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Relationship Variables in Group Psychotherapy Treatment for Sexual Trauma Survivors

A Dissertation

Presented to

the Faculty of the Morgridge College of Education

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Sarah Gooch

August 2018

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Abstract

In the aftermath of sexual trauma, many survivors face painful emotions and experiences that impact their mental health and relationships. This study examined relational group psychotherapy processes including group cohesion and bond with the group leaders as vital components in treatment for sexual trauma survivors. The construct of shame was highlighted and the relationship between shame and group cohesion was explored. Outcome measures were used to assess PTSD symptomatology. A repeated-measures design was used to assess groups that were currently occurring in the community for adult, female survivors of sexual trauma. Five treatment groups were evaluated, with 27 members consenting to participate in this study. Assessment members used included the Engagement Subscale of the Group Climate Questionnaire (GCQ), the Bond Subscale of the Working Alliance Inventory – Short Form (WAI-S), the Compass of Shame Scale (CoSS), and the Posttraumatic Stress Disorder Checklist (PCL-5). Participants were administered the PCL-5 at pre- and post-treatment and the GCQ, WAI-S, and CoSS at four different time points throughout treatment. Data were analyzed with growth curve models in hierarchical linear modeling (HLM), one-tailed *t*-tests, and Cohen's *d* effect sizes. Participants endorsed connections with other group members and those scores increased further as the treatment group progressed. Results showed that initial perceptions of Bond with group leaders were high at the onset of treatment, and remained this way throughout the course of group psychotherapy. Although no decreases

were found on measures of Shame Reactions across treatment, important clinical implications from the results suggest a need for more specific interventions to target feelings of shame. Similar to other studies, there were substantial decreases on scores of PTSD symptomatology at post-treatment. These results and their implications offer insight into clinical practice for group leaders when working with the unique considerations of this population.

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Chapter One: Introduction

Sexual trauma is a pervasive concern in modern society, and it has been reported that every 98 seconds another sexual assault occurs in the United States (Department of Justice, 2015). Women compose the majority of sexual trauma victims and statistics have shown that 91% of those who endorse surviving sexual trauma identify as female (National Sexual Violence Resource Center, 2015). It has been theorized that the development of Posttraumatic Stress Disorder (PTSD) symptoms is a common reaction after surviving a sexual trauma. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) outlines the diagnostic criteria for PTSD as including clusters such as intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. It also has been speculated that the interpersonal and intrusive nature of sexual trauma in comparison to other traumas may exacerbate the occurrence of these symptoms and place females in particular at higher risk of developing PTSD (Charuvastara & Cloitre, 2008; Foa, Keane, Friedman, & Cohen, 2009). These symptoms often present co-morbidly with other psychiatric diagnoses, and sexual trauma survivors frequently experience depression and anxiety disorders as well as alcohol abuse/dependence (Foa et al., 2009). These complex presentations further complicate the treatment given to survivors, as the presence of

multiple diagnoses may indicate the need to consistently monitor and adjust treatment methods throughout the delivery of psychological care.

In addition to the above-mentioned diagnostic considerations found with sexual trauma survivors, it also has been found that this population frequently reports troubles with social and interpersonal skills that result in a variety of relationship problems. A pattern often emerges that shows dissatisfaction with many relationships, including both romantic and platonic ones (DiLillio, 2001; Lassri, Luyten, Fonagy, & Shahar, 2018). Interpersonal problems appear to be a widespread concern for survivors, and it has been hypothesized that social support is a salient factor in the recovery for trauma survivors. It has been shown that social support can buffer the effects of trauma symptom development and may help prevent the development of PTSD symptomatology (Hyman, Gold, & Cott, 2003). In contrast, negative social reactions and a lack of social support can contribute to the cultivation of higher rates of PTSD among survivors, and this can lead to survivors not reaching out for support from others about their trauma due to a concern about negative, unsupportive, or blaming reactions (Ullman, Townshead, Filipas, & Starzynski, 2006; Ullman & Peter-Hagene, 2014). This isolation and internalization of symptoms then may perpetuate a survivor's distress, loneliness, and inability to trust others in relationships.

The internalization of negativity for survivors can also be attributed to feelings of shame that develop in the aftermath of their sexual trauma (Weiss, 2010). Shame has been found to be prevalent amongst sexual trauma survivors and studies have found that this negative affect is related to the development of PTSD symptoms (Andrews, Berwin,

Rose & Kirk, 2000; Duran, Callahan, Forman, Mendelsohn, & Herman, 2008; Rahm, Renck, & Ringsberg, 2013; Sayin, Candansayar, & Welkin, 2012). Shame also holds social implications, in that it encompasses the notion of perceived threats from others about disapproval or disconnection (Brown, 2006; Weiss, 2010). Situations may evoke shame and lead people to anticipate shameful interactions and then they work to actively avoid encountering them (Weiss, 2010). This can result in interpersonal distancing wherein survivors develop schemas that they are not deserving or worthy of having relationships with others, and they then disengage from interpersonal connections (Brown, 2006; Weiss, 2010).

Studies on social support point to the importance of the relationship between a survivor and therapist in individual psychological treatment. The therapeutic relationship has been shown to be vital in the process of healing, and the ability of a therapist to establish a safe environment and a supportive relationship may help form a bond in therapy that could be the first step in helping the survivor develop and improve her personal relationships (Charuvastra & Coitre, 2008). The therapeutic relationship has been shown to be a strong predictor of outcome, and the modeling of appropriate interactions in therapy that emphasize developing trust and safety may provide opportunities for survivors to experience a new kind of interaction (Cloitre, 2002; Cloitre, Petkova, & Wang, 2012; Ehring, Wellboren, Morina, Wicherts, Freitag, & Emmelkamp, 2014; Parry & Simpson, 2016).

Although individual therapy holds the capacity for relational development, group psychotherapy provides an environment where those who have been sexually abused can

engage in a form of treatment where they have an increased opportunity to develop relationships with both the members in the group and the group leader(s). These interactions may help bring out the commonalities amongst the group members, and this normalization can help address the shame and stigmatization of sexual abuse that contributes to the psychological distress found in survivors (Yalom, 2005). Unlike individual therapy where there is a power imbalance, group therapy addresses some of this dynamic by allowing group members to approach each other on equal ground, and to provide and receive compassionate support where they can begin to feel that they are of value to the group and the members within it (Herman, 2011). It has been suggested that group interventions may be especially beneficial for sexual trauma survivors in order to help foster social support and enable observational learning (Ehring et al., 2014). In the past decade, some research points to group treatment as being effective for sexual abuse, although much more research is needed (Burlingame, Strauss, & Joyce, 2013; Burlingame, Whitcomb, & Woodland, 2014). Additional studies have concluded that group treatment for sexual abuse survivors has helped to achieve a reduction in PTSD symptomatology (Vilencia, Shakespeare-Finch & Obst, 2013) and indicated gains in interpersonal interactions and relationships (Lundqvist, Hanson, & Svedin, 2009).

Findings point to the importance of both process and outcome variables in group psychotherapy. Process variables refer to elements that occur during group treatment such as whether the group is cohesive, while outcome variables indicate influences that impact the overall result of group treatment, such as the level of PTSD symptoms. Valerio and Lepper (2010) reported that certain interpersonal factors found in group treatment, such

as being able to voice emotions, receive feedback from group members about relational behaviors, and learning new interpersonal behaviors in group, may be of vital consequence when working with sexual trauma survivors. The processing of what is discussed and occurs in the group also is of value with this population. It allows survivors to try out new behaviors in the context of group treatment and to recognize and address the relational and psychological impacts of the sexual abuse they experienced by disclosing it in a group setting with other survivors (Classen, Koopman, Nevill-Manning, & Spiegel, 2001; Sayin, Candansayar, & Welkin, 2012). These disclosures allow members the opportunity to identify with other group members who have similar experiences, which assists to diminish the stigmatization and isolation often felt by sexual trauma survivors (Yalom, 2005). The notion of group cohesion suggests that group members begin to connect with each other and then begin to perceive the group as a place that holds the opportunity for social relationships (Yalom, 2005). Yalom further noted that group treatment contains different therapeutic factors than those found in individual treatment, and it may be that the factors such as universality, and interpersonal learning are essential to the normalization and reduction in stigmatization that is often experienced by sexual trauma survivors. Cox, Owen, & Ogrodniczuk (2017) emphasized that additional group factors including the development of socializing techniques and the opportunity for secure emotional expression, hold significant implications in the improvement of perceived social support in individuals with a PTSD diagnosis.

The strength of the therapeutic alliance has been linked to better client outcomes (Baldwin, Wampold, & Imel, 2007) and these relationships appear to be important in

both individual and group treatment for survivors. The structure of group therapy and the influence of the group leaders to encourage empowerment and engagement may be vital components in working with individuals with a diagnosis of PTSD, as the symptoms associated with this diagnosis often cause individuals to withdraw and have a negative view of themselves and the world (Corey & Corey, 2010; Moore, Wadsworth, & Cory, 2009). The establishment of a safe therapeutic environment and therapeutic alliance with the group leaders models the notion of healthy boundaries and helps to mitigate social difficulties faced within this population (Payne, Liebling-Kalifani, & Joseph, 2007).

Survivors of sexual trauma often experience specific relational concerns. There are interpersonal components in the criteria outlined in the DSM-5 for PTSD, such as avoidance of situations or people that are reminiscent of the trauma, or a sense of negativity about interpersonal relationships and trust (American Psychological Association, 2013). Thus, it seems as though the interpersonal struggles of a survivor are intertwined with PTSD symptomatology that perpetuate relational difficulties. The internalization of these undesirable emotions holds a deleterious impact upon survivors' interpersonal functioning and propagates a sense of shame (Feiring, Simon, & Cleland, 2009). Furthermore, symptoms related to hyper-vigilance, anxiety and intrusive memories also may affect a survivor's desire and ability to interact and trust others. If these symptoms influence a survivor's relational capacities, then improvement in social functioning could positively impact upon the other symptom clusters delineated by the DSM-5 for PTSD.

Research on the treatment of sexual trauma is effective yet more granular studies that investigate specific components that lead to positive change are sparse. Meta-analyses suggest that treatment is better than no treatment and that treatment shows medium to large effect sizes for symptom reduction (Harvey & Taylor, 2010; Hetzel-Riggin, Braush & Montgomery, 2007; Sloan, Feinstein, Gallagher, Beck & Keane, 2013; Taylor & Harvey, 2010). The conclusion here is that group treatment is beneficial, yet there is little guidance on the specific elements that contribute to positive outcomes. Additionally, current research suffers from small samples, one time point measurement instead of measurement across multiple group sessions, and lack of long-term studies (Elkjaer, Kristensen, Mortensen, Poulsen, & Lau, 2014). Besides these methodological problems, the inattention to assessing interpersonal variables within group process is a concern, given that these variables are commonly impacted for survivors of sexual trauma.

Purpose and Justification

In the aftermath of sexual trauma, many survivors face painful emotions and experiences that impact their mental health and relationships. Fifty-five percent of the variance in psychological adjustment after a trauma has been attributed to the social support one receives, and this suggests the salience of fostering safety and encouragement for the sexual trauma population (Hyman, Gold, & Cott, 2003). Survivors likely have had their trust violated following their trauma, as statistics show that among female rape victims, 25% of perpetrators were reported to be current or former intimate partners, 45% were determined to be acquaintances, and 28% were

strangers (Department of Justice, 2015). In instances of childhood sexual abuse, statistics have demonstrated that 93% of juvenile victims knew the perpetrator with 59% being acquaintances, 24% family members, and 7% were strangers (Department of Justice, 2015). Experiences of sexual trauma may teach survivors that no one can be trusted, potentially resulting in pushing people away in an effort to protect themselves from continuous interpersonal injuries. It has been suggested that the resulting isolation then contributes to survivors internalizing their emotions, and this perpetuates their distress and the development of their PTSD symptoms (Ullman et al., 2006).

Sexual trauma survivors are a population in need of additional support due to the complexity of their psychological presentation and social difficulties. Current findings have demonstrated that group treatment is effective for addressing PTSD symptoms and aspects of social functioning for those who have been exposed to sexual trauma (Ehring et al., 2014). However, there has been little focus given to the group process variables that help members connect to each other, such as cohesion. Although research strongly points to the damage caused by sexual trauma to interpersonal relationships, assessing relational variables within group treatment has not been a concentration in the literature. This study addressed this gap by examining the group members' perceived relationship with the group leader (Bond), as well as with the other group members (Engagement) and investigating any relationship present between the two variables. Methodological problems in the extant research were tackled by measuring the variables of Bond and Engagement at four time points throughout treatment, so as to provide specific information about the trajectory of these variables over the time spent in group. The

construct of shame was investigated by looking at group members different perceptions of shame reactions. This measure was also given at four time points to examine the course of these perceptions over time in group psychotherapy treatment. Relationships between these reactions and Engagement with group members were explored. Similar to other studies, it also assessed treatment outcomes by measuring PTSD symptoms prior to treatment and again at the end of treatment.

Research Hypotheses

The hypotheses in this study were developed from a literature review of group treatment for sexual trauma that is presented in Chapter Two. The lack of focus on the interpersonal factors of group therapy as it relates to survivors' ability to develop relationships and recover from interpersonal trauma leaves questions unanswered about how the relational factors of group psychotherapy influence treatment with this population. This study examined the impact of relationship development for group members' PTSD symptoms, and gave particular attention to the interpersonal aspects of PTSD including negativity, shame, and avoidance. The following hypotheses were examined:

- 1a. Group members' perceptions of Engagement will significantly increase across Time 1 to Time 4, as measured by the Engagement subscale of the Group Cohesion Questionnaire (GCQ).
- 1b. Group members' perceptions of Bond will significantly increase across Time 1 to Time 4, as measured by the Bond Scale of the Working Alliance Inventory (WAI-S).

- 1c. There will be a significant interaction between time spent in group and level of Bond that will lead to an increase in Engagement across the 4 time points.
- 2a. There will be a significant decrease in group members' overall PTSD symptoms from Time 1 to Time 4 of the Posttraumatic Stress Disorder Checklist (PCL-5).
- 2b. There will be a significant decrease in group members' symptoms of Intrusion from Time 1 to Time 4 of the PCL-5.
- 2c. There will be a significant decrease in group members' symptoms of Avoidance from Time 1 to Time 4 of the PCL-5.
- 2d. There will be a significant decrease in group members' symptoms of Negativity from Time 1 to Time 4 of the PCL-5.
- 2e. There will be a significant decrease in group member's symptoms of Hyperarousal from Time 1 to Time 4 of the PCL-5.
- 3a. Group members' perceptions of different Shame reactions will significantly decrease across Time 1 to Time 4, as measured by the Attack Self, Withdrawal, Attack Other, and Withdrawal Scales of the Compass of Shame Scale (CoSS).
- 3b. It is expected that there will be a significant interaction between Engagement and Shame reactions across Time 1 to Time 4.
- 4a. Changes in Engagement and Bond scores will be significant predictors in post-treatment outcome (Overall PTSD symptoms).

Methodology

The following is a brief overview of the methodology that was used to address the research hypotheses (Chapter Three provides a more in-depth description). Participants

in this study consisted of adult (ages 18 and older), female, survivors of sexual trauma. Group members were heterogeneous on age (mean age of 31.07), ethnic background, education level, and socioeconomic status (See Table 1). Participants were screened for their appropriateness to engage in group therapy by the agency that conducted the group treatment. Potential group members were excluded from group treatment if they endorsed current psychosis, substance use, or suicidal intent to help ensure a safe group atmosphere.

The study focused on women who were members of five closed process groups held at a rape crisis center. Each group consisted of four to eight members. Separate groups were composed of survivors of adult sexual assault ($N = 18$) and adult survivors of childhood sexual abuse ($N = 9$), both of which have been associated with the development of posttraumatic stress symptoms (Ullman, Najdowski, & Filipas, 2009). Groups for survivors of adult sexual assault were 16 weeks long and groups for adult survivors of childhood sexual abuse were 24 weeks long. The agency operates under the philosophy that childhood sexual assault results in a more severe trauma presentation that requires a longer course of treatment, thus explaining the different treatment lengths. Both types of treatment groups follow similar group curriculum that is based on Trauma-Focused Cognitive Behavioral Therapy. The Posttraumatic Checklist - Civilian Version (Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013) was used to assess PTSD symptoms at pre- and post-treatment and includes subscales correlated to the symptom clusters found in the DSM-5 (Intrusion, Avoidance, Negative Alterations in Cognition and Mood, and Hyperarousal). This instrument was given to participants by the agency

prior to beginning group treatment and at session 15 for the 16-week group and session 23 for the 24-week group. This is a standard measure given to all clients at the rape crisis center.

Measures that were implemented for the purpose of this study included the Bond Scale of Working Alliance Inventory Short Form (WAI-S; Horvath, 1992), the Group Climate Questionnaire Short Form (GCQ; MacKenzie, 1983) and the Compass of Shame Scale; (Elison, Pulos, & Lennon, 2006). Although only the Engagement subscale of the GCQ was used in analysis, the entire measure was given to maintain the standardization of the measure and retain the statistics of variability and reliability. The GCQ, CoSS, and WAI-S Bond Scale measures were given following the first group session and then administered at five week intervals following the group meeting to examine the trajectory of symptoms throughout group treatment (sessions 1, 5, 10, and 15). Bond levels between the therapist and participant were measured by the Bond Scale of the WAI-S to assess the members' perception of trust and acceptance from the group leaders. The Engagement subscale of the GCQ examined the development of cohesion within the group. The CoSS assessed participants' perceptions of different shame styles in order to examine the relationship between the interpersonal aspects of PTSD (negativity and shame) that survivors' frequently present with following sexual trauma.

Definitions

Bond. Feelings of trust and confidence that constitute the attachment of the client to the group leader (Horvath, 1992).

Group Leader. Mental health providers who facilitate group treatment. These clinicians are responsible for maintaining the structure of the group, establishing group culture, and facilitating group process factors (Yalom, 2005).

Group Treatment. Group treatment refers to the use of therapy interventions by one or multiple group leaders that are delivered to a group of clients (typically 4 - 8 people). Group treatments may vary in terms of their overall structure (i.e., size, length, duration), purpose (i.e. support group, substance abuse, trauma, etc.) and group member composition (i.e., heterogeneity or homogeneity of members). Common among group treatments are identified group leaders, group members, group goals, and norms (Yalom, 2005).

Group Cohesion. Group cohesion is analogous to the relationship in individual therapy and can be seen as the “we-ness” of the group (Yalom, 2005). It is often related to a sense of solidarity within the group.

Sexual Trauma. Interpersonal traumas that result in lingering physical, emotional and psychological symptoms. The term sexual assault typically refers to traumatic experiences such as rape, or any other forcible, unwanted sexual contact. Sexual abuse typically refers to unwanted sexual contact that occurred when one was a minor (under the age of 18) by an older adult figure (Walsh, Galea, & Koene, 2012).

Shame. A debilitating emotion linked to a person’s self-worth and identity. It is commonly associated with self-condemnation, powerlessness, feelings of disgrace, failure and inadequacy. Those who feel shame frequently view themselves as having

done something wrong and they often feel humiliated and worry that others will negatively judge them (Weiss, 2010).

Social Support. Social support refers to the different types of assistance that people receive from others during stressful times and consists of interpersonal interactions that are perceived as beneficial (Hyman, Gold, & Cott, 2003).

Therapeutic Alliance. The relationship between client and therapist. It has been hypothesized that the relationship consists of three parts, the tasks of therapy, goals of therapy, and the affective bonds that form between the therapist and client in therapy (Bordin, 1979).

Trauma Symptoms. Symptoms that are associated with the DSM-5 criteria for Posttraumatic Stress Disorder. These include intrusive thoughts about the trauma, avoidance of reminders of the trauma, negative cognitions about self and the world, and exaggerated levels of anxiety and hyper-awareness of one's surroundings (American Psychiatric Association, 2013).

Summary

This study examined relational variables including bond and group cohesion that developed across group psychotherapy sessions and investigated how these interpersonal connections impacted PTSD symptoms. This chapter addressed the psychological and interpersonal dilemmas that are faced by sexual trauma survivors following their trauma experience. Social support has been theorized to play a crucial role in the recovery of survivors, and it may be that this kind of social interaction can mediate the experience of PTSD symptoms (Charavastara & Cloitre, 2008). It was expected that participation in

group therapy would help bolster these social interactions, and the therapeutic factor of group cohesion could help normalize a survivor's experience and allow her the opportunity to connect with other survivors in a safe environment. It was hypothesized that all of these factors would help increase a survivor's ability to interact with people in her life and develop trusting and intimate relationships, and this in turn would be related to an overall relief in her trauma-related symptoms.

Additionally, this chapter pointed to the scarcity of research on the relational aspects of group therapy within this population. The intent of this study was to focus on the relationships that develop in group between other group members (Engagement) and with the group leaders (Bond). Repeated measures were used in this study to assess the progress and development of relational capacities throughout group treatment and compare these with measures of reported trauma symptoms. It was hypothesized that the members' ability to establish relationships in the group (with both other members and the therapist) would increase over the course of treatment. Additionally, it was expected that members who perceived the group as more cohesive would also report significant decreases in shame and negativity.

The following chapter provides a review of the literature, beginning with an overview of the prevalence of sexual trauma. Research on the aftereffects of sexual trauma is discussed and the relational difficulties faced by survivors are given special focus. Literature regarding the therapeutic alliance, group treatment and group cohesion also is presented to provide a context to the current available research on the topic of group treatment with sexual trauma survivors.

Chapter Two: Review of the Literature

It is reported that one in five women will experience a completed or attempted sexual assault and 44% of women will experience some form of sexual violence in their lifetime (National Crime Victims' Rights, 2017). Additional statistics show that nearly 91% of all victims of rape are female (National Sexual Violence Resource Center, 2015). Other studies have reported that 7-36% of females have been sexually abused as children (Gerrity, 2014). In instances of childhood sexual abuse, 93% of victims under the age of 18 reported knowing their perpetrator (Department of Justice 2015). Statistics related to the sexual victimization of adults show that 25% of perpetrators were reported to be current or former intimate partners, 45% were acquaintances, and 28% were strangers (Department of Justice, 2015). Out of this population, less than 40% of victimizations were reported to the police and only 21% of women reported receiving victim services including information, emotional support, and help with finding resources (National Crime Victims' Rights, 2017).

