THE IMPLICATIONS OF COUNTERFACTUAL THOUGHTS ON MILITARY MEMBERS AND VETERANS

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Abstract

While there is a plethora of research conducted on therapeutic techniques for military service members and veterans with Post-Traumatic Stress Disorder (PTSD), there is little information about how certain cognitive processes may hinder participation in therapy or various mental health interventions. There remains a large problem within the military, in that many returning military service members and veterans are not seeking services when they need them. The cognitive mechanism of counterfactual thinking may play a role in hindering the treatment seeking process for service members and veterans. Counterfactual thinking has been defined as "mental representations of alternatives to the past." Usually elicited by negative events, counterfactual thinking is produced when an individual creates hypothetical alternatives to their previous actions resulting in a different, hypothetical outcome. This graduate master's thesis sought to explore if using different kinds of counterfactual thinking mechanisms can impact a military service member or veteran's stigma against seeking psychological treatment and resulting meaning surrounding their military life. Findings show that there were no significant differences in different types of counterfactual thoughts on one's internalized stigma of seeking help, or one's meaning making. However, there may be changes in how counterfactuals are used regarding the intensity of one's experiences within the military, and the intensity of their PTSD and depression symptoms. Implications of using counterfactual thoughts to reduce barriers to help-seeking are also discussed.

The Implications of Counterfactual Thoughts on Military Members and Veterans

When considering the reintegration process a military service member undertakes upon returning home, it is vital to remain aware of possible resulting mental health ramifications. An estimated 14 to 22% of currently returning military service members and veterans develop Posttraumatic Stress Disorder (PTSD) (Brenner et al., 2015) and about 15 to 20% develop Major Depressive Disorder (MDD) (Mustillo et al., 2015). Although there is a plethora of treatment options for military service members and veterans, a large problem lies with those who do not seek help. This could be due to a variety of psychological, social, and cultural reasons.

One prevalent example as to why military members do not seek appropriate treatment for their symptoms is military culture (Denneson et al., 2015). The cultural aspects within the military can heavily impact the ways in which service members and veterans derive meaning out of their experiences and help to define specific stereotypes surrounding psychological treatment (Denneson et al., 2015). Recent literature regarding barriers to seeking treatment among members of the military has been primarily focused towards stigma (e.g., Blais & Renshaw, 2014; Lannin, Vogel, Brenner, Abraham, & Heath, 2016; Pearl, Forgerard, Rifkin, Beard, & Bjorgvinsson, 2017), which can inhibit one's motivation to seek help and can lead to an increase in suicidal ideation (Corrigan, 2004).

The cognitive mechanism of counterfactual thinking, or the generation of hypothetical alternative outcomes to real, past events, may also play a role in hindering the treatment-seeking process for service members and veterans, as it has been positively linked to higher amounts of posttraumatic stress (El Leithy, Brown, & Robbins, 2006). However, as there are different forms of counterfactual thoughts with different functions, discussed below, counterfactual thoughts may also be helpful in decreasing posttraumatic stress. The current study sought to explore if

using counterfactual thinking mechanisms impacted a military service member or veteran's stigma against seeking psychological treatment, as well as their meaning making surrounding their time in the military.

Stigma

Evidence suggests that stigma generally plays a role in deterring individuals from seeking mental health services, and specific cultural factors may exacerbate this stigma for military service members and veterans (Mittal et al., 2013; Vogel, Bitman, Hammer, & Wade, 2013). Research to date has delineated two main types of stigma that seem to affect not only the individual with a mental illness, but also their surrounding peers: public stigma and internalized stigma. Both have foundations within societal schemas regarding what mental health is and how one should handle their symptoms, potentially leading to negative consequences for the individual experiencing a psychological illness (Corrigan, 2004).

Public stigma is defined as the publicly held belief that something, such as seeking treatment for mental illnesses, is undesirable or unacceptable (Vogel et al., 2013). Although it is integral to understanding the foundations of internalized stigma, public stigma does not have the same effect on behavior. Internalized stigma, defined as the decrease of one's self esteem based on the notion that they are socially unacceptable (Vogel et al., 2013), has been found to have negative mediated effects on mental health outcomes as well as treatment seeking behaviors (Blais & Renshaw, 2014; VanSickle et al., 2016). As such, it is important to address the self-stigmatizing nature of particular thoughts surrounding the decision to seek treatment.

For example, Ingram, Litchenberg, and Clarke (2016) found that those diagnosed with PTSD are more likely to view stigma in terms of their own limitations, their fear of being considered devalued based on perceptions of public stigma, their own internalized self-stigma,

and resulting self-blame for the events that have occurred. Britt, Jennings, Cheung, Pury and Zinzow (2015) determined four main stereotypes facing military service members and veterans: perceived stigma to career, perceived stigma of differential treatment, self-stigma, and the perceptions of other soldiers who have sought treatment. While those who were less likely to seek treatment scored higher on all four stigma perceptions, self-stigma was the most significant predictor of treatment dropout and avoidance (Britt et al., 2015). These findings were partially replicated by Brown and Bruce (2016), who found that soldiers from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) who measured higher on three levels of stigma (self-stigma, public stigma, and career worry) were significantly less likely to seek treatment. Out of the three different stereotypes that were analyzed, they found career worry was the strongest predictor of those that were least likely to seek treatment (Brown & Bruce, 2016). This perceived threat of losing one's job because of mental illness is integral to one's self-stigma when considering that most combat veterans think that they are somehow responsible for their diagnosis and for not being able to control their symptoms (Mittal et al., 2013).

Furthermore, an exploratory, qualitative study by Czyz, Horwitz, Eisenberg, Kramer, and King (2013) found the most commonly endorsed reason for not seeking mental health treatment was the perception that one does not need it. Other reasons found were lack of time and a preference to deal with their symptoms on their own (Czyz et al., 2013).

This raises a question: What specific cognitive processes hold such internalized stigma in place? Rumination, the constant and repetitive thought process that perpetuates harmful and negative beliefs, has been shown to be a positive predictor of depressive states, as well as an indicator of increased stigma towards seeking treatment (Pearl et al., 2017). Rumination after experiencing or witnessing a negative event can foster increased negative affect, avoidance

behavior, and even suicidal ideation (Pietrzak, Russo, Ling & Southwick, 2011; Zetsche, Ehring, & Ehlers, 2009). Such aspects of rumination are unwanted and maintain depressive and suicidal tendencies in those who have PTSD. Rumination is considered unavoidable, and most cognitive-behavioral treatments seek to change the way in which those affected by PTSD ruminate on past events (McLean & Foa, 2011). One cognitive process that, if involved in rumination, can perpetuate the cycle of negative affect and PTSD symptomatology is counterfactual thinking.

Counterfactual Thinking

Counterfactual thinking has been operationalized as "mental representations of alternatives to the past, [which] produce consequences that are both beneficial and aversive to the individual" (Roese, 1997, p. 133). It can best be further explained as the concept of "what if" scenarios (e.g., "What if this specific traumatizing event had never occurred?"). Usually elicited by negative events, counterfactual thinking is produced when an individual creates ideas that could hypothetically change the outcome of what has occurred. These ideal hypothetical changes can be directional. An individual may hypothetically alter the proceedings of an event that has occurred for an ultimate positive outcome, deemed "upward counterfactuals." Alternatively, individuals may alter the proceedings of the event to imagine an even worse outcome than the original event, deemed "downward counterfactuals" (Roese, 1994). An example of an upward counterfactual thought would be "if only I had studied harder, I would have gotten a better grade on the test." Conversely, an example of a downward counterfactual thought would be "if I didn't study at all, I probably would have gotten an even worse grade on the test."

The direction of the counterfactual has implications on one's behavior, affect, and resulting mental health. Upward counterfactuals have been associated with increased distress (El Leigthy et al., 2006; Roese, 1994), whereas downward counterfactuals have been shown to help

in creating meaning around the event that has occurred. Utilizing different counterfactuals has been found to have different outcomes on an individual depending on the situation (Roese, 1994).

