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Acceptance and Commitment Therapy and Posttraumatic Stress Disorder Symptoms in Women

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Abstract

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by

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Dissertation Submitted in Fulfillment

of the Requirements for the Degree of

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Abstract

The purpose of this study was to analyze the effectiveness of acceptance and commitment therapy (ACT) in a group setting for 8 weeks on the symptoms of posttraumatic stress disorder (PTSD) for women diagnosed with PTSD due to childhood trauma who have not served in the military. ACT was developed using contextualism with relational frame theory being the foundation for contextualism. Women diagnosed with PTSD due to childhood trauma were found to have higher rates of attempted suicide, higher rates of mental health disorders, as well as higher rates of medical disorders than those who were not diagnosed with PTSD. The PTSD symptoms were measured using the PTSD checklist-civilian (PCL-C). The PCL-C was completed during Session 1 and Session 8 of ACT group therapy. There was a total of 24 PCL-C score sheets utilized for this study and only the score sheets of women diagnosed with PTSD due to childhood trauma who did not have a thought disorder were included. The research design was considered a pre-experimental design and the statistical design used was ANOVA with repeated measures using subject x trials. Cohen's estimate of small effect size was used. Secondary data analysis was conducted using archival data from a community mental health agency. According to the statistical measure of the repeated ANOVA the null hypothesis was rejected as there was sufficient evidence to support that using ACT in a group setting for 8 weeks can decrease PTSD symptoms as measured by the PCL-C. This study contributes to social change by decreasing symptoms of PTSD, therefore decreasing suicidal thoughts, as well as behaviors, and lead to an increase in overall functioning and prosocial behaviors.

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Dedication

This is dedicated to all those who suffer from PTSD. My hope is to add to the research and knowledge for those who suffer from a history of traumatic events. I dedicate this to the many clients I have worked with in the past who have the resilience to withstand so many physical and emotional offenses. You are truly the heroes of this earth.

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Chapter 1: Introduction to the Study

Introduction

This study investigates how acceptance and commitment therapy (ACT) impacts symptoms of posttraumatic stress disorder (PTSD) in women who have been diagnosed with PTSD due to childhood trauma. ACT has been used for populations who have been diagnosed with various mental health disorders, including PTSD. Many people have been diagnosed with PTSD due to various forms of trauma including childhood trauma, adulthood trauma, combat-related trauma, and domestic violence (Gobin, Iverson, Mitchell, Vaughn, & Resick, 2013; Wangelin & Tuerk, 2014; Washington, Davis, Der-Martirosian, & Yano, 2013). PTSD impacts not just emotional health, but physical health as well (Barrios et al., 2015; Lang et al., 2008; Messina & Grella, 2006).

This study seeks to increase knowledge regarding the use of ACT in a group specifically for women diagnosed with PTSD due to childhood trauma. This study would promote social change by inspiring professionals and clients alike to fully utilize ACT for this specific population in group therapy. The ACT group seeks to increase a women's positive sense of self, self-confidence, independence, and ability to live a more enriched life.

This chapter includes information regarding ACT and PTSD and their relationship. The background includes a summary of the research and describes a gap in the knowledge of the discipline, as well as why the study is needed. The problem statement, the significance of the problem, and the relevance to social change are also included. The literature review includes topics such as PTSD, ACT, contextualism, and

childhood trauma. The research question and hypotheses, as well as the nature of the study are included. The theoretical foundation of contextualism and how it is related to ACT is explained. Definitions of the variables are listed as are the assumptions that are necessary for the study. The scope of delimitations and limitations are outlined, and the significance of the study that identify potential contributions and implications are summarized.

Background

Past researchers have investigated the use of ACT with individuals and some researchers have also investigated its effects in groups. ACT has been used to treat symptoms of various mental health disorders including anxiety disorders, PTSD, psychosis, depression, chronic pain, and eating disorders. ACT has shown to be effective in creating goals in clients who have psychosis (Boden et al., 2016). Boden et al. (2016) stated due to the small study populations, more studies need to be conducted. ACT has shown to be effective for clients suffering chronic pain (Vowels, Witkiewitz, Levell, Snowden, & Ashworth, 2017). ACT did not decrease the client's pain levels, but increased their tolerance of the pain which increased their activity levels (Vowels et al., 2017). ACT uses distress tolerance to increase a client's ability to manage intense emotions so they are able to move forward in treatment as they work through their emotional pain. ACT has shown to be effective for several mental health disorders in various populations such as men and women with panic disorder, clients in an inpatient unit diagnosed with schizophrenia, and men and women with combat-related PTSD (Lanza, Garcia, Lamelas, & Gonzales, 2014; Lopez, Javier, & Salas, 2009; Pankey &

Hayes, 2003; Vujanovic, Niles, Pietrefesa, Schmertz, & Potter, 2011) . However, few researchers have used ACT or ACT groups to specifically decrease PTSD symptoms due to childhood trauma (Sloan & Beck, 2016).

Gap in the Literature

There is a significant gap in the literature regarding the relationship between ACT in a group setting and its effects on PTSD symptoms in women who have been diagnosed with PTSD due to childhood trauma. In this study I investigate the effect of an 8-week ACT group on the symptoms of PTSD for women who have suffered childhood trauma. The group is specific for those diagnosed with PTSD due to any type of trauma. However, only the PCL-C scores completed by women diagnosed with PTSD due to childhood trauma will be collected for this study. To this date there has not been a study that investigates the effectiveness of using an ACT group for women diagnosed with PTSD due to childhood trauma. Therefore, the target population is women diagnosed with PTSD due to childhood trauma who have not served in the military. A sample will be obtained from the community agency that met criteria for this study. This study seeks to investigate if using an 8-week ACT group decreases the PCL-C score for this specific population. A decrease in the PCL-C score would suggest that using the 8-week ACT group effectively reduced PTSD symptoms for this population.

Problem Statement

This study is needed to investigate the effectiveness of ACT used in group therapy and its effect on women diagnosed with PTSD due to childhood trauma. This study is further needed due to the prevalence of PTSD and its negative psychological and

physical effects on women. ACT has not been studied for this specific population with this specific modality. The U.S. Department of Veterans Affairs (2016), stated 60% of men and 50% of women experience at least one traumatic event in their lifetime. The U.S. Department of Veterans Affairs further stated that women tend to suffer from trauma due to sexual assault, including childhood sexual assault, as well as other childhood trauma. Those who have experienced childhood trauma are more likely to have difficulty as adults with emotional regulation and psychosocial functioning (Kulkami, Pole, & Timko, 2013; Ogle, Rubin, & Siegler, 2013; Ono, Devilly, & Shum, 2016). Women who have suffered childhood abuse are also more likely to have health problems than those who have not suffered from childhood trauma (Hampson et. al., 2016). According to Zielenski (2016) and the National Institute of Mental Health (NIMH) childhood maltreatment and trauma has contributed to adult unemployment and poverty. The ability to heal from childhood trauma is complex in nature as there are many factors, such as a personality, home life, work life, and physical health that may play a role in the healing process from childhood to adulthood.

Purpose of the study

The purpose of this study was to determine if using an 8-week ACT group decreased PTSD in women with childhood trauma as measured by the PCL-C. The PCL-C is a quantitative questionnaire requiring a quantitative study to be completed. The PCL-C includes 17 questions rating each question between a 1 and a 5 with a possible total score of 85. According to the National Center of PTSD (2016) and Monson et al. (2008), a 5-10 point change in the PCL-C is considered reliable and a 10-20 point change is

considered clinically meaningful. The independent variable is PTSD and the dependent variable is the PCL-C score. The PCL-C will be completed at the first and last session of an 8 week ACT group.

Research Question and Hypothesis

RQ: Is there a significant difference between the PCL-C scores taken at the beginning and the end of an 8 week ACT group for women diagnosed with PTSD due to childhood trauma who have not been in the military?

H_0: There is a significant difference between the PCL-C score at the beginning and the end of treatment after an 8 week ACT group.

H_a: There is not a significant difference between the PCL-C score at the beginning and the end of treatment after an 8 week ACT group.

Theoretical Foundation

ACT was developed using contextualism as the philosophy. Relational frame theory (RFT) is the theoretical foundation that forms contextualism. RFT describes how a person relates to the world through the context of cognition and language. The context and relation of words and actions then create memories which are stored for future use (Zettle, 2011). Thoughts play a role in language and cognition which Zettle stated is related to social cues within the environment.

Contextualism was originally developed by William James using his theory of pragmatism and relational frame theory (Hayes & Lillis, 2015). Hayes and Zettle were two theorists use developed ACT which is based on contextualism and relational frame theory (2015). According to Zettle (2011) some psychotherapies, mindfulness practices,

and dialectical behavior therapy (DBT) are also therapies that are founded out of contextualism.

Humans are taught how to think and behave through contextual cues. Learned behaviors and thoughts may be effective or ineffective depending on the specific situation. For example, for individuals who have been raised in an abusive home, the nature of their childhood is about surviving instead of developing healthy relationships with peers and adults. Learned behaviors may include: shutting down emotions, dissociating, creating a pretend world, and fighting. Children and adolescents may behave in this manner in order to gain a sense of control. However, these behaviors are not just maladaptive in childhood, but also in adulthood. RFT suggests that these behaviors are taught through the contextual and verbal cues which then become ineffective in adulthood.

PTSD symptoms often create inappropriate behaviors as the behavior is based from past contextual ques. ACT uses six therapeutic processes to teach clients how to process their emotions and feelings from the past in the current context of individual and group therapy. ACT allows the client to create room for changing their reactive behaviors to appropriate and controlled behaviors.

The goal of ACT in the group process, is to teach clients to change these ineffective behaviors by creating a safe emotional environment to process the emotions and behaviors that have become instinctive. ACT uses six therapeutic processes to create psychological flexibility in clients who have been diagnosed with PTSD (Luoma, Hayes, & Walser, 2007). Teaching a client to accept their emotions and thoughts without

judgment and to process and let them go facilitates psychological flexibility. The six therapeutic processes to increase psychological flexibility are values, defusion, self as context, acceptance, being present, and committed action. These allow the client to manage their emotions and thoughts without reacting to past traumas. RFT and contextualism will be further explained in Chapter 2.

Nature of the Study

The nature of this study will be considered a quantitative study. The research design is considered pre-experimental and the statistical design that will be used is the ANOVA with repeated measures using subject x trials (Creswell, 2014). Cohen's estimate of small effect size will be used (Research Consultants, 2016). Archival date will be used removing any risk of harm. The archival data will be collected from the clinician who has used a numbering system to maintain participant anonymity.

Definitions

Community mental health agency: According to the Washington State Department of Health (2016) (WADOH) a community mental health agency is licensed according to the codes of the State of Washington. A community mental health agency provides services for anyone who qualifies to receive services that are a medical necessity as defined by the Behavioral Health Organization (BHO). The community mental health agency is licensed to take clients who qualify for State Medicaid. Services provided are dependent on the agreement between the BHO and community mental health agency. For this study only one community mental health agency was used to collect archival data.

Posttraumatic stress disorder (PTSD): According to the Diagnostic and Statistical Manual of Mental Disorders 4th Edition-TR (DSM IV TR) PTSD can include nightmares, flashbacks, having physical reactions to triggers of past traumatic events, avoiding places, thoughts and events that cause memories of the past traumas as well as emotional detachment and numbing.

Acceptance and commitment therapy (ACT): A therapy based on relational frame theory (RFT) and contextualism. ACT uses six core therapeutic processes to decrease symptoms of various mental health disorders including PTSD. These are: acceptance, defusion, being present, self as context, defining valued directions, and committed action (Luoma et al., 2007).

Posttraumatic Stress Disorder Checklist-Civilian (National Center for PTSD, 2016): This is a questionnaire that measures the severity of PTSD symptoms. The PCL-C consists of seventeen questions rating each question from one to five with a possible total score of 85.

Childhood trauma: According to the Academy of Pediatrics (AAP, 1992) childhood abuse is interactions between a child and their parents or another significant adult that causes physical or psychological harm causing damaging interactions. The AAP (1992) further stated this can include physical, sexual, verbal, and psychological abuse that may include neglect of a child before the age of 6 years.

Assumptions

PTSD causes emotional and physically pain and suffering. According to Scioli-Slater et al. (2016), women with PTSD due to childhood trauma including rape have a

higher rate of somatic symptoms and physical illness. The assumption is ACT can decrease physical pain by decreasing the symptoms of PTSD. This is important to the study as there is a high incident of PTSD among women with a history of childhood trauma.