National attention has focused on Title IX and the topic of sexual abuse, including the establishment of a Presidential Task Force and high profile public service announcements that started in 2014 under the administration of former president Barack Obama (Lhamon, 2014). The government sponsored website is entitled NotAlone.gov, which underscores the isolation often felt by sexual abuse survivors. In 2017, the new

presidential administration under Mr. Donald Trump started the process of withdrawing guidelines previously outlined by Obama's task force, and there has been public criticism that the new policies will attempt to minimize concerns about sexual violence (Berman, 2017). In January 2018, a lawsuit was filed by the National Women's Law Center suing Mr. Trump and the Secretary of Education Betsy DeVos. The lawsuit alleges that the extreme Title IX policy changes are unlawfully based on government officials' discriminatory stereotypes about the credibility of women and girls who report sexual violence (National Women's Law Center, 2018). The suit also seeks to address the protections that have been removed for survivors of sexual violence, including the lack of ability for survivors to receive interim measures on college campuses (i.e. revised class schedules and new housing requests), and granting permission for mediation to occur between victims and their perpetrators.

Recent months have suggested an emerging dichotomy in the political stance regarding sexual assault awareness. The election of Donald Trump as president and mounting sexual assault allegations against many high ranking political and entertainment figures, have brought increased attention to the experience of sexual trauma survivors. Scott Berkowitz, the president of the Rape, Abuse, and Incest National Network (RAINN), stated that the National Sexual Assault Hotline documented a significant spike in calls following sexual assault accusations about presidential nominee Donald Trump (Berman, 2017). The Women's March in January 2018 was a direct response of women advocating for their rights and was the largest protest in history with satellite marches occurring in all 50 states and more than 50 other countries (Zacharek,

Dockterman, & Edwards, 2018). The advent of the #MeToo movement (a hashtag used on social media to demonstrate the widespread occurrence of sexual assault and harassment) has pushed the topic of sexual assault into the mainstream media (Zacharek et al., 2018). The increased focus on sexual trauma exemplifies the need to reduce the stigmatization felt by survivors and highlights the importance of examining best treatment practices to support survivors in their recovery from sexual mistreatment.

This chapter begins with a literature review that addresses sexual trauma survivors, and primarily focuses on adult, female survivors, as women remain the most readily investigated and reported demographic within the population. The second section underscores the aftereffects of trauma experienced by survivors. Interpersonal relationships are a specific area impacted by sexual trauma, and therefore this section explores the influence of social connections in the recovery process. Next, this chapter presents information about the current treatments for survivors, describing both individual and group psychotherapy and their effectiveness. For many researchers and practitioners, group treatment for sexual trauma is highlighted as an effective treatment, and for some it has been suggested as the treatment of choice due to the group's ability to address interpersonal considerations within the group process (Classen et al., 2011). This section, therefore, addresses specific variables that have been studied related to interpersonal relationships and reviews other variables that are thought to be beneficial for the unique concerns of the sexual trauma population. Group treatment research for sexual abuse is growing but continues to be limited in its depth and scope. The final section provides a chapter summary including the major limitations of the extant

research, particularly related to the minimal focus on process variables, such as cohesion, between members in group therapy.

Aftereffects of Sexual Trauma

Sexual Trauma and Posttraumatic Stress Disorder

Theorists have posed that it is common for survivors to develop symptoms of Posttraumatic Stress Disorder (PTSD) following their sexual trauma. Robinaugh and McNally (2011) found that the personalized impact that sexual trauma holds upon a survivor's sense of identity leads to greater PTSD symptom severity. The DSM-5 defines PTSD as an exposure to a traumatic event that meets specific stipulations and symptoms from four clusters including: intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity (American Psychiatric Association, 2013). The interpersonal and invasive nature of this trauma may be the foundation for making PTSD such a common occurrence among survivors, as the loss of control over one's personal boundaries threatens personal safety and questions a sense of trust in others. Along with the psychological anxiety triggered by posttraumatic stress, PTSD is characterized by a failure to physiologically adapt to stressors, and this can lead to survivors having a long-term activation of stress pathways that leave them feeling anxious, hyper-aware, and vigilant of their surroundings (Pacella, Hruska, & Delahanty, 2013). PTSD also may result in cognitive-behavioral symptoms including avoidant coping, poor sleep, and disruption in relationships (Pacella et al., 2013). It has been speculated that the long-term effects of sexual abuse may include the development of psychiatric and social problems such as major depression, anxiety disorders, dissociative

symptoms, borderline personality disorder, alcohol or substance abuse, eating disorders, re-victimization, and suicidality (Classen, Koopman, Nevill-Manning & Spiegel, 2001; Elkjaer, Kristensen, Mortensen, Poulsen & Lau, 2014).

Approximately one third of female rape victims have been identified as having PTSD (Ullman & Filipas, 2001). A study of 148 women found that 70% experienced symptoms of acute trauma, and 45% of these women met the complete diagnostic criteria for PTSD (Elklit & Christiansen, 2013). Women generally develop PTSD symptoms at twice the rate of men (10.4% versus 5%) when exposed to similar traumas, and sexual abuse survivors may be at even higher risk for symptom development due to the interpersonal nature of their trauma (Charuvastara & Cloitre, 2008; Foa, Keane, Friedman, & Cohen, 2009). Lilly and Valdez (2012) postulated that women may be more likely than men to develop PTSD due to different types of trauma they are frequently exposed to, and posited that women are more likely to be victims of interpersonal trauma, while men are more likely to experience physical trauma. This study also demonstrated that the experience of an interpersonal trauma, such as sexual assault, is correlated with PTSD symptoms, regardless of gender. Frans, Rimmo, Aberg, and Fredrikson (2005) stated that these interpersonal forms of trauma have higher levels of subjective distress, and this may also be a factor in the development of PTSD in survivors.

Women with a history of sexual assault often have a higher risk of problem drinking and drug use (Ullman, Relyea, Peter-Hagene, & Vasquez, 2013). Research conducted by Ullman et al. (2013) showed that although non-interpersonal traumas (i.e., being threatened with a weapon, witnessing a homicide, or death or being in a military

zone) and interpersonal traumas (i.e., abuse by an intimate partner, sexual trauma, emotional abuse) both predicted PTSD, only interpersonal traumas were predictive of survivors engaging in substance use as a coping mechanism. The authors suggested that this might be due to a survivor's inability to trust others or to rely on a social network for coping, which then could lead to seeking out maladaptive coping strategies such as drug and alcohol use. Substances may also be used to help reduce distress associated with intrusive re-experiencing and may provide temporary avoidance of trauma memories that survivors experience in the aftermath of their trauma (Ford & Russo, 2006). Lifetime prevalence rates of alcohol abuse/dependence among women sexual trauma survivors are approximately 28% and other substance abuse/dependence rates are 27% (Foa et al., 2009).

Besides drug and alcohol problems, sexual trauma survivors frequently present with a variety of co-morbid psychiatric diagnoses including depression and anxiety disorders. It is estimated that approximately 80% of individuals with PTSD also live with additional disorders (Foa et al., 2009). This results in additional complications in the treatment of sexual trauma survivors, as the different or multiple diagnoses, may require adjustments throughout the course of psychological care.

Sexual Trauma and Relationships

Survivors of sexual abuse have reported poor social adjustment and interpersonal skills, sexual dysfunction, relationship problems, and medical disorders (Classen et al., 2001; Walsh et al., 2012). Sexually abusive events tend to foment experiences of guilt and shame. Herman (2011) defined shame as “an acutely self-conscious state in which

the self is ‘split’, imagining the self in the eyes of the other” (p. 160). Brown (2006) studied women’s experience of shame, and through qualitative interviews with 215 participants, determined a definition of shame as, “An intensely painful feeling or experience of believing we are flawed and therefore unworthy of acceptance and belonging” (p. 45). Brown additionally postulated the Shame Resilience Theory (SRT) wherein she described the antidote to shame as being experiences of empathic understanding and relational connection.

Shame has been found to be prevalent amongst sexual trauma survivors, and in a study of 157 survivors who were asked directly about shame experiences it was found that shame was the only independent predictor of PTSD symptoms (Andrews, Berwin, Rose & Kirk, 2000). Dutra, Callahan, Forman, Mendelsohn, and Herman (2008) found that in a study of 137 survivors, shame schemas were significantly correlated with measures of PTSD and depression. A qualitative study conducted by Weiss (2010) discovered shame themes among 136 survivor interviews, including a concern of being negatively judged by others about their trauma, a sense of humiliation and disgrace about their victimization, and a worry about the exposure of their personal lives and sexual history being scrutinized by others. Rahm, Renck, and Ringsberg (2013) examined 87 survivors participating in self-help groups for childhood sexual abuse and found that the concept of shame was correlated with poor mental health and feelings of being alone and different.

In studies that have looked more closely at the component of shame, women who experience rape frequently report feeling ‘dirty’ afterwards, or place blame on themselves

for their assault, and this can result in the cultivation of shameful emotions (Feiring & Taska, 2005; Sayin et al., 2012; Vilencia, Shakespeare-Finch, & Obst, 2013). Platt and Freyd (2012) found a positive correlation between the level of trauma exposure and negative underlying assumptions (attitudes that contribute to embodying a sense of badness and shame) and illuminated how survivors were more prone to feel flawed following a traumatic event when compared to those who did not endorse a trauma history. Pearlman and Curtois (2005) asserted that the internalization of these feelings further develop into cognitive distortions about self-concept, worth in relationships, and the motivations of others. Shame is also considered to be a key correlate of avoidance of trauma disclosure (Sable, Danis, Mauzy, & Gallagher, 2006; Thompson, Sitterle, Clay, & Kingree, 2007) and this may influence additional relationship difficulties and isolation in survivors. It may also result in women not seeking treatment following their experience of sexual trauma.

In addition to the influence of shame in the isolation of survivors, many struggle with interpersonal relationships, and these relational dynamics have been a source of clinical discussion for many years. Diagnostic criteria for PTSD include interpersonal dimensions such as an avoidance of people who arouse recollections of the event, feelings of detachment from others, and a sense of irritability (American Psychiatric Association, 2013). These factors may raise difficulties for survivors as they attempt to cultivate relationships in their lives. Bleiberg and Markowitz (2005) described PTSD resulting in people becoming withdrawn, mistrustful, and interpersonally hypervigilant.

Themes of interpersonal difficulties faced by sexual trauma survivors have been explored in previous research. In a review of the literature on the interpersonal functioning of sexual trauma survivors, DiLillio (2001) examined 24 studies focused on the interpersonal functioning of sexual trauma survivors and reported that college-aged incest survivors experienced more social problems in relational activities than their peers who did not experience incest or other childhood sexual abuse. Lassri et al. (2018) conducted a study to explore the mechanism underlying the negative impact of childhood sexual abuse on romantic relationship satisfaction. For the 59 female survivors studied, a relational pattern was found wherein childhood sexual abuse resulted in elevated levels of self-criticism, which then eroded romantic relationship satisfaction, left survivors unable to manage interpersonal difficulties, and resulted in feelings of detachment from their partners. Feiring, Simon, and Cleland (2009) conducted a longitudinal study with 160 female participants and postulated that trauma-specific stigmatization and distorted feelings and beliefs about oneself carry over to negative self-views regarding feelings and behaviors in other situations. These authors found that these cognitions resulted from the secretive context of sexual abuse, and the social taboos and legal sanctions against sexual abuse. Results showed that stigmatization felt by the survivors was correlated with an internalization of symptoms, which further interrupted interpersonal connections and abilities to trust.

Interpersonal difficulties may factor into a survivor's chance of being re-victimized. It has been hypothesized that women survivors are at higher risk for future sexual trauma incidents than women who have not been abused (Classen, Palesh, &

Aggarwal, 2005; DePrince, 2005). DePrince (2005) found that individuals that were re-victimized had problems detecting violations of interpersonal and safety rules, suggesting an unawareness of danger cues. Classen et al. (2005) reviewed the literature on sexual re-victimization examining 90 empirical studies that indicated that women who experienced unwanted sexual intercourse in childhood were approximately two to three times more likely to be sexually assaulted after 16 years of age than those who were not abused as children. These studies indicate that some survivors may have experienced numerous instances of sexual trauma throughout their lifespan.

Some studies have focused on the interpersonal consequences of multiple victimizations. DePrince, Combs, and Shanahan (2009) studied relational schemas by examining automatic associations between relationship and harm concepts among women with interpersonal trauma histories. Findings indicated that women with histories of multiple victimizations often develop schemas of relationships that include expectations of harm that interfere with their ability to connect with others. Herman (1997) cited additional interpersonal considerations of re-victimization, and postulated that a survivor's dissociative defensive style prevents her from accurately assessing dangerous situations, and she may also hold a desire to relive a threatening situation in order to change the outcome. Cross-sectional data demonstrated that women that have been re-victimized have been found to be less assertive, feel overly responsible, overly nurturing, demonstrate troubles with being sociable or intimate, and exhibit controlling behaviors (Classen et al., 2001; Classen et al., 2005), traits that may be related to a risk for re-victimization.

Social Support

It has been suggested that social connections are especially salient in recovery for trauma survivors. Strong social relationships are thought to foster feelings of safety for survivors, while poor social attachments are connected to the development of PTSD symptomatology (Charuvastra & Cloitre, 2008). Evidence has shown that social support buffers the effects of trauma symptom development in sexually abused children, and may later prevent the development of PTSD symptomatology (Hyman et al., 2007). Research indicates that 55% of the variance in psychological adjustment following sexual trauma is attributed to social support, showing a significant contribution to the healing of a survivor (Hyman et al., 2007).

Social support is defined as assistance provided to individuals coping with stressful events (Hyman, Gold, & Cott, 2003). It consists of interpersonal interactions that are perceived as beneficial and helpful (Ullman, Townsend, Filipas, & Starzynski, 2007). Perceived social support facilitates experiencing stressful situations less negatively and protects against psychological distress (Cox, Owen, & Ogrodniczuk, 2017). Support may come from formal sources such as first responders, police, firefighters or medical and mental health professionals, or it may be more informal, consisting of family members, friends, or romantic partners (Borja, Callahan, & Long, 2006).

Hyman et al. (2007) examined four types of perceived support and their contribution to the development of PTSD symptoms in adult survivors of childhood sexual trauma. Appraisal support consisted of guidance or advice in coping, tangible

support was defined as available tangible resources, belonging support focused on feelings of association with others, and self-esteem support referred to others' communications about the value of the abused individual (Hyman et al., 2007). The authors found that self-esteem support and appraisal support were inversely related to PTSD symptom development, suggesting that as acceptance and value assist increase, PTSD symptoms decrease (Hyman et al., 2007).

Similar to self-esteem support, Borja et al. (2006) found that positive reactions from family, friends and formal social support providers were associated with benefits following sexual trauma. These reactions included aspects such as being believed about the trauma, receiving information about available resources, and being absolved of blame regarding the abuse (Borja et al., 2006). Ullman and Peter-Hagene (2014) found that positive social reactions to assault disclosures predicted greater perceived control over a survivor's recovery, which was related to a decrease in PTSD symptoms. However, although these positive reactions may assist in the buffering of PTSD symptomatology, it seems that their overall effect in the recovery process may be more powerful when combined with other supports (Hyman, et al., 2007).

In contrast, negative reactions, such as implying victim blame, or instructing the survivor to forget about the trauma, have been found to predict poor post-trauma adjustment (Borja et al., 2006). A study illustrated that negative social reactions have been related to a higher reliance on avoidance coping (attempts to forget about the trauma), and a greater sense of self-blame for the survivor (Ullman et al., 2006). These characteristics then contribute to the cultivation of higher rates of PTSD symptoms in

survivors, and may lead to a disengagement from speaking about the trauma due to concern about a secondary victimization from other people (Ullman et al., 2006, Ullman & Peter-Hagene, 2014). The stigma associated with disclosure of the sexual trauma may further perpetuate a survivor's distress, sense of social isolation, and feelings of mistrust.

Therapeutic Relationship and Alliance

The therapeutic relationship has been shown to be important in the process of healing from traumatic encounters, and may be more imperative in trauma treatment than in treatment for other psychological disorders (Charuvastra & Cloitre, 2008).

Therapeutic trauma treatment requires the establishment of a safe environment (Pearlman & Courtois, 2005). For the client to perceive this environment, she must be able to see the therapist as someone who is supportive, interested in her, empathetic, resourceful, and warm (Charuvastra & Cloitre, 2008). These traits of the therapist could contribute to the formation of a social bond in therapy and could be the first step in helping a survivor establish outside social connections.

Related to the notion of the therapeutic relationship is the therapeutic alliance, terms that are often used interchangeably (Baldwin, Wampold, & Imel, 2007). There is no single agreed upon definition for the therapeutic alliance, however many have adopted Bordin's (1979) explanation that the alliance describes the degree to which the therapy dyad is engaged in collaborative, purposive work (Bordin, 1979). Additional definitions suggest that the alliance is a collaboration between the client and therapist with three distinct aspects: feelings of mutual warmth and understanding, agreement on the goals of treatment, and agreements by which these goals will be attained (Charuvastara & Cloitre,

2008; Raue & Goldfried, 1994). Cloitre et al. (2002) demonstrated that the strongest alliance-related predictor of post-treatment outcome was that of a sense of a warm and understanding bond with the therapist, suggesting that the interpersonal connection fostered in therapy is of utmost importance for survivors. Survivors of sexual trauma may have a multitude of broken social bonds and the interpersonal aspects of therapy can model healthy interactions, especially in terms of communication and feedback (Caruvastara & Cloitre, 2008).

Individual and Group Treatment for Sexual Trauma Survivors

A great deal of the literature regarding therapeutic treatment for sexual trauma survivors examines individual formats of therapy. This may be due to the ease of outcome assessment in individual therapy modalities and the ability to assess clients on a regular basis. A recent meta-analysis found that individual trauma-focused treatments showed the highest effect sizes when compared to waitlist conditions and group conditions, and stated that as such, they may be viewed as first-line interventions for trauma survivors (Ehring, Welboren, Morina, Wicherts, Freitag & Emmelkamp, 2014). This finding was similar to earlier results from a meta-analysis by Taylor and Harvey (2010), who also found that individual therapy treatments for survivors was the most efficacious method of treatment. The meta-analysis by Ehring et al. (2014) included 16 studies with 7 group studies, and Taylor and Harvey (2010) included 44 studies with 16 group treatment conditions. The lack of information in the meta-analyses about group format and group dynamics make it difficult to discern what aspects of group are effective in treating this population.

Individual treatment has also been compared to group treatment in a few studies. In an experimental design study, Stalker and Fry (1999) demonstrated that ten sessions of group therapy were equal in reducing symptoms of PTSD to ten sessions of individual therapy. Ryan, Gilbert, and Mason (2005) also found that survivors showed equal significant improvements in their symptomatology regardless of whether they were in group or individual treatment. These findings suggest similar outcomes for both individual and group treatment approaches with sexual trauma.

Additional studies of group-focused treatment with the sexual trauma populations have demonstrated that group therapy is effective. A meta-analysis by Sloan, Feinstein, Gallagher, and Beck (2013) examined 16 studies from 1997 to 2011, and found that group treatment for trauma symptoms is better than no treatment. This meta-analysis further showed that group treatments are associated with significant pre- to posttreatment reduction in the severity of PTSD symptoms, indicating a large effect size in overall PTSD symptom reduction ($d = .71$).

At this time, research has given confidence that group treatment works well for outcomes such as reducing PTSD symptoms. What seems to be missing is the specificity of what group processes are contributing to this outcome. Foa et al. (2009) explained that much of the group research with this population is focused primarily on symptom reduction and daily functioning. However, this outcome-based emphasis gives little focus to the relational aspects of trauma and does not take into account how the social aspects of group may influence other areas of a survivor's experience.

The interpersonal nature of group psychotherapy provides opportunities for those who have been sexually abused to engage in treatment where supportive relationships can be developed, isolation can be reduced, trust can be established, and coping strategies can be explored in a safe environment. Yalom (2005) suggested that group treatment for trauma allows survivors to find commonalities among their experiences and resolve the shame and secrecy that perpetuates additional psychological disorders.

Groups for those who have survived sexual abuse are often in a closed group format. Closed groups have time limitations, members are expected to remain in the group for the duration of treatment, and new members are not added to the group after it starts (Corey & Corey, 2006). Due to the problems that many trauma survivors experience, this format is often recommended to help establish cohesion between the members. These closed groups are more stable, with consistent members in attendance, which may be a crucial factor to increasing trust between group members.

There have been a handful of studies that have compared two different types of group treatment. Alexander, Neimeyer, Follette, Moore, and Harter (1989) conducted what appears to be the first study to provide empirical data supporting the efficacy of group therapies for adult survivors. The authors used an experimental design and randomly assigned 65 women with a mean age of 36 years, who had been sexually abused as children to three different treatment conditions, including an interpersonal transaction (IT) group, a process group, or assigned to a wait list. Results demonstrated that both group formats were significantly better than the wait-list condition in reducing depression and distress, and these results were upheld at a 6-month follow up. The two

treatment groups were shown to be equally beneficial when examining these variables. Yet, results also showed the process group scored significantly better on social adjustment than the IT group, $F(1, 9) = 7.40, p < .05$. Compared to the two treatment groups, the subjects in the wait list condition showed deterioration on all variables, with the most significant deterioration in their social adjustment and functioning $F(1, 9) = 11.05, p < 0.01$. Although both treatment groups were effective on many variables, the process group was significantly better on the measure of social adjustment.

Similar to the Alexander et al. (1989) study, others have found that group treatment for sexual abuse is better than a control condition, and some of those studies have included interpersonal variables. For example, Cloitre et al. (2002) randomly assigned 58 women with PTSD related to childhood sexual abuse to 2-phase cognitive-behavioral treatment or a waitlist condition. In addition to measuring outcome PTSD scores, the authors assessed interpersonal variables, including the therapeutic relationship. Results found that the women in the group treatment developed a strong therapeutic relationship and showed significant improvements in affect regulation problems, interpersonal skill deficits, and PTSD symptoms when compared to the wait list condition.

Other studies have focused primarily on the interpersonal outcomes for survivors in group psychotherapy treatment. Lundqvist, Svedin, Hansson, and Broman (2009) examined changes in social interactions and social adjustment for survivors following a group treatment intervention. Researchers hypothesized that the group treatment provided an opportunity to help women discuss their relationships and sexual abuse

narratives, and showed statistically significant improvements on social interaction, support, and overall social adjustment when compared to a wait-list group. Krupnick, Green, Stockton, Miranda, Krause, and Mete (2008) compared the effectiveness of Interpersonal Group Therapy (IPGT) with a non-treatment wait-list for sexual trauma survivors. The IPGT group emphasized relationship disputes, social deficits, role transitions, and relationship losses, and examined how these concerns related to PTSD symptoms. Compared to the wait-list, the IPT group had a significant (70%) decrease in PTSD symptom scores and no longer met criteria for a PTSD diagnosis. Participants also reported a significant increase in their social functioning. Mean changes from baseline in the IPT group were found on Interpersonal Sensitivity (-0.40), Need for Social Approval (-0.43), Lack of Sociability (-0.47), and Interpersonal Ambivalence (-0.33) and the authors stated that these findings demonstrated the benefit of IPT group in identifying behaviors that contribute to healthy relationship functioning.