Although it may seem as if the process of counterfactual thinking is inherently maladaptive and not useful within the scope of treating mental illnesses, there may be positive and adaptive rationales to counterfactual thinking. For example, upward counterfactual thinking can be an adaptive thought pattern and useful as a preparatory function. The use of "if only" (e.g., "If only I didn't text while driving, I would not have gotten into a car accident) statements used after a negative consequence can prepare an individual for future similar incidents. Although it may elicit avoidance behavior, one can argue that such avoidance behavior is adaptive for that individual's survival (Roese, 1994). Particularly, with studies of habituation in animals, avoidance behavior has a long history of presenting itself as positively adaptive. Roese (1997; 1994) argues specifically that upward counterfactual thinking is inherently more useful than downward counterfactual thinking as it usually leads to improved performance, in the sense that previous negative consequences prepare an individual for the next time a similar antecedent occurs.

This functional argument for the use of counterfactual thinking presents an important question in relevant research and literature: Can counterfactual thinking be both maladaptive and useful? Since past research presents counterfactual thinking as mostly maladaptive, the current research seeks to discover if counterfactuals can be used for a more functional, coping purpose. More specifically, the current study tried test whether using downward counterfactual thoughts (i.e., generating a hypothetical less desirable outcome to the situation than actually occurred) can

be useful in positively affecting stigma and meaning making for those with PTSD-symptomatology.

Counterfactual Thinking and PTSD. Replicated findings have shown that PTSD-diagnosed individuals are more likely to display upward counterfactuals when presented with a negative event or after a negative affect elicited by an event (e.g., Dalgleish, 2004; Roese, 1994). As such, trauma survivors and those with PTSD mentally alter antecedents in order to hypothetically ameliorate a negative consequence. In regards to Roese's (1997) claim that upward counterfactuals are adaptive, this adaptiveness is countered by the course of PTSD and its thought intrusion and avoidance tendencies (American Psychiatric Association, 2013; Mitchell, Contractor, Dranger & Shea, 2015). The retroactive thought processes that one could have done something else in order to achieve a better outcome, but that one cannot now control the negative outcome, can be a significant mental roadblock to recovery for those with PTSD. These thoughts could impede on everyday life, adding to PTSD symptomatology, or could create a feeling of increased guilt or self-blame (Zetsche et al., 2009). This is especially salient where ruminative counterfactual thinking may be related to a life-or-death consequence or when the event was out of the service member's control (Roese, 1994).

Consequently, upward counterfactual thinking has been found to be significantly associated with perpetuating posttraumatic stress (El Leithy et al., 2006). Using mostly self-report measures, Mitchell et al. (2015) found that counterfactual thinking is associated with certain PTSD symptom clusters specified by the Diagnostic and Statistical Manual of Mental Disorders-5 (American Psychiatric Association, 2013). Counterfactual thinking has been linked specifically to the clusters of intrusion of thoughts, and avoidance behaviors. Clusters associated with negative alterations in mood and cognitions, as well as alterations in arousal and reactivity,

are less associated with the results of counterfactual thinking (Mitchell et al., 2015). Roese's (1994) claim about the adaptive avoidance nature of upward counterfactual thoughts falls short when considering PTSD, as avoidance is maladaptive for those with this mental illness. Since counterfactuals are linked more to thought intrusions and avoidance behavior, this relationship is intensified further by the nature of the disorder. As such, to possibly reduce these symptoms, there needs to be a break in this thought pattern and consequent behavior that is perpetuated by continuously using upward counterfactual thoughts. Furthermore, it is important to be able to thematically examine the meaning within counterfactual thoughts that utilize public and internalized stigma that continues to maintain avoidance behavior.

Meaning Making

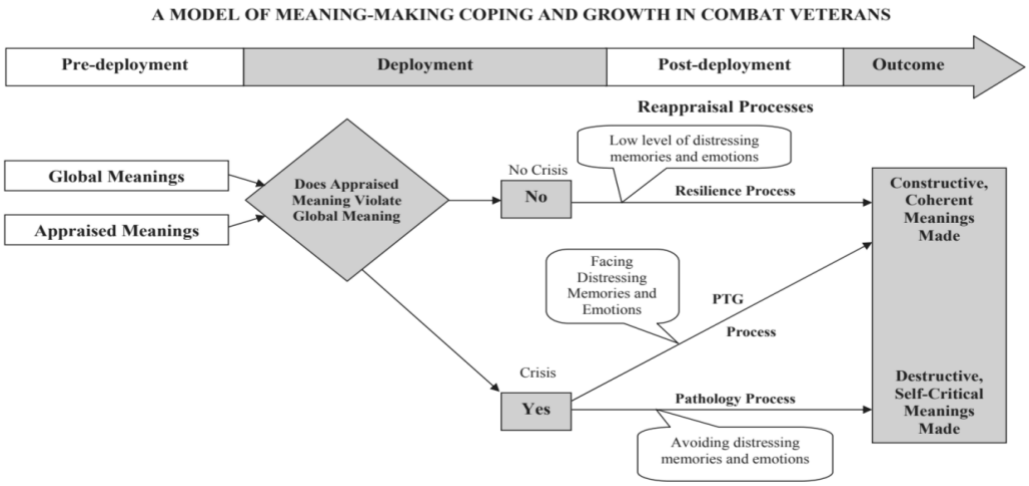
Direction of counterfactuals alone is not the sole mechanism behind maintaining PTSD symptoms. The actual thoughts generated, and the meaning ascribed to them, are also inherently important in the avoidance behavior of service members and veterans with PTSD symptoms. As discussed previously, downward counterfactuals have been shown to provide meaning to the event or events that have transpired (Roese, 1997). This meaning is extremely important when considering that it can be made using the individual's perception of the actual event (e.g., direction of counterfactuals) and through the lens of stereotypes or stigma from their experiences within military culture. This can best be explained further via recent studies concerning the way in which individuals create meaning.

In Park's (2010) meta-analysis on meaning making, she claims that meaning is derived through effortful reduction of the discrepancy between what she calls "global meaning" and "situational meaning." Global meaning is considered the schema in which we view the world; it is our beliefs, goals, and feelings about how the world operates. Situational meaning is the

meaning we derive from the context of a specific event or culmination of events that have occurred. Park (2010) argues that when an event occurs in an individual's life, there is the opportunity for global and situational meanings to conflict, creating a discrepancy. This discrepancy between how we view the world and how we view the event can be distressing depending on how much the two disagree with each other (Park, 2010). For example, a person may have a global belief that God is inherently good. However, if they walk around their city and see a homeless individual who is suffering, the individual finds themselves in a discrepant situation. Globally, God is good and is good to everyone; situationally, the homeless individual seems to be suffering meaninglessly. Park claims that we derive meaning out of trying to recover from this discrepancy: Through an unconscious and automatic cognitive process, we either shift our appraised situational meaning (*assimilation*) or change our global beliefs (*accommodation*). As such, the individual may walk away thinking that the homeless individual did something wrong in order for them to be suffering (assimilation), or conversely, that God is not inherently good (accommodation). Park (2010) claims that the former is more likely than the latter, or that both assimilation and accommodation co-occur at the same time.

Based on Park's (2010) meaning making model, Larner and Blow (2011) adapted a model specifically for military service members and combat veterans. This model designates different levels of meaning ascribed to different moments of deployment. In the pre-deployment stage, the service member has both global and situational meanings. During deployment, many traumatic events may occur which may violate the individual's global meaning. How the service member cognitively attends to this violation post-deployment determines their mental, behavioral and meaningful outcome. If there is a violation and the service member faces this crisis, Larner and Blow (2011) claim that a "posttraumatic growth process" occurs, leading to

constructive meanings made. However, if the service member avoids distressing emotions and memories created by this discrepancy and the negative events, the authors claim that the "pathology process" occurs and destructive or self-critical meanings are made. See the diagram of this meaning making process within veterans from Larner and Blow (2011):



These meaning making models demonstrate how the process of creating meaning out of negative situations is integral to behavior and thought processes, which may eventually perpetuate PTSD symptoms. Owens, Steger, Whitesell, and Herrera (2009) found that endorsement of lower presence of meaning in life predicted higher severity of PTSD symptoms. As discussed previously, these upward counterfactuals feed avoidance and consequently the "pathology process" according to Larner and Blow's (2011) meaning making model. The stigma of mental illness within military culture adds immensely to this maladaptive consequent avoidance and may lower the presence of meanings made, which has potentially disastrous outcomes. Conversely, as downward counterfactuals have been associated with increased meaning making (Roese, 1994), there might be a more positive influence of generating these types of thoughts after a negative or traumatic event occurs. As downward counterfactual

thoughts have been linked to meaning making processes (Roese, 1994), it could be that deriving meaning in one's life could potentially decrease destructive, self-critical meanings made, perhaps leading to increased self-esteem, ameliorating the negative effects of internalized stigma towards seeking help. This study attempted to thematically and quantitatively explore this phenomenon.

