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Letter from the Editors

The *Journal of Military and Government Counseling* (JMGC) is an official publication of the Military and Government Counseling Association (MGCA), a division of the American Counseling Association. The mission of the journal is to promote reflection and to encourage, develop, facilitate, and promote professional development for administrators, counselors, and educators working with all members of the Armed Services and their families, whether active duty, guard, reserve, retired, or veteran; civilian employees of the Department of Defense; first responders including EMS, law enforcement, fire, and emergency dispatch personnel; and employees of Local, State and Federal governmental agencies.

The only constant is change. Starting several months ago we (the counselor education programs at Troy University) partnered with the MGCA to assist with publishing the JMGC and we've assembled a good crew with Dr. Noah, Dr. Creamer, Dr. Boyd, myself and several others. We will be expanding the JMGCs' offerings to include more and deeper investigations of military life, first responder life, and the professional perspectives that can help us to better understand how to work with and support these populations, their families, and their communities. With Ben's guidance we're getting on track and the next issue (vol.7/is.1) of the JMGC will start to show some of these changes.

So, keep those manuscript submissions coming in and contact me if you are interested in being a reviewer for the JMGC. As always, thank you for the work you do in support of our military, first responder and emergency service personnel, and those that work in and with government agencies. The procedure for submitting articles is available at JMGC Guidelines for Authors and the contact email is JMGC Editor.

Keith, Ben, Andy, Lynn, Michelle and the JMGC Editorial Team

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Supporting Veterans Experiencing Homelessness through a Theoretically-based Career Development Group

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Abstract

Military service members and veterans have unique considerations related to their career development. Considering their context, experience, and career development needs, it is essential to provide assistance that accounts for these elements. This article provides a description of a career-focused group designed to support veterans experiencing homelessness that integrates RIASEC (Holland, 1997) and Cognitive Information Processing (Sampson, Reardon, Peterson, & Lenz, 2004) career development theories. Specific to the needs of this population, aspects of military culture such as unit cohesion was utilized in the intervention. The theoretical foundation, analogous concepts within group counseling and military culture, curriculum, steps in implementation, and preliminary outcomes related to the career development group are provided.

Keywords: career development, military veterans, group counseling, career development theory

Counseling military service members and veterans entails exposure to an array of experiences of those receiving services. Within this population, homelessness presents a unique constellation of concerns. As of January 2016, 39,471 veterans experiencing homelessness were identified in America during point-in-time counts (National Alliance to End Homelessness, 2016). Though this represents a substantial decrease (56%) in the number of homeless veterans counted in 2010, military veterans remain over represented in the homeless population in America and are more likely than civilians to experience homelessness (Fargo et al., 2012). Similar to the general population of those who are homeless, veterans are at a significantly increased risk of homelessness if they have low socioeconomic status, a mental health disorder, and/or a history of substance abuse (National Alliance to End Homelessness, 2016). Post-traumatic stress disorder (PTSD), lower pay grade in the military (E1-E4), substance use, and psychotic disorders were found to be substantial risk factors for homelessness among veterans deployed to Afghanistan and Iraq (Metraux, Clegg, Daigh, Culhane, & Kane, 2013). A study of veterans initiating medication-administered treatment for opioid use disorder screened each of these patients for risk of homelessness and found the prevalence of homelessness in veterans with opioid use disorder is 10 times more than the general veteran population (Bachhuber,

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Roberts, Metraux, & Montgomery, 2016). These factors speak to the complexity and mental health-oriented elements associated with this population which mandates a sophisticated response to their needs especially in the realm of career development.

Career Development Concerns of Veterans

Military veterans' career development has inherent challenges associated with transitioning from the context of the military to civilian life, translating military experience to civilian-equivalent opportunities, and securing meaningful and sustainable employment. There is evidence that veterans of the recent engagements in Afghanistan and Iraq have secured employment at a higher rate than in previous years (Bureau of Labor Statistics, 2017). There are limitations in solely utilizing a global indicator of unemployment as a metric of veterans' employment progress as there are several subcategories of this population. One example is that though veterans' employments overall seems on par with their civilian counterparts, male veterans 25-34 experience more unemployment than the civilian peers (6.4% vs. 5.0%; Bureau of Labor Statistics).

There is also a lack of understanding of the transition of military services members and their future career development (Bullock, Braud, Andrews & Phillips, 2009). Economically disadvantaged individuals which could include veterans encounter distinct barriers such as lacking in extended education, inability to obtain training, and unsuccessful personal adjustment (Brown, 2015). These conditions can contribute to unresponsive career support leading to detrimental career outcomes and the potential for long term unemployment and potential homelessness.

Unique career-related concerns for this population involve translating military experience to civilian employment in addition to addressing the career development needs associated with post-combat injuries (i.e. PTSD, TBI, etc.) (Hayden, Ledwith, Dong, & Buzzetta, 2014; Hayden, Green, & Dorsett, 2013). Specific skills such as resume preparation, interviewing, networking, and negotiating a job offer have been identified as key areas for counselors to focus on in when addressing career developmental needs of military veterans (Clemens, & Milsom, 2008; Hayden, Ledwith, Dong, & Buzzetta).

Veterans experiencing homelessness were found to have similar beliefs related to achieving and improving their socioeconomic conditions as their veteran and non-veteran peers (Porat, Marshall & Howell, 1997). In addition, veterans within those who are homeless expressed a desire to learn new job skills and believed that obstacles can be overcome indicating motivation to take positive steps to improve their employability. Their lower level of education and poor jobs available to them may be reasons for not viewing work as intrinsically satisfying (Porat, Marshall & Howell). Exploring meaningful occupational opportunities connected to interests, values, and skills in a group counseling modality with veterans experiencing homelessness can contribute to growth in career development.

Culture of the Military

Given the distinct characteristics of military culture and the degree of effect on those associated, it is imperative counselors leverage elements of this context when creating supportive interventions. The unique context of the military possesses a distinct set of laws, norms,

traditions, values and perceptions that govern how service members think, communicate, and interact with each other as well as with civilians (Coll, Weiss, & Yarvis, 2011).

Military culture encompasses its own language, set of rules, and rituals that are unique to the population (Rausch, 2014). A cardinal principle of unit cohesion involving the formation of trusting bonds between members of the same team (Coll, Weiss, & Yarvis) is the lens in which military service members view the world. This culture is ingrained to the point that transitioning from the military to civilian life can generate a culture shock similar to the experience of immigrants coming to the United States (Rausch).

Though shared core characteristics exist, there is not a monolithic culture of the military. Each branch of the military has its own unique characteristics that influence those associated. Within each branch, distinctions exist regarding active duty and guard/reserve, officers and enlisted, and role and/or nature of experience within the military. A specific example is referring to service members in the Air Force, Coast Guard, Marines, and Navy as "soldiers". Soldiers is specific to the Army and would likely be met with derision on the part of the service member belonging to another branch of the U.S. Armed Forces. Honoring these unique characteristics while understanding the shared values exhibit cultural competence on the part counselors serving this population.

The aforementioned shared characteristics especially unit cohesion can be leveraged to the benefit of supportive services such as career development assistance. The esprit de corps of the military lends to a strong connection amongst its members as they function collective in service of a shared mission. When considering modalities of support, this strong collectivist identity can be integrated using group-oriented career interventions. The characteristics of group counseling lend to this manner of service provision.

Benefits of Group Career Counseling

Yalom outlined several elements of group counseling that distinguish it from individual therapy. There curative factors inherent in group counseling enable the participants to utilize the social milieu of this modality to address their concern. Such characteristics as *Instilling hope, Universality, Imparting of Information, Altruism, The Corrective Recapitulation of the Primary Family Group, Development of Socializing Techniques, Imitative Behavior, Interpersonal Learning, Group Cohesiveness, Catharsis,* and *Existential Factors* (Yalom, 2005) provide participants with socially-oriented mechanisms in which to effect change. Specific to military service members; *Universality*, *Interpersonal Learning*, *Group Cohesiveness,* and *Catharsis* correlates with the aspects of military culture in that participants have the opportunity to connect with others in their preferred group sharing affective elements of their experience. All of the indicated factors of group counseling can also benefit military members focused on a career transition.

In relation to career development interventions, it is indicated that structured group career interventions have a tangible benefit as opposed to counselor-free support (Whiston, Brecheisen & Stephens, 2003). More specifically, group interventions composed of three to five sessions containing the following elements; (a) committing career development goals to writing (b) focusing on self-appraisal related to goals, plans, and decision making strategies, and (c) providing current information, appropriate models for effective career decision making, and identifying important sources of support in their environment contribute to effective group career counseling (Brown & Krane, 2000). Additional examination of the efficacy of group career

counseling in addressing a myriad of concerns and with a diverse population supports its utility (Berrios-Allison, 2011; Clark, Severy, & Shanaz, 2004; Di Fabio & Maree, 2012). Pyle and Hayden (2015) outline the specific application of group counseling to career concerns. Those associated with the military have indicated a preference for a group modality to address career concerns when offered the option of various formats (Hayden, Ledwith, Dong, & Buzzetta, 2014).

Theoretical Foundation

The utilization of theory is imperative when delivering career interventions. Utilizing established frameworks enables both participants and practitioners to efficiently navigate career concerns. Cognitive Information Processing (CIP; Sampson, Reardon, Peterson, & Lenz, 2004) is an empirically supported career development theory that encompasses both the domains (i.e. *options knowledge, self-knowledge, decision making, and career-associated thinking*) and the process (i.e. CASVE; *communication, analysis, synthesis, valuing, and execution*) involved in making a career decision. There is also a consideration within CIP of the associated negative thinking which can affect one's ability to effectively navigate career decision making and problem solving (Sampson, et al, 2004). Assessing for the degree of negative thinking utilizing the *Career Thoughts Inventory* (CTI, Sampson, Peterson, Lenz, Reardon, & Saunders, 1996,1998) allows for informed and individualized support. The CTI's global indicator of negative career thoughts along with its subscales (i.e. *Commitment Anxiety*, *Decision Making Confusion*, and *External Conflict*) identify specific areas to address related to negative thoughts that when addressed can remove cognitive barriers to growth in career development. There is support for focusing on negative career thoughts when addressing a career concern as they are associated with inhibited ability to make a career decision (Austin., Dahl, & Wagner, 2010; Bullock-Yowell, Andrews, McConnell, & Campbell, 2012; Bullock-Yowell, Katz, Reardon, & Peterson, 2012).

John Holland's RIASEC theory (Holland, 1997) is characterized by the view that personality and environments can be categorized into a specific typology termed Holland Occupational Codes (HOC; i.e. *Realistic, Investigative, Artistic, Social, Enterprising,* and *Conventional*). A focus of this approach involves examining personality traits and their connection to characteristics of various occupations. Alignment between person and environment can lead to enhanced work satisfaction (Holland). Assessing the link between person and occupational environment is a framework in which to conceptualize and address a career concern.

In relation to addressing veterans' career development, CIP has been identified as applicable to the needs of this population (Bullock-Yowell, Braud, Andrews, & Phillips, 2009; Buzzetta & Rowe, 2012; Clemens & Milsom, 2008; Hayden, Green, & Dorsett, 2013; Phillips, Braud, Andrews, & Bullock, 2007; Stein-McCormick, Osborn, Hayden, & Van Hoose, 2013). Holland's typology has also been utilized in the consideration of military service members and occupations. Holland classified Army and Navy occupations into HOCs (Holland, 1986). In addition, the Veterans and Military Occupations Finder (VMOF; Messer, Greene, & Holland, 2013), an adjunctive resource for the Self-Directed Search (Messer & Holland, 2013), was designed the classify military occupational specialties (MOS) of the military branches into specific HOCs. When using this resource, military service members and veterans can identify civilian occupations comprised of similar characteristics of their MOS.

Integrating the CIP focus on negative career thinking while assessing other components of the theory (i.e. *options knowledge, self-knowledge, decision making,* and stage of CASVE) and Holland's approach offers a comprehensive structure to support veterans experiencing homelessness in their career development. Assimilating elements of CIP and Holland's approach with aspects of group counseling that leverages components of military culture such as unit cohesion provided the foundation for a theoretically-grounded career development intervention.

CIP and Holland-Based Career Group for Veterans Experiencing Homelessness

CIP and Holland's approach were the theoretical basis for a career group designed to assist veterans experiencing homelessness. Given the challenges this population faces and the analogous nature of group counseling to the strong connections between those who have served in the military, the facilitator created a curriculum grounded in CIP and Holland career development theories informed by the specific concerns of the participants.

The following description of the implementation of the intervention is limited to the recent iterations as the partnership was not initially focused on empirical outcomes. The purpose of providing this account is to inform the utilization of a career development intervention for military veterans. Though limited in generalizability, initial outcomes indicate promise for this method of support.

Setting

The group was created in collaboration between the facilitator and a residential facility tasked with providing long-term support for members of this population. The primary focus of the organization is to provide, "... a tailored program that gives them the skills, education, confidence and a plan to rebuild their lives and reestablish them as net contributors to our community." (organization website).

Residents are guaranteed two years of secured housing if they are veterans, homeless, and meet certain behavioral expectations during their time at this facility. While in the facility, the residents receive extensive support with life skills, executive functioning, career planning, and exit planning. The primary goal is to instill in the residents' requisite skills necessary to function effectively in the civilian world and by extension secure permanent housing.

Need

While career planning had been addressed in the facility in various ways, discussions revealed a need for specialized support in areas of career decision making and transitioning out of the facility. Much of what had been provided such as assistance with resume writing and locating resources had been facilitated by support staff in the Department of Veterans Affair. Professionals in the facility expressed a need for support with the transition to civilian career opportunities upon separating from the facility. The facilitator's awareness of the career development concerns of the military population and experience providing support to military veterans were identified as desirable assets for the creation of the intervention.

Participants

Participants consisted of residents of the facility who upon being presented with information on the group indicated an interest in participating. Staff at the facility assisted in connecting the participants with the facilitator to initiate involvement. The facilitator conducted a pre-screening interview to assess their level of interest, goals for participation, and the degree the group would be the appropriate modality for them to receive career development assistance. The participants were informed of the intention of the group and provided informed consent documentation outlining the facilitator's background, approach to counseling, ethical aspects of participation, and expectations of facilitator and participants involved in the group. Establishing rapport between the facilitator and participants was an ancillary intention of the meetings.

The group has been facilitated on two different occasions with four participants in each group. The group participants were an average ag of 57.4 years old, male (8), and predominately African American (6) with two identifying as Caucasian. Six of the eight participants identified as heterosexual with two choosing not to respond. Three group members indicated having previously received individual counseling with five not having previously receiving this type of support. Six of the respondents indicated they attended all six sessions.

Structure

The structure of both implementations of the group involved a closed group with participants expected to attend each session. A mix of psycho-educational elements such as orientation to the theoretical foundation for the group (i.e. CIP, Holland), the format of utilized assessments such as the CTI and the Self-Directed Search (SDS; Holland & Messer, 2013), and online resources such as O*NET (National Center for O*NET Development, n.d.) along with process elements encompassed the format of the group. Each group met six times over the course of six to ten weeks

Curriculum. Specific goals were developed for the first three sessions: 1.) develop rapport and group cohesion especially attending to the unique military experience of participants, 2.) outline career development goals utilizing an Individual Learning Plan (document for cataloging goals and associated activities with specific indications of the purpose and outcome, time needed, and prioritization for each activity), 3.) provide easily understood explanation of theoretical approach, 4.) model the tone and the nature of productive interactions, and 5.) administer the CTI. Those these objectives were ongoing beyond the first three sessions, it was imperative a foundation was established to ensure meaningful interactions and a precise understanding of the intention of the intervention. Given the purpose of the CTI, it was critical for the assessment to be introduced early to facilitate identification and remediation of negative career thinking which could impair later exploration of occupational options. This information would serve as content for subsequent sessions.

The following three sessions had similar, but distinct goals. Sessions four through six involved 1.) administering the SDS including using the VMOF as it contains information specific to this population, 2.) examining O*NET (National Center for O*NET Development, n.d.) utilizing the results of the SDS to inform exploration of occupations, 3.) continually referencing the Individual Learning Plan adding and deleting goals and/or activities based on assessment results and new insights gained from the group experience, and 4.) concluding the group with attention to insights gained from the experience and ongoing and anticipated career development

activities. Closure of the group focused on what was learned, what are appropriate next steps, and ways in which to utilize the group experience going forward.

Though there were clear goals for each phase of the group, flexibility was needed to ensure participants' present needs were primary. The goal-oriented element of the group did not supersede various conversations of the participants' past and present challenges in attaining career development goals. Feelings of fear, frustration, and uncertainty were expressed, which offered the opportunity for participants to utilize the group in support of these concerns. The facilitator attempted to balance these discussions with the goals of the intervention. Information on resources that could be helpful going forward was also provided.