Elkjaer, Kristensen, Mortensen, Poulsen, and Lau, 2014 investigated the impact of analytic and systemic group treatment modalities on psychosocial functioning and general symptomatology. The study included 106 female participants that were randomly assigned to either an analytic or systemic therapy group. The analytic group focused on intra-psychic and interpersonal dynamics and difficulties in past and present relationships within the group, while the systemic group therapy attended to more solution focused forms of processes to reframe patients' life histories. Both groups showed significant increases in psychosocial functioning and significant decreases in participants' symptomatology post-treatment. Gains were significant for both treatment modalities,

yet the systemic group showed significantly larger gains when compared to the analytic group. The two groups had different trajectories in their efficacy. The systemic therapy group demonstrated a more dramatic decrease in the initial improvement of their symptoms while the analytic group showed a more gradual initial decrease in symptoms at the end of treatment, yet both ended with similar results at the end of treatment. By a one-year follow-up, no statistically significant difference was found between the two groups in achieved gains from pre-treatment to follow-up. This suggests that the analytic group continued to slowly make progress in symptom reduction while the systemic group decreased in its initial symptom improvement, resulting in the two groups to show similar outcomes at the one year follow up and both groups showed significant improvement in symptomatology and psychosocial functioning. It was theorized that the more symptom-focused structure of the systematic group may have resulted in group members working on issues related to their symptomatology more quickly than participants in the analytic group. However, the authors postulated that the less structured approach of the analytic group may have allowed for more natural interactions throughout the group setting in which group members could explore their trauma and develop relationships that may have continued to evolve at the conclusion of treatment. This is similar to the findings of the study by Alexander et al. (1989) that found that the process group increased social adjustment compared to the interpersonal transaction and waitlist conditions.

Over the last decade, there has been some focus on assessing interpersonal relationships within group psychotherapy for sexual trauma. The damage caused to interpersonal relationships by sexual trauma points to a need to include them in treatment

and in research. Additionally, the measures of interpersonal relationship variables thus far in research have been global in scope and have not specified what relational processes within treatment are most related to positive social growth.

Group Therapy Modalities

The literature suggests that the most widely studied evidence based treatment for sexual trauma is Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), which has been shown to reduce trauma symptoms (Foa et al., 2009). However, no recommended theoretical orientation as a standard for group therapy has been identified with this population (Liotta, Springer, Misurell, Block-Lerner, & Brandwein, 2015). There is some indication that trauma-focused group treatment demonstrates larger effect sizes than non-trauma focused group interventions on symptoms, including depression and dissociation and therefore they have been recommended as first-line interventions with sexual trauma survivors (Ehring, et al., 2014). For example, TF-CBT showed superior efficacy when treating childhood sexual abuse survivors when compared to other treatment modalities such as nondirective, supportive counseling and community therapy approaches in both individual and group therapy formats (Kendall, Deblinger, Behl, & Glickman, 2012). TF-CBT also was found to have positive results across different sites and diverse populations, showing it to be a culturally sensitive methodology of treatment (Kendall et al., 2012). TF-CBT treatments aim to help the individual reconstruct the trauma and integrate disassociated affect and cognitions (Foa et al., 2009). TF-CBT groups typically focus on behavioral skills training, cognitive restructuring, and trauma

exposure, however typically they do not specifically focus on the interpersonal factors in group treatment (Foa et al., 2009).

In addition to trauma-focused methodologies, studies have investigated the use of Present Focused Groups (Classen et al., 2001), Psychoanalytic and Psychodynamic Groups (Lundqvist et al., 2009), Systemic Group Therapy (Elkjaer et al., 2014), Client-Centered Therapy (Payne, Liebling-Kalifani & Joseph 2007), Feminist Empowerment Models (Morgan & Cummings, 1999), Cognitive Processing Therapy (Lubin, 2007) and Interpersonal Process Groups (Krupnick et al., 2008). All of these modalities resulted in superior symptom reduction when compared to wait-list conditions or no treatment.

Group Process Variables

Theorists have pointed to the importance of processing the group dynamics in group treatment for sexual trauma (Yalom, 2005). Valerio and Lepper (2010) suggested factors that they thought to be beneficial in group therapy with sexual abuse survivors. These include: discovering and accepting previously unknown or unacceptable parts of the self, developing the ability to voice upsetting emotions and express feelings, receiving feedback from group members about interpersonal behaviors, asserting emotions towards other group members, witnessing new behaviors and feeling safe to engage in them in the group setting, and experiencing existential factors within the group dynamic. Cox, Owen, and Ogrodniczuk (2017) found evidence that supports the relationship between the group factors of emotional expression and social learning with improved social support in a study of Veterans with PTSD diagnoses. These researchers suggested that their findings illustrate the importance of process-oriented treatment groups that allow patients

to observe and practice interpersonal skills in a safe environment. Sayin et al. (2012) found that therapeutic factors including existential factors, universality, and cohesiveness were powerful elements in group treatment with sexually abused survivors in Turkey.

The disclosure of traumatic experiences in group allows members to have new identifications and foster relationships with group members (Sayin et al., 2012). The maintenance of boundaries in the group setting also models appropriate boundary interactions, which they may be lacking due to the intrusive nature of their trauma (Mathews & Gerrity, 2002; Moore et al., 2009). The establishment of a safe therapeutic environment and therapeutic alliance with the group leader assists in this endeavor while also addressing social difficulties faced within this population (Mathews & Gerrity, 2002; Moore et al, 2009; Payne, Liebling-Kalifani, & Joseph, 2007). Thus, the relationship that develops between group leaders and group members may be of extra importance in modeling new interpersonal behaviors for group members in the context of group treatment.

Group Cohesion

Group cohesion has been viewed as an essential component of group therapy and it has been shown that clients that perceive the group as more cohesive experienced more social contact with other group members (Burlingame, Fuhriman, & Johnson, 2001; Cox, Owen, and Ogrodniczuk, 2017). A review of research about interpersonal functioning in group psychotherapy found that cohesion has a strong positive relationship with client outcome, and clients who reported higher levels of feeling understood by the other group members also reported the most symptom reduction (Lo Coco, Gullo, Fratello, Giordano,

& Kivlighan, 2016). Cohesion has become synonymous with the therapeutic relationship in group therapy (Burlingame et al., 2001; Burlingame, McClendon, & Alonso, 2011). There is no consensus on a definition of cohesion in group therapy, although a common one used in research is a force that causes group members to remain in the group and develop an element of “sticking-togetherness” (Burlingame et al., 2011, p. 34). Other definitions that have been offered are more focused on elements of the group, such as group attractiveness or alliance (Burlingame et al., 2011). Throughout this chapter, the common definition of cohesion used is one that references the sense of togetherness that members perceive in the group.

Measurement of Cohesion

It has been noted that cohesion has been investigated systematically in a way in which determinants, effects, and development of cohesion have been delineated in a small group setting (Drescher, Burlingame, & Fuhriman, 2012). Over time it has been measured by assessing group acceptance, emotional well-being, self-disclosure, and interpersonal liking, yet these may fail to clearly define the notion of group cohesion as the definition of cohesion remains so unclear in the available literature (Burlingame et al., 2011). It has been postulated that group members perceive cohesion through the relationships between member-member, member-group, and member-leader (Burlingame et al., 2011). Drescher et al. (2012) described past measures of cohesion involving four dimensions: individual member, leader, relational subgroups, and the total group. Many studies have used the individual group member as the unit of observation and have assessed them for actions or reactions relevant to cohesion (Drescher et al., 2012).

Holmes and Kivlighan (2000) noted that members often view their relationships with other members or with the group as a whole, as more indicative of a feeling of cohesion than the reporting of their relationships with just the therapist. However, Burlingame et al. (2011) noted that leaders' theoretical orientation produced a significant difference in the cohesion-outcome relation, and stated that leaders using an interpersonal orientation achieved the highest cohesion-outcome relation rating ($r = .58$). This seems to speak to the importance of relationship development in the context of group therapy, and the therapeutic factors implied in the interpersonal connections that are fostered. The salience of relational development also is illustrated in Burlingame et al.'s (2011) finding that group leaders that emphasize member interaction, regardless of theoretical orientation, post higher cohesion and outcome associations than groups that do not have a process oriented focus.

Cohesion and Group Treatment Outcome

Yalom (2005) noted that group cohesiveness mediates changes and results in members experiencing an increase in self-esteem and better therapeutic outcomes. Marmarosh, Holtz, and Schottenbauer (2005) explored this assertion and examined the experience of 102 group members from university counseling centers. Path analyses demonstrated that group cohesiveness led to gains in self-esteem, hope, and overall well-being. Burlingame et al. (2011) also suggested that group cohesion was reliably associated ($r = .25$) with group outcome, when outcome was defined as symptom distress or improvement in interpersonal functioning. A meta-analysis showed that the findings of group cohesion impacting self-esteem and well-being have been replicated in different

settings (both inpatient and outpatient) and across diagnostic classifications (Burlingame et al., 2011). Other studies have hypothesized that cohesion may not have a direct relationship with outcome, yet may act as a “substrate” for work in the group (Joyce, Piper, & Ogrodniczuk, 2007). This would suggest that certain processes such as confrontation and feedback might not exist in the group without the cohesion variable, and that cohesion influences the quality of the group’s work, thus cohesion allows for a variety of interactions to occur within the group (Joyce et al., 2007). Regardless of the direction of the relationship between cohesion and group functioning, it is vital to a group’s overall interpersonal functioning and safety. Relational factors may be of utmost importance when working with survivors of sexual trauma, as both their safety and interpersonal functioning often are compromised due to their trauma histories.

Conclusion

Research demonstrates the deleterious psychological effects of sexual trauma, including the development of PTSD symptoms and poor interpersonal relationships. Many survivors struggle with interpersonal relationships and may develop difficulties with trusting people in their life after they experience a trauma such as sexual assault. Feelings of negativity and shame also plague survivors, and this likely perpetuates the presence of PTSD symptoms and further interferes with interpersonal relationships. Social support helps to mediate the effects of PTSD symptoms for survivors, however, there is limited literature regarding this variable in the treatment that have experienced sexual abuse. Much of the available research explores the efficacy of individual treatment modalities, and some research also points to group psychotherapy as an equally

effective form of treatment for the population, although research lags behind that of individual treatment. Meta-analyses of studies suggest that group treatment is better than no treatment and that treatment shows medium to large effect sizes for symptom reduction with survivors of sexual trauma (Harvey & Taylor, 2010; Hetzel-Riggin, Braush & Montgomery, 2007; Sloan, Feinstein, Gallagher, Beck & Keane, 2013; Taylor & Harvey, 2010).

Although it has been shown that groups are an effective treatment modality in working with survivors, little is known about the process variables that contribute to symptom reduction and treatment effect sizes. Research points to the importance of group cohesion in treatment, and it has been demonstrated that cohesion mediates change in a group setting and can provide an element of safety that seems important when working with persons who have experienced sexual trauma. Thus, the increased social interaction in a group setting may be beneficial to survivors as they work to re-build their ability to engage in relationships and establish a sense of interpersonal trust. Investigating how group treatments that intentionally include and measure interpersonal interaction variables such as cohesion and social support may assist in improved group treatments for sexual trauma and training guidelines for effective group leadership.

The next chapter provides a description of the methodology used in the study. It includes sections on the sample, measures, and procedures. It will start with an explanation of the research design and discuss the strengths and limitations of the chosen design. The sample and assessment instruments will also be discussed.

Chapter Three: Method

This chapter will outline the research design, research sample, procedures, measures, and statistical analyses that were used in this study. While other studies have touched on the relational variables occurring in group psychotherapy treatment with sexual trauma survivors, this study specified the processes of group cohesion and bond with the group leader as important predictors in treatment outcome. This study also included the construct of shame in the conceptualization of distress faced by sexual trauma survivors and examined the relationship between shame and relational processes within group treatment.

Design and Rationale

This study examined the relational aspects of group therapy, bond and engagement, for sexual trauma survivors and ascertained how these variables impacted social functioning and PTSD symptoms. Group treatment studies are complex, and it is often difficult to obtain a large sample. One way to address this is to use a repeated measures design, as it helps to increase the power of the study with a smaller sample size (Gliner et al., 2009), and this design was used in the current study. The study is correlational, as no independent variable was implemented, and the within-subject design allowed for the measurement of change over the duration of the group (Gliner, Morgan, & Leech, 2009). Assessing groups that were already occurring in the community did not

necessitate the random assignment of subjects, which assisted in the issue of time availability and ethical concerns of assigning participants to waitlist controls, as it is unethical to not provide treatment to clients in need (Heppner, Wampold, Owen, Thompson, & Wang, 2016). The assessment of groups in the community also provided naturalistic data that reflected work currently being done in the field.

Each participant in the study received group treatment and was assessed on several measures, including Engagement, Bond, PTSD symptoms, and Shame Reactions. A strength of this research design is that the error variance is reduced due to each participant being her own control (Gliner et al., 2009). The repeated measures design also strengthened the expectation that all changes that were measured were due to the nature of the treatment (group psychotherapy) and not to the variability among participants (Gliner et al., 2009). Gliner et al. (2009) cited one disadvantage of this study design as the possibility that participants display demand characteristics as the study progresses, meaning that participants attempt to guess the purpose of the study and respond to the measures in a desirable fashion.

Participants

The sample consisted of adult (ages 18 and older), female, survivors of sexual trauma. The mean age of the women in the study was 31. Participants identified with the following ethnic/racial groups 74.1% White, 14.8% Hispanic, and 11.1% Multiracial. Participants were all women who were members of group treatment at a rape crisis center in Colorado that regularly provides group treatment for sexual trauma survivors. Twenty-seven participants were members of five different treatment groups at the same

agency. Of the 27 participants, 26 completed the group treatment while one participant withdrew after Time 2 due to health problems. This participant did complete the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) prior to the study and all measures after the first and fifth sessions prior to her leaving treatment. A power analysis was conducted in GPower for a repeated measures ANOVA, within factors test (this was chosen as it best represents the repeated measure design of the study), for 1 group, with an effect size of 0.40 (effect sizes in the literature appear to be between .4 and .5), an alpha coefficient of .05, 4 time points of measurement, and a .5 correlation among the repeated measure. This analysis demonstrated that a total sample size of 15 participants is the minimum number required in order to reduce chances of making a Type 2 error (GPower, 2014).

Of the five groups included in the study, three focused on survivors of adult sexual assault (ASA) and two of the groups were for adult survivors of childhood sexual abuse (AMC). Each group followed similar curriculums based upon principles of Trauma-Focused Cognitive Behavioral Therapy (TF-CBT). Stages of treatment in each group consisted of establishing safety within the group, an exposure component of having group members share their trauma narrative and receive feedback, and a concluding stage of learning how to integrate trauma experiences into daily narratives. ASA groups met for a total of 16 weeks and AMC groups met for a total of 24 weeks. Although the length of therapy differed for each group, all group measures (GCQ, Bond Scale, and CoSS) were administered at weeks one, five, ten, and fifteen of treatment to control for dose effect. The PCL-5 was given at the end of each group treatment (either week 15 or week

23) to assess for post-treatment effect. Due to the difference in number of treatment sessions, groups were at different stages in their treatment during data collection. ASA data represented an entire course of treatment, while AMC data represented group measure data for half of the treatment course and a post-treatment measure of symptom outcome. Please see Table 2 for a summary of each of the five groups and the number of members within each group.

Table 1: Overview of Participant Demographic Characteristics

Demographics	Frequency	Percentage
Total Participants	27*	
Age Range		
19 – 25	7	25.9
26 – 30	9*	33.3
31 – 35	5	18.5
36 – 40	1	3.7
41 – 45	4	14.8
46 – 50	0	0
51 – 55	1	3.7
Racial/Ethnic Group		
Caucasian/White	20*	74.1
Hispanic/Latino	4	14.8
Multiracial	3	11.1
Assault Type		
Adult Sexual Assault	18*	66.7
Adult Molested as Child	9	33.3

*shows data for person who withdrew from treatment after the 5th session

Table 2: Overview of 5 Treatment Groups

Group Name	Number of Members
ASA1	6
ASA2	5
ASA3	7*
AMC1	4
AMC2	5

*shows data for person who withdrew from treatment after the 5th session

Instruments

Demographic Information Form. Each participant completed a demographic information form. Collected demographic information included age, ethnicity, type of sexual trauma (adult sexual assault or child sexual abuse), and whether they were currently enrolled in both individual therapy and group treatment. This form was expected to take less than five minutes for participants to complete. Participants were all assigned identification numbers to protect their confidentiality in the study (See Demographic Information Form, Appendix A).

Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5). This measure is given to all clients who receive treatment at the rape crisis center, both prior to and at the completion of treatment. As part of the research, participants were asked permission for their scores to be included as part of the study. The PCL-5 is one of the most widely used self-report measures to assess for PTSD symptoms (Bovin et al., 2015). Total PCL scores correlate highly with total scores of other self-report PTSD measures, including the Clinician-Administered PTSD Scale (CAPS) with an alpha of .79 (Bovin et al., 2015). The PCL-5 was updated in 2013 to reflect the revised PTSD criteria in the DSM-5 and includes 20 items that correspond to the 20 PTSD symptoms outlined in the DSM-5 (Bovin et al., 2015). This measure took participants approximately five to ten minutes to complete and was given at pre-and post-treatment. The questionnaire is based on a Likert scale of 0-4, with scale descriptors ranging from “Not at all” (0), to “Extremely” (4) (Blevins, Weathers, Davis, Witte, & Domino, 2015). A total score ranging from 0 - 80 can be achieved, and a clinical cutoff of 33 suggests the presence of PTSD symptoms and

a likely PTSD diagnosis. DSM-5 symptom cluster severity scores can also be obtained from the measurement by summing the scores for an item with a given cluster. These clusters compose the different subscales for Avoidance (two items), Intrusion (five items), Negativity (seven items), and Hyper-Arousal/Reactivity (six items) can be calculated (Blevins et al., 2015). The measure has a test-retest correlation of .82 and has demonstrated excellent convergent validity with PLC-C scores as well as with scores on the PHQ Depression and Generalized Anxiety Disorder scales (Bovin et al., 2015). Subscales have shown internal consistency scales ranging from acceptable to good (alpha coefficients of 0.57 - .078) (Sveen, Bondjers, & Willebrand, 2016). Additionally, PCL-5 scores demonstrated positive correlations with scores on measure of panic, somatization, and functional impairment (Bovin et al., 2015). The psychometric properties indicate that the PCL-5 is a valid and sound measure to assess PTSD symptoms. However, due to the fact that this is a recent version of the measure, little psychometric research exists on the use of the measure outside of the veteran population, which may prove to be a limitation to the use of this measure with sexual trauma survivors. This measure was given at Time 1 and Time 4 (See Appendix B).

Group Climate Questionnaire Short Form (GCQ). The Group Climate Questionnaire Short Form (GCQ; MacKenzie, 1983) has been used in many group studies and is cited as the most commonly used group process instrument in the literature (Johnson, Pulsipher, Ferrin, Burlingame, Davies, & Gleave, 2006). It contains 12-items rated on a seven-point Likert scale and consists of three subscales. The Engagement scale consists of five items and describes constructive therapy work and the group bond.

The Conflict scale is composed of four items and measures interpersonal anger, and the Avoidance scale includes three questions to ascertain if members are avoiding constructive involvement in the group (Johnson et al., 2006). For the purpose of this study, the Engagement subscale was used in the analysis, as it relates to group cohesion and relationship development between members, however all participants were administered the entire questionnaire. The GCQ has shown good construct validity, with demonstrated links to determining group outcomes and processes. Coefficient alphas for the GCQ subscales have been reported at .94 for Engagement, .92 for Avoidance, and .88 for Conflict (Kivlighan & Goldfine, 1991). This measure took participants approximately five to ten minutes to complete and was given following group therapy sessions at weeks one, five, ten, and fifteen (See Appendix C).

Working Alliance Inventory Short Form (WAI-S). The Working Alliance Inventory Short Form (WAI-S, Horvath, 1992) consists of 12 items that reflect the client's judgment on the level of agreement on therapeutic tasks, treatment goals, and the strength of the affective bond (Smits, Luyckx, Smits, Stinkens, & Claes, 2015). The WAI-S was used in this study to address participants' level of bond that develops throughout the course of therapy with their therapist, thus only the Bond scale of the WAI-S was used in this research. This subscale contains four questions and took participants approximately three to five minutes to complete. It was administered following group therapy sessions at weeks one, five, ten, and fifteen. Items are scored on a seven-point Likert scale and these scores are summed and then averaged to find a mean bond score. Reliability coefficients for the WAI-S have been shown to be between .82

and .85 (Smits et al., 2015). The Bond subscale has reliability coefficients ranging from .85 to .92 (Horvath & Greenberg, 1989) with good convergent and discriminant validity (Flakenstron, Granstrom & Homqvist, 2013; Horvath & Greenberg, 1989). There is a lack of psychometrics about this measure in regard to its use in group settings (Woody & Adessky, 2002), however the pantheoretical nature of the WAI-S could help it be flexible amongst modalities (Horvath & Luborsky, 1993) (See Appendix D).

Compass of Shame Scale (CoSS). The Compass of Shame Scale (CoSS; Elison, Pulus, & Lennon, 2006; Nathanson, 1992) is a twelve-item, scenario-based measure that was developed to assess an individual's use of the four styles of shame reactions described by Nathanson's (1992) Compass of Shame model (Elison et al., 2006). The four poles of the Compass of Shame model are represented in subscales of the CoSS, and assess different types of shame reactions. The four subscales are comprised of Withdrawal, Attack Self, Avoidance, and Attack Other (Elison et al., 2006). Participants were provided with a series of statements that describe potentially shame-inducing situations and four responses, each of which characterizes a different type of shame reaction to the prompt. Individuals were instructed to rate every item using a Likert scale ranging from 0 (Never) to 4 (Almost Always) (Elison et al., 2006). Subscales are totaled by summing the ratings for each shame reaction for all the prompts. The CoSS has been shown to be a reliable measure, and has demonstrated internal consistency coefficients of .89 (Withdrawal), .85 (Attack Other), .91 (Attack Self), .74 (Avoidance.) Three-week test-retest reliabilities also demonstrate alpha coefficients of .75 (Withdrawal), .85 (Attack Other), .81 (Attack Self), .75 (Avoidance) (Elison et al., 2006). The CoSS has

been positively correlated with the Internalized Shame Scale and a confirmatory factor analysis showed that each item factor loaded on the scale that it was theoretically expected to represent (Harper, 2011). This measure took participants approximately ten minutes to complete and was administered following group therapy sessions at weeks one, five, ten, and fifteen.

