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The War After Battle: Morale, Post-Traumatic Stress And Long-Term Welfare Of Combat Soldiers

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THE WAR AFTER BATTLE: MORALE, POST-TRAUMATIC STRESS AND LONG-TERM WELFARE OF COMBAT SOLDIERS

by

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This thesis, submitted by Corey Doan in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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Dean of the School of Graduate Studies

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PERMISSION

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Corey Doan

Date 8.2.18

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For Ellen, Olivia Creek, and all the
soldiers and families who have served
(to include my own)

ABSTRACT

There is a historical, literary, and philosophical record of the effects of combat on mental health. Modern psychological research has focused on the relationship between combat deployment and a litany of mental health issues which include post-traumatic stress disorder (PTSD), various forms and manifestations of depression, substance abuse with a specific focus on alcohol, as well as social, family, and work-life functional impairment. This study introduces a customized 18-item Integrated Military Morale Questionnaire (IMMQ) which was designed to measure the proposed basic components of military morale: personal morale, cohesion, and esprit de corps. Data from 185 United States military members were collected using Amazon's MTurk survey program and indicated a significant relationship between military morale and maladjustment indicators. The relationship between morale and PTSD was not significant. The IMMQ demonstrated aspects of reliability and validity and additionally, MTurk shows promise for surveying military populations. Results and implications are discussed.

CHAPTER I

INTRODUCTION

The seemingly simple quote, “only the dead have seen the end of war”, was made famous by General Douglas McArthur to military service members. He attributed the quote to Plato at the time, though this statement is not found in any of Plato’s dialogues and was instead likely obtained from George Santayana in the 1920s. While there may exist some measure of controversy or misattribution, the statement is as fitting after the Peloponnesian War as it was after World War I. It not only harkens to the eternal nature of conflict in humanity, but also to the lasting remnants of battle which do not rest until a soldier’s death. This encapsulates conflict and morale for warriors in battle: a simple statement marred by complexity and misattribution.

Military history and the history of psychology are interwoven and complex bedfellows; Dixon and Dixon (2011) relay a multitude of reasons why there is hesitation on both sides in acknowledging the relationship, especially when folly is involved. An oversimplification is that individuals on the military side do not care greatly for having their motivations and actions explained by distant academics, nor do they wish to have an ineffable event such as war oversimplified with erudite and esoteric psychological terminology. Practically, however, history is made by people and events which are influenced and described by mechanisms of social sciences, thus the relationship is not only inevitable but clearly linked in the literature.

Two main avenues are generally considered the impetus for the relationship: 1) the military is an applied test-bed of captive subjects, and 2) the wide range of tasks, people, and structure allow for innovation and conceptualization of new and interesting psychological mechanisms (Driskell & Olmstead, 1989). In 1918 in the United States, the then-president of the

American Psychological Association (APA) APA Robert Yerkes began to support and call upon researchers to evaluate and examine issues with combat in World War I (1918). Within a few years, well over one million recruits and soldiers had been administered the newly formed intelligence tests (Uhlaner, 1977). By World War II, a bank of psychological data and participants had become a tinderbox for wide-scale development of research, the likes of which the academic community had not yet experienced (Stouffer, Suchman, DeVinney, Star, & Williams, 1949). For a summary of the different branches, technology trends, and major events of this history, reference Driskell & Olmstead (1989).

Effects of Combat Deployment

There is a great historical, literary, and philosophical record of the effects of combat and mental health. Modern psychological research has focused on the relationship between combat deployment and a litany of mental health issues which include post-traumatic stress disorder (PTSD), various forms and manifestations of depression, substance abuse with a specific focus on alcohol, social, family, and work-life functional impairment (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004; Thomas, Wilk, Riviere, McGurk, Castro, & Hoge, 2010). Additionally, research has addressed the overall increased load on mental health services such as the Department of Veteran's Affairs (Bergman, Przeworski, & Feeny, 2017). Combat deployment has been largely painted as a negative life event in the social sciences.

