores in the AAT group suggests that there could potentially be large reductions in symptom scores; however, these analyses simply lack the statistical power to detect any significant differences.

Even if AAT does not provide significantly better symptom reduction compared to non-AAT, it is possible that AAT may provide benefit in other ways. For example, a therapy dog could potentially make therapy a less threatening and possibly even enjoyable time for the child, especially a child who may otherwise dread coming to treatment. It would be interesting to know if children who participated in AAT had lower dropout rates than children participating in non-AAT. This would require analyzing an intent-to-treat population and unfortunately was beyond the scope of the current study.

Due to the literature suggesting the health and psychological benefits of directly interacting with animals and the potential role of the therapy dog as an attachment figure as a means of promoting an individual's mental health and wellbeing, it was hypothesized that children who participated in AAT in individual therapy would experience better treatment outcomes when compared with children in a group AAT therapy setting. In order to account for differences that could be attributed solely due to the differences in therapy modalities (i.e., individual and group settings), it was first necessary to evaluate any significant differences between treatment outcomes in children who attended individual versus group therapy overall. Analyses investigating within-group differences

revealed that children who received individual therapy significantly improved with regard to all 11 CBCL symptom subscales. On the other hand, children who participated in group therapy experienced significant improvement on the subscale assessing internalizing problems. Although this subscale was the only one that significantly decreased from baseline, most of the subscales demonstrated an average decrease from baseline with the exception of the Social Problems subscale, which increased slightly from baseline to post-treatment.

This study also investigated which symptom subscales were significantly different between individual and group modalities. The results suggested that children in individual therapy significantly improved with regard to Externalizing and Total Problem domains when compared to children in group therapy. More specifically, children in individual therapy experienced significantly greater decreases in Social Problems, Thought Problems, and Aggressive Behaviors when compared to children in group therapy. A published review of 10 outcome studies investigating the effectiveness of group therapy for sexually abused adolescents (Avinger & Jones, 2007) revealed that a number of studies reported significant improvement on internalizing symptoms such as depression and anxiety. Also consistent with the results from the current study, none of the studies reviewed in this article demonstrated a significant improvement in externalizing problems (e.g., oppositional behaviors, aggression, and running away) with group therapy.

A few conclusions could be drawn from these results. Firstly, it is possible that for the children in this study, therapeutic services provided in an individual setting may have been superior over the group setting with regard to symptom improvement on

certain subscales from baseline to post-treatment. Research on the effectiveness of group therapy with child sexual abuse victims is limited and overall has lacked studies with robust experimental conditions (e.g., randomized, controlled studies). Additionally, published studies tended to lack standardized outcome measures, making it difficult to draw conclusions and generalize the findings across studies (Miffitt, 2014). Throughout the literature, most studies have found conflicting results with regard to the effectiveness of group therapy, particularly compared to individual therapy. Individual and group therapy offer different approaches to therapy and therapeutic success may depend, in a large part, on the fit of the therapy modality with the child's personality and presenting problems.

Another possibility is that the duration of group therapy was not long enough for the children to experience improvement in certain symptoms and that post-treatment data was collected before subjective improvement could be observed. For example, this study only included subjects who had completed therapy. As mentioned earlier, completion of therapy was defined differently between individual and group therapy participants; children in individual therapy "completed therapy" when a subjective improvement in symptoms was observed by the clinician, the caregiver, or both, whereas group therapy participants "completed therapy" by successfully attending at least 75% of the scheduled group sessions (typically 12 to 20 total scheduled sessions). Therefore, it would be expected that individual therapy participants would have significant decreases in symptoms as measured by the CBCL, but this would not necessarily be the case for children in group therapy. The different criteria for completion between individual and group therapy make it difficult to make comparisons between the treatment outcomes in

these two groups. In order to remove this potentially confounding factor, comparisons would need to be made between individual and group therapy outcomes either after the same number of sessions, or between individual and group therapy participants who have the same criteria for completion (i.e., subjective improvement in the presenting problems), which would likely have to include group therapy provided in an open format with no limit to participation. Those studies purporting the success of group therapy with sexual abuse victims generally tended to have longer durations of treatment (e.g., 20 sessions) than the 12 sessions typically held at DCAC. This could potentially play a role in the lack of significant symptom improvement at DCAC and should be considered in the planning of future therapy groups. Unfortunately, due to the lack of robust studies involving group therapy with sexual abuse victims, the field lacks an evidence-based, manualized treatment for use in these settings, making it difficult to discern which aspects of successful groups may be mediating significant symptom reduction.