Procedure

Participants were recruited from clientele who engaged in group treatment at a rape crisis center in Colorado. Prior to beginning treatment, all participants completed an intake interview at the rape crisis center (with staff therapists at the agency) to discuss their clinical history, the nature of their trauma, and to determine their appropriateness for trauma treatment (i.e., maladaptive coping skills and other safety concerns were screened out of trauma treatment for ethical reasons). Participants that the center decided were appropriate and willing to be in group treatment then met with a therapist at the agency to complete a pre-group interview, which further ascertained goodness of fit for the group and also provided the participant with information about group treatment (i.e., expectations, meeting times, norms). This meeting was approximately 45 minutes for each participant. Following the approval of the agency, potential participants were notified of their assignment to group treatment. Each group consisted of four to eight members, with four to seven members of the group consenting to participate in the study (see Table 2). Groups met for two hours on a weekly basis and were closed groups, meaning that the same members were in the group throughout the treatment period. The groups focused on both women who are survivors of an adult sexual assault (meaning

that their sexual trauma occurred when they were over the age of 18) and on women who are adult survivors of childhood sexual abuse (indicating that their sexual trauma occurred prior to the age of 18). These were two separate groups; however, trauma types were not mutually exclusive in each group (i.e. group members in the childhood sexual abuse group may also have experienced re-victimization as an adult). The groups were structured in a three-phase model, with the first phase having an emphasis on establishing safety in the group, the second phase consisting of survivors sharing their trauma narratives, and the third and final phase incorporating trauma histories into their day-to-day lives and future. The initial phase of developing safety in the group was important in order for group members to be able to attend to the later stages of treatment, and these first weeks involved a variety of activities to help build safety, trust, relationships, and cohesion within the group. The curriculum is based on a Trauma Focused Cognitive Behavioral Therapy model, which recommends this tri-phasic approach to treatment for survivors (Foa et al., 2009). Therapeutic techniques for PTSD treatment have emphasized the importance of recollection of traumatic events to help establish a coherent memory of the event, which can then be adaptively reorganized into an individual's self-perspective and world schema and also provide a sense of mastery over the event that felt out of the individual's control (Cloitre et al., 2012).

All groups employed a co-facilitator model for group therapy and all group leaders received training from the agency about how to work with survivors of sexual assault and abuse. Each group leader dyad consisted of one staff therapist at the agency with a master level education in Counseling or Social Work and one master level student

in training in one of these disciplines. Staff members ranged in age from 25 to 34. Students in training did not identify their age. Group leaders (both staff members and student trainees) were all female and identified as Caucasian/White. Three different therapists co-facilitated the five groups and had a different student in training co-facilitating with them and receiving supervision on group leadership.

Informed consent was provided to all members and the researcher trained the group leaders to disseminate this information to participants (See Appendix F). Group leaders were responsible for providing informed consent to protect the anonymity of research participants. An introductory script was used to ensure that all participants receive the same exposure to the study purpose and directions (See Appendix G), and a video of the Principal Investigator discussing the study was shown to fully explain the nature of the study and obtain consent from participants. The group leaders delivered the informed consent and showed the video to the participants prior to the start of the first group session to uphold the confidentiality of study participants. Some group members did decline to participate in the study, yet completed group measures for agency use only. Participants were notified that participation in the study was voluntary and that their choice in declining to be a part of the study would not jeopardize their group treatment at the agency. In addition to the informed consent document, all participants created a three-digit code to be used in the future for all data collection. This de-identified the collected measures and helped protect confidentiality. In addition, each group in the study received an identification number to identify the group in the research. Only the researcher and the participant were aware of the code and all data were stored in

encrypted files. All hardcopy data were kept in a locked file that was only accessible by the researcher and a research associate at the agency. The group leaders administered the questionnaires at the end of weeks 1, 5, 10, and 15. Participants were asked to place their completed questionnaires in an envelope so that the group leaders were not privy to their responses. A trained research assistant at the agency then entered all scores into an encrypted database.

Participants were given the PCL-5 prior to the start of the group treatment by the group leaders at the rape crisis center. The group leaders were responsible for administering this measure, as it is a questionnaire that is used by the agency and given to all clients who receive services at the center. The informed consent document notified participants that if they decided to participate, their PCL-5 scores would be assessed by the Principal Investigator for the purposes of the study. For participants who chose to be a part of the study, the group leaders provided the Demographic Information Form and the PCL-5, prior to the start of the first group. The GCQ, CoSS, and the Bond Scale were administered at the conclusion of the first group meeting. These measures were administered by the group leaders following the group session, as many of the questions are specific to the events of the group session. Participants continued to complete the GCQ, CoSS, and the Bond Scale every five weeks during treatment, after sessions 1, 5, 10, and 15. This helped provide information about the events in the group throughout treatment, and also gave data about the trajectory of the group as it progressed through the different phases of the outlined treatment. The PCL-5 was re-administered at the second to last group session (week 15 and week 23) by the therapists at the agency as a

part of their routine procedure with clients (measures are given one week prior to the termination session to ensure completion of the instruments). All measures were given at the agency following group sessions. If a participant decided to not complete one of the measures, she was excused from the task and ensured that there were no negative consequences for choosing to decline the measures and she could continue in the study if she would like to do so in the future. Participants who missed group sessions were also notified that there would be no negative consequences for their absence at the time point measurement, and the proposed method of analysis (growth curve analysis) can still be estimated in the presence of partially missed data (Curran, Obeidat, & Losardo, 2010). Throughout the course of treatment, three participants out of the 26 who completed missed one group session and thus did not have data for that time point. All participants (with the exception of the one woman who left due to health concerns) completed the post-treatment PCL measure. Missing data will be discussed in the following chapter.

Summary

This chapter provided an overview of the research design, sample, measurements, procedures and statistical analyses that will be used in this proposed study. The study's repeated measure design demonstrated the advantage of collecting longitudinal data about group therapy currently occurring in the field and examining the relational aspects of group therapy with sexual trauma survivors. This study focused on examining trajectories of change over time for survivors perceived relational development in group treatment, PTSD symptoms, and sense of shame. This allowed for an investigation of

what is occurring individually for members in the group and also gives a broad overview of the impact of group treatment in general.

Chapter 4 discusses the data analyses and results of the analyses. Preliminary analyses are reviewed, including analyses of missing data, power analyses, and normality assumptions. A description of the main analyses addressing the study hypotheses are provided, along with outlines of the statistical procedures used for each hypothesis.

Chapter Four: Results

This chapter presents an overview of the data analyses and results from the hypotheses. Preliminary data analyses are reviewed, including missing data, power, normality assumptions, and group differences. The main analyses including growth curves in hierarchical linear modeling, t-tests, and measuring effect sizes (Cohen's d). Supplemental analyses are provided when appropriate. Statistical analyses for this study were conducted with the Statistical Package for the Social Sciences (SPSS) and Hierarchical Linear Modeling Student Version (HLM – Student Version; Raudenbush, Bryk, & Congdon, 2017). The alpha level was set at 0.05. Correlation coefficient size followed the recommendations of Cohen (1988) and was considered small if $r = .20$ to $.39$, moderate if $r = .40$ to $.69$, large if $r = .70$ to $.89$, and very large if $r = .90$ to 1.0 . Hypotheses 1 and 3 examined change over time and these analyses were addressed using a repeated measures design (Gliner, Morgan, & Leech, 2009). Each participant was administered questionnaires at four specific intervals throughout the study, allowing for the observation of change trajectories across treatment. Hypothesis 2 was examined using a pretest- posttest design and Hypothesis 4 was analyzed using a cross-section hierarchical linear model. Please refer to Table 3 for a list of hypotheses, variables, and statistical tests used for each one.

Table 3: Hypotheses, Variables, and Statistical Procedures

Hypotheses	Variables	Statistics
Hypothesis 1:		
a.) Group members' perceptions of Engagement will significantly increase across the 4 time points.	a.) Repeated measures of the Engagement subscale of the GCQ at weeks 1, 5, 10, and 15	a.) Growth curve modeling in HLM
b.) Group members' perception of Bond will significantly increase across the 4 time points.	b.) Repeated measures of the Bond scale of the WAI-S at weeks 1, 5, 10, and 15	b.) Growth curve modeling in HLM
c.) There will be a significant relationship between time spent in group and level of Bond that will lead to an increase in Engagement across the 4 time points.	c.) Repeated measures of the Engagement subscale of the GCQ and Bond scale of the WAI-S at weeks 1, 5, 10, and 15	c.) Growth curve modeling in HLM
Hypothesis 2:		
a.) There will be a significant decrease in group members' Overall PTSD Symptoms from Time 1 to Time 4.	a.) Time 1 and Time 4 of the Overall PTSD Symptom score from the PCL-5	a.) Student t-test; Cohen's <i>d</i>
b.) There will be a significant decrease in group members' Intrusion symptoms from Time 1 to Time 4.	b.) Time 1 and Time 4 of the Intrusion subscale from the PCL-5	b.) Student t-test; Cohen's <i>d</i>
c.) There will be a significant decrease in group members' Avoidance symptoms from Time 1 to Time 4.	c.) Time 1 and Time 4 of the Avoidance subscale score from the PCL-5	c.) Student t-test; Cohen's <i>d</i>
d.) There will be a significant decrease in group members' Negativity symptoms from Time 1 to Time 4.	d.) Time 1 and Time 4 of the Negativity subscale score from the PCL-5	d.) Student t-test; Cohen's <i>d</i>

<p>e.) There will be a significant decrease in group members' Hyperarousal symptoms from Time 1 to Time 4.</p> <p>Hypothesis 3:</p> <p>a.) Group members' perception of different Shame reactions will significantly decrease across Time 1 to Time 4.</p> <p>b.) There will be a significant interaction between Engagement and Shame across Time 1 to Time 4.</p> <p>Hypothesis 4:</p> <p>a.) Changes in Engagement and Bond scores will be significant predictors of post-treatment outcome (Overall PTSD scores).</p>	<p>e.) Time 1 and Time 4 of the Hyper-Arousal subscale score from the PCL-5</p> <p>a.) Repeated measures of the CoSS at weeks 1, 5, 10, and 15</p> <p>b.) Repeated measures of the Engagement subscale and CoSS subscales for weeks 1, 5, 10, and 15.</p> <p>a.) Time 1 and Time 4 change score of the Bond subscale of the WAI-S and Time 1 and Time 4 change scores of the Engagement subscale of the GCQ</p> <p>b.) Time 1 and Time 4 of the PCL-5</p>	<p>e.) Student t-test; Cohen's <i>d</i></p> <p>a.) Growth curve modeling in HLM</p> <p>b.) Growth curve modeling in HLM</p> <p>a.) Cross-sectional modeling in HLM</p>
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Preliminary Analyses

Missing Data

Twenty-seven women entered the study and completed informed consent, initial paperwork, and treatment measures. Over the course of the study, one woman left treatment after the second-time measurement due to medical problems. For the purpose of this study, 26 participants were included in the data analyses, as they completed at least 3 out of 4 of the required measurement points, and both the first and final outcome data points. The 27th participant was compared with the rest of the sample for the first

two time points of measurement to determine whether her data were similar or dissimilar to the rest of the sample. No statistically different scores were found between this participant and the other group members on baseline scores, and her scores on all variables were within one standard deviation of the other participants. This data supported the statement that she left treatment due to medical purposes, as there was no evidence to suggest the presence of any significant differences between her and the other group members that could have influenced her departure from treatment.

Prior to conducting statistical analyses, the measures for the twenty-six participants were examined for missing data. Missing data were expected due to the longitudinal nature of the study, and is common in naturalistic studies (Spratt et al., 2010). Little's Missing at Random (MCAR; Little, 1988) test was performed in SPSS and verified that data were in fact missing at random for the 26 participants that completed treatment, $\chi^2(157, N = 26) = 112.647, p = .997$. When data are missing completely at random, a single imputation using the expectation maximization algorithm provides unbiased parameter estimates and improves the statistical power of analyses (Scheffer, 2002). As displayed in Table 4, the 26 participants only missed 5 of the total 104 sessions, and no participant missed more than one session. There were no additional missing data on any measures except for the measures not completed when a member missed a session (See Table 4).

Table 4: Missing Data by Participant

Participant	Time 1	Time 2	Time 3	Time 4
1	Completed	Completed	Completed	Completed
2	Completed	Completed	Completed	Completed
3	Completed	Completed	Completed	Completed
4	Completed	Completed	Missing	Completed
5	Completed	Missing	Completed	Completed
6	Completed	Completed	Missing	Completed
7	Completed	Missing	Completed	Completed
8	Completed	Completed	Completed	Completed
9	Completed	Completed	Completed	Completed
10	Completed	Completed	Completed	Completed
11	Completed	Completed	Completed	Completed
12	Completed	Completed	Completed	Completed
13	Completed	Completed	Completed	Completed
14	Completed	Completed	Completed	Completed
15	Completed	Completed	Missing	Completed
16	Completed	Completed	Completed	Completed
17	Completed	Completed	Completed	Completed
18	Completed	Completed	Completed	Completed
19	Completed	Completed	Completed	Completed
20	Completed	Completed	Completed	Completed
21	Completed	Completed	Completed	Completed
22	Completed	Completed	Completed	Completed
23	Completed	Completed	Completed	Completed
24	Completed	Completed	Completed	Completed
25	Completed	Completed	Completed	Completed
26	Completed	Completed	Completed	Completed
27	Completed	Completed	Missing	Missing

Missing data were imputed using the Missing Values Analysis within SPSS. Missing data on the Bond Subscale, GCQ, and CoSS resulted in a total of 4.8% of the data missing. Due to few instances of missing data, all of the 26 participants were retained in all analyses.

Between Group Differences

When examining group data, it is necessary to take into account the potential for differences between groups. In ordinary least squares analyses (OLS) there is an assumption of independence of observations, wherein it is noted that cases within the data should be independent of one another (Robson & Pevalin, 2016). However, if people are clustered within groups they often have similar characteristics based on group membership, thus the assumption of independence is violated and incorrect estimates of the standard error are achieved, creating a false positive (Robson & Pevalin, 2016).

Treatment groups in this study varied in length according to trauma type, with the groups focused on adult sexual assault (ASA) lasting for 16 weeks and groups focused on adults molested as children (AMC) lasting for 24 weeks. The agency conducts these groups with different treatment lengths based on their philosophy that childhood sexual trauma results in a more complex psychological presentation that requires a longer course of treatment. Both treatment lengths follow the same structure of group protocol, with phases of group including safety, exposure, and integration of the trauma narrative. As time points were measured at weeks 1, 5, 10, and 15 of treatment in this study, it was necessary to take into account the differences of where the groups were in treatment protocols at these points of measurement. For example, while the 16-week groups were concluding treatment at week 16, the 24-week groups were two-thirds through their course of treatment and within the exposure phase of the protocol.

To examine if between group differences existed within the collected data prior to the start of treatment, one-way ANOVAs were performed among the five treatment

groups (ASA1, ASA2, ASA3, AMC1, AMC2). Time 1 outcome variables were used as dependent variables to examine baseline correlational data (PCL-5, Engagement Scale of the GCQ, the Bond Subscale, and the subscales of the CoSS including AV, AS, WD, AO) prior to beginning group psychotherapy treatment. Each measure was tested for the assumption of homogeneity of variance and all measures met this assumption. Each variable of interest was examined at Time 1 to determine if any group differed significantly on the variables. There was no statistical significance found at the $p < .05$ level for the PCL, $F(4, 22) = 1.560, p = .220$, the Engagement Scale of the GCQ, $F(4, 22) = .331, p = .854$, the Bond Subscale, $F(4, 22) = 1.162, p = .354$, the AV Subscale of the CoSS, $F(4, 22) = .750, p = .568$, the AS Subscale of the CoSS, $F(4, 22) = .755, p = .565$, the WD Subscale of the CoSS, $F(4, 22) = .696, p = .603$, and the AO Subscale of the CoSS, $F(4, 22) = .507, p = .731$. No significant between group differences were found, suggesting that all treatment groups were similar on all of the variables at the first-time point measurement.

The 16 and 24-week groups were also examined at post-treatment to determine any significant between group differences at the final time point measurement of PTSD scores. A one-way ANOVA was conducted on the post-treatment measure of the PCL, using the post-treatment Overall PTSD score as the dependent variable to examine correlational data between the two group lengths. It was found that there was no statistical difference between the two different treatment lengths on this measure at the end of treatment, PCL, $F(2, 24) = 0.633, p = .434$.

Although no significant differences in group length were determined in these analyses, the two length of treatment groups were controlled for at the third level of the growth curve models in HLM for Hypotheses 1 and 3. Although the small sample size (i.e., 5 groups) may result in large biases, group effects were still included in the models to account for the variance between groups. For the t-test analyses in Hypothesis 2, groups were examined with both length of treatment groups combined and separately according to their trauma type and treatment duration (ASA or AMC).

Power Analysis

An a priori power analysis was conducted using G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007). A repeated measures ANOVA, within factors test was performed, as this best represented the repeated measure design of this study. This analysis was performed with 1 group, an effect size of 0.40 (effect sizes in the literature range from moderate to large for measures related to PTSD symptom reduction), an alpha coefficient of 0.05, 4 time points of measurement, and a .5 correlation among the repeated measures. This analysis demonstrated that sample size of at least 15 participants was recommended to decrease the chance of making a Type 2 error.

Main Analyses

This section reviews the primary analyses used to test the five hypotheses of this study. The analyses were performed in Hierarchical Linear Modeling 7 (HLM-7) and Statistical Package for the Social Sciences (SPSS). HLM was used as this study design has three levels of observation. Level-1 consists of the time points of the study (Time 1 through Time 4), Level-2 is composed of individual participants in the study, and Level-3

represents the different groups in the study. The time points of Level-1 are then nested within the individuals of Level-2, and share the impact of the Level-2 variables (McCoach, 2010). The individuals of Level-2 are nested within groups that compose Level-3. Using this type of model, it is possible to estimate a mean growth slope, determine the reliability of status and change, estimate the relationship between initial status and rate of change, provide general descriptive statistics, and model relations of person-level variables to status and growth rate (McCoach, 2010).

Hypothesis One

Hypothesis 1a. Hypothesis 1a stated that it was expected that group members would show an increase in their perception of engagement with other members, as measured by the Engagement Subscale of the GCQ, across the four time points of measurement (Time 1 to Time 4). Growth curve modeling was conducted in HLM-Student to examine the repeated measures and capture the average growth parameters in Engagement for all of the individuals in the study. Frankfurt et al. (2016) recommends the use of growth curve models to observe group average change trajectories in addition to individual trajectories. For this analysis, time was used as a Level-1 predictor, Pre-PTSD scores were controlled for as a Level-2 predictor, and length of group treatment was used as a Level-3 predictor. This approach explored the impact of each predictor on an individual's engagement within the group. Further, individual variability in the rate of change in engagement was assessed.

Both linear and quadratic unconditional models were built with no Level-2 predictors, and with only time as a Level-1 predictor (time as a predictor is a necessity for

growth models in HLM). To find the model of best fit, the unconditional linear growth model (Deviance = 238.86, parameters = 5) and the unconditional quadratic growth model (Deviance = 228.41, parameters = 6) were compared and it was determined that the X^2 statistic was significant ($p > .002$) with $X^2(1) = 10.45$. This indicated that the quadratic model was the better fit to examine the growth of Engagement over time, as the addition of the quadratic model's contribution to the explanation of variation in the outcome was significant. The Akaike's Information Criterion (AIC; Bozdogan, 1987) for the linear model was 248.86, and was 240.41 for the quadratic model. The difference between the two models further suggested that the quadratic model was the better fit for this hypothesis.

Examining the quadratic model provided the following information about the growth of participants' Engagement scores across Time 1 to Time 4. Both linear and quadratic components were included in the modeled. The intercept at Level-1 for Time was significant ($p < .001$), indicating that members varied significantly in their average Engagement scores at the start of group therapy and highlighting the individual differences in members at the onset of treatment. Possible Engagement scores on the GCQ ranged from 1 to 7. A mean intercept of 4.15 indicated that an average Engagement score was approximately 4.15 points at the start of treatment. The slope was significant ($p < .009$), showing a significant difference in growth rate for group members throughout treatment and demonstrating each group member's different trajectory in growth and the variance in scores across the time points. A coefficient of 1.17, demonstrated that each member gained approximately 1.17 points in their Engagement score for every time

point. The random linear slope did not vary significantly across individuals ($r_1 = 0.022$, $X^2 = 18.95$, $p = 0.331$), suggesting a similar rate of linear growth in Engagement scores among participants. The acceleration of growth was also significant ($p = 0.001$), indicating that change slowed over the treatment with a coefficient of -0.22 points in Engagement over time.

Pre-PTSD scores were not found to be significant in the prediction of initial Engagement scores ($p = 0.926$), nor were they significant in predicting the growth of Engagement over time ($p = 0.318$). The two different treatment lengths also were not significant in the prediction of initial Engagement scores ($p = 0.335$), nor growth in these scores over the course of treatment ($p = 0.708$). See Table 5 for a summary of these results.