Preliminary Outcomes

To obtain a sense of the impact of the group, a post survey was administered. The brief survey requested demographic information such as age, ethnic/racial identity, and if participants accessed previous career development supports. In addition, participants were asked questions regarding their perceptions of the group experience, the effectiveness of the facilitator, and the degree the group addressed specific aspects of their career development. Though limited in scope, this information obtained via a modified group counseling post-survey (i.e. focus on career development) describes participant's perceptions of the experience regarding specific aspects of their career development. Aggregated data offers encouraging preliminary outcomes connected to the experience.

The participants (n=8) in the two groups indicated a benefit to the experience. The questions existed on a 5-point scale ranging from 1 - strongly disagree to 5 - strong agreement with the statement. Prior to the group, participants were not content with the status of their career development (m = 2.25). The group contributed to an improvement in strategies for addressing career development (m = 4.625). The group also enhanced understanding of next steps related to the participants' career development (m = 4.625). The participants also indicated satisfaction with the quality of the group counseling experience (m = 4.875) and would recommend the group to someone else (m=4.625).

There were also items related to the facilitation of the group. Respondents indicated being prepared well by the facilitator for the group experience (m = 4.25). Clear guidelines were set by the facilitator (m = 4.75). Finally, the facilitator was helpful in establishing goals for the group (m = 4.25).

More data is needed as a pre- and post-survey would provide an expanded understanding of the effect of the group on participants' career development. The initial indications of a benefit in specific areas of career development such as awareness of next steps and strategies related to career development suggests that the group format is useful for veterans lacking secure housing.

Discussion

The development and implementation of the career development group for the veterans experiencing homelessness was guided by established and empirically supported career development theories. CIP and Holland provided a framework that integrates cognitive processes and personality characteristics with elements of career decision making and problem solving. Identifying the unique needs of this population and applying appropriate assessments and

interventions grounded in theory served as the structure for a career development group experience.

The participants' responses indicated a benefit to the experience. Future iterations of the group will look to further integrate the information gathered from the CTI and the SDS into each participant's Individual Learning Plan. Though the assessment results were thoroughly processed, there is potential for more work in this area to ensure the maximum benefit is derived from assessment results.

Additional consideration could be given to the inclusion of more participants. Though convention lends to a small number of group participants per facilitator, increasing the number to six or eight would offer more opportunity for varying perspectives and meaningful exchanges among the participants. More participants would also allow for more data to substantiate the benefit of the group.

Though this group was implemented with veterans experiencing homelessness, there is the potential for its use with the broader population of military service members and veterans with career development concerns. Veterans and military service members often have access to a wide array of career-oriented resources. These resources are often content focused and less on the process of career decision making and problem solving and the associated negative thinking that can hinder progress. While developing a resume, networking, and enhancing skills on an interview are essential elements of successful occupational attainment, the process of navigating a career decision is a broader experience not fully accounted for in current mechanisms of support. Utilizing existing career development theories such as CIP and Holland to guide the structure of an intervention attends to the micro and macro skills necessary for career development. Theory also couches the career decision within the broader human experience ensuring that associated concerns such as negative thinking are identified and ameliorated to minimize their impact on this process. Though cognitive and emotional concerns such as negative career thoughts or anxiety may seem ancillary to focused attention on occupational attainment, a willingness on the part of career practitioners to address these elements can lend to efficient and effective career decision making and problem solving.

Conclusion

Veterans experiencing homelessness encounter unique career development concerns. Career practitioners are confronted with the task of providing expanded support related to this population's career and psychological concerns. The career development group outlined in this manuscript offers one way in which these concerns can be addressed in a theoretically-grounded intervention that incorporates the connectivity within military culture to the benefit of the participants. Utilizing existing theory and associated assessments provides a comprehensive approach to addressing their career development concerns. Attending to the cognitive and emotional concerns of veterans experiencing homelessness allows for individualized support designed to enhance career decision making both now and into the future.

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Affective Response to Exercise in Veterans Participating in a Substance Abuse or Posttraumatic Stress Disorder Rehabilitation Program

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Abstract

This study examined exercised-associated affect in United States military veterans in residential treatment for posttraumatic stress disorder (PTSD) or substance use disorder (SUD). Veterans reported affect before and after-exercise using the Exercise Feelings Inventory (EFI). Repeated measures analyses of variance (ANOVA) using the four EFI subscales as dependent measures examined Time (Before-Exercise and After-Exercise) x Diagnostic Group (PTSD and SUD) x Age (18-39, 40-59, and 60+ years). ANOVA results showed improvements in Positive Engagement, Revitalization, and Tranquility subscales for PTSD and SUD patients; however, before and after-exercise affect was less positive for the PTSD than the SUD group. Revitalization improved most in 18-39-year-old participants. Although PTSD patients had less positive affective ratings, both diagnostic groups showed significant affective boosts.

Keywords: exercise, affect, posttraumatic stress disorder, substance use disorder

A variety of studies have shown that regular exercise improves depressive and anxiety symptoms over time (Cooney et al., 2013; Hovland et al., 2015; Pederson & Saltin, 2015). Additionally, engaging in consistent physical activity and better physical fitness can help alleviate posttraumatic stress disorder (PTSD) and substance use disorder (SUD) symptoms (Fetzner & Asmundson, 2015; Linke & Ussher, 2015; Rosenbaum et al., 2016). Many of these

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studies examined the impact of exercise on psychiatric symptomatology and other outcomes across extended periods of time, such as days, weeks, or months; however, less is known about immediate, post-exercise, affective changes in clinical samples. An early literature review (Yeung, 1996) suggested that exercise produces positive affective changes; however, many of the cited studies examined college students, and did not address the impact of exercise type, duration, intensity, or psychiatric problems on affect in clinical populations. Several more current investigations have explored acute, exercise-associated affective changes in depressed participants (Mata et al., 2012; Wichers et al., 2012). Despite this handful of depression studies, however, we are unaware of investigations examining other clinical conditions. Understanding these acute, affective changes could help guide clinicians who wish to prescribe exercise to alleviate distress in a wide variety of psychiatric populations.

Several studies have demonstrated post-exercise affective improvements in female participants in laboratory and community settings. Barnett (2013) found improvements in a group of sedentary, younger women who were an average age of 20 years, and a separate group of sedentary, older women who were an average age of 56 years. Both younger and older women showed affective improvements on the Positive Engagement, Revitalization, and Tranquility sub-scales of the Exercise Feelings Inventory (EFI) after exercise (Gauvin & Rejeski, 1993). Using a community-dwelling sample, Gauvin, Rejeski and Reboussin (2000) collected data on physically active females from 19 to 57 years of age who exercised, on average, twice per week. An experience-sampling method of collecting self-report ratings at random time-points throughout the day was used to capture periods of inactivity versus periods of sustained activity lasting a minimum of 20 minutes. Results showed that participants reported pre- to post-exercise improvements on the EFI subscales of Positive Engagement, Revitalization, and Tranquility.

Investigations of all-male and mixed-gender samples also found exercise-related affective improvements. Bothe and colleagues (2013) examined experienced versus inexperienced male exercisers between the ages of 20 and 32 years and asked them to engage in moderate-intensity physical activity on an inclined treadmill for 30 minutes. Results revealed that both groups experienced pre- to post-exercise improvements on the Positive and Negative Affect Schedule (PANAS: Watson, Clark, & Tellegen, 1988). Another study by Hogan, Mata, and Carstensen (2013) examined community-dwelling males and females in three age groups: younger (19-39 years), middle-aged (40-64 years), and older (65 years and older). Participants were assigned to either an experimental exercise group consisting of stationary bicycling at a moderate intensity or to a control group. Results revealed that high-arousal positive affect (e.g., feelings of being excited and activated) increased across all age groups after exercising.

Researchers have also found significant affective improvements in people reporting elevated pre-exercise depression levels. For instance, Wichers and colleagues (2012) used an experience sampling method to examine females ranging in age from 18 to 46 years who were classified as having, or not having, a history of major depressive disorder (MDD). Analyses revealed significant improvements in post-exercise affect for both the MDD and no-MDD groups. Similarly, Lane and Lovejoy (2001) examined affect in a group of mixed-gender, experienced exercisers who were 28 years on average and classified as either depressed or non-depressed. Participants were assessed before and after exercising in a 60-minute, aerobic dance class. Results found reductions in negative mood states from pre- to post-exercise on the Profile of Mood States (POMS: Terry, Lane, Lane, & Keohane, 1997) for both the depressed and non-depressed groups. In another study, Mata and colleagues (2012) used the PANAS to examine a

mixed-gender sample, and they showed that both MDD and no-MDD group members experienced improved exercise-related affect. Longer and higher intensity exercise effort produced significantly greater affective improvements in the MDD group as compared to the no-MDD group, suggesting a dose-response effect of physical activity on affect as a function of depression status (Mata et al., 2012). Although this handful of studies examined the impact of exercise on depressed participants, we are unaware of similar investigations using psychiatric samples with diagnoses other than depression and/or patients enrolled in residential mental health treatment programs.

Past studies have also examined the relationship of age to exercise-associated affective boosts, but found inconsistent results. In the aforementioned study by Hogan, Mata, and Carstensen (2013), high-arousal positive affect (e.g., feelings of being excited and activated) increased across all age groups (i.e., younger, middle-aged, and older) after exercising. In contrast, this study also revealed that younger participants reported a significant decrease in positive, low-arousal reactions (e.g., feeling calm and relaxed) as compared to their older counterparts. Next, Barnett (2013) found that older, sedentary women experienced significantly larger improvements in post-exercise Tranquility and Positive Engagement on the EFI than younger, sedentary women. Also, older women demonstrated significantly lower levels of post-exercise Physical Exhaustion than younger women. In summary, the results of these studies do not yield a clear picture of the relationship of age to exercise-associated affect.

The current investigation adds new information to the literature on acute, exercise-associated changes in clinical populations by exploring whether affect improves after physical activity in a novel sample of military veterans in a residential treatment program for either PTSD or substance use disorder (SUD). As part of their treatment program, veterans in both rehabilitation groups self-selected to exercise in a room containing strength-training and cardio equipment within the Veterans Affairs (VA) Mental Health Service. Participants were monitored by a kinesiologist to ensure their safety. The study compared affective ratings prior to physical activity (i.e., before-exercise) and after physical activity (i.e., after-exercise) for individuals in the SUD and PTSD groups. It also examined the relationship between exercise-associated affective changes, age, and level of perceived exercise effort. Because this investigation is not a randomized controlled trial and was originally designed as a quality improvement project, it may be considered a first step toward identifying exercise-associated affective changes in this sample of veterans. What this study adds to the existing literature is an initial look at exercise-associated affect in a novel clinical sample of participants enrolled in active, residential treatment for PTSD or SUD.

Based on prior studies, we had several predictions. First, we expected that average pre- to post-exercise affective ratings would improve in both the SUD and PTSD groups. This expectation is based on several investigations that showed that physical activity improves acute, post-exercise emotional states in samples that vary with respect to gender, exercise experience, fitness level, age, and depression status (Bothe et al., 2013; Gauvin, Rejeski, & Reboussin, 2000; Mata et al., 2012; Wichers et al., 2012). Next, we predicted that greater exercise intensity, as measured by ratings of physical effort, would be correlated with improvements in post-exercise affect in our clinical sample. This expectation is based on the results of the study by Mata and colleagues (2012) showing that longer and higher intensity effort produced significantly greater affective improvements, suggesting a dose-response effect.

Finally, we explored the effects of age and diagnostic group on affective response to exercise, but we did not have specific predictions about these two variables. As mentioned

above, there is a lack of consensus in age-related study results. Furthermore, we are unaware of any studies to date that examine the impact of physical activity on acute, affective changes in people with SUD or PTSD; therefore, we did not make specific predictions regarding these two diagnoses. Given these gaps in our knowledge, the current study explored for age and diagnostic differences to expand the extant literature. This study not only adds to prior work in the area of exercise-related acute affective changes, but it also takes an initial step toward exploring the clinical utility of including physical activity as part of a comprehensive, whole health approach to treating psychological problems.

Method

Participants

Veterans from three cohorts of PTSD or SUD residential patients (i.e., June 2013, December, 2013, and July, 2014) were invited to participate in a quality improvement project for the exercise component of the treatment program. The sample was mostly middle-aged and older, with 67% being over the age of 40 years. Most participants (76%) were in treatment for SUD, while 24% were in PTSD treatment. Attending exercise sessions was an optional component of both residential programs and consisted of one-hour sessions at a frequency of four times per week. All patients had received medical clearance to exercise without direct supervision. At the time of data collection, the participants were experienced users of the exercise equipment, and they managed their own exercise routines with some oversight by the supervising kinesiologist. Those who participated in the current study received a water bottle as compensation.

Procedures

The survey data described in the current study were collected as part of a quality improvement project designed to describe the exercise equipment preferences of veterans, determine whether their exercise choices changed after installation of new equipment, assess their self-reported exercise intensity, and determine whether they experienced emotional benefit from physical activity. Brief, anonymous surveys, which we refer to as before-exercise surveys and after-exercise surveys, were created by the quality improvement team and approved by a VA hospital patient education committee. The supervising therapist placed the surveys on clipboards with pencils at the entrance to the exercise room. Participating veterans completed the before-exercise survey as they arrived, kept the clipboards with them, and then turned over the page to completed the after-exercise survey upon completion of their workouts. The before-exercise survey stated that veterans using the exercise equipment were being asked to complete a short, anonymous, voluntary questionnaire. They were told that the information gathered could be used to help improve future rehabilitation services by learning more about how veterans experience the exercise program and its associated workout equipment. The before-exercise surveys and after-exercise surveys were stapled together to ensure that pre- and post-exercise responses for each person were linked.

After we analyzed the data for the quality improvement project and reported the results to the appropriate VA staff and managers, we recognized that it could potentially add to the exercise literature on acute affective changes in a clinical sample of veterans. We then requested

and gained approval from the VA's Institutional Review Board to further analyze and publish our findings. The current study reflects the culmination of those efforts. Because the surveys were originally designed for an anonymous, quality improvement project rather than a randomized controlled trial, we were not able to collect extensive information on participants' survey response rates, psychiatric history (e.g., types of treatments completed), comorbid diagnoses (e.g., depression or chronic pain), or demographics (e.g., gender and branch of service). Although we did not record the exact number of males and females, race of the participants, or number of deployments in our three study cohorts (i.e., June 2013, December, 2013, and July, 2014), the managers of the SUD and PTSD residential programs provided us with administrative demographic data that is aggregated and thus, avoids incidental patient identification. Of the entire enrolled SUD program population in fiscal years 2013 and 2014 (N = 990), 93% were male (n = 921), 7% were female (n = 69), 55.5% were African-American (n = 549), 44.2% were Caucasian (n = 438), and 0.3% were other (n = 3). Of the entire enrolled PTSD program population in fiscal years 2013 and 2014 (N = 357), 95.5% were male (n = 341), 4.5% were female (n = 16), 43.7% were African-American (n = 156), 51.8% were Caucasian (n = 185), and 4.5% were other (n = 16).

Measures

The before-exercise survey included an item that tracked the location of each participant's rehabilitation program within the VA hospital. This information was used to determine whether each participant was being treated for PTSD or SUD. Participants indicated their age group on the before-exercise survey (i.e., 18 to 24 years, 25 to 39 years, 40 to 59 years, or 60 years and older). Lastly, to assess affective responses, the before-exercise survey included the 12 items of the EFI (Gauvin & Rejeski, 1993). There are four EFI subscales composed of three questionnaire items per sub-scale. The four subscales of the EFI are Positive Engagement (i.e., feelings of being enthusiastic, happy, and upbeat), Revitalization (i.e., feelings of being refreshed, energetic, and revived), Tranquility (i.e., feelings of being calm, relaxed, and peaceful), and Physical Exhaustion (i.e., feelings of being fatigued, tired, and worn out). Each questionnaire item is ranked by the respondent on a 5-point scale, ranging from 0 (*do not feel*) to 4 (*feel very strongly*), with the mid-point score of 2. Each subscale score represents the mean of the 3 questionnaire item scores that are associated with that subscale. The EFI has good psychometric properties and has been used in previous exercise affect studies (Barnett, 2013; Gauvin & Rejeski, 1993; Gauvin, Rejeski, & Reboussin, 2000; Hallgren, Moss, & Gastin, 2010). Gauvin and Rejeski (1993) calculated Cronbach alphas for the EFI subscales in two different study samples. For the first sample, they found the following alphas: .87 for Revitalization; .91 for Physical Exhaustion; .82 for Tranquility; and .82 for Positive Engagement. For the second study sample, they found the following Cronbach alphas: .78 for Revitalization; .80 for Physical Exhaustion; .72 for Tranquility; and .74 for Positive Engagement.