Scope and Delimitations

The specific boundaries for this study are limited to using the PCL-C scores of women who have been diagnosed with PTSD due to childhood trauma who have not served in the military. There will only be one type of therapy researched for this dissertation, and it is administered only in a group setting. In effect, limitations include not using the PCL-C scores of the entire group which would include men and women who have been diagnosed with PTSD not due to childhood trauma. For the purpose of this study, this population was not used as there is a lack of literature specifically for using ACT in a group setting for women diagnosed with PTSD due to childhood trauma.

Limitations

External Validity Limitations

The results of this study can only apply to women diagnosed with PTSD due to childhood trauma. The results of this study are not generalizable due to the lack of ethnic diversity within the ACT group. Since the population was a convenience sample, it does not represent the entire population of the agency. However, the population does represent the population of women who come for services to this specific community mental health agency.

Internal Validity Limitations

Limitations of internal validity include: exclusion of certain information such as the psychopharmacology, age of the client, and past treatment for PTSD. The consistent component to this study is that all participants completed the 8-week ACT group. Secondary diagnoses will be included as information for this study. Secondary diagnosis for these clients may include depression, borderline personality disorder, a historical substance abuse disorder, as well as other mental health disorders. Those with a thought disorder will not be included in this study. Clients who have an active substance abuse disorder or who have a diagnosis of schizophrenia are referred to other groups in the agency. All other clients who have a diagnoses of PTSD were welcome in the ACT groups and to do otherwise would be unethical. According to Pietrzak, Goldstein, Southwick, and Grant (2011) substance abuse disorders can affect up to 52% of those diagnosed with PTSD. According to Wanklyn et al., (2016) major depressive disorders has been shown to be prevalent among the civilian and veteran population diagnosed with PTSD. A further and more detailed study regarding how secondary diagnoses may affect the outcome of PTSD symptoms in an ACT group would be beneficial. Secondary diagnoses may affect the outcomes of the PCL-C scores as it only addresses the measurement of PTSD symptoms. The symptoms of PTSD may be more difficult to address for those who have another diagnosis since their ability to work through emotional difficulty may be stunted.

Significance

This study contributes to current knowledge about the effectiveness of an 8-week ACT group. PTSD affects thousands of individuals and there are numerous treatments that have been studied. However, at this time no study specifically looks at using an 8-week ACT group with women diagnosed with PTSD due to childhood trauma. There is a gap in the research using ACT in a group setting using this specific population. This study will add to the base knowledge of ACT and its effectiveness for this specific population. The implications of social change are to increase this population's positive sense of self, self-confidence, independence, and ability to live a more enriched life. Women with confidence and a positive sense of self are more likely to make better decisions for themselves and those around them when they no longer have anxieties created from PTSD. Women who suffer from childhood trauma are more likely to have difficulties emotionally and physically as adults compared to those who do not suffer from childhood trauma (Hampson et al., 2016; Kulkami, Pole, & Timko, 2013; Ogle et al., 2013; Ono et al., 2016). ACT uses therapeutic processes to decrease symptoms of PTSD which in theory would increase emotional and physical functioning for this population. Social change comes as women have an increase in emotional and physical function which increases their self-confidence.

Summary

The purpose of this chapter was to provide an overview of the research for this study. PTSD significantly impacts the psychological and physical wellbeing and thus quality of life of women. Studies have shown women who suffered childhood trauma

have higher rates of mental health and physical diagnoses. This study is designed to bridge the gap in knowledge of the use of ACT group for women diagnosed with PTSD due to childhood trauma. There are many different treatments for PTSD including cognitive therapies and psychotherapies, but there has not been a study using this specific population in an 8-week ACT group.

The research design will be a quantitative design as the symptoms of PTSD are measured by the PCL-C which is a quantitative questionnaire. The research has relative social change implications as 50% of women and 60% of men suffer at least one traumatic event in their lifetime, according to the U.S. Department of Veteran Affairs (2016). This study will introduce information of the effectiveness of using ACT in the group setting for this specific population.

Chapter 2 provides the literature for this study. It reviews information regarding ACT, PTSD, childhood trauma, and group therapy. Chapter 2 further establishes the identified gap in the literature.

Chapter 2: Literature Review

Introduction

Studies have shown that childhood trauma adversely affects women's physical and mental health (Barrios et al., 2015; Lang et al., 2008; Messina & Grella, 2006). PTSD caused by various forms of trauma has been a widely studied topic. PTSD has been diagnosed in veterans, and civilians of all ages, genders and cultures (Gobin et al., 2013; Wangelin & Tuerk, 2014; Washington et al., 2013). PTSD symptoms can include: experiencing flashbacks of the traumatic event, feeling upset when reminded of past events, avoiding discussing or thinking of past events, being easily startled, losing interest in activities normally enjoyed, and feeling emotionally numb (APA, 2013). ACT has shown to be useful in veterans who have been diagnosed with PTSD due to military job and combat stress. ACT has been shown to decrease symptomatology in other mental health disorders as well (Sharp, 2012).

While researcher have investigated veterans with PTSD using ACT for individual and group therapy, few researchers have explored the efficacy of ACT treatment for childhood trauma-related PTSD using ACT. Other researchers investigated using ACT for various anxiety disorders and other mental health diagnoses; however, there is a lack of literature specifically investigating women diagnosed with PTSD due to childhood trauma.

This chapter describes the philosophy of contextualism that forms the theoretical foundation of RFT which is the foundation of ACT. ACT will be fully explained

including how ACT can influence treatment outcomes. This chapter also gives a description of how RFT and contextualism have influenced other therapies. The history of RFT and its influence on ACT will also be explained. Journal articles that have included ACT, group, RFT, contextualism, cognitive behavior therapy (CBT), dialectical behavior therapy (DBT), and other forms of therapy will be included to show the gap in the research. Studies that demonstrated a reduction in symptoms of PTSD, anxiety and other mental health disorders will be included as well as a description of how PTSD can affect women emotionally and physically. Literature search strategies have also been described in this chapter including specific search terms and research databases.

Literature Search Strategy

The literature search for this dissertation was conducted using the following electronic research databases: EBSCO Host, Academic Search Complete, PsychARTICLES, PsychCritiques, PsychEXTRA, PsychINFO, Dissertation Library, Government PTSD Website, Veterans Administration Website, and Inter-University Consortium for Political and Social Research (ICPSR). Key words included, but were not limited to, *posttraumatic stress disorder (PTSD), ACT, PCL, PCL-C, childhood trauma, trauma, acceptance and commitment therapy, women, cognitive behavior therapy, contextualism, functional impairment, suicide, disability, childhood abuse, group therapy, relational frame theory, RFT.* The literature search was conducted over a twelve month period.

Theoretical Foundation

ACT was developed in the 1980s by Hayes, Zettle, Strosahl, and Wilson. Contextualism is the philosophy that forms the theoretical foundation of RFT which is the foundation of ACT. The founders of ACT created a holistic type therapy that fluidly adapts to a client's given diagnosis. ACT has been used to decrease symptoms of PTSD, depression, anxiety, and has also been shown to facilitate acceptance of psychosis for those who have been diagnosed with schizophrenia. ACT is primarily used, however, for anxiety and PTSD. Hayes, Strosahl, and Wilson (1999) stated ACT includes techniques adapted from a number of psychological theories, and therapies including mindfulness training and spiritual therapy. When using ACT a clinician's goal is to increase a client's psychological flexibility (Gutierrez & Hagedorn, 2013).

The goal for the ACT therapist is to create psychological flexibility in their client in order to increase the ability to accept emotions and feelings as they are without judgement. Acceptance is a method of guiding clients through emotions, thoughts, and feelings to create desired behaviors and values. By creating values, the client can then manage their behaviors caused by emotions and feelings that have caused inappropriate behaviors or thoughts in the past. ACT uses six different core interventions that can be simultaneous or singularly represented. These interventions are: acceptance, defusion, self as context, being present, values, and committed action (Hayes & Lillis, 2015).

Contextualism

The philosophy of contextualism originated with William James and his theory of pragmatism as well as relational frame theory (Hayes & Lillis, 2015). Other therapies founded on principles of contextualism include, functional analytic psychotherapy,

dialectical behavior therapy, and mindful-ness based cognitive therapy (Zettle, 2011). According to Hayes and Lillis (2015) Hayes and Zettle were the two theorists who developed the foundation of ACT based on contextualism and relational frame theory.

ACT incorporates contextualism into therapy by teaching clients the function of emotions, thoughts, feelings, and behaviors in a particular context. This increases a client's knowledge about how past experiences can create dysfunctional reactions in a context that reminds them of past events, even though the context may have no relation to the past event. Knowledge of how past events can create dysfunctional behaviors can increase a client's ability to accept current feelings with less fear. Acceptance of emotions and feelings is a way to create psychological flexibility that can increase a client's ability to let their emotions and feelings pass through as they happen rather than avoiding these emotions and feelings (Hayes & Lillis, 2015).

Contextual philosophy theorizes an individual's experience impacts their entire emotional, social, and physical well-being (Hayes, Strosahl, & Wilson, 1999; Witherington & Heying, 2015). Traumatic experiences are not a linear process as they impact an individual's thoughts, emotions, behaviors, and physical sense of self. Contextualism theorizes that life runs on a continuum within the context of social culture, family culture, and past events. Therefore, an individual's traumatic experience can also affect their family and their social environment by causing isolation and inappropriate reactions to behaviors of others.

ACT teaches a client to relate to the past and future by relating contextually rather than just categorically or verbally. This teaches the client that behaviors are actions

related to past stimuli and less related to current events (Hayes et al., 1993). The behavior and thoughts from past traumatic experiences then cause the client to have difficulty moving past their traumatic experiences causing cognitive fusion. ACT uses the concept of defusion to teach the client to put thoughts and feelings into context rather than using them to create more dysfunctional thinking (Jennings & Apsche, 2014). According to Ruiz (2012) ACT theory does not believe behavior change comes from changing thoughts and beliefs as they do not directly cause behaviors. Mulick, Landes, and Kanter (2011) stated avoiding thoughts and events reminding the client of the traumatic events is one of the main symptoms of PTSD. Contextual philosophy is used through ACT as a way to teach clients how to work through their emotions, thoughts and behaviors as a way to understand their function (Mulick et al., 2011).

Relational Frame Theory

According to Blackledge (2003), B.F. Skinner wrote a book about interpreting verbal language. However, Blackledge further stated this book focused on interpretation rather than how language and higher cognition work together to create relational framing. RFT is a complex theory that uses reasoning, metaphors and perspective taking. The ability to utilize RFT in part is innate due to its relation of language since language is innate in nature, but requires context and behavior to create meaning. ACT works towards teaching the client to look at how words are used in processing rather than language as content (Hayes et al., 1999).

Hayes, Barnes-Holmes, and Roche (2001) stated relational framing includes relational frames of coordination, opposition, distinction, comparison, hierarchy, and

perspective-taking. Barnes-Holmes, Barnes Holmes, and McHugh (2004) stated the relational frame of coordination may be one of the frames that is established in early childhood in part due to the bidirectional relation it promotes. The relational frame of opposition appears to be more abstract and needs to be distinguished from other events in its context. The frame of distinction is a more generalized dimension of which the relations to the context is not implied. Comparison and hierarchy relational frames are even more complex in that the response needs to be according to a number of dimensions within its context. Perspective taking or deictic frames include the frames of *I* and *you, here,* and *there* and *now* and *then* (Barnes-Holmes, Barnes Holmes, & McHugh, 2004).

RFT is how a client relates to the world around them using higher cognition and language. Thoughts facilitate a role in language and cognition which Zettle (2011) stated is related to social ques within the environment. This is also related to contextualism as roles and behaviors are related to the context of the current situation. During childhood, a client learns how to relate to the familial world around them using social cognition, verbal cues, and thoughts. This frames how the child relates to life outside of the family, and as they become an adult, it creates the lens of how they see the world. Language and cognition are bidirectional and therefore create emotional responses to words according to their original context (Barnes-Holmes et al., 2004). Some words have equal meaning to an event and this is called relational networks. Studies have shown that children are highly capable of building large complex relational networks which then carry into adulthood (Barnes-Holmes et al., 2004). Children raised in an emotionally healthy environment will learn appropriate ways to relate to the world around them. Children

raised in an abusive environment will learn inappropriate ways to relate to the world around them causing isolation and emotional suffering.