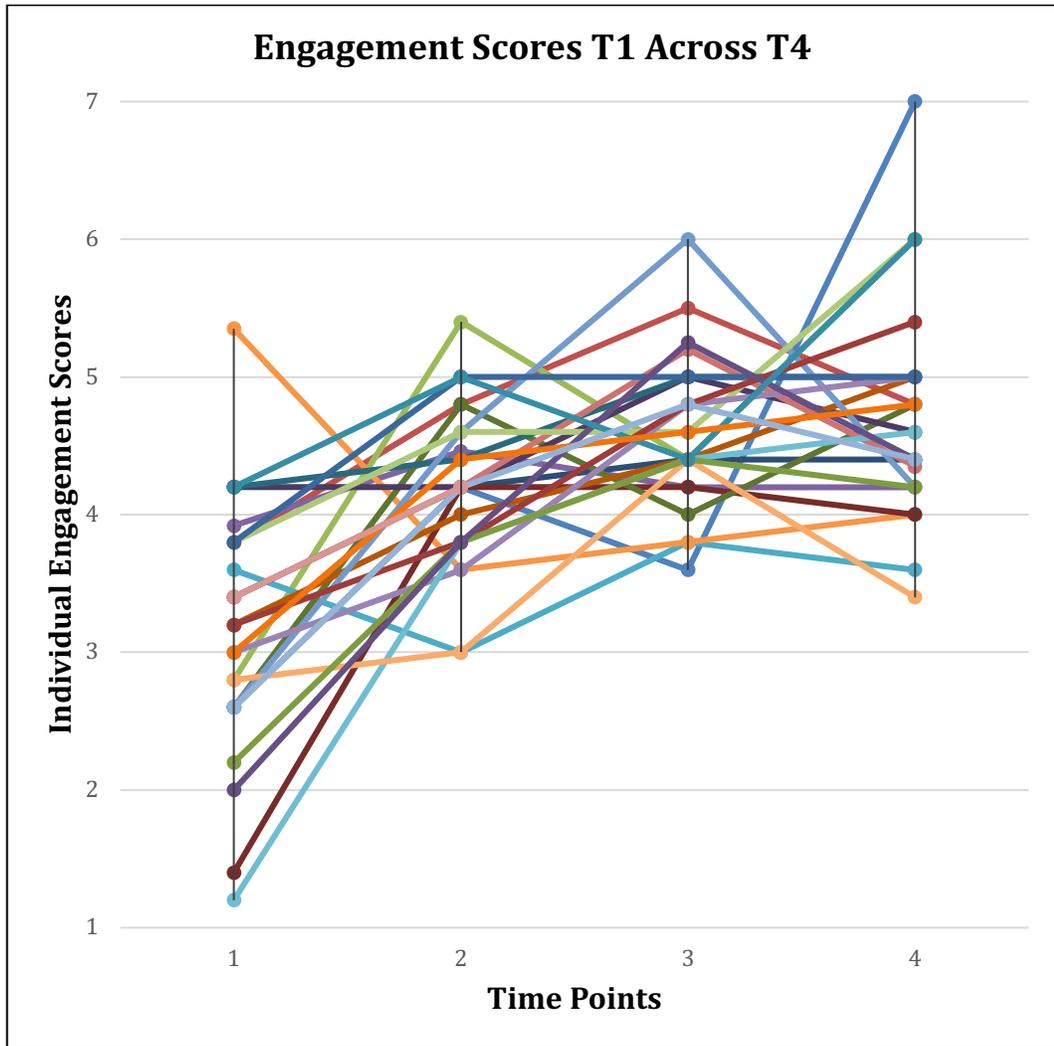
Table 5: Fixed Effects for Engagement Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0 INTRCPT2, β_{00} INTRCPT3, γ_{000} LENGTH, γ_{001}	4.155742 -0.194952	0.080914 0.170235	51.360 -1.145	3 3	<0.001 0.335
For PRE_PTSD, β_{01} INTRCPT3, γ_{010} LENGTH, γ_{011}	-0.000506 -0.009770	0.005037 0.010668	-0.100 -0.916	3 3	0.926 0.427
For TIME slope, π_1 INTRCPT2, β_{10} INTRCPT3, γ_{100} LENGTH, γ_{101}	1.174428 -0.054503	0.191866 0.132412	6.121 -0.412	3 3	0.009 0.708
For PRE_PTSD, β_{11} INTRCPT3, γ_{110} LENGTH, γ_{111}	-0.004681 0.008831	0.003919 0.008299	-1.194 1.064	3 3	0.318 0.365
For QUAD slope, π_2 INTRCPT2, β_{20} INTRCPT3, γ_{110}	-0.217064	0.060556	-3.585	31	0.001

Using HLM analyses, it is possible to partition the total variability in outcome into three different components. Intra-class correlations (ICC) were calculated for each of the three levels of the hierarchical growth curve model to estimate the proportion of variance in outcome at each level. The ICC is a statistic that ranges from 0 to 1.0 and refers to the degree of correlation among observations within a cluster. An ICC of 76.35% at Level-1 indicated that approximately 76% of the total variance in Engagement was explained as occurring between observations from the same cluster (i.e., repeated measures for individual group members). This percentage also demonstrates the anticipated correlation between two observations that are randomly chosen from the same cluster (i.e., the correlation of two-time point measurements from the same individual). An ICC of 23.63% at Level-2 demonstrated that 24% of the total variance in Engagement was explained as occurring between individual participants. At Level-3, there was no variability in outcome between groups with an ICC of 0%, meaning that no variability in outcome was attributed to differences between the five treatment groups.

The null hypothesis was rejected as the intercept and slope were both significantly different from zero. The data shows that there was a significant growth in Engagement Scores over time in treatment. There are no clinical cutoffs to indicate how much change in Engagement scores is of benefit to the sexual trauma survivor, yet in this study, mean Engagement scores increased 1.17 points at each time point of the study, demonstrating significant growth during treatment.

Figure 1: Graph of Engagement Scale Across T1 to T4



Supplemental analyses were conducted to examine group members Engagement levels across treatment. Time 1 of Engagement scores were used to assess initial levels of Engagement within the group and scores were collapsed into two categories to examine differences within participant levels of Engagement. A median score of 3.2 was determined as the cutoff, and this was used as the category split. Thus, scores below 3.2

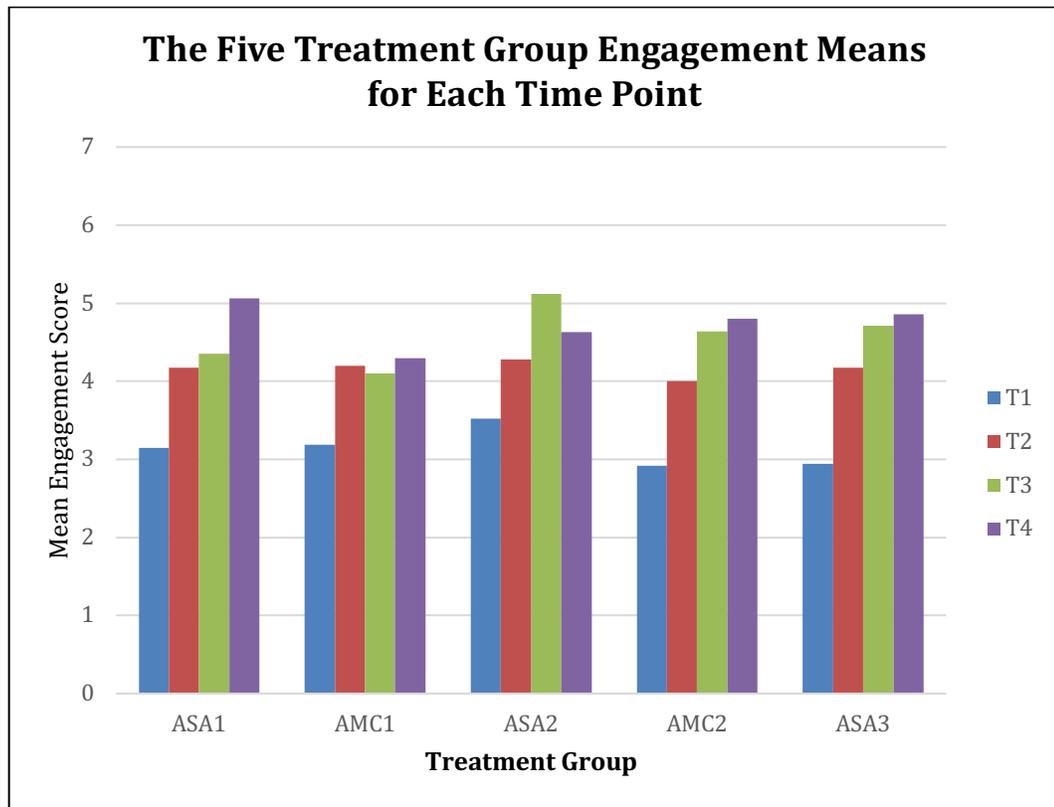
were considered low and above 3.3 were considered high. Please see Table 6 for a summary of these frequencies by each time point.

Table 6: Descriptive Statistics for Participants' Initial Level of Engagement Scores

Time Point and Engagement Level	N	Mean	S.D.
Time 1			
Low	13	2.38	0.47
High	14	3.82	0.54
Time 2			
Low	2	3.00	0.00
High	25	4.25	0.51
Time 3			
Low	0		
High	26	4.60	0.54
Time 4			
Low	0		
High	26	4.78	0.80

Group Engagement means were graphed to demonstrate any group effects that might be present in the patterns of Engagement according to the different treatment groups. All groups appeared to follow a similar growth pattern in mean Engagement scores. Please see Figure 2.

Figure 2: The Five Treatment Group Engagement Means for Each Time Point



Hypothesis 1b. It was expected that group members' perception of bond with the group leader, as measured by the Bond scale of the WAI-S, would increase across Time 1 to Time 4. Growth curve modeling was performed in HLM to examine the repeated measures. For this analysis, time was used as a Level-1 predictor, with the Bond Subscale as the outcome variable. Pre-PTSD scores were controlled for at Level-2, and group length was controlled for as a Level-3 predictor. To find the model of best fit, a quadratic model was built in addition to the unconditional linear model with no Level-2 predictors, and with only time as a Level-1 predictor. The unconditional linear growth model (Deviance = 242.6484, parameters = 9) and the unconditional quadratic growth model (Deviance = 241.7866, parameters = 10) were compared and it was found that the

X^2 statistic was not significant $X^2(1) = 0.86299, p > .500$. The Akaike's Information Criterion (AIC) for the linear model was 260.65, and 261.79 for the quadratic model. This result indicates that the linear model was the better fit to examine the growth of Bond Scores over time.

The intercept at Level-1 for Time was significant ($p < .001$), indicating that members varied significantly in their average Bond scores at the start of group therapy. Bond is measured on a 1 to 7-point scale. A mean coefficient of 6.198 indicated that this was the average Bond score for a group member at the start of treatment. The slope coefficient was not significant ($p = 0.076$), suggesting that group members did not significantly increase their Bond scores over time. The random linear slope did not vary significantly across individuals ($r_1 = 0.00027, X^2 = 11.124, p > 0.500$), suggesting a similar rate of linear growth in Bond scores among participants.

Pre-PTSD scores were not found to be significant in the prediction of initial Bond scores ($p = 0.428$), nor were they significant in predicting the growth of Bond over time ($p = 0.625$). The different treatment lengths were also not significant in the prediction of initial Bond scores ($p = 0.331$), nor in the growth of these scores over treatment ($p = 0.673$).

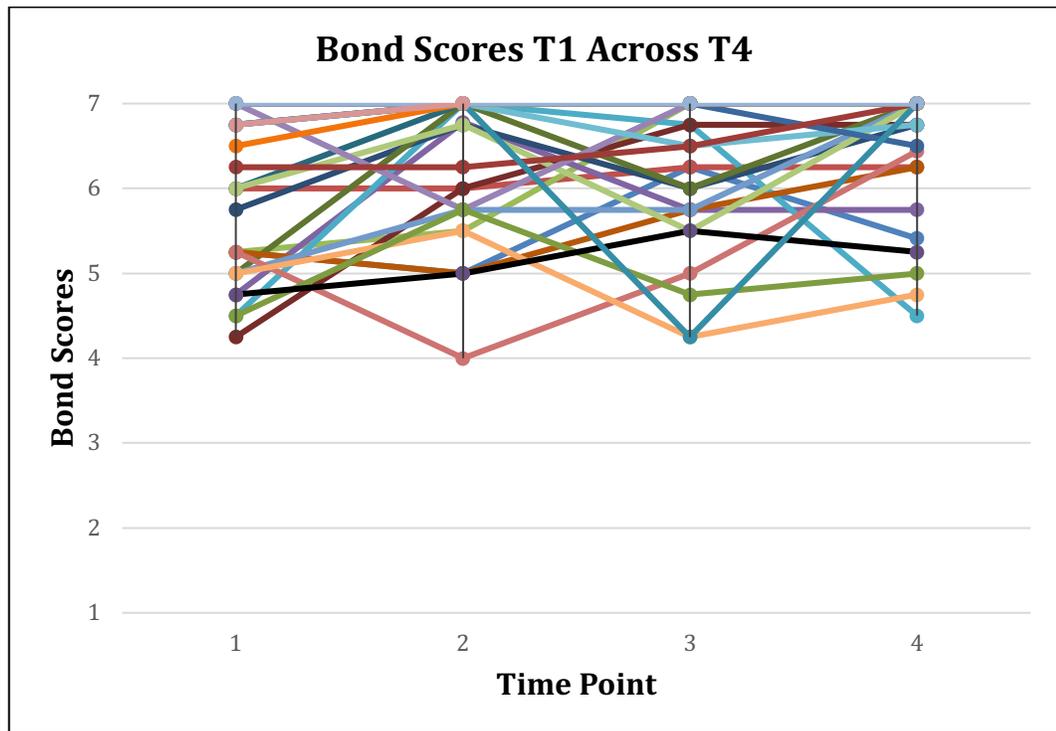
Intra-class correlations were calculated for each of the three levels to estimate the proportion of variance in outcome at each level. An ICC of 56.42% at Level-1 indicated that approximately 56% of the total variance in Bond was explained as occurring between observations from the same cluster (i.e., repeated measures for individual group members). An ICC of 43.56% at Level-2 demonstrated that

approximately 44% of the total variance in Bond scores occurred between individual participants. There was no variability in outcome between groups with an ICC of 0% at Level-3. Table 7 displays a summary of the Bond Subscale results.

Table 7: Fixed Effects for Bond Scores Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0 INTRCPT2, β_{00} INTRCPT3, γ_{000} LENGTH, γ_{001}	6.198946 0.287347	0.118058 0.248172	52.507 1.158	3 3	<0.001 0.331
For PRE_PTSD, β_{01} INTRCPT3, γ_{010} LENGTH, γ_{011}	-0.007229 -0.024587	0.007910 0.016668	-0.914 -1.475	3 3	0.428 0.237
For TIME slope, π_1 INTRCPT2, β_{10} INTRCPT3, γ_{100} LENGTH, γ_{101}	0.173690 -0.063321	0.065333 0.135927	2.659 -0.466	3 3	0.076 0.673
For PRE_PTSD, β_{11} INTRCPT3, γ_{110} LENGTH, γ_{111}	0.001959 0.012162	0.003608 0.007592	0.543 1.602	3 3	0.625 0.207

Figure 3: Graph of Bond Scores Across T1 to T4



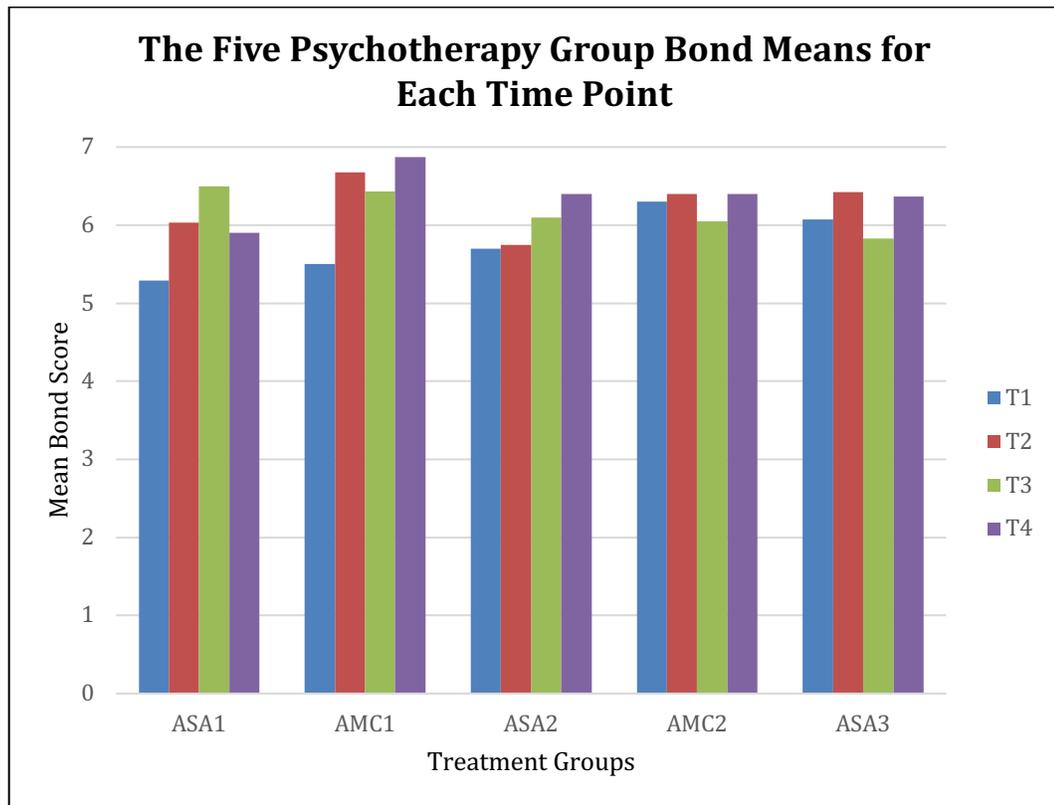
Supplemental analyses were conducted to further examine changes in group members perceptions of Bond over the course of treatment. As Bond scores were notably high at the onset of treatment, it was decided to parse them into categories labeled ‘high’ and ‘average’ as opposed to ‘high’ and ‘low.’ Bond scores were collapsed into two categories with a median score of 6.0 used as the category split. Thus, scores below 6 were considered below average and above 6.1 were considered high. Please see Table 6 for a summary of these frequencies by each time point.

Table 8: Descriptive Statistics for Participants' Initial Level of Bond Scores

Time Point and Bond Level	N	Mean	S.D.
Time 1			
Average	13	4.96	0.406
High	14	6.55	0.418
Time 2			
Average	9	5.25	0.573
High	18	6.75	0.393
Time 3			
Average	9	5.16	0.625
High	17	6.71	0.377
Time 4			
Average	6	5.11	0.560
High	20	6.66	0.454

Group Bond means were also graphed to explore any group effects that might be present in the trend of change in Bond scores according to the two different treatment groups. Please see Figure 4.

Figure 4: The Five Psychotherapy Group Bond Means for Each Time Point



Results show that there was not a significant growth in participant perceptions of Bond across the four time points. The null hypothesis was not rejected. This indicated that time spent in the group did not significantly impact the growth of participants perceptions of their Bond with the group leader.

Hypothesis 1c. It was postulated that there would be a significant relationship between Engagement and Bond scores over the four time points, suggesting that there would be an interaction between time spent in group and level of Bond with the group leader, resulting in an increase in Engagement across time. To examine the impact of Bond scores on Engagement scores and observe any interaction, Bond was added to Level-1 as a time-varying covariate with Engagement as the outcome variable. Bond was

re-centered prior to being added to the model, and an interaction term was created between Bond and Time to examine any covariance between Bond and Engagement. Pre-PTSD scores were controlled for as a Level-2 predictor, and group length was a Level-3 predictor. The growth rate did not differ significantly with the inclusion of Bond ($p = .089$). Bond was also not shown to significantly co-vary with Engagement ($p = 0.159$), meaning that Engagement and Bond did not change at the same rate over time.

The random linear slope was not significant across individuals ($r_1 = .0036$, $X^2 = 16.756$, $p > .500$), suggesting participants did not vary in their growth of Engagement across time after Bond was added to the model. These results indicated that perceptions of Bond with the group leader did not have a significant relationship to the increase in group cohesion (Engagement) across time spent in treatment. Refer to Table 9 for a summary of these results.

Table 9: Fixed Effects for Bond Scores as Time-Varying Covariate Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0 INTRCPT2, β_{00} INTRCPT3, γ_{000} LENGTH, γ_{001}	4.117534 -0.240934	0.095688 0.214596	43.031 -1.123	3 3	<0.001 0.343
For PRE_PTSD, β_{01} INTRCPT3, γ_{010} LENGTH, γ_{011}	0.004441 -0.000394	0.005783 0.012930	0.768 -0.030	3 3	0.498 0.978
For TIME slope, π_1 INTRCPT2, β_{10} INTRCPT3, γ_{100} LENGTH, γ_{101}	0.460288 -0.109142	0.085998 0.182426	5.352 -0.598	3 3	0.013 0.592
For PRE_PTSD, β_{11} INTRCPT3, γ_{110} LENGTH, γ_{111}	-0.010524 0.006643	0.004600 0.009718	-2.288 0.684	3 3	0.106 0.543
For BOND slope, π_2 INTRCPT2, β_{20} INTRCPT3, γ_{200} LENGTH, γ_{201}	0.391329 0.420737	0.157462 0.291747	2.485 1.442	3 3	0.089 0.245
For PRE_PTSD, β_{21} INTRCPT3, γ_{210} LENGTH, γ_{211}	0.013304 -0.002553	0.009541 0.017133	1.394 -0.149	23 23	0.177 0.883
For INT slope, π_3 INTRCPT2, β_{30} INTRCPT3, γ_{300}	-.104621	0.071843	-1.456	23	0.159
For PRE_PTSD, β_{31} INTRCPT3, γ_{310}	-0.001253	0.004886	-0.256	23	0.800

Hypothesis Two

Hypotheses 2a – 2e. The PCL-5 was given at pre- and post-treatment, week 15 for the 16-week treatment group and week 23 for the 24-week treatment group. It was hypothesized that there would be a significant decrease in overall PTSD symptoms from Time 1 to Time 4. Additional hypotheses proposed that there would be a decrease in symptoms on each of the four PCL-5 subscales from pre-to post-treatment (given at week

15 and week 23). All assumptions of normality and homogeneity of variance were examined and found to be tenable, with no outliers in the distribution. One-tailed student t-tests were conducted in SPSS to determine the difference in PTSD scores from pre- to post-test. A critical value of -1.708 was obtained from a student t-table and used for hypothesis testing. Table 10 shows the t-test results for all the participants combined.