The after-exercise survey included the following information: an item for checking the type(s) of exercise equipment used that day (cardio, upper body, lower body and/or free weights); the 12 EFI items; and the 11-point Borg scale of perceived physical exertion to measure exercise intensity (Lee, Sesso, Oguma, & Paffenbarger, 2003). This 11-point version of the Borg Scale was chosen because it rates effort on a continuum ranging from 0 (*nothing at all*) to 11 (*maximal effort*). We believed participants who were unfamiliar with exercise effort ratings and completing questionnaires on their own would easily understand this 11-point scale of

perceived effort level. These self-reported scores will be referred to as effort variable ratings throughout this manuscript.

Analyses

Statistical analyses were initiated to examine the data distributions and frequencies for categorical data. Age groups 18-24 years and 25-39 years were combined because there was only one participant under age 25. Veteran after-exercise survey responses indicated the kinds of exercise equipment they used, and these data were coded into the following categories: cardio-only, strength-only, and both cardio and strength. Next, EFI subscale scores were computed for both the before-exercise survey and after-exercise survey items. Of the veterans who participated (N = 101), only those who provided complete assessment data (n = 92) were included in the analytic sample. Exclusions were due to missing data for age (n = 3), treatment group (n = 2), effort rating (n = 3), and incomplete EFI ratings (n = 1). The Kolmogorov-Smirnov test described by Kolmogorov (1941) was used to test the hypothesis that there were no differences in the distribution of EFI subscale values or effort ratings among the three veteran cohorts. Because the p-values for these tests were not significant (i.e., $p > 0.05$), the data for the three cohorts were combined for the remaining analyses. Preliminary analyses showed no significant differences between SUD and PTSD groups for age group distribution, types of exercise equipment used, or effort ratings. Also, effort was not significantly associated with age group or type of equipment used.

To test our prediction that before to after-exercise affective ratings would improve in both diagnostic groups, and to explore for the possibility of age-group differences, we conducted four separate repeated measures analyses of variance (ANOVAs) with the four EFI subscales as dependent measures: Time (Before-Exercise and After-Exercise) x Diagnostic Group (PTSD and SUD) x Age Group (18-39 years, 40-59 years, and 60 years and older). For each ANOVA, the within-subjects factor was time, and the between-subjects variables were diagnostic group and age group. In separate analyses, associations between EFI and exercise effort ratings were examined using Pearson correlational analyses to test our prediction that higher level of effort would be positively correlated with greater pre- to post-exercise improvements. Analyses were conducted using SPSS version 19. An alpha level of 0.05 was used to designate statistically significant results.

Results

Table 1 provides the results of descriptive statistical analyses of study participant characteristics. For their self-selected exercise, 12% of participants reported using cardio-only equipment. Other participants used strength-only training equipment (49%), and 39% of veterans used both cardio and strength equipment.

The results of descriptive statistical analyses of before-exercise and after-exercise effort ratings for the total sample included both the PTSD and SUD participants. For both groups combined, the mean and median response scores of all four before-exercise EFI subscales were below the midpoint of the range of possible scores. For after-exercise effort ratings, only three participants reported exercise effort less than 3, which corresponds to a *moderate* level of physical exertion. Results for the group revealed a median effort rating of 4.5, which falls between *somewhat strong* and *strong*, and the mean effort rating was 5.2, which falls between

strong and *very strong*. When subgroups were examined separately, mean effort levels for SUD and PTSD ($p = 0.494$) and for the three age groups ($p = 0.413$) were not significantly different.

Next, we will present the results our primary study analyses using repeated measures ANOVA models. The mean before and after-exercise EFI scores for the two diagnostic groups, with the *F*-values and estimates of effect size for the effects of time and diagnostic group, are shown in Table 2. As predicted, there were significant effects for time for all the EFI subscale scores, with after-exercise scores being significantly greater than before-exercise. These score increases reflect improvements in affect from pre- to post-exercise for the Positive Engagement, Revitalization, and Tranquility subscales. Also, results revealed an increase in mean Physical Exhaustion subscale scores. Unlike the other EFI subscales, which all focus on measuring positive affective states, an increase in Physical Exhaustion indicates a rise in exercise-induced fatigue and tiredness, which may be considered a negative affective state. There was also a significant effect for diagnostic group for Positive Engagement, Revitalization, and Tranquility, with scores for the PTSD group being lower and thus, less positive, than those for the SUD group. There was no main effect for age group. There was, however, a Time x Age Group interaction, (F [2,86] = 3.822, $p = .026$), with greater before- to after-exercise affective improvements in Revitalization scores in the youngest (i.e.,18-39-year-old) group (Mean change = 1.273 for 18-39-year old patients) as compared with the older groups (Mean change = .688 for 40-64-year old patients, and Mean change = .609 for those 60 and older).

Results of the correlational analyses revealed that before-exercise survey scores on the four EFI subscales were significantly and inversely correlated with after-exercise scores, with lower before-exercise scores predicting higher after-exercise scores on each of the subscales: Positive Engagement, $r = -.614$, $p < .001$; Revitalization, $r = -.624$, $p < .001$; Tranquility, $r = -.546$, $p < .001$; and Physical Exhaustion, $r = -.500$, $p < .001$. Next, we found that higher levels of exercise effort were significantly and positively associated with larger before to after-exercise changes in Positive Engagement ($r = .259$, $p = 0.013$) and Tranquility ($r = .241$, $p = 0.020$). In contrast, correlations between effort and changes in Revitalization ($r = .072$, $p = 0.498$) or changes in Physical Exhaustion ($r = .124$, $p = 0.241$) were not significant.

Discussion

As anticipated, we found improved positive affect after a session of self-selected exercise in veterans receiving residential PTSD or SUD treatment, as measured by the EFI subscales of Positive Engagement, Revitalization, and Tranquility. These affective changes occurred in all age groups, with only one EFI subscale, Revitalization, showing a differential improvement in the youngest subgroup. We also observed that the PTSD group's post-exercise affective ratings were improved but remained lower than those of the SUD group. Correlational analyses supported previously-reported findings that greater perceived effort, a proxy for exercise intensity, was associated with greater improvements in two of the EFI's affective subscales, Positive Engagement and Tranquility. One discrepant, but not unexpected, finding to this pattern of exercise-associated improvement, was that EFI Physical Exhaustion subscale scores also increased, which may be perceived as a negative affective change in some persons.

Both pre- and post-exercise scores for PTSD group members were lower than those of their SUD counterparts for the following EFI subscales: Tranquility, Positive Engagement, and Revitalization. Although both groups of participants experienced a boost in affect after exercising, the PTSD patients in our sample remained at a less positive affective level as

compared to SUD patients. Although an interesting finding, the limitations of our study design and paucity of available information in the literature make it difficult to interpret this result or make specific statements about how particular psychiatric diagnoses may impact exercise-associated affective changes; thus, this topic warrants follow-up investigation.

Results of our exploratory analysis of age differences in affective response to exercise revealed no main effect for age group. A significant Time x Age Group interaction was found, however, with greater differences in scores from before to after-exercise in the youngest group (i.e., 18-39-year old patients) as compared with the older groups (i.e., 40-64-year old patients and those 60 years and older) for the EFI subscale of Revitalization. This result suggests that the youngest age group showed a larger improvement in Revitalization post-exercise as compared to the older age groups. Hogan, Mata, and Carstensen (2013) also discovered age differences, with younger participants showing a larger reduction in their ratings of low-arousal affective reactions (e.g., being calm or relaxed) as compared to older participants. In other words, younger participants in the Hogan study were less relaxed and calm post-exercise as compared to older participants. In contrast, Hogan, Mata, and Cartensen (2013) found no age difference with respect to changes in high-arousal reactions, such as being activated or excited. In another study, Barnett (2013) found that compared to younger women, older women experienced significantly larger improvements in post-exercise EFI ratings of Tranquility and Positive Engagement, and significantly lower levels of post-exercise Physical Exhaustion. When comparing our study results to prior investigations, we fail to see a coherent pattern of findings; thus, the relationship between age and exercise-induced affect warrants further investigation to clarify these inconsistencies.

We found that greater changes in affect before- to after-exercise were associated with higher levels of reported exercise effort, which is consistent with the results of other investigations. For instance, Mata and colleagues (2012) found that more intensive exercise effort produced greater affective improvement in participants with MDD as compared to those without MDD. In addition to improved psychological health, higher effort has also been associated with better physical health. For instance, Lee and colleagues (2003) found a reduced risk ratio for coronary heart disease among men who perceived their exercise as *moderate*, *somewhat strong*, or *strong*, as compared to participants exercising at lower intensity levels. Although we did not assess cardiovascular disease risk in this study, the link between good mental and physical health is well-known in the literature; thus, if greater exercise intensity is associated with better mental and physical outcomes, then further study is warranted to better understand the impact of exercise effort on cumulative health outcomes.

Strengths

A strength of this study is that it explores acute, exercise-associated, affective responses using a novel clinical sample of participants in a PTSD or SUD residential program. Our findings resemble the results of prior investigators who found that exercise produces immediate emotional improvements across a variety of samples that vary with respect to gender, fitness level, and age. Although there is a growing literature showing the positive impact of engaging in exercise across time on SUD and PTSD symptomatology (Fetzner & Asmundson, 2015; Linke & Ussher, 2015; Rosenbaum et al., 2016), the current study is the first to report on acute, immediate post-exercise affective changes in a PTSD and SUD sample. Additionally, we uncovered an interesting difference between the PTSD and SUD patients, with the participants in residential PTSD

treatment showing a lower level of positive affective overall compared to those in the residential SUD program. This finding warrants further investigation to explore if affective response to exercise may vary by diagnosis. Additionally, as far as we are aware, this is the only investigation that examines a residential treatment sample of PTSD and SUD patients; thus, it updates and expands previous work to a new population. In summary, the current study provides novel findings about immediate, post-exercise affective responses in a psychiatric sample of PTSD and SUD patients, and suggests a wide variety of interesting future directions.

Limitations

The current investigation has several limitations because it was originally conceptualized as a quality assurance program. First, we did not have a formal, randomized control group, which limits our ability to determine whether there were significant differences in the post-exercise affective reactions of exercisers versus non-exercisers. Additionally, we did not examine exercise in various settings, but only measured participants who used an indoor gym. Setting might be an important variable, as suggested in a recent study that found that affective scores are lower for indoor exercisers as compared to outdoor exercisers (Dunton, Liao, Intille, Huh, & Leventhal, 2015). Also, our sample included experienced exercisers; thus, we may have missed differences in affective response based on exercise experience. Also, the fact that we used a residential treatment sample was a strength with respect to examining a new population, but it could also be considered problematic because our findings might be less generalizable to outpatient samples. Next, we gathered limited information on demographic characteristics, such as gender, which would have been useful for describing our sample and might be an important moderator of affective response to exercise. Lastly, we did not directly measure common comorbidities in our SUD and PTSD participants. The common co-occurrence of PTSD and SUD documented by the U.S. Department of Veterans Affairs (2016) makes it likely that the PTSD and SUD groups were not mutually exclusive with respect to diagnostic status, which may have impacted their affective responses.

Future Directions

The results of the current investigation provide a preliminary look at the acute, exercise-associated affective responses of PTSD and SUD patients, yet also raise additional questions. Future studies need to examine the impact of co-occurring mental health conditions and age on exercise-induced affect to effectively prescribe exercise programs for specific psychiatric samples. This line of investigation is important given the known comorbidity between substance abuse and PTSD documented by the U.S. Department of Veterans Affairs (2016). This study is the only one we are aware of that examines a residential treatment sample of PTSD and SUD patients; however, it also highlights the need for more studies examining this population. Also, given the inconsistent results regarding age, the impact of age on exercise-associated affective changes needs further empirical clarification. Finally, to expand on the results of the current study using a more rigorous experimental design, it would be useful to examine affective responses in SUD and PTSD residential samples pre-, during-, and post-exercise via a randomized controlled trial.

Other topics to further investigate are affective responses during physical activity, adherence to exercise programs, and the role of exercise experience in psychiatric samples.

Recently there has been increased interest in the question of whether exercise-associated affect might be an important, but relatively unrecognized, determinant of exercise participation and adherence (Helfer, Elhai, & Geers, 2015; Williams, Dunsiger, Jennings, & Marcus, 2012). A recent meta-analysis of 24 studies concluded that affective response during, but not post-exercise, is reliably associated with engaging in future physical activity (Rhodes & Kates, 2015). Our study did not include measures of affect during exercise, so this may be a topic of future interest to explore using psychiatric populations. Also, all participants in this study were experienced exercisers, which may have produced elevated levels of positive affect as compared to a less experienced group of exercisers. Some studies have found that inexperienced, or less fit, exercisers are more likely to experience negative affect (Ekkekakis, Parfitt, & Petruzzello, 2011); therefore, this would be an important issue to explore in the future with clinical samples.

Although more work needs to be done, this study provides a valuable first step toward conducting rigorously-controlled studies that examine acute, exercise-associated affective reactions in psychiatric patients with PTSD and SUD diagnoses. Further research to explore the impact of exercise-associated affect is important because it may potentially lead to the development of appropriate programs of physical activity that enhance a patient's arsenal of acute distress tolerance and coping skills. If immediate, positive, exercise-related affective changes can be elicited, they may be used to augment and increase the efficacy of current evidence-based mental health treatments (Powers et al., 2015). If exercise reliably produces feelings of relaxation, revitalization, and activation, then perhaps these positive affective states might facilitate active participation in standard psychotherapy sessions. Given the holistic benefits of exercise on physical and psychological well-being, further research on the topic of acute, post-exercise affective responses is promising because it may offer relief for individuals with a variety of psychiatric and health conditions.

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Disclosures

Conflicts of Interest: None

Ethical Standards: The procedures for this study were approved by the Institutional Review Boards of the participating institutions. The ethical standards of the American Psychological Association for the treatment of human subjects were followed.

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Table 1

Participant Characteristics by Diagnostic Treatment Group

	SUD[a] Group	PTSD[a] Group	Combined Groups[a]
Number of participants	70 (76%)	22 (24%)	92 (100%)
Age Group			
18-29	23 (32.9%)	8 (36.4%)	31 (34.0%)
40-59	33 (47.1%)	8 (36.4%)	41 (44.0%)
60 and older	14 (20.0%)	6 (27.3%)	20 (22.0%)
Equipment Used[a]			
Cardio only	7 (10.0%)	4 (18.2%)	11 (12.0%)
Strength only	32 (45.7%)	13 (59.1%)	45 (48.9%)
Both	31 (44.3%)	5 (22.7%)	36 (39.1%)
Effort (exertion)[b]	5.31 (2.29)	4.86 (2.05)	5.21 (2.24)

[a] Number of participants (percent).

[b] Mean rating (standard deviation).

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The Emotional Cycle of Deployment: A Dance/Movement Therapy Approach for Children

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Abstract

Since the early 2000's, U.S. military operations around the world have led to increased deployment rotations for active duty service members (Lincoln, Swift, & Shorteno-Fraser, 2008). Young children are especially vulnerable due to the importance of developing and maintaining close relationships essential for growth and development (Paris, DeVoe, Ross, & Acker, 2010). This paper integrates the Emotional Cycle of Deployment (Pincus, House, Christenson, & Adler, 2001) with Dance/Movement Therapy to create a model for a ten-week group session for military children between two years and five years old and their primary caregiver at home. The goal is to learn how the body holds emotions, where in the body they are stored, and how to work with them.

Keywords: military children, cycle of deployment, attachment, dance movement therapy

Our first experience as infants is physical. . . The first strategies we use to modulate our attention are through the body.

-Christine Caldwell, *Getting our Bodies Back: Recovery, Healing, and Transformation through Body-Centered Psychotherapy, 1996*

Dance/Movement Therapy (D/MT) is a form of psychotherapy that focuses on the connection between the mind and the body (Levy, 1988). The brain and the body are not separate entities. When we experience events such as grief, loss, and trauma, our bodies hold onto it in various forms such as pain, illness, and fear (Cozolino, 2014). This holds true for positive experiences as well. Dance/movement therapists can guide clients in learning how to notice sensations in their bodies and provide techniques to safely shift and move these sensations in order to work with them in constructive ways (Caldwell, 1997). Children rely on their caregivers to teach them what these sensations mean and how to work with them (Levine & Kline, 2007). Other models created for military children utilize some movement as part of group therapy such as the Expressive Arts Therapy group created by Kim, Kirchhoff, & Whitsett (2011), but very little is written with a focused D/MT lens. This goal of this D/MT model is to teach young children and their caregivers how the body holds emotions, where they are stored, and how to work with them in order to recognize the body as a foundational resource when working through the unique obstacles encountered during the stages of deployment.