A client may relate to the world around them through the lens of abuse which was created around certain language, behaviors, and other environmental cues during the abusive event (Hayes et al., 1999). When they experience the same relational frame of cues, clients may act as if they were back in the same abusive situation thereby causing inappropriate or overreaction to the current, non-abusive situation. According to Hayes et al. training a client to have a different set of behaviors and thoughts can be achieved. However, it can be difficult, and the client may still show signs of distress even though they have been taught differently (Hayes et al., 1999). Clinicians using ACT will work with the client in creating values that will assist in using thoughts, behaviors, and emotions that are more functional by changing the relational frame of which these cues originated (Hayes & Lillis, 2015).

When an individual experiences emotion it is experienced holistically, meaning all five senses are involved. Blackedge (2003) used fear as an example in his article when he described RFT. When experiencing fear, an individual's sense of smell, vision, hearing, taste, and tactile functions are included in the experience creating a memory which can be recalled by any one of those same senses at a later date. The specific sense used at a later date may not necessarily be the same exact stimulus used at the time it was first evoked, however, the individual may have the same reaction. The original reason for the fearful event may be recalled evoking the same reaction thereby creating PTSD type symptoms. RFT purports expressive verbal behaviors which define the context of a word

may provoke fear, such as the word *spider*. *Spider* may be related to a specific situation in a specific setting, and any one of those aforementioned stimuli may provoke an irrational emotional response.

RFT theorizes verbal cues can have an impact on a person's reactions due to the relation of the word in its original context. One example could be the word *bear*. If an individual's relation to the word *bear* is fear due to a fearful experience, whenever the word *bear* is used the individual may have an exaggerated or inappropriate reaction when used in a nonfearful environment. If the individual's experience was running from a bear or being around an angry bear at the zoo, for example, use of this word would evoke a flight, fight, or freeze response. If that individual has not been able to relate the word *bear* in a calm situation this reaction may then become symptomatic creating PTSD.

According to Hayes et al. (1999), learning through language alone rather than experience can decrease an individual's ability to be psychologically flexible. Those who learned through experience were shown to have more adaptability to change than those who learned simply through verbal instruction (Hayes et al., 1999). The verbal instruction can set up rigid rules, which creates more psychological inflexibility as well as creating a feeling of hopelessness when not taught with context. For an individual to have psychological flexibility, there is a need to have knowledge of how to behave within a context not just verbally, but behaviorally as well (Barnes-Holmes et al., 2004).

For those with PTSD, stimuli that evoke a memory may cause the same reaction that happened at the time of the event. For example, a person who was physically abused every morning by a family member may have anxiety in the morning even though that

event was many years ago. If coffee was brewing or eggs were cooked at the same time a person was being abused, the smell of coffee or eggs may stimulate emotions, and physical reactions directly related to the abuse. The word *coffee* or *eggs* may also evoke fear and anxiety just by the relations it evokes due to the abuse. Therefore, RFT works on changing the reactions to the stimuli relating to the past experience that provoked the irrational reaction to stimuli in the current moment. ACT also works towards decreasing irrational reactions to stimuli by using defusion to decrease the relational reaction of the stimuli. RFT and ACT work towards creating a sense of self without context to the past or future to increase a client's ability to separate themselves from specific events. Teaching the client to recontextualize their world through mindfulness, acceptance, diffusion, values, and metaphors is a goal of ACT.

Overview of Acceptance and Commitment Therapy

ACT uses six principles to create psychological flexibility within the client. The six principles for psychological flexibility are acceptance, cognitive defusion, being present, self as context, defining valued directions, and committed action (Luoma et al., 2007). There are also six principles used as a model for psychopathology of psychological inflexibility that the client uses causing the inability to move past their given mental health diagnosis. The six principles of psychopathology are experiential avoidance, cognitive fusion, attachment to the conceptualized self, dominance of the conceptualized past and future meaning limited self-knowledge, lack of values clarity, and inaction, impulsivity, or avoidant persistence creating psychological inflexibility

(Hayes et al., 2012; Hayes et al., 1999). Hayes and Lillis (2012) have used a diagram called a hexaflex to illustrate these principles.

As the model of psychological flexibility, the hexaflex is divided into two different areas with three principles in each. Acceptance, cognitive defusion, and self as context are the principles of the therapeutic process that guide the client towards the acceptance process and as a way of increasing the use of mindfulness (Hayes & Lillis, 2015). Being present, defining valued directions, and committed action facilitates the commitment and the behavior change process (Hayes & Lillis, 2015). The client may be working on only one principle area or on all six simultaneously. ACT does have a specific therapeutic process when guiding a client to make changes; yet, each client is different and may be at different stages in the process at any given time. The goal for each client is to create psychological flexibility in order to create forward movement. Without psychological flexibility, the client will stagnate the very emotions and behaviors they are trying to avoid (Hayes & Lillis, 2015).

One of the principles in ACT that distinguishes it from other therapies is the acceptance of events. Some therapies, such as CBT use distraction techniques to decrease emotional stress (Craske, et al., 2014). ACT uses acceptance to work towards psychological flexibility to assist the client in accepting emotions and feelings just as they are without judgement and even with openness. By doing so, clients can understand their emotions from their value base (Hayes & Lillis, 2015). Hayes and Lillis (2015) described avoiding feelings and emotions as experiential avoidance which can actually create more of the emotions the client is trying to avoid. When a client attempts to avoid

an emotion such as anxiety, anxiety increases due to feeling anxious about feeling anxious producing a cyclical effect. Acceptance is the ability to accept what was and what is rather than running from what is not wanted. Rather than running from the past, and using experiential avoidance a client is taught to accept thoughts and emotions without judgement by letting the thought or emotion be felt and heard in a safe environment. Luoma et al. (2007) stated acceptance is used to give up the power struggle against the client's thoughts and feelings to increase the client's psychological flexibility. Acceptance is a way to increase the client's willingness and flexibility to work through a normally avoided event (Luoma et al., 2007).

PTSD symptoms, such as avoidance and emotional numbing, have been shown to be related to functional impairment. By increasing a client's psychological flexibility avoidance will be decreased and their ability to function in day to day activities. Understanding the client's thoughts, behaviors, and emotions towards a specific event can increase the clinician's and client's knowledge of their avoidance (Meyer, Morissette, Kimbrel, Kruse, & Gulliver, 2013). Increasing this understanding will improve treatment compliance and positive outcomes for those diagnosed with PTSD.

Defusion is the ability to see a thought as just that, a thought without power to cause behaviors. Defusion teaches a client to look at a thought rather than through the lens of a particular thought (Hayes & Lillis, 2012). Clients will often take a thought as fact which becomes a part of their identity, such as *I am dumb*. Internalizing thoughts and being fused with them can cause a distorted sense of identity. Defusion does not deny that a thought is present and does not intend to create a false sense of security that a thought

will never be there once distance is created; it simply looks at a thought without judgement. Harris (2009) stated teaching clients to say or think, *I am having the thought that* rather than saying or thinking, *I am dumb* can be a way to increase a client's ability to defuse from their thoughts (p.109). Defusion does not promote creating a different thought as much as observing thoughts in context of the events of trauma. RFT focuses on how language shapes the context of events, and ACT uses this principle to create context for the language that is being used during the time of the event. This can then create a way for the client to step outside of their thoughts and observe without the necessity of changing the thoughts.

ACT empowers a client to create a sense of self that is able to look at past trauma without destroying their identity, and this is called self as context (Luoma et al., 2007). Self as context allows the client to have a healthy identity that can then withstand threats of difficult psychological content (Hayes et al., 1999). By creating a strong sense of self, the client will be less threatened by change. ACT works with three senses of the self. They are: conceptualized self, ongoing self-awareness, and self as perspective, all together working again towards the goal of psychological flexibility (Hayes et al., 1999). When a client feels safe, they are more likely to move forward in their psychological journey and have a willingness to change. Being present is the ability to be in the moment without judgement and without focusing on the future or the past. This gives the client the opportunity to practice awareness of the current moment and increase the ability to defuse from past emotions and thoughts (Luoma et al., 2007). Self as process allows

clients to separate themselves from context to facilitate the ability to describe thoughts and feelings without judging them (Luoma et al., 2007).

According to Luoma et al. (2007), values based on traumatic events or a chaotic childhood may result in a client trying to avoid rejection, emotional pain, anxiety, and depression, causing the very behaviors, such as isolation from others, that are counter-productive to their wanted values. When client create a list of values, it empowers them to evaluate their actions, thoughts, and feelings and see if they are endorsing the desired value. In a sense, values can act like a compass (Hayes et al., 1999). Hayes et al. further stated values can create a foundation for a client identity that can withstand psychological adversity.

ACT uses six processes to describe psychopathology. They are experiential avoidance, cognitive fusion, attachment to the conceptualized self, dominance of the conceptualized past and future, lack of values, and unworkable action (Harris, 2009).

Experiential avoidance can be described as avoiding and/or altering thoughts, feelings, and emotions that cause emotional pain (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Experiential avoidance avoids any negative internal distress such as thoughts of past trauma and places that remind a client of past traumatic events (Gamez, Chmielewski, Ruggero, Kotov, & Watson, 2011).

Cognitive fusion is caused when a person becomes trapped in their own way of thinking, even when it is not helpful. Cognitive fusion is when the mind does not use its emotions, thoughts, and behaviors fluidly and stays stuck in past habits due to trauma. This will then cause a reaction that has been used in past situations that are not

appropriate to the current situation, which then causes disruption to daily life. Luoma et al. (2007) used Obsessive Compulsive Disorder OCD as an example of cognitive fusion: someone with OCD will get caught up in the irrational belief of thinking their family and friends will be contaminated if they do not wash their hands; they do not recognize this as a thought. Luoma et al. further made the analogy it is like wearing sunglasses that represents a person's thoughts and then colors a person's world differently. They are unable to realize the sunglasses can be taken off, so that the thoughts, feelings, and behaviors can be adjusted accordingly.

Dominance of the conceptualized past and future/limited self-knowledge prevents being in the present moment (Luoma et al., 2007). This concept is used to explain the ineffectiveness of keeping in the past or future that causes the inability to create new possibilities of being in the here and now.

Unworkable action is behavior that automatically obstructs the individual from practicing mindfulness, and values, while continuing with reactivity and impulsive behaviors (Russ, 2009). Russ (2009) further stated behaviors may include isolating, avoiding, and obsessively doing an activity that keeps the individual stuck.

Attachment to the conceptualized self occurs when the client is fused to who they are by their past experience and relates to current life in that framework. Furthermore, solutions to current life experiences are within that past (Hayes et al., 1999). Getting stuck in this pathological area creates the inability to have stability within the client's life.

The sixth pathological way of living according to ACT therapy is lack of values, clarity, and contact (Hayes & Lillis, 2015). Having values can guide a client towards a

life of where their needs met and is enriching. Without values, a client may engage in impulsive behaviors that cause emotional conflict. However, for the person who grew up in a chaotic and unpredictable environment, values can be rather intimidating which then leads to avoidance and continuation of emotional pain. Client who experienced an abusive home view values as false hope of a better relationship. As such, they may have given up creating values to avoid pain (Hayes et al., 1999). When using ACT, a clinician empowers the client's ability to feel safe enough to create values that can increase the ability for the client to move beyond their mental health diagnosis.

Relational Frame Theory Treatment

RFT has been used in studies to increase a client's ability to have empathy and to increase their adaptability in a given situation. Davis (1983) stated empathy is a multidimensional process and part of that process includes perspective taking. When a client has been raised in an abusive home, their ability to take the perspective of others is underdeveloped and the ability to separate themselves from others is also skewed. An abusive environment creates enmeshment in relationships, which then causes the inability to have an individual identity. The client's lack of self-identity then creates the inability to have an emotionally healthy sense of empathy and perspective. When a person is enmeshed with another, they will often view the world through the lens of the person they are enmeshed with.

Hendriks et al. (2016) stated clients diagnosed with autism, schizophrenia, or social anxiety that used perspective taking increased their ability to have appropriate social interactions. PTSD can cause anxiety while in social situations due to certain

sounds, smells sights, tastes, and/or sensations, and client with PTSD are unable to take the perspective of others. Hendriks et al. (2016) used RFT to teach those with social anxiety ways to decrease their emotional reactivity when around others by training them to use perspective taking. This type of training can lead to defusion. Clients can then create a sense of self by getting away from over-analyzing their sense of others.

When a client is able to create their own sense of self, their ability to be in the moment without being the moment increases. This creates independence from what is happening around the client. In ACT, this process is similar to defusion. Defusion increases the client's ability to stop and look at a situation in its context rather than through the lens of past trauma.

