Measuring the Effectiveness of a Group-Therapeutic Model for Veterans

by

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Counselling Psychology)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

March 2020

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Measuring the Effectiveness of a Group-Therapeutic Model for Veterans

submitted by Kevin Lutz in partial fulfillment of the requirements for

the degree of Doctor of Philosophy

in Counselling Psychology

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Abstract

This study examined the effectiveness of a group-therapeutic model, utilized by the Veterans Transition Program (VTP), to meet its stated goals of decreasing symptoms of depression and PTSD, while increasing the experience of hope and general quality of life. Analyses of these data showed improvements in all outcome variables. Change scores were compared using paired t-tests. One-way ANOVAs were done to determine whether the demographic factors of age, sex, marital status, children, and income were significantly associated with change scores. Multiple linear regression was carried out on the change scores to assess the possible combined effects of the covariates. Results showed a significant change in the scores on all of the measures relevant to the stated goals of the VTN. Age appeared to have an effect on some outcomes including the BDI-II, PCL-5, and OQ-45; having children appeared to be associated with change scores on the PCL-5; and sex of the respondent appeared to be associated with change scores on the THS. Outcomes of this group-therapeutic model were independent of any identified covariates. These results were seen in both the bivariate and multivariate models.
Lay Summary

This doctoral research critically examines outcomes of a group-based therapy program through statistical analyses to better understand what elements contribute to the effective outcomes of this kind of program. This research is also an exploration of ways in which such programs could be improved, and how the effective elements of this program could be replicated and utilized by other programs working to support our military and first responder populations, and adapted to support other service providers of veterans and their families.
Preface

This dissertation is an original intellectual product of the author, K. Lutz. All clinical and research fieldwork was collected by the Veterans Transition Network, and covered by The University of British Columbia’s Behavioural Research Ethics Board Certificate number H13-00206, entitled “Evaluation of the VTP”. The analyses reported in Chapter 4 were conducted by K. Lutz as a secondary analysis of data collected by the Veterans Transition Network.
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Acknowledgements

I wish to thank my supervisor, Dr. Marla Buchanan. It is with the utmost gratitude that I acknowledge that I am only at this point because of your support. You have been a shining beacon of hope through difficult times, and offered understanding, guidance, and solutions.

I wish to show my appreciation to my committee members, Dr. Marvin Westwood, and Dr. Robinder Bedi. Thank you to Dr. Westwood, who supervised me through my Masters degree, and supported me to complete my PhD. You have always shown confidence in me, academically and clinically, and I have grown much because of you. Thank you to Dr. Bedi, for trusting me, and helping me find solutions when I didn’t have the answers to practical and academic conundrums.

To the Veterans Transition Network, the work you are doing is making a difference in the lives of many. I feel honored and privileged to have been a part of it.

To my colleagues, Ada Law, Deepak Matthew, Jessie Wall, Lynn DuMerton, and Maria Timm. I could not have asked for a better group of people with whom to undertake such a foolish and monumental task as this.

I also wish to thank my friends and family, I would not be here if not for the support and understanding of the people I am fortunate to have care for me. Even in my most difficult times, I have never doubted that I am well taken care of.

To my daughter, Destiny, you are the source of my strength and my motivation to always move forward. You are my inspiration to always evolve and strive to become the best version of myself that I can be.
Dedication

If I am ever in danger, scared, or hurt, there are people whose job it is to take care of me, and to intervene by stepping in harms way on my behalf. The men and women who serve domestically and abroad make my freedom and security possible. It is a sense of security that is often only acknowledged in its absence. While I have never worn a uniform, my service is to focus my career and this research in support of those who do, and in hopes of helping in the healing and reintegration processes. It is with this in mind that I would like to dedicate this research to those who have worn a uniform, thank you for your service.
Chapter I

Introduction

1.1 Background

Our troops are trained intensely upon entering the forces to be able to handle their ‘jobs’ under any circumstances. In parallel, military culture teaches them that they must handle any personal struggle as well, and, that any kind of emotional distress is a sign of weakness (Green, Emslie, O'Neill, Hunt, & Walker, 2010, Shields, 2016). Within former military populations, comorbidity rates of posttraumatic stress disorder (PTSD) with depression are as high as 76.6% (Jakupcak, Tull, McDermott, Kaysen, Hunt, & Simpson, 2010), and complex comorbid PTSD with both depression and anxiety have been estimated at around 26.7%-30% for some populations (Ginzburg, Ein-Dor, & Solomon, 2010). Alcohol and drug use for the purposes of self-medication is also common, affecting 2 to 3 times the prevalence in the general population.

Stigma interferes with treatment seeking behaviours due to concern about perception by peers and military leadership, and has been found to be disproportionately prevalent among those most in need of help from mental health services (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004). These men and women who spent their adult lives working in disciplined cohesive teams find themselves, often suddenly, alone. This sudden loss of the military community that gave support and meaning to their lives leaves them feeling isolated from the world and is a significant cause of emotional distress (Sweet, Stoler, Kelter, & Thurrell, 1989).

One program that has demonstrated success in supporting Canadian men and women transitioning out of the military is a Canadian program called the Veterans Transition Program (VTP). The mission statement of the Veterans Transition Network (VTN), the organization that coordinates and provides service to these programs, is that no Canadian veteran is left suffering
in isolation – the motto of the organization is “nunquam unus”, meaning “never alone.” The VTN aims to support vocational needs of veterans by setting concrete plans for achieving personally meaningful careers, support for family and relationships by reconnecting and building understanding with loved ones, and individual needs by helping them to understand the effects of operational stress and how to cope with it, as well as how to access available services. A preliminary program review conducted using initial data collected by the VTN programs, funded by Veteran’s Affairs Canada (VAC), the Department of National Defense (DND), and several other private funders, indicated improvements in depression and PTSD symptoms, and the development of career goals that support our veterans transitioning into civilian life (Cox et al., 2014). What is particularly unique to this program is that while group therapy programs tend to have very high dropout rates (Sloan, Feinstein, Gallagher, Beck, & Keane, 2013), an initial assessment of the data provided by the VTN, at the time of writing this, showed a completion rate of greater than 95% of participants.

In conversations with program founders, I was informed that this program began in 1997 with a veteran who asked if it was possible to start a group and include 4 of his friends. Dr. Westwood, and a group of his graduate students at the time, including Dr. David Kuhl, Dr. Paul Whitehead, and Dr. Timothy Black, began working with this group of veterans weekly, in the basement of Christchurch Cathedral, in downtown Vancouver, on Thursday evenings for about 4 hours, facilitating work using group-based Life Review and Therapeutic Enactment methods. This weekly format was modeled on the way groups at the time were designed by specialists such as Irving Yalom, and others, who met with clients for 3 hours once per week using CBT in the initial stages. Facilitators came to realize that when working with the kinds of trauma their clients had experienced, CBT did not create the change they were aiming for, and they began to
use more process experiential methods (Life Review and Therapeutic Enactment) to provide a more complete approach that addressed clients’ psychological, emotional, and physiological needs. The nature of these techniques involves very personal disclosures, and the need for a very connected, safe group was important, so facilitators began to apply Schutz’s (1961) model of inclusion, control, and affection, and they began to see change. Because all 5 of the men in the original group knew each other, there was a shared camaraderie, and understanding of the environment and social context that is essential in developing a cohesive group in which trust and the communalization of their experiences could occur safely (Abramson et al., 2006; Crowe & Grenyer, 2008; Kingsley, 2007).

Awareness came to the facilitators quickly that the men were struggling with outbursts of aggression, legal concerns, and substance abuse, that were having significant negative impacts on their lives, and that the process moved rather slowly. In consideration of timing, intensity, and dosage, the founders concluded that such a combination of therapeutic interventions would work better in a retreat format where, “. . . the participants could eat, sleep, and work together in a place away from distraction.” In conversation with one of the original facilitators of the program, he simply stated, “they needed help faster”, and, by structuring the group this way, members would each be able to engage in their own therapeutic work each day.

For a group to be effective beyond the effects of group cohesion and other therapeutic factors such as interpersonal learning, instillation of hope, secure emotional expression, and awareness of interpersonal impact (Joyce et al., 2011; Macnair-Semands et al., 2010; Yalom & Leszcz, 2005), the timing of the various techniques and structure of the group must be designed intelligently (Burlingame, Mackenzie, & Strauss, 2004) because each member will respond uniquely to different aspects of the group experience (Kivlighan & Goldfine, 1991). The VTP
has been designed through iterative facilitations over 25+ years of experience and client evaluation feedback. Every element of education, process, and integration is designed to build on those aspects of group process that preceded it, and is structured so as not to overwhelm participants in terms of the amount of therapeutic work that is done on consecutive days. This is the reason for the structure of the 3-phase model. Further, having a series of transitional experiences built into the program, in which participants return to their daily lives between phases where they are able to apply learning in a practical way, and attempt to achieve goals set on the last day of each phase with support from the other members of the program, affords the opportunity for participants to apply in a practical sense, the learning and growth experienced while on the program in their daily lives. It also allows for the normalization of a transition experience.

1.2 Rationale

The potential societal cost of ignoring the struggle of Canadian soldiers returning home is significant. In March of 2014, the last of 40,000 Canadian peacekeepers returned home from Afghanistan. For those who served to protect the rights and freedoms we enjoy today, we owe our veterans our understanding, respect, and support.

Upon returning home, there are a series of reintegration difficulties that veterans face. Among them are the attitudes and beliefs they carry over from their military culture, financial and logistical difficulties, system-level factors that make it difficult to access services, and, anxiety, depression, and traumatic injuries related to their service (Ginzberg et al., 2009; Jakupcak et al., 2010; Sayer et al., 2010). These types of issues seldom present as an isolated experience, and navigating these issues concurrently can be a formidable and overwhelming task (Ginzburg, 2010; Sayer, 2010). On top of this, the sheer numbers of veterans returning home at
this point in history has overwhelmed the health care systems in both Canada and the United States (among other nations in the world), with veterans services being unable to keep up with demand for service, and many treatment needs not being covered by standard medical services (Sayer et al. 2013).

Because of the increasing demand for counselling and psychotherapy, group-based interventions are rising in popularity, both for their effectiveness in treating increasingly prevalent problems such as PTSD (Keane, Marshall, & Taft, 2006), and for their efficiency compared to individual treatment from an economic standpoint as a treatment model (Castillo, Lacefield, C'de Baca, Blankenship, & Qualls, 2014).

The current state of the research on group-based interventions for trauma, however, remains limited. Sloan et al. stated, “we know very little regarding what group treatments work best for different trauma populations and how group treatment compares with individual treatment” (2013, p. 182). This is especially true as group researchers observe an imbalance of theoretical orientation in controlled studies with most favoring cognitive-behavioural approaches (Johnson, Burlingame, Olsen, Davies, & Gleave, 2005; Kösters, Burlingame, Nachtigall, & Strauss, 2006). Preliminary analyses were conducted on the VTP, indicating positive changes in depression and trauma symptoms as assessed by the Beck Depression Inventory (BDI-II) and the Trauma Symptom Inventory (TSI) (Cox et al., 2014), suggesting that, for the populations it serves, could be an effective form of group therapy.

Despite the gaps in knowledge regarding the specifics of group-based interventions, group psychotherapy in general is considered to be particularly well suited to treat people who suffer with PTSD, and who often have accompanying interpersonal difficulties (Williams et al., 2014). While some theorists argue that group cohesion is the group psychotherapy construct
analogous to the therapeutic alliance in individual therapy others point out that it is a far more complex construct encompassing multiple and integrated relationships, as well as relationship with the group as a ‘whole’ (Joyce, Piper, & Ogrodniczuk, 2007).

The development of the therapeutic factors associated with group processes that are most widely accepted today began, and still exist with the work of Irving D. Yalom. Initially labeled “curative factors”, Irving Yalom (Yalom & Leszcz, 2005) developed a compendium of 11 therapeutic factors related to the therapeutic effectiveness of group psychotherapy. These factors were intended to identify the most crucial and fundamental components that created the framework from which the change process in “group psychotherapy” happens, independent of the theoretical framework of the therapist, the problems faced by clients, the population, or the treatment setting (Kivlighan, Miles, & Paquin, 2010). Using these basic factors as a foundation, Yalom (2005) posited that the group leader becomes a guide through the modeling of empathy, openness and warmth (Burlingame, MacKenzie, & Strauss, 2004), and the skillful development of a cohesive group.

Among these factors are ‘interpersonal learning’ and ‘cohesiveness’. They are considered so important and complex that Yalom (Yalom & Leszcz, 2005) describes them separately in their own chapters of his book. Interpersonal learning is to group therapy what insight, working through transference, and corrective emotional experiences are to individual therapy (Conyne, p. 623). Through interpersonal learning, members gain insight while maintaining adaptive behaviour. Group cohesiveness is the source of members’ sense of belonging, acceptance, and validation, and is considered by many to be the primary treatment factor in group psychotherapy (Joyce, Piper, & Ogrodniczuk, 2007). While cohesion is considered to be a factor in its own right, it is also recognized to stimulate other therapeutic
factors. Veteran’s participating in the VTN programs indicate that being in the company of their peers to witness and share in their experiences in a safe and supportive environment validates them and their reactions, and supports their ability to reconnect with living in a civilian community (Cox et al., 2014). A piece that is still missing in the current research is information regarding the degree to which the positive outcomes of group-based programs are actually influenced by the groups’ interventions, and how much of the variance is the result of other, unmeasured factors.

1.3 Purpose

The primary purpose of this doctoral research is to critically examine positive outcomes of a group-based therapy program through statistical analysis to better understand what contributes to the effective outcomes of the VTN program. This research is also an exploration of ways in which such programs can be improved, and how the effective elements of this program could be replicated and utilized by other programs working to support our military and adapted to support other service providers of veterans and their families.

The objective of the study is to address this significant gap in knowledge by re-analyzing existing data collected by the VTN with a focus on the direct impact of the group-therapeutic model, factoring out other variables that may be responsible for change over time, and to answer the question of whether there are significant reductions in depression and PTSD symptoms, increases in hope, and improvement in quality of life. These outcomes correspond with the stated goals of this organization. Four specific domains of research were developed:

1. The first research question was: does participation in the VTP improve symptoms related to occupational stress injuries? Four directional hypotheses were developed:

   o Hypothesis 1: Participation in a VTP would be associated with decreases in symptoms of depression as measured by the Beck Depression Inventory (BDI-II).
Hypothesis 2: Participation in a VTP would be associated with decreases in symptoms of PTSD as measured by the Post-Traumatic Stress Checklist 5 (PCL-5).

Hypothesis 3: Participation in a VTP would be associated with increases in the experience of ‘Hope’ as measured by the Trait Hope Scale (THS).

Hypothesis 4: Participation in a VTP would be associated with decreases in symptoms related to interference with the experience of quality of life (including symptom distress, interpersonal relations, and social relations) as measured by the Outcomes Questionnaire (OQ-45).

The demographic factors of interest considered when assessing whether this group-therapeutic model is effective were: age, sex, marital status, having children, education, and income.

2. The second question was whether participants experience social support over the program, as indicated by the OQ-45 subscales of ‘Interpersonal Relations’ and ‘Social Role’, and whether this would correlate with decreases in scores of depression or PTSD, and increases in scores on the Trait Hope Scale?