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Statistics and the need for an Early Childhood Focused Model

A 2016 Department of Defense report states that 40.5 percent of active duty service members had children. Within this group, 37.8 percent had children ages 0-5 years, 31.6 percent had children ages 6-12 years, and 23.8 percent had children ages 13-18 years. When service members deploy for missions, their children experience a multitude of challenges. Pincus, House, Christenson, and Adler (2001) break down this period into different stages called "the emotional cycle of deployment." Children of different ages experience these stages in varying ways, depending on their own stage of development (Park, 2011).

Much of the research on military children focuses on school-age and adolescents. However, not a lot is focused on the 0-5-year age range even though the majority of military children fall into this age group (Barker & Berry, 2009). Young children are much more dependent on their primary caregivers and therefore require focused attention (Paris et al., 2010).

While a lot of research references the Pincus et al. (2001) cycle, there is a lack and need for programs that specifically address the challenges faced during each stage (Paris et al., 2010).

Kim, Kirchhoff, and Whitsett (2011) created an eight - week expressive arts therapy group for middle-school aged children from military families. The creators of this process group use a variety of expressive arts modalities such as art, drama, music, and movement to assist middle-school aged children manage the struggles associated with having a caregiver deployed. While this model references Pincus et al (2001) it does not address the challenges faced at each specific stage of deployment.

Families Overcoming Under Stress (FOCUS) is a comprehensive, family centered resiliency training program that utilizes evidence-based interventions and psychoeducation to assist families through the challenges faced before, during, and after deployment. The program was designed to be adaptable to individual family needs and has been used on military bases all over the United States (Lester et al., 2011).

The program is implemented in eight sections and covers topics such as emotion regulation, communication, goal setting, and problem solving (Lester et al., 2011). This program provided inspiration for the ECD-D/MT model.

Military One Source (www.militaryonesource.mil) provides links for other family programs.

The Importance of Healthy Attachment

Attachment theory, introduced by John Bowlby and Mary Ainsworth in the mid 1900's, is rooted in the idea that infants have a biological need to bond with their caregivers in order to survive (Broderick & Blewitt, 2015). This bond is heavily based on nonverbal communication from the caregiver. Since infants understand that their survival depends on this relationship, they will adapt to their caregiver to get their needs met (Wallin, 2007). In a sense, infants borrow from the caregiver's resources (Fosha, 2000). Mary Ainworth's research illustrates the need for responsive caregivers. Her strange situation test showed how infants responses depended on the quality of interactions with their caregivers (Broderick & Blewitt, 2015). Having a responsive caregiver sets the foundations for a child to develop healthy relationships to others and their environments (Van der Kolk, 2014).

For children, especially very young children, having a parent leave for deployment creates a disturbance in the attachment relationship (Paley, Lester, & Mogil, 2013). This

separation can have the impact of a traumatic event (Paris, DeVoe, Ross, & Acker, 2010). Toddlers and preschoolers are especially vulnerable to a parental separation for the simple fact that they understand enough that their parent is away, but developmentally, lack necessary coping skills (Masten, 2013). This strain can have serious consequences such as delays in brain development and general behavioral and emotional health. Prolonged and repeated deployments make it difficult for children to develop the security necessary for their attachment relationships. (Boberiene & Hornback, 2014).

While the attachment relationship to both parents is essential for children, during deployment, the attention and responsibility is focused on the caregiver that stays home. Juggling the myriad of responsibilities while also worrying about their partner can make it difficult for the caregiver to maintain a healthy connection with their child (Chandra et al., 2010).

Studies show a clear path between parental distress and behavioral challenges in children (Bobreriene & Hornback, 2014). Research shows that young children often blame themselves when their primary attachment figure is unavailable (Lieberman & Van Horn, 2013). Having a supported and supportive caregiver at home can lessen the strain and anxiety (Riggs & Riggs, 2011).

The Emotional Cycle of Deployment

Much of the literature on military families and children references the Emotional Cycle of Deployment created by Pincus et al. (2001). This cycle is separated into five stages: pre-deployment, deployment, sustainment, re-deployment, and post deployment (Pincus et al., 2001). Each stage brings unique logistical and emotional challenges that require significant adjustments (Kim et al., 2011).

The pre-deployment stage begins at the time the order to deploy is given and ends when the service member departs for the mission. This time frame can be as short as a few weeks or as long as a year (Pincus et al., 2001). During this phase, families prepare to make changes in childcare, prepare legal documents, adjust in the work schedules, and financial planning. It is common for the deploying parent to have absences during this time for trainings necessary for the mission (Siegel, Davis, & The Committee on Psychosocial Aspects of Child and Family Health and Section on Uniformed Services, 2013). Children experience a variety of emotions and uncertainty. It is important to have coping strategies in place, and ways to stay connected with the deployed parent (Heyward et al, 2013). Parents need to be aware that children, even very young children, understand that their parent is going to a dangerous place (Paley et al., 2013). Sophisticated technology and increased media coverage also make it difficult for parents to shield their children from stories and images of war zones (Kim et al., 2011).

The deployment stage occurs during the first month of deployment. This time brings out mixed emotions for children and the caregiver that is staying home. Children may feel overwhelmed, numb, and alone. The sense of safety for the entire family is compromised due to the nature of combat (Riggs & Riggs, 2011). It is important to keep family routines and create a timeline, so children understand that the deployed parent will likely come back. However, parents need to be honest with their children that the deploying parent is going to a dangerous place, could get injured, and might not come back. Parents need to acknowledge the fear and anxiety that might arise and let their children know that it is okay to be afraid during this time (Siegel et al., 2013).

Pincus et al. (2001) define the sustainment stage as occurring the second month through the fifth month of deployment. However, due to increasing deployment lengths for the wars in Iraq and Afghanistan, it is now being measured as the beginning of the fourth month and lasting through the 13th month (Siegel et al., 2013). Families establish new routines, begin to feel more in control, and discover new sources of support (Pincus et al., 2001). It is a time for caregivers to utilize these other sources of support and take some time for themselves, away from the parental duties (Siegel et al., 2013).

Re-deployment occurs during the final month a service member is away. Families often experience worry and excitement. Basic decision making can become challenging due to the anticipation for the soldier's return (Pincus et al., 2001). The family will often have established new routines and independence. The anticipation of change within the daily routines can be unsettling (Siegel et al., 2013).

The Post-deployment stage occurs three to six months after a service member returns home. This is often described as a "honeymoon" period. Routines need to be adjusted as the service member re-integrates back into family and civilian life (Pincus et al., 2001). Families often hope and expect for conditions to return to "normal", however, it usually becomes a "new normal." The parents that stayed home to care for the children often need a break from the duties of being a single parent (Siegel et al., 2013). In addition to these challenges there is the possibility that the service member returns with post traumatic stress disorder (PTSD), traumatic brain injury (TBI), or other serious injuries (Kim et al., 2011).

Integrating the Emotional Cycle of Deployment with Dance/Movement Therapy

This model utilizes a D/MT framework to target the specific challenges facing young children and their caregivers during each stage of the deployment cycle. Each session is designed to address emotional difficulties using the body as the foundational resource for coping and managing obstacles that arise during this time.

By requiring caregivers to participate with their children, a scaffold is provided in creating deeper body awareness within themselves. This supports the concept that in order to help the child, caregivers need to pay attention to their own needs (Fosha, 2000).

Tools of D/MT

D/MT uses a variety of tools and therapeutic interventions. This model draws upon the Bartenieff Fundamentals, Kestenberg Movement Profile, the Five Fundamental Actions, and other techniques created by pioneers in the field.

Bartenieff Fundamentals are based on a progression of six core movements. These are: breath, core-distal connectivity, head-tail connectivity, upper-lower connectivity, body-half connectivity, and cross-lateral connectivity. Breath is the basic movement necessary for life. Core-distal is about finding one's center. Head-tail focuses on connecting with and moving from the spine. Upper-lower examines the different functions of the upper body and the lower body. Body-half refers to the connection between the right and left sides of the body. Cross-lateral movements refer to connecting with the whole body (Hackney, 2002).

The Kestenberg Movement Profile (KMP) is a complex tool used to help clinicians observe, track, and interpret nonverbal behavior (Amighi, Loman, Lewis, & Sossin, 1999). This model references tension flow rhythms, tension flow attributes, and efforts. Tension flow

rhythms examine differences and changes in muscle tension. Tension flow attributes look at how the muscle tension changes and moves. Efforts are a way of examining movement in relationship to space, weight and time (Loman & Merman, 1996).

The five fundamental actions are yielding, pushing, reaching, grasping, and pulling. Yielding is about being in contact with the environment. It is often correlated with feelings of safety. Pushing refers to separating oneself from the environment and exploring boundaries. The act of pushing can lead to sensations of empowerment. Reaching involves lengthening muscles and correlates to curiosity and moving beyond oneself. Grasping is dependent on the ability to reach. An example is an infant reaching for a toy. Pulling is about bringing that pleasurable object closer to the body. All of these actions build on one another. Pushing requires yielding, reaching depends on the ability to push, and so on. Trauma and other adverse life events can cause one to get stuck in the ability to sequence these actions. By focusing in on the stuckness, it is possible to learn new ways to sequence and move through it (Aposhyan, 1999).

ECD-DMT Group Model

This is a closed group designed for children ages two to five years old that will meet for 45 minutes once per week for ten weeks. The group will be limited to ten children plus their parent for a total of 20 attendees. Each session will focus on the building skills needed to thrive during each stage in the Emotional Cycle of Deployment (Pincus et a., 2001).

Facilitators will be required to have a master's degree in psychology or mental health counseling and have had some training in the field of somatic counseling. It is preferable that the facilitator have a degree in dance/movement therapy or body psychology.

Each session will begin in a circle with introductions, and check-ins. Check-ins can include words, sounds, and movement. A two or three-minute warm-up will follow that utilizes elements of the Bartenieff fundamentals and five fundamental actions to drop into body-mind connections (Hackney, 2002; Aposhyan, 1999). Sessions will close with everyone coming back together in a circle to check-in with a sound, word, or movement. There will be time for caregivers to reflect on the session and a psychoeducation piece provided by the facilitator.

Since two to five-year-olds have difficulty staying focused for long periods of time, breaks will occur throughout each meeting as needed. Facilitators should be prepared to make adjustments to keep the flow of energy consistent. This age group is unpredictable and some sessions are going to run smoother than others.

Since this is a therapeutic group, it is essential that facilitators regularly check-in with participants and adjust activities accordingly to ensure containment and safety.

The overall goal of this group is to provide a safe space for parents and children to learn and explore how their bodies communicate, hold tension and emotions, and to develop important skills needed during a challenging and sometimes scary time.

Sessions 1 and 2- Pre-deployment

Session 1. The first session will focus on introductions, getting comfortable in the space, and setting boundaries to ensure safety and confidentiality. This will be a space for parents to discuss deployment experiences and challenges that they have or are currently dealing with. Children will also be able to share their feelings when a parent leaves for deployment.

The first activity will involve learning to notice, name, and feel into different emotions. Young children experience the world with their whole bodies, but do not yet have the verbal language to understand their sensations (Levine & Kline, 2007).

A feelings guessing game will start the session. It is important that facilitators explain that feelings are expressed using the whole body, not just the face. Caregivers will be instructed to show a happy expression with the face and body and the children will guess what feeling is being shown. It will proceed into a discussion into how we know it is a happy expression. This will continue with sad, angry, confused, and scared expressions. The activity will progress by exaggerating these expressions by making them large, small, tight, and loose. This is to understand how different emotions feel and are expressed in the body. What does it look, sound, and feel like to make the emotion large? What happens when muscles are tightened to make the expressions very controlled and deliberate? What does it feel like to then loosen up the body and move freely? What sensations arise when an emotion is made to be tiny? This will assist caregivers and children in understanding the different ways that a single emotion can feel and be expressed. The facilitator will model these differences while reminding the group to check in with their breath and individual needs while in the space. Caregivers will be prompted to notice how their children are impacted by the changes in expressions of emotions and the changes in intensity.

As the group experiments and explores these emotions with different levels of intensity, participants will gradually move into a circle. The facilitator will guide the group with a few deep breaths. Children and parents will imagine that they are filling their bellies with air, like a balloon. They will hold for one count then let it all out. The circle will close with space given to parents and children to share what they are feeling. Toys will be out for children who are no longer able to sit in the circle. The session will end with one final movement together and an expression of gratitude.

Session 2. The second session will build on the foundations set from the first but will add gradual and abrupt changes in the expressions. The goal is to help children and caregivers understand different ways and speeds in which emotions can change, how it feels in the body, and the impacts it has on the self and others.

The group will review what was explored during the last session. Participants will be asked to show, with their bodies, how they are currently feeling. They will then be asked to express different emotions with high and low intensity. As they move around the space, the facilitator will prompt them to gradually increase the intensity of an emotion. The facilitator will show the group examples of this such as expressing happy on the floor then gradually making themselves bigger and into a standing position. Another example would be to start large and loud then make it very small and quiet. Participants will be prompted to pay attention to their breath and any sensations arising.

The group will then move around the space expressing an emotion with a high intensity, then suddenly stop. An example is for parents to make happy, animated expressions using their faces and bodies with their child then suddenly relax into a neutral affect.

The activity will then become a feelings freeze dance. The facilitator will put on music of various moods and have the group dance with the emotion that arises. The music will stop and the group will freeze while expressing that emotion. This will be done a two to three more times followed by free dancing to transition to the closing circle.

Sessions 3 & 4: Deployment

The activities for these sessions will help children and caregivers explore and work through the mixed feelings and perceptions of chaos. The goal is to create sensations of empowerment and control.

Session 3. The facilitator will introduce session three with bubbles. As the children begin chasing them, they, along with their caregivers, will be directed to move like one. The facilitator will offer prompts such as, "what does a bubble do?" "Are bubbles light or heavy?" As participants begin to emulate how a bubble moves, they will be asked how it feels when they move like this. The facilitator will, in simple terms, prompt the group to pay attention to their feet, legs, torso, and so on to track feelings of lightness in various parts of the body. Is this a pleasurable feeling or an uncomfortable feeling? The group will then be directed to float to specific places in the room. They will be asked to pay attention to their breath and where it is landing in their bodies, such as their bellies, chest, throat, or head. Participants will be encouraged to take a break if they are feeling dizzy or unstable. The dyads of caregiver and child will float together back into a circle.

While the first part explored lightness, the next phase will explore heaviness and weight. The group will begin sitting on the ground feeling the floor with their hands and feet. Participants will imagine sinking into the floor with their whole bodies, letting gravity pull them down. The group will begin to crawl on the floor, feeling into their own weight. As they do this, heavy objects such as medicine balls, weighted stuffed animals, and bean bags will be brought out. Participants will be encouraged to utilize these props as the facilitator discusses how different emotions can have the impact of different weights on the body. The group will be prompted to experiment with what kind of weight is pleasurable and what is uncomfortable. If they feel they are stuck floating but need to come down, what can they do? If they feel that gravity is pulling too hard, what could be done to move upwards? The final phase will have the parents deliberately contrast with what their child is doing. If the child is needing to move with heaviness and strength, the parent will move with lightness. If the child moves like a bubble or feather, the parent will contrast with strength and heavier weight.

As everyone moves to the circle to close, participants will be given time to share what came up during the activities. Children will be asked how it felt when their parent was doing the opposite of them. At this time, the facilitator will bring out toys and other items for the children so a more in-depth conversation can commence for the caregivers. The facilitator will bring forth the contrasts of needs between parents and children and discuss how these differences can be managed.

Session 4: Session four will continue to work with lightness and weight but will involve more direct interaction between parents and children. It will also include push and pull elements from the Satisfaction Cycle (Aposhyan, 1999). The goal of this exercise is to explore, experiment, and establish boundaries in regards to the role of the caregiver and role of the child. Since this stage can be overwhelming for many families, these boundaries and roles often get blurred (Kim et al., 2011).

After the warm-up and check-in, the group will move around the space playing with lightness and weight, while also paying attention to what sensations are coming up in their bodies. After this quick review and drop in, everyone will line up in a row on one side of the

room. There will be buggy carts and scooter boards. Parents will push their children across the room on the buggy carts and scooter boards. After a few rounds of this, everyone will line up on one side of the room. It will then be the parents turn to be pushed. Parents will sit on the scooter boards and their children will push them across the room. If parents have mobility limitations, children can simply push them from behind or pull them by grasping the hands and moving forward. Parents will try to make it easy for their children to push them across the space the first time. Depending on the ability of the children to stay focused, children will push their parents once again across the space. However, this time, parents will add some resistance. After this is accomplished, there will be a few minutes of free play before coming together in the circle for the closing discussion.

Caregivers will be asked how it felt when their children pushed them. How were they impacted when it was easy versus difficult? How did they feel pushing the children in the buggy carts? Children will also be invited to share how it felt to push and be pushed by their caregivers. Caregivers will be prompted to think about the many ways we "push" each other in supportive and unsupportive ways and how these dynamics play out at home.