Present Study

This study sought to explore how different types of counterfactual thinking impact military service members' and veterans' internalized stigma regarding seeking help, as well as the way they create meaning surrounding their military experiences. Participants were asked to reflect upon past, negative events related to their time within the military, and to create specific, directional counterfactual thoughts based off that particular experience, or their experience in the military as a whole. Self-reported internalized stigma and meaning making were assessed after counterfactual thought manipulation in order to account for any between group differences, as well as any interactions between manipulated counterfactual thoughts, stigma, and meaning making.

Hypotheses:

H_1: Participants in the downward manipulation will endorse reduced self stigma of seeking help, relative to those in the upward manipulation or control groups.

H_2: Participants in the downward manipulation will endorse reduced search for meaning in military life relative to those in the upward manipulation or control groups.

H_3: Participants in the downward manipulation will endorse increased amounts of presence of meaning relative to those in the upward manipulation or control groups.

H_4: Participants in the downward manipulation condition will endorse increased trauma centrality surrounding their negative experience(s) relative to those in the upward manipulation or control groups.

H_5: Veterans will endorse increased presence of meaning, and reduced search for meaning relative to active duty (including National Guard and Reserves) service members.

H_6: Those with high Post Traumatic Stress (PTS), controlling for depression, will endorse increased self-stigma relative to those with moderate to low PTS.

Methods

Participants

Originally 114 individuals participated in the online study, but after excluding those that did not finish the relevant sections of the survey, the final sample included 53 participants. Eighty-five percent of participants were men and 72% were, with an average age of 34 (*SD* = 10.5). The sample was mostly made up of veterans. Fifty-seven percent indicated their military status as veteran, while 26% indicated they are currently serving on active duty, and 17% are in the National Guard. By service branch, 58.5% of participants indicated membership with the Army, 18.9% with the Marines, 13.2% with the Navy, and only 9.4% with the Air Force. The majority of the sample (64.2%) indicated that they have deployed, predominately to Iraq and Afghanistan, as well as other countries in the Middle East and western Asia. While the original intention of this study was to recruit participants from colleges in the Hudson Valley area, only 38% of the sample indicated that they currently attend school.

Participants were recruited via email, using snowball sampling methods, as well as social media. Coordinator of Veteran and Military Services at SUNY New Paltz, Jason Gilliland, assisted with recruitment through his connections to schools within the Hudson Valley, and his

relationship to the military population on campus. Twenty-five percent of the sample indicated that they are currently attending school within the Hudson Valley. In addition, the survey was distributed on the social media website, Reddit.com. Reddit.com is a digital forum, with pages devoted to specific, niche-like topics. A recent study on the use of Reddit for psychological research showed that it is effective at targeting specific interest groups by posting one's survey to specific pages (Shatz, 2017). The survey was posted on veteran, academic, and military-branch specific pages in order to reach as many people as possible. As an incentive for participation, those completing the survey could enter a raffle for three $50 Amazon gift cards. Due to the nature of recruitment, and limitations of the demographic data, it is not known exactly how many participants were recruited via reddit.com, nor can overall participation rates be calculated for any recruiting method.

Materials

The study was distributed using the data collection website qualtrics.com. Participants were asked to answer typical demographic questions (age, gender, ethnicity, etc.) and questions about their military service including possible deployments, and were given the following questionnaires. As there is evidence that PTSD and depression are highly comorbid, a depression measure was included in order to control for this possible confound (Roley et al., 2015). See Appendix for all actual scales.

PTSD-Checklist-Military Version (PCL-M). The PTSD Checklist - Military version, was used to assess PTSD symptomatology (Keen, Kutter, Niles, & Krinsley, 2008). The PCL-M assesses symptomatology using diagnostic criteria from the DSM-IV-TR. This 17-item self-report measure asks participants to rate how much they have been bothered by certain problems within the past month on a Likert scale from 1 (not at all) to 5 (extremely) (Keen et al., 2008).

Questions include inquiries into physical (e.g., "having physical reactions [e.g., heart pounding, trouble breathing, or sweating] when something reminded you of a stressful experience from the past?"), emotional (e.g., "feeling very upset when something reminded you of a stressful experience from the past?"), and ruminative (e.g., "repeated, disturbing memories, thoughts, or images of a stressful experience from the past?") reactions when reminded of the event, as well as inquiries into disturbing memories, thoughts, images, and dreams regarding the traumatic event(s) (Keen et al., 2008). An analysis done by Keen et al. (2008) found an overall internal consistency rating (α) of .96.

Although the PCL-M was created based on DSM-IV-TR criteria for PTSD, the specific symptoms used in the DSM-5 remain generally consistent with those described previously, though they are now grouped into different symptom clusters. The fact that this scale specifically focuses on military populations, with no reliable, DSM-5 equivalent yet, this outweighed any concerns regarding its validity regarding recent diagnosis developments.

Patient Health Questionnaire-9 (PHQ-9). Depression was assessed as a covariate in order to control for its impact on the counterfactual manipulation and stigma measures. The PHQ-9 is a short, 9-item, self-report measure that is used to assess levels of major depression (Mitchell et al., 2015). It asks participants to rate how frequently they experienced specific behaviors, emotions, and thoughts throughout the past two weeks (i.e., "Feeling down, depressed and hopeless" and "Trouble concentrating on things such as reading the newspaper, or watching television") on a scale of 0 (Not at all) to 3 (nearly every day) (Mitchell et al., 2015). The PHQ-9 has high internal consistency, with alpha coefficients ranging from .86 to .89, high test-retest reliability, and construct validity (Kroenke et al., 2001, as cited by Mitchell et al., 2015).

Counterfactual Manipulation. Counterfactual thoughts were manipulated in order to determine if different types of counterfactual thoughts impact stigma and meaning in life. They were manipulated using a thought exercise adapted from successful thought manipulations by Roese (1994) (See Appendix F). In this thought exercise, participants were asked to think about a previous negative event or events during their time within the military. They were then presented with the counterfactual manipulation with one of the following conditions: upward generation manipulation, downward generation manipulation, or a control prompt.

Centrality of Events Scale (CES). Trauma centrality was assessed using the Centrality of Events Scale (Berntsen & Rubin, 2006). Prior to completing the counterfactual manipulation, participants were asked to focus on a specific negative event or events during their time in the military, and that same event was used as the focus of the CES. The short 7-item, self-report version is used to determine how fundamental an event is to a person's identity and life. It asks questions on a Likert scale from 1 (totally disagree) to 5 (totally agree) and asks the individual to assess how much they agree with each statement (i.e., "this event has become a reference point for the way I understand new experiences") (Berntsen & Rubin, 2006) The CES has displayed good internal reliability and validity (Brown, Antonious, Kramer, Root, & Hirsch, 2010).

The Self-Stigma of Seeking Help Scale (SSOSH). The SSOSH is a 10-item measure on a 5-point Likert scale that measures one's self stigma to seeking mental health treatment (Vogel, Wade, & Haake, 2006). Possible scores range from 1 (strongly disagree) to 5 (strongly agree), where a person is asked to what degree they agree with statements such as "I would feel inadequate if I went to a therapist for psychological help" and "I would feel worse about myself if I could not solve my own problems" (Vogel et al., 2006). Within this study, the SSOSH

displayed high internal consistency with a Cronbach's α = .91. This measure was used to assess one's internalized self-stigma towards mental health and treatment services.

Meaning in Life Questionnaire (MLQ). The MLQ is a 10-item self-report measure on a 7-point Likert scale that measures two aspects of meaning in one's life: search for meaning and presence of meaning (Steger, 2006). Possible scores range from 1 (absolutely untrue) to 7 (absolutely true), where a person is asked how truthful they feel a statement to be. The search for meaning subscale measures the degree to which an individual believes they have achieved meaning within their life, with five items including: "I understand my life's meaning." The presence of meaning subscale measures the degree to which an individual is attempting to understand their life's meaning, with five items including: "I am seeking a purpose or a mission for my life" (Steger, 2006).