Table 10: PCL-5 Scores from Pre- to Post-Treatment for ASA and AMC Groups Combined

Scale of PCL	Pre N	Pre-Mean/SD	Post N	Post Mean/SD	Mean Diff.	t	df	Sig. (1-tailed)
Overall Pre-PCL – Overall Post-PCL	26	M = 37.12 SD = 16.62	26	M = 25.83 SD = 14.18	-11.29	-4.06	25	.000
Cluster B Pre – Cluster B Post	26	M = 9.19 SD = 4.71	26	M = 6.24 SD = 4.51	-2.95	-3.33	25	.001
Cluster C Pre – Cluster C Post	26	M = 5.15 SD = 2.14	26	M = 3.21 SD = 2.38	-1.94	-4.14	25	.000
Cluster D Pre – Cluster D Post	26	M = 13.11 SD = 6.36	26	M = 8.66 SD = 5.49	-4.45	-4.13	25	.000
Cluster E Pre – Cluster E Post	26	M = 9.65 SD = 5.89	26	M = 7.70 SD = 4.18	-1.95	-2.37	25	.013

There were statistically significant decreases in Overall PCL symptom scores ($M = 25.83$, $SD = 14.18$, Mean Difference = -11.29), Cluster B symptoms scores ($M = 6.24$, $SD = 4.51$, Mean Difference = -2.95), Cluster C symptom scores ($M = 3.21$, $SD = 2.38$,

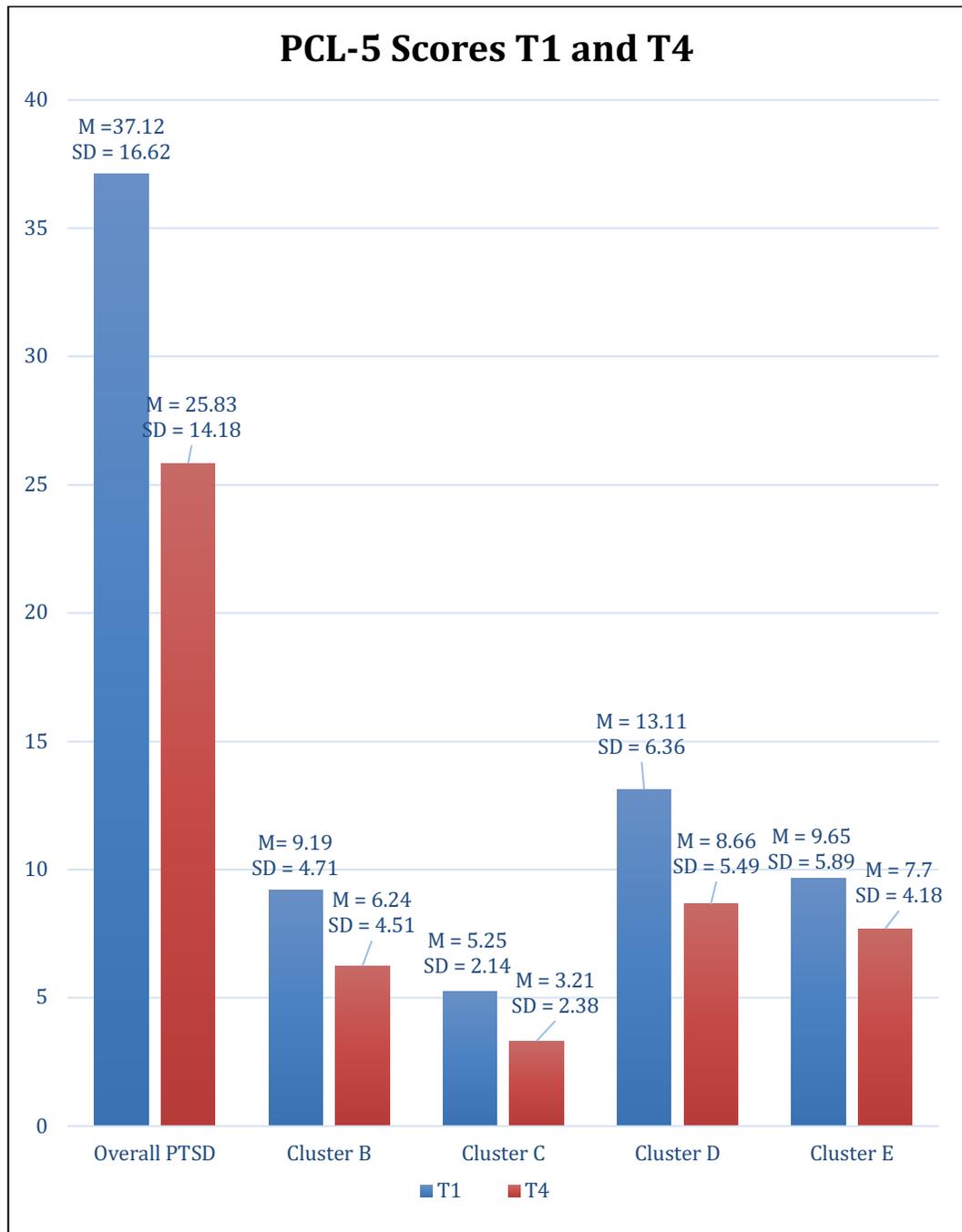
Mean Difference = -1.94), Cluster D symptom scores ($M = 8.66$, $SD = -5.49$, Mean Difference = -4.45), and Cluster E symptom scores ($M = 7.70$, $SD = 4.18$, Mean Difference = -1.95).

The PCL-5 suggests a clinical cutoff score of 33 (Bovin et al., 2015). At the start of treatment 17 participants were above the clinical cutoff score, suggesting that they met full criteria for a PTSD diagnosis. Nine participants were below the clinical cutoff score, indicating that they were subthreshold for a PTSD diagnosis. At the end of treatment, all participants showed decreases in their PTSD symptom scores. Seventeen participants were below the clinical cutoff score of 33 post-treatment. Although 9 participants remained above the clinical cutoff of 33, each demonstrated decreases from their pre-treatment scores.

Cohen's d effect sizes were also calculated for all PCL scores to demonstrate the magnitude of the difference in scores. Cohen's d was calculated by dividing the mean difference between pre- and post-test groups by the standard deviation. Overall PCL scores ($d = .73$), Cluster C (Avoidance; $d = .86$), and Cluster D (Negative Alterations in Cognition and Mood; $d = .75$) all showed large effect sizes. Cluster B (Intrusion) showed a moderate effect size ($d = .64$). Cluster E (Hyperarousal) was shown to have a small effect size ($d = .38$).

These results demonstrate significant decreases on all subscales of the PCL and the null hypothesis was rejected. Figure 5 illustrates the difference in mean scores of the PCL-5 subscales at T1 and T4 for all five treatment groups combined. The different treatment groups (ASA and AMC) were examined separately to ascertain PTSD symptomatology according to trauma type. A summary of these findings is located in Table 11.

Figure 5: PCL-5 Scores at T1 and T4 for AMC and ASA Groups Combined



*Clinical cutoff of 33 for Overall PTSD scores

**Although PCL scores range from 0 – 80, no mean score was above 40 and this chart was created to reflect present scores in the study

***Cluster B (Intrusion), Cluster C (Avoidance), Cluster D (Negative Alterations in Cognition and Mood), Cluster E (Hyperarousal)

Table 11: PCL-5 Scores from Pre- to Post-Treatment for ASA and AMC Groups Separated

Scale of PCL	ASA Pre-Mean SD	ASA Post-Mean SD	Mean Diff.	<i>t</i>	Sig. (1-tail)	AMC Pre-Mean SD	AMC Post-Mean SD	Mean Diff.	<i>t</i>	Sig. (1-tail)
Overall PTSD	M = 35.47 SD = 17.02	M = 24.20 SD = 14.71	-11.27	-3.16	.003	M = 40.22 SD = 16.35	M = 28.89 SD = 13.40	-11.33	-2.53	.018
Cluster B	M = 8.88 SD = 4.69	M = 5.55 SD = 4.36	-3.32	-3.15	.003	M = 9.77 SD = 4.97	M = 7.56 SD = 4.74	-2.22	-1.40	.099
Cluster C	M = 5.41 SD = 2.18	M = 3.39 SD = 2.55	-2.02	-3.28	.003	M = 4.66 SD = 2.12	M = 2.89 SD = 2.14	-1.77	-2.47	.019
Cluster D	M = 12.29 SD = 6.46	M = 8.19 SD = 5.83	-4.09	-2.90	.005	M = 14.66 SD = 6.22	M = 9.55 SD = 5.00	-5.11	-3.07	.008
Cluster E	M = 8.88 SD = 6.23	M = 7.07 SD = 4.34	-1.80	-1.71	.053	M = 11.11 SD = 5.18	M = 8.89 SD = 3.82	-2.22	-1.74	.059

*ASA (*N* = 17)

**AMC (*N* = 9)

Cohen's *d* was calculated for all subscales in both groups. The ASA group showed large effect sizes in Overall PTSD symptoms ($d = 0.71$), Cluster B ($d = 0.74$), and Cluster C ($d = 0.85$), Cluster D ($d = 0.66$) and a small effect size in Cluster E ($d = 0.34$). The AMC group showed large effect sizes in Overall PTSD symptoms ($d = 0.76$), Cluster C ($d = 0.83$), Cluster D ($d = 0.91$), and moderate effect sizes in Cluster B ($d = 0.46$) and Cluster E ($d = 0.48$).

These scores indicate that participants in the ASA groups showed lower initial PTSD scores when compared to group members in the AMC group. The ASA group demonstrated significant decreases in Overall PTSD scores, Cluster B, Cluster C, and Cluster D scores. The AMC group showed significant decreases in Overall PTSD scores, Cluster C, and Cluster D scores. Neither group showed statistically significant decreases in Cluster E scores when examined separately.

Hypothesis Three

Hypothesis 3a. It was expected that there would be a significant decrease in group member perceptions on the four different Shame Subscales from Time 1 to Time 4. Four different unconditional models were constructed, and each shame reaction was set as the outcome variable with Time as the Level-1 predictor, without any Level-2 predictors to determine model fit. Each outcome variable had a linear model and quadratic model constructed and chi-square hypothesis testing was used to determine the model of best fit. Models were then built with pre-PTSD controlled for as a Level-2 predictor, and group length as a Level-3 predictor.

For the Shame Avoidance Subscale (AV), the linear model was the better fit for the data. The X^2 statistic was not significant, $X^2(1) = .28428, p > .500$, indicating that the linear model was the best fit to examine the trajectory of Avoidance (AV) shame reactions over time. The final model included pre-PTSD as a Level-2 predictor and group length as a Level-3 predictor. In this model, it was shown that individuals had significantly different Shame Avoidance (AV) reaction scores at the start of treatment, with a mean Avoidance shame reaction score of 21.75. The slope coefficient of -0.14

indicated that a group member decreased .14 points in their Shame score for each time point, yet this was not a significant decrease in scores ($p = .735$). The random linear slope did not vary significantly across individuals ($r_1 = 0.07032$, $X^2 = 20.200$, $p = 0.264$), suggesting that participants did not show different rates in their change in scores.

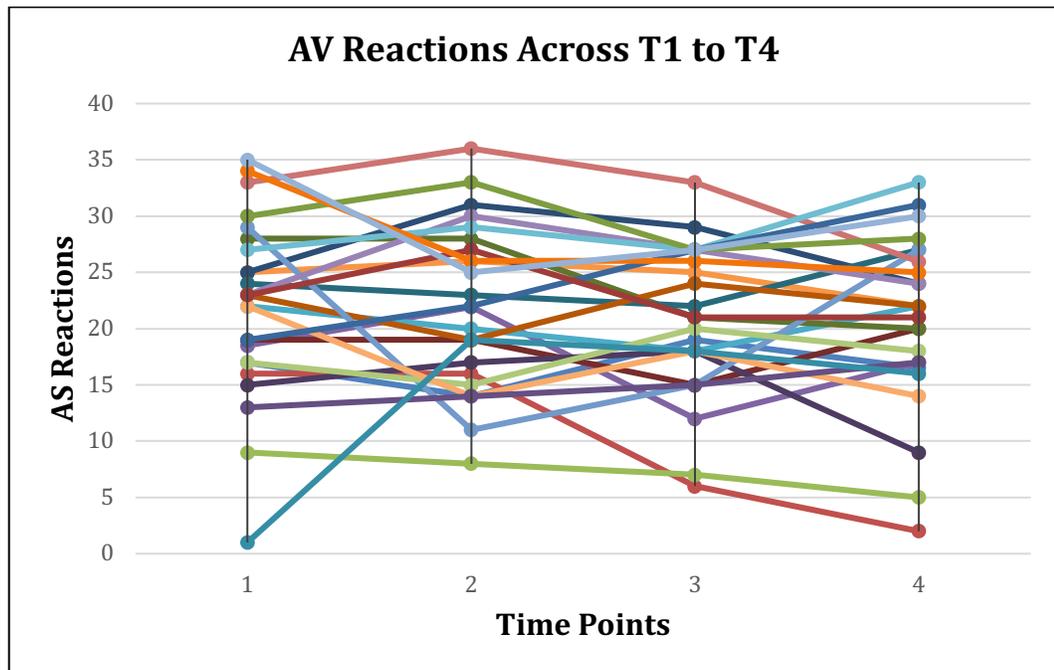
Pre-PTSD scores were not found to be significant in the prediction of initial AV scores ($p = 0.643$), nor were they significant in predicting the change of AV over time ($p = 0.265$). The different treatment lengths were also not significant in the prediction of initial AV scores ($p = 0.316$), nor in the growth of these scores over treatment ($p = 0.387$). Please refer to Table 12 for a summary of these results.

Table 12: Fixed Effects for AV Reactions Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0 INTRCPT2, β_{00} INTRCPT3, γ_{000} LENGTH, γ_{001}	21.750564 3.191050	1.266397 2.654689	17.175 1.202	3 3	<0.001 0.316
For PRE_PTSD, β_{01} INTRCPT3, γ_{010} LENGTH, γ_{011}	-0.040996 -0.186868	0.079937 0.168915	-0.513 -1.112	3 3	0.643 0.347
For TIME slope, π_1 INTRCPT2, β_{10} INTRCPT3, γ_{100} LENGTH, γ_{101}	-0.143225 0.816706	0.385977 0.809454	-0.371 1.009	3 3	0.735 0.387
For PRE_PTSD, β_{11} INTRCPT3, γ_{110} LENGTH, γ_{111}	-0.034326 -0.121492	0.025134 0.052993	-1.366 -2.293	3 3	0.265 0.106

AV results indicated that time spent in group did not result in a significant decrease in these scores. This hypothesis was not supported.

Figure 6: AV Reactions Across T1 to T4



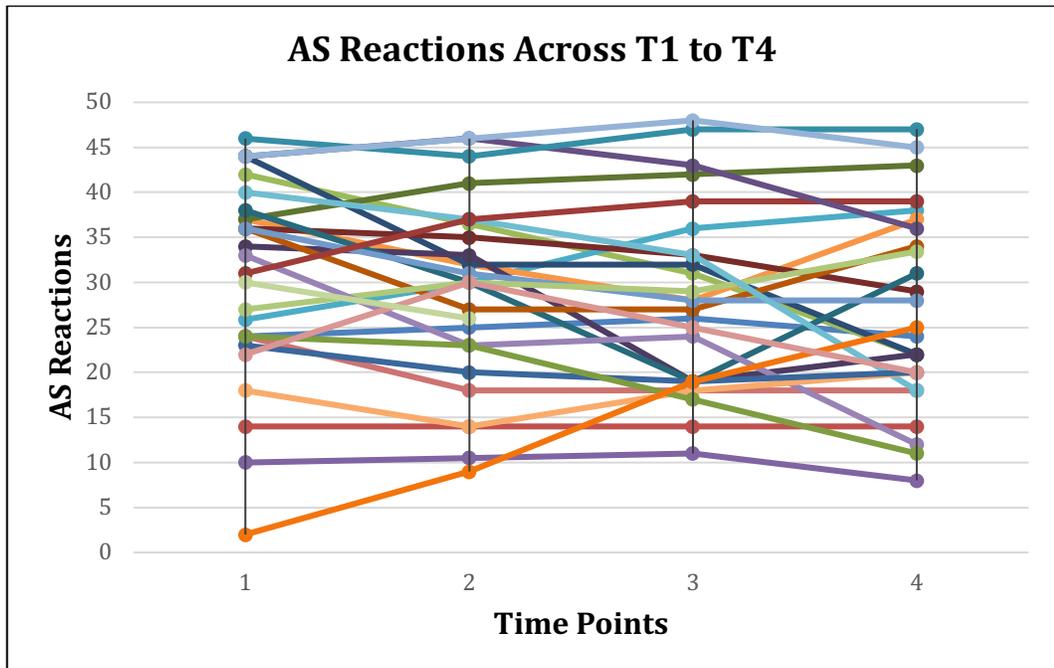
For Attacking Self (AS) shame reactions, it was determined that the X^2 statistic was not significant, $X^2(1) = 0.53855$, $p = > .500$, indicating that the linear model was the better fit to examine the trajectory of AS. The final model included pre-PTSD as a Level-2 predictor and group length as a Level-3 predictor. This model showed that individuals varied significantly in their average Attacking Self shame reaction scores at the start of treatment with a mean score of 28.58. Although participants decreased their AS reaction scores by 1.29 points at each time point, this was not a significant decrease in scores ($p = .129$). The random linear slope varied significantly across individuals ($r_1 = 3.80346$, $X^2 = 37.997$, $p = .003$), indicating that participants differed significantly in their growth in AS scores over time. Pre-PTSD scores were not found to be significant in the prediction of initial AS scores ($p = 0.208$), nor were they significant in predicting the change in AS over time ($p = 0.904$). The different treatment lengths were also not

significant in the prediction of initial AS scores ($p = 0.690$), nor the growth in these scores over treatment ($p = 0.228$; see Table 13).

Table 13: Fixed Effects for AS Reactions Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0					
INTRCPT2, β_{00}	28.582863	1.767090	16.175	3	<0.001
INTRCPT3, γ_{000}	1.627666	3.697464	0.440	3	0.690
LENGTH, γ_{001}					
For PRE_PTSD, β_{01}					
INTRCPT3, γ_{010}	0.160052	0.100036	1.600	3	0.208
LENGTH, γ_{011}	-0.389887	0.211435	-1.844	3	0.162
For TIME slope, π_1					
INTRCPT2, β_{10}					
INTRCPT3, γ_{100}	-1.289736	0.619407	-2.082	3	0.129
LENGTH, γ_{101}	-1.954516	1.295388	-1.509	3	0.228
For PRE_PTSD, β_{11}					
INTRCPT3, γ_{110}	-0.006257	0.047602	-0.131	3	0.904
LENGTH, γ_{111}	-0.145384	0.099440	-1.462	3	0.240

Figure 7: AS Reactions Across T1 to T4



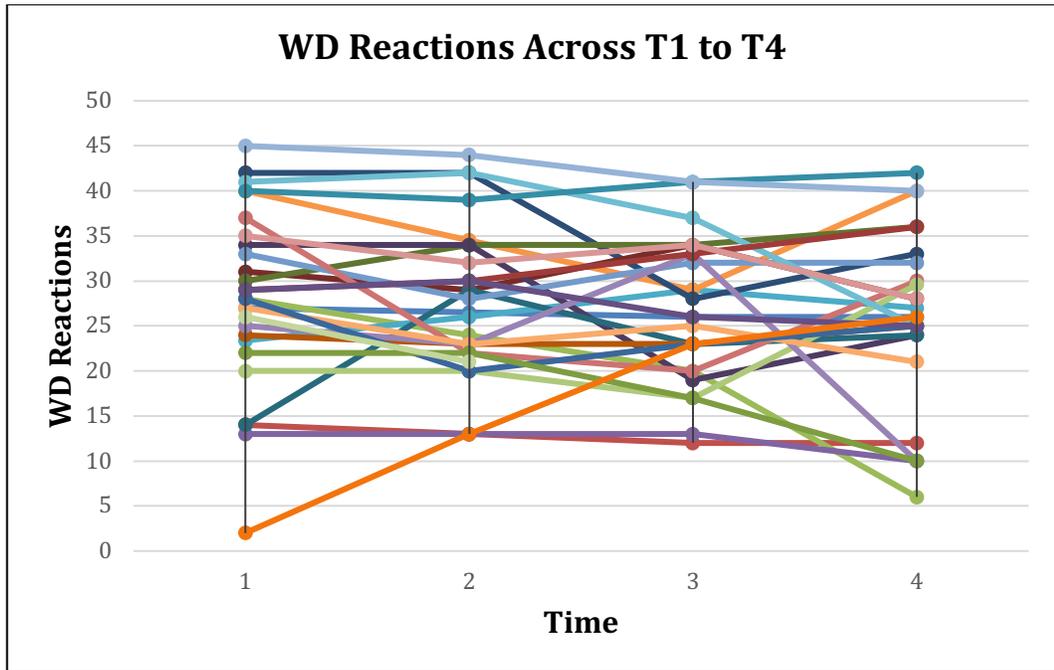
AS results indicated that time spent in group did not result in a significant decrease in these scores. This hypothesis was not supported.

The shame reaction of Withdrawal (WD) over the time points was examined by comparing unconditional and linear growth curve models. The X^2 statistic was not significant, $X^2(1) = 0.48571, p > .500$, and indicated that the linear model was the better fit. Final model design included pre-PTSD scores as a Level-2 predictor and group length as a Level-3 predictor. Model estimates showed that individuals had a mean Withdrawal score of 27.08 and varied significantly in their average scores at the start of treatment. A group member decreased 0.66 points in their Withdrawal shame reaction score for each time point, yet this decrease was not significant ($p = .332$). The random linear slope did not vary significantly across individuals ($r_1 = 0.78083, X^2 = 93.119, p = .106$), indicating that participants did not show different rates in their decrease of scores on this subscale. Pre-PTSD scores were not found to be significant in the prediction of initial WD scores ($p = 0.416$), nor were they significant in predicting the change in WD over time ($p = 0.922$). The different treatment lengths also were not significant in the prediction of initial WD scores ($p = 0.208$), nor the growth in these scores over treatment ($p = 0.270$). These results indicated that there was not a significant decrease in WD across the time points (see Table 14).

Table 14: Fixed Effects for WD Reactions Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0					
INTRCPT2, β_{00}					
INTRCPT3, γ_{000}	27.076965	1.402740	19.303	3	<0.001
LENGTH, γ_{001}	4.684106	2.931263	1.598	3	0.208
For PRE_PTSD, β_{01}					
INTRCPT3, γ_{010}	0.078323	0.083150	0.942	3	0.416
LENGTH, γ_{011}	-0.252829	0.175204	-1.443	3	0.245
For TIME slope, π_1					
INTRCPT2, β_{10}					
INTRCPT3, γ_{100}	-0.661396	0.572377	-1.156	3	0.332
LENGTH, γ_{101}	-1.619747	1.199902	-1.350	3	0.270
For PRE_PTSD, β_{11}					
INTRCPT3, γ_{110}	-0.004168	0.039023	0.107	3	0.922
LENGTH, γ_{111}	-0.110605	0.082058	-1.348	3	0.270

Figure 8: WD Reactions Across T1 to T4



WD results indicated that time spent in group did not result in a significant decrease in these scores. This hypothesis was not supported.