A missing topic from most major research is a link to any positive outcomes from combat deployment. Some research has explored an increase in resilience and toughness in heavy combat veterans (Elder, & Clipp, 1989) as well as active combat experiences having better outcomes than passive ones (Britt, Herleman, Odle-Dusseau, Moore, Castro, & Hoge, 2017). The

vast majority of studies, however, have examined the effects and attributes of combat from an anti-war perspective. This has been predictable within the context of a documented liberal skew in the social sciences (Jussim, 2012; Skitka, 2012; Jussim, Crawford, Anglin, & Stevens, 2015) and the underrepresentation of veterans in the field of psychology. The APA does not even track military history in their demographic data base that includes vast details on education, region, subspecialties, multiple gender categories, and other attributes. This is a critical factor that warrants consideration when assessing any of the literature related to combat and combat deployment in the social sciences. The surge of combat PTSD literature produced in conjunction with the Global War on Terror seems to have done little to stem the surge of PTSD and suicide in veterans (Department of Veterans Affairs, 2017). While the link to PTSD and combat trauma seems clear in relation to major traumatic events, the paths through which these effects are transacted remains incompletely understood.

PTSD and Combat

From the older "soldier's heart" and "railway spine" through "shell shock" in World War I and "battle fatigue" or "combat stress reaction" after World War II (Trimble, 1985), to the updated modern iteration of PTSD, a common and universal theme seems to resonate between soldiers of any era and any conflict: war is hell. The trauma experienced from these conflicts had themes related to anxiety, sleep issues, depression, and re-living the experiences from the battle field. The modern criteria for PTSD mirror many of these elements (APA, 2013), and it is likely these universal features will remain intact for conflicts to come.

Forceful new factors derived from other research areas of psychology, such as grit, resilience, and moral injury, have found a home in military PTSD and combat trauma research. A

concept such as resilience may account at least partially for many military outcomes, such as insulation against PTSD (Agaibi, & Wilson, 2005), M-16 rifle performance skill enhancement (Walker, 2017), or other influences. While resilience is important, peritraumatic disassociation and severity of combat exposure itself are together one of the largest contributing factors to severity and longevity of PTSD in military members (Foy, Sipprelle, Rueger, & Carroll, 1984; van der Velden, & Wittmann, 2008). While researchers are beginning to understand the relationships between PTSD severity and pre-traumatic variables, such as resilience and social support, the situation of the traumatic exposure has remained one of the most important features.

Assessment of specific elements of combat exposure and PTSD can also prove difficult; misrepresentations of combat exposure and service has been common in research samples (Frueh, Elhai, Grubaugh, Monnier, Kashdan, Savagean, & Arana, 2005; Frueh, Hamner, Cahill, Gold, & Hamlin, 2000), and few efforts have been taken to verify actual severity and reoccurrences of combat exposure in most research. The modern American conflicts of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) have been unique in the extent to which they have accelerated PTSD and combat-related research in areas such as evaluation, differential diagnosis, and the extent to which symptomatic presentations represent manifestations of illness versus over-pathologized normative responses to the stress of combat (Marx, 2009).

Soldiers vary extensively in their experience and reactions to combat. To date there has been no link established between military occupational specialty (MOS), including the distinction between service support and combat arms (Dunbar, 2016), and PTSD. There are lasting implications to combat PTSD and support, and while residential treatment has

demonstrated its effectiveness (Campbell, Loeffler, Pulos, & Campbell, 2016), the field and entire system struggle to understand and support combat veterans and PTSD.

Personality Differences and Military Service

An underdeveloped area of investigation in the culture and context of military service and PTSD is personality and coping styles. Many pre-traumatic factors such as childhood emotional issues, abuse, and fatalistic and negativistic views are related to the onset, maintenance, and prevalence of PTSD (APA, 2013). Selected personality facets, such as neuroticism, have been linked to the risk of PTSD (Holeva, & Tarrier, 2001). From the MMPI, Hypochondriasis, masculinity-femininity, psychopathic deviate, and paranoia scales scores are associated with PTSD symptomatology (Schnurr, Friedman, & Rosenberg, 1993). These links have been incorporated into modern conceptualizations that trace stress reactions from internal anxiety to dissociation to more severe PTSD outcomes. More research is required to fully understand the relationships between military culture, PTSD, and personality.