For the purposes of this study, the MLQ was adapted to focus on meaning in one's military life. Each item was altered to focus on one's internalized meaning surrounding their military life. For example, the item "I understand my life's meaning" was adjusted to "I understand my military life's meaning," and "I am seeking a purpose or mission for my life" was changed to "I am seeking a purpose or mission for my military life." This was done in order to assess how one's meaning making specifically regarding their military life may relate to counterfactual generation, as well as one's stigma against mental health. At the conclusion of the study the search for meaning subscale reported high internal consistency, Cronbach's α = .92, while the presence of meaning subscale reported low internal consistency, having inter-item correlation of .119, with a range of -.778 to .740. This issue is discussed in the Limitations section.

Procedure

First, participants answered some brief demographic questions, as well as questions about their time in the military. They were also asked to describe their motivation for joining the military, and any other comments about their experience in the military they wished to share. Following this, participants were given the PCL-M in order to assess possible trauma and subsequent PTSD symptoms. They also were given the PHQ-9 in order to assess depression level.

Next, participants were asked to think about a negative event or events within their experience in the military (e.g., combat, deployment, ROTC, active duty, training, drill, Unit Training Assembly, tours, etc.) and were given an opportunity to write out their negative event if they chose to disclose any details. Participants were asked to write about their significant event(s) to possibly help consolidate the memory and increase focus on the actual event(s), as well as help elucidate their responses within the following counterfactual manipulation (Koopman et al., 2005). If they chose to not disclose any information, they were reminded to focus on the chosen memory for the remaining tasks.

After this short exercise, the participants were presented randomly with one of three counterfactual manipulation prompts (upward generation, downward generation, or control) and were asked to generate three or more sentences similar to the example given in the prompt. If the participant did not choose to participate in the manipulation but continued to answer the following surveys, they were still included within the analysis, as they were still shown the prompt, and were following along with the goal of the manipulation (discussed further in the Results section). Following the counterfactual manipulation, the CES, SSOSH and the MLQ

were administered to assess if there were any changes between counterfactual manipulation groups they were randomly assigned to.

As this study had the potential to be distressing, after the survey there was a positive mood induction comprised of two short video clips of stand-up comedian John Mulaney. This sought to ameliorate any possible negative effects this study may have had on participants, as well as hopefully leaving them happier than when they originally started the study. In addition, the final screen of the study contained resources concerning available mental health support and clinical services for those who felt they may have needed more support.

Results

Preliminary Analysis

Table 1 (see page 52) displays the means, standard deviations, and correlations of all the independent and dependent variables within the study, including age. Table 2 (see page 53) displays a breakdown of the means and standard deviations of the categorical, demographic data. Only three of these categorical, demographic means varied significantly between levels, all regarding self-reported PTSD symptoms. There was a significant difference in endorsed PTSD symptomatology between veterans (M = 42.13, SD = 15.23) and those in the National Guard (M = 27.11, SD = 7.56), $F(2,49) = 3.802$, $p < .05$. There was another significant difference across branches of the military on endorsed PTSD, $F(3,48) = 2.80$, $p = .05$, with the only significant difference between those in the Army (M = 33.03, SD = 14.64) and those in the Marines (M = 47.90, SD = 12.01). Lastly, there was a significant difference between those who have deployed (M = 41.76, SD = 14.02) and those who have not (M = 30.47, SD = 16.74) on endorsed PTSD, $t(50) = -2.60$, $p<.05$.

There was little missing data from participants. Of the entire final sample (N = 53), seven did not complete the counterfactual manipulation, but continued to complete the outcome measures. A series of independent-sample t-tests were conducted in order to assess if there were differences between those who did and did not complete the manipulation, but continued with the survey. Of those t-tests, there was only one significant difference between those who completed the manipulation task and those who did not, on trauma centrality, $t(50) = -2.95$, $p < .01$. Those who completed the manipulation task indicated higher trauma centrality (M = 3.36, SD = 1.20) than those who did not complete the manipulation task (M = 1.86, SD = .88). There were no other differences between those who did and did not complete the manipulation in any other independent or dependent variable. As such, these seven participants were included within the final sample.

Primary Analysis

The hypothesis that there would be a difference in self-stigma towards seeking help between the three counterfactual manipulations (upward generation condition, downward generation condition, and control condition) was tested using a one-way, between groups analysis of variance (ANOVA). There were no significant differences found between the three conditions on resulting self-stigma of seeking help, $F(2, 49) = .094$, $p > .05$.

A one-way, between-groups multivariate ANOVA (MANOVA) was used to test the hypotheses that those in the upward generation condition (i.e., "If only…") would display higher self-stigma and search for meaning, with less presence of meaning, than those in the downward generation (i.e., "Well, at least…") and control conditions, and that those in the downward manipulation would display less self-stigma and presence of meaning, with higher search for meaning, than those in the upward and control conditions, controlling for endorsed

levels of PTSD and depression. These hypotheses were also not significant, F (6, 86) = 0.720, p > .05; *Pillai's Trace* = 0.096; *partial eta squared* = 0.048. This indicates that there was no interaction between self-stigma, search for meaning, and presence of meaning influenced by counterfactual manipulation.

Furthermore, the hypothesis that veterans (i.e., those who indicated that they are veterans, and are no longer serving) would display more presence of meaning, and less search for meaning than active duty members (i.e., those who indicated that they are currently serving active duty, as opposed to the National Guard and/or Reserves) was tested using a one-way, between-groups ANOVA. Results found no significant difference in meaning scores between active duty members and veterans. However, upon ancillary analysis, there was a significant, moderate, and positive correlation for veterans between endorsed PTSD symptoms and search for meaning scores, $r(29) = .443$, $p < .05$. There was also a significant, positive relationship for veterans between endorsed depression symptoms and search for meaning scores, $r(29) = .424$, $p < .05$. There were no such significant relationships for active duty members.

Finally, the hypothesis that those who endorsed higher post-traumatic stress symptoms (high PTS) would have more self-stigma about mental health over those who endorsed moderate to low PTS was tested using a one-way, between groups ANOVA. The results found no significant difference of self-stigma of seeking help by endorsed severity of PTS, F (2,48) = .589, p >.05. However, upon ancillary analysis, there was a significant difference of endorsed depression, F (2, 48) = 32.01, p <.01, between those with low endorsed PTS (M = 12.32, SD = 5.44) and those with high endorsed PTS (M = 23.95, SD = 4.46). There was also a significant difference of trauma centrality, F (2.48) = 4.072, p <.05, between those with low endorsed PTS (M = 2.80, SD = 1.22) and those with high endorsed PTS (M = 3.81, SD = 1.08).

Qualitative Analysis

Qualitative data were collected at several times throughout the survey. Responses to each question, including both the upward and downward manipulation condition short answers, were analyzed using an iterative process, rooted in grounded theory methods. The data were reviewed multiple times by two graduate students trained in qualitative analysis methods. Both reviewed the answers independently to come up with recurring ideas and themes. Then, both met to discuss and further specify overall themes and subcategories. These themes were also reviewed by the thesis adviser.

Coding of the qualitative responses was conducted following thematic analysis. Within each response to the descriptive short answer questions, every complete sentence or coherent thought (i.e., replying with "money" as motivation for joining the military) provided by the participant was coded independently with its own theme. For both manipulation conditions (upward and downward), only counterfactual statements (i.e., a sentence starting with one of the prompts "if only" or "well at least"/ "at least") were coded with a theme specific to the manipulation.

After coding concluded, interrater reliability between the two graduate student coders was assessed. Both reviewed and coded the responses independently from each other. Coders were in 90% agreement for negative event description responses, and in 92% agreement for responses regarding one's motivation to join the military. For the responses to the two manipulation conditions, coders were in 97% agreement for the upward manipulation condition (i.e., "If only"), and in 84% agreement for the downward manipulation condition (i.e., "Well, at least").

Motivation Themes. Motivations for joining the military were thematically analyzed. About 29% of the sample indicated that their motivation for joining the military was for the monetary benefits, both for financial stability and for tuition assistance for collegiate education. This was the most prevalent motivation endorsed by the sample. Themes regarding motivation for joining the military, as well as their frequencies are displayed in Table 3 (see page 54).