1. Will higher initial social support result in better outcomes in any or all of the other variables?

2. Will being married or having children result in greater BDI or PCL changes?

3. What is the relationship of this group-therapeutic model to changes on feelings of suicidal ideation, as identified by item 9 on the BDI-II?

3. The third question sought to determine whether the program would have a significant positive relationship between participation in a VTP and changes in critical items on the BDI and OQ-45, related to suicidality, substance abuse, and possible violence. Critical items included:

   o BDI item 9 – thoughts of suicide

   o OQ-45 item 8 – suicide

   o OQ-45 items 11, 32 – substance abuse

   o OQ-45 item 44 – anger

4. The fourth question sought to examine whether there is an evidence for a statistically significant relationship between group therapeutic factors, as measured by the Therapeutic
Factors Inventory Scale and outcomes following a VTP. One directional hypothesis was developed: Increased endorsement of therapeutic factors would predict decreases in scores of depression or PTSD, and increases in scores on the Trait Hope Scale.
Chapter II

Review of the Literature

Creswell (1994) suggests that a literature review should satisfy three specific requirements. First, it should present the results of similar studies. To this I would add that the studies identified should be presented with a critical lens. Secondly, that the studies should be related to the ongoing dialogue about the field. And third, that there should be a framework for comparing the results of a study with other studies.

In this chapter, I will first discuss military culture and the impact that it has on veterans’ ability to manage in the civilian world. As a follow up to this, I will identify some of the general difficulties with reintegration that veteran’s experience. I will take a specific look at how stress and trauma impact their ability to transition, and address how this as well as other mental health barriers are treated and managed by giving an overview and examination of the effectiveness of some of the standard treatments for veterans with PTSD. I will then take a look at specific issues that women in the military might face. Because this research is based specifically on a group-psychotherapeutic model of treatment, I will critically examine research looking at the effectiveness of group-psychotherapy. I will also offer some of the research identifying factors that make group interventions effective for trauma treatment and provide a review of the literature on how group interventions compare with individual treatments, including an examination on how factors that contribute to the efficacy of groups line up with positive change factors in the long term.

2.1 Military Culture

Culture refers to a shared sense of values, norms, ideas, symbols, experiences and meanings, and is the result of environment and social context (Abramson, 2012; Soeters,
Military culture is unique, and is highly and rigidly organized around a framework of many rules (Redmond et al., 2015). The chain of command, honor, loyalty, integrity, courage, and most of all, service before self, are valued by the military culture, and obedience, discipline, and self-sacrifice are the ways that these values are supported and honored within the military (Redmond et al., 2015). Adapting to a civilian culture, where these values are not regarded the same way is often difficult for military personnel (Redmond et al., 2015). A common experience among veterans upon leaving the military and entering into civilian life is an acute felt absence of respect for authority (Teeter, 2011). Veterans describe this as incredibly frustrating as they come from a community where effectiveness and efficiency are the gold standards of action. Moving from such a community into one where there is a seeming disregard for these virtues has been described by service personnel to this author as confusing and infuriating, whether it is from managers or bosses, from colleagues, or from subordinates in the civilian work force.

In a published dissertation, Teeter (2011) found differences in the experiences of leaving the military between participants with and without combat experiences. While all participants described enjoying the freedom of self-expression and less scheduled/regimented days, participants who had not been involved in combat described enjoying the opportunity to speak their minds more openly, and newfound freedoms, whereas participants with combat experience struggled more with the need for more personal responsibility and had difficulty relaxing, or trying to ‘ease up’.

While all described brotherhood, camaraderie, life long friends, and structure as positive experiences, they described that, “once you’re out, things become disorganized and people fade away” (Teeter, 2011). Teeter (2011) writes that, rarely do post-military relationships fill the
same ‘team’ experience, and that this loss of the “group identity” can be devastating to many 
veterans who valued the community they shared while in the service. Similarly, it has been 
described to me by many veterans that one major factor that influences this is the difficulty 
relating with, or finding common interests with people who have never served. It is often 
reported that there is a shared understanding of trades, cultures, and experiences within the 
military that, veterans believe, someone without this background would not understand. This can 
be an unhelpful and limiting belief, preventing them from successful transition, and preventing 
them from grieving the loss of their military family and career. Because the military is a culture 
and lifestyle, these topics become the primary interactions that are then lost when transitioning 
into civilian life, and another difficult cultural shift occurs (Teeter, 2011). Further to this fear of 
not being understood, veterans often describe fear that telling their stories to civilians will do 
psychological or emotional harm, because of the traumatic nature of their experiences. This all 
contributes to the experience of disconnection as veterans feel as though they can no longer tell 
their stories because they do not feel understood, but also as though they are somehow different 
and judged, because of their participation in experiences that others are unwilling or unable to 
hear or understand.

A part of military culture that is often both confusing and painful for soldiers is the 
experience of injured soldiers feeling “thrown away” by the military family for being injured. 
The result in my experience has been that veterans often do not trust the military when receiving 
help for PTSD. In addition, the military often censors the information and stigmatizes soldiers 
who admit they have problems (Hoge, 2004).

In a study by Koenig, Maguen, Monroy, Mayott, and Seal (2014), challenges to 
readjustment were identified across three domains: intrapersonal, professional/educational, and
interpersonal. Koenig et al. conducted qualitative, in-depth semi-structured interviews with combat veterans returning from Iraq and Afghanistan within the previous two years, and who had been admitted to Primary Care, Integrated Care, or Women’s Clinics, at least twice within 3 months between Oct. 31st, 2008, and Oct 31st, 2010. The goal of the interviews was to investigate veterans’ readjustment experiences.

Intrapersonally, Koenig et al.’s (2014) participants identified difficulty in public places when encountering unfamiliar objects or loud sounds. Because they were trained in critical survival skills in warzones, these experiences evoked the reflexive responses appropriate for warzones. While this state of being ‘on guard’ and hypervigilant is necessary in a combat environment, it becomes maladaptive in civilian life (Koenig et al., 2014). In the area of professional/educational contexts, these participants identified difficulty moving from tight-knit social support from fellows with whom they share long workdays, quarters, and a sense of meaning and purpose in their work, to a much slower pace, more socially isolated, and a lack of shared meaning and rapport. There was also an experience of a much slower pace. As identified in the intrapersonal and educational/professional environments, social isolation is experienced as a significant stressor. Interpersonally, participants in this study indicated feeling isolated from both military and civilian populations.

2.2 Reintegration Difficulties

Sayer et al. (2010) surveyed Iraq and Afghanistan combat veterans with many objectives in mind. First, they were interested in understanding the prevalence and types of community reintegration problems among veterans who received U.S. Department of Veterans Affairs (VA) medical care. They were also interested in identifying interests in interventions or information,
promoting readjustment to community life, and exploring the impact of posttraumatic stress disorder (PTSD) on reintegration and treatment interests.

In a stratified random sample of 1,500 veterans, 274 were excluded for various reasons. The remaining 1,226 were sent a pre-notification letter that described the study, followed 2 weeks later by a cover letter, a 12-page questionnaire, and a $5 incentive. Seven hundred and fifty-four questionnaires were returned indicating interest in participation in the study. The questionnaire assessed veteran characteristics, current physical and mental health, perceptions of difficulties with community reintegration, and preferred mode of intervention service delivery (in person or via internet) (Sayer et al., 2010).

To measure community reintegration, the research team developed a questionnaire modified from the social relations, life activities, and self-care domains of the World Health Organization Disability Assessment Schedule II, and used content from the Community Integration Questionnaire and Community Integration Measure to supplement the study design. The 12-item Short-Form Health Survey (SF-12v2) was used to assess overall physical and mental health. Because the VA and Department of Defense use the Primary Care PTSD Screen, it was chosen to assess probable PTSD. Finally, the Two-Item Conjoint Screen was used to screen for substance use problems.

Results indicate that 40% of veterans who participated in this survey experienced some to extreme overall difficulty adjusting to civilian life in the past 30 days, and at least 25% experienced the same in each of the areas assessed (Sayer et al.). Difficulty in family and social relationships were common, as were extreme productivity problems at home, school, or work, high-risk behaviours, and difficulty with anger management.
Of interest is that in each of the functional areas assessed, probable PTSD was associated with significantly increased odds of some to extreme difficulty, with odds ratios ranging from 3.10 to 13.78. Also, the odds of reporting problems experienced since leaving the military was higher among Veterans with probable PTSD, with odds ratios ranging from 2.21 to 8.89. In all veterans who participated in this study, the most commonly reported problem was anger management, with more than half reporting significant difficulty, and nearly one-third engaging in behaviours that put themselves and/or others at risk. Not surprisingly, veterans with probable PTSD expressed interest in more kinds of reintegration services than those without diagnosed or probable PTSD.

There are a number of barriers that veterans experience when it comes to treatment seeking, not the least of which are attitudes and beliefs carried within military culture about treatment seeking being related to weakness or as invalidating of their service (Redmond et al., 2015; Sayer et al., 2010). There are also financial and logistical barriers as well as system level factors that limit access to some services (Sayer et al., 2010). What is troubling is that many of the issues endorsed by veterans (e.g. social functioning, employment, anger management) do not fall within the traditional scope of medical services, and VA mental health providers may struggle to keep up with the demand for service. Despite the finding that veterans with probable PTSD expressed interest in more kinds of service, this study did not assess whether this interest translates into treatment seeking behaviours.

2.3 How is Military Trauma Generally Treated

The word “trauma” is a Greek word from the late 17th century that literally means, “wound”, and can be defined as a psychological, emotional response to any event or an experience that is deeply distressing or disturbing. Not all traumas result in a diagnosis of
PTS; in fact, many can be important benchmarks or foundations of growth. Factors that contribute to vulnerability include severity of the trauma event, lack of social supports/response, and the presence of additional life stress (Brewin, Andrews, & Valentine, 2000). There are many ways that trauma and PTSD can be treated.

Cusack et al. (2016) conducted a systematic review and meta-analysis of studies that assessed the efficacy, comparative effectiveness, and adverse effects of psychological treatments for adults with PTSD. Authors searched multiple databases for articles from January 1, 1980, to May 20, 2014, for original research on eligible psychological interventions including: brief eclectic psychotherapy; cognitive behavioral therapies (CBT) including cognitive therapy (CT), cognitive processing therapy (CPT), cognitive restructuring (CR), coping skills therapy (e.g. stress inoculation), and prolonged exposure therapy (PE); eye movement desensitization and reprocessing (EMDR); hypnotherapy; interpersonal therapy; psychodynamic therapy; and narrative exposure therapy (NET) (Cusack et al., 2016). These therapy styles were chosen by the authors as they “are designed to minimize the intrusion, avoidance, and hyperarousal symptoms of PTSD by some combination of re-experiencing and working through trauma-related memories and emotions and teaching better methods of managing trauma related stressors” (pg. 131). For a study to be included in this analysis, it was required to assess at least one of: PTSD symptoms, remission, loss of PTSD diagnosis, quality of life, disability or functional impairment, return to work or active duty, or adverse events.

Having one of the strongest evidence bases, exposure therapies are rooted in the emotional processing theory of PTSD and are aimed at disconnecting the overwhelming sense of fear from trauma memories by repeated exposure to the traumatic memories in a safe and secure
therapeutic environment (Cusack et al. 2016). Imagination uses mental images or in vivo, or a combination of the two.

Narrative exposure therapy (NET) is described as a standardized short-term approach based on principles of exposure therapy that adapted exposure therapy to meet the needs of traumatized survivors of war and torture. The therapy has been applied to a number of civilian samples that have experienced multiple traumatic events. NET is also based on testimony therapy, where instead of defining a single traumatic event, the patient constructs a narrative about their whole life from birth to the present, while focusing on the detailed report of the traumatic experiences (Neuner, Schauer, Klaschik, Karunakara, & Elbert, 2004).

Psychodynamic therapy explores the meaning of traumatic events. While the origins are based in Freudian psychoanalysis with an emphasis on conflict and meaning, it has evolved and assimilated intrapersonal, developmental, and relational processes (Spermon, Darlington, & Gibney, 2010). The goal is to bring unconscious processes such as defensive dynamics in relationships, wishes, and fears, into conscious awareness so that PTSD symptoms can be addressed and reduced. The therapy presumes that the PTSD symptoms are the result of the unconscious memories. Psychodynamic therapy traditionally lasts from 3 months to 7 years (Friedman, 2003; Spermon et al., 2010).

Interpersonal Psychotherapy is a brief, present-focused therapy that aims to alleviate patients’ suffering by decreasing symptoms and improving interpersonal functioning. It is a highly structured and time-limited approach that follows a manual and lasts within 12–16 weeks followed by a time-limited “maintenance phase”. This type of therapy focuses specifically on current interpersonal relationships rather than PTSD symptoms, with the goal of helping people either improve their interpersonal relationships or change their expectations about them. It also
works on their social support so they can better manage their current interpersonal distress (Cusack, 2016; Markowitz et al., 2015).

Coping skills therapies use techniques such as education, progressive muscle relaxation (PMR), breath-work, role playing, and other similar interventions as a way of managing PTSD symptoms such as anxiety, or to aid in corrective experiences of issues developed at the time of trauma. Components such as stress inoculation training, assertiveness training, biofeedback, and relaxation are used to support these techniques (Cusack, 2016).

Hypnosis may be used as an adjunct to psychodynamic, CBT, or other therapies. It has been shown to enhance their efficacy for many clinical conditions (Cusack, 2016).

Cognitive therapy focuses interpretations of the traumatic event with respect to their appraisals about the world and themselves. It is designed to help people modify existing beliefs by identifying distorted thinking styles so they may be better able to cope and change problematic behaviors and learned responses. Cognitive therapy is generally brief, goal oriented, and time limited (Cusack, 2016; Paunović, 2011).

More than 70 randomized controlled trials (RCTs) evaluating CBT-based treatments have been published since 1989, showing a positive outcome in male and female veterans, female assault survivors, refugees, survivors of natural disasters such as earthquakes, and several mixed trauma studies (Paunović, 2011). In one study examining a style that utilizes this method, 29 crime victims with chronic PTSD were randomized to a group that received exposure inhibition therapy immediately (N = 14), or a wait-list control group (N = 15) that waited for 2.5 months and then received the treatment (Paunović, 2011). In this individual therapy model, sessions lasted 60 - 120 minutes (rarely more than 90 min) once a week for up to 9 sessions. Respondent memories were utilized in order to directly counter numbing and depressive symptoms and to
begin incorporating the primary trauma memory into primary incompatible memories and to inhibit primary responses trauma memories. Participants who received this exposure therapy immediately showed significantly improved PTSD symptoms scores using the CAPS, IES-R, and the PCL. They also demonstrated improved scores for depression (BDI), anxiety (BAI), posttraumatic cognitions of self, others and guilt (PTCI), and coping self-efficacy (CES) compared to the wait-list control group (2011). Results were maintained at a 3-months follow-up in the treatment group.

EMDR (Shapiro, 2018) has also received much support in recent years. The EMDR protocol involves eight stages: 1. Patient history and treatment planning; 2. Preparation; 3. Assessment; 4. Desensitization and reprocessing (this is where saccades of eye tracking or alternative bilateral stimulation occur); 5. Installation of positive cognition; 6. Body scan; 7. Closure; and 8. Re-evaluation. Currently, EMDR consists of 8-10 weekly, 90-minute sessions, in which a client engages in saccadic eye movements while holding a distressing image in mind along with the resulting negative cognitions and body sensations. After approximately 20 seconds, the client is asked to “blank it out” and take a deep breath, and note any changes in the image, somatic experiences, thoughts, or emotions (Cusack, 2016). This process is repeated until desensitization occurs and the client is asked to hold a previously identified positive cognition in mind while engaging the previously described process.