Sessions 5 & 6- Sustainment

Session 5. Session five draws upon the work of Blanche Evan and her projective technique that used imagery such as nature, animals, and colors (Levy, 1988). The goal of this activity is to identify inner sources strength and discover new ways of accessing this strength during times of instability.

After the initial warm-up and wiggle time, session five will begin with pictures of different animals laid out in the middle of the circle. Children and caregivers will pick out one or two images. The dyads will begin to move around the room, imitating and embodying the creatures that they have chosen. The facilitator will prompt the group to think about the strengths of their chosen animal and how these strengths might help them. As the dyads move around the room as their creatures, they will be invited to begin interacting with the other dyads. The facilitator will pay attention to what themes come up as the dyads begin to interact with each other. Some example themes might be jungle, ocean, and forest. Do the creatures want to play or fight? Are they close to the ground like lizards or in the air like birds? There are numerous ways to lead this activity, so it is important for the facilitator to be prepared to hold the space and wind down the experiential at an appropriate time.

After the exercise, the group will join in a circle to talk about the experience. Borrowing from Blanche Evan again, individuals will be encouraged to fill in sentences such as "I feel__" or "My body can__" (Levy, 1988). This is to continue to build on the skills of detecting and naming sensations in the body and be able use to these sensations as a source of power. Caregivers will likely need to assist their children in coming up with words. If words do not fit an individual's needs, then other means of expression, such as movements or sounds, will be encouraged.

The session will end with calming music, deep breaths, and a closing movement. Participants will be invited to take any of the pictures left over as they leave.

Session 6. This activity will involve a long, stretchy, circular prop called a co-oper blanket. Everyone will be inside the blanket pushing with their backs to make the circle larger. While trusting the prop and each other, continue to lean out. Everyone will check in as to how

they are feeling in the moment. At some point the children will be needing to move and wiggle. This will be welcome as the parents stay in the circle holding up the blanket. As the children begin to move and likely want to get outside of the circle, another check-in will occur for the caregivers. How is their nervous system adjusting as the children move independently around the room? They will be prompted to discuss how the support changed and what adjustments needed to be made to ensure the stability of the circle. The experiential will end with everyone gradually leaving the circle and the blanket on the floor.

Children will be invited to play while the facilitator opens up the circle for a deeper discussion with caregivers. How did it feel having to work with and trust others to hold up the blanket? How did it feel to trust that the children were safe while you stayed to hold the circle? Did you catch yourself holding your breath as the children began to move out of the circle? Did you notice places in your body that tensed up when supports changed? Were there moments of relief? How might this activity translate to issues at home? What supports do you have? What supports do you need?

Sessions 7 & 8: Redeployment

Session 7. Session seven will require the children to create a string of beads with their caregivers while working moving the body in different ways during the process. The design of the activity is to work with the feelings of worry, anticipation, and excitement while having to pay attention to instructions and what the body is supposed to do. The activity will result in a string of beads that can be turned into a necklace, bracelet, or other meaningful object to be given to the deployed caregiver.

After the warm-up, the facilitator will have a box of large beads of different shapes and colors. On the other side of the room the caregivers will be holding string for the beads. Children will pick a bead from the box and give the bead to their parent to put on the string. Each time the children choose a bead, they will be instructed to move across the room in different ways. The first time will be to run. The second time will be walking. Other ways to move across room the include: hopping but keeping the upper body stiff with hands at the side, hopping but with heavy legs and feet but wavy arms and hands, crawling, walking very slowly, dancing, tip toeing very quietly, and stomping feet. Facilitators can get creative and experiment with different music during the activity.

The activity will then move into a freeze dance. Different types of music will be used to elicit different movements and feelings. The first round will be fast dancing to fast music then freeze. The next will be do move slowly to slow music. The facilitator has freedom to use different types of music that is appropriate for the group. The goal is to develop impulse control and manage the bursts of energy common during this stage (Siegel et al., 2013).

Session 8. Session eight will be focused on balance. Anticipation of a loved one returning can be exciting but it can also disrupt newly established routines (Pincus et al., 2001). This activity targets these feelings of unevenness by forcing participants to activate their sense of balance and core strength in a controlled way.

During the warm-up, participants will be prompted to pay attention to their feet and how they are connecting to the ground. They will be asked to rock back and forth from the heal to the toes. What does the upper body want to do with this rocking? Can they feel their core muscles working to stay balanced?

An obstacle course will be set up for the group using a variety of tools such painter's tape, balance discs, tactile discs, and low balance beams. Facilitators are encouraged to be creative to better serve the group. Participants will start moving through the course slowly then gradually increase in speed. As this is going on, the facilitator will get out some balloons and bubbles. The group will be prompted to notice what happens as they navigate the obstacle course, keep their balance, and try to pay attention to the bubbles and balloons. How do the dynamics between parents and children change when speed is increased and more stuff is added to the activity? Does the heart beat faster? Do the muscles tense up? Are you breathing? Where is your breath?

The group will have a few minutes to play with the bubbles and balloons as the facilitator takes apart the obstacle course and gets out large exercise balls for the next activity.

Parents will start the next phase by placing their children on their bellies on top of large balance balls. They will hold their child's hands and move around, helping them stay balanced on the ball. This is to facilitate connection while also working to stay balanced. After a few minutes of this, caregivers will sit on the ball, holding their children. They will be prompted to notice what their bodies need to do to stay on the ball. What sensations, emotions, and feelings arise as you try to keep yourself balanced while supporting your child at the same time? What do the children want to do? Are they sitting still or do they want to wiggle and bounce? How does this contrast to the needs of the caregivers?

The re-deployment stage can bring about excitement and apprehension as preparations are made for the homecoming of the service member (Siegel et al., 2013). How does one stay grounded and balanced during this chaotic time? How are children impacted during this time?

The session will close in a circle with time given to reflect on the experience of constantly adjusting the body in order to stay balanced.

Session 9: Post-deployment

Session nine will use hula hoops as a means of exploring the need for personal space. A craft will be part of the second activity to create something new together as routines at home are readjusted.

The first experiential will be a hula hoop version of musical chairs. This game requires some physical closeness with group members. If anyone is uncomfortable participating, they are welcome to sit outside the circle and observe. Hula hoops will be placed around the room in a large circular formation. Each participant will find one and stand in the middle of it. As music begins to play each participant will move while maintaining one person per hula hoop. A hoop will be removed each time the music stops. Participants left without their own hoop will find an occupied hoop to stand in. This will keep going until everyone is crammed into three or four hula hoops. Then everyone will step outside of the hoops and the facilitator will guide the group with a movement and deep breaths.

The group will be asked how they felt when everyone had their own hoop. What happened to their breath as more hoops were removed from the circle? Did anyone feel a tightness in their bodies as they were forced to get closer to each other? What other feelings and sensations did they notice as the game progressed?

Caregiver and child dyads will then take one hula hoop and spread out in the room. They will be encouraged to use the hoop to play and explore their own feelings of space. What is does

it feel like to stand in the hoop together? What happens when both are outside the hoop? What is the dynamic when the caregiver is inside the hoop and the child is outside and vice versa?

Different colors of yarn, ribbon, beads, bells, and buttons will be placed in different corners of the room. Dyads will be invited to decorate and create something, such as a spider web, wreath, or chandelier, with their hula hoop. Bags will be available to take art supplies home if the craft is not finished during the session. The goal is to create something new together with the understanding that it is okay if it is not finished right away.

Session 10: Closing

This final meeting will be an invitation to play and experiment with the props independently. An obstacle course will be set up in one corner, the co-oper blanket will be in another corner, and hula hoops will also be available. The facilitator will go around and offer guidance at each of the stations. Participants will be advised to pay attention to their breath, sensations, balance, relationship to space, and relationship to each other. A table will be set up with art supplies such as construction paper, glue, colored pencils, crayons, ribbons, yarn, and beads for those that want to create a tangible object to take home.

The session will begin with a quick warm-up, and a chance for participants to reflect on their experiences throughout the course of the meetings. Caregivers will be invited to express what activities worked for them and what did not. What was it like to pay attention to sensations in the body? How did it feel to exaggerate the range of feelings in the body? Did of any of the activities result in increased feelings of anxiety and unsteadiness? What challenges were not addressed? Children will also be encouraged to speak about their experiences and feelings.

A parachute, beach balls, and balloons will be brought out for a final activity. The goal is to create a sense of flexible grounding in the space. Caregivers will hold up the parachute while the children run under it, playing with the balloons and beach balls. The parachute moves but can still be a protective cover people hold it up. Each caregiver will be individually prompted to let go the parachute. What happens to it when you let go but others are still holding on? Are the children still safe? Did they even notice that you let go for a few seconds? Caregivers will be prompted to notice their feet and how their bodies are balanced. Are they holding tension anywhere? Are there sensations of heaviness or lightness?

The last five or ten minutes will commence in a circle for final words or movements that group members would like to share in the space. Caregivers will be asked to complete a short survey. The facilitator will handout a list of supportive resources as the group comes to a final close.

Discussion

The model is intended as a guideline to be adapted to serve the needs of different groups. There is room for flexibility and creativity within each of the sessions. It will be important for the facilitator to attune to the needs of the participants to ensure meaningful completion of the program.

While it was designed for two-parent families with one parent that stays home while the other is deployed, it is possible to adjust it for single parent families. It requires a ten-week commitment which can be challenging for families that are already making significant life adjustments during this time. Facilitators should be knowledgeable of other services available

through churches and other community centers. The YWCA is a wonderful resource for services such as low-cost childcare, if there is one available.

This model does not address sociocultural differences. However, due to the flexibility of D/MT based interventions, it is possible to incorporate culturally appropriate material into each session. It will be important for facilitators to be mindful of differences and adjust activities to ensure safety, containment, and inclusivity.

Conclusion

Frequent and lengthy deployments can have detrimental impacts on children of active duty service members (Paris et al., 2010). There is a significant need for programs that focus on early childhood, yet a limited amount of research exists (Barker & Berry, 2009). There is also a need for programs that address the issues faced during each stage of the deployment cycle (Paris et al., 2010).

This model integrates D/MT with the Emotional Cycle of Deployment (Pincus et al., 2001) to create a therapeutic group that addresses the struggles military families with young children face during each stage in the deployment cycle. By teaching children and caregivers how to identify sensations in the body and how to work with them, they can learn how their own bodies can be a foundational source of strength and support. D/MT can provide a wealth of alternative interventions to support children and adults in their healing processes.

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Military Sexual Trauma: Effects on U.S. Navy Female Personnel

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Abstract

Structural equation modeling-partial least squares squares (SEM-PLS) algorithms analyzed archival data to determine the impact of military sexual trauma (MST) on female U.S. Navy personnel (*N*=2,986 and *N*=822 for active duty and reserve females, respectively). Results yielded a positive correlation between MST, stress, depression, and posttraumatic stress disorder (PTSD). A distinct difference between military sexual assault victims, based on their military service status: active duty or reserve, was also found. Limitations, directions for future research, and implications for counseling are discussed.

Keywords: Resilience, PTSD, stress, depression, trauma

The Navy embodies the core values of honor, courage, and commitment into Sailors from the first day of induction (Secretary of the Navy, n.d.). Illegal or improper behavior is not tolerated in the U.S. Navy; sailors must display integrity in public and private lives at all times (Coates, 2016; Toner, 2015). Although prohibited behavior runs counter to Navy core values, sexual assault, an indicator of military sexual trauma (MST), along with sexual harassment, is widespread in the military (Rau et al., 2011; Woods, 2014). These acts are a discredit to naval service and are a crime punishable under the Uniform Code of Military Justice (UCMJ, 2017). Former Secretary of the Navy, Honorable Ray Mabus, declared in 2009, that the effects of sexual assault are devastating on the survivor, friends, and family, command morale, and operational and combat readiness (Blowers, 2009).

This contradiction between the intolerance of illegal and improper behavior and the rising incident rates of MST in the Navy compelled this study, which was designed to investigate the degree of the effect of MST on perceived levels of stress, depression, and PTSD of U.S. Navy personnel. While much is known about MST, no research was found that addressed the

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effect of MST on these three conditions. Additionally, no literature was located which illustrated the differences between active duty and reserve Navy personnel who had experienced MST.

Literature Review

Sexual trauma is now identified as a significant concern among military members. The Veteran's Administration coined the term *military sexual trauma* (MST) to define a mental health condition experienced by military personnel after occurrences of various forms of sexual harassment or sexual assault (U.S. Department of Veteran's Affairs, 2015). The most concise definition of MST was provided in Title 38, U.S. Code 1720D that states MST is psychological trauma, which in the judgment of a VA professional, resulted from a physical assault of a sexual nature, battery of a sexual nature, or sexual harassment, which occurred while the Veteran was serving on active duty or active duty for training. (U.S. Department of Veteran's Affairs, 2015, para. a.1.)

In 2007, the Veteran's Administration (VA) defined MST as the assault of military personnel occurring in a military setting, based on Federal law, Title 38 U.S. Code 1720D (Cornell University Law School, n.d.). During this period, the VA also recognized MST as a mental health condition (Maguen et al., 2012).

Ample research has been conducted regarding MST, both as a result of sexual assault and as a form of post-traumatic stress disorder (PTSD) since being defined and classified as a mental health condition (Burgess, Slattery, & Herlihy, 2013; Conard, Young, Hogan, & Armstrong, 2014; Katz, Cojucar, Beheshti, Nakamura, and Murray, 2012; Maguen et al., 2012; Stander & Thomsen, 2016; Walter, Buckley, Simpson, & Chard, 2014). The literature suggests helping professionals have the ability to evaluate and help females cope with this form of victimization (Burkhart & Hogan, 2015; Conard et al., 2014). However, research fails to address the effects of MST on perceived levels of stress, depression, and PTSD of U.S. Navy personnel. The literature also failed to provide a comparison of these effects between the two populations of interest, active duty and reserve personnel.

Military Sexual Trauma (MST)

For the purpose of this study, MST was indicated by eight forms of trauma experiences: sexist behavior, crude/offensive behavior, unwanted sexual attention, sex discrimination, sexual harassment, unwanted sexual contact, sexual coercion, and sexual assault. Literature related to each of these experiences, along with stress, depression, and PTSD, were reviewed to glean a deeper understanding of the research problem. Additionally, factors, which may contribute to experiences of military sexual trauma, were investigated and are discussed in this review of the literature.

The statistics surrounding sexual crimes, the root cause of MST, against military members are staggering. The percentage of sexual assaults, the most severe of the sexual crimes against women in the military, ranged anywhere from 4% to almost 50% of the military population (Hoyt, Rielage, & Williams, 2012; Katz, Cojucar, Beheshti, Nakamura, & Murray, 2012). Depending on the study design, the percentages varied, but the overall findings of the studies revealed a constantly increasing rate of victimization (Firestone & Harris, 2003; Lee & Theus, 2012; Oglesby-Taylor, 2015; Rosen & Hansen, 2009).

In the past, MST was considered a 'woman's only' problem (Burns, Grindlay, Holt, & Manski, 2014). It was commonly assumed men were not affected, as men did not report sexual assault victimization to the same degree as women (Kimerling, Gima, Smith, Street, Frayne,

2010). However, due to recently increased reporting rates, there are a greater percentage of male sexual assault victims than previously believed (Kimerling et al., 2010). According to the Department of Justice (2015), sexual assault is still one of the most underreported crimes in the United States. Only 5% to 20% of all victims, both women and men, report the crime of sexual assault (Department of Justice, 2015). The literature revealed a resistance to report sexual assault (Vedder, 2015). Several factors may contribute to under-reporting of sexual assault. These factors can include stigma, shame, or fear of retaliation or repeated assaults associated with reporting this crime (Farris, Schell, & Tanielian, 2013; Vedder, 2015).

Military culture, as an enabler of MST, is a dominant theme in the literature. Military culture is characterized as a masculine warrior culture, grounded in stereotypical masculine toughness and physical strength, and conformity (Knight, 2013; Meyer & Brim, 2016). Individuals who elect to enter military service are inherently different from civilians (Moore, 2012). Those who enter military service possess hyper-masculine traits and tendencies that civilian counterparts do not possess (Burgess et al., 2013; Jackson et al., 2012). This hyper-masculinity is believed to strengthen military unit cohesion and a sense of distinctiveness from the civilian sector, but this degree of masculinity can be physically hostile to women, and it can make responding to sexual assaults on military members very challenging (Alcorn, 2014; Knight, 2013; Leard-Mann et al., 2013).