Eighteen percent of the sample indicated motivations that were only mentioned once. As such, they were placed in the "other" category. Some examples of what constitutes the other category are: "Warrior ethos," "self discovery," "I was homeless," "I didn't see myself going to college," and "Hoped to meet good people."

Negative Event Themes. Table 4 (see pages 55-56) displays the different types of negative experiences described before the counterfactual manipulation, along with their frequencies. Twenty three percent of the sample did not choose to describe their negative experiences, but those responses that were provided were thematically analyzed.

Combat-related incidents were the most prevalent theme (19%) among the negative event descriptions. These include IED attacks (e.g., "During Deployment I witnessed fellow members Hit an IED"), explosions (e.g., "I got blown up in Afghanistan"), and changes within their combat experiences (e.g., "Being rotated out of company command while in Iraq."). This theme differed from death of a friend and/or commanding officer (9.4%), which included statements where the participant explicitly mentioned the death of a particular individual (e.g., "Having my best friend at the time get blown apart from an IED", or "Watching my first supervisor die."). This was also different from indications of sexual assault or sexual harassment (11.3%), as the participant needed to explicitly mention that they were sexually harassed or assaulted in order to fulfill endorsement. Lastly, this theme also differed from personal injury (3.8%), as this theme

only includes those in a non-combat situation (e.g., "water torture after eating in boot camp. Made to drink water till you throw food up.").

The second most endorsed negative event regarded extreme stress or exertion (13%). Examples of extreme stress include "Three days without sleep, then getting blood drawn" and "nuclear field high stress." The third most prevalent negative event description regarded bad treatment within the military. Some mentioned racial discrimination: "The military would constantly refer to you as a 'terrorist', with somewhat racial implications," while others mentioned abuse by superior officers, such as "...just to have an hour where I wasn't looking over my shoulder for fear of officers looking for someone to shit on," or "I was held underwater by a NAvy Seal for failing to exercise in Boot Camp." Surprisingly, only one person indicated that killing others was their negative event (i.e., "I shot a young teenager in the head.").

There were also some event descriptions that did not fit within these categories. As such, they were placed in an "other" category (28.3%). Some of these descriptions include, "Loading 18 American bodies on to an aircraft," "Dressing and photographing dead babies in case the Mom's changed their minds later and wanted a photograph," and "abandoned at a traffic control point, forgotten by chain of command." As these descriptions did not explicitly mention a combat scenario, it cannot be assumed that these events happened within deployment or combat, and were thus thematically coded as "other."

Manipulation Check. Responses to the manipulation prompt were assessed in order to determine if the manipulation was successful. The manipulation would be considered successful if it altered the participant's thought process in an upward or downward counterfactual way, focusing on predictable time points. In accordance with counterfactual theory (Roese, 1994), those who were prompted to think in an upward way (i.e., thinking of ways to improve a past

situation) should have thoughts that are oriented before the event took place, or throughout the actual event. Those who were prompted to think in a downward way (i.e., thinking of ways in which the past situation could have been worse) should have thoughts that are oriented throughout the event, or after the event has occurred. From the qualitative data, three time orientations emerged: before event, during the event, and post event.

The "before event" category referred to when the participant discussed actions, emotions, decisions, etc. that might have been altered before the negative event occurred. For example, one participant stated, "If only I hadn't reenlisted, or had chosen assignment." This indicates that the participant wished to change a decision they made before the negative event they were told to think about. The "during the event" category referred to actions, emotions, decisions, etc. throughout the actual negative event. For example, "If only I had paid more attention to the situation" implies that the participant wished to change their actions that occurred throughout the negative event they chose to think about. Finally, the "post event" category referred to actions, emotions, decisions, etc. after the chosen negative event occurred. "Well at least we all got out of there okay" regards one's feelings surrounding the outcome of the negative event.

Fifty percent of the total codes (32 codes) for the upward manipulation answers were oriented before the event, with 47% of the upward manipulation codes oriented during the event. Only one answer (3%) classified as a post event. Furthermore, of the total codes (38 codes) for those in the downward manipulation condition, 55% were oriented after the event, whereas 39% were oriented during the event. Only two of these codes (5%) were classified as oriented before the event. As most of the responses in the upward condition were oriented before and during the event, and responses in the downward condition were oriented during and after the event, it

appears that the manipulation was successful at altering thought processes in a counterfactual way.

Manipulation Themes. Through thematic analysis of responses to the manipulation prompts, four themes emerged: external perceived control, self-blame, benefit finding, and resilience. Tables 5 (see page 57) and 6 (see page 58) display examples and the frequencies of each theme found within manipulation responses.

Theme 1: External Perceived Control. Some participants indicated alternatives to their negative event that were outside of the limits of their control (19.4%). For example, one female participant said, "If only I wasn't a female, it would've been so much easier to connect with the other cadets and not feel isolated from friendships." Being female is something that one has no control over, and may be viewed as a negative attribute for military members. Other examples include: "If only there was more time," "If only they hadn't let a known rapist join the Navy after the Marines kicked him out, I wouldn't have been assaulted," and, "Well at least the command figured out what really happened."

Theme 2: Self-Blame. Self-blame in this study is defined as attributing the outcome of a negative event to one's own actions, decisions, and/or emotions. Participants seemed to internalize and blame themselves for negative outcomes, and as such, the theme of self-blame was endorsed the most by those in the upward counterfactual condition (i.e., If only…), since upward counterfactuals revolve around the amelioration of negative outcomes. There were three ways in which self-blame was articulated: performance-based self-blame, life-choice based self-blame, and vigilance-related self-blame.

The most endorsed subcategory of self-blame was life-choice based (35.4%). This is qualitatively different from performance-based self-blame, as life-choice based refers to choices

and decisions made that could have preemptively helped to avoid the negative experience, or even their military/deployment experience as a whole. For example, one participant indicated "If only I had stayed enlisted instead of becoming an officer." This participant is blaming their own decision to become an officer, as staying enlisted could have helped them to avoid a negative outcome, possibly providing for a more positive one. Another example of life-choice based self-blame is "If only I would have taken my training more seriously." In this example, the participant is blaming their earlier decision to not take their training seriously as the reason why a negative event may have occurred: If they had taken their training seriously, they might have had a more positive outcome than the one that had occurred. As such, this life-choice based self-blame is rooted more in one's overall decisions, instead of their actions regarding their performance.

The second most endorsed subcategory was performance-based self-blame (32.3%). This refers to an explicit choice, action, or decision made surrounding the actual negative event the participant was told to think about. For example, one participant said, "If only I hadn't changed the seating in the vehicles, he wouldn't have been the one that was hit." The participant is blaming their own actions during the actual negative event as the reason why someone else got hurt. In another example, "If only I had been the driver," the participant is attributing the outcome of a negative event to the decision to not drive, assuming that if they were the driver, the situation would have turned out differently, perhaps with a positive outcome. That positive outcome, of course, cannot be assumed, but the participant may believe that this change in his performance might have contributed to at least a different outcome than the one that transpired.

Lastly, some participants blamed themselves over their lack of vigilance during the negative event (9.7%). For instance, one participant mentioned "If only I had paid more attention

to the dirt covered road I wouldn't have gotten blown up." This implies that the participant counterfactually thinks that being more attentive would have resulted in a positive outcome. They are essentially blaming their lack of vigilance in the moment as the impetus for the negative outcome. Surprisingly, the subcategory of survivor's guilt, or the notion that one should have died instead of someone else after a traumatic event, was only expressed by one participant: "If only I had been the one who died in Musah Qaleh."

Theme 3: Benefit Finding. The theme of benefit finding was defined as the reference to positive outcomes of one's negative experience, or their time in the military. Not surprisingly, most participants within the downward manipulation condition ("Well at least…) seemed to endorse benefit finding, since downward counterfactuals revolve around the notion that a negative event could have been worse. There were five different types of benefit finding displayed by the participants: basic needs, harm avoidance, time, and positive appraisal of their military experience as a whole, as well as other various positive outcomes.