In a study comparing one version of a CBT approach with EMDR, 106 (young and adult) patients were obtained from a psycho-trauma treatment unit of the Community Stress Prevention Center (CSPC) in northern Israel - self-referred - from urban and communal populations located in an area exposed to hostilities for 33 days during the Second Lebanon War in the summer of 2006. Adult PTSD patients, divided into EMDR (n = 12) and CBT (n = 9) groups, were assessed
for traumatic symptoms at three time intervals (pre-treatment, post-treatment and 1-year follow-up). Both EMDR and CBT were associated with effective alleviation of traumatic symptoms, showing statistically significant decreases in their trauma symptoms over time with no difference in treatment efficacy during any of the assessment times (Lahad, Farhi, Leykin, & Kaplansky, 2010).

Another treatment option used commonly for PTSD is psychopharmacology. Medications are often used to control the physiologic symptoms, enabling a patient to tolerate PTSD symptoms in daily life, and work through the highly emotional material of trauma in psychotherapy. Some of these include:

- Selective serotonin reuptake inhibitors (SSRIs) (e.g., Sertraline, Paroxetine, Fluoxetine) are designed to address all symptom clusters.
- Beta-blockers (e.g., Propranolol) are used off label for anxiety, and to manage hyperarousal-related symptoms.
- Benzodiazepines (e.g., Lorazepam, Diazepam) are designed to alleviate anxiety primarily, and/or as a sedative to assist with sleep.
- Anticonvulsants (e.g., Carbamazepine, Lamotrigine) are sometimes used off label to manage impulsivity and emotional liability.
- Atypical antipsychotics (e.g., Risperidone, Olanzapine) have been used off-label for patients who do not respond to antidepressants, for the treatment of the re-experiencing symptoms.
- Alpha-1 receptor agonists (e.g., Prazosin) are used off-label to manage nightmares and sleep disturbances.
• Alpha-2 adrenergic agonists (e.g., clonidine) are used off-label for hyperarousal symptoms and may help with nightmares.

Less commonly prescribed medications include:

• Monoamine oxidase inhibitors (MAOIs) are an antidepressant most researched for treatment of panic.
• Tricyclic antidepressants (TCAs) (e.g. Imipramine) are an antidepressant often used for managing panic disorders.
• Low-dose glucocorticoids are sometimes used to decrease recall of traumatic memories. (Alexander, W., 2012)

Within psychopharmacology, the SSRI group is currently the first line of defense as Serotonin is heavily involved in regulating the processing of information in the amygdala, where memories are formed and fear conditioning originates (Tawa & Murphy, 2011). Importantly, long-term remission rates achieved with drug treatments alone are considerably lower than with CBT and other treatments, and relapse rates upon discontinuation are high as symptoms that have not received adequate parallel psychological treatment. The reason for this is that while psychological treatments take more time and effort, they do not, generally, focus only on symptom management the way medications do. Upon discontinuation of a medication, unless there has been concurrent psychotherapy, PTSD symptoms return. In a review of the research on pharmacological treatments, Tawa and Murphy (2011) found that Propranolol (a Beta Blocker) was more effective than SSRIs for both the treatment and prevention of PTSD through its ability to influence the reduction of fearful memory consolidation in the amygdala.
2.4 Women’s Groups and Their Specific Challenges

Women in the military are subject to the same service challenges as men, including combat related trauma, non-combat related trauma, and occupational stress injury. A review of existing literature conducted by Zinzow, Grubaugh, Monnier, Suffoletta-Mairle, and Freuh (2007) indicate that female veterans may be as likely as men to experience combat, even if not as directly or frequently. In addition, military sexual trauma (MST) is a significant problem for women veterans, and that the cumulative effects of trauma resulting from pre-military and service experiences result in higher rates of PTSD diagnoses for women (Zinzow et al., 2007).

From September 14 to November 15, 2018, Statistics Canada conducted their second survey of sexual misconduct in the armed forces (Statistics Canada, 2019, May 22) titled Sexual Misconduct in the Canadian Armed Forces, 2018. Results of this survey can be found at https://www150.statcan.gc.ca/n1/daily-quotidien/190522/dq190522a-eng.htm. In this survey, they defined sexual assault as sexual attacks, unwanted sexual touching, or non-consensual sexual activity. They found that 1.7% of regular force members, and 2.6% of primary reserve force members had experienced some form of sexual assault. They also found that the rates of sexual violence against women was 4 times higher than men (4.3% compared to 1.1%) in regular force members, and 6 times higher (7.0% compared to 1.2%) in primary reserve members. On the Statistics Canada website, there is a note to readers that only active regular force and primary reserve members were invited to complete this survey, and that it was voluntary.

In a research review of 26 studies, Suris and Lind (2008) found that MST prevalence ranges vary greatly, and depend on the response format. The greatest range of disclosure came from studies using in-person responses and varied from 0.4% to 71%, with an explanation of the lowest end likely being due to open-ended type questions that did not directly identify MST, and
the highest end including MST attempts. Overall, the majority of studies included in the review ranged in reported prevalence from 20% to 43%. These rates are much higher than in the general Canadian population, where rates are estimated for women to be approximately 3.7% (Conroy & Cotter, 2017; Department of Justice, 2017, January 10), though, this number rises and becomes comparable when considering that as much as 83% of sexual assaults are not reported (Department of Justice, 2017, January 10).

In a study comparing rates of PTSD in women who had MST compared with women who experienced other types of trauma, Yaeger et al. (2006) found that MST predicted PTSD more strongly than any other trauma, and that other traumas did not contribute to the relationship between MST and PTSD. Notably in this study, the number of women who identified MST was less than half of the number of women who identified other forms of trauma, but the relationship of the MST group with PTSD was stronger (Yaeger et al). Further risks associated with MST include increased difficulty with readjustment to civilian life following service. Katz, Bloor, Cojucar, and Draper (2007) found that MST was significantly related to higher clinician ratings of symptom severity and psychometric assessment scale scores designed to identify difficulty with readjustment to civilian life. They argue the importance of women seeking mental health services as a critical factor for predicting symptoms in order to mitigate long-term difficulty with readjustment. This study, however, had a very small sample size (n=18) and included a number of different interpretations of MST. Katz et al. (2007) acknowledge this limitation and identify the need for further study.

2.5 The Effectiveness of Group Interventions

The development of the therapeutic factors associated with group process that are most widely accepted today began with the groups of the 1940’s and 1950’s that utilized the group
itself as a ‘curative factor’. In 1968, Yalom, Tinklenberg, and Gilula began developing a method for assessing these therapeutic factors. Building on his and others’ previous research in factors associated with group process, initially labeled curative factors, Yalom (Yalom & Leszcz, 2005) developed a compendium of 11 therapeutic factors related to the therapeutic effectiveness of group psychotherapy. These factors are intended to identify the most crucial and fundamental components that create the framework from which the change process in group psychotherapy happens, independent of the theoretical framework of the therapist, the problems faced by clients, the population, or the treatment setting (Kivlighan, Miles, & Paquin, 2010). Using these basic factors as a foundation, Yalom (2005) posited that the group leader becomes a guide, through the modeling of empathy, openness and warmth (Burlingame, MacKenzie & Strauss, 2004), and the skillful development of a cohesive group.

Installation of hope occurs when a group participant becomes inspired or encouraged by the process or progress through group participation of another participant who has been struggling with similar problems. Universality refers to the recognition of shared experiences and feelings, thereby reducing feelings of isolation (often present in trauma) and validating experiences. Imparting information refers to the sharing of factual information, planned theoretical input, direct advice, and guidance between group members about treatment options or processes, or about access to services. Altruism is the experience of group members being able to help one another. Such an experience can lift members’ self esteem and facilitate the development of adaptive coping styles and interpersonal skills. Group process is the only modality that allows for this type of learning. Corrective recapitulation of the primary family group is a unique process that is a form of transference specific to group therapy. Members can unconsciously identify with the therapist and other members of the group as members of their
family, and re-experience past family conflicts in a corrective way, gaining a new understanding of the impact of childhood experiences on their personality development, and begin to develop new patterns of behaviour.

The group setting allows for the development of socializing techniques as it provides a safe and supportive environment for members to take risks, and increase the breadth of their interpersonal behaviour and social skills. It also allows members to develop their own skills and contribute to the development of others by observing and imitating the therapist and other group members, and modeling interpersonal skills of their own. Imitative behaviour refers to the learning of group members by vicariously observing the leader(s) and other members.

Interpersonal learning and group cohesiveness are considered so important and complex that Yalom (Yalom & Leszcz, 2005) describes them separately in their own chapters of his book. Interpersonal learning is to group therapy what insight, working through transference, and corrective emotional experiences are to individual therapy (Conyne, p. 623). Through interpersonal learning, members gain insight while maintaining adaptive behaviour. Group cohesiveness is the source of members’ sense of belonging, acceptance, and validation, and is considered by many to be the primary treatment factor in

**Figure 14.1** Forces that govern the therapeutic outcomes of group psychology.
group psychotherapy (Joyce, Piper, & Ogrodniczuk, 2007). Cohesion is considered to be a factor in its own right, but is recognized to stimulate other factors. Existential factors are the learning components associated with life’s lessons about personal responsibility for life choices. Catharsis refers to the experience of distress relief through uninhibited emotional expression, and self-understanding refers to increased insight into one’s problems and motivations for interactions and reactions to the world.

In the consideration of factors that influence the outcomes of group treatment process, figure 14.1 (Burlingame, MacKenzie, & Strauss, 2004, pg. 648) identifies the level of interconnectedness of factors within the group process. Formal change theory refers to the theoretical perspective (e.g. Humanistic, Psychodynamic, Cognitive, etc.) of the specific group treatment. With the exception of only a few group models, these perspectives have been based formally on individual therapy. While a strong working alliance has been found in individual therapy to be correlated with positive outcomes, the ability of alliance measures to predict outcomes in group therapy is less known (Crowe & Grenyer, 2008; Ellis, Peterson, Bufford, & Benson, 2014).

Small-group process includes “group development, therapeutic factors, degree and timing of group structure, and interpersonal feedback” (Burlingame, Mackenzie, & Strauss, 2004, p. 648-649). The therapeutic environment of the group itself can be a strong independent source of patient change; though, group participants with different interpersonal styles will value different aspects of the group experience (Kivlighan & Goldfine, 1991).

The group leader is a central component, the “pivotal force” according to this model, for change in the group treatment process. In individual treatment, the therapeutic ingredients arise from the interventions of the therapist and the nature of the relationship between therapist and
patient (Lo Coco, Gullo, Prestano, & Burlingame, 2015). There is much research identifying the working alliance between client and therapist as significant in the change process (Horvath & Bedi, 2002), and leader characteristics such as warmth, openness, and empathy have been found to facilitate group cohesion and lead to better patient outcomes (Burlingame, Fuhriman, & Johnson, 2002; as in Burlingame et al. 2004). As the patient is the focus of therapy, patient characteristics are important factors in determining outcomes. Empathy, and the ability of group members to listen and understand are important components of members of a group. Finally, structural factors that include dosage (the length and number of sessions), sequencing (how often), group size, setting, and the need for co-leads have been found to be significant in effecting outcomes for group therapy (Burlingame et al., 2004; Crowe & Grenyer, 2008; Joyce et al., 2007; Sayin, Candansayar, & Welkin, 2013). These factors can have a significant impact on the members’ experience of a group, thereby influencing the ability to affect group cohesion.

In a review to examine whether or not group is an effective treatment modality compared to individual treatment, Tschuschke (1999) summarized 22 controlled studies from 1973-1999, comparing their effectiveness. While half of those reviewed reported no differences, of the remaining, 5 found individual therapy to be more effective and 6 found group therapy to be more effective.

To determine the effectiveness of group treatment for PTSD, a number of studies have been conducted assessing different modalities, and in various settings and treatment lengths. Foy et al. (2006) reviewed five outcome studies of psychodynamic group treatment for adult survivors of child sexual abuse. Results indicate general improvement in distress; however, only two studies specifically measured changes in PTSD symptoms while anxiety and depression were measured in the other three. Also, groups ranged in length from 10 weeks to 1 year, only 3
had control groups, and only one of the four included random assignment. With such variability between programs being studied, it is difficult to make confident suppositions of the effectiveness of group treatment as a modality.

Addressing the need for more information about the overall effectiveness of groups in light of how widely they are being used, Kösters, Burlingame, Nachtigall, and Strauss (2006) conducted a meta-analysis of 46 controlled studies from 1980-2004 to look at the effectiveness of inpatient group psychotherapy. This meta-analysis included patients presenting with mood, anxiety, psychosomatic disorders, schizophrenia, PTSD, and mixed diagnoses. Results show beneficial effects for both controlled studies and pre- and post- data compared to waitlist patients. Unfortunately, because the studies included in this meta-analysis are outcomes rather than process studies, they do not contain information about the mechanisms by which change in these groups occurred.

In a meta-analysis of the efficacy of group treatment, Sloan, Feinstein, Gallagher, Beck, and Keane, (2013) examined the effects sizes for PTSD severity outcomes. Sixteen RCTs, including 1686 participants, from 1997-2011, were included in the meta-analysis. Results suggest that group treatments produce significant reductions in pre-/post- treatment PTSD symptom severity, and were superior relative to waitlist control conditions, but not compared with active treatment control conditions. At first glance, these analyses indicate that effectiveness of group treatment is similar to active control treatments; however, upon closer inspection, only 10 of the 16 studies used an active treatment control group, and 14 of the 16 studies used in these analyses are rooted in CBT. The results then are less generalizable to group treatments, and more related to the treatment modality of CBT for groups. Sloan et al. observed
that the majority of work in the area of group treatment tends to be non-RCT, and that designing clinical trials in the context of groups is expensive and very complex.

In a meta-analysis of group psychotherapy “outcomes” research, cognitive–behavioural was by far the theoretical orientation most used (51%), versus behavioural (19%), psychodynamic (15%), and eclectic (15%) (Burlingame, Fuhriman, & Mosier, 2003). In the majority of research that is being conducted on “therapeutic factors” in group psychotherapy however, CBT is identified as the treatment orientation much less often. Kingsley (2007) indicates that despite the theoretical approach to PTSD treatment groups, the common denominator is the development of a cohesive group in which trust and the communalization of trauma can occur. Nevertheless, it is important to attend to how groups are being conducted and the theoretical orientation upon which the group is based.