McKeel and Dixon (2014) used RFT to increase delay of gratification in children. McKeel and Dixon stated many behavioral techniques have been studied and used to decrease impulsivity. However, using RFT McKeel and Dixson completed a study showing a quicker learning response to delay of gratification by creating verbal and contextual relation to the reward of waiting. They successfully taught these children to have more control over their impulsive behaviors. RFT creates cognitive relations with language therefore taught these children the context of language as it relates to verbal and non-verbal behaviors. RFT creates cognitive relations with language therefore taught children the context of language as it relates to verbal and non-verbal behaviors. When a child does not have the ability to understand verbal relations due to a cognitive or learning disorder they will have difficulty learning social cues as well as difficulty with situational context (Cullinan & Vitale, 2009). Cullinan and Vitale further stated there has

been some development in creating interventions, using RFT, to teach children specific aspects of early language development, but further research is needed. This study has shown the importance of context, verbal relation, and rules to increase the ability to manage behavior. This type of learning can increase a client's ability to increase emotional regulation to stimuli that remind them of past traumas.

RFT has been used to create quantifiable measurements to understand an individual's ability to relate to the context of their environment. Two of these measurements are the Implicit Relational Assessment Procedure (IRAP) and the Implicit Association Test (IAT). The IRAP is based on the IAT and both are used to measure beliefs and attitudes (Power, Barnes-Holmes, Barnes-Holmes, & Stewart, 2009). These tests have been used to measure the beliefs and attitudes in a number of populations including sex offenders. The IRAP and IAT have assisted researchers in creating treatment to increase an individual's ability to understand how their own beliefs and attitudes affect their language and behaviors.

RFT is the foundation of ACT and has shown useful to those who have been diagnosed with a mental health disorder, including PTSD. Those with the diagnoses of PTSD often react to their situation according to past traumas instead of the current here and now context. ACT works by teaching clients to relate to their current environment by using a number of techniques.

RFT is useful in treating PTSD since RFT relates the current surrounding to language and cognition. RFT also works to increase an individual's ability to have empathy and healthy perspective taking. These are both important to create a client's

sense of self away from the judgement of others and without judgement of self. Creating distance between self and context enables a client to be proactive and not react to the situation around them, which would cause more stress and dysfunction. RFT is complex in nature and its theory does not have a specific set of techniques; rather, it is the foundation for ACT which is the foundation of this study.

For those with PTSD an event, smell, word, sound, touch, or sight will often cause a significant reaction related to a past trauma that has nothing to do with the current situation. This is the relational feedback the mind or body creates after a traumatic event when an individual has not worked through that event. ACT, through the foundation of RFT and philosophy of contextualism, teaches clients to act in accordance to the current situation. ACT teaches client's to work through their feelings and emotions rather than avoid them. Working through feelings and emotions due to past traumatic events will empower the client to create a different context and relationship to those feelings. When a client feels emotions in a safe environment, they have the opportunity to be present with the feelings without the threat of harm. This then creates the ability for the client to be proactive rather than reactive to non-related events that may cause traumatic stress.

ACT has been used and studied by many researchers and counseling professionals. Guiterrez and Hagedorn (2013) stated there have been over 60 randomized controlled trials using ACT. There are many studies using ACT for various populations, including athletes who want to improve their performance, to individuals diagnosed with schizophrenia who want to function more successfully in the community. ACT has shown to decrease symptoms of many different types of anxiety disorders, including

PTSD. Part of the reason ACT has shown to be successful is its simultaneous practice of acceptance and commitment to work through the feelings stemming from traumatic events.

This research will build upon existing research as there have been studies that have included veterans with PTSD using ACT for individual and group therapy. The PTSD of veterans was primarily related to their service and was not distinguished childhood trauma within the studies. There have also been studies using ACT for various anxiety disorders and other mental health diagnosis. However, not specifically an 8 week group with women diagnosed with PTSD due to childhood trauma.

Posttraumatic Stress Disorder

PTSD affects many who have suffered different forms of trauma, including childhood abuse. Millions of Americans are diagnosed with PTSD due to various traumas every year, and women have higher rates than men according to the Centers for Disease Control (CDC, 2016). Individuals that experience childhood trauma are particularly susceptible to developing PTSD, according to Stovall-McClough and Cloitre (2006), and some studies have shown 48-85% of those diagnosed with PTSD are survivors of childhood abuse. While this may be a big range percentage-wise, childhood trauma is nonetheless devastating. According to Moehler, Biringen, and Poustka (2007), many studies have shown the correlation of abused women furthering the cycle of abuse onto their children, causing them to have higher rates of being victims and/or perpetrators. Moehler et al. further stated socioeconomic status and lack of familial and social support may also be a factor in the cycling of abuse.

Individuals who have suffered trauma during childhood have been shown to have problems with mood regulation and intrusive thoughts of the trauma as well as interpersonal struggles (Stovall-McClough & Cloitre, 2006). Stovall-McClough and Cloitre further stated adults who have suffered from childhood trauma have shown to have inappropriate attachment with others, including struggles with attachment to their own children. One researcher found that women diagnosed with PTSD due to childhood trauma were more likely to have intrusive behaviors towards their infants compared to those who did not (Moehler et al., 2007). Those who suffer from PTSD have also been shown to have lower distress tolerance, increasing impulsive anger outbursts (Contractor, Armour, Wang, Forbes, & Elhai, 2015).

PTSD causes debilitating symptoms to the point of avoiding any feeling, thought, situation, place, item, and behavior that reminds the person of the traumatic event. Nightmares and flashbacks are also primary symptoms of PTSD that contribute to decreased sleep and energy (Held, Anderson, & Owens, 2015). As explained in ACT avoidance can actually cause more symptoms the individual is trying to avoid. According to Held, Anderson and Owens, this type of avoidance is one of the reasons so many who have been diagnosed with PTSD are also co-morbid with a secondary substance abuse diagnosis as many use self-medication with alcohol and/or drugs as a means to try and avoid.

Stovall-McClough and Cloitre (2006) stated for some individuals, PTSD causes mental disorganization, a lack of closure of the abuse, disassociation, and the inability to have a full narrative of the abuse. Complete treatment narratives have been shown to be

effective in enabling the client to gain closure from their childhood trauma (Stovall-McClough & Cloitre, 2006).

Another symptom of PTSD is a "persistent negative emotional state (e.g., fear, horror, anger, guilt, or shame)" (APA, 2013, p. 272). Guilt is a more adaptive type process as guilt views a person's behaviors negatively and guilt unchallenged can turn into shame (Held et al., 2015). Shame does not differentiate between behaviors, thoughts, feelings, and a sense of self. According to Gutierrez and Hagedorn (2013), shame is when an individual has a heightened self-awareness which causes difficulty separating self from behaviors, thoughts, and feelings. Those who have suffered trauma will often blame themselves and believe they are defective for not having managed their symptoms, increasing their sense of guilt and shame (Held et al., 2015). Gutierrez and Hagedorn further stated mindfulness techniques and acceptance, such as those used in ACT, have been shown to increase a client's ability to differentiate between shame and self as well as guilt.

Childhood trauma can lead to increased victimization and unhealthy relationships which can increase physical and mental health problems in women (Messina & Grella, 2006; Messing, LaFlair, Cavanaugh, Kanga, & Campbell, 2012). Suicidal ideation and suicidal behaviors have also been shown to be higher in those who have a history of at least one traumatic event (Stein, et al., 2010). Women who have suffered childhood trauma have a higher rate of having physical and mental health illnesses such as fibromyalgia, PTSD, and suicidal behavior (Messina & Grella, 2006; Panagioti, Gooding, Taylor, & Tarrier 2012; Sigurdardottir & Halldorsdottir, 2013; Smith, et al., 2009).

Panagioti et al. (2012) stated there are a number journal articles connecting PTSD to suicidal behavior, which is also connected to an individual's negative sense of self. PTSD has contributed to decreased functioning in a number of psychosocial and life domains (Rodriguez, Holowka, & Marx, 2012; Shnaider, et al., 2014). Karam et al., (2014) stated the more traumatic events a person experiences, the more complex PTSD becomes causing greater loss in functionality.

Some studies have shown that women with PTSD experience higher rates of somatization as well as increased addiction to alcohol; and other chemical substances as well as self-harm behaviors and suicide attempts. In general, women have higher rates of psychopathology who have suffered childhood trauma compared to women who have not (Carepenter, Shattuck, Tyrka, Geracioti, & Price, 2011). Women who have suffered from childhood trauma have also shown to have higher rates of borderline personality disorder. They have also been shown to have a higher rate of maladaptive thinking, which can create maladaptive behaviors leading to a cyclical reactionary maladaptive pattern (Weinstein et al., 2016). Another study correlated sexual childhood trauma and schizoid and schizotypal personality disorder (Berenz et al., 2013).

Posttraumatic Stress Disorder Treatment

Previous studies have included women as part of the population for treatment for PTSD using other therapies such as CBT, DBT, psychoeducational groups, exposure therapy (ET), psychotherapy, and psychopharmacology (Iverson et al., 2011; Iverson, Fruzzetti & Shenk, 2009). While studies that used ACT for group therapy for Combat Veterans, GAD, individual case studies, and individual therapy for those with various

mental health disorders, currently in the literature, there is a lack of extensive studies using ACT in a group setting specifically for nonveteran women suffering from PTSD due to childhood trauma.

Contextualism and RFT as joined in ACT use interventions to facilitate clients to process traumatic events using acceptance rather than avoidance. Mulick et al.(2011) stated the full success of contextual type treatment continues to need more exploration. However, Mulick et al. further stated contextual therapies such as ACT, Behavioral Activation (BA), DBT and Functional Analytic Psychotherapy (FAP) have shown to be effective in treating PTSD. ACT is an evidence-based therapy that has been used to decrease symptoms of various mental health disorders, including PTSD (Berman, Boutelle, & Crow, 2009; Zarling, Lawrence, & Marchman, 2014). These types of therapies include an exposure type of component in their technique to increase the ability to defuse from the emotions past traumas promote. The exposure piece of each of these therapies is not necessarily as direct as Exposure Therapy (ET) itself, which is one reason they might have a higher compliance rate (Mulick et al., 2011). Some studies have shown that despite being effective, ET can have higher non-compliance due to the directness of the therapy (Mulick et al., 2011).

The journal article written by Mulick et al. (2011) presented two case studies showing significant improvement in function and significant decrease in PTSD symptomatology when using ACT. In one case study, a 19 year old female suffered from childhood sexual abuse as well as a 51 year old male suffered from combat related-PTSD from the Vietnam War experienced decreased symptoms after ACT. Within this same

article, Mulick et al. (2011) described success of decreasing PTSD symptoms after clients had been in a group utilizing BA therapy. This second group was diverse having two women who had suffered sexual assault, one male Vietnam War combat veteran, and one male who experienced physical and sexual abuse as a young child and young adult (Mulick et al., 2011). DBT, which is primarily used to treat Borderline Personality Disorder (BPD), has been shown to decrease PTSD symptoms as well. BPD has been diagnosed in many whom also have a diagnosis of PTSD, so it is not surprising DBT has success in treating those with PTSD as well.

A combination of EP and CBT have shown to decrease symptoms for individuals with different forms of anxiety besides PTSD (Sharp, 2012). Sharp as with other professionals state EP can be a drawback for those with more debilitating or chronic anxiety due to their strong avoidance of past experiences. One study, noted by Sharp, described the success of ACT used with a client who had not had any symptom relief after one year of taking medications. This same client continued to have success even after a one year follow-up from ACT treatment. ACT was additionally successful with four individuals diagnosed with PTSD even though one of the participants missed several appointments. The authors of this study noted the values and acceptance tools in ACT seemed to be the most helpful for these clients to increase their ability to manage anxiety in other areas of their life. (Orsillo, Roemer, & Barlow, 2003).

A study using mindfulness-based cognitive therapy (MBCT) showed promising results when used in a group setting for combat PTSD veterans who were treated at a veteran's hospital. In this study, participants had an 8 hour group each week for a total of

8 weeks. The Clinical Administered PTSD scale (CAPS) was used to measure symptoms of PTSD at the beginning and end of group (King et al., 2013). After accounting for various variables, the study showed a significant decrease in the CAPS score at the end of treatment. This research suggests that teaching mindfulness while experiencing anxiety can be effective as opposed to avoiding anxiety and PTSD symptoms.