The basic needs subcategory (14.3%) refers to the participant presently having the resources needed to sustain life, such as food, shelter, family, and health. Examples from participants include "Well at least all my needs are met," and "At least I'm back with my family and those who like having me around." Being alive is also considered a basic need, for example, a participant mentioned "Well at least I'm alive and healthy." Receiving monetary benefits from the military were also considered a part of the basic needs subcategory, such as "Well at least if I die from falling overboard my family would get the insurance money," and "Well at least I'm getting my tuition paid."

Participants who found benefits in the fact that they or others avoided a more serious injury or death were considered to endorse the subcategory of harm avoidance. Harm avoidance

was the most endorsed subcategory of the benefit finding theme (30.6%), as it can be considered to be directly related to the actual process of downward counterfactual thoughts. For example, one participant stated, “Well at least it was just my ankle [that broke].” This participant is implying that the situation could have been worse, as they could have injured more than just their ankle. Another participant stated, “Well at least, no one died,” implying that the situation could have resulted in the deaths of others and possibly themself. Because both participants avoided harm, both injury and death, these individuals are displaying harm avoidance. They are essentially finding benefit from not being harmed (or harmed worse) during their negative event.

Another endorsed subcategory within the benefit finding theme was time (14.3%). This subcategory is defined as a reference to a participant's time not in combat, the military, or the particular negative situation. Participants indicated that they found benefit in the fact that their time with the military is over. Examples of this include “At least I'm not in the military anymore,” and “Well at least it is over.” On the other hand, participants also found benefit in the fact that they have time before they must return to combat. For example, some participants stated “Well, at least I don't have to do it again for another three years,” and “Well at least I was only in for 2 years. Well at least they didn't call me back from IRR.”

The least endorsed subcategory was positive appraisal (8.2%). This subcategory is defined as a participant assessing their time in the military as a positive experience. It could also be defined as the participant indicating that their military service was worth the experience. For instance, a participant stated, “Well at least I’m doing service for my country,” indicating that this participant found benefit in the mere service to his country, regardless of the negative event. Another example states, “When it is all said and done the memories I have were of fun, stressful, and exhilarating days with some of my closest friends,” indicating that this participant finds

benefit in his negative experience, in that the experience and his service culminated in a worthy outcome.

Lastly, there were some responses that can be considered benefit finding that do not fit into the above subcategories. As such, they were coded as "other" (28.6%) For example, a participant responded saying "Well at least I can smile." This can be considered benefit finding, as it is a positive outcome of their negative experience, but it is not captured by the basic needs category. Another participant stated, "At least I didn't get in trouble or blamed for it." This participant is finding benefit in that they did not get blamed for the negative event they were asked to think about, however, it is not necessarily considered harm avoidance, since there was no physical harm to avoid.

Theme 4: Resilience. Although this theme was the least endorsed by the sample (4%), it is worth mentioning. Resilience was defined within this study as the reference to an ability to keep going. Only two participants endorsed this theme. One stated "At least I was able to keep going" and the other stated "Well at least i took a Master Resilience Training Course that taught me how to be resilient."

Discussion

The present study sought to test whether different types of counterfactual thoughts may impact military service members' and veterans' stigma towards seeking help, as well as their meanings made surrounding their military experience. The results found no significant differences or interactions between the two different types of counterfactual thoughts (upward and downward) and resulting stigma or meaning making. This could be due the strength of the manipulation of counterfactual thoughts. As stigma is very ingrained within an individual and hard to extinguish, the manipulation may have been too simple to impact one's internalized

stigma or meaning making processes. A stronger manipulation, such as manipulating counterfactual thoughts in an in-person scenario, may be more successful at using counterfactuals to significantly impact one's stigma or meaning making processes. The manipulation of counterfactual thoughts, however, appeared to be successful at altering the content of participants' thought processes as the majority of responses in the upward condition (i.e., "if only") had more antecedent-based orientations, and most responses in the downward condition (i.e., "at least") had more outcome-based orientations.

Although the main hypotheses were not supported, there were some significant observed relationships between PTSD symptoms, depression symptoms, self-stigma of seeking help, and meaning in military life. Consistent with prior literature (Brown, Antonius, Kramer, Root, & Hirst, 2010), those with high endorsed PTS scored higher on trauma centrality than those with low endorsed PTS. This is interesting given the negative relationship between trauma centrality and presence of meaning. There was also a positive correlation between trauma centrality and PTSD. This could mean that those with PTSD are integrating their trauma within their identity, which may be preventing them from creating coherent meaning about their military life.

This possible interpretation is supported by a study by Groleau, Calhoun, Cann, and Tedeschi (2013) that found that trauma centrality explains some of the variance that contributes to PTS symptoms. Furthermore, George, Park, and Chaudoir (2016) found that belief and goal violations mediate the relationship between trauma centrality and PTSD symptoms. As such, they concluded that putting trauma at the center of one's identity may be considered a violation of one's global meaning, maintaining PTSD symptoms (George et al., 2016), which could then lead to destructive, self-critical meanings made (Larner & Blow, 2011), if meaning is made at all.

Interestingly, the present results also indicate that there was a moderate, positive relationship between self-stigma of seeking help and search for meaning in military life. Those with higher stigma towards seeking help could have higher search for meaning if they already have distorted and self-critical meaning presently within their military life, as exemplified by the significant, negative relationship between search and presence of meaning. It seems reasonable to suggest that if one already formed a distorted, destructive, and self-critical meaning, they may wish to seek a greater interpretation of their time within the military in order to justify their suffering, especially if they assume causal responsibility for the negative outcome through self-blame.

More specifically, if one feels like their own actions or decisions could have changed the situation, they may be more likely to have their global or situational beliefs surrounding the event violated, leading to incoherent meanings made, fostering a greater search for meaning within their military life. Self-blame is inherently an internal process that occurs when someone feels responsible for the outcome of a situation (Fraser, 2001), and has been tied in previous studies to counterfactual thoughts (Branscombe, Wohl, Owen, Allison, & N'gbala, 2003). Self-blame was an essential theme that was highly endorsed within responses to the upward counterfactual condition, whereas responses within the downward counterfactual condition highly endorsed themes of benefit-finding and resilience. Such theme endorsement could shed light as to why different types of counterfactuals were not related to stigma of seeking help, as well as meaning making.

There is evidence that just thinking counterfactually, rather than factual-focused thinking, can amplify blameworthy feelings of guilt and shame (Mandel & Dhami, 2005). If this is so, then it could be that merely thinking counterfactually is only magnifying one's resulting self-blame

from the outcome of an event. Upward counterfactual thoughts may not be changing one's resulting stigma towards seeking help or meaning making, but maintaining it. Furthermore, internal processes of self-blame and benefit finding may not coincide with one's public stigma surrounding seeking mental health help.

As downward counterfactuals have been shown to promote meaning making (Roese, 1994), it is surprising that there were no statistically significant effects of generating downward counterfactuals on presence and search for meaning. However, when looking at the generated counterfactual responses, the most endorsed theme was benefit finding. Benefit finding has been found in previous studies to be generated by downward counterfactual thoughts (Kray et. al., 2010). So why did the generation of downward counterfactuals not appear to increase presence of meaning in military life in this study? This could be related to the length of time the participant was or is in the military. Wood, Britt, Wright, Thomas, and Bliese (2012) found that benefit finding as a coping strategy is limited by the length of time served in the military. Those who were in the military longer were less positively affected by using benefit finding than those who served a shorter amount of time (Wood et al., 2012). Unfortunately, length of military service was not measured within this study.

Benefit finding has also been shown to be higher within individuals with lower levels of PTSD (Wood et al., 2012). While this could be due to the positive effects of using benefit finding as a coping strategy, it could be possible that there is a dose-response relationship between benefit finding and PTSD or depression symptoms. As the average levels of endorsed PTSD and depression symptoms of participants within this study were relatively high, there might be an observed ceiling effect. This ceiling effect could prevent the utilization of downward

counterfactuals and benefit findings for both PTSD/depression symptoms, as well as its effect on stigma of seeking help and meaning making.

Several limitations within this study should be mentioned. First, the sample was relatively small. As military members are a very specific and selective group, it was hard to reach members of this population from an academic setting, even with the support of the campus Coordinator of Veteran and Military Services. Most of the participants were self-selected from social media websites focused on military issues (e.g., Reddit.com), which may reflect a particular ongoing salience of their service that might not be typical of veterans who do not choose to participate in these online communities. As such, these results cannot be considered representative of the entire military population. The sample was also greatly reduced, by more than half, due to participants not completing the survey. Why this happened is unknown, but it could be due to the uncomfortable nature of the topic, and possible increased avoidance behaviors for those with high PTSD or depression symptoms.