The current study sought to identify differences between individual and group therapy settings for AAT. In the group setting, the emphasis with AAT is more on the presence of the dog facilitating social interactions and therapeutic techniques, whereas in individual therapy, one of the goals is for the child to form a bond with the therapy dog. It was hypothesized that this bond would help to facilitate symptomatic improvement. When the children who participated in individual AAT were compared to the children who participated in group AAT, improvements in the individual AAT group were significantly greater than those in the non-AAT group for four symptom subscales: Total Problems, Social Problems, Attention Problems, and Aggressive Behaviors. As discussed earlier, differences in the Total Problems, Social Problems, and Aggressive

Behavior subscales could be attributed to the different therapy modality (i.e., individual versus group) since these symptoms were demonstrated to also be significantly more improved in children who received individual versus group therapy without AAT; therefore, we cannot definitively conclude that these significant differences between individual and group AAT were due to AAT factors. However, one subscale that significantly decreased between individual and group AAT but not between individual and group therapy in general was the Attention Problems subscale. This is an interesting finding because to date, there are no studies specifically looking at how AAT can improve attention problems in children. One study mentioned earlier (Martin & Farnum, 2002) demonstrated improved focus and attention in children with pervasive developmental disorders while in the presence of a therapy dog; however, there have been no data to suggest that these improvements generalize to attention problems on a daily basis outside of the therapeutic setting, which is what the current results suggest. It would be interesting to see if the significant improvement in attention problems with AAT is consistent in future AAT studies.

Limitations of this Study and Inherent Difficulties of CSA Research

Several factors limit the ability to definitively draw conclusions from this study on the effects of caregiver participation and animal-assisted therapy in CSA. Firstly, the treatment groups consisted of very small sample sizes which greatly reduced the statistical power and the ability to generalize findings to the population as a whole. Although caregiver groups and AAT are offered as adjuncts to therapy at DCAC, these services are not utilized anywhere close to the extent that individual or group therapy alone are used for treatment. This difference likely occurs for a number of reasons: the

clients may not be aware of the availability of these adjunctive services, the clients' schedules or childcare limitations limit the parents' ability to attend services, the particular therapy dog that a child chooses may not be available during his particular therapy time, the parent or the child may not like dogs, may fear dogs, or may question the usefulness of using dogs in therapy. Furthermore, this particular study was also limited by the fact that all clients who utilized these services did not necessarily complete both the baseline and post-treatment CBCL forms (both of which were required to be included in this study). The failure to obtain these post-treatment forms resulted in an even smaller sample size from which to draw conclusions.

Another limitation of the current study is that it was a retrospective study on treatments that were not standardized; therefore, at least a part of the variability in the treatment outcomes was inevitably due to the different methodology used throughout treatment. A good example is that for those clinicians who utilized AAT in either individual or group settings, the extent to which the dog was utilized ranged widely from simply having the dog present for the therapy sessions (with the client having no direct contact), to the client using the dog as a source of comfort by petting and cuddling with the dog, to the clinician utilizing the dog during specific activities to teach therapeutic skills. Additionally, in individual therapy, it is generally up to the therapist's discretion which therapeutic approach to use with a client (e.g., cognitive, behavioral, directive versus non-directive, manualized versus no manual, etc.) in therapy, and it was beyond the scope of this study to control for that variable and the variable of different treatment providers.

As discussed earlier, this study only included those children who had completed therapy at DCAC. In addition to the aforementioned limitations with regard to different completion criteria between individual and group participants, there may also be important information about treatment outcomes that is lost by not taking into account all children who began therapy at DCAC (i.e., the intent-to-treat population). More specifically, those children who started therapy and did not complete therapy may have had several reasons for not completing treatment, one of which could have been that they were not experiencing any improvement with therapy participation. Therefore, it would be important with future studies to include the full intent-to-treat population and assess symptoms more regularly and frequently to rule out this possibility and to be able to make general conclusions about the effectiveness of a particular treatment. Outcome measures would need to be collected at consistent, regular intervals with each study participant.