In a pilot study designed to examine efficacy, outcomes, and treatment outcome predictors associated with group inpatient treatment of combat-related PTSD, Ellis, Peterson, Bufford, and Benson (2014), found that using Cognitive Processing Therapy (CPT) in a group inpatient treatment setting was effective, and that baseline symptomatology and group cohesion can significantly predict outcomes in this setting. They suggest that a patient’s willingness to share and process personal information in the context of a group is an important functional element of why group treatment is effective for working with PTSD. One major implication of this research is that the effectiveness of group treatment will be moderated by a participant’s willingness to engage in the group process, and share personal information in such a setting. Kivlighan et al. (2012) add support for this assertion from their group climate research in which group membership accounted for 10% and 7% of the variance for the ‘engaged’ and ‘conflict’ scales, respectively, of the GCQ. Kivlighan et al. highlight that studying group members at the
individual level is theoretically and empirically problematic based on the inherent nature of what a group is: “To act as if the group member is not impacted or does not impact other members of her or his group is not reasonable theoretically or empirically” (p. 526). Effectiveness of a group program will then be significantly related to a variable not relevant to individual treatment modalities. This may call into question the relevance to group psychotherapy of research identifying mechanisms of change for individual psychotherapy (Crowe & Grenyer, 2008: Ellis et al. 2014). Further, according to research by Crowe and Grenyer (2008), subjective experiences of recovery reported by patients in group treatment settings appear to be associated more with the social functions of group therapy (e.g., being around others with similar experiences, enhancing empathy, camaraderie), than with individual therapists or modalities of treatment. Groups provide an opportunity to reduce the emotional isolation by fostering a sense of cohesion between common cohort members (Ellis, 2014).

Schnurr et al. (2003) examined the efficacy of trauma-focused group therapy (TFGT) compared with a present-focused group therapy (PFGT) in a sample of 360 male Vietnam veterans. The primary outcome measure was PTSD severity as assessed by the CAPS. The PCL 12-item general version, the Addiction Severity Index, General Health Questionnaire, and the Short-Form Health Survey were also used. Comorbid psychiatric diagnoses and Global Assessment of Function scores were assessed by the SCID-P. Participants in this research attended 30 weekly 90-minute sessions of either TFGT or PFGT, though exposure sessions in the TFGT groups lasted 2 hours. Following the initial sessions, treatment shifted to booster sessions, once per month for 5 months with an accompanying 15-minute phone call each month between sessions. Two clinicians with masters or doctoral level training, with previous experience treating PTSD, facilitated each group. Outcomes showed significant reductions on CAPS, PCL,
and General Health Questionnaire scores, though change differences between groups were not significant. There were no significant changes on the Quality of Life Inventory or the Addiction Severity Index. While there was a main effect for treatment favoring the TFGT in post-hoc intention-to-treat analyses, findings of this study do not indicate differences between the two treatment modalities for PTSD or other outcomes (Schnurr et al., 2003).

Following the research model of Schnurr et al. (2003) with military veterans, Classen et al. (2011) compared TFGT with PFGT and a waitlist condition, for reduction of HIV risk and PTSD symptoms in survivors of childhood sexual abuse (CSA). Clients attended twenty-four 90-minute sessions led by a trained psychologist, psychiatrist, or master’s level clinician. All group leaders were supervised by an expert group therapist, and all sessions were video recorded. Following a baseline assessment of 448 women, 166 met inclusion criteria. Seven cohorts of 24 participants were then assigned randomly (8 each) to the TFGT, PFGT, or waitlist condition. Classen et al. (2011) found no advantage in reducing PTSD symptoms for either TFGT or PFGT, however there was a treatment effect for both compared to the waitlist condition, and PFGT was found to be more effective in reduction of overall HIV risk. Anger and irritability were reduced in the TFGT group, but not in the PFGT or waitlist control groups. Symptom reductions in PTSD, risk behaviours, and anger / irritability were observed in a CSA sample that included individuals with comorbid substance abuse issues, and personality pathologies. Classen et al. note that individuals with comorbid disorders are often screened out of studies of CSA survivors. Some secondary analyses indicated that group treatment was effective for reductions in depression, dissociation, and sexual concerns. Overall, this study lends support to the effectiveness of group therapy in reducing PTSD symptoms among CSA survivors.
These studies appear to provide support that group treatment is effective regardless of theoretical orientation (Foy et al., 2000), while addressing within-study randomization and the presence of an active waitlist control group. Further, generalizability of the treatment modality increases as it is used a wider population and sample demographic.

Using data collected from 271 female veterans treated in 51 groups at a Southwest VA women’s outpatient trauma clinic for PTSD between 1995 and 2013, Castillo et al. (2014) found significant improvements in post-group PCL scores for all participants, with 22% no longer meeting PTSD criteria. An initial assessment was conducted in which PTSD diagnosis was assessed in a semi-structured interview that utilized the CAPS. The PCL was administered at the first and last session to determine pre-/post- PTSD changes symptoms changes. Women who met criteria then attended either an 8, 10, or 12 session manualized Cognitive Processing Therapy (CPT) for PTSD group. Completers (n=172) were defined as participants not missing post-treatment PCL scores. They were significantly older and had experienced fewer reported traumas than non-completers (n=99), though there were no other significant differences between the groups. Authors found that increased session numbers did not result in further PTSD symptom reductions as determined by PCL scores. Overall results provide support for the effectiveness of a time limited group delivered cognitive therapy program.

Unfortunately, all groups are not equally effective. The “group effect” references variable differences in outcomes of members across types of groups and across outcome measures (Kivlighan, Lo Coco, and Gullo, 2014). In one example, Baldwin, Stice, and Rohde (2008) found that 2% to 12% of differences in member-member outcomes for an eating disorder problem were attributable to the group that the member belonged to. In fact, examining
differences between groups may not be as important as understanding the impact of differences between members within groups (Kivlighan et al., 2010).

Ultimately, what we learn is that not all groups are created equal (Kivlighan, Lo Coco, and Gullo, 2014), and factors such as the working alliance between clients and therapists as significant (Horvath & Bedi, 2002), particularly their warmth, openness, and empathy (Burlingame, Fuhriman, & Johnson, 2002; as cited in Burlingame et al. 2004). Also, dosage, sequencing, group size, setting, and the need for co-leads are very important factors in group work (Burlingame et al., 2004; Crowe & Grenyer, 2008; Joyce et al., 2007; Sayin, Candansayar, & Welkin, 2013), and that groups with a high degree of cohesion are effective for treatment of a variety of presenting concerns regardless of the theoretical approach used (Foy et al., 2000; Kingsley, 2007; Kösters et al., 2006)

2.6 The Neuroscience of Group Process

According to Yalom and Vinogradow, all psychotherapy is “by nature largely interpersonal” (1993), and, because we now have effective neuroimaging methods and a greater understanding of the biology and cognitive theory underlying social relationships and empathy, we can examine this in a more concrete way.

2.6.1 Interpersonal Neurobiology

Daniel Siegel (2019) defines interpersonal neurobiology (IPNB) as, “…a framework for exploring the nature of reality…”. As a self-described attachment research trained scientist, Siegel began to ask the question of whether ‘mind-as-brain’ activity and ‘mind-as-relational’ activity could both be true (Siegel, 2019). This philosophy as a question is supported by research examining the Polyvagal and mirror neuron systems of the brain (Alcalá-López, Vogeley,
Interpersonal neurobiology theorises that the flow of energy and information between two or more people as being at the heart of communication and relationship (Siegel, 2012). While many researchers and philosophers continue to engage in the mind/body debate, IPNB conceptualizes an energy and information triangle that includes the mind, brain, and relationships, as distinct but interrelated and interacting constructs through which energy flows to carry and convey meaning. This may be intentional or unconscious, and may give information about our own states that we ourselves are unaware of (Ginot, 2009). For example, a patient with an affective disorder may interact in fundamentally different ways than someone who is otherwise psychologically stable, as identified in research examining differences in patterns mirror neuron activity between control participants and inpatient populations diagnose with affective disorders (Lebedeva, Karimova, Burkitbaev, Maltsev, & Guekht, 2019). In those who have experiences with significant early stress and trauma, the amygdala is likely to be primed towards fear/anxiety responses resulting in elevated levels of stress hormones and related physiological reactions and other predisposing physiological changes in the brain (Zhang et al., 2011). This is true even when it is known and rationally understood that there is no present danger. Of note is that we may not have conscious awareness of our conditioned anxiety or understanding of its reactivation under certain conditions and situations (Ginot, 2009) as our threat responses in the limbic system are “instantaneous responses, completely instinctive and non-cognitive” (Rothschild, 2002, pg. 11).

Within the IPNB framework, Siegel identifies the triangle of well-being that demonstrates how thoughts and experiences shape connections in the brain. In this model, the
‘mind’ is responsible for insight, awareness, focused attention, and intention, monitors and
‘regulates’ the flow of energy and information; ‘relationship’ refers to the ‘sharing’ and
exchange of energy and information between people; the ‘brain’ is the structural means, or
‘mechanism’, referring also to the extended nervous system throughout the body, through which
energy and information flows (Siegel, 2012). This model impresses the reciprocal impact of
healthy relationships and integrative communication, identifying that healthy relationships are
supported by positive interpersonal interactions, and that an integrated brain creates a
coordinated and balanced nervous system that permits empathic relationships. Trauma and
neglect appear to be associated with neural disintegration (Siegel, 2012).

Within the context of a group-psychotherapeutic model, we know that repeated activation
of neural connections strengthens and maintains pathways, and if we follow the line of reasoning
that there is a reciprocal relationship between a coordinated and balanced nervous system, and
empathic relationships, and that both are supported by integrative communication, then the
group-therapeutic factors (e.g. group cohesion and interpersonal learning) identified by Yalom
(2005) must be seen as very important in the healing process.

2.6.2 Polyvagal Theory

In 1995 Stephen Porges presented the Polyvagal Theory as an emerging model describing
how the autonomic nervous system is regulated by the central nervous system. The Polyvagal
Theory attempts to describe how different behaviours are associated with different physiological
states, and, outline the bidirectional nature of these interactions. It emphasizes an integrated
social engagement system developed evolutionarily through links between neural control of
muscles of the face and viscera. Finally, it proposes the concept of neuroception, an unconscious
process designed to activate or to inhibit self-protective strategies (Porges, 2009).
This model has since been expanded upon to describe psychophysiologicaly how our nervous system is connected to and interacts with internal physiological and emotional states, as well as external social experience. Of note, one of the main tenets of the original theory was that primary emotions are related to autonomic function (2007). Polyvagal Theory presents an interesting and innovative explanation regarding the adaptive nature of neural regulation of our autonomic nervous system. While previous explanations have focused on the flight/flight model based in the sympathetic (SNS) adrenal activating system, and the parasympathetic (PNS) inhibitory vagal system, this theory identifies a modification of these systems by myelinated vagus and cranial nerves to enable a set of survival strategies “… associated with activation of a phylogenetically more ancient pathway” affecting facial expressions associated with the social engagement system (Flores & Porges, 2017; Porges, 2001a). With respect to the aforementioned fight/flight response, the Polyvagal Theory identifies a state characterized by vagal withdrawal to support mobilization behaviours, whereas vagal influence would support spontaneous social engagement behaviours (2007). This process of social engagement will include structural and functional links between neural control of facial muscles and various internal organs including the heart.

The Polyvagal Theory also proposes the concept of neuroception. Neuroception, an unconscious neurobiological assessment of risk, is a mechanism designed to trigger or inhibit defensive strategies based on whether specific environmental features activate physiological states associated with fight/flight or social engagement behaviours (Porges, 2007, Porges, 2009). Essentially, neuroception is this theory’s way of explaining why a child or toddler would accept affection from a trusted family member, but recoil from a stranger. This is the part of our
nervous system that reacts unconsciously in prosocial ways when safety is being detected in the environment, and safety seeking behaviours are observed when there is potential danger.

Three distinct autonomic subsystems have been identified and linked to the branches that support the various adaptive behavioural strategies: social communication, mobilization, and, immobilization. Social communication strategies are linked to the ventral vagal complex (myelinated vagus), and include listening behaviours, vocalization, and facial expressions (Porges, 2009). This system fosters calm behavioural states through the inhibition of the SNS and dampening of the HPA axis. Mobilization, including fight/flight behaviours are linked to activation of the SNS (adrenal system), and are associated with the spinal cord. Immobilization strategies such as feigning death, vaso-vagal syncope, and behavioural shutdown, are linked to the dorsal vagal complex (unmyelinated vagus) and are associated with the dorsal motor nucleus of the vagus (Porges, 2007; Porges, 2009):

Table 1
*Phylogenetic Stages of the Polyvagal Theory, (Porges, 2007).*

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<th>ANS Component</th>
<th>Behavioral Function</th>
<th>Lower motor neurons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Myelinated vagus</strong></td>
<td>Social communication, self-soothing and calming, inhibit “arousal”</td>
<td>Nucleus ambiguus</td>
</tr>
<tr>
<td>(ventral vagal complex)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sympathetic-adrenal system</strong></td>
<td>Mobilization (active avoidance)</td>
<td>Spinal cord</td>
</tr>
<tr>
<td></td>
<td><strong>Unmyelinated vagus</strong></td>
<td>Immobilization (death feigning, passive avoidance)</td>
<td>Dorsal motor nucleus of the vagus</td>
</tr>
<tr>
<td>(dorsal vagal complex)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The circuits identified above are organized to respond to challenges based on a phylogenetically hierarchical sequence in ascending order. In his rationale, Porges (2007) references the work of J. Hughlings Jackson (1884), in which Jackson supposes that it is reasonable to assume that ‘higher’ and ‘lower’ centers of the brain are made up of the same material (“cells and fibers”) but
acting in quite different capacities that he refers to ‘most’ and ‘least’ involuntary (Jackson, 1884). On this point, Porges specifically reflects on Jackson’s assertion that when higher level neural circuits are in some way incapacitated, lower level neural circuits rise in activity, and as it relates to Polyvagal Theory, that this design is a phylogenetically-ordered hierarchical autonomic response designed to respond adaptively to environmental challenges (Porges, 2007).

What this means functionally is that when the environment is perceived as safe by an organism, the body is regulated to promote “growth and restoration” as well as “social connection (Porges, 2001a). Growth and restoration can best be identified by ‘visceral homeostasis’ and can be measured in the myelinated vagal pathway of the SNS that dampens the stress response of the HPA axis, and inhibits fight/flight mechanisms. This pathway also regulates the muscles of the face and head, resulting in “…bidirectional coupling between spontaneous social engagement behaviours and bodily states” (Porges, 2007). These visceral states of growth and restoration are neuroanatomically and neurophysiologically linked to muscles that regulate subtle communication factors such as facial expressions, gaze, prosody, and listening (2007). Porges (2009) notes that prosocial behaviour and communication, and visceral homeostasis, are incompatible with behaviours and neurophysiological states associated with the two neural pathways that initiate defense strategies, and that any stimulus that promotes an organism’s perception of safety in an environment supports activation of the more evolutionarily advanced neural circuits that activate the social engagement system. Two adaptive tasks must occur before the mammalian nervous system will be capable of switching from defensive strategies to social engagement: an assessment of risk in the environment, and, if the organism perceives the environment as safe, inhibition of the limbic response (2009).
2.6.3 Mirror Neurons

Typically, empathy has been investigated using behavioural paradigms (Eres & Molenberghs, 2013), but recent advances in neuroimaging have allowed researchers to investigate the neural circuitry upon which those paradigms and theories are based (Decety, 2011). In a review of the literature, Decety (2011) proposed a three-component model for understanding the foundations of what empathy is and how it works. First, she identifies the affective process, which is the bottom-up automatic process, where the sharing of the pain of others is automatic. Cognitive and emotion regulative processes make up the top-down modulator processes, in which thinking about/understanding and self-regulating are examples of the behavioural components of empathy (Decety, 2011). Essentially, when we are in the presence of the suffering of others we will feel some emotional response about it whether we intend/want to or not, but there is a process also by which our behaviour responses will be determined and differentiated by the way we understand think and make decisions about how we will respond to what we are experiencing that is differentiated by our motivations towards perspective taking and supportive behaviours, and our emotion regulation through the process.