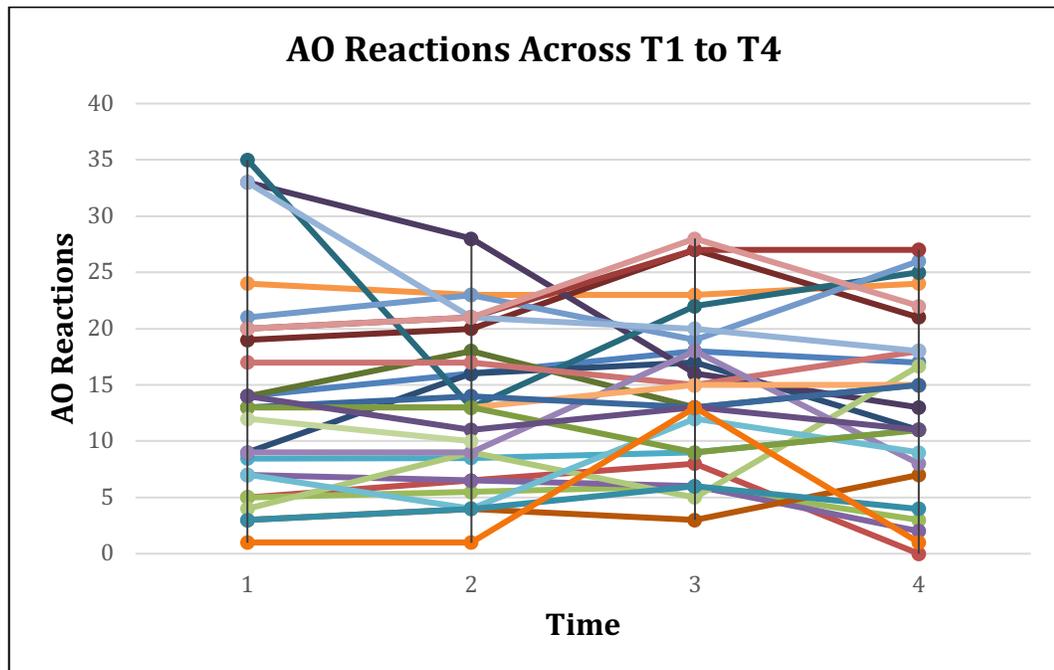
The Attacking Others (AO) reactions χ^2 statistic was significant, $\chi^2(1) = 9.16379$, $p = .003$. The Akaike's Information Criterion (AIC) for the linear model was 707.56, and was 700.40 for the quadratic model and these statistics indicated that the quadratic model is a better fit to examine the trajectory of AO over time. Individuals varied significantly ($p = 0.002$) in their average AO scores at the start of treatment with a mean score of 14.08. Group members increased .09 points in their AO score for each time point. This was not a significant increase in scores ($p = .958$). The random linear slope did not vary significantly across individuals ($r_1 = 14.2465$, $\chi^2 = 24.14198$, $p = 0.086$), suggesting that participants did not differ in their change in AO scores over time. There was not a significant acceleration of growth in AO scores across treatment ($p = .842$). Pre-PTSD scores were not found to be significant in the prediction of initial AO scores ($p = 0.441$), nor were they significant in predicting the change in AO over time ($p = 0.364$). The two groups of different lengths were also not significant in the prediction of initial WD scores ($p = 0.454$), nor were they significant in the growth in these scores over the course of treatment ($p = 0.156$; See Table 15).

Table 15: Fixed Effects for AO Reactions Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0					
INTRCPT2, β_{00}	14.079254	1.367213	10.298	3	0.002
INTRCPT3, γ_{000}	2.455448	2.861527	0.858	3	0.454
LENGTH, γ_{001}					
For PRE_PTSD, β_{01}					
INTRCPT3, γ_{010}	-0.088207	0.099573	-0.886	3	0.441
LENGTH, γ_{011}	0.100864	0.207552	0.486	3	0.660
For TIME slope, π_1					
INTRCPT2, β_{10}	0.092886	1.605543	0.058	3	0.958
INTRCPT3, γ_{100}	6.335264	3.359686	1.886	3	0.156
LENGTH, γ_{101}					
For PRE_PTSD, β_{11}					
INTRCPT3, γ_{110}	-0.106864	0.100029	-1.068	3	0.364
LENGTH, γ_{111}	-0.165823	0.210076	-0.789	3	0.488
For QUAD slope, π_2					
INTRCPT2, β_{20}	0.114970	0.528442	0.218	3	0.842
INTRCPT3, γ_{110}	-1.955592	1.102546	-1.774	3	0.174
LENGTH, γ_{011}					
For PRE_PTSD, β_{21}					
INTRCPT3, γ_{210}	0.020211	0.029816	0.678	3	0.546
LENGTH, γ_{211}	0.009854	0.062725	0.157	3	0.885

Results demonstrated that time spent within group treatment did not influence a significant decrease in AO scores and therefore, the null hypothesis was not rejected.

Figure 9: AO Reactions Across Time



Hypothesis 3b. Engagement was then added as a time-varying covariate Level-1 predictor to examine the interaction between group engagement and shame reactions over time. Engagement was re-centered prior to including it in the model, and an interaction term was created between Engagement and Time to investigate whether the two predictors changed at the same rate. The final models included pre-PTSD as a Level-2 predictor and group length as a Level-3 predictor. Engagement was not found to be a significant predictor growth of shame reactions over time (AV; $p = .675$, AS; $p = .388$, WD; $p = .407$, AO, $p = .969$). Engagement also was not found to be a covariate in any model, demonstrating that Engagement and Shame Scores did not change at the same rate over time (AV; $p = .843$, AS; $p = .217$, WD; $p = .227$, AO, $p = .333$).

Supplemental analyses were conducted to examine possible decreases in shame reactions from Time 1 to Time 4. All assumptions of normality and homogeneity of variance were examined and found to be tenable, with no outliers in the distribution. Student t-tests were run in SPSS to determine the difference in shame reaction scores from Time 1 to Time 4. A critical value of -1.708 was determined using a student-t table for hypothesis testing. Results from this analysis indicated a significant decrease in AS scores ($p = .049$) with a small effect size ($d = 0.32$). Although this finding is significant according to this analysis, the data is likely better modeled by the growth curve in the HLM. No significant decreases were found on any other subscale (AV, WD, AO). (See Table 16)

Table 16: CoSS Subscales from T1 to T4

Scale of CoSS	Pre N	Pre-Mean/SD	Post N	Post Mean/SD	Mean Diff.	<i>t</i>	df	Sig. (1-tailed)
AV Time 1 – AV Time 4	26	M = 21.92 SD = 7.72	26	M = 20.34 SD = 8.67	-1.57	-0.93	25	.182
AS Time 1 – AS Time 4	26	M = 30.44 SD = 11.11	26	M = 26.79 SD = 11.82	-4.21	-1.72	25	.049
WD Time 1 – AS Time 4	26	M = 28.21 SD = 10.17	26	M = 25.33 SD = 10.66	-2.88	-1.38	25	.090
AO Time 1 – WD Time 4	26	M = 13.98 SD = 9.59	26	M = 13.45 SD = 7.99	-0.53	-0.39	25	.369

The significant decrease in AS shame reaction scores found in the t-test analyses informed an additional supplemental analysis. Growth curve modeling in HLM was again used to analyze AS shame reactions. This model used fixed slopes and did not include the non-significant higher-level predictors (Pre-PTSD Scores and Group Length). By using a fixed slope, this model viewed time spent in group psychotherapy as an average effect across the entire population. Thus, this model did not assume that the effect of time spent in group treatment varied randomly within the population of group members, and instead provided an average estimate of growth. Results from this model showed that AS scores significantly decreased over time ($p = 0.48$), suggesting that on average, group members' AS scores decreased 1.09 points at each time point when individual variability was not taken into account.

Table 17: Fixed Effects for AS Reactions Across T1 to T4

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, π_0 INTRCPT2, β_{00} INTRCPT3, γ_{000}	28.1777770	1.801554	15.641	4	<0.001
For TIME slope, π_1 INTRCPT2, β_{10} INTRCPT3, γ_{100}	-1.087422	0.541322	-2.009	73	0.048

Hypothesis Four

It was expected that changes in Bond and Engagement scores would be significant predictors of overall post-treatment outcome PTSD scores. To examine the relationship between changes in the Engagement subscale of the GCQ and the Bond subscale of the WAI-S with the outcome measure of the Overall-PTSD subscale of the

PCL-5, change scores were determined by calculating the difference between Time 4 and Time 1 scores of the repeated measures (Engagement and Bond). A multi-level model was created with Post-PTSD symptoms as the outcome variable and the change scores for Bond and Engagement as Level-1 predictors. Pre-PTSD symptoms were controlled for as a Level-2 predictor.

Results showed that individuals differed significantly ($p < 0.001$) in their Post-PTSD scores, with a mean score of 25.55. Changes in Bond scores were not significant in the change of these scores over time ($p = 0.620$). Changes in Engagement scores also were not shown to be significant in the change of PTSD scores over time ($p = 0.321$). An ICC calculation of .1693 indicates that approximately 16.93% of the total variance in Post-PTSD scores was explained as occurring between individual group members and indicate a clustering/nesting effect in the data.

Table 18: Fixed Effects for Impact of Bond and Engagement on Overall-PTSD Post-Treatment

Fixed Effect	Coefficient	Standard Error	t-ratio	Approx. df	p-value
For INTRCPT1, β_0	25.556625	2.191865	11.660	24	<0.001
INTRCPT2, γ_{00}	0.516563	0.147613	3.499	24	0.002
PRE PTSD, γ_{01}					
For BOND slope, β_1	1.595514	3.170050	0.503	23	0.620
INTRCPT, γ_{10}	0.098855	0.181571	0.544	23	0.591
PRE-PTSD, γ_{11}					
For ENGAGE slope, π_1	-2.104375	2.076544	-1.013	23	0.321
INTRCPT3, γ_{20}					

Results did not support the hypothesis that changes in Bond and Engagement scores are significant predictors of post-treatment outcomes.

Summary

Out of the 27 women who initially joined this study, 26 participants completed treatment and provided measurements at Time 1 and Time 4. Missing data at Time 2 and Time 3 were found to be missing completely at random and data was imputed using the expectation maximization likelihood method in SPSS. An *a priori* power analysis demonstrated that the suggested sample size was adequate to have some confidence in avoiding a Type 2 error. The members of the five psychotherapy groups were not found to be different on any of the variables studied based on the group they attended, nor were there any differences between the different treatment group lengths. Therefore, all members were assessed as individuals, rather than individuals nested within groups. All normality assumptions were tested and were adequate.

Four hypotheses were tested. Hypothesis 1a was significant for growth in Engagement scores over time. Hypothesis 1b was not supported in the data, and Bond was not found to grow significantly over the course of treatment. The data did not support Hypothesis 1c, as Engagement was not found to be a significant time-varying covariate across the four time points.

For Hypothesis 2, significant decreases in post-treatment PTSD scores on the Total PCL and all four subscales were found. Clusters C (Avoidance) and D (Negative Alterations in Cognition and Mood), and overall symptom scores demonstrated large effect sizes. Cluster B (Intrusion) showed a moderate effect size, and Cluster E (Hyper-arousal) scores showed a small effect size.

Hypothesis 3a postulated that there would be a decrease in Shame Subscale scores across time points, which was not supported in the data. There were not significant decreases in any of the four subscales of the CoSS, including Avoidance, Attacking Self, Withdrawal, or Attacking Others reactions. Hypothesis 3b also was not supported, as there was not a significant interaction between time spent in group psychotherapy, Engagement, and Shame reactions.

Hypothesis 4 stated that changes in Engagement and Bond scores would be significant predictors of post-treatment outcome. The data did not support this hypothesis and the results showed that changes in Bond and Engagement scores were not significant predictors in the outcome of post-treatment PTSD symptoms.

Chapter 5 discusses the implications of the results from this research, addresses limitations of the study, provides ideas for future research, and outlines recommendations from this study for group treatment with women who have experienced sexual trauma.

Chapter Five: Discussion

Sexual trauma is a prevalent and serious concern, with 44% of women experiencing some form of sexual violence in their lifetime (National Crime Victims' Rights, 2017). Statistics have shown that only 21% of women reported receiving victim services following a sexual trauma (National Crime Victims' Rights, 2017), yet recent media attention and the call for de-stigmatization of sexual trauma through movements such as #MeToo, have influenced an increase in help-seeking behaviors from persons who have experienced sexual trauma. This study showed that survivors can decrease their PTSD symptoms and become more engaged with others through group therapy. Trauma is often debilitating and yet the strength and courage of persons who have experienced sexual trauma, along with treatment, can help in the healing process. Identifying effective psychological treatments for the unique struggles faced by survivors of sexual trauma is imperative to their recovery.

Sexual trauma has been shown to impact several different areas of a victim's life, including their interpersonal connections. Research on effective treatment has been improving, and some attention has been shown on the benefits of group psychotherapy, especially with a focus on repairing social relationships often damaged by sexual trauma. This study is distinct in its specificity of examining group psychotherapy processes that help members connect with others in the group, including the bond that they develop with

their group leader and connectedness they feel with other group members. Similar to other studies (Alexander et al., 1989; Elkjaer et al., 2014; Krupnick et al., 2009; Sloan et al., 2013), this study emphasized the effectiveness of group treatment for sexual trauma survivors in PTSD symptom reduction. Additionally, this study investigated the construct of shame, with the hope that group treatment would decrease the shame responses that are so prevalent for persons who are victims of sexual assault. This chapter focuses on the implications of the study findings, limitations and strengths, recommendations for clinical practice, and areas for future research.

Specific Findings

Group Cohesion and Therapeutic Bond in Group Treatment

A reassuring and consistent finding akin to past research, was that group members endorsed an increase in connections with other members that deepened as the group treatment progressed. Despite having varying levels on the Engagement Scale at the start of treatment, the participants in this study all reported increases in their perceived connections with other group members and of being engaged in constructive therapy work within the group. The increases in Engagement scores over time suggests the possibility that factors occurring within the group, such as interpersonal interactions and social support, helped participants increase their trust and connections with others and this may have led to improvements in other areas, such as decreases in PTSD scores.

The trauma-informed group curriculum used by the agency for all of the five groups may have contributed to the development of connections among group members. The protocol was based on Herman's (2015) tri-phasic theoretical model of trauma

therapy. This model asserts that the first stage of group involves establishing safety, followed by engaging in exposure to stimulus related to the traumatic incident, and then integrating the event into one's personal narrative. Herman (2015) discussed the importance of first focusing on safety within the group to allow for members to exchange information about their mutual symptoms and share techniques for coping and self-care. This then fosters a feeling of protection for group members as they enter into the exposure phase as a more cohesive unit. These strategies may aid in the trajectory of increased cohesion over time. Other group theorists have underscored the vital nature of developing trust and safety in group psychotherapy first (Moore et al., 2009; Yalom, 2005), before having members share trauma histories. One advantage of group psychotherapy is that as the group members share their trauma experiences, they often recognize similarities between them which promote support, empathy, and connections between members. In this study, each group member perceived their engagement with others growing over time.

The opportunity for increased relationships, both between group leaders and other group members, sets group psychotherapy apart from individual treatment. Given the findings of previous research that this population frequently experiences a variety of broken social bonds that influence their ability to relate and connect with other individuals (Bleiberg & Markowitz, 2005; Charuvastra & Cloitre, 2008; DePrince, Combs, & Shanahan, 2009; DiLillio, 2001; Feiring, Simon, & Cleland, 2009; Lassri et al., 2018), safety and connections with others are critical components within the group dynamic. This is the first study that has examined group cohesion using the Engagement

Subscale of the GCQ with sexual trauma survivors, and the results point to Engagement as a fundamental component in helping to heal some of the disconnections that often arise for victims of sexual trauma.

An unexpected finding was that the relationship with the leader (Bond) did not increase as the group sessions continued. From past research, bond or also known as therapeutic alliance, has been shown to be key in psychotherapy group treatment (Charuvastra & Cloitre, 2008; Cloitre et al., 2002). In this study, the Bond Scale scores were surprisingly high when measured after Time 1. One explanation for these unusually high Bond scores is that each group member had contact with the facilitators prior to the start of therapy in the form of pre-group interviews and phone contact. It is typical for group leaders to meet with potential group members once or several times prior to beginning group treatment to determine the readiness and appropriateness of the member for the specific group. Having a member meet with the leader(s) helps to provide information and connections that then influence the treatment. It is thought that had the Bond Scale been administered at the first interaction with the leader, the scores would be much lower and then show growth over the length of the group, yet this strategy may not have been ethical as it could have increased the anxiety of the member or discouraged the member from seeking treatment. Although it is unknown whether Bond Scores would have been lower at the initial intake meeting prior to the start of group treatment, it is a positive finding that group members felt safe and trusting of their group leader at the initiation of group treatment.

Research has suggested that there is a relationship between the behaviors and connections developed with the group leaders and the subsequent sense of cohesion within the group (Charuvastra & Cloitre, 2008; Payne, Liebling-Falifani, & Joseph, 2007; Valerio and Lepper, 2010), yet this study did not find a significant interaction between these processes. The high initial Bond Scores likely impacted this result. Group leaders are responsible for setting group norms, creating group culture and safety, and by doing so protect and deter forces that threaten the cohesiveness of the group (Yalom, 2005). It is likely that the previous meetings that group members had with the group leaders were beneficial for the growth of trust in the leaders, which may have then helped them develop trust with the other group members.

Although research investigating the relational processes of group has been sparse, extant literature suggests that group psychotherapy does benefit group members' interpersonal functioning (Alexander et al., 1989; Cloitre et al., 2002; Elkjaer et al., 2014; Lundqvist, Svedin, Hansson, & Broman, 2009; Krupnick et al., 2008). However, few studies have investigated the social processes occurring within the dynamic of group treatment. This study addressed this gap in the literature and assessed the relational processes between group members by measuring perceived group cohesion and bond with the group leaders.

Group Treatment and PTSD Symptom Severity

Previous studies have focused primarily on outcome measures such as PTSD symptoms for participants in group therapy. Sloan, Feinstein, Gallagher, and Beck (2013) conducted a meta-analysis of 16 studies and determined that group treatment was

associated with significant pre- to post-treatment symptom reduction in PTSD severity. The current study also found that group treatment decreased PTSD symptom severity. This decrease occurred for every group member, and it is atypical for research in general to have every member show improvement on any specific variable. Results in this area were robust, and symptom reduction was found on all subscales of the PCL-5 (Overall PTSD, Intrusion, Avoidance, Negative Alterations in Cognition and Mood, and Hyperarousal) when all treatment groups were combined. With a score of 33 and above for a full PTSD diagnosis, this study found that prior to treatment 17 participants had Overall PTSD scores above this cutoff and 9 were below the clinical cutoff. At the end of treatment, 17 participants were below the clinical cutoff and no longer met criteria for a PTSD diagnosis. Five of the participants scores post-treatment were under 40 points, and the remaining four participant scores were between 40 and 50 points. Although these 9 participants retained scores that met criteria for a clinical diagnosis of PTSD, each of them had substantial decreases in their pre-to post scores.

Research has not weighed in on the treatment differences for women who were sexually abused as children and those who were sexually assaulted as adults. In this study, care was taken to look at these subsamples to determine if there were differences on any of the variables investigated. No differences were found between treatment groups on any variables studied, including PTSD scores. All Pre-PTSD and Post-PTSD scores were within one standard deviation of the mean for both trauma types.

Implications of this finding suggest that although the perpetrators and the context of the sexual trauma were different for two types of groups (sexual abuse in childhood and

sexual trauma as an adult), all participants benefitted from treatment. There are no guidelines as to how many sessions are beneficial for trauma treatment, and no empirical evidence that provides guidance on the differential effectiveness of short or long-term groups with persons with sexual trauma histories (de Jong & Gorey, 1996). Results from this study indicate that all treatment groups showed significant and similar benefit regardless of whether they were in a 16 or 24-week group.

The significant decrease on the PTSD Avoidance subscale scores may be of particular interest with the women in this study. The decrease in this cluster appears to be consistent with theories regarding the maintenance of PTSD symptoms, including that of Keane, Zimering, and Caddell's (1985) classical conditioning theory. In this conceptualization of PTSD, a stimulus generalization of fear occurs following the traumatic event. Avoidance of trauma-related stimuli or memories becomes negatively reinforced over time, as anxiety decreases when one avoids exposure to feared stimulus. Over time, this avoidance results in more re-experiencing and hyperarousal symptoms, as there is no opportunity for the extinction of the feared stimulus to occur.

The exposure content found within the group treatment in this study may be an important element in the treatment of trauma survivors. In most trauma work, clients are encouraged to engage in exposure and approach, rather than avoid, trauma stimuli, aiding participants in habituating to the anxiety caused by the stimuli. Discussing these stimuli within a group context may target avoidant behaviors and have an impact on Cluster D (Negative Alterations in Cognition and Mood) symptoms. In this study, the supportive environment of the group may have helped shift maladaptive beliefs about self, others,

and the world that commonly develop following a traumatic event. The decrease in Cluster D symptomatology may also speak to the relational developments made in group, as shown by the growth in Engagement scores over time.

Smaller, yet significant, effect sizes were noted in symptom clusters of intrusive thoughts and hyperarousal. This may make sense when interpreting the results in the context of PTSD symptom maintenance. The decreases in participants' avoidance of trauma-related stimuli could have influenced an increase in thinking about their traumatic event more frequently, which in turn may have resulted in intrusive thoughts and anxiety related to these cognitions. In the treatment protocols in this study, group members were given an opportunity to check in about their mood and functioning at every session, and coping strategies were frequently re-visited, which may have given members the support they needed to manage these symptoms.

Shame Perceptions and Group Cohesion

Shame certainly has been raised as a major component for victims of sexual trauma. In this study, group members did not demonstrate any significant decreases in their perceptions of shame reactions across group treatment. Although, the Attacking Others Scale was not significant, it is intriguing to wonder whether the small non-significant increase for members may signal further investigation. Previous research has found shame to be an independent predictor of PTSD symptoms and strongly linked to depressive symptoms within the population (Andrews et al., 2000; Dutra et al., 2008; Rahm, Renck, & Ringsberg, 2013). It is clear that shame impacts many aspects of functioning, including relationships, and it appears to be an essential component in the

treatment of sexual trauma. However, shame may be a challenging element to address and group treatment may need to focus more on this component within the treatment curriculum.

Perceptions of cohesion within the group were predicted to have a significant interaction with shame reactions across the time spent in group, and this did not occur in this study. Brown's (2006) Shame Resilience Theory postulates that feelings of shame are combated by recognizing and accepting personal vulnerability, gaining awareness of the impact of social/cultural influences on shame, developing abilities to have empathic relationships, and cultivating skills to 'speak shame.' Aspects of this theory seem consistent with tenets of group cohesion, and it may be that focusing on these properties within the context of group therapy could deplete the feeling of isolation often perpetuated by shame and be powerful forces in recovery.