Culture and Sexual Orientation

The common prototypical conceptualization of an American soldier not only includes a cluster of personality traits but also an emphasis on the assertion of masculinity in self-image. The end of the Department of Defense's "Don't Ask, Don't Tell" (DADT) policy in 2011 was another step in a long and complicated history of soldiers and the protection of their identity ideal. Even with the conclusion of the DADT policy, many questions remain about the image and openness of the military for those who identify outside the prototype (Allsep, 2013). Current literature still indicates that some LGBT service-members, such as lesbians, state that military

culture lags behind policy and that they had fears of repercussion due to their identity (Mount, Steelman, & Hertlein, 2015). The effects of the current debate about transgendered service members requires even further investigation to understand the complex nature of military systems, LGBT culture, and their impacts on morale and long-term mental health. The prevalence and duration of PTSD symptoms has been greater among women than men in law enforcement and other emergency fields (Lilly, Pole, Best, Metzler, & Marmar, 2009), and important impatient treatments have been found to have greater success for women soldiers (Campbell, Loeffler, Pulos, & Campbell, 2016). The impacts of gender and gender-identity on combat-related PTSD, as well as unit cohesion and morale, remain important foci of contemporary military research.

Life Adjustments and Effects

The effort to understand the long-term impacts of military life and post-separation adjustment represents a major challenge for mental health services and individuals. Soldiers often experience the seeking of mental health services as negative and stigmatizing (Mohatt, Boeckmann, Winkel, Mohatt, & Shore, 2017; Jones, Mitchell, Clack, Fertout, Fear, Wessely, & Greenberg, 2014). While positive military community research shows protective factors can enhance the experience, the stigma of mental health issues in the military is deeply ingrained in military culture (Greene-Shortridge, Britt, Castro, 2007). While social resilience and cultural competencies are able to be taught to soldiers (Cacioppo, Adler, Lester, McGurk, Thomas, Chen, & Cacioppo, 2015), there have been few innovations in military history that markedly reduce the overwhelming impact of PTSD and its treatment among service-members.

The most common mental health outcomes of combat deployment have been PTSD and substance use disorders, particularly alcohol abuse (Fear, Jones, Murphy, Hull, Iversen, Coker, & Greenberg, 2010). Alcohol use is a targeted and specific military issue and has serious ramifications to psychological distress, resilience, and PTSD with returning soldiers (Green, Beckham, Youssef, & Elbogen, 2014; McDevitt-Murphy, Luciano, Tripp, & Eddinger, 2017). While much of the Vietnam and OIF/OEF era research has mirrored this concern about the alcohol use and PTSD link, others have highlighted the heterogeneity of post-traumatic timeline differences in regard to these complex symptom trajectories (Morgan & Desmarais, 2017).

Additional aspects of internalized anger and suicide are salient features of military service as well: members of the military are far more likely to attempt and commit suicide than the general population (Department of Veterans Affairs, 2017). PTSD symptoms, depression, anger and internal hostility are all positively related to suicide risk and possibly act as a mechanism connecting PTSD and suicide in military populations (McKinney, Hirsch, & Britton, 2017). These types of mental health issues not only endanger soldiers' lives but also negatively impact unit effectiveness and retention rates for the military (Wright, Kim, Wilk, & Thomas, 2012). These concepts are also possibly related to the morally difficult and often traumatic experiences of a combat-deployed soldier.