In the study of “empathy” there has been a notable absence of a collectively understood, systematic definition in the neuroscientific literature. This has led to the use of concepts, paradigms that “range from mutually exclusive to contradictory” (Alcalá-López et al., 2019). Fundamentally, the problem in understanding empathy from the perspective of neuroscience arises from the fact that there is physical distance between the brains of those engaged in and/or experiencing empathy (Eres & Molenberghs, 2013). That being said, the mirror system is nearly regarded as a ‘functionally combined’ system of neural networks that show activation in observation that is identical to that of when the system is experiencing/performing a particular
action (Alcalá-López et al., 2019; Lebedeva et al., 2019). Initially studied with interest in its function in the motor system, the mirror system of the brain (MSB) is believed to be associated with learning through imitation, understanding the moods and emotions of others, and, forming prosocial interactions (Lebedeva et al., 2019). Social neurosciences have identified two distinct systems that are associated with the processing of these kinds of social information; these are the mirror neuron system (MNS) and the mentalizing system (MENT). The MNS is activated both during the executions of one’s own movements, as well as during the observation of the actions and movements of others (Gallese, Fadiga, Fogassi, & Rizzolatti, 1996). The MENT in contrast, allows the attribution of inner states (e.g. thoughts, emotions, moods, intentions) to others, and is recruited when there is a need to infer these (Amodio & Frith, 2006). These systems, though clearly distinct in their function, converge in a sophisticated and dynamic social paradigm system used to both learn, and to navigate complex social environments (Geiger, Bente, Lammers, Tempest, Roth, Bzdock, & Vogely, 2019), and are often collectively referred to under the umbrella of the MSB as a way to reference this type of unconscious and automatic communication between two organisms (Lebedeva et al., 2019).

Bridging the gap between behavioural research and social neuroscience, recent non-invasive neuroimaging techniques have allowed for researchers to make observations of passive perception and active execution of particular actions (Alcalá-López et al., 2019) where in the mirror neurons exist, and what their typical response patterns look like. Mirror neurons are located widely throughout the brain. Mirror neurons associated with empathic state matching were found to activate in the anterior insula (AI) and the anterior mid-cingulate cortex (aMCC), though, when these areas are damaged, other areas were recruited, including the ventro-medial prefrontal cortex (ventral mPFC). Mirror neurons associated with the observation and execution
of goal directed behaviour are found in the ventral premotor cortex, and, the dorsal premotor cortex (PMd) has been observed to activate in tasks associated with anticipated responses (e.g. in Pavlovian conditioned responses). Activation of mirror neurons during cognitions/behaviours associated with perspective taking can be found in the medial prefrontal cortex (mPFC), the posterior cingulate cortex (PCC), and the temporo-parietal junction (TPJ) (Alcalá-López et al., 2019; Geiger et al., 2019). As a result of this research, there has become an expanded definition of empathy that goes beyond the sharing of emotions in the moment, and has moved towards imagining what others are thinking and feeling (perspective taking), and understanding others’ social behaviour (Alcalá-López et al., 2019).

In light of this growing body of literature mapping out MNS of the brain, we must consider what this might mean therapeutically given that there is a complex system of communication within each therapeutic relationship that is an expression of mutual inter-subjective influence, that may be, and is likely, out of awareness (Ginot, 2009).
Chapter III

Method

In this chapter, I will describe the process by which participants were chosen for this research, present the procedures used in the study and describe the assessments selected for analyses. I will then describe the ways the data were analyzed and give a rationale for the methods chosen.

3.1 Participants

This analysis is a secondary analysis of data collected by the Veterans Transition Network between 2012-2017. Ethics approval was granted by the UBC research ethics board (REB) in 2012 and renewed by the primary research each subsequent year. Permission to access a subset of the data was granted by the VTN head office as well as the primary researcher collecting the data.

Participants of the program included in the data set given to this author by the primary researcher (N = 229) were military veterans who participated in a VTP, ranging from 23 to 76 years old (M = 46.74, SD = 11.01).

Any Canadian Forces Veteran is eligible for inclusion into a Veterans’ Transition Program, regardless of time since leaving the military, and was referred by a therapist, VAC caseworker, friend, or were self referred after learning bout the program through Internet research or social media.

3.2 Program Procedure

The Veterans Transition Program (VTP) is a group-based program developed at the University of British Columbia by Dr. Marv Westwood, Dr. David Kuhl, and Dr. Timothy Black. The program is a multimodal group psychotherapy treatment program designed to help men and
women returning from military service “drop the baggage” of operational stress injuries and re-integrate more fully into civilian lives.

The VTP has veterans working co-operatively in groups facilitated by specifically trained counsellors and counselling psychologists with support from veterans who are also former program graduates. This peer-driven and group based approach has been shown to be effective for helping veterans resist stigma related to therapy and engage earlier in the process (Mittal, Drummond, Blevins, Curran, Corrigan, & Sullivan, 2013), and is anchored in the same principles and initiatives found in military training. The program involves 10 8-10 hour days of retreat-based group work, consisting of three separate phases (4 days, 4 days, and 2 days) over six to eight weeks.

The structure of the program as it is now evolved from the weekly sessions to two 4-day weekends, utilizing the Life Review method to have everyone “tell their story” during the first 4-day phase, and the Therapeutic Enactment (TE) method approach during the second 4-day phase. The interphase between the two weekends utilized ongoing contact with the participants for the purposes of consolidation and integration, and planning for the TE phase, as well as contact between the participants for social support. After trying this model a few times, the program ran two 5-day phases, to allow a day for deeper integration after each phase, but facilitators felt something was missing. The first two phases were shortened back to 4 days (for LR and TE methods, and goals setting), and a third phase of 2 days was added as an ‘up and out’ phase, dedicated to giving participants time to focus on consolidation and integration of the learning’s from their own and one another’s processes, and, the opportunity to end on a positive note and in a relaxed state.
Program delivery begins with written informed consent, and a 30-page information gathering and assessment package collected on the morning of the first day of treatment. At the end of the last day of treatment, a follow up 36-page information gathering and assessment package is distributed. To create a degree of separation of the content and facilitation of the program from the research, the paraprofessional support members introduce and administer these measures. This is done to avoid feelings of obligation, and, impression management of group members who fear judgment for their responses, or risk their participation within the group. It is made clear to the participants that participating in the research is completely voluntary, is completely confidential from the facilitators, and will in no way influence their inclusion in, or, support from the group or program facilitators.

Embedded within the program are interventions such as trauma-related psychoeducation, affect regulation training, exposure, goal setting, and career transition and planning. Life-review method and the Therapeutic Enactment method (pioneered by Dr. Marv Westwood and Dr. Patricia Wilensky, 2002) are utilized to help participants process and move beyond trauma injuries in a supportive, structured, and safe environment. By the end of the program, each participant will have engaged in roughly 80 hours of personal and group work in a clinically supervised setting.

Phase 1 focuses on creating safety and group cohesion. Safety and cohesion are accomplished by ensuring fully informed consent, the development of a collaborative list of group guidelines (known as the Rules of Engagement, or ROE’s), information about active listening and communication skills, and the creation of opportunities for the group members to interact and get to know each other using the skills taught. There is then a series of psychoeducational components where veterans are taught the basic underlying mechanisms of:
self-awareness, emotional regulation, the neurobiological translation of trauma into PTSD and how it can affect their work and relationships, and, regulation skills including various breathing, grounding, and relaxation techniques. These educational components are referenced and practiced throughout the program to support knowledge translation. During phase 1, participants are asked to prepare two narratives (one for day two, and one for day three) identifying 3-4 major ‘branching points’ and the impacts those events/experiences have had on their lives and development. Facilitators support the writing of these narratives, that each participant then reads to the group the day after it is written (narrative one on the second day, and narrative two on the third), facilitated by the clinicians, and are offered reflection on their experiences by each member of the group, also facilitated by the clinicians. The fourth day of phase 1 includes integration of the work so far, information and preparation for phase 2, skills education for transitioning from the safety of the group back into daily routines, and the development of goals to be accomplished before the beginning of the next phase. These goals are meant to be in support of the work that participants have already done and their stated goals for the overall program.

Preparation for Phase 2 is supported through phone contact between program clinicians and participants during the interphase time. Phase 2 focuses on what each veteran identifies as their most significant barrier to military to civilian transition; this often, but not necessarily, focuses on a participant’s index trauma event. Using the Therapeutic Enactment technique, participants are able to process and integrate the piece of work they have identified. Similarly to the phase 1 procedure of group process following a focused piece of work, group members offer reflections that normalize experiences, offer support and understanding, and provide new and different perspectives of their experiences. As with phase 1, phase 2 ends with the creation of
goals by each member to be accomplished before the next phase, with the intention of supporting the work they have already done, and their stated goals for the overall program.

During phase 3, veterans consolidate and further integrate their experiences of self and others throughout the program, and translate that awareness and knowledge into long-term goals. Further education is provided to support ongoing development of communication and interpersonal skills. As identified earlier, preliminary analysis has indicated that veterans who completed the program experienced statistically and clinically significant reductions in depression and PTSD severity (Cox et al., 2014). Though these analyses used different and fewer measures, and a much smaller sample size, they indicate improvement in struggles related to barriers to transition.

Once a participant is identified to the VTN through word of mouth, clinical referral, or personal inquiry – often made possible by social media connections, as a potential applicant, they are contacted by the program coordinator to identify what program they would be most likely to attend (in terms of date and location). When they have been identified for a specific program, they are contacted, usually by email, by one of the lead clinicians. Each potential participant is sent an electronic copy of the informed consent form and asked to review it, and given times with which to coordinate a time for a telephone intake assessment to take place. The telephone assessment usually takes between 45-75 minutes, during which each potential participant is guided through the informed consent form, including the limitations to informed consent, and assessed for suitability using a standard questionnaire developed by the VTN. Some major considerations in the assessment concern current substance use, mental and medical health concerns, and current medications. These considerations allow the clinicians to make an informed decision about whether there are any specific existing variables that will prevent each
participant from being able to participate and/or to maintain engagement within the group format, or potentially disrupt the engagement of other members of the group. Exclusion criteria included an inability to remain abstinent from alcohol and/or recreational substance use, including non-medical cannabis while on site at the program, medical illness or disability that cannot be accommodated at the site, and any current experience of psychosis. Current medications are documented in case there is a medical emergency. Other considerations include the current stability of housing, and, previous and current counselling and therapeutic support.

3.3 Materials

The VTN describes itself as a transition program. As identified earlier, one of the most significant barriers to transition is related to the experience of trauma (Sayer et al., 2010). Trauma is often complex, particularly in the veteran/first responder population and is associated with depression, anxiety, substance misuse and dependence, difficulty with emotional regulation, loss of hopefulness, and diminished quality of life. The VTN aims to support individuals’ needs by helping them to understand the effects of their personal experience with operational stress and how to cope with it, as well as how to access other available services. The VTN also aims to work towards a renewed sense of meaning and purpose for veterans by setting concrete plans for achieving personally meaningful careers, and to support family and relationships by reconnecting and building understanding with loved ones. The University of British Columbia supported the VTN in developing a series of demographic and assessment measures to better understand its participants, their process, and their progress through the program and beyond. For the purposes of addressing the questions identified in this paper, the following areas of evaluation have been selected:
• The Beck Depression Inventory-II (BDI–II; Beck, Steer, & Brown, 1996) is a validated instrument designed to assess the respondent’s level of depression. Twenty-one questions regarding symptoms and attitudes are rated on a 4-point Likert scale and reflect the way the respondent has been feeling during the preceding 2 weeks. The BDI–II provides a total score that can be used to assess for the severity of depressive symptoms.

• The Trait Hope Scale (Snyder et. al., 1991) is a 12-item self-report instrument measuring respondents’ level of hope, as assessed by two subscales: agency and pathway. Respondents are asked to rate each item in terms of how they are best described by the item on a Likert-type scale, from 1 (“definitely false”) to 8 (“definitely true”). Total hope scores are derived from the sum of the 4 items from each of the agency and pathway subscales, with a possible range of 8 to 64. A higher score indicates a higher level of hope.

• The PTSD Checklist version 5 (PCL-5) (Blevins, Weathers, Davis, Witte, & Domino, 2015) is a 20-item self-report measure addressing respondents’ level of symptoms commonly seen in people who have experienced a stressful or traumatic life experience, such as problems with sleep, hypervigilance, avoidance of people or places that may remind them of the event, and attitudes and beliefs about the world. Items are based on the DSM-V criteria for PTSD, and as such there are four symptom clusters, including intrusion, avoidance, negative alterations in cognitions and mood, and arousal and reactivity. Respondents are asked to answer each item indicating how big a problem that particular symptom has been for them within the past month. Responses are given a 5-point scale, ranging from 0 (not at all), to 5 (extremely) with a possible total score range of 0 to 80. A higher score represents higher symptom severity. Cut-off scores vary depending on the purpose of test administration, with no suggested clinical cut-off score. (Using the PTSD Checklist for DSM-5 (PCL-5)
• The Outcome Questionnaire (OQ-45; Lambert et. al., 1996) is a brief 45-item self-report measure that asks respondents to rate their functioning on a 5-point Likert-type scale ranging from “never” to “almost always.” It is designed to track progress in therapy and was developed to cover common symptoms across a broad range of psychological disorders, including stress-related illnesses. It covers three content areas including symptomatic distress, interpersonal relations, and social role performance. Total scores are based on composite scores from each content area and are used to assess general psychological functioning. Possible total scores range from 0 to 180, with a higher score indicating a higher level of functioning.

• The 23-item Therapeutic Factors Inventory-Short Form (TFI-S; MacNair-Semands, Ogorodniczuk, & Joyce, 2010) is derived from Yalom’s (2005) theory of the therapeutic factors of group psychotherapy. The scale is meant to study the presence of therapeutic factors in group therapy, and uses a 7-point Likert-type scale to assess domains of Instillation of Hope, Secure Emotional Expression, Awareness of Relational Impact, and Social Learning.

3.4 Procedure

To address research objectives, three central analytic strategies were used: paired t-tests, ANOVA, and Linear Regression Modeling. Using t-tests allowed the observation of whether or not changes occurred by comparing the pre- and post-test scores within each measure. With the ANOVA, the association of each covariate on the post-test outcome, but not necessarily the change would be observable. Using linear regression modeling, the statistical association of each covariate on how much change in the outcome occurred would be observable, however, the predictive effects of pre-test values on the outcomes would not be visible (i.e., whether or not
people with a higher BDI/PCL score are more likely to show improvement, which is possibly due to regression to the mean).

Using data collected from several years of programs, I chose to use ANOVA to identify the positive impacts of the program, and Linear Regression Modeling to examine the possible influence of covariates on pre- and post-changes in scores. Univariate analyses were conducted for each variable as a potential predictor to facilitate the identification of potential predictors for inclusion in the final multivariable model. Linear Regression Modeling was used to identify how much of the positive outcomes are accounted for by interventions, and how much may be due to other factors or parallel processes.