Arch et al. (2012) completed a study comparing the efficacy of CBT and ACT in a group setting. According to Arch et al., both groups had similar outcomes immediately after the study. However, at the 12 month follow-up, the ACT group had lower anxiety scores than the CBT group. The authors of this study stated the difference could have been due to the fact that the ACT group had more participants who continued or sought out individual counseling once the group ended.

Resick et al. (2015) conducted a study using two different types of group therapy for military personnel who had been diagnosed with military related-PTSD. Resick et al. used cognitive processing therapy cognitive only version (CPT-C) and group present-centered therapy (PCT) in two different groups for six weeks with participants attending two sessions a week for 90 minutes each. Resick et al. discovered that both groups had improvements, but the CPT-C group had better outcomes and a greater decrease in PTSD symptoms as measured by the PTSD checklist stressor specific version (PCL-S) and the posttraumatic stress symptom interview (PSS-I). This study was conducted to see if group therapy would be successful in this specific population in an effort to attempt to reach more veterans with PTSD for military bases that have limited mental health professionals.

Castillo et al. (2016) conducted a study specifically for women diagnosed with PTSD due to combat related-trauma. The group lasted for 16 weeks and was 90 minutes each week. This study compared group therapy using a three-module treatment paradigm using cognitive and exposure skills and individual therapy using prolonged exposure (PE) treatment. According to Castillo et al. the group therapy showed a higher improvement rate in the quality of life inventory (QOLI) and a decrease in symptoms which included not just improvement in PTSD symptoms, but also a decrease in the medical outcomes study short form-36 (SF-36) scale as well.

According to Burlingame et al. (2016) it is difficult to study the efficacy of group versus individual therapy due to the amount of variables. One difficulty when comparing group and individual therapy is limited studies using the same exact format for group and individual therapy (Burlingame et al., 2016). All studies have limitations and variables. In order to do no harm to clients, many studies in the non-military sector included variables such as dual diagnoses, chemical dependency diagnosis, psychosis, and mixed groups. However, many studies in the military sector included only veterans who had been diagnosed with combat-related PTSD without a secondary diagnosis of a psychotic disorder or other thought disorders. Another variable was compliance of treatment, including: lack of motivation, incomplete homework assignments, missed group sessions, court ordered clients, length of session or length of group, to name a few issues. Some studies did limit the group or individual therapy to only those diagnosed with PTSD without psychosis or chemical dependence issues. PTSD is often a primary diagnosis for a client with a secondary diagnosis. It would be difficult to do a study that included

clients with only PTSD. Another limitation includes the facilitator's experience in mental health, specifically their experience in administering ACT. Other limitations could include the gender of the facilitator in a women's specific group, the investment of the facilitator to the group, and the attitude of the facilitator.

Summary

As reported in the literature, PTSD has a profound debilitating effect for those who have suffered traumatic events. Women who have PTSD due to childhood trauma have been shown to have many problematic behaviors, thoughts, and emotions causing a cyclic dysfunction in their lives. ACT has been shown to be useful in a number of ways for various mental health disorders. In particular ACT has been shown to decrease PTSD symptoms as well as generalized anxiety disorder (GAD) symptoms by teaching clients to live through their emotions and thoughts by acceptance and defusion. Group therapy has also been shown to be especially effective for those diagnosed with PTSD due to military related trauma to create a reconnection with others lost due traumatic events (Keenan, Lumley, & Schneider, 2014).

The combination of RFT and contextualism purports that when a person is suffering a traumatic event, they will use coping behaviors that may have been useful for that specific traumatic event. However, this same behavior is not useful in non-traumatic situations. Using these behaviors in non-traumatic events may in fact be harmful and cause even more emotional trauma for that individual. This is where the holistic approach has shown helpful in decreasing trauma-like responses and behaviors.

ACT works these two theories together to assist a client in decreasing exaggerated and inappropriate responses by using a number of techniques. Using a combination of techniques has the ability to work holistically with the client to increase their ability to work through the traumatic event without having the same response and reactivity. Decreasing reactive responses to stimuli and cues can then decrease the client's PTSD symptoms.

Currently, no study in the literature exists to this author's knowledge that specifically investigates the effectiveness of ACT used in a therapeutic group setting for adult women who have been diagnosed with PTSD due to childhood trauma and have not served in the military. The purpose of this study is to investigate if PTSD symptoms, as measured by the PCL-C will decrease following an 8-week course of group treatment using ACT.

Chapter 3: Methodology

Introduction

This study sought to determine if using ACT for 8 weeks in a group setting would decrease PTSD symptoms in women who have been diagnosed with PTSD due to childhood trauma. Some studies have shown ACT to be helpful for veterans with combat PTSD and others suffering from various mental health disorders (Ruize, 2012; Sharp, 2012). The women included in this study did not serve in the military. Currently, there is no existing literature that studies an ACT group for this specific population of women using the PCL-C to score symptoms before and after treatment.

This chapter describes the research design and methodology including the specific population accessed, the procedures of recruitment, and how the archival data was collected. The variables relevant to the study and limitations of the research design are reviewed. This chapter further includes the intervention used, threats to validity, and ethical procedures used to ensure the safety of the participants. This chapter includes an explanation of the PCL-C and its history. The archival data of the PCL-C was used for this study to determine if using ACT for 8 weeks with a 90-minute session each week decreased PTSD symptoms.

Research Design and Rationale

The research design and rationale was based on archival data. Only the PCL-C scores of women diagnosed with PTSD due to childhood trauma who have not served in the military was used for this study. The archival data are stored at the outpatient community mental health agency. This agency serves all individuals diagnosed with a

mental health disorder who are stable enough to be treated by outpatient services. The independent variable was PTSD, the dependent variable was the PCL-C, and the mediating variables were the participation of the client in the group and completion of the group homework.

Each participant had been through the intake process and diagnosed with PTSD in accordance with the Diagnostic and Statistics Manual of Mental Disorders 4th Edition Text-Revised (DSM-IV-TR). All participants were assigned an individual therapist after intake and were then referred by their individual therapist to the ACT group. Each participant continued to receive individual therapy during their participation in the group. The participants may or may not have been receiving psychotropic medications at the time of group treatment.

The PCL-C was given at the first session of the group and again at the last session of group. The PCL-C was used to measure the symptomatology of PTSD at the beginning and end of group. The research design was a quantitative study. Due to the design choice, there was a limited number of PCL-C scores before and after treatment because the agency had only provided ACT in a group setting for 2.5 years. Another constraint of the design choice was that the groups included both male and female participants and not just the desired sample population for this specific study. The PCL-Cs were separated by the clinician completing the group and only the female participants will be used for this study.

The design choice was consistent with a quantitative study due to the numerical measures of the PCL-C which scores the severity of PTSD in each individual. The PCL-

C consists of 17 questions rating each question on a 1-5 scale with a possible total score of 85. The scoring process of the PCL-C is explained later in this chapter.

The research design was considered a pre-experimental design and the statistical design that was used is the ANOVA with repeated measures using subject x trials (Creswell, 2014). Cohen's estimate of small effect size was used (Research Consultants, 2016). The software that was used for analysis was the Statistical Package for Social Sciences (SPSS) version 22.0 for Windows. SPSS is a software program developed and publish by IBM (IBM, 2013).

Methodology

Sampling of the Target Population

The targeted population was women diagnosed with PTSD due to childhood trauma who came to the community mental health agency for treatment due to PTSD symptoms. The target population sample were accessed through archival records from this community mental health agency. .

This community mental health agency serves anyone with a mental health diagnosis that meets medical necessity according to the Behavioral Health Organization (BHO). BHO is funded through state Medicaid insurance and this specific community mental health agency serves anywhere from 1200-1500 clients at any given time. This specific community mental health agency is the largest community mental health organization in this specific county of this state. This agency conducts evaluations, intakes, as well as individual, family and group therapy. This agency also offers intensive case management, as well as an inpatient facility.

Sampling and Sampling Procedures

The records of clients who had been through the full 8 week ACT group were obtained for this study and these same individuals also continued to receive individual therapy. Only women who had been diagnosed with PTSD due to childhood trauma who did not serve in the military and completed the 8 weeks of the ACT group were included in the analysis. Some participants may have also been diagnosed with other mental health in addition to PTSD. However, clients diagnosed with schizophrenia or a thought disorder were excluded.

A convenience sample was chosen as these groups had already completed the 8 week group and the data had been archived (Creswell, 2014). I received the archival data of the PCL-C with the permission of the program director and her superiors. With this permission there were no time constraints in obtaining the data. The PCL-C was accessed through archival data at a community mental health agency. A power analysis was conducted which used the program from Research Consultants (2016) website with an alpha level of .05 and a power level of .80. Cohen's estimate of small effect size was also used since the sample size was only $n = 24$.

Procedures for Recruitment, Participation, and Data Collection

Only the before treatment and after treatment scores of the Posttraumatic Stress Disorder Checklist-Civilian (PCL-C) of women diagnosed with PTSD due to childhood trauma were used. Only the age and diagnosis was identified on the PCL-C for reasons of anonymity. The exact number of available archival data was 24. The same therapist conducted the ACT therapy for an 8-week period for three different groups.

Instrumentation and Operational Constructs

The posttraumatic stress disorder checklist (PCL) is a self-reporting checklist which was designed to measure symptoms of PTSD in combat veterans from the National Center for PTSD in 1993 by Weathers, Litz, Herman, Huska, and Keane (as cited in Blanchard, Jones-Alexander, Buckley & Forneris, 1996). The PCL-C is a further development of the PCL and is used specifically for the civilian population. The difference between the PCL and the PCL-C is simply that the PLC-C refers to traumatic events in general while the PCL relates specifically to a stressful event due to a military event (Health, 2016).

Both the PCL and PCL-C have demonstrated psychometric validity and reliability (Holliday, Smith, North, & Surist, 2015; Keen, Kutter, Niles, & Krinsley, 2008; Wilkins, Lang, & Norman, 2011). Wilkins et al. stated that the PCL and the PTSD checklist-specific event (PCL-S) tended to have higher validity and reliability since both focus on a specific event to diagnose PTSD compared to the PCL-C which focuses on trauma in general. In addition, Ruggiero, Del Ben, Scotti, and Rabalais (2003) affirmed that the PCL-C has high validity and reliability, as well as high test- retest reliability. Both Ruggiero et al. (2003) and Keen et al. (2008) used the clinician-administered PTSD Scale (CAPS), a well-known scale used to diagnose PTSD, as a way to compare validity and reliability. The CAPS is a structured interview scale that measures the severity of each PTSD symptom. The CAPS has shown strong psychometric properties and is therefore considered the gold standard for measuring PTSD (Keen et al., 2008). The PCL-C as a single instrument does not hold as high of psychometric properties to diagnose PTSD as

the CAPS, but it has shown to be a valid and reliable measure of how a client perceives their own symptoms before and after treatment.

The PCL was developed to measure PTSD in combat veterans. The PCL was originally developed based on the Diagnostic and Statistics Manual of Mental Disorders 4th Edition (DSM-IV). Once the Diagnostic and Statistics Manual of Mental Disorders 4th Edition Text-Revised (DSM-IV-TR) was published the PCL was revised and revised again after the DSM-5 was published. However, this study used the PCL-C that was based on the DSM-IV-TR.

The original PCL was designed to measure the symptoms of PTSD in the veteran population to determine the severity of PTSD. Since its development in 1993, there are a few versions of the PCL that have been modified slightly to use for specific populations, including the PCL-C. Since the PCL-C has been demonstrated to have high psychometric properties it will show sufficient instrumentation to answer the research question for this dissertation.

The therapist that facilitated the 8 week ACT group used the PCL-C to measure symptoms at the start and end of the group. The PCL-C is a 17 item checklist that measures the severity of symptoms of PTSD specifically in the civilian population where clients rate their symptoms on a scale from 1 “not at all” to 5 “extremely.” The total score can range from 17-85, depending on the severity of the PTSD symptoms the client is experiencing at the time they complete the questionnaire. According to the National Center for PTSD (2016) and Monson et al. (2008) a 5-10 point change in the PCL-C is considered reliable, and a 10-20 point change is considered clinically meaningful.

Intervention

ACT is a therapy based in the philosophy of contextualism and the theoretical foundation of RFT. ACT is based on a client's values, acceptance of past and current feelings and emotions, psychological flexibility, cognitive defusion, and committed action. Steven Hayes, is the founder of ACT teamed up with Zettle, Strosahl, and Wilson to create a therapy that included the above listed (Hayes, Strosahl, & Wilson, 1999). The archival data collected for this study was used in an 8 week ACT group having one 90 minute session each week with homework assignments. The group therapy was completed by a social worker with a master's degree. The therapist who led the group had been trained in ACT and has used it for four years. He has experience using ACT with the veteran population and the general population.