Moral Injury and the Mission

War creates not only physical and emotional injury, but comes with the possibility of injury to personal values and morals. The specific moral impact of war is well-documented (Marx, 2009), and the military has provided a history of hard-made choices. Jinkerson (2016) described moral injury as a trauma which develops from a lack of trust coupled with feelings of

guilt and existential crisis. While guilt and crisis are core symptoms, secondary symptoms manifest such as depression, anxiety, self-harm and others commonly associated with soldiers returning from war (Jinkerson, 2016).

PTSD is related to a host of issues in the legal system for veterans (Tramontin, 2010), and this may be due in part to a tarnishing of moral certitude. Individuals face overwhelmingly complex issues with moral trauma after separation, especially forced separation, from a unit (McCormack, & Riley, 2016). McCormack and Riley (2016) discovered a pervasive theme consisting of an erosion of hope and rigid shame in police personnel discharged due to PTSD. Though some were able to manage these issues to declare a better sense of self, lacking social support from a unit to which one pledges an identity can be a crushing event. The subtler relationship between moral injury and unit morale is currently unrepresented in the literature.

Morale in the Military

Morale, in the context of the military and its operations, has been historically defined in several contexts over thousands of years. It would be nearly impossible to give an all-encompassing and completely integrated definition of military morale in its current state, and would be equally difficult to overstate its importance to military operations and the military community. Morale has often been somewhat improperly operated as an emotional state (Manning, 1994), but most researchers agree that those types of definitions add nothing to the conversation nor elucidate the underlying complexity of the concept in relation to mission completion.

Leadership manuals for the United States Army glorify the role of unit morale and the impact that stellar leadership can levy upon morale (U.S. Army, 2006). It has been called “the

most important single factor in war (Baynes, 1988) but has also been used just as readily as a substitute for lack of depression in organizational psychology. The importance of morale is a theme which resonates operationally in military history as well as psychological research. Manning is clear to point out the difference between the related concepts of "cohesion" and "esprit de corps" to morale (1994); two possible components which may load on an integrated concept of military morale. While unit cohesion and a larger sense of unit belonging may possibly load on morale, the complete structure is thus far unidentified fully.

A positive psychology has recently been suggested to better detail the complex and motivational elements related to morale. A "life worth living" is conceptually associated with morale (Peterson, Park, & Sweeney, 2008) as positive psychology seeks to focus on the enthusiastic and interconnected aspects of the construct. In this regard, researchers have begun to separate morale from concepts such as depression (Britt, Dickinson, Moore, Castro, & Adler, 2007) in positive psychological contexts using soldiers on mission in Kosovo. Morale was distinctly predicted by meaningful work and confidence in the unit and leadership, while depression was predicted by stressors and negative events in the sample. This positive conceptualization supports the role in military mission "buy-in" and enthusiastic mission completion. While the definitions of morale differ, and are generally left unintegrated in current research, they generally are broken into events within the individual, the unit/leadership, and the mission or purpose and training for work (Manning, 1994).

The underlying concept of morale is not only anecdotally important to military leaders but has been demonstrated to be related to a host of protective outcomes. Higher morale, regardless of operational definitions, has been related to higher motivation and unit effectiveness (Motowidlo, & Borman, 1978), lower psychological distress (Whitesell, & Owens, 2012), and as

a moderator for combat PTSD (Britt, Adler, Bliese, & Moore, 2013). Morale may additionally be related to some aspects of resilience which have protective qualities, specifically with combat PTSD (Foran, Adler, McGurk, & Bliese, 2012). Training, such as military cultural or resilience training, may load on morale, indicating the ability to proactively take part in individual military member's morale apart from basic quality factors such as access to quality food or mail/communication.

Evolution of Morale Assessment

While defining morale may be an ever-evolving and daunting task, assessment of morale can appear even more complicated. Manning (1994) describes a meaningful and detailed history of psychological elements of morale and attempts to assess given elements. In 1977, an original and behaviorally defined scale was created to attempt to assess morale in military units (Motowidlo, & Borman, 1977). This distinctly behavioral assessment suffered somewhat from low inter-rater reliability and halo error, which are common issues in military research. It is possible that halo error will be a common issue when understanding the complex mechanisms of morale in a military unit, as there can be a general compulsory atmosphere as well as a sense of oversimplification.