Impact of MST

Stress. Perceived stress is stress levels, as measured by emotional experiences and reactions (Cohen, Kamarck, & Mermelstein (1983). Survivors of MST experience increased stress levels, hopelessness, shame, a sense of betrayal (Conard et al. 2013), while also suffering from poor health and quality of life (Williamson, Holliday, Holder, North, & Suris, 2017). Stress symptoms of active duty and reserve military sexual assault victims, across all of the military service branches, suggest active duty personnel may be at greater risk than reservists for stress (Lane, Hourani, Bray, & Williams, 2012).

Depression. Depression is a common mental health disorder, characterized by several symptoms including a loss of interest or pleasure in doing things that were once pleasurable, feelings of guilt or worthlessness, changes in appetite, insomnia, fatigue, and difficulty concentrating (Spitzer et al., 1999). Depression is strongly associated with cardiovascular disease (Lutwik & Dill, 2013). MST increases the risk of depression and may amplify the possibility of suicide, as well as additional physiological problems, such as diabetes and chronic fatigue and pain (Lutwik & Dill, 2013; Maguen et al., 2012).

Post-traumatic Stress Disorder. Post-traumatic stress disorder (PTSD) is a mental health disorder, which is triggered by experiencing or witnessing extreme trauma characterized by undue stress or fright (Weathers & Keane, 1999). Psychological and physiological problems due to PTSD from MST can include increased rates of depression, hopelessness, eating disorders, and chronic pain with female victims and comorbid substance abuse in male victims, and chronic pain (Maguen et al., 2012). Also, male MST victims diagnosed with PTSD suffer to a greater degree than female victims, due to other factors related to male rape, such as gender-role expectations and the stigma in reporting the trauma (Dhingra, 2010).

Current literature does not adequately address the effects of MST on perceived levels of stress, depression, and PTSD of active duty and reserve U.S. Navy personnel. Nor, does the literature include comparison studies between the two population of these effects. This study was predicated on the need to bridge this gap in the literature. The following section describes how this study was executed including the purpose of the study, research questions and

hypotheses, the design, target population and sample, procedures, instruments, analyses, and the results of the study.

Method

A non-experimental quantitative ex post facto research design was utilized to explore the relationship between an experience of military sexual trauma (MST) and perceived levels of stress, depression, and PTSD of female active duty and reserve duty U.S. Navy personnel. To better understand the impact of military sexual trauma the following three research questions were examined:

Research Question 1: To what extent does the experience of military sexual trauma (sexual assault, sex discrimination, crude/offensive behavior, unwanted sexual attention, sexual coercion, sexist behavior, sexual harassment, and unwanted sexual contact) among active duty U.S. Navy female personnel influence perceived levels of (a) stress, as measured by the Perceived Stress Scale (Cohen et al., 1983), (b) depression, as measured by the Patient Health Questionnaire (PHQ-9) Depression Scale (Spitzer et al., 1999), and (c) PTSD, as measured by the PTSD Checklist-Military (PCL-M) (Weathers et al., 1993)?

Research Question 2: To what extent does the experience of military sexual trauma (sexual assault, sex discrimination, crude/offensive behavior, unwanted sexual attention, sexual coercion, sexist behavior, sexual harassment, and unwanted sexual contact) among reserve U.S. Navy female personnel influence perceived levels of (a) stress, as measured by the Perceived Stress Scale (Cohen et al., 1983), (b) depression, as measured by the Patient Health Questionnaire (PHQ-9) Depression Scale (Spitzer et al., 1999), and (c) PTSD, as measured by the PTSD Checklist-Military (PCL-M) (Weathers et al., 1993)?

Research Question 3: To what extent do the responses to the Perceived Stress Scale (Cohen et al., 1983), Patient Health Questionnaire (PHQ-9) Depression Scale (Spitzer et al., 1999), and PTSD Checklist-Military (PCL-M) (Weathers et al., 1993) included in the 2012 Workplace Gender Relations Surveys differ with respect to whether the female U.S. Navy personnel were on active duty or in the Reserves?

Each of the independent variable indicators was measured dichotomously, 0 = Did not experience; 1 = Experienced. The dependent variables used to analyze Research Questions 1 and 2 were stress, depression, and PTSD. Except for PTSD, all of the variables listed above are ordinal data measured using 4-point and 5-point scales. PTSD was measured using an interval-level scale. These indicators, or constructs, are operationally defined by the Sexual Experiences Questionnaire (SEQ)-DoD (Fitzgerald, Magley, Drasgow, & Waldo, 1999).

The outcome or dependent latent variables for Research Questions 1 and 2 include the respondents' perceptions of stress, depression, and PTSD, as influenced by the experience of MST. These variables were measured using the Perceived Stress Scale (Cohen et al., 1983), the Patient Health Questionnaire (PHQ-9) Depression Scale (Spitzer et al., 1999), and the Post-Traumatic Stress Disorder (PTSD) Checklist-Military (PCL-M) developed by Weathers et al. (1993). These measures, along with the SEQ-DoD, were incorporated in the 2012 Workplace

Gender Relations Survey of Active Duty Members (WGRA) (DMDC, 2012b) and the 2012 Workplace Gender Relations Survey of Reserve Component Members (WGRR) (DMDC, 2012a).

Data Collection

Archival data were collected from the surveys mentioned earlier to explore the impact of the experience of MST on female U.S. Navy personnel. There were four inclusion criteria for participation: female gender; pay grades E-1 through O-6; ages 18-62; and, affiliation with the Navy, active duty or Reserves, for at least six months before the survey fielding dates. Excluded from the study were samples returned from the surveys which were found to be ineligible or skipped key questions, as determined by the Defense Manpower Data Center (DMDC, 2013a; 2013b), were returned blank, did not return a survey (estimated ineligible), did not return a survey (estimated eligible), and those who had not been in the Navy for at least six months before the survey fielding dates were found ineligible to participate.

Sample

The original sample size of the WGRA (DMDC, 2012b) was 108,478. Of these observations, 4,415 were Navy personnel. The original sample size of the WGRR (DMDC, 2012a) was 75,436. Of these observations, 1,634 were Navy Reserve personnel. Excluded from the study were 10,879 observations where the respondents were from other service branches (Army Reserves, Marine Corps Reserves, Air Force Reserves, Coast Guard Reserves, and Army National Guard).

The minimum sample size needed to detect the desired effect size, or R^2, from the WGRA (DMDC, 2012b) and WGRR (DMDC, 2012a) surveys for structural equation models (Hair et al., 2014) was calculated using an online a priori sample size calculator (Soper, 2017). Given the number of latent and observed variables, 3 and 8 respectively, and the probability level of 0.05, Soper (2017) recommended a minimum sample of 256 for a statistical power of 0.8 and 281 for a statistical power of 0.95. The sample sizes N=2,986 and N=822 for active duty and reserve female observations, respectively, more than satisfied the recommended minimum sample size of 281 for a statistical power of 0.95 and 256 samples for a statistical power of 0.80. Of the usable observations from the WGRA (DMDC, 2012b), or active duty, survey, 2,986, or 67.6%, were female respondents. From the same survey, 1,429, or 32.4%, were male respondents. Of the usable observations from the WGRR (DMDC, 2012a), or reserve, survey, 822, or 50.3%, were female respondents. From the same survey, 812, or 49.7%, were male respondents. Males comprise approximately 80% of the total Navy population (Women in the Military Statistics, 2013); yet, the survey response rate from the male population was disproportionately small. DMDC data reports (DMDC, 2013a; DMDC, 2013b) suggested male respondents failed to answer survey questions related to MST. This failure is consistent with the literature, as researchers indicate a reticence of males to report sexual crimes due to social stigma (Hoyt et al., 2012; Javaid, 2014; Maguen et al., 2012; Weiss, 2010).

Measures

Demographic characteristics. Demographic variables included in this study were the respondent ID code, the Navy branch of the military, the active duty or reserve duty status, and gender.

Scales. The Perceived Stress Scale (Cohen et al., 1983) measured symptoms of perceived stress, PTSD, and depression (Cohen et al., 1983; Cohen & Williamson, 1988). The scale scored the items from 0 to 4 and the sums ranged from 0 to 40. Higher scores on this measure indicated greater perceived stress. The reliability, or Cronbach alpha, of the 10-item measure equals 0.78, the test-retest reliability met the recommended criterion of >0.70, and the measure correlated in a predicted way with other measures of stress (Cohen & Janicki-Deverts, 2012; Lee, 2012).

The first eight questions of the Patient Health Questionnaire (PHQ-9) Depression Scale (Spitzer et al., 1999) was used to measure depressive symptoms from traumatic events and a perceived connection of PTSD (Spitzer et al., 1999). Scores on the questionnaire ranged from 1 to 4 and were summed from 8 to 32. Higher scores indicated higher levels of depression. One item on the questionnaire, which reported suicidal ideations, was omitted from the measure used in this study. The PHQ-9 (Spitzer et al., 1999) has a mean score of 17.1; the standard deviation is 6.1. It has an internal reliability Cronbach's alpha of 0.89, and the test-retest reliability is excellent (Kroenke, Spitzer, & Williams, 2001).

The Post-Traumatic Stress Disorder (PTSD) Checklist-Military, or PCL-M, (Weathers et al., 1993) was used to measure the relative severity of PTSD symptoms experienced (Weathers et al., 1993). The summed scores ranged from 17 to 85, where a normed score greater than or equal to 50 suggested the benefit of further evaluation (Weathers et al., 1993). The PCL-M (Weathers et al., 1993) has high test-retest reliability, or Pearson *r*, of 0.96 over a 2 to 3-day period with no change in the mean reported (Wilkins, Lang, & Norman, 2011). The test also has high internal consistency with an overall Cronbach alpha of 0.97, and the PCL (Weathers et al., 1993) strongly correlates with other measures of PTSD (Wilkins et al., 2011).

Procedures

A descriptive statistical analysis of the archival data was performed using Microsoft Excel software. The inferential statistical analysis was performed using structural equation modeling-partial least squares algorithms in SmartPLS 3.0 (Ringle, Wende, & Becker, 2016). A power analysis was conducted using an online a priori sample size calculator (Soper, 2017). Post-hoc analyses were also conducted using a post-hoc power analysis using the Soper (2017) online calculator. The post hoc calculator calculated the observed power of the survey path models constructed using SmartPLS 3.0 (Ringle et al., 2016).

Analysis

Data from the WGRA (DMDC, 2012b), or active duty, and the WGRR (DMDC, 2012a), or reserve, surveys were described using measures of central tendency and measures of spread of the independent variables, which construct MST, and the dependent variables: stress, depression, and PTSD. SmartPLS 3.0 software (Ringle et al., 2016) was used to conduct the hypothesis testing for the study. The statistical inference was addressed for the research questions using multivariate statistics because all of the variables were related to each other; the effects of the experience of MST on perceived levels of stress, depression, and PTSD act simultaneously, and not in isolation. Consequently, to simulate reality, the research questions were addressed by using structural equation modeling (SEM) -partial least squares (PLS) protocols described by

Wong (2013) and Hair, Hult, Ringle, and Sarstedt (2014), which brought all the partial effects of the experience of sexual assault together into one model.

Results

The null hypotheses for the first and second research questions stated MST would not influence perceived levels of stress, depression, and PTSD; however, tests to determine the effect and statistical significance indicated the null hypotheses was rejected. The null hypothesis for the third research question stated there would be no statistically significant difference between the answers to Research Question 1 (active duty) and Research Question 2 (Reserves). Hypothesis testing for Research Question 3 revealed a significant difference between the mean of the WGRA (DMDC, 2012b) and the WGRR (DMDC, 2012a), and both data sets showed to be statistically significant using the criteria: the Variance Inflation Factor (VIF)<3.30, indicating no collinearity, path (β) coefficients, or the strength of the relationship among the variables>0.10, the *t*-statistics, or mean of the original sample divided by the standard deviation>1.96, and the probability<0.05). From the path models created in SmartPLS (Ringle et al., 2016), the path (β) coefficient values implied a causal relationship between the variables, and the tests conducted on both data sets suggested, with 95% confidence, the results used to reject all of the null hypotheses are statistically significant and reliable.

When taken together, the indicators of MST: sexual assault, sex discrimination, crude/offensive behavior unwanted sexual attention, sexual coercion, sexist behavior, sexual harassment, and unwanted sexual contact have a statistically significant effect on the perceived levels of stress, depression, and PTSD of female U.S. Navy personnel who reported an experience of one or more of the indicators. The extent of the effect was demonstrated by the path (β) coefficients in path model diagrams constructed from the active duty and reserve survey data using SmartPLS 3.0 software (Ringle et al., 2016). The path (β) coefficients in the path models showed the effect of the independent variable on the dependent variables in each model.

The outer path models showed vast differences between the surveys' factor loading of the indicator variables on the independent variable, MST, even when controlled for unequal sample sizes. The inner path model of the active duty survey, created to study Research Question 1 and corresponding hypotheses, showed a statistically significant relationship between the independent and the dependent variables. The strength of the relationships, in descending order, was PTSD (0.466), depression (0.412), and stress (0.348). The inner path model of the reserve survey, created to study Research Question 2 and corresponding hypotheses, also showed a statistically significant relationship between the independent and dependent variables; however, the path (β) coefficients of the relationships in this path model were not as strong as those of the active duty survey path model. The strength of these relationships, in descending order, was PTSD (0.364), depression (0.33), and stress (.0184). With both surveys, an experience of MST had the strongest effect on PTSD levels, a slightly less strong effect on depression levels, and the least effect on stress levels.

Discussion

The research questions included in this study were designed to answer to what extent an experience of MST affected the stress, depression, and PTSD levels of female active duty and reserve U.S. Navy personnel and the difference in the extent of the two populations. From the

survey data, reservists reported incidences of MST in a nearly identical manner to the active duty survey respondents, meaning the incident rate of the more benign indicators of trauma was higher than the incident rate of the more serious indicators. However, the actual incident rates of reserve personnel were roughly half of those of the active duty. The difference in the incident rates of reserve and active duty personnel raises interesting questions about the factors involved.

The implications of the differences are speculative, but one possible explanation of the difference in incident rates includes a higher risk of MST while on active duty, as compared to the risk when in a reserve duty status. Active duty personnel are at a higher risk with a broader opportunity to encounter MST. There is more opportunity to experience MST when on active duty because personnel are exposed to each other on a more consistent basis than reservists.

Another possible explanation is that active duty personnel may be more compelled to report MST experiences than reservists, which could also possibly explain the higher incident rate. Reporting MST for active duty may be related to a stronger sense of career commitment or feeling a greater connection to the military mission. This connection could stem from a sense of necessary correction or improvement for peers and the military community. However, reporting MST can sometimes have a negative impact due to shame, guilt, a negative perception from others, and possible retaliation. It is also possible that active duty victims may experience more disruption from MST, as it is so closely tied to identity as a military service member (Mattocks et al., 2012).

A final postulate from these results could speak to an internal quality of reservists. Reservists could be more resilient than active duty personnel. Reservists have an identity outside of the military when compared to active duty, which allows for the separation needed to heal (Griffith, 2011). A threat to this identity could facilitate stronger symptomatology on the part of active duty members since there is a continued requirement to interact with the environment. Compounding this requirement is also the possibility of triggering stimulus present in the military environment since the active duty member is being continuously exposed to the perpetrator and the stimuli of the memories of the traumatic event. Without an external identity or additional sense of self outside of the military, active duty personnel are unable to gain physically distance from traumatic reminders. Active duty victims do not have the respite needed to heal, or grow, after the experience of trauma, as these victims typically remain in the environment where the trauma occurred (Litz, 2014).

An important aspect to consider with these results center on the timeline of reporting. There was no way to accurately determine the timeframe of when the MST occurred from the survey data. Post-traumatic growth does not immediately occur after traumatic experiences (Arpawong et al., 2016). There is a possibility that the scores on the scaled data were lower due to a time lapse from the date of the MST and the date the surveys were completed. When attempting to determine the extent of an effect from experience, by extension, a measure of causality between the experience and the degree of effect to the subject who experienced MST was assumed. Although path analysis cannot definitively predict cause and effect relationships, path analyses may reveal a possible causal relationship between the independent variable, MST, and the dependent variables, stress, depression, and PTSD, in this study (Simon & Goes, 2013). Post-traumatic growth also influences these results regarding the timeline. There is a possibility that post-traumatic growth occurred reducing symptomology, which might explain the lower scale scores of the Navy Reservists. As stated earlier, the possible explanations for the findings

of this study are speculative, and further research is recommended to understand this phenomenon better.

Implications

Haiyasoso and Moyer (2014) suggested the need for meaningful, current training for helping professionals who counsel sexual assault victims. Bicknell-Hentges and Lynch (2009) discussed the responsibility of those who counsel traumatized victims and the need to ensure that these counselors have current information in treatment toolkits. There are variables, such as culture, the level of risk, and combat exposure, among others, that may make treating military victims of sexual assault more complex than victims of other populations (Bicknell-Hentges & Lynch, 2009; McFarlane & Yehuda, 1996; McFarlane & de Girolamo, 1996). As there is so little information regarding comparisons of the impact on the levels of stress, depression, and PTSD of active and reserve duty Navy females who have experienced sexual assault while in the service of the military (Middleton & Craig, 2011), information gained in this study could help frame, or improve, training for these helping professionals (Coll et al., 2012).