Each week of the ACT group has a specific agenda with a specific topic. The first session is different from the others as it is the introduction to the group and includes an outline to the 8-week group, what to expect, and the rules of the group. The following weeks include an introduction with a reflection of the last week, a review of the homework, a 5-minute mindfulness sitting, a review of the prior session, the introduction of a new concept for the day, an ACT metaphor reading, and the assignment of new homework. The session closes with a final 5-minute mindfulness exercise.

The format for each of the 8 weeks follows: Week 1 is an introduction to the therapist, ACT, and the structure of the group sessions. Week 2 offers an explanation of mindfulness and dissociation. Week 3 discusses expectation versus reality and acceptance. Week 4 covers the topic of defusion. Week 5 continues the discussion of

defusion. Week 6 covers values. Week 7 describes how to make a committed action. Week 8 a review of the group process and a discussion of how to identify progress and stagnation. The week concludes with the reassessment of PTSD symptoms using the PCL-C. A complete outline of the ACT group and each week's packet is included in the appendix A of this dissertation.

Data Analysis Plan

The software that was used for analysis is the Statistical Package for Social Sciences (SPSS) version 22.0 for Windows. SPSS is a software program developed and published by IBM (IBM, 2013).

Research Questions and Hypotheses

RQ: Is there a significant difference between the PCL-C score taken at the beginning and the end of an 8 week ACT group for women diagnosed with PTSD due to childhood trauma?

H_0: There is a significant difference between the PCL-C score at the beginning and end

of treatment after an 8-week ACT group.

H_1: There is not a significant difference between the PCL-C score at the beginning and end of treatment after an 8-week ACT group.

Description of Data Analysis Plan

The research design was considered a pre-experimental design and the statistical design that was used was the ANOVA with repeated measures using subject x trials

(Creswell, 2014). Cohen's estimate of small effect size was be used (Research Consultants, 2016).

Threats to Validity

Threats to External Validity

Threats to external validity did exist in this study due to the narrow population used. This study did not account for other ethnicities other than Caucasian due to the small sample size and lack of diversity at the agency. Therefore, the results can only be cautiously generalized due to the limited cultural diversity. Since the population was a convenience sample, it does not represent the entire population of clients at the agency. However, it does represent a portion of the population at this specific agency since one of the main diagnoses given for women who present for treatment is PTSD.

Threats to Internal Validity

Various threats to internal validity exist in this study, including: the age and maturity of each client, medication history, extent of their trauma, and past treatments for PTSD before attending the group. Other threats included not accounting for secondary diagnoses, or chemical dependency use. The one consistent component to this study was that none of the participants had been in an 8 week group using ACT prior to coming to the agency.

Ethical Procedures

Institutional Permission

Permission from the program director was obtained. The permission letter and the confidentiality contract with the agency stated that I agreed to not use the archival data

except for this study in Appendix A. I worked at the site where the data was collected. The archival data that was collected before I started working at the agency as well as after.

Treatment of Data

The names of the participants were not included in the data that I obtained. I was only provided the age and DSM-IV-TR diagnoses. The data was stored in a locked cabinet at the agency. The data was obtained from the agency following Walden University IRB approval. The IRB approval number was 07-11-2017-0276532. The agency has a policy that all data is destroyed after the five-year retention period.

Summary

This chapter outlines the research design and rationale, the methodology including the population, recruitment and sampling procedures for obtaining the archival data, the operational constructs, threats to validity, and ethical procedures. Procedures for collecting the archival data and the ethics of this process were explained, as was the process of anonymity for the participant included in this study. The statistical procedures and the program used were also described, which included ANOVA with repeated measure design. Cohen's estimate of small effect size was used. Chapter Four will describe the data collection and the results.

Chapter 4: Results

Introduction

The purpose of this study was to narrow the gap in literature regarding the use of ACT in a group setting as measured by the PCL-C. The targeted population was women with a diagnoses of PTSD due to childhood trauma who have not served in the military. Substantial research has established that using ACT has decreased symptoms of PTSD. However, not specifically using an 8-week group for those diagnosed with PTSD including women diagnosed with PTSD due to childhood trauma. Therefore, the research question was the following: Is there a significant difference between the PCL-C scores taken at the beginning and the end of an 8-week ACT group for women diagnosed with PTSD due to childhood trauma who have not served in the military? A repeated-measures of ANOVA method was used to compare the before and after scores of the PLC-C to determine if the 8-week ACT group decreased symptoms of PTSD.

Data Collection

The study used archival data from one community mental health agency. Data was collected without interaction with the participants by collaborating with the mental health provider who facilitated the ACT group. The PLC-C score sheets of the participants provided the age, and diagnoses of the participants who had been diagnosed with PTSD due to childhood trauma during the intake process. The facilitator kept the participants anonymous by using a numbering system for the PLC-C score sheets.

Treatment

Of the 28 PCL-C score sheets only those completed by women were collected (*n* = 24). All participants had a diagnosis of PTSD due to childhood trauma and 23 of the 24 had at least one secondary diagnoses. All participants participated in an 8-week ACT group. All 3 groups were facilitated by the same mental health provider.

Results

Research Question and Hypothesis

RQ: Is there a significant difference between the PCL-C scores taken at the beginning and the end of an 8 week ACT group for women diagnosed with PTSD due to childhood trauma who have not served in the military?

H_0: There is a significant difference between the PCL-C score at the beginning and end of treatment after an 8-week ACT group.

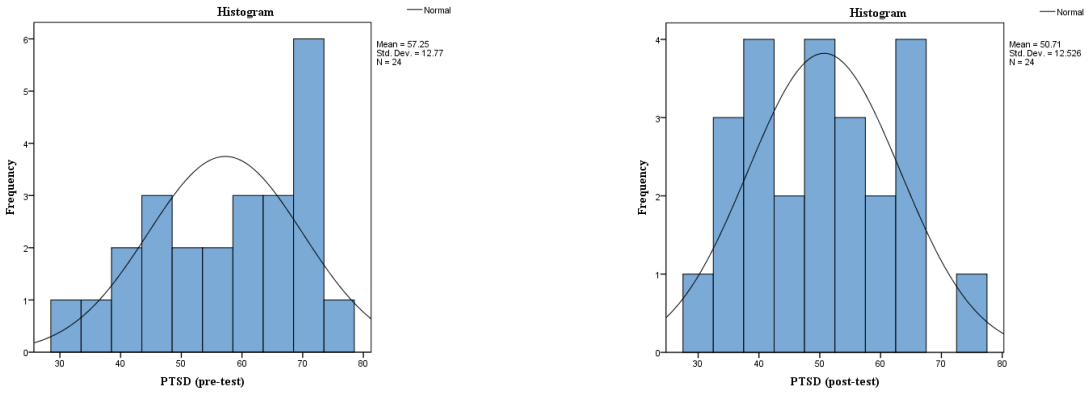
H_1: There is not a significant difference between the PCL-C score at the beginning and the end of treatment after an 8-week ACT group.

In order to address the research question a repeated-measures of ANOVA was used to determine if there was a significant difference in PCL-C scores after an 8-week ACT group. A repeated-measures of ANOVA was appropriate to use as there were 3 different 8-week ACT groups. Therefore, the study tested for the 3 assumptions of the repeated measures ANOVA test.

A repeated-measures ANOVA method was utilized to examine whether the PTSD mean differences between the pretest and posttest scores are statistically significant. For the repeated-measures ANOVA method to be utilized a total of 2 input variables were

used; i.) *PTSD pre-test* = a scale variable with interval measurement and ii.*) PTSD post-test* = a scale variable with interval measurement of the study's total sample size, *n* = 24. The study tested for the 3 assumptions of the repeated measures ANOVA test which included the approximation to normal distribution of the dependent variable the PCL-C at both time points, the equality of variance between the two time point measurements, and the assumption of correlation between the dependent variables including pre-test and post-test.

Assumptions of Normality



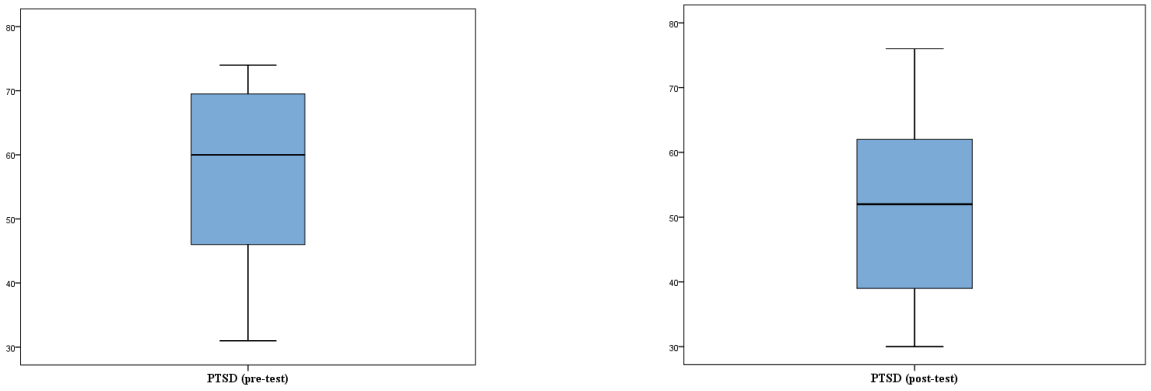
i. PTSD at Pretest ii. PTSD at Posttest

Figure 1. Histogram with fitted curves of PTSD measure at two time points.

The histograms above were used to graphically illustrate whether normal distribution was assumed using fitted curves. PTSD level at pre-test, the histogram graph revealed an asymmetric distribution as evidence of a left-tailed distribution of the observed scores, this indicated a negative skewed distribution of the observed scores. In

comparison, PTSD level at the posttest had shown an asymmetric distribution as evidence of a right-tailed distribution, therefore a positive skewed distribution was detected at the post-test level. Both the pretest and posttests PTSD scores exhibited slight asymmetric distribution curves based on the visual inspection of the histograms and the approximation to normal distribution may be violated or not.

Outlier Detection



i. PTSD at Pre-test ii. PTSD at Post-test

Figure 2. Boxplots of PTSD measure at two time points.

Examinations of both boxplots above, Figure 2, have shown that there were no detection of influential outliers in each of the two time points of PTSD measures.

Table 1

Statiscal Summaries

	PTSD (pre-test)	PTSD (post-test)
N	24	24
Mean	57.25	50.71
Std. Deviation	12.77	12.526
Minimum	31	30
Maximum	74	76
Skewness	-0.496	0.195
Std. Error of Skewness	0.472	0.472
Skewness Ratio	-1.051	0.413
Kurtosis	-0.955	-0.941
Std. Error of Kurtosis	0.918	0.918
Kurtosis Ratio	-1.040	-1.025

Examination of Table 1 above were the two PTSD measures observed at two time points along with summary statistics and skewness/kurtosis estimations. At pre-test, the variable had shown a slight negative skewed distribution (*skewness statistic* = -0.496). Its kurtosis had negative kurtosis values (*kurtosis statistic* = -0.955) indicates an evidence of platykurtic or with flat distribution characteristics. At posttest, the PTSD variable had shown a slight positive skewed distribution (*skewness statistic* = 0.195). Its kurtosis had a negative kurtosis values (*kurtosis statistic* = -0.941) indicated as evidence of platykurtic or with distribution with flat distribution characteristics. (Warner, 2013) suggested that skewness and kurtosis values of -1 to +1 are considered ideal, whereas values ranging from -2 to +2 are considered acceptable for psychometric purposes. Therefore, according to (Warner 2013) convention, each of the outcome variables measured at 2 timepoints did approximate normality.

Another test for approximation to normality is the *skewness and kurtosis ratio test* formula (below) was used to assess the distribution of the outcome variable:

Z_s = *skewness or kurtosis* ÷ *standard error* * Z_s values should be within ±1.96 or ±2.0 for normal distribution at p=.05 (Hair, Black, Babin, Anderson, & Tatham, 2006).

Table 1 above, have shown the skewness ratio value of PTSD measure at pre-test (-1.051) did not exceed ±1.96 or ±2.0 threshold. Its kurtosis ratio value of PTSD measure at pre-test (-1.040) also did not exceed ±1.96 or ±2.0 threshold, and thus the approximation to normality was assumed. Similarly, skewness ratio value at post-test (0.413) did not exceed ±1.96 or ±2.0 threshold, and its kurtosis ratio value of PTSD measure at post-test (-1.025) also did not exceed ±1.96 or ±2.0 threshold, therefore normal distribution was assumed.