Overall the number of missing items within the data set provided to this author was less than 5%. Within the BDI-II, 18 participants who answered the measure had missing data in the pre-test, and 7 in the post-test. On the THS, 8 participants were missing data on the pre-test and 7 on the post-test. On the PCL, 4 participants were missing response on the pre-test and 7 on the post-test. And, on the OQ-45, 43 participants had missing responses on the pre-test and 43 also on the post-test; of the missing information, 69 participants were missing single item information on both pre- and post-tests of the OQ-45. Twelve participants were missing responses on the TFI. Because the number of missing values was relatively small, and appeared to be missing at random, that is there was not a systematic way in which values were omitted, analyses were conducted using means replacement as the best option.
Chapter IV

Results

Statistical analysis was carried out using Excel, and IBM SPSS Statistics Version 26. Participants completed baseline and post-treatment measures, as well as 3-, 12-, and 18-month follow-up measures; however, only the pre- and post-treatment measures were made available to this author. Scores were screened for skewness and kurtosis by visual inspection of graphs and by examining summary statistics; all scores follow normal or approximately normal distributions.

Participants included in this analysis \((n = 229)\) were military veterans who participated in a VTP, ranging from 23 to 76 years of age \((M = 46.7, \ SD = 11.0)\).

Figure 1

*Sample Age Distribution*

Of the participants who completed the measures, 90.0% were male \((n = 199)\), 64.2% \((n = 140)\) had a current partner, and, 72.0% \((n = 157)\) had children. Most respondent participants \((93.1\%, n = 202)\) had at least a high school or equivalent education, and ranged from ‘less than high school’ to having a graduate degree.
Analyses of these data showed improvements in all outcome variables and results did not appear to be dependent on any of the covariate information collected. Change scores were compared using paired t-tests.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>199 (90.0%)</td>
</tr>
<tr>
<td>Female</td>
<td>22 (10.0%)</td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
</tr>
<tr>
<td>Current partner</td>
<td>140 (64.2%)</td>
</tr>
<tr>
<td>No current partner</td>
<td>78 (35.8%)</td>
</tr>
<tr>
<td>Children</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>157 (72.0%)</td>
</tr>
<tr>
<td>No</td>
<td>61 (28.0%)</td>
</tr>
<tr>
<td>Highest level of education</td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>15 (6.9%)</td>
</tr>
<tr>
<td>High school or equivalent</td>
<td>57 (26.3%)</td>
</tr>
<tr>
<td>Some college or technical</td>
<td>73 (33.6%)</td>
</tr>
<tr>
<td>College or university degree</td>
<td>57 (26.3%)</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>15 (6.9%)</td>
</tr>
<tr>
<td>Household income</td>
<td></td>
</tr>
<tr>
<td>Under $40,000</td>
<td>31 (14.3%)</td>
</tr>
<tr>
<td>$40,000 to $59,999</td>
<td>50 (23.0%)</td>
</tr>
<tr>
<td>$60,000 to $79,999</td>
<td>46 (21.2%)</td>
</tr>
<tr>
<td>$80,000 or more</td>
<td>90 (41.5%)</td>
</tr>
</tbody>
</table>

One-way ANOVAs were done to determine whether the demographic factors of age, sex, marital status, children, and income had a significant association with change scores. Multiple linear regression was carried out on the change scores to assess the possible combined statistically significant association of the covariates. Results showed a significant change in the
scores on all of the measures relevant to the stated goals of the VTN. Age appeared to have a statistically significant relationship to some outcomes including on the BDI-II, PCL-5, and OQ-45; having children influenced scores on the PCL-5; and sex of the respondent influenced scores on the THS. These results were seen in both the bivariate and multivariate models.

Table 3
Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Diff.</th>
<th>t</th>
<th>Sig.</th>
<th>95% Confidence Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>BDI-II</td>
<td>M = 30.07 SD = 10.93</td>
<td>M = 15.02 SD = 11.22</td>
<td>M = 15.04 SD = 10.84</td>
<td>18.25</td>
<td>&lt;.001</td>
<td>13.42</td>
</tr>
<tr>
<td>PCL-5</td>
<td>M = 48.64 SD = 15.37</td>
<td>M = 34.19 SD = 15.99</td>
<td>M = 14.45 SD = 15.79</td>
<td>12.55</td>
<td>&lt;.001</td>
<td>12.18</td>
</tr>
<tr>
<td>THS</td>
<td>M = 38.73 SD = 11.35</td>
<td>M = 46.05 SD = 10.04</td>
<td>M = -7.32 SD = 8.95</td>
<td>-11.22</td>
<td>&lt;.001</td>
<td>-8.61</td>
</tr>
<tr>
<td>OQ-45</td>
<td>M = 94.25 SD = 25.50</td>
<td>M = 72.29 SD = 27.31</td>
<td>M = 21.96 SD = 21.95</td>
<td>13.72</td>
<td>&lt;.001</td>
<td>18.80</td>
</tr>
</tbody>
</table>

The first research question comprised four hypotheses. Each hypothesis was related to one of the measures, and suggested that participation in a VTP would relieve symptoms related to occupational stress injuries, including depression, loss of hope, PTSD, and quality of life.

Hypothesis 1 proposed that participation in a VTP would decrease symptoms of depression as measured by the BDI-II. Paired-sample t-tests showed an overall significant improvement in scores on the BDI-II following participation in a VTP, \( t(172) = 18.25, p < .001 \), \( d = 1.358 \) (2-tailed). To account for possible non-normality, results were confirmed using the Wilcoxon Signed Rank Test, \( z = -11.408, p < .001 \).
Of the 172 respondents to the BDI-II, 125 people (73%) showed improvement of at least one unit of severity or more (using the four-category version of the BDI-II), 43 people showed no change, and only 4 participants reported worsening of symptoms. Of note, 38 respondents improved from “severe” to “minimal”, 14 improved from “severe” to “mild”, and 37 improved from “moderate” to “minimal”. Linear regression analysis showed that the effect of age on the change score remained significant when all covariates were entered into the model, $F(1,167) = 6.71, p = .01$. However, age appeared to have a very small potential influence on change in BDI-II scores, with an R-squared of only 3.6%; the regression coefficient indicated that each year of age reduced total change scores by 0.193.

Hypothesis 2 proposed that the VTP would decrease the experience of symptom severity of PTSD as measured by the PCL-5. Results showed an overall significant improvement in scores on the PCL-5, $t(187) = 12.55, p < .001, d = 0.921$ (2-tailed), and this improvement was true across all subscales: intrusion, $t(187) = 7.31, p < .001, d = 0.562$ (2-tailed), avoidance, $t(187) = 7.14, p < .001, d = 0.569$ (2-tailed), negative alterations in mood and cognition, $t(187) = 12.84, p < .001, d = 0.957$ (2-tailed), and alteration in arousal and reactivity, $t(187) = 12.64, p < .001, d = 0.905$ (2-tailed). Once again, these results were confirmed using the Wilcoxon Signed Rank Test for the total scores, $z = -11.86, p < .001$ (2-tailed), as well as subscale D (negative alterations in cognition and mood), $z = -9.84, p < .001$, and, subscale E (alterations in arousal and reactivity), $z = -9.64, p < .001$. 

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Table 4  
*PCL-5: Pre-Post Change*

<table>
<thead>
<tr>
<th>PCL-5</th>
<th>Mean</th>
<th>SD</th>
<th>t (df)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B – Intrusion</td>
<td>2.65</td>
<td>4.96</td>
<td>7.31 (187)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>C – Avoidance</td>
<td>1.20</td>
<td>2.31</td>
<td>7.14 (187)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>D – Cognition &amp; Mood</td>
<td>5.86</td>
<td>6.26</td>
<td>12.84 (187)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>E – Arousal &amp; Reactivity</td>
<td>4.73</td>
<td>5.13</td>
<td>12.64 (187)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total</td>
<td>14.45</td>
<td>15.79</td>
<td>12.55 (187)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

One-way ANOVA indicated a significant relationship between age and change scores on the PCL-5, \( F(4, 183) = 2.95, p < .022 \), with an impact particularly in the subscales relating to negative alterations in mood and cognition, \( F(4, 183) = 3.46, p < .009 \) (2-tailed), and, alteration in arousal and reactivity, \( F(4, 183) = 3.58, p < .008 \) (2-tailed). Linear regression analysis showed that the relationship between age and total change scores on the PCL-5 remained significant when all covariates were entered into the model, \( F(1, 182) = 11.68, p = .001 \). R-squared remained small, at 6%; each year of age reduced total change scores by 0.35.

Analysis of variance also showed that there was also a significant relationship between having children and scores on the PCL-5, \( F(1, 185) = 6.90, p = .017 \), although this relationship did not remain significant when all other covariates were entered into a multiple regression model.

Hypothesis 3 proposed that participation in a VTP would be associated with increases in the experience of “Hope” as measured by the Trait Hope Scale (THS). This group-therapeutic
model appeared to have an overall significant positive relationship with respondent scores on the THS, \( t(187) = -11.22, p < .001, d = 0.683 \) (2-tailed). Regression analysis showed that the sex of the respondent was significantly related to the change scores, \( F(1,182) = 4.67, p = .032 \), but with R-squared of only 2.5%, and men having a higher overall average increase in scores of 6.28. It should be noted when interpreting these results that on this measure 177 respondents were male, while only 10 were female.

Hypothesis 4 proposed that participation in a VTP would have a significant relationship with decreases in symptoms related to interference with the experience of quality of life, as measured by the OQ-45. Results showed an overall significant improvement in scores on the OQ45 following a VTP, \( t(187) = 13.72, p < .001, d = 0.831 \) (2-tailed). Analysis of variance showed that age was significantly related to change scores, \( F(4,183) = 3.12, p = .017 \). This was confirmed by a linear regression analysis, \( F(1,181) = 7.49, p = .007 \), with age as a covariate giving an R-squared of only 4%, and scores decreasing by 0.388 for every year of age of the participant.

The second research question examined whether participants would report an experience of social support over the program, as indicated by the OQ45 subscales of ‘Interpersonal Relations’ (IR) and ‘Social Role’ (SR), and whether social support would be correlated with decreases in scores of depression (BDI-II) or PTSD (PCL-5), and increases in scores on the Trait Hope Scale (THS). A simple linear regression was conducted to examine the impacts of perceived social support, as measured by initial IR and SR subscale scores, with respect to change scores on the BDI-II, the THS, and the PCL-5.

Pearson correlations identified a relationship between pre-program scores on the IR and SR subscales with outcomes on the BDI-II, and the IR subscale with outcomes on the PCL-5.
Linear regression analysis confirmed that initial scores on the IR and SR were related to changes on the BDI-II, $F(1,169) = 16.07, p < .001$, and, $F(1,169) = 7.166, p = .008$, respectively. Initial IR scores accounted for 8.7% of the change in BDI-II scores, with scores on the BDI-II improving by 0.443 for each point of increase on the IR subscale. Initial SR scores accounted for 4.1% of the change on BDI-II scores, and change scores improved by 0.386 on the BDI-II for each point on the SR subscale of the OQ-45. Initial scores on the IR subscale of the OQ-45 also had a significant effect on change in PTSD scores as measured by the PCL-5, $F(1,185) = 6.76, p = .010$, with 3.5% of the variance related to initial scores on the IR subscale, and scores on the PCL-5 improving by 0.397 for each point of increase on the IR subscale of the OQ-45.

The third research question was what, if any, effect the VTP would have on critical items on the BDI-II and the OQ45. Paired-sample t-tests were used to examine the relationship between participation in at VTP with outcomes on specific “critical items” on the BDI-II and the OQ-45. Results show that there was significant improvement on people’s experience of hopelessness and suicidality, as measured by item 9 on the BDI-II, $t(171) = 8.03, p < .001$ (2-tailed), with an average change from pre-test to post-test of -0.33 (SD = 0.54). Crosstabulations showed that, of the 172 respondents to this item on the BDI-II, 61 people (35%) showed improvement of at least one unit of severity or more, 106 people showed no change, and only 5 participants reported increases in thoughts or intentions of suicide. Of the 13 participants who originally responded with “would like to kill myself”, 11 (85%) showed improvement of at least one category.

There was a significant improvement in the experience of suicidal ideation as measured by item 8 on the OQ-45, $t(182) = 6.31, p < .001$ (2-tailed), with an average decrease in scores from pre-test to post-test of -0.42 (SD = 0.89). Crosstabulations showed that, of the 183
respondents to this item, 30 people (16%) showed improvement of at least one unit of severity or more.

Item 44 on the OQ-45 measured people’s experiences of feeling overwhelmed enough by anger to react in ‘a way they might regret’. On this item, there was a significant improvement, $t(173) = 5.5, p < .001$ (2-tailed), with an average change in scores from pre-test to post-test of $-0.44$ (SD = 1.06). Crosstabulations showed that, of the 174 respondents to this item on the OQ-45, 61 people (35%) showed improvement of at least one unit of severity or more.

The Wilcoxon Signed Rank Test was used to confirm these observations, with item 9 on the BDI-II, $z = -6.86, p < .001$, item 8 on the OQ-45, $z = -5.88, p < .001$, and item 44 on the OQ-45, $z = -5.12, p < .001$, all showing significant change.

The only exception to improvements on critical items, and indeed in the program general, was item 32 specifically on the OQ-45: “I have trouble at work/school because of drinking or drug use.” This question, which examines negative impacts of substance use on work and academics, did not show a significant improvement from pre-test to post-test, $t(171) = 0.38, p = .70$ (2-tailed), although the change in mean score was in the direction of improvement. The Wilcoxon Signed Rank Test confirmed this observation, $z = -.227, p = .82$.

The fourth research question sought to examine the impact of group therapeutic factors, as measured by the Therapeutic Factors Inventory Scale (TFIS). One directional hypothesis was developed: Increased endorsement of therapeutic factors (higher scores on the TFIS) would predict decreases in scores related to depression (BDI) and PTSD, (PCL-5), increases in scores on the Trait Hope Scale (THS), and general improvement in self-reported quality of life (OQ-45).
Simple linear regression revealed that participants’ experience of therapeutic factors as measured by the TFIS had a significant association with positive changes on each of the outcome variables.

Table 5  
Effect Of Therapeutic Factors

<table>
<thead>
<tr>
<th></th>
<th>( b )</th>
<th>( R^2 )</th>
<th>( t )</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI-II</td>
<td>.211</td>
<td>.128</td>
<td>4.75</td>
<td>154</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>PCL-5</td>
<td>.191</td>
<td>.049</td>
<td>2.96</td>
<td>170</td>
<td>.004</td>
</tr>
<tr>
<td>THS</td>
<td>-.120</td>
<td>.062</td>
<td>-3.35</td>
<td>170</td>
<td>.001</td>
</tr>
<tr>
<td>OQ-45</td>
<td>.300</td>
<td>.063</td>
<td>3.40</td>
<td>171</td>
<td>.001</td>
</tr>
</tbody>
</table>

The TFIS was significantly related to change scores in the BDI-II, \( F (1,154) = 22.53, p < .001 \), the PCL-5, \( F (1,170) = 8.73, p = .004 \), the THS, \( F (1,170) = 11.24, p = .001 \), and the OQ-45, \( F (1,171) = 11.53, p = .001 \). For each point of increase in the TFIS, BDI-II scores dropped by 0.211, PCL-5 scores dropped by 0.191, THS scores increased by 0.12, and OQ-45 scores dropped by 0.30. Corresponding values of R-squared were: 12.8%, 4.9%, 6.2%, and 6.3% respectively.