Positive psychology has inspired some researchers to evaluate morale from new and interesting angles (Britt, & Dickinson, 2006). Britt et al. (2007) posited that morale could be understood by looking at engagement in meaningful work and confidence in both leadership and unit functioning. This was done via self-report, asking soldiers about things such as "drive" and "motivation" as well as "task significance" and "unit cohesion". This evolving scale was modified from the original 1997 study and updated again in 2013 using terms such as

"enthusiasm" and "eagerness" to further incorporate the concept of positive action dictating future events (Britt, Adler, Bliese, & Moore, 2013).

Items used to evaluate military morale have varied widely in the assessment literature. Some items may be as simple as "morale within the unit has generally been high" (Jones, Seddon, Fear, McAllister, Wessely, & Greenberg, 2012). Most items focus on enthusiasm about the situation and unit, with a special focus traditionally on leadership. Regardless of formal definitions, it seems clear that morale is defined best by mission motivation and buy-in ranging from cohesion with unit, leadership, personal factors, mission importance and a sense of esprit de corps.

Current Study

The customized 18-item Integrated Military Morale Questionnaire (IMMQ) was designed to measure the three basic components of military morale, cohesion, and esprit de corps operationalized below.

Personal Military Morale: A service member's level of motivation and enthusiasm for accomplishing mission objectives (Britt & Dickinson, 2006).

Military Cohesion: A sense of respect and trust which bonds together service members and sustains their commitment to each other and the mission. A sense of place within the unit.

Esprit de Corps: The spirit of dedication to greater ideals and ideology which impact a service member's sense of greater belonging.

The current study will attempt to validate and confirm these morale constructs. The distribution of IMMQ component scores within a normative national sample will be established. The internal consistency and concurrent validity of the IMMQ will be established using a range of maladjustment indicators including the HSCL-21, PID-5-BF, PCL-M, VEQ-R, SWLS, and ATSPPH-SF. Gender differences in these IMMQ relationship strengths are not expected to occur.

Chapter II

Method

Participants and Procedure

A sample of male and female respondents were recruited from Amazon's Mechanical Turk (MTurk) using monetary compensation ($1.00) as an incentive for participation. Inclusion criteria include active service in a recognized military unit and deployment in support of combat operations in the name of the individual's military component. Exclusion criteria included both a consistency item check embedded in the survey as well as a "military representation integrity (i.e., DD214 verification) question described below. The study was approved by the Institutional Review Board at the University of North Dakota.

All participants who provided informed consent were asked to complete a standardized Qualtrics survey administered through the University of North Dakota. While MTurk workers have garnered support in the literature as a quality data source (Bartneck, Duenser, Moltchanova, & Zawieska, 2015), concerns remain about use of this platform to recruit specialized samples such as military personnel without adequate validation of their representation (Wessling, Huber,

& Netzer, 2017). Respondents in this study were all identified by MTURK as military service members *and* affirmatively verified as understanding the meaning of DD214 or ERB/ORB status (common knowledge to all past and present military members). Respondents completed the integrated survey which required less than an hour for completion. After compensation was assured, respondents were asked about the honesty and accuracy of their responses. A debriefing followed completion and ended their participation in the study. This verification process appears distinctive in the MTurk military literature and presumably reduced error variance associated with misrepresentations of military status for financial gain.

Materials

Satisfaction with Life Scale (SWLS). The SWLS is a brief 5-item measure of global satisfaction with the summative entirety of one's life at the point of testing (Diener, Emmons, Larsen, & Griffin, 1985). Item content emphasizes the high face validity of the SWLS (e.g. "I am satisfied with my life"). Items are scored on a seven-point Likert-type scale (1 = "strongly disagree" to 7 = strongly agree). Item content has been shown to be reliable (Pavot, Diener, Colvin, & Sandvik, 1991).