Using the Bonferroni outlier test (R-Commander) have revealed that case #3 responses on both time periods were indeed an outlier and statistically significant, B_{pre} = -9.90, p < .001, and B_{post} = -5.26, p < .001, so case #3 had been removed from the hypothesis tests conducted.

Table 2

Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
PTSD (pre-test)	0.929	24	0.091
PTSD (post-test)	0.961	24	0.462

Lastly, using a conservative normality test in Shapiro-Wilk's test of normality provided a stricter assessment of whether the two-time points approximates normal distribution. The Shapiro-Wilk's test of normality (Table 2) above, at PTSD pretest the estimates have a non-significant statistic value greater than the .05 threshold, $S\text{-}W(24) = 0.929$, $p = .091$, which indicates the approximation to normality was not violated or the current data was normally distributed. At Post-Test, a non-significant statistic value greater than the .05 threshold, $S\text{-}W(24) = 0.961$, $p = .462$, which indicates the approximation to normality was not violated or the current data was normally distributed.

In conclusion, the two dependent variables measured at two time points adequately approximated normality based on visual inspections using the histogram and boxplots, and the adequate results from the skewness/kurtosis ratio and *Shapiro-Wilk's test of normality*.

Equality of Variance Assumption

Table 3

Test of Homoscedasticity of Variances (Breusch-Pagan test)

	Chi-Square value	Df	Sig
Pre-test (Baseline) and Post-test	0.966	2	0.617

Table 3 above, is the Breusch-Pagan test of homoscedasticity, and importantly, a non-significance value of $p > .05$, suggested that the error variance between the two time points are approximately equal from each other. Upon examination of the table, the paired sample effects had a non-significant outcome, $X^2 = 0.966$, $p = .617$, at which indicated that the error variances between the two timepoints are equal, and thus meeting

the assumption of equality of variances between the two time points. Overall, the assumption of homogeneity of variances for the between-groups, within-groups the two time points was achieved.

Assumptions of Linearity between time points

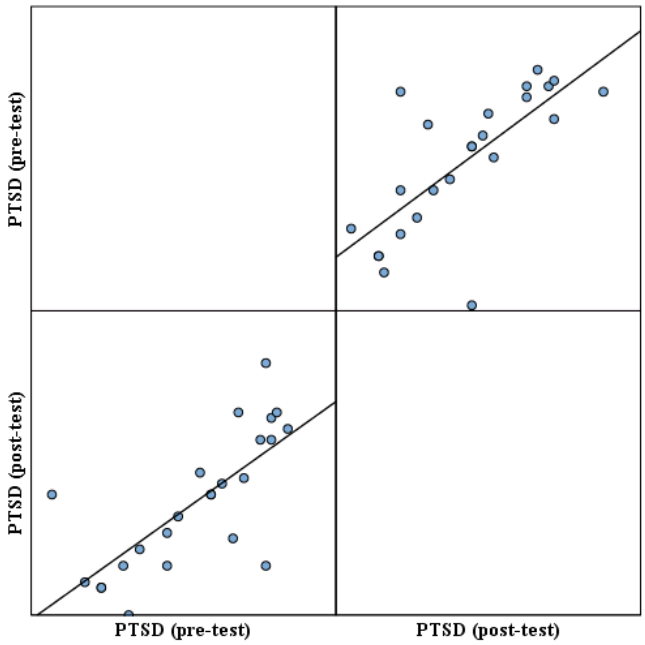


Figure 3. Scatter-plot matrix.

Table 4

Correlations Matrix

		PTSD (pre-test)	PTSD (post-test)
PTSD (pre-test)	Pearson Correlation	1	.729**
	Sig. (2-tailed)		0.000
	N	24	24
PTSD (post-test)	Pearson Correlation	.729**	1
	Sig. (2-tailed)	0.000	
	N	24	24

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

The third assumptions of the repeated measures ANOVA are whether there is a meaningful association between dependent variables. Table 4 is the correlation matrix of the PTSD measure observed across two time points. The bivariate correlations from the table above between the two outcome variables had a significant and positive correlations, PTSD level (pre-test and post-test), $r(22) = 0.729$, $p < .001$ In figure 3 above is the scatterplot matrix to provide an illustration of the linearity and the strength of the relationship between the pre-test and post-test PTSD measures. Overall, the assumption of correlation between the two time points of PTSD measure was assumed.

Summary Statistics

Table 5

Statiscal Summaries

	PTSD (pre-test)	PTSD (post-test)
N	24	24
Mean	57.25	50.71
Std. Deviation	12.77	12.526

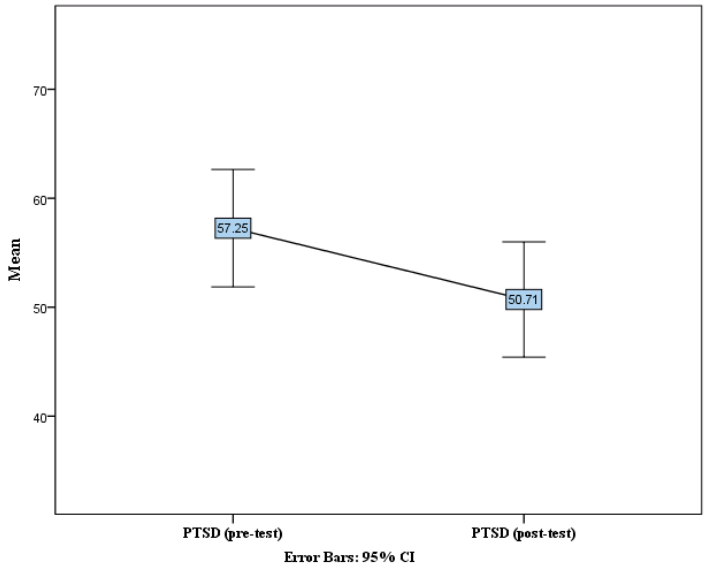


Figure 4: Line-plot of PTSD Pre-test and Post-test

Table 5 above have shown that the mean averages of the PTSD measure at pre-test (M = 57.25, SD = 12.77) and at post-test (M = 50.71, SD = 12.526) indicated a 11.42% decrease in PTSD measures given the ACT intervention between the two time points. Examination of the line-plot above (Figure 4) have depicted that the PTSD scores at post-test was lower in comparison to the PTSD scores at pre-test.

Hypothesis

Table 6

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Observed Power[c]
PTSD	Pillai's Trace	0.34	11.859[b]	1	23	0.002	0.34	0.909
	Wilks' Lambda	0.66	11.859[b]	1	23	0.002	0.34	0.909
	Hotelling's Trace	0.516	11.859[b]	1	23	0.002	0.34	0.909
	Roy's Largest Root	0.516	11.859[b]	1	23	0.002	0.34	0.909

a. Design: Intercept
Within Subjects Design: PTSD

b. Exact statistic

c. Computed using alpha = .05

A repeated measures ANOVA was conducted to test the mean differences of *PTSD* measures across two time points. The test revealed, multivariate test (table 6) above, have shown that the hypothesized model's main effect of PTSD measure was significant, Pillai's Trace (1) = 11.859, p = .002 and Wilk's ^{s} (1) = 11.859, p = .002 with a large effect-size in *Partial ETA*^{2} = 0.34 Observed statistical power .91 or 91% in detecting a Type II error rate.

Table 7

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[a]
PTSD	Sphericity Assumed	513.521	1	513.521	11.859	0.002	0.34	0.909
	Greenhouse-Geisser	513.521	1	513.521	11.859	0.002	0.34	0.909
	Huynh-Feldt	513.521	1	513.521	11.859	0.002	0.34	0.909
	Lower-bound	513.521	1	513.521	11.859	0.002	0.34	0.909
Error(PTSD)	Sphericity Assumed	995.979	23	43.303	~	~	~	~
	Greenhouse-Geisser	995.979	23	43.303	~	~	~	~
	Huynh-Feldt	995.979	23	43.303	~	~	~	~
	Lower-bound	995.979	23	43.303	~	~	~	~

The tests of within-subjects effects ANOVA (Table 7) above, revealed that the within-subjects main effect of the PTSD measure across two time points for the hypothesized model was significant, Greenhouse-Geisser, $F(1, 23) = 11.859$, p = .002.

Table 8

Pairwise Comparisons

(I) PTSD	(J) PTSD	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Pre-test	Post-test	6.542*	1.9	0.002	2.612	10.471
Post-test	Pre-test	-6.542*	1.9	0.002	-10.471	-2.612

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

A pairwise comparison was conducted (Table 8 above) using the Bonferroni adjustment. Based on this test, a pairwise comparison revealed that the PTSD score taken at Pre-test was about 6.542 times higher on PTSD average scores than the Post-test given the ACT intervention and was statistically significant, $p = .002$, 95% C.I. [2.612, 10.471].

Summary of Results

The purpose of this study was to assess the effectiveness of an 8 week ACT group for women diagnosed with PTSD due to childhood trauma. The data analysis using repeated measures ANOVA was provided in this chapter including tables, the approximation of normal distribution, equality of variance, and the assumption of correlation between the dependent variables.

The results of the repeated measure ANOVA rejected the null hypothesis providing enough evidence to support the study's claim in which the PTSD measure at pre-test against the post-test were statistically different from each other. Therefore, using an 8-week ACT group to decrease PTSD symptoms has shown to be effective for women diagnosed with PTSD due to childhood trauma who have not served in the military.

The next chapter will describe the interpretations of the findings in context of the theoretical foundation. The limitations of the study of the validity and reliability that arose from the execution of the study will also be summarized. The next chapter will also describe the recommendations for further research and the potential impact for positive social change.

Chapter 5: Discussion, Conclusion, and Recommendations

Introduction

The purpose of this study was to analyze the effectiveness of using ACT for women who have been diagnosed with PTSD due to childhood trauma. The research was conducted to add to the research of ACT and to see if using ACT in a group setting for 8 weeks would decrease the symptoms of PTSD in women who have been diagnosed with PTSD due to childhood trauma. The PCL-C measured symptoms at the beginning of group and again at the end of the 8-week ACT group.

A repeated ANOVA was used to test the hypothesis for this study. This study tested for 3 assumptions of the repeated measures of ANOVA, approximation of normality, homogeneity, and the assumption of correlation. Both the pretest and posttest PTSD scores exhibited slight asymmetric distribution curves based on the visual inspection of the histograms. Box plots were used to detect any influential outliers and none were found. The Shapiro-Wilk's test of normality did not find any significant value greater than .05 threshold, *S-W(*24) = .929, p = .091 for the *pre-test* which indicates the approximation to normality was not violated or the current data was normally distributed. The Shapiro-Wilk's test of normality at posttest indicates that approximation of normality was not violated as the non-significant statistic value greater than .05 threshold, *S-W* (24) = .961, and p = .462. According to the statistical measure of the repeated ANOVA the null hypothesis was rejected as there was sufficient evidence to support that using ACT can decrease PTSD symptoms as measured by the PCL-C. Using ACT can decrease symptoms of PTSD for this specific population using this specific group setting.

Interpretation and Analysis of the Findings

Historically, researchers have indicated that using ACT with veterans diagnosed with combat related PTSD decrease symptoms (Sharp, 2012). ACT has shown to increase a client's ability to accept difficult symptoms that may not go away, therefore taking away the power they have in the client's life (Hayes, et al., 1996). Acceptance, according to Hayes, Strosahl, and Wilson (1999) creates room for the first steps towards self-perspective and defusion. These steps can then lead towards psychological flexibility and working towards values the client believes are pertinent towards moving forward in recovery from trauma (Hayes, & Lillis, 2012). ACT has also been used to increase a client's ability to accept and manage physical pain increasing their ability to have a more fulfilled life (Vowels, et al., 2017). ACT is not a one size fit therapy, but has shown to improve a client's mental health by decreasing symptoms of depression, generalized anxiety, and schizophrenia as well as the ability to accept symptoms and move forward in treatment (Hayes, et al., 2015; Lanza, Garcia, Lamelas, & Gonzales, 2014; Lopez, Javier, &Salas, 2009; Pankey & Hayes, 2003; Vujanovic, Niles, Pietrefesa, Schmertz, & Potter, 2011). Studies that investigated veterans with PTSD using ACT for individual and group therapy exist, however, very few studies explore the efficacy of ACT treatment for childhood trauma-related PTSD. This study was completed to confirm the effectiveness of ACT for women diagnosed with PTSD due to childhood trauma. The results of this study have shown to decrease symptoms of PTSD using ACT in a group setting for 8 weeks adding to the base knowledge of other studies using ACT for PTSD. This specific

study adds the knowledge that ACT can be useful to decrease symptoms of PTSD for women diagnosed with PTSD due to childhood trauma.