4.1 Summary of Findings

These analyses confirm that participation in this well-designed group-therapy program was associated with change on each of the outcome variables. Results show significant reductions in depression and PTSD severity, an increase in participants experience hope, and improvement in quality of life. There were covariates identified within the analyses, including
age impacting outcomes on the BDI-II, PCL-5, and OQ-45, having children influencing scores on the PCL-5, and, the sex of participants impacting their experiences of hope as measured by the THS. Thought they had a notable effect, these covariates were not responsible for the significant overall outcomes of this program.
Chapter V

General Discussion

“How does group therapy help clients? A naïve question, perhaps. But if we can answer it with some measure of precision and certainty, we will have at our disposal a central organizing principle with which to approach the most vexing and controversial problems of psychotherapy.”

_Yalom and Leszcz (2005, p. 1)_

Overall, my findings concur with research that identifies a positive correlation between attendance to a well-designed group-therapy program and positive clinical outcomes, as attendance to this program appears to be related to significant reductions in depression and PTSD symptoms, increases in hope, and improvement in quality of life. These analyses also lend further support to the effectiveness of group psychotherapy across a variety of presenting concerns (Kösters et al., 2006), especially one that has been intentionally designed to suit the population it serves.

There are numerous factors that contribute to the success of group-therapeutic programs like this one, designed to treat veterans and first responders. In particular the focus is on the development of a safe and contained, cohesive group (Burlingame, Mackenzie, & Strauss, 2004). The tenets of inclusion, control, and, affection (Schutz, 1961) are of significant importance in the development of a relational program. Inclusion refers to a participants experience of being accepted and a part of the group, control refers to the experience of agency and autonomy within the group as well as a belief that someone is leading the group intentionally, and affection refers to members’ experience of being cared for and that other members ‘want’ him/her to be a part of the group. According to Schutz’ Fundamental Interpersonal Relations Orientation (FIRO) model, members of a group have the need to feel ‘worthwhile’, while also making others feel important. There is a need for group members to feel they have agency within the group, but
also that they can receive guidance from others and that someone has control of the environment as a whole. As articulated in the FIRO model, there is a need for a reciprocal affection with other members of the group, and a desire for closeness and attachment with them (1961). These needs, when met, are a catalyst for a ventral vagal (socially communicative) response according to Porges’ polyvagal theory (2001a). Polyvagal Theory identifies that adaptive social communication strategies including listening, vocalizations, and appropriate facial expressions, are linked to the ventral vagal complex (Porges, 2009), which is a higher order biological response system. In an environment where safety is experienced, more atavistic responses are not necessary, and members can communicate and interact in ways that allow for the processing of difficult experiences rather than re-experiencing threat response protective behaviours (Porges, 2001a).

The evolution of the VTP into a 3-phase small group structure (group building and narrative storytelling, therapeutic enactments, and final consolidation and integration, Westwood, 2001) is also in line with research that identifies group size, setting, sequencing, dosage, and the use of co-facilitators as significant factors in group therapy outcomes (Burlingame et al., 2004; Crowe & Grenyer, 2008; Joyce et al., 2007; Sayin, Candansayar, & Welkin, 2013). The group-therapeutic model was successful in meeting the stated goals of this program even when factoring out effects of age, sex, marital status, having children, education, and income. This falls in line with the observations previously noted that that the development of a safe group, attention to the therapeutic factors, and the degree and timing of group structure form the foundation of positive group-therapeutic outcomes (Burlingame et al., 2004).
5.1 The Relationship Between Age And Outcomes

Age appeared to have a significant association with outcomes related to depression, PTSD symptoms, and the experience of quality of life. In all three of these measures, the influence of the program on change scores appeared to diminish somewhat as age of participants increased.

A preliminary search using Google Scholar, PsycINFO, Military & Government Collection, PsycARTICLES, PsycBOOKS, PsycEXTRA, and Academic Search Premier, revealed a dearth of information relating to the impact of age on therapeutic outcomes. In one article, however, Davis, Kendall, and Suveg (2019) did identify that in youth populations, participants with higher levels of pre-treatment emotional awareness had better outcomes when being treated for a clinically diagnosable anxiety disorder than those with lower pre-treatment levels of emotional awareness. While this research was conducted with youth, ages 7-15 years, who met criteria for an anxiety disorder, there was not a significant effect of age in either boys or girls. The results of Davis et al.’s study present an interesting possibility that could be applied to veteran populations. Traditionally, a mastery over body, emotions, and thoughts, has been the expectation (Shields, 2016), and stoicism has been the ethos within professions of service such as the military, and treatment-seeking behaviours have been stigmatized as weakness, or invalidating of service (Redmond et al., 2015; Sayer et al., 2010; Shields, 2016). Fortunately, this has begun to change in recent years as awareness of occupational stress injuries and PTSD have come into broader public awareness, as well as the importance of emotional awareness and self-care in the general population. As a result, it could be argued that the age of participants has a correlation with their initial emotional awareness, due to generational differences in how emotional awareness skills were valued and taught. The reason then that these group-therapeutic
interventions show statistically significant change across all ages may have to do with the
psychoeducational aspect of the program that teaches emotional awareness, appropriate
expression, communication skills, and empathic reflection, each of which are implemented
multiple times daily on each day of the program. This notion is supported by the Polyvagal
theory, which identifies that a ventral vagal response (a calming effect) will be activated when an
environment of safety and support is present, including adaptive strategies of listening
behaviours, vocalization, and facial expressions (Porges, 2009). Individuals with higher pre-
program levels of emotional awareness are more likely to ‘buy in’ to the program earlier, and, be
primed for easier integration of the early psychoeducational elements of the program,
particularly those designed to facilitate communication and empathic reflection.

Another likely possibility for apparent decreased efficacy with age in the study may be
related to persistence of more deeply established patterns related to thoughts, behaviours, and
emotional reactivity. Essentially, the older you are, the more likely you have been living with
PTSD symptom related patterns such as avoidance, negative beliefs about self and the world, and
reactivity (including emotional numbing). As a result, it may take longer to experience symptom
reduction, and older age will be related to continuing difficulties and slower symptom
remediation (Cornelius, van der Klink, Groothoff, & Brouwer, 2011). It is also important to
consider the effect of the reactions of social networks that are accustomed to the participants’
patterns and are now having a difficult time adjusting, and thus reacting in unexpected ways to
these changes. This could, in effect, inhibit the amount of change that is possible for participants
in the program. It would have been of great interest to these analyses to have the 3, 12, and 18-
month follow up data to see if these findings persisted over time, or, if there was a gradual
change that brought outcomes in line across age categories. This is one possible future research question, and would be of interest in further analysis if the data were made available.

5.2 The Relationship Between Sex And ‘Hope’

In speaking with the current VTN clinical director, Dr. Paul Whitehead, about the state of the VTP programs currently, and identifying that there was a difference in men’s experience of change in hope, as measured by the THS, compared to that of women’s, he was able to offer some insight as to why this might be. He identified two primary understandings that came out of meetings with clinicians that are primarily responsible for the women’s’ programs: First, that during women’s programs it was found that it was more important to contain emotions rather than to elicit emotions, and, that there was a sense that there was not a sisterhood amongst women in the military as there is a brotherhood with men in the military. As in Shields, (2016) there is an expectation of mastery over the self, and non-expression is the ethos; containment of emotions is the norm in the military. Each VTP is engineered to afford the opportunity for participants to express these repressed and (barely) contained emotions in a safe and healthy way, which promotes safety, normalization, and cohesion of the group.

The military culture has not historically responded often, or well, to sexism or reports of harassment. To maintain a competitive edge, some women report that they must not only keep up with, but also outperform their male counterparts in order to be accepted by their peers. Many service women describe being treated negatively, as though they were inferior, felt demeaned, and often betrayed (Burkhart & Hogan, 2015). This means not just trying to fit in, but also rejecting other women in the military who are not (at least outwardly) assimilating into the traditional military culture. In conversation with Dr. Whitehead, he identified that it was reported from women in the programs that trust is more difficult because of how they experience
uncertainty of how their military sisters may relate to power in the military structure. It was reported by the clinicians responsible for the women’s programs that they may compete with each other to access power from the men in the military hierarchy. This experience of ‘competition’ rather than cohesion may impact the experience of safety for women in these programs and result in diminished increases in hopefulness. Analysis of the results identified that the experience of hope does not appear to increase for women at the same rate it does for men. It is possible that this is a lingering result of the culturally cultivated mistrust that women have with other women, making group cohesion more difficult to attain, and, result in a still significantly improved, but comparatively diminished improvement in the experience of ‘hope’ as measured by the THS in these analyses. An unfortunate confound in how to interpret these results relates to the fact that many of the VTP women’s programs were run with at least one male facilitator – that man often being the primary lead facilitator. If women experienced conflict with other women in the military as a result of competition for access to authority in a male dominated environment, having women’s programs facilitated by a man may serve to recreate that experience, and, diminish positive outcomes as a result. It would be very interesting to examine what factors impact hope in women specifically, in particular, group cohesion. Unfortunately, due to the small sample size that question is outside of the scope of analysis using this data set. It would be further interesting to see how outcomes of the program endure through the follow up questionnaires, and specifically, whether interpersonal relationships improve and whether that improvement correlates with maintenance (or possible improvements) of the experience of hope. It would also be interesting to look at whether hope is affected by the sex of the lead group facilitator.
A search using PsycINFO, Military & Government Collection, PsycARTICLES, PsycBOOKS, PsycEXTRA, Women's Studies International, revealed very minimal research and information about the experiences of women in the military. Joana Amara and Maxine Krengel (pp. 36-44, in Ainspan, Bryan, & Penk, 2016) identify that in the United States military, the number of women, and the extent and depth of their participation, has increased dramatically. The fact that a search for information regarding the experience of women in the military poses any difficulty represents another significant gap in the literature, and denotes the very difficulty that the women of the VTP programs have identified. A qualitative study exploring the experiences of women in the Canadian military is an area of important future research.

5.3 The Importance of Relationships and Social Support

The second question was whether participants would experience social support over the program, as indicated by the OQ-45 subscales of ‘Interpersonal Relations’ and ‘Social Role’, and whether this would correlate with decreases in scores of depression or PTSD, and increases in scores on the Trait Hope Scale.

As indicated in the results section, there was a significant effect of ‘Interpersonal Relations’ and ‘Social Role’ on outcomes on the BDI-II, and of ‘Interpersonal Relations’ on PCL-5 outcomes. The IR subscale measures the extent to one experiences loneliness, conflict with others, and difficulties within marriage and family relationships. The SR subscale measures the extent to which one experiences work, student, or home duties as difficult. Higher scores indicate difficulties in these areas, while lower scores suggest the absence of interpersonal problems, adequate social role performance and increased satisfaction in these domains. Results of this analysis suggest that increased satisfaction with interpersonal relationships and social roles facilitates improvement in depression scores, and that satisfaction within interpersonal
relationships supports improvements in PTSD symptom severity. This is an important consideration in the lives of those who suffer from occupational stress and traumatic injuries as a result of service. It lends support to a growing body of literature suggesting that social support and connection are vital in recovery. Given the structure and format of each VTP, and the focus on interpersonal communication and connection, it makes sense that the program will increase satisfaction on both of these sub-scales, and that already existing supports and satisfaction in these areas will facilitate improvements in the program.

Having children also appeared to have a positive relationship to changes in PCL-5 scores, and having children was associated with less positive change over the program. Taken together, it is possible that having children was an “interpersonal relationship” in which there were difficulties, or, those that did not have children had one fewer relationship with which they might be dissatisfied. It is also possible that the effects of having children added a stress to other intimate relationships in their lives, as sometimes happens. It is common among veterans of this program to feel as though they had not been the best parent they could have been, due largely to depression, anxiety, and PTSD symptom severity, or, to have conflict with their children, and thus feel stress or dissatisfaction within those (and possibly other familial) relationships. For example, PTSD symptom severity such as avoidance and numbing out has negative consequences for children, and hyperarousal symptoms can be frightening for family members. Additionally, not being able to be present to family members can lead to disconnections and attachment injuries for children of veterans with severe PTSD symptoms.

Given the focus of this particular group-therapeutic program on communication and relationship building, it would be very interesting to find out how these relationships evolve over time, and the follow up data would have been very helpful in understanding this longer-term.
With these improved communication skills, are people who have attended the program getting new/more information about how the problems within their relationship are affecting themselves and others, and/or about how to navigate them? Would having new awareness of the impacts they have had on their family / children affect them negatively? The results of these analyses raise many interesting questions about how a program that seeming has very positive effects may have some unintended consequences. Pre- / post- internal change scores are important, but it may take time for others, and larger systems to be corrected. When a person participates in an intentional process to bring about change, that person will (usually) naturally embrace that change, and be willing and able to adjust to those new ways of being in the world, having worked towards that experience. However, immediately following this change process, social networks and communities may be surprised by that person’s experience of feeling healthier and new ways of interacting with the world, and have difficultly adjusting to those changes. It may take time for friends and family (e.g. children) to catch up, and, those people may feel some resentment.

5.4 Impact on Critical Items

The third question sought to determine whether the program would have a significant positive relationship with critical items on the BDI-II and OQ-45. The program did have a significant positive correlation with experiences of hope and decreases in suicidal thoughts and ideation, use of substances, and, the experiences of anger that is overwhelming (BDI-II item 9, and OQ-45 items 8, 11, and 44, respectively).

Item 44 on the OQ-45 examines the experience of feeling overwhelmed by anger and acting in potentially unsafe ways. Analyses of the VTP data indicated that there was a significant decrease in endorsement of this item, which is important considering that in a survey
of Iraq and Afghanistan combat veterans, Sayer et al. (2010) found that problems with anger management was the most commonly reported concern, with endorsement from more than half of respondents.

This has implications for the importance of relationships and the experience of social roles (IR & SR on the OQ-45 respectively) prior to entering the program. While the experience of anger appears to be among the most commonly reported symptoms among combat veterans, it is interesting to wonder how this affects their experiences at home, and the impact this has on their families, jobs, and social network. Participants’ ability to move from a SNS/PNS response into one that favors communication and social connection (Porges, 2001a) has far reaching implications for their experiences of emotional stability and social connection. Though it is not directly measured by this research, one can imagine a positive change in the experience of family and loved ones, as well as in stability of working relationships and friendships.

There is a notable exception of the effect of the program on item 32 on the OQ-45 relating to the negative impacts of substance use. The absence of statistically significant change is likely because of the low endorsement of the item in the pre-program assessment. Of the N = 182 participants who completed this measure, only 26 respondents identified a score greater than 0 (mean = 0.214), leaving little room for decrease. That being said, while there was not a statistically significant change in scores, there was an overall decrease in endorsements and severity noted on the post-VTP measure with only 24 respondents endorsing this item (mean = 0.198).

There is certainly a high endorsement of substance use/abuse within veteran and first responder populations, and this low endorsement of the negative impact of substance use on this measure is likely reflective of a selection bias embedded within the exclusion criteria of the
program that requires participants to be able to abstain from recreational drug use while participating. Participants who are able to adhere to this inclusion requirement are less likely than the general population to experience negative impacts of substance use on work or school (as per OQ-45 item #32). Derefinko et al. (2018) examined the link between emotional distress and substance use through the military to civilian (MTC) transition. Repeated measures analysis found that there was not a significant difference between active duty members and those post transition on endorsement of alcohol (25% moderate to heavy use), and that cannabis and ‘hard drug’ use, and prescription drug misuse use increased (12%) following transition out of active service (2018). Derefinko et al. highlight the link between anxiety, depression, and military based trauma symptoms, and increased risk of substance abuse.