Kessler Psychological Distress Scale (K10). The K10 is a 10-item self-report inventory designed to assess general symptoms of mental distress (Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, & Zaslavsky, 2002). Assessment items are rated on a five-point Likert-type scale (1 = "none of the time" to 5 = "all of the time"). The total score on the K10 indicates general psychological distress symptom severity. The scale was found highly reliable, able to assess morbidity in a population, and appropriate for clinical practice (Andrews & Slade, 2001)

PTSD Checklist–Military (PCL-M). The PCL-M is a 17-item self-report inventory which assess PTSD symptom severity with a specific focus on military members and populations (Weathers, Litz, Herman, Huska, & Keane, 1993). Items are scored on a five-point scale (1 = "not at all" to 5 = "extremely"). PTSD symptom severity can be identified by the total score on the PCL-M. Concurrent validity has been supported, as evidenced by its high association with other measures of PTSD symptomatology (Blanchard & Buckley, 1999).

Personality Inventory for DSM-5 Brief Form (PID-5-BF). The PID-5 (Krueger, Derringer, Markon, Watson, & Skodol, 2012) examined five personality domain trait facets in relation to the DSM-5. Items composed were rated on four-point Likert-type scales (1 = "Very False or Often False" to 4 = "Very True or Often True"). If more than 25% of items contributing to a facet were missing, that designated facet would not be calculated. Only if all contributing facet scores were available would domain scores then be calculated (Krueger et al., 2012). The PID-5-BF (American Psychiatric Association, 2013) is a 25-item self-report questionnaire which was designed to assess and explore the five AMPD trait dimensions of Negative Affectivity (NA), Detachment (De), Antagonism (An), Disinhibition (Di), and Psychoticism (Ps) in both adults and adolescents with each domain scale consisting of 5 items.

Britt's Morale Scale. The Morale Scale assesses participants' level of military morale utilizing a 6-item self-report survey (Britt & Dickenson, 2006). Participants rate their levels of items such as motivation and enthusiasm on a five-point scale (1 = "Very Low to 5 = "Very High). This scale should be adapted to service members based upon active deployment in combat zone versus garrison duty (Britt et al., 2013). This scale is reported to have high reliability with a Cronbach's alpha coefficient of .93 (Ivey, Blanc, & Mantler, 2015).

Integrated Military Morale Questionnaire (IMMQ). The IMMQ is a brief, 18 question self-report survey used in identifying a quantitative and integrated morale score for military members. Items are constructed with a four-point Likert-type scale (1 = "Never or Almost Never" to 4 = "Always or Almost Always"). Questions assess items related to the individual, the unit, leadership, the task and stressors related to combat. The total score will range from 18 to 72 with higher scores indicating a higher sense of integrated morale.

Attitudes Toward Seeking Professional Psychological Help Scale-Short Form (ATSPPH-SF). The ATSPPH-SF is a broadly utilized self-report measure of attitudes toward seeking mental healthcare (Fischer and Turner, 1970). Fischer and Farina (1995) developed a shortened version with college students which is now widely used. This shortened version discovered an optimal two-factor solution with 10 reworded items from the original. The short and original form use the same four-point Likert-type scale (0 = "Disagree" to 3 = "Agree,"). Final scores can range between 0 to 30. A higher score will indicate more favorable attitudes toward treatment.

CHAPTER III

RESULTS

A total of 266 respondents identified by MTurk as military service members initiated and fully completed the survey (partial data from 81 respondents were not analyzed). Exclusions were then made for respondents who failed either the DD214 verification (n = 62) or consistency (n = 19) validity checks. Most (83%) of these excluded respondents were from IP addresses in India. The final sample consisted of 185 (69.5%) respondents who fully completed the survey

and met the inclusion and exclusion criteria. This sample size was adequate to test small/medium effect sizes (Cohen's $F = 0.18$) at a power of .80 (G-Power v3.0.10).