In addition to the practical implications for helping professionals, this study also has implications for the Department of the Navy Sexual Assault Prevention Response Office (SAPRO), which is the authority for sexual assault prevention accountability and training for the Navy (Holland, Rabelo, & Cortina, 2014). Ultimately, the goal of SAPRO is to reduce the number of sexual assaults among the population of interest (Vedder, 2015). The SAPRO prevention program targets cultural attitudes and beliefs about aggression and sexual violence, focusing on increasing healthy behaviors and relationships (Ellis, 2017). The results from this study point to the need to develop more effective prevention strategies since the rates are still so high and the impact of MST is so devastating. SAPRO might consider comparing active duty and reserve prevention programs to see if some similarities or differences can be adapted.

Studies about the sexual harassment and assault of military personnel and the efficacy of prevention programs are relatively new (Crus & Anchan, 2013; DeGue et al., 2014; Hyun et al., 2009). The literature indicates a lack of confidence in the relationship between prevention activities and training and the reduction of sexual assault, the most severe indicator of MST in this study (Bouldin & Grayson, 2010). However, studies contradict this lack of confidence showing where incident rates are reduced when trainees are exposed to prevention intervention (Harmon, Cooper, Nugent, & Butcher, 2016; Holland et al., 2014). Sexual assault, as well as the remaining indicators of MST, could be reduced by prevention programs, which encourage peer-support for risk-reduction behaviors, and by creating a social environment that is supportive of victims (DeGue et al., 2014). Sexual assault prevention was outside of the scope of this study. The active duty and reserve surveys included questions related to sexual assault prevention training efficacy. These questions were formed from unpublished scales and were excluded from this study. If this information had been reliable and trustworthy, it could have provided insights into possible correlations between sexual assault prevention training and the military sexual assault incident rates.

In addition to practical implications, this study also has theoretical implications, where the study was conceptualized and analyzed using a post-traumatic growth theoretical lens. Post-Traumatic growth theory (Tedeschi & Calhoun, 1996) essentially states that those who survive extreme trauma will return to a healthier state of mental wellness as a result of successfully surviving trauma **(**Tedeschi & Calhoun, 2004). This study informs counselors or others who

work with military sexual assault victims by expanding the use of post-traumatic growth theory to understand the perceptions and attitudes of military sexual assault victims toward personal health and wellbeing. This study also provided a clearer perspective of the ability of sexual assault victims to rebound in the aftermath of MST. Based on previous research, post-traumatic growth theory (Tedeschi & Calhoun, 1996) suggested that the population included in this study will return to this healthier state of mental wellness (Tsai et al., 2015), which may explain why the degree of the effect of trauma was less than expected for both the active duty and reserve population and why the degree of effect was less for the reservists when compared to active duty.

Limitations

This study is limited in the field of social and behavioral sciences, as it cannot be generalized for an entire population; it is specific to a unique subset of the population, members of the military. This study used archival data from two independent surveys, which incorporated several incomplete or unpublished scales. Not all of the scales could be validated; therefore, data from those scales had to be omitted from this study. This omission may have impacted the results of the study, as vital information regarding the survey participants may have been inadvertently omitted. As such, the effect may not be an accurate depiction of the problem addressed in this study due to this omission.

Causal-comparisons are not explicit when using archival data, due to the nonexperimental nature of the research (Simon & Goes, 2013). As the research questions and hypotheses asked the effect of an experience on the research participants and suggested a comparison between two populations, the findings from this study can only be inferred; the findings cannot be definitively proven. Additionally, the archival data are five years old, and may not be as relevant as more current data.

The WGRA (DMDC, 2012b) active duty survey raw data file sample had over 108,000 observations, and the WGRR (DMDC, 2012a) reserve survey had over 75,000 observations. To prepare the data for analysis, observations from service branches other than the Navy: Army, Marine Corps, Air Force, and Coast Guard were excluded from the study. Observations from male participants were also excluded from this study, due to an extraordinarily large number of missing responses to questions related to sexual assault (DMDC 2013a; DMDC, 2013b). Scaled data were also converted from individual scale scoring, or equalized, so each scale was scored from 0 – 100. Any of the above manipulations of the datasets, if performed incorrectly, could have contaminated the results of this study. For this study, delimiting factors included the objective of researching the effect of MST on the perceived mental wellness of victims using well-written research questions including the variables of interest: stress, depression, and PTSD, and by framing the study using a post-traumatic growth theoretical perspective.

Recommendations for Future Research

Archival data from both surveys contained several scaled questions, which could have been used in this study. Only three scales used in the WGRA (DMDC, 2012b) and the WGRR (DMDC, 2012a), the Perceived Stress Scale (Cohen et al., 1983), the Patient Health Questionnaire (PHQ-9) Depression Scale (Spitzer et al., 1999), and the PTSD Checklist-Military (PCL-M) (Weathers et al., 1993) were published, reliable, validated scales used in peer-reviewed literature. The authors of the two DoD surveys were contacted to inquire of the validity of the

remaining scales used and learned that the scales in question were created by DoD researchers, who deemed the scales as valid and reliable from repeated use in prior and subsequent DoD studies. The active duty and reserve surveys included one sub-section, which asked questions related to sexual assault prevention training efficacy. In future studies, the excluded scales could be examined to see if the variables from those scales lend value to this study.

Males were excluded from this study, as many of the survey responses to questions related to sexual trauma went unanswered. Male victims of sexual crimes are primarily understudied due to a reticence to report (Javaid, 2014). Low reporting statistics by males are typical (but accepted as a norm) in a military culture characterized by inordinate masculinity and physical strength (Javaid, 2014). Future MST studies, which include the male population, could prove valuable due to findings where experiences occurring with males show similarities to those of females; yet, males are victimized from the trauma to a greater degree than females, due to gender-role expectations and the stigma associated with reporting the crime (Dhingra, 2010; Snipes, Calton, Green, Perrin, & Benotsch, 2015).

As the development and evaluation of military-centric prevention programs are so new, further research in this area could prove beneficial to helping professionals who treat MST victims and to those who create, approve, and implement training sponsored by the Navy SAPRO (Haiyasoso & Moyer, 2014). A final recommendation for future research is the employment of a feminist theoretical foundation in quantitative MST studies. Although typically employed in qualitative studies, feminist theory can also be used in quantitative research (Henry, Foss, & Ahl, 2016). Feminist theory characterizes dominance by the male population as a social construct, where males typically have economic and social control over relationships (Else-Quest & Hyde, 2016). Feminist theory has primarily framed sexual assault as a woman's issue, but it can also be applied to help understand stigmas associated with male sexual assault (Franklin & Menaker, 2014; Javaid, 2014; Snipes et al., 2015).

Conclusion

In this quantitative study, archival data from two independent surveys fielded by the Department of Defense (DoD) were analyzed to test the hypothesized effects of an experience of MST on stress, depression, and PTSD levels of those participants who self-reported on the survey. SmartPLS 3.0 (Ringle et al., 2016) was employed to perform a multiple linear regression with structural equation modeling-partial least squares on the data and used Daniel Soper's online statistical calculators for post hoc analysis (Soper, 2016). A statistically significant relationship between the independent variable, MST, as indicated by sexual assault, sex discrimination, crude/offensive behavior unwanted sexual attention, sexual coercion, sexist behavior, sexual harassment, and unwanted sexual contact and the dependent variables, stress, depression, and PTSD were found. The strongest relationship was between MST and PTSD in both survey path models. There was a slightly less strong relationship between MST and depression. In this study, the relationship with stress was the weakest, but this finding does not discount the overall significance of stress. An earlier study by Schmeid, Larson, Highfill-McRoy, and Thomsen (2016) showed a strong reciprocal relationship between stressful life events, such as MST, and the stress levels of the victims included in the study. This study showed that there were differences in the impact of the relationship of the variables when comparing the surveys of the active duty and Reserve study participants, where the degree of the effect of MST on stress, depression, and PTSD levels was slightly less for Reserve participants than for active duty

participants. Possible reasons for these differences are a higher risk of MST while on active duty, as compared to the risk when in a reserve duty status, active duty personnel may also be more compelled to report MST experiences than Reservists, or Reservists are more resilient than active duty personnel. Future research is needed to confirm or refute these possibilities.

The purpose of this study was to bridge the gap in the literature by studying first the effect of trauma on the mental health and wellbeing of military service members and then studying the differences between two separate, but similar populations: active duty and reservists. This study showed a statistically significant correlation between MST and stress, depression, and PTSD levels of both the active duty and reserve populations included in this study. These results are consistent with previous studies of MST victims and victimization (Barrett-Model, 2010, Burgess et al., 2013; Farris et al., 2013; Hoyt et al., 2012; Mitka, 2010). The results of this study also showed a lesser degree of effect from MST to the Reserve population than active duty. No comparison studies between active duty and reserve MST victims were located. So, this study could serve as a springboard for future comparison studies of the two populations.

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Suicide in the Military – More than PTSD

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Abstract

There is a link between military members who have been exposed to combat in Iraq and Afghanistan and the risk for suicide attempts and completion. With the growing number of Veterans who have returned from overseas and are now diagnosed with conditions such as posttraumatic stress disorder (PTSD) and traumatic brain injury (TBI), the risk for suicide is a growing threat. Hollywood and other media platforms focus (often negatively) on Veterans with PTSD and violent actions (murder or suicide) that are implied to come with the diagnosis. Throughout the research, several indirect links can be made to suicide attempts and suicide completion. PTSD alone was not directly association with an increased risk, but that can change if there is a presence of co-morbid conditions such as major depressive disorder or substance use disorder. As a confirmation check, the military mental health literature of NATO allies was reviewed with similar results being found. More research needs to be conducted on beneficial interventions for PTSD in order to prevent possible attempts in the future. Additionally, counselor training programs need to emphasize more than PTSD when teaching about the military/Veteran population.

Keywords: military, Veterans, posttraumatic stress disorder, suicide

This article attempts to identify a link between military members who have been exposed to combat in Iraq and Afghanistan and the risk for suicide attempts and completion. With the growing number of Veterans who have returned from overseas who are now diagnosed with conditions such as post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI), the risk for suicide is a growing threat. A search of the ProQuest Central database using the keywords military and suicide yields 26,693 peer reviewed journal articles. A search in the same database using military, PTSD, and suicide gives 2,643 peer reviewed journal articles. Using the same three keywords in Google Scholar, the return number jumps to 36,400 articles.

Obviously, there are too many articles for inclusion in a single article and a meta-analysis could turn into a lifetime project. Consequently, the coverage of the literature is limited. Articles focusing on the mental health of the North Atlantic Treaty Organization (NATO) military are

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included in an attempt to add confirmation (validity) to the U.S. research. The rationale for using NATO forces is based on the commonalities in training, a history of service in United Nations peacekeeping efforts, and NATO forces serving in the War on Terror.

Literature Review

Background Information

When attempting to place a number of U.S. military personnel deployed in what has come to be called the Global War on Terror, one comes face-to-face with the reality of multiple or overlapping tours of duty – combat zone, natural disaster, or both. Perhaps the safest number is to simply say millions of Americans have been deployed (Carter, 2016). Consequently, much of the research is quantitative with large numbers of participants. Likewise, much of the research is based on archival data. For example, a number of the reviewed articles use the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS) – a study of over 1.6 million Soldiers on active-duty 2004-2009 to help develop recommendations to reduce suicides (Kessler et al., 2013). A follow-up to Army STARRS is the Study to Assess Risk and Resilience in Servicemembers – Longitudinal Study (STARRS-LS) which is funded by the Department of Defense and will be active through 2020 (STARRS-LS, 2018). Some preliminary articles are starting to be released from this project.

In the war zones, exposure to life-threatening events was a normal part of servicemembers' daily routine. Posttraumatic stress disorder (PTSD) presents as intrusive thoughts and memories of these events; attempts to make the person avoid reminders of the events; and can also cause startle, arousal, and sleep issues (American Psychiatric Association [APA], 2013). Depression and substance abuse can often be co-morbid with PTSD. From 2003 to 2016, more than 6,000 Veterans lost their life to suicide in each of the years (U.S. Department of Veteran Affairs [DVA], 2018, p. 4). Conditions such as PTSD are not limited to Veterans, but also occur if a civilian experiences a traumatic event (APA, 2013). All counselors should be aware of trauma-informed care regardless of what population they serve.

Being in the military is inherently dangerous and death can occur at any time and in any context. To the average civilian, combat is best known source of danger for the servicemember. However, similar stress (and danger) can be offered in humanitarian missions (e.g., Somalia, Haiti, Kurdistan, etc.) or in routine training. Service personnel in any of these missions may experience acute stress disorder or PTSD.

Hollywood has presented movies focusing on the "out-of-control" Veteran with PTSD – *The Deer Hunter* (Cimino, 1978), *Heaven & Earth* (Kassar & Stone, 1993), and *Home of the Brave* (Davidson & Winkler, 2006) to name a few. Movies such as these and the high visibility of headlines about Veteran suicides present a misleading narrative. Counselors and counselors-in-training need to be aware that their first thought when a Veteran walks in the office should not be "PTSD."

The Military and Government Counseling Association (MGCA) has endorsed competencies for use in counselor training. The competencies recognize the need for counselors to be aware of the suicide statistics across the military and Veteran population. The counselor should also be aware of the alcohol misuse and its impact on mental health concerns and suicidality (Prosek et al., 2018).

U.S. Forces

Earlier research has shown that male Veterans are twice as likely to die by suicide as male nonveterans in the United States (Kaplan, Huguet, McFarland, & Newson, 2007). However, more recent research indicates a slight drop to 1.5 times for Veteran suicide over civilians (DVA, 2018). Conversely, women Veterans' suicide rate is nearing twice the suicide rate of civilian women (DVA, 2018).

One point that should be made up front is that not all military suicides are completed by combat Veterans. Among those National Guard and Reserve members never federally active, suicide deaths increased between 2005 and 2016 with 902 suicides in 2016 (DVA, 2018). The Army STARRS data was used to evaluate the association between pre-enlistment suicidal ideation, plans, and attempts of Soldiers in basic training in 2011-2012 with later suicidal behaviors (Ursano et al., 2015). The Ursano et al. (2015) report estimated the pre-enlistment presence of suicidal ideation (14.1%), plans (2/3%), and attempts (1.9%) with a high level of suicide plans and attempts occurring with the first year of ideation (73.3-81.5%). Prior suicidal behavior is a known strong predictor of later suicide; thus, Ursano et al. (2015) concluded that targeted preventive interventions were needed.

In a later study using the Army STARRS data, Ursano et al. (2017) identified active-duty Soldiers who had attempted suicide (n=9650) between 2004 and 2009 to examine the association between suicide attempts and Army combat occupation (combat arms, combat medic, and Special Forces). An equal probability control sample (n=153,528) of non-combat specialties was included. Socio-demographics, service related characteristics, and prior mental health diagnosis were also considered. A logistics regression revealed that the odds of attempting suicide were higher in combat arms and combat medics, but lower in Special Forces Soldiers when compared to all other occupations. "The resilience of SF [Special Forces] may result from rigorous selection, intense training, strong unit cohesion, or psychological and biological characteristics" (Ursano et al., 2017, p. 7). One interesting finding was that occupation was associated with suicide attempts in the first ten years of service, but not later. Ursano et al. (2017) concluded that military occupation "can inform" understanding of SI, but the association is "modest."

Huguet, Kaplan, and McFarland (2014) assessed the possibility that Veteran suicide statistics may be inaccurate due to misclassifications of both Veteran status as well as the manner of death. The purpose of the study was to assess the effect of excluding current military personnel (listed as Veterans on the death certificate) from Veteran suicide rate estimates by age and gender and to also test the effect of including deaths by injury of undetermined intent as suicides on suicide rate estimates. Analyses were performed with data from the 2003-2010 National Violent Death Reporting System (NVDRS), the 2003-2010 Department of Defense Casualty Analysis System (DCAS), the 2003-2010 American Community Survey (ACS), and the 2003-2010 Department of Veterans Affairs (DVA) Veteran population estimates. The results found that misclassification of current military personnel as Veterans had minimal effect on the data and combining death by injury of undetermined intend and suicide did not alter the conclusions illustrating the validity of the NVDRS. Additionally, more than half of young male and female suicides were probably current military personnel and misclassified on the death certificate.