In addition, the significant portion of participants of the VTP veterans who use medical cannabis will affect responses to substance use. While this data was not recorded within the program, Veterans Affairs Canada (VAC) identified 10,466 medical cannabis clients in the 2018/2019 year (https://www.veterans.gc.ca/eng/about-vac/research/research-directorate/publications/reports/cmp2018), so questions regarding the negative impacts of substances on their work or academic performance will be influenced by their understanding of the classification of substances, as well as a potential benefit of the use of certain substances, despite the effects they may have on work and/or school.

### 5.5 The Impact Of Therapeutic Factors

The fourth question sought to examine the impact of group therapeutic factors, as measured by the Therapeutic Factors Inventory Scale, with a prediction that an increased experience of group therapeutic factors would be related to improved treatment outcomes.
Cox, Owens, and Ogrodniczuk (2017) analyzed data from 117 veterans who were also graduates of the VTP programs, and found that secure emotional expression and social learning were related to PTSD symptom reduction, and, increases in social support from baseline to post treatment.

These authors also examined the effects of the perceived social support, as assessed by the Interpersonal Support Evaluation List-Short Form (ISEL-SF), and group therapeutic factors, as assessed by the TFI-SF, on PTSD symptoms, as measured by the PCL-5. The ISEL-SF is a 16-item measure that is designed to assess perceived social support. The TFI and PCL-5 have been described previously, and measure the experience of group therapeutic factors and PTSD severity respectively.

Results of their analysis indicated that PTSD severity decreased from baseline to post-treatment, and that each of the social support functions measured (appraisal support, tangible support, and, belonging support) increased from baseline to post-treatment (Cox et al., 2017). Age was identified through as a series of Univariate analyses as the only examined sociodemographic variable that was significantly related to change and was therefore included as a covariate in each model, but was not found to be a significant predictor in any of the final models (2017). Three multiple linear regression analyses were conducted to assess whether perceived social support was associated with PTSD severity reduction. Results indicated that “belonging support”, but not “appraisal support” or “tangible support” was associated with PTSD change. A second step was added to the regression equations to evaluate which therapeutic factors were most related to change in social support. Regression analyses identified that social learning, but not secure emotional expression, was related to changes in perceived appraisal support, and that the therapeutic factors observed accounted for 11% of the variability.
of change in appraisal support, taking control variables into account (2017). Secure emotional expression, but not social learning, was related to change in participants’ experience of tangible support, with therapeutic factors accounting for 4.7% of the variance (2017). Cox, Owens, and Ogrodniczuk identify in this research the importance of the group therapeutic factors that normalize psychological distress due to PTSD, and highlight the importance of reduction of associated stigma and the need to reach out for support (2017).

Cox et al. found that age was a significant covariate, but that it did not impact their final models, that PTSD symptom severity was decreased, and that participants experienced increases in social support from baseline to post treatment. Results of my analysis confirms findings of age as a covariate in VTP programs using a different subset of the database, and decreases in PTSD severity across programs. These results also lend further support to the importance of group therapeutic factors, and social support outside of the group-therapeutic environment. One difference in outcomes was the amount of variance that therapeutic factors had on PTSD severity outcomes, likely due to a different sampling, and because of the focus on a broader spectrum of factors and outcomes (i.e., awareness of interpersonal impact and instillation of hope) than just the interpersonal therapeutic factors measured. This analysis builds on their work by examining the effect of the therapeutic factors on the other measures of interest in a group-therapeutic program (i.e., depression, hope, and perceived quality of life).

5.6 Implications for Future Research

While these analyses answered many questions about what is happening within the groups examined, they created a number of interesting questions to be explored in the future that would be best answered by creating a randomized control study, to definitively demonstrate efficacy of this group-therapeutic model.
First, it would be very interesting using follow up data to examine whether patterns noted within pre/post analyses endure over time. One pattern in particular was the relationship between age and outcomes. Given possible reasons for an effect of age to occur (i.e., enduring patterns, pre-program emotional awareness, etc.), would older participants’ outcomes begin to catch up to younger graduates of the program? There is follow up data at 3-, 12-, and 18-months post program that would answer this question. This analysis would lend support to speculated reasons for an influence of age, or, may provide information to postulate possible alternative explanations. This information will provide support for the need to have veterans attend programs such as this one earlier in their military to civilian transition.

There are a number of questions regarding why having children impacted outcomes on the PCL-5. A qualitative component examining participants’ experiences of social roles and interpersonal relationships (SR and IR on the OQ-45 respectively) before, during, and after the program would provide more insight on why having children impacted their alleviation of trauma symptom severity. Essentially, it would be interesting to identify whether there is a correlation between the quality, or, perceived quality of their relationships with children and family that had an influence on outcomes.

Though there is a question about the validity of results suggesting that women did not experience increases in ‘hope’ at the same levels men did, it would be interesting to examine if there is any correlation between the experience of ‘hope’, and women’s experience of camaraderie during their service as well as group cohesion outcomes as measured by the TFIS, or, an additional measure designed specifically to measure group cohesion, such as the Group Questionnaire, which is an empirically validated measure that assesses the quality of therapeutic relationships within a group-therapeutic environment (Thayer & Burlingame, 2014). This would
offer insight into women’s experiences in the military and how they affect the group therapeutic environment through treatment for women in the process of military to civilian transition.

5.7 Limitations of this Study

There are many design concerns present when interpreting the outcomes of this study. The most obvious limitation of this research in general is that there is no control group with which to compare these participants. In a well-designed study, there would be an active control group, or, a delayed onset treatment group with whom to compare outcomes. Because these analyses are looking at outcomes without a comparison, it is entirely possible that gains made throughout the programs are explainable by some variable or variables that were not measured, even including simply the passage of time. I would note however, that while it is possible maturation or passage of time is a factor for change, it seems unlikely that participants who have been experiencing significant difficulties for long periods of time would all suddenly experience significant improvements coincidentally over the relatively short duration (5-8 weeks) of the program. It also seems unlikely that enough of the sample population would experience some other event that would explain their improvements to affect the data to show significant changes across the total population sample. Further, measures were not re-administered during treatment; primary variables were only assessed at the beginning and/or end of treatment. This eliminates the ability to examine more closely the trajectory of change within participants, in order to better ascertain particular points that change begins to happen, whether it is a linear progression, whether it is the program as a whole that influences change, or whether changes occur at different times and places throughout this group-therapeutic model.

The majority (90%) of data was from men’s programs, leaving questions around the generalizability of outcomes to women. In particular, there was a finding that women in the
program did not have the same level of increase in ‘hope’ as measured by the THS. A reanalysis of data from this program with a more representative sample would clarify the impact of sex as a covariate. This is particularly important given there is a severely limited amount of information that currently exists around women’s experiences in the military, and of their transition into civilian life afterwards. In discussion with female veterans (and other first responder personal), the common theme is a statement that they have to do ‘twice the work for half the respect’. A more representative sample would offer credibility to the finding that there are differences between men and women. Further, because there is currently little qualitative information about the experience of women, other than that they experience MST at much higher rates than men, it is hard to make informed connections about why their experiences are different from men, if they are.

For analysis of these data, I was intending to employ a mixed methods project (Creswell, 2007) utilizing both quantitative and qualitative methods that would include follow up. This became difficult, as access to the data was limited, and access to participants of the programs from which data was used for this analysis was prohibited by the steward of the data, despite the permission given by the executive and clinical directors of the VTN. Further, changes in scores between pre, post, 3-month, 12-month, and 18-month follow up were intended to be examined, however, these data were also not made available to this author by the steward of the data despite permission given by the executive and clinical directors of the VTN. Follow up information would have the potential to fill in gaps in information around questions of trajectory of gains, whether age had lasting effects as a covariate, and to what extent the experiences of social support and connection maintained positive outcomes. For example, looking at how experiences of social roles and interpersonal relationships would change over the year with healthier attitude,
better communication, decreased depression symptoms and PTSD severity, and increases in hope and quality of life.

One of the most significant factors related to limitations of the generalizability of the data presented here are the sheer number of different clinicians facilitating this group-therapeutic model. Currently, there are 16 identified VTN lead-clinicians across Canada, with different levels and experiences of training in the various techniques used within the VTN programs. Fidelity to a specific protocol and technique methodology has never, to my knowledge been measured. With that in mind, it does speak to the effectiveness of the program design, that it retains (statistical) effectiveness across so many differing backgrounds. This lends support to research that identifies the importance of safety and inclusion, and the effectiveness of group therapy regardless of therapeutic theoretical orientation (Foy et al., 2000; Kingsley, 2007, Kösters et al., 2006).

5.8 Summary of Findings and Conclusions

These analyses support the efforts of researchers to identify the effectiveness of the group-therapeutic model, showing improvements in all outcome variables, which were not dependent on any of the covariate information collected. It also appeared to be effective despite significant variation in therapist background and training. The implication of this finding is that this group-therapeutic model is effective as a result of its structure and approach to the presenting concerns (i.e. group cohesion, communication, education, and process-experiential focus). Specific to the organization that allowed access to this data, results identify that this group-therapeutic program supports meeting the stated goals of the VTN.

While these findings are promising, there were many questions left unanswered due to constraints on these analyses. Future research that utilizes a control group would offer a much
stronger claim of effectiveness and inclusion of follow up data would shed light on long many of the questions raised by the limitations of this study, including causal effectiveness, the effects of participant age, and generalizability of claims of the impact of sex on outcomes. Specifically, a control group would help to support the claim that it is this program, and not some other unexamined factor that influenced the outcomes identified. Also, that it is age, and not some other factor closely related to age, that affected the variance of change identified. Finally, a population sample that includes comparative numbers between male and female identified participants would lend credit to, or possibly correct the finding that there is an effect of sex on the improvement of hopefulness of participants.
References


posttraumatic stress disorder in trauma-exposed adults. *Journal of consulting and clinical psychology*, 68(5), 748.


doi:10.1016/j.socscimed.2010.07.015


Appendices

Appendix A: Beck Depression Inventory-II (BDI-II)

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

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

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

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

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

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

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

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

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

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

10. Crying
    0 I don’t cry anymore than I used to.
    1 I cry more than I used to.
    2 I cry over every little thing.
    3 I feel like crying, but I can’t.
11. Agitation
   0  I am no more restless or wound up than usual.
   1  I feel more restless or wound up than usual.
   2  I am so restless or agitated that it's hard to stay still.
   3  I am so restless or agitated that I have to keep moving or doing something.

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

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

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

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

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

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

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

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

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

21. Loss of Interest in Sex
   0  I have not noticed any recent change in my interest in sex.
   1  I am less interested in sex than I used to be.
   2  I am much less interested in sex now.
   3  I have lost interest in sex completely.

---

NOTICE: This form is printed with both blue and black ink. If your copy does not appear this way, it has been photocopied in violation of copyright laws.

Subtotal Page 2
Subtotal Page 1

Total Score
Appendix B: The Trait Hope Scale (THS)

Worksheet 3.4 The Adult Trait Hope Scale (Snyder et al., 1991)

**Directions:** Read each item carefully. Using the scale shown below, please circle the number next to each item that best describes YOU.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Definitely False</td>
<td>Mostly False</td>
<td>Somewhat False</td>
<td>Slightly False</td>
<td>Slightly True</td>
<td>Somewhat True</td>
<td>Mostly True</td>
<td>Definitely True</td>
</tr>
</tbody>
</table>

1 2 3 4 5 6 7 8 1. I can think of many ways to get out of a jam
1 2 3 4 5 6 7 8 2. I energetically pursue my goals
1 2 3 4 5 6 7 8 3. I feel tired most of the time
1 2 3 4 5 6 7 8 4. There are lots of ways around any problem
1 2 3 4 5 6 7 8 5. I am easily downed in an argument
1 2 3 4 5 6 7 8 6. I can think of many ways to get the things in life that are most important to me
1 2 3 4 5 6 7 8 7. I worry about my health
1 2 3 4 5 6 7 8 8. Even when others get discouraged, I know I can find a way to solve the problem
1 2 3 4 5 6 7 8 9. My past experiences have prepared me for my future
1 2 3 4 5 6 7 8 10. I’ve been pretty successful in life
1 2 3 4 5 6 7 8 11. I usually find myself worrying about something
1 2 3 4 5 6 7 8 12. I meet the goals that I set for myself

**Scoring information**

**Pathways subscale score:** Add items 1, 4, 6, and 8. Scores on this subscale can range from 4 to 32, with higher scores indicating higher levels of pathways thinking.

**Agency subscale score:** Add items 2, 9, 10, and 12. Scores on this subscale can range from 4 to 32, with higher scores indicating higher levels of agency thinking.

**Total hope score:** Add the pathways and Agency subscales together. Scores can range from 8 to 64, with higher scores representing higher hope levels.

Appendix C: PTSD Checklist for DSM-V (PCL-5)

Below is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

<table>
<thead>
<tr>
<th>In the past month, how much were you bothered by:</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Repeated, disturbing, and unwanted memories of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Repeated, disturbing dreams of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Feeling very upset when something reminded you of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Avoiding memories, thoughts, or feelings related to the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Trouble remembering important parts of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Blaming yourself or someone else for the stressful experience or what happened after it?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Loss of interest in activities that you used to enjoy?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Feeling distant or cut off from other people?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Irritable behavior, angry outbursts, or acting aggressively?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. Taking too many risks or doing things that could cause you harm?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. Being “superalert” or watchful or on guard?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Feeling jumpy or easily startled?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. Having difficulty concentrating?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. Trouble falling or staying asleep?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix D: Outcome Questionnaire (OQ-45)
## Appendix E: Therapeutic Factors Inventory—Short Form (TFIS)

<table>
<thead>
<tr>
<th>TF</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>Because I've got a lot in common with other group members, I'm starting to think I may have something in common with people outside group too.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF2</td>
<td>Things seem more helpful since joining group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF3</td>
<td>I feel a sense of belonging in this group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF4</td>
<td>I find myself thinking about my family a surprising amount in group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF5</td>
<td>Sometimes I notice that in group I have the same reactions or feelings as I did with my sister, brother, or parent in my family.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF6</td>
<td>In group I've learned that I have more similarities with others than I would have guessed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF7</td>
<td>It's okay for me to be angry in group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF8</td>
<td>In group I've really seen the social impact my family has had on my life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF9</td>
<td>My group is kind of like a little piece of the larger world I live in: I see the same patterns, and working them out in group helps me work them out in my outside life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF10</td>
<td>Group helps me feel more positive about my future.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF11</td>
<td>It touches me that people in group are caring towards each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF12</td>
<td>I pay attention to how other handle difficult situations in my group so I can apply these strategies to my own life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF13</td>
<td>In group sometimes I learn by watching and later imitating what happens.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF14</td>
<td>This group helps me recognize how much I have in common with other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF15</td>
<td>In group, the members are more alike than different from each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>TF16</td>
<td>It's surprising, but despite needing support from my group, I've also learned to be more self-sufficient.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>