The demographic composition of this sample appeared consistent with Department of Defense (DOD, 2015) figures for the United States military. This sample seemed generally representative of the population of over 2 million American military members (Tables 1, 2, 4, and 5). These data provide information on other attributes not recorded by the DOD such as sexual orientation (Table 3). A sample was disproportionately represented by male ($n = 138$, 74.6%), white ($n = 111$, 60.0%), and "straight or heterosexual" ($n = 158$, 85.4%) military members. Many of the participants identified their combat experience as service in Iraq ($n = 61$, 33.0%) or Afghanistan ($n = 54$, 29.2%), with lessor representation from conflicts such as Desert Shield ($n = 24$, 13.0%), Vietnam ($n = 7$, 3.8%), or Korea ($n = 1$, .5%).

Table 1. Participant Sex or Gender Identification/Expression.

Sex	N	% Total
Female	46	25%
Male	138	75%
Unknown	1	1%
Total	185	100%

Table 2. Participant Self-Described Ethnic Identity.

Ethnicity	N	% Total
Asian	30	16%
Bi-Racial	2	1%
Black or African American	17	9%
Caucasian/White	111	60%

Table 2. cont.

Hispanic or Latino	13	7%
Native American, American Indian, or Alaska Native	10	5%
Other	2	1%
Grand Total	185	100%

Table 3. Participant Self-Identified Sexual Orientation.

Sexual Orientation	N	% Total
Bisexual	17	9%
Gay or Homosexual	6	3%
Other	3	2%
Straight or Heterosexual	158	85%
Unknown	1	1%
Grand Total	185	100%

Table 4. Participant's Most Recent Marital Status.

Marital Status	N	% Total
Divorced	24	13%
Married	108	58%
Other	1	1%
Separated	5	3%
Single, never married	45	24%
Widowed	2	1%
Grand Total	185	100%

Table 5. Participant's Main Identified Combat Deployment Experience.

Deployment	N	% Total
Desert Shield/Gulf War	24	13%
Korean War	1	1%
Operation Enduring Freedom	54	29%
Operation Iraqi Freedom	61	33%
Operation New Dawn	14	8%
Other	21	11%
Panama/Operation Just Cause	2	1%
Vietnam War	7	4%
Unknown	1	1%
Grand Total	185	100%

The total IMMQ scores for participants (M = 52.32, SD = 9.40) indicated a slightly positive morale for the group, with the average score for each item trending close to 3 out of 4 (M = 2.92, SD = 0.52). This is complimented by the Britt Morale Scale scores which displayed a similar sense of morale (M = 19.84, SD = 5.84). Scores for Britt Morale were close to 4 out of 5 per item on average, also indicating a positive endorsement overall for items which measure enthusiasm and motivation. Participants reported about an average satisfaction with life (SWLS; M = 21.4, SD = 8.20) with an average score of about 4.3 out of 7 (Pavot & Diener, 2008). Somewhat elevated scores for the K10 (M = 25.17, SD = 10.85) combined with an above-average treatment resistance (ATTSPH-SF; M = 15.4, SD = 6.38) paint a complex picture (Carper, McHugh, & Barlow, 2013).

Principal components analysis was selected for use due to the purpose of understanding and computing underlying factors for the newly designed IMMQ. Item correlations on the

IMMQ (Table 6.0 and 6.1) indicate a variety of significant and moderate correlations between items with most ranging between $r = .30$ and $r = .50$ at $p < .05$. The first solution emergence in investigation was a 4-component solution (Table 7) with all items on the IMMQ included. After an Equamax rotation, the 4-component solution accounted for 59.13% of the variance with each component above a 1 for Eigenvalues. The Kaiser-Meyer-Olkin measure of sampling adequacy was .90, above the commonly recommended value of .6, and Bartlett's test of sphericity was significant ($\chi 2$ (153) = 1235.67, $p < .001$). A Scree Plot (Figure 1) shows the strongest drop after component 1 and a dip below Eigenvalues of 1 after component 4. This configuration of all items was highly reliable (18 items; $\alpha = .90$). The communalities were all above .3 which additionally supports each item's common variance with each other.