A study by Britton et al. (2011) examined the prevalence, correlates, and symptom profiles of depressive disorders in men who were Veterans since depression can lead to unemployment, poor productivity, and suicide. Data was collected from the 2006 Behavior Risk

Factor Surveillance System (BRFSS) which uses a nationally representative sample of non-institutionalized adults from across America. The dependent variables in the study were self-reported lifetime diagnosis of a depressive disorder, current depression, and depression symptom profiles. The independent variable was a history of military service. Britton et al. (2011) used a multivariate logistic regression to identify correlates of lifetime and current depression. Regularly occurring symptom profiles were also created with cluster analysis. These clusters included "Standard Depression," "Older Anhedonic," and "Younger Anhedonic." Overall, Britton et al. found that the prevalence of lifetime and current depression were similar in men both with and without a history of military service. However, the study did suggest that depression may be more prevalent in certain subpopulations of Veterans such as those who receive their health care through the Veterans Health Administration. Other important populations may be a history of being deployed to a combat zone, exposed to traumatic experiences, in the Reserves, had utilized mental health care, or discharged from the military early.

Bryan, Hernandez, Allison, and Clemans (2013) attempted to identify direct and indirect effects of combat exposure on suicide risk through depression symptom severity, PTSD symptom severity, thwarted belongingness, perceived burdensomeness, and fearlessness about death. Participants in the nonclinical sample include 248 active duty Air Force Security Forces members deployed to Iraq (312 male, 36 female). Out of these, 221 (63.5%) were Caucasian, 50 (14.4%) African American, 42 (12.1%) Hispanic/Latino/a, 12 (3.4%) Asian or Pacific Islander, 18 (5.2%) other, and 5 (1.4%) unknown. The mean age was 24½ years old and approximately half had previously deployed at least once. The clinical sample consisted of 219 (201 male, 18 female) deployed military personnel who had presented to an outpatient mental health clinic in Iraq for routine psychological treatment and/or neuropsychological evaluation for suspected traumatic brain injury. There were 158 (72.1%) Caucasian, 31 (14.2%) African American, 18 (8.2%) Hispanic/Latino/a, 2 (2.7%) Asian or Pacific Islander, 1 (.5%) other, and 5 (2.3%) unknown. The mean age was 27.88 and approximately half had been deployed previously. The study asked participants to complete self-report questionnaires as a part of routine psychological and neurocognitive screening and assessment that was conducted within the first two weeks of arriving in Iraq. This was to provide baseline functional data. Combat exposure was measured using the Combat Experiences Scale (CES), trauma symptoms were measured using the PTSD Checklist Military Version (PCL-M), depression symptoms were measured using the Behavioral Health Measure-20 (BHM), thwarted belongingness and perceived burdensomeness were measured using the subscales of the Interpersonal Needs Questionnaire (INQ-10), acquired capability was measured using the Acquired Capability for Suicide Scale (ACSS), and lastly, suicide risk was measured using the Suicidal Behaviors Questionnaire-Revised (SBQ-R). Bryan et al. (2013) used structural equation modeling (SEM) to test the relationship among variables because it allowed for the simultaneous calculation of regression equations and generated fit statistics to determine the adequacy of the model. It was found that greater combat exposure was directly associated with fearlessness about death and PTSD symptom severity in both samples. However, it failed to show a direct or indirect effect on suicide risk. PTSD severity was strongly associated with depression symptom severity which was directly related to suicide risk in the nonclinical sample, and indirectly through low belongingness and perceived burdensomeness in the clinical sample.

Bryan and Anestis (2011) explored the relationship among re-experiencing symptoms of posttraumatic stress disorder and the three components of interpersonal-psychological theory of

suicidal behavior. The participants included 157 service members as well as four civilian contractors who were referred to an outpatient medical clinic in Iraq. The participants were mostly male (93.2%) and had an average age of 27.52. Race was made up of 70.8% Caucasian, 15.5% African American, 9.3% Hispanic/Latino/a, 2.5% Asian/Pacific Islander, .6% other, and 1.2% no response. It was further categorized by branch of service to include 78.9% Army, 13.7% Air Force, 5.0% Marines, and 2.5% civilian contractor. Approximately half of the participants were on their first deployment, 28.0% were on their second, 10.6% were on their third, and 8.6% were on their fourth or more (Bryan & Anestis, 2011). The Behavioral Health Measure (BHM) was used as well as the Interpersonal Needs Questionnaire (INQ-10) to examine perceived burdensomeness and thwarted belongingness. Bryan and Anestis (2011) also used the Acquired Capability for Suicide Scale (ACSS), the PTSD Checklist Military-Version (PCL-M), and the Suicide Behaviors Questionnaire-Revised (SBQ-R). Bryan and Anestis (2011) used a model consistent with mediation hypotheses, which are represented in a triangular diagram. The diagram showed a direct path from predictor to dependent variable as well as an indirect path from predictor through the confounding variable to the dependent variable. As expected, PTSD re-experiencing symptoms were significantly and positively correlated with all three components of the interpersonal-psychological theory of suicidal behavior. Also, the relationships between PTSD re-experiencing symptoms and both components of the desire for suicide-perceived burdensomeness and thwarted belongingness – were statistically accounted for by general mental health. Overall, these findings show initial evidence that PTSD re-experiencing symptoms are directly related to service members' acquired capability for suicide while only indirectly relating to suicide desire (Bryan & Anestis, 2011).

Finley et al. (2015) discussed the increases in the incidence of psychological disorders among Veterans accompanied by a corresponding increase in suicides and suicide-related behavior (SRB) in a quantitative study. They identified an elevated suicide rate among former active duty service members and those diagnosed with mental disorders which suggested the presence of vulnerable subgroups within this population (Finley et al., 2015). The most predictive risk factors appear to be a previous history of suicide attempts or a previous diagnosis of psychiatric disorders including posttraumatic stress disorder (PTSD), depression, substance abuse, bipolar disorder, and schizophrenia. PTSD appears to predict increased suicide ideation in both Veterans and civilians. Traumatic brain injury (TBI) has also been associated with increased suicidal ideation and attempts, as well as completed suicide, and has even been associated with damage to the frontal lobe that can increase impulsivity and suicidality. Studies have also shown high rates of chronic pain among OEF and OIF Veterans. The co-occurrence of PTSD, TBI, and chronic pain has come to be known as the polytrauma clinical triad (PCT). Finley et al. (2015) was a retrospective cohort study which used the Department of Veterans Affairs OEF/OIF roster file to identify VA patients who returned from OEF or OIF. Finley et al. (2015) used those service members who also received VA inpatient or outpatient care at least once per year during a three-year period. The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes were used to identify the outcomes of interest which were suicidal ideation (V62.84) and attempt (E950-E958) during each of the three years of the study. Finley et al. created categorical variables of suicide related behaviors and cohort members were grouped into four mutually exclusive categories which include neither ideation nor attempt; ideation only; attempt only; and both ideation and attempt. Members were also clustered into age groups. Lastly, baseline clinical characteristics were identified. Conditions included in the PCT include TBI, PTSD, and pain. Since the VA administrative data does not include information on

the number of TBIs experienced, TBI was constructed as a dichotomous yes-or-no category, as were all other conditions. They also identified conditions in the Charlson Comorbidity Index with the Deyo algorithm. Finley et al. (2015) used vicariate statistics to test the associations between clinical-demographic characteristics and outcomes with the x2 and student *t*-test as appropriate. They assessed multicollinearity with the suicidality, with neither ideation nor attempt as the reference category. Results shows that female Veterans were more likely than male Veterans to attempt suicide or to both attempt and ideate, but were less likely to report ideation alone. TBI was not found to elevate risk for suicide related behavior. Pain co-morbidity was also not associated with increased risk. On the other hand, adding co-morbid depression to a diagnosis of PTSD significantly increased the odds of ideation and adding co-morbid substance abuse to a diagnosis of PTSD resulted in significantly increased odds of both ideation and ideation and attempt, but not attempt only. Pain was actually associated with a decreased risk of suicidal ideation. The multivariable model also supported previous research that demonstrated the importance of substance abuse as a predictor for suicide related behavior among Veterans, particularly when it co-occurs with depression or TBI, or both (Finley et al., 2015).

According to the study conducted by Huguet, Kaplan, and McFarland (2014), suicide rates were computed with adjustment for the two misclassification biases. They computed Veteran suicide rates with four equations. Two different adjustments were made to the numerator including removing the estimated number of current military personnel suicides from the number of Veteran suicides. They then added undetermined deaths to the number of Veteran suicides. Nonveteran suicide rates were computed and adjustments were also made to the numerator and denominator. There was a reduction in the number of younger Veteran suicides, but the results shows that male and female Veterans of all ages had higher suicide rates than nonveterans. Chi-square test results also showed that all Veteran suicide rates were statistically significantly higher than that of nonveterans. The results indicated that designation of Veteran status on the death certificate was reliable. The findings also support the rates of Veteran suicides are elevated even after current military suicides were removed. Overall, this study provided descriptive statistics as well as inferential statistics that were appropriate and it does not appear as though any violations of assumptions were made.

NATO Forces

Canada. In order to examine the association between suicidal ideation and self-reported symptoms of posttraumatic stress disorder (PTSD), major depressive disorder (MDD), generalized anxiety disorder (GAD), and alcohol use disorder (AUD) of Canadian Armed Forces members, a quantitative study was conducted by Richardson et al. (2012). The study used a convenience sample of 250 Royal Canadian Mounted Police, active-duty Canadian Forces members and Veterans who were referred to the Parkwood Hospital Operational Stress Injury outpatient clinic. This clinic follows a standardized assessment screening protocol which includes the PHQ which is a self-administered version of the Primary Care Evaluation of Mental Disorders, the PCL-M for self-reported PTSD symptoms, the AUDIT which measures people who may be at an increased risk for harmful patterns of alcohol consumption, the Short-Form Health Survey-36, as well as the Brief Traumatic Brain Injury Screen. Descriptive statistics were used to determine the frequency of the four self-reported psychiatric illnesses (Richardson et al., 2012). Linear regression analyses were conducted to determine if total PCL-M scores were significantly associated with suicidal ideation in model one. Model two used both PTSD

symptom severity and the presence or absence of generalized anxiety disorder. Model 3 had PTSD symptom severity and alcohol misuse severity. Model four showed PTSD symptom severity and depressive symptom severity. In the last model, PTSD symptom severity, presence or absence of generalized anxiety disorder, alcohol misuse severity, and depressive symptom severity were entered. Other variables such as depression as well as deployment to Afghanistan were included in regression analysis (Richardson et al., 2012). These five regression models were later repeated using only participants who had been deployed to Afghanistan. Overall, PTSD severity was associated with increased suicidal ideation in treatment-seeking Veterans. The study showed that PTSD alone was not associated with suicidal ideation; however, it demonstrated the importance of screening for co-morbidities, particularly major depressive disorder, as being strongly related to suicidal ideation in military personnel (Richardson et al., 2012).

In a later study, Richardson et al. (2018) examined the relationship between depression, insomnia and nightmares, and suicidal ideation (SI) in Canadian Armed Forces (CAF) personnel and Veterans (N = 663). Controlling for depressive symptom severity, posttraumatic stress disorder (PTSD) symptom severity, anxiety symptom severity, and alcohol use severity, regression analyses were used to investigate associations between sleep disturbances or trauma-related nightmares and suicidal ideation. Depressive symptom severity was found to be the only variable significantly associated with suicidal ideation and insomnia or trauma-related nightmares. Thus, treating the depression helped to reduce suicide risk (Richardson et al., 2018).

United Kingdom. A cohort study of UK armed forces deployed to Iraq and Afghanistan between 2003 and 2009 examined the mental health outcomes of multiple deployments against a group of non-deployed personnel (Fear et al., 2010). A questionnaire about deployment experiences and mental health outcomes was answered by 9990 regular and reserve personnel (56% return rate). Probable PTSD was reported by 4%, 13% alcohol misuse, and 19.7% "common mental disorders" (Fear et al., 2010). An interesting finding from the Fear et al. (2010) study was that the number of deployments did not affect the outcome. The study did not inquire into suicide ideation.

In order to highlight some of the critical post deployment issues facing the British Armed Forces, as well as to highlight the recent interventions that have been put into place to help promote successful adjustment, Fertout et al. (2011) established that the primary prevention strategies were decompression and psychoeducational interventions. Decompression occurs after the deployment, neither in theater nor at home; rather in a third location, to be able to unwind. A secondary prevention strategy includes post-deployment mental health screening, and a tertiary prevention measure introduces the treatment of mental health problems, stigma, and barriers to care. Fertout et al. (2011) concluded that there is a lack of robust outcome data to support its use at any stage during a person's military career. The data also suggested that screening might identify significant numbers of service members who appear to suffer from mental health problems; it does not appear to facilitate engagement with these treatment services. There was also little research found that evaluated the efficacy of decompression despite large-scale deployment and popularity. Overall, Fertout et al. (2011) determined that there is a considerable knowledge gap as to what works and what does not.

Demark. The Danes have a long history of deployment on United Nations peace keeping missions. Their involvement in both Iraq and Afghanistan has resulted in the highest loss of

Danish Soldiers since World War II (Ejdesgaard, Zollner, Jensen, Jorgensen, & Ka'hler, 2015). A questionnaire was administered to Danish Soldiers (n=1264) deployed between 1990 and 2009). Significant risk factors for suicidal ideation were identified for pre-deployment (drug abuse and poor finances), during deployment (heavy workload and/or early return), and post-deployment (attending poor athletic or recreation programs). Support from friends during deployment and appreciation of the general public after deployment were found to be significant protective factors. An unhappy childhood and perceived pointless tasks during deployment were significant factors for suicide attempts (Ejdesgaard et al., 2015).

Discussion

Overall, this literature review shows that there are still gaps in the research which could be linked back to the current studies. Most of these studies used samples that were not really representative of the populations studied. Most studies included in this literature review were based around men who were in combat units. This seems to exclude other vulnerable populations, such as non-combat service members who are still on the front line assisting and exposed to trauma. This population can also include many female service members who seemed to be greatly underrepresented in these studies.

Finley's et al. (2015) study which was a retrospective cohort study which has both advantages and disadvantages. Some advantages are that they are conducted on a smaller scale, typically require less time to complete, and are better for analyzing multiple outcomes. On the other hand, some disadvantaged are that some key statistics cannot be measured, significant biases may affect the selection of controls, and major biases can impact the recall of former exposure to risk variables. There can also be selection bias and misclassification or information bias. Also, those who are conducting the study cannot control exposure or outcome assessment but instead, need to rely on others for accurate record-keeping which can be very difficult to make accurate comparisons between the exposed and non-exposed. They would also need very large sample sizes for rare outcomes.

When these studies are taken together, PTSD alone is not a strong reason for suicide or suicidal ideation. However, PTSD with co-morbid depression was implicated as a fatal combination (Bryan & Anestis, 2011; Bryan et al., 2013; Finley et al., 2015; Richardson et al., 2012). Depression, a history of childhood struggle and pre-enlistment suicidal ideation, plans, and attempts are implicated in attempted suicides of military members with or without PTSD (Britton et al., 2011; Finley et al., 2015; Richardson et al., 2018; Ursano et al., 2017). Consequently, counselors should not make assumptions when working with military members or Veterans. Rather, be open to the possibilities presented by military culture and the individual life story.

Practice Implications of the Research

Even amongst all of the research and proposed interventions, the suicide attempts and completion rates of military members seems to continue to rise (DVA, 2018). While it is possible to make indirect connections to PTSD and suicide, there were several indirect links that were identified. Additional studies should be conducted with servicemembers seeking mental health services both inside and outside of the VA system. The results could vary greatly depending on the practice status as well as active duty status. If a person is active duty and receiving services

through the base, they may not respond accurately out of fear of losing their job. However, in a private practice they may be more open with a counselor in the hopes that it would not get back to the military. It appears as though something like PTSD is still a taboo subject for those who are active duty.

Conclusion

Throughout the research, several indirect links can be made to suicide attempts and suicide completion. Exposure to combat was seen as increasing a person's fearlessness about death. PTSD was related to the concept of acquired capability to be able to commit suicide, but only indirectly to the desire itself. Therefore, PTSD alone was not directly associated with an increased risk, but that can change if there is a presence of co-morbid conditions such as major depressive disorder or substance use disorder. This shows that it is crucial to screen for the possibility of co-morbidity. PTSD severity was directly linked to depression severity, which in turn was also directly linked to suicide attempts and completion. Lastly, the presence of pain, such as in a polytrauma model, showed a decrease in the risk of suicide attempt and completion.

Additional research needs to be completed in this area in order to close some of the gaps in knowledge. Most studies included in this literature review were based around men who were in combat units. This seems to exclude other vulnerable populations, such as non-combat service members who are still on the front line assisting and exposed to trauma. This population can also include many female service members who seemed to be greatly underrepresented in these studies.

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