There were also large, observed differences in endorsed PTSD symptoms, with higher intensity service experiences (i.e., Marines vs. other branches, veteran vs. active duty, and deployed vs. not deployed) displaying more extreme scores. While this was expected, such severity of experiences may mitigate the impact of the manipulation of counterfactuals on stigma and meaning making. Future studies could compare the effectiveness of using counterfactual thoughts on resulting stigma and meaning making between high intensity and low intensity military service experiences.

Furthermore, the MLQ (Steger, 2010) was adapted for this study in order to assess meanings made within one's own military life, rather than meaning making in general, as the instrument was originally developed. While this was done in order to determine if one can have

meaning within their military life, the internal consistency of the presence of meaning subscale was very low. However, the other subscale to the MLQ, search for meaning in military life, had high internal consistency. Future studies may wish to explore how to modify such scales to assess specific areas of people's lives, such as military life, more consistently.

There are several implications one can take away from this study for future research. First, it appears that using downward counterfactuals helped to qualitatively create positive meaning (i.e., benefit-finding) from many participants' traumatic experiences. Those in the upward condition appeared to generate thoughts that were more self-destructive, mostly blaming themselves over things they cannot or could not change, which might help to increase or maintain symptoms of PTSD and depression. It may be beneficial to incorporate the use of downward counterfactual thoughts within interventions that emphasize positive cognitive reconstructing. As the present manipulation may have been too weak to impact one's stigma or meaning making, it may be that more direct, and in-person manipulations may be stronger, especially if there is an already established, positive therapeutic alliance. However, such downward counterfactuals must be generated within the individual, as externally imposed counterfactual thoughts from another person may be considered meaningless or belittling.

The ultimate goal of research on this topic is to develop interventions that reduce self-stigma and encourage military service members and veterans to seek mental health help. While this study could not definitively say if counterfactual thoughts change one's self-stigma of seeking help, future research may be able to better elucidate this relationship. It could also be that a military service member or veteran's stigma towards mental health is rooted within public stigma as opposed to self-stigma. For example, career worry has been found to be a strong predictor of not seeking treatment within military populations (Brown & Bruce, 2016). As such,

one's public stigma surrounding seeking help may be more influential on treatment seeking behaviors than self-stigma. Furthermore, perhaps downward counterfactual thoughts can have a positive influence on public stigma, as it may help to find benefit within a negative situation, as well as create meaning surrounding one's potential external attributes of negative experiences, rather than the internalizing nature of upward counterfactual thoughts. Future studies assessing how upward and downward counterfactual thoughts relate to public stigma may be more useful in determining how to increase treatment seeking behaviors among military service members and veterans.

Stigma is still a large obstacle to seeking mental health services, especially within military populations. The way in which military service members internalize self-stigma towards mental health, as well as self-critical meanings made surrounding their service experience, can have harmful and potentially deadly outcomes. Future research can help to determine how to increase military members' participation with mental health services, by investigating how to decrease stigma surrounding the mere decision to seek help. Interventions within the military to try to decrease stigma of psychological services, as well as within the community, should be implemented to help to ameliorate this issue. If successful, it could potentially lead to higher rates of mental health attendance by military service members and veterans, fostering greater care for the people who put their lives on the line for their country.

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Appendix A

PTSD Checklist- Military Version (PCL-M)

Instructions: Below is a list of problems and compaints that veterans sometimes have in response to stressful military experiences. Please read each one carefully, then chose the corresponding numbers to indicate how much you have been bothered by that problem in the past month. Use the following scale:

Not at all	A little bit	Moderately	Quite a bit	Extremely
1	2	3	4	5

1. Repeated, disturbing *memories, thoughts or images* of a stressful military experience?
2. Repeated, disturbing *dreams* of a stressful military experience?
3. Suddenly *acting or feeling* as if a stressful military experience *were happening again* (as if you were reliving it)?
4. Feeling *very upset* when *something reminded you* of a stressful military experience?
5. Having *physical reactions* (e.g. heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful military experience?
6. Avoiding *thinking about or talking about* a stressful military experience or avoiding *having feelings* related to it?
7. Avoiding *activities or situations* because *they reminded you* of a stressful military experience?
8. Trouble *remembering important parts* of a stressful military experience?
9. *Loss of interest* in activities that you used to enjoy?
10. Feeling *distant or cut off* from other people?
11. Feeling *emotionally numb* or being unable to having loving feelings for those close to you?
12. Feeling as if your *future* will somehow be *cut short*?
13. Trouble *falling or staying asleep*?
14. Feeling *irritable* or having *angry outbursts*?
15. Having *difficulty concentrating*?
16. Being *"super-alert"* or watchful or on guard?
17. Feeling *jumpy* or easily startled?

Appendix B

Patient Health Questionnaire- 9

Over the last two weeks, how often have you been bothered by any of the following problems? Please answer according to the scale below:

Not at all	Several days	More than half the days	Nearly every day
0	1	2	3

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead or of hurting yourself in some way

Appendix C

Centrality of Events Scale

Please think back upon the most stressful or traumatic event in your life and answer the following questions in an honest and sincere way, by circling a number from 1 to 5.

1. I feel that this event has become part of my identity.

   Totally disagree 1 2 3 4 5 Totally Agree

2. This event has become a reference point for the way I understand myself and the world.

   Totally disagree 1 2 3 4 5 Totally Agree

3. I feel that this event has become a central part of my life story.

   Totally disagree 1 2 3 4 5 Totally Agree

4. This event has colored the way I think and feel about other experiences.

   Totally disagree 1 2 3 4 5 Totally Agree

5. This event permanently changed my life.

   Totally disagree 1 2 3 4 5 Totally Agree

6. I often think about the effects this event will have on my future.

   Totally disagree 1 2 3 4 5 Totally Agree

7. This event was a turning point in my life.

   Totally disagree 1 2 3 4 5 Totally Agree

Appendix D

Self-Stigma of Seeking Help Scale (SSOSH)

Instructions: People at times find that they face problems that they consider seeking help for. This can bring up reactions about what seeking help would mean. Please use the 5-point scale to rate the degree to which each item describes how you might react in this situation:

Strongly Disagree	Disagree	Agree & Disagree Equally	Agree	Strongly Agree
1	2	3	4	5

1. I would feel inadequate if I went to a therapist for psychological help.
2. My self-confidence would NOT be threatened if I sought professional help.
3. Seeking psychological help would make me feel less intelligent.
4. My self-esteem would increase if I talked to a therapist.
5. My view of myself would not change just because I made the choice to see a therapist.
6. It would make me feel inferior to ask a therapist for help.
7. I would feel okay about myself if I made the choice to seek professional help.
8. If I went to a therapist, I would be less satisfied with myself.
9. My self-confidence would remain the same if I ought professional help for a problem I could not solve.
10. I would feel worse about myself if I could not solve my own problems

Appendix E

MLQ Please take a moment to think about what makes your military life and existance feel important and significant to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. If you have retied from the military, please respond regarding how your past service influences your current life. Please answer on a scale of 1-7.

Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't say True or False	Somewhat True	Mostly True	Absoultely True
1	2	3	4	5	6	7

1. I understand my military life's meaning.
2. I am looking for something that makes my military life meaningful.
3. I am always looking to find my military life's purpose.
4. My military life has a clear sense of purpose.
5. I have a good sense of what makes my military life meaningful.
6. I have discovered a satisfying purpose in my military life.
7. I am always searching for something that makes my military life feel significant.
8. I am seeking a purpose or mission to my military life.
9. My military life has no clear purpose.
10. I am searching for meaning in my military life.

Appendix F

Please think about a relatively negative experience (or experiences) related to your time in the military (e.g., combat, deployment, ROTC, active duty, training drill. Unit Training Assembly, tours, etc.) It does not need to be the most negative or distressing event that you can think of.

Upward Manipulation Condition: People often have thoughts like, "if only..." after negative events, in that they can see how things might have turned out better. For example. A Poughkeepsie woman who recently sustained injuries when she was hit by a car told reporters, "If only I had looked down that street a second time, I would have been fine." In the space below, please generate sentences using "if only..." regarding your experience that you were asked to think about. Please write as many sentences as you would like, but try to list at least three.