Another limitation of this study is that treatment outcomes were based on a parent-report measure; more specifically, the severity of the children's symptoms were based on the parent or caregiver's perception of the problems. Parent questionnaires are commonly used in child therapy due to the fact that children, depending on their level of cognitive development, may not be able to answer detailed questions about their own functioning, and children may not always be forthcoming about emotional and/or behavioral problems that they may be experiencing. However, parent-report questionnaires have inherent limitations to their use. For example, internalizing symptoms (such as anxiety and depression) are not always easy to observe, even by caregivers who spend the most time with their children. Additionally, parent-report

observations about children's behaviors are frequently affected by the caregiver's own personality characteristics, level of parental stress, and nuances about the adult-child relationship (e.g., the parent's working model of their child) that can affect their ability to give "objective" ratings of the child's symptomatology. These limitations are widely known and accepted with the use of parental measures; however, a more robust study would also include a child-report questionnaire, however brief, to assess the child's perception of the severity of presenting problems and improvement across time with treatment.

Despite the extensive literature on child sexual abuse, research in this field is fraught with difficulties in interpreting the data and making definitive conclusions about how CSA affects children. It is difficult to parse out the effects of the abuse events from other stressors and personal factors. Additionally, the abuse events vary widely from case to case and their effects on a child's outcomes following the abuse are modified by personal and environmental factors that are not always easy to identify. Furthermore, it would be impossible to design a study in which the researcher reliably had measures of pre-abuse functioning with which to compare the post-abuse effects. This study is no exception to these inherent limitations of CSA research. Unfortunately, even a well-designed study would have most of these difficulties confounding the results. However, the obvious grave short- and long-term psychological effects of CSA on many children will always drive researchers to explore new methods to help them understand and treat these complex symptomatic profiles better and improve these victims' well-being.

Directions for Future Research

It would be difficult to conduct a completely randomized research study investigating the effects of caregiver interventions or animal-assisted therapy, primarily because it would be unethical to withhold caregiver interventions from a parent who would want to participate in these services or to force a child to participate in AAT if, for example, the child had a fear of dogs or who was allergic to dogs. However, studies could be designed that would control for a number of confounding factors listed above. For example, future studies could utilize standardized treatment protocols so that the content of the sessions would be similar across different treatment groups. This would include making the treatment protocol similar across sessions teaching the same therapeutic concepts and utilizing the same techniques. This standardization might also include utilizing a small number of therapists who have been trained on the process. Making the treatment process as similar as possible across groups except for the variable of interest (e.g., caregiver participation, AAT) would make conclusions about the benefit of these services much more conclusive and compelling.

Additionally, collecting outcome measures at regular, consistent intervals would allow for the analysis of a timeline for symptom improvement for comparisons between groups and make it possible to ascertain how quickly symptomatic improvement occurs within and between groups. Regularly collected outcome measures would also be important for analysis of an intent-to-treat population since lack of therapeutic improvement leading to study dropout could be an important factor when investigating the effectiveness of a therapeutic intervention. Additionally, inclusion of a child self-

report measure could be very useful for investigating children's perceptions of symptom reduction.

It is possible that some of the benefits to the child victims of caregivers participating in an intervention are longer-term and may not be apparent from just baseline to post-treatment observations. For example, Cohen and Mannarino (1998) suggested that parent support was a strong mediator of long-term (6- to 12-month) treatment outcome success in preschool children and suggested that parent interventions should be offered whenever possible. Additionally, Duffany and Panos (2009) suggested that caregiver involvement in treatment may result in lower recidivism rates in child victims of sexual abuse several years following the completion of treatment. Therefore, it would also be beneficial to add a long-term outcome variable to a study investigating the effects of a caregiver intervention on child treatment outcomes in order to capture possible long-term benefits.

Lastly, it would be interesting to design an AAT study in which psychological constructs were measured in conjunction with a physiological endpoint as well, such as salivary cortisol levels. Salivary cortisol has been utilized in numerous research studies as a means of assessing a subject's level of distress. A research study investigating the effects of AAT on short-term (i.e., within session) and long-term (i.e., across treatment weeks) distress levels in CSA victims might help to understand better the effects of a dog in the therapy environment and may give further insight into how AAT might modify short- or long-term treatment outcomes.

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