Although no decreases in shame scores were noted in this study, it is an area that warrants further research. It may be that shame reduction needs stronger attention within group curriculum for persons who have experienced sexual trauma, with a focus of research being interventions intended for shame reduction. The CoSS also may not have been the best fitting measure to evaluate this population. The authors of the measure describe it as measuring both state and trait shame reactions, and this could have resulted in difficulty in determining movement in the scores across time, as trait measurements would be expected to be more stable than state changes within the population (Elison et al, 2006).

Relationship between Group Cohesion, Bond, and Treatment Outcome

Previous research has shown 55% of psychological adjustment following a sexual trauma is attributed to social support (Hyman et al., 2007), suggesting that relationships have a strong impact in the recovery from interpersonal trauma. Literature has also given attention to the influence of positive reactions to trauma disclosures within the population, and found a link between receiving reactions of support and decreased PTSD symptom severity (Borja et al., 2006; Ullman & Peter-Hagene, 2014). These findings provide a strong theoretical background to explore the correlation between the relational processes of group psychotherapy and treatment outcome of symptom severity.

It was an expectation of this study that changes in Engagement and Bond scores would be significant predictors of post-treatment PTSD symptoms. Changes in these variables were examined to investigate how the growth of interpersonal connections within the context of group psychotherapy correlated with decreases in PTSD symptomatology. No relationship between these variables were found within the data. Again, the high initial scores on the Bond Scale are likely the culprit for not finding this result. Prior research has shown the importance of group cohesion resulting in group members feeling more understood within the setting, which in turn has been related to overall symptom reduction and increases in self-esteem and well-being (Burlingame et al., 2011; Lo Coco et al., 2016). Findings from this study imply that the connections established within group dynamics are important to the functioning of the group and a survivor's recovery, yet no explicit relationship between these processes and symptom reduction were found.

Limitations and Strengths of the Study

Study Limitations

There are some important limitations of this study. This study used self-report measures, and participants could have under or over-reported their experiences. It is also possible that participants responded in a socially biased manner, and this too could have impacted the results. However, even with these limitations, self-report from victims of sexual trauma is the best, and often only, way to provide a representation of the participants' perceived progress and engagement within the group, making them a vital source of information. It also honors their voice in this process, something that is often silenced due to sexual trauma. All data were collected anonymously by having participants place their completed measures in a designated envelope. It is hoped that this procedure allowed the group members to feel as though they could respond honestly to the questionnaires.

Another limitation is that some participants received individual therapy in addition to group therapy, and this may have resulted in participants experiencing effects of the treatment other than what is being measured in the study. While this study provided information about the relational development of survivors, it could not control outside experiences that may have influenced survivors' interpersonal functioning. Some participants received individual treatment at the same agency, and this may have influenced ratings of bond with the group leader, as it is possible that their individual treatment was occurring concurrently with the same therapist in group. Additionally, there may have been differences between the group leaders of the various groups, and

this could have added extraneous variables. However, all group leaders were trained by the same facility, and all used a treatment curriculum that is required by the agency to assist in operationalizing treatment.

This study was implemented in a community mental health agency and resulted in inherent difficulties in obtaining a larger sample size, as well as the sample including group members with different types of trauma histories and varied PTSD levels.

Although the obtained sample size was adequate to observe changes in individuals over time, it may not have been large enough to observe differences between groups. Care was taken to analyze potential differences between the two types of psychotherapy groups, yet the smaller group sample size may have resulted in biases within the group effects. Thus, it is possible that there were some differences between the treatment groups depending on the type of trauma (adult sexual assault or adult survivor of childhood sexual abuse) that were not accounted for in this study. An advantage of this study was that it was conducted in the field with actual groups. Field studies provide additional extraneous variables but also provide data about groups as they are actually facilitated. Even with these extraneous variables, treatment was consistently positive for each of the group members.

Missing data were present in the study and a total of five sessions were missed by participants throughout treatment. Although the handling of missing data is often a topic of concern, it was decided to use expectation maximization techniques to impute the missing data points and retain all 26 participants in the analyses. The missing data all occurred at sessions 5 and 10, and all participants completed first and last data points, and

no participant missed more than one session during treatment. In fact, the small amount of missing data (or missed sessions) was quite positive for the group members and for the results of this study.

Study Strengths

Women who have experienced sexual trauma often do not seek treatment and therefore, conducting a study that provides psychotherapy for victims of sexual abuse is complex for many reasons. Providing treatment in a group adds to this difficulty due to the number of groups required to have a large enough sample. Ethical considerations are vital when providing treatment to this vulnerable group, including concerns with stigma and confidentiality that often accompany sexual trauma.

Several strengths of the study are important to underscore. First, the consistency of the member attendance in the groups is notable. It is generally estimated that approximately twenty percent of participants drop out of research studies (Swift & Greenberg, 2012). Other statistics have shown that attrition within group treatment for individuals with PTSD diagnoses ranges from 16 to 29% (Vogel, Braungardt, Kaul, & Schneider, 2017). Within the five groups included in this study, only one participant left treatment due to health problems (not concerns with the treatment), which accounted for 3% of the original sample. This is remarkable, given that all five of the treatment groups addressed trauma themes and required substantial commitments of time from the participants (i.e., 2 hours per week for 16 or 24 weeks). Another strength of this study in addition to the low attrition rate, is that only five group members missed one session each (of the time points measured), and no member missed more than one session.

The use of both process and outcome measures within group treatment also are significant strengths of the study. The use of repeated measures (four different time points across the group sessions) provided a broad trajectory of a group member's progress and further illuminated the specific processes that influenced treatment outcomes. Likewise, it is unusual to measure groups across time and provides a much better indication of the power of group dynamics.

Implications for Clinical Practice

This study highlights important implications for the clinical practice of group psychotherapy with survivors of sexual trauma. Perceptions of Engagement were highlighted as being important to the overall group dynamic, and emphasizing these connections within the group likely will benefit survivors' as they work to repair their ability to engage in social connections. Emphasizing commonalities within the group may also hold powerful implications for the reduction of shame in the context of group psychotherapy. Incorporating experiential exercises that focus on role-playing difficult interpersonal situations may aid group members in developing skills of assertiveness that empower them in their outside interpersonal interactions and also could impact their internalized feelings of shame. Findings from this study emphasize the importance for safety to be established within the group dynamic so that group members can develop connections with each other and practice new behaviors in a supportive environment.

Random slopes were used in the main analyses, as group members varied significantly on their scores of Engagement, Bond, and Shame Reactions across the time spent in group. This indicated that members varied in their course of recovery

throughout group treatment, and speaks to the importance of group leaders being aware of the individual differences found between group members. Continually checking in with group members and emphasizing the universality of the group experience to assist in addressing individual concerns may help elicit feelings of cohesion within the group, and help each participant could feel heard and supported by other members.

Additional clinical implications can be drawn from the high Bond Scores at the beginning of treatment. The groups conducted in this study followed many of Yalom's (2005) group principles, including the requisite of a pre-group interview to discuss what to expect from group treatment and to thoroughly assess an individual's appropriateness to engage with this modality of therapy. Although agencies often complete an initial screen of a client to assess presenting concerns, it is rare for a follow-up session that evaluates a person's ability to attend to the purpose of the group. The focus given at this agency to prepare clients for group treatment may result in the construction of groups with members who are able to fully engage with the group material, and this may contribute to the development of a stronger sense of cohesion over time. It may also influence a group member's sense of allegiance to the group, which could result in lower attrition rates within group treatments.

Recommendations for Future Research

There is a scarcity of research on the relational aspects of group therapy within the population of sexual trauma survivors. Although there is literature that demonstrates the effectiveness of group treatment on outcome variables such as PTSD symptom reduction, there is little empirical evidence on specific elements of group therapy that

contribute to its efficacy (Foa et al., 2009; Sloan et al., 2013). Previous research suggests that variables including interpersonal functioning, shame, and assertiveness may be of specific importance when working with survivors of sexual trauma (Alexander et al., 1989; Andrews et al., 2000; Cloitre et al., 2002; Elkjaer et al., 2014; Lundqvist et al., 2009), and therefore, these variables should continue to be considered in future studies.

This study examined the influence of group cohesion and bond with group leaders within psychotherapy groups for sexual trauma survivors and found important results regarding the development of these interpersonal variables throughout treatment. Findings from this study suggest that there should be further research on the influence of these variables on a survivor's overall functioning, and perhaps expand the notion of outcome variables from solely observing symptom reduction to examining how skills learned within the group may translate to other relationships within a survivor's life. It may be that participants within these treatment groups are benefitting in various ways from treatment that are not being assessed by the outcome measures often used in research, and broadening the scope used to look at gains made in treatment to social functioning and relationship satisfaction may provide interesting insights into the importance of social aspects of group treatment.

Previous research has highlighted the prevalence and severity of shame within survivors of sexual trauma, and have shown the power of relational connection in decreasing shame reactions (Andrews et al., 2000; Brown, 2006). Future studies also should examine any differences between peer relationships in group treatment and with group leaders to ascertain what types of associations are most beneficial in the reduction

of shame and how these connections can be fostered in therapeutic treatment.

Investigating the impact of experiential activities, including role-playing shame evoking situations in the safe environment of group therapy, also may provide beneficial information about treatment implications and interventions within this population. These role-plays may also emulate assertiveness training, and it would be interesting for future research to examine the relationship between assertiveness and shame in interpersonal contexts.

Conclusions

This study specifically focused on examining relational group psychotherapy processes including group cohesion and bond with the group leaders as vital components in treatment for sexual trauma survivors. The construct of shame was emphasized and the relationship between shame and group cohesion was explored. This study was similar to previous research and demonstrated group to be an effective treatment modality for this population, with significant PTSD symptom reduction from pre- to post-treatment. Additionally, it was found that perceptions of group cohesion increased over time spent in treatment, pointing to important interpersonal developments within group members. Taken with previous findings of the importance of relational variables in group treatment (Alexander et al., 1989; Cloitre et al., 2002; Elkjaer et al., 2014; Lundqvist et al., 2009), the findings from this study suggest that the social connections fostered within group psychotherapy hold significant impact upon a survivor's recovery.

This study is the first to assess perceptions of shame within the context of group psychotherapy for sexual trauma survivors. Although findings were not significant for

any decrease in shame perceptions or relationship between social connections within the group and shame reactions, it highlighted the challenges faced by practitioners in managing this construct. Shame has been shown to be a prevalent concern for survivors of sexual trauma and continues to be an area to expand upon in the literature to examine what specific interventions foster shame reduction.

There were limitations in this study, including a small sample size, participants engaging in concurrent treatment, and imputation of missing data points. However, results from the present study contribute important evidence to the existing literature, including demonstrating the trajectory of relational processes over the course of treatment and providing additional evidence of the effectiveness of group treatment on the reduction of PTSD symptomatology. These results provide support that the social and relational aspects of group psychotherapy hold important implications in the process of recovery for sexual trauma survivors.

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Appendix A: Demographic Information Form

Thank you for participating in this study. Please provide the following demographic information for future analysis. All information will be confidential and will be de-identified prior to collection. Thank you.

Age:

Race/Ethnicity:

Type of Sexual Trauma (Adult Sexual Assault or Childhood Sexual Abuse?):

Are you currently enrolled in individual therapy?:

Appendix B: Posttraumatic Checklist for DSM-5 (PCL-5)

In the past month, how much were you bothered by:	Not at All	A Little Bit	Moderately	Quite a Bit	Extremely
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it?)	0	1	2	3	4
4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience (heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4

7. Avoiding external reminders of the stressful experience (people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience.	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world (having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4

14. Trouble experiencing positive feelings (being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15. Irritable behavior, angry outbursts or acting aggressively?	0	1	2	3	4
16. Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17. Being “super-alert” or watchful or on guard?	0	1	2	3	4
18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

Appendix C: Group Climate Questionnaire

Read each statement carefully and **as you answer the questions think of the group as a whole.**

For each statement fill in the box under the MOST APPROPRIATE heading that best describes the group during the four sessions.

Please mark only ONE box for each statement.

	Not at All (0)	A Little Bit (1)	Somewhat (2)	Moderately (3)	Quite a Bit (4)	A Great Deal (5)	Extremely (6)
1. The members liked and cared about each other.							
2. The members tried to understand why they do the things they do, tried to reason it out.							
3. The members avoided looking at important issues going on between themselves.							

4. The members felt what was happening was important and there was a sense of participation.							
5. The members depended upon the group leader (s) for direction.							
6. There was friction and anger between the members.							
7. The members were distant and withdrawn from each other.							
8. The members challenged and confronted each other in their efforts to sort things out.							

9. The members appeared to do things the way they thought would be acceptable to the group.							
10. The members rejected and distrusted each other.							
11. The members revealed sensitive personal information or feelings.							
12. The members appeared tense and anxious.							

Appendix D: Working Alliance Inventory – Short Revised (WAI-S)

Instructions: Below is a list of statements and questions about experiences people might have with their therapy or therapist. Some items refer directly to your therapist with an underlined space -- as you read the sentences, mentally insert the name of your therapist in place of _____ in the text. Think about your experience in therapy, and decide which category best describes your own experience.

IMPORTANT!!! Please take your time to consider each question carefully.

1. I believe my group leader likes me.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

2. I am confident in my group leaders' ability to help me.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

3. I feel that my group leaders appreciate me.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

4. My group leaders and I trust one another.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Note: Items copyright © Adam Horvath, 1981; Revision Tracey & Kokotowitc, 1989.

Appendix E: Compass of Shame Scale (CoSS)

Below is a list of statements describing situations you may experience from time to time. Following each situation are four statements describing possible reactions to the situation. Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself reacting in that way. Use the scale below. Please respond to all four items for each situation.

SCALE				
0	1	2	3	4
NEVER	SELDOM	SOMETIMES	OFTEN	ALMOST ALWAYS

A. When an activity makes me feel like my strength or skill is inferior:

1. I act as if it isn't so. (AV)	0	1	2	3	4
2. I get mad at myself for not being good enough. (AS)	0	1	2	3	4
3. I withdraw from the activity. (WD)	0	1	2	3	4
4. I get irritated with other people. (AO)	0	1	2	3	4

B. In competitive situations where I compare myself with others:

5. I criticize myself. (AS)	0	1	2	3	4
6. I try not to be noticed. (WD)	0	1	2	3	4
7. I feel ill will toward the others (AO)	0	1	2	3	4
8. I exaggerate my accomplishments (AV)	0	1	2	3	4

C. In situations where I feel insecure or doubt myself:

9. I shrink away from others. (WD)	0	1	2	3	4
10. I feel others are to blame for making me feel that way. (AO)	0	1	2	3	4

11. I act more confident than I am. (AV)	0	1	2	3	4
12. I feel irritated with myself. (AS)	0	1	2	3	4

D. At times when I am unhappy with how I look:

13. I take it out on other people. (AO)	0	1	2	3	4
14. I pretend I don't care. (AV)	0	1	2	3	4
15. I feel annoyed at myself. (AS)	0	1	2	3	4
16. I keep away from other people. (WD)	0	1	2	3	4

E. When I make an embarrassing mistake in public:

17. I hide my embarrassment with a joke. (AV)	0	1	2	3	4
18. I feel like kicking myself. (AS)	0	1	2	3	4
19. I wish I could become invisible. (WD)	0	1	2	3	4
20. I feel annoyed at people for noticing. (AO)	0	1	2	3	4

F. When I feel lonely or left out:

21. I blame myself. (AS)	0	1	2	3	4
22. I pull away from others. (WD)	0	1	2	3	4
23. I blame other people. (AO)	0	1	2	3	4
24. I don't let it show. (AV)	0	1	2	3	4

G. When I feel others think poorly of me:

25. I want to escape their view. (WD)	0	1	2	3	4
26. I want to point out their faults. (AO)	0	1	2	3	4

27. I deny there is any reason for me to feel bad. (AV)	0	1	2	3	4
28. I dwell on my shortcomings. (AS)	0	1	2	3	4

H. When I think I have disappointed other people:

29. I get mad at them for expecting so much from me. (AO)	0	1	2	3	4
30. I cover my feelings with a joke. (AV)	0	1	2	3	4
31. I get down on myself. (AS)	0	1	2	3	4
32. I remove myself from the situation. (WD)	0	1	2	3	4

I. When I feel rejected by someone:

33. I soothe myself with distractions. (AV)	0	1	2	3	4
34. I brood over my flaws. (AS)	0	1	2	3	4
35. I avoid them. (WD)	0	1	2	3	4
36. I get angry with them. (AO)	0	1	2	3	4

J. When other people point out my faults:

37. I feel like I can't do anything right. (AS)	0	1	2	3	4
38. I want to run away. (WD)	0	1	2	3	4
39. I point out their faults. (AO)	0	1	2	3	4
40. I refuse to acknowledge those faults. (AV)	0	1	2	3	4

K. When I feel humiliated:

41. I isolate myself from other people. (WD)	0	1	2	3	4
42. I get mad at people for making me feel this way. (AO)	0	1	2	3	4
43. I cover up the humiliation by keeping busy. (AV)	0	1	2	3	4
44. I get angry with myself. (AS)	0	1	2	3	4

L. When I feel guilty:

45. I push the feeling back on those who make me feel this way. (AO)	0	1	2	3	4
46. I disown the feeling. (AV)	0	1	2	3	4
47. I put myself down. (AS)	0	1	2	3	4
48. I want to disappear. (WD)	0	1	2	3	4

Appendix F: Informed Consent

Project Title: Relationship Variables in Group Psychotherapy for Sexual Trauma Survivors

Principal Investigator: Sarah Gooch, MA

Faculty Sponsor: Maria Riva, Ph.D.

You are being asked to be in a research study. This form provides you with information about the study. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part.

Invitation to participate in a research study

You are invited to participate in a research study that examines the specific component of relationships within group therapy and how these interactions affect the symptoms you may have experienced after surviving a trauma. The researcher in this study is interested in better understanding how the relationships that develop in group therapy impact distressing symptoms related to your experience of trauma.

You are being asked to be in this research study because you are in group therapy at a rape crisis center.

Description of subject involvement

If you agree to be part of the research study, you will be asked to complete 3 short, self-report questionnaires that have a combined total of 28 questions. 2 of the questionnaires will be related to your experience in group therapy and your sense of connection and bond with other group members and the group leaders. All of the questions are asked in a scaled format with responses ranging from "strongly agree" to "strongly disagree." The third questionnaire will provide day-to-day scenarios and common reactions to the situations and will ask you to rate your imagined reaction to the situation. These questionnaires will be administered 5 times throughout the course of your group treatment and will take approximately 15 - 20 minutes each time to complete.

We are aware that you will be completing the Posttraumatic Stress Disorder Checklist at the time you enter treatment. For this study, we are requesting that you allow us to access this measure for the data analysis. This will help us to look at the effectiveness of group treatment without imposing any more measurements or time upon you.

Possible risks and discomforts

The researcher has taken steps to minimize the risks of this study. Even so, you may still experience some risks related to your participation, even when the researcher is careful to avoid them. It is anticipated that these risks will be minimal, yet may include experiencing some anxiety when answering questions regarding the nature of your experience within group therapy, your perceptions of your relationships within the group, or your imagined reactions to various situations. No questions will be asked about your traumatic experience. Although the potential risk is minimal, you are always encouraged to share only the information that you are comfortable disclosing. If you become anxious, you can discontinue that question. If any questions have you feeling uncomfortable you can choose to stop participation at any time.

Possible benefits of the study

If you agree to take part in this study, there will be no direct benefit to you. However, information gathered in this study may help the researcher understand more about the relationships that develop in group therapy with trauma survivors and this could allow for the development of additional knowledge in group therapy practices with survivors of sexual assault and abuse.

Study compensation

You will not receive any payment for being in the study

Study cost

You will not be expected to pay any costs related to the study.

Confidentiality, Storage and future use of data

To keep your information safe:

- Your name will not be attached to any data, but a study number will be used instead.
- The data will be kept on a password-protected computer using special software that scrambles the information so that no one can read it.

The data you provide will be stored in a locked file and will not include your name or any identifying information. The researchers will retain the data for a total of 3 years. The data will not be made available to other researchers following the completion of this research study and will not contain information that could identify you.

The results from the research may be shared at a meeting. The results from the research may be in published articles. Your individual identity will be kept private when

information is presented or published. All data from this study will be presented in group form and individual identities will never be revealed.

Who will see my research information?

Although we will do everything we can to keep your records a secret, confidentiality cannot be guaranteed.

Both the records that identify you and the consent form signed by you may be looked at by others.

- Federal agencies that monitor human subject research
- Human Subject Research Committee

All of these people are required to keep your identity confidential. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

Although we are not doing interviews with you, if you indicate on the research form something that makes us believe that you or others have been or may be physically harmed, we may report that information to the appropriate agencies.

Voluntary Nature of the Study

Participating in this study is completely voluntary. Even if you decide to participate now, you may change your mind and stop at any time. If you decide to withdraw early, the information or data you provided will be destroyed. You will not receive any negative consequences for ending participation at any time throughout the study.

Contact Information

The researcher carrying out this study is Sarah Gooch, M.A. You may ask any questions you have now. If you have questions later, you may call Sarah Gooch at 303-871-2484. The faculty sponsor associated with this study is Maria T. Riva, Ph.D.

If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about; (1) questions, concerns or complaints regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects issues, you may contact the Chair of the Institutional Review Board for the Protection of Human Subjects, at 303-871-4015 or by emailing IRBChair@du.edu, or you may contact the Office for Research Compliance by emailing IRBAdmin@du.edu, calling 303-871-

4050 or in writing (University of Denver, Office of Research and Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121).

Agreement to be in this study

I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I know that being in this study is voluntary. I choose to be in this study: I will get a copy of this consent form.

Signature: _____

Date: _____

Print Name: _____

Appendix G: Introductory Script

Hello – My name is Sarah Gooch and I am a doctoral student from the Counseling Psychology department at the University of Denver. I'm here to speak to you about participating in my research study. This is a study that examines relationships within group therapy and how these interactions affect the symptoms you may have experienced after surviving a trauma. I am interested in better understanding how the relationships that develop in group therapy impact distressing symptoms related to your experience of trauma. You're eligible to be in this study because you are a group member at this agency.

If you decide to participate in this study you will take three short questionnaires at five different points throughout your group therapy treatment. Each of these questionnaires has a combined total of 32 questions related to your experience in group therapy, your sense of connection and bond with other group members and the group leaders, and your imagined reactions to various day-to-day situations. All of the questions are asked in a scaled format and will take approximately 20 - 30 minutes each time to complete.

Remember, this is completely voluntary. You can choose to be in the study or not. If you'd like to participate, we can schedule a time for me to meet with you and give you more information. If you need more time to decide if you would like to participate, you may also call or email me with your decision.

Do you have any questions for me at this time?

If you have any more questions about this process or if you need to contact me about your participation, I may be reached at sarahgooch@gmail.com, 303-871-2484.

Thank you so much.