According to the U.S. Department of Veterans Affairs (2016) women tend to suffer from trauma due to sexual assault, including childhood sexual assault. Childhood trauma has been shown to adversely affect women's physical and mental health (Barrios et al., 2015; Lang et al., Messina & Grella, 2006). According to Scioli-Slater et al, (2016) women with PTSD due to childhood trauma including rape have a higher rate of somatic symptoms and physical illness. Difficulty with emotion regulation and psychosocial functioning have been found in those who have suffered from childhood trauma (Kulkami, Pole, & Timko, 2013; Ogle, Rubin, & Siegler, 2013; Ono, Devilly, & Shum, 2016). According to Pietrzak, Goldstein, Southwick, and Grant (2011) substance abuse disorders can affect up to 52% of those diagnosed with PTSD.

The goal of using ACT is to decrease PTSD symptoms which can cause suicidal ideations and behaviors, inability to live pro-actively, loss of confidence to problem solve, higher risk of chemical dependency, and the feeling of being paralyzed by even the simplest of life's tasks. The implications of social change are to increase this population's positive sense of self, self-confidence, self-efficacy, independence, and ability to live a pro-active as well as prosocial life. Social change comes when symptoms of PTSD are no longer driving behaviors and prosocial behavior begins. Prosocial behaviors benefit not just the client, but those around them as these clients are now able to contribute to the community.

Teaching values using ACT will enable this population's ability in creating self-efficacy and increasing prosocial behaviors. According to Caprara, Alessandri, and Eisenberg (2012) prosocial behaviors are correlated with the combination of higher order values and self-efficacy beliefs. Women with a sense of self-efficacy are more likely to make prosocial decisions based on the needs of others once their values have been established while working through trauma symptoms (Sullivan, McPartland, Price, Cruza-Guet, & Swan, 2013). ACT uses six therapeutic processes to decrease symptoms of PTSD which in theory would increase emotional and physical functioning for this population. These six therapeutic processes are acceptance, defusion, being present, self as context, defining valued directions, and committed action (Luoma, Hayes, & Walser, 2007). Using these six therapeutic processes has shown to decrease PTSD symptoms in the veteran population who have been diagnosed with combat related PTSD ((Sharp, 2012).

Limitations of the Study

The results of this study can only be generalized to Caucasian women and the sample size was small *n*=24. The population used in this study was a convenience sample therefore, it does not represent the entire population of clients served by the agency. However, this population is representative of the women who come for services at this specific mental health agency diagnosed with PTSD due to childhood trauma. Due to the structure of this study individual therapy and medications were not accounted for which may have contributed to the decrease in PTSD symptoms. This study did not account for incomplete homework. The participants are not required to have their homework

completed to participate in the full 8-week group. However, as explained by the facilitator all participants could call or make an appointment as needed with the facilitator or their individual therapist to get a better understanding of the assignment.

The group was not specifically designed for the population tested for this study. The 8-week ACT group was open to anyone diagnosed with PTSD for any reason who wanted to participate in the group. At the time of this study Thurston County had limited resources for those whose insurance was Medicaid which is the state health benefits for low income families. Due to these limitations it would have been unethical to exclude anyone who may have benefited from this group. However, since the completion of this study a number of other mental health agencies taking Medicaid have moved into the community which may lend itself to creating groups for specific types of PTSD. This study did not include a control group to compare those who chose group and those who did not chose the group.

The group process could have been compromised as most women in the population studied most likely had suffered childhood abuse by a man. PTSD symptoms can include anticipatory fear of being re-victimized decreasing a person's ability to manage this fear and to move forward in recovery (Salcioglu, Urhan, Pirinccioglu, & Aydin, 2017). However, there have not been any studies published that have directly compared gender difference outcomes that include using ACT for PTSD in a group setting. More studies need to be conducted to know if a mixed gender group using ACT effects the efficacy. Zaccari, Layne, Loftis, and Penn (2017) stated mixed gender did not make a difference in efficacy for those diagnosed with PTSD who participated in a

seeking safety group. Therefore, it is possible that a mixed group may not have an effect on outcome.

Recommendations

The results of this study did show an improvement in PTSD at the end of the 8 week ACT group for women diagnosed with PTSD due to childhood trauma. However, further research might want to include a number of variables that were not in this study. Most of the participants were involved in individual therapy, and some may have been taking psychotropic medications. The frequency and length of individual therapy should be included in the next study as well as a survey to ask participants if they felt that one type of therapy was more beneficial. Including psychopharmacology would be efficacious especially if this is the first time the client has taken any psychotropic medication as this may increase the efficacy of treatment as a whole. Increasing participants and number of groups would be beneficial not only for the study, but for those who suffer from PTSD due to childhood trauma. Including a control group to compare scores of those who chose not to be in group and those who did could be beneficial. The ideal study would include other mental health providers in the community including those who do not take state funded insurance such as Medicaid. The ideal study would also include mixed gender groups, and single gender groups with the purpose of including only those who have been diagnosed with PTSD due to childhood trauma. These types of studies would truly test the efficacy of this specific type of treatment. There are other groups in the community along with one at the community agency used

for this study that currently have groups for anyone who has a diagnoses of PTSD for any reason.

Implications

The present study did find a significant result indicating that using an 8-week ACT group can decrease PTSD symptoms in women diagnosed with PTSD due to childhood trauma. PTSD has shown to be physically and mentally debilitating for many who have been diagnosed (Barrios et al., 2015; Lang et al., 2008; Messina & Grella, 2006). For those with complex PTSD a need for approval as an adult and maladaptive coping styles are especially significant causing difficulty in life as well as while attending therapy (Reynolds et al., 2017). According to the U.S. Department of Veterans Affairs (2016) and the CDC (2018) women are more likely than men to develop PTSD after trauma occurs and women tend to have higher rates of PTSD due to childhood trauma. Those diagnosed with PTSD have shown to have higher rates of physical illnesses compared to those who do not (Bisson, Cosgrove, Lewis, & Roberts, 2015). The CDC (2018) estimated the cost of health care due to symptoms of PTSD to be in the billions in part due to the psychosomatic symptoms PTSD can present. For individuals with PTSD the symptoms can be overwhelming, debilitating and cause a loss of quality of life. For many PTSD causes a negative self-appraisal and feelings as if they cannot solve problems which can lead to low self-efficacy decreasing prosocial behaviors (Samuelson, Bartel, Valadez, and Jordan (2017). Research has shown a correlation between PTSD and suicidal ideations as well as suicide itself consistently across all ages and trauma types. (Davis, Witte, Weathers, & Blevins, 2014; Thome, Price Fiske, & Scotti, 2017). Guina,

Nahhas, Mata, and Farnsworth (2017) stated there is a significant correlation between suicide attempts and PTSD as well as a strong association between suicide attempts and childhood trauma. According to Hayes, Pistorello, and Biglan (2008) completing any type of study to see if therapy decreases suicide can be tricky and more studies need to be completed to make an absolute statement about ACT decreasing suicidal behaviors.

Positive Social Change

Decreasing symptoms of PTSD will decrease symptoms of suicidal ideations, anxiety and increase self-efficacy. The decrease of PTSD will lead to less visits to the doctor for symptoms brought on by anxiety therefore decreasing the cost of PTSD not just to the public but for the individual. More importantly a decrease in symptoms and having a set of values will give the individual a sense of purpose as well as the ability to become prosocial. ACT uses six therapeutic processes to increase an individual's ability to decrease PTSD and increase their quality of life. Psychological flexibility as well as values increase the client's ability to navigate this world pro-actively instead of reacting to past trauma triggers. This creates a sense of confidence which then creates movement toward healing and self-efficacy and eventually prosocial behaviors. Since the findings were significant using ACT in this specific group setting positive social change did occur for the individuals participating in the group. Decreasing PTSD symptoms may increase women's positive sense of self and confidence despite having a past filled with childhood trauma.

Psychological flexibility can occur by using the six therapeutic processes of ACT that are founded in contextualism and RFT. Psychological flexibility can increase when a

client is able to understand how past trauma effects current thoughts and behaviors. This knowledge will enable the client to defuse from their emotions and thoughts in order to differentiate past and current thoughts and emotions. Therefore, creating an ability to understand that current behaviors are not useful for the current event. Symptoms of PTSD are based on past events and decreasing these symptoms by using ACT the client may increase more pro-social behaviors to increase their quality of life. This study showed, for those individuals with a decreased PCL-C score at the end of the 8 weeks, an increase in psychological flexibility and the ability to accept the past to be able to move forward in treatment. These same individuals now have the opportunity to move beyond their past experiences and create a life filled with self-efficacy leading to pro-social behavior.

Essentially decreasing PTSD symptoms has the potential to save lives. Social change comes when symptoms of PTSD are no longer creating maladaptive behaviors and thoughts and prosocial behavior begins. Using ACT can effectively loosen the grip of suicidal ideations, lack of confidence, and increase the client's ability to move beyond the disabling symptoms of PTSD and start living a life filled with self-efficacy and prosocial behaviors.

Conclusion

Women who have a history of childhood trauma have shown to have more physical illnesses as well as psychological illnesses compared to those who do not which decreases their quality of life (Hampson, et al., 2016). PTSD has been associated with higher costs in healthcare, increase in suicidal ideations and behaviors, and an increase in significant mental health issues (Bisson, Cosgrove, Lewis, & Roberts, 2015; CDC, 2018;

Davis, Witte, Weathers, & Blevins, 2014; Thome, Price Fiske, & Scotti, 2017). Read, Agar, Barker-Collo, Davie, and Moskowitz (2001) stated in their research study that over half of the admission to the psychiatric hospital they studied including men and women who had attempted suicide had a history of childhood trauma. PTSD can effect an entire person's life in such a way they are unable to fully engage or function in all aspects of their life. Those with PTSD can affect their physical functioning, family life, work life, social life, and self-care. Co-curing disorders of a chemical dependency are common for those diagnosed with PTSD (Westphal, Aldao, & Jackson, 2017). Due to the multiple issues that PTSD can create treatment is vitally important for the individual as well as their surrounding environment.

PTSD has been diagnosed in veterans, and civilians of all ages, genders and cultures (Gobin, Iverson, Mitchell, Vaughn, & Resick, 2013; Wangelin & Tuerk, 2014; Washington, Davis, Der-Martirosian, & Yano, 2013). Literature has shown that ACT has been useful in decreasing and/or the acceptance of symptoms of PTSD as well as other mental health symptoms such as depression, general anxiety, and psychotic symptoms (Hayes, et al., 2015; Lanza, Garcia, Lamelas, & Gonzales, 2014; Lopez, Javier, & Salas, 2009; Pankey & Hayes, 2003; Vujanovic, Niles, Pietrefesa, Schmertz, & Potter, 2011). ACT has shown to reduce stress, anxiety and depressive symptoms while increasing an enhanced quality of life (A-Tjack, 2015; Smout, Hayes, Atkins, Klausen, & Duguid, 2012).

The symptoms of PTSD can be terrifying and paralyzing causing some to lead only a life of existence and fear. ACT creates the emotional space needed for the

acceptance of unwanted thoughts and emotions that those with PTSD tend to avoid (Mulick et al.2011). Therefore, creating psychological flexibility and space for healing and decreasing unwanted thoughts and emotions which increases the ability to live life with less anxiety and avoidance. Living with less avoidance and anxiety then increases the ability to create a more meaningful and pro-social lifestyle.

The purpose of this study was to research the impact of using an 8 week ACT group to decrease PTSD symptoms. The PCL-C was used to measure the symptoms of PTSD at the beginning and end of the 8-week group. The PLC-C scores were collected from women who had been diagnosed with PTSD due to childhood trauma who had not served in the military. According to the statistical measure of the repeated ANOVA the null hypothesis was rejected as there was sufficient evidence to support that using ACT can decrease PTSD symptoms as measured by the PCL-C for the participants selected. This supports the theory that ACT can decrease PTSD symptoms for this population, therefore decreasing SI, suicidal behaviors, anxiety, and increase self-efficacy leading to pro-social behaviors. With so many people suffering from PTSD it is vital to use all therapeutic resources found to be effective in changing lives. ACT has shown to decrease PTSD symptoms.

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