Downward Manipulation Condition: People often have thoughts like, "well, at least..." after negative events, in that they can see how things might have turned out even worse. For example. A Poughkeepsie woman who recently sustained injuries when she was hit by a car told reporters, "Well, at least my children were not in the car, or they could have been hurt and it would have been a lot worse." In the space below, please generate sentences using "well, at least..." regarding your experience that you were asked to think about. Please write as many sentences as you would like, but try to list at least three.

Control: Please describe what you ate today.

Table 1

Descriptive Statistics and Bivariate Correlations among Independent and Dependent Variables

Variable	Range	*M*	*SD*	1	2	3	4	5	6	7
1. Age	20-60	34.39	10.49	_						
2. PTSD	17-75	37.63	15.88	-.159	_					
3. Depression	9-34	16.98	7.16	-.145	.793**	_				
4. Trauma Centrality	1-5	3.19	1.26	.173	.453**	.467**	_			
5. SOSSH	10-50	24.83	9.84	-.192	-.122	.064	-.102	_		
6. Search for Meaning	5-35	17.65	8.37	-.401**	.165	.359**	.132	.328*	_	
7. Presence of Meaning	5-35	24.88	7.39	.038	-.068	-.256	-.342*	-.050	-.389**	_

Note. $N = 53$. SSOSH = Stigma of Seeking Help Scale. * $p < .05$, ** $p < .01$.

Table 2

Demographic Breakdown of Descriptive Statistics among Independent and Dependent Variables

	PTSD		Depression		Trauma Centrality		SSOSH		Search for Meaning		Presence of Meaning	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Branch of Service												
Army (*n* = 31)	33.03	14.64	16.19	7.11	3.19	1.22	24.97	9.48	17.87	9.46	23.50	7.68
Navy (*n* = 7)	43.29	14.90	17.71	8.28	3.12	1.28	17.86	5.58	17.57	7.28	22.71	8.56
Air Force (*n* = 5)	36.80	22.93	14.40	5.03	2.57	1.46	29.40	6.47	17.00	4.18	28.00	5.74
Marines (*n* = 10)	47.90	12.01	20.20	7.25	3.56	1.36	27.00	12.86	17.33	7.84	29.44	3.97
Degree of Service												
Active Duty (*n* = 14)	34.54	15.23	15.93	7.36	2.72	1.43	28.71	10.38	20.29	8.39	25.50	8.15
National Guard (*n* = 9)	27.11	7.56	14.33	3.71	2.94	1.13	24.33	10.79	18.33	8.63	25.25	6.04
Veteran (*n* = 30)	42.13	16.50	28.27	7.70	3.49	1.16	23.01	9.08	16.17	8.22	24.48	7.57
Deployment												
Yes (*n* = 34)	41.76	14.02	17.24	6.64	3.21	1.24	25.59	10.48	17.76	7.85	25.55	6.35
No (*n* = 19)	30.47	16.74	16.53	8.17	3.14	1.33	23.39	8.62	17.44	9.49	23.67	9.07

Note. *N* = 53. SSOSH = Stigma of Seeking Help Scale.

Table 3

Themes for Motivation for Joining the Military

Theme	Frequency	Examples
Money & Benefits	29%	"I could not afford to live on my own in California and wanted to move out." "They would pay for college."
Patriotism & Civic Duty	14%	"Duty and honor." "Always wanted to serve my country."
Change the World & Make a Difference	4%	"Desire to make a difference." "Make the world a better place."
Travel & Adventure	12.5%	"Have new experiences." "Travel."
Family Tradition	11%	"Grandfather and Father served. I wanted to carry on the tradition." "Pressure from my Father and mother."
No Plan	3%	"Not a clue. Just something I wanted to do." "I didn't have a plan after graduating high school."
Structure & Stability	3%	"Military promised stability, a good paycheck…" "Structure."
Terrorist Events	5.5%	"Watching the invasion back in 2002." "Iraq." "9/11 events."
Other	18%	"Warrior ethos." "Hoped to meet good people, learn a trade." "Self discovery."

Table 4

Themes for Negative Event Description

Theme	Frequency	Examples
Death of Friend/Commanding Officer	9.4%	"Team leader being shot in head by friendly fire and giving him first aid." "I cleared an aircraft to fly for the day and long story short, the aircraft failed to maintain altitude resulting in the death of two Marines and the physical loss of the two pilots legs."
Sexual Assault/Harassment	11.3%	"Having a male service member appear in the showers when I was alone during the female shower time…" "Sexual Harassment." "Being falsely accused of sexual assault."
Bad Treatment		
Discrimination within Military	5.6%	"Senior leadership allowed continued racial neglect and abuse." "Many of the young men were uneducated and were in turn quite racist towards minorities."
From Superior Officers	7.5%	"Being treated like a piece of shit every min. of every day." "Insulted and spoken down to be senior NCOs."
Personal Injury	3.8%	"Broke my ankle." "Water torture in boot camp, made to drink water till you throw food up."
Combat/Explosions/IEDs	19.2%	"Having my best friend at the time get blown apart from an IED." "I was involved in several ambushed staged by insurgents. Most of them included IED attacks." "Getting mortared; getting shot at."
Extreme Stress & Exertion	13%	"Just constant, unending stress of all kinds—physical, mental, academic." "Working on the flight deck of an aircraft carrier, constantly working on the edge of the flight deck where there were no safety nets."

Killing Others	2%	"I shot a young teenager in the head."
Other	28.3%	"Literally all four years of USMA." "The worst thing I've dealt with is crappy paperwork. I hate paperwork." "losing pressure in the forward trim tank and sinking uncontrollably, watching Haitians drown."

Table 5

Upward Counterfactual Themes

Theme	Definition	Frequency	Examples
External Perceived Control	Reference to events that are thought to be outside of one's own influence	19.4%	"If only there was more time." "If only I was told to be polite, i wouldn't have been in that situation." "If only I had been given appropriate after care."
Self-Blame			
Performance Based	Refers to an explicit choice or action having to do with the negative event.	32.3%	"If only I had moved faster I could have saved his life." "If only I said I didn't think they should fly that day." "If only I had just moved out of the back of the mrap and helped the guys that were outside I definitely could have helped in avoiding the whole thing
Life-Choice Based	Refers to life choices or actions that could have been made preemptively to avoid the experience as a whole.	35.4%	"If only I had switched majors sooner I could've saved myself months of hurt, stress, and pain." "If only I had never gave into guilt by family to go in." "If only I had more experience."
Vigilance	Refers to wishing one had paid more attention during the negative event	9.7%	"If only I was more guarded." "If only I had paid more attention to the situation it could have been avoided."
Survivor's Guilt	Expressing guilt over not having died during their negative experience.	3.2%	If only I had been the one who died in Musah Qualeh."

Table 6

Downward Counterfactual Themes

Theme	Definition	Frequency	Examples
Benefit Finding			
Basic Needs	Refers to food, shelter, family, health, money, education, etc.	14.3%	"Well at least we will eat later. Well at least I am getting in shape." "Well at least if I die from falling overboard my family would get the insurance money."
Harm Avoidance	Reference to the avoidance of one's own death/death of others, or more serious injury to oneself or others.	30.6%	"Well at least it wasn't a child." "Well at least I didn't have to go to war." "Well at least no one died at my hands." "Well at least we weren't subsequently ambushed after the IED strike..."
Time	Reference to their time not in combat, that their time in combat or their duty is over, or that they are not in the military anymore.	14.3%	"Well at least it is over." "Well at least I don't have to do it again for another three years." "At least I'm not in the military anymore."
Positive Appraisal	Assessing their time in the military as a positive experience. That their time in the military was worth it.	8.2%	"As long as there was someone to joke around with the situation was always better." "Well at least I'm doing service for my country."
Other		28.6%	"Well at least I remember them being interrogated as I left army." "Well at least I can laugh at fart jokes." "Well at least I can eat this pizza, only to throw it up later." "At least I can think for myself."
Resilience	Participant Refers to an ability to keep going.	4%	"At least I was able to keep going." "Well at least I took a Master Resilience Training Course that taught me how to be resilient."