Table 6.0. IMMQ Inter-Item Correlations (Items 1-8).

	Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**
Q1	1							
Q2	0.46[a]	1						
Q3	0.303[a]	0.305[a]	1					
Q4	0.412[a]	0.268[a]	0.352[a]	1				
Q5	0.422[a]	0.518[a]	0.403[a]	0.391[a]	1			
Q6	0.395	0.421[b]	0.292[a]	0.528[a]	0.459[a]	1		
Q7	0.119[a]	0.165[a]	0.231[a]	0.24[a]	0.27[a]	0.315[a]	1	
Q8	0.435[a]	0.268[a]	0.25[a]	0.429[a]	0.319[a]	0.576[a]	0.308[a]	1
Q9	0.447[a]	0.35[a]	0.197[a]	0.35[a]	0.357[a]	0.558[a]	0.204[a]	0.422[a]
Q10	0.347[a]	0.351[a]	0.189[a]	0.476[a]	0.363[a]	0.577[a]	0.217[a]	0.656[a]
Q11	0.265[a]	0.471[a]	0.231[a]	0.299[a]	0.382[a]	0.463[a]	0.219[a]	0.378[a]
Q12	0.401[a]	0.454[a]	0.202[a]	0.147[b]	0.452[a]	0.303[a]	0.21[a]	0.292[a]
Q13	0.505[a]	0.489[a]	0.265[a]	0.272[a]	0.504[a]	0.401[a]	0.238[a]	0.404[a]

Table 6.0. cont.

Q14	0.389[a]	0.396[a]	0.181[a]	0.306[a]	0.418[a]	0.414[a]	0.149[b]	0.275[a]
Q15	0.322[a]	0.285[a]	0.298[a]	0.354[a]	0.404[a]	0.503[a]	0.317[a]	0.551[a]
Q16	0.322[a]	0.512[a]	0.217[a]	0.316[a]	0.38[a]	0.496[a]	0.231[a]	0.39[a]
Q17	0.063	0.091	0.153[b]	-0.072	0.16[b]	0.073	0.232[a]	0.007
Q18	0.32[a]	0.375[a]	0.183[a]	0.367[a]	0.355[a]	0.508[a]	0.215[a]	0.336[a]

Notes: [a] correlation is significant at the .001 level (one-tailed); [b] correlation is significant at the .05 level (one-tailed)

Table 6.1. IMMQ Inter-Item Correlations (Items 9-18).

	Q9	**Q10**	**Q11**	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**
Q9	1									
Q10	0.49[a]	1								
Q11	0.367[a]	0.416[a]	1							
Q12	0.324[a]	0.246[a]	0.326[a]	1						
Q13	0.421[a]	0.405[a]	0.376[a]	0.538[a]	1					
Q14	0.399[a]	0.321[a]	0.262[a]	0.503[a]	0.569[a]	1				
Q15	0.394[a]	0.48[a]	0.39[a]	0.294[a]	0.413[a]	0.385[a]	1			
Q16	0.445[a]	0.459[a]	0.473[a]	0.391[a]	0.455[a]	0.339[a]	0.482[a]	1		
Q17	0.142[b]	0.068	0.018	0.198[a]	0.192[a]	0.189[a]	-0.014	0.110	1	
Q18	0.45[a]	0.34[a]	0.36[a]	0.241[a]	0.371[a]	0.362[a]	0.358[a]	0.372[a]	0.119	1

Notes: [a] correlation is significant at the .001 level (one-tailed); [b] correlation is significant at the .05 level (one-tailed)

Table 7. Principal Component Analysis Eigenvalues and Total Variance Explained for 4-Component Solution.

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.96	38.69	38.69	3.60	20.00	20.00
2	1.51	8.36	47.05	3.24	18.00	38.01
3	1.14	6.36	53.41	2.30	12.80	50.81
4	1.03	5.72	59.13	1.50	8.32	59.13

Notes: *N*=185; Rotation Method: Equamax with Kaiser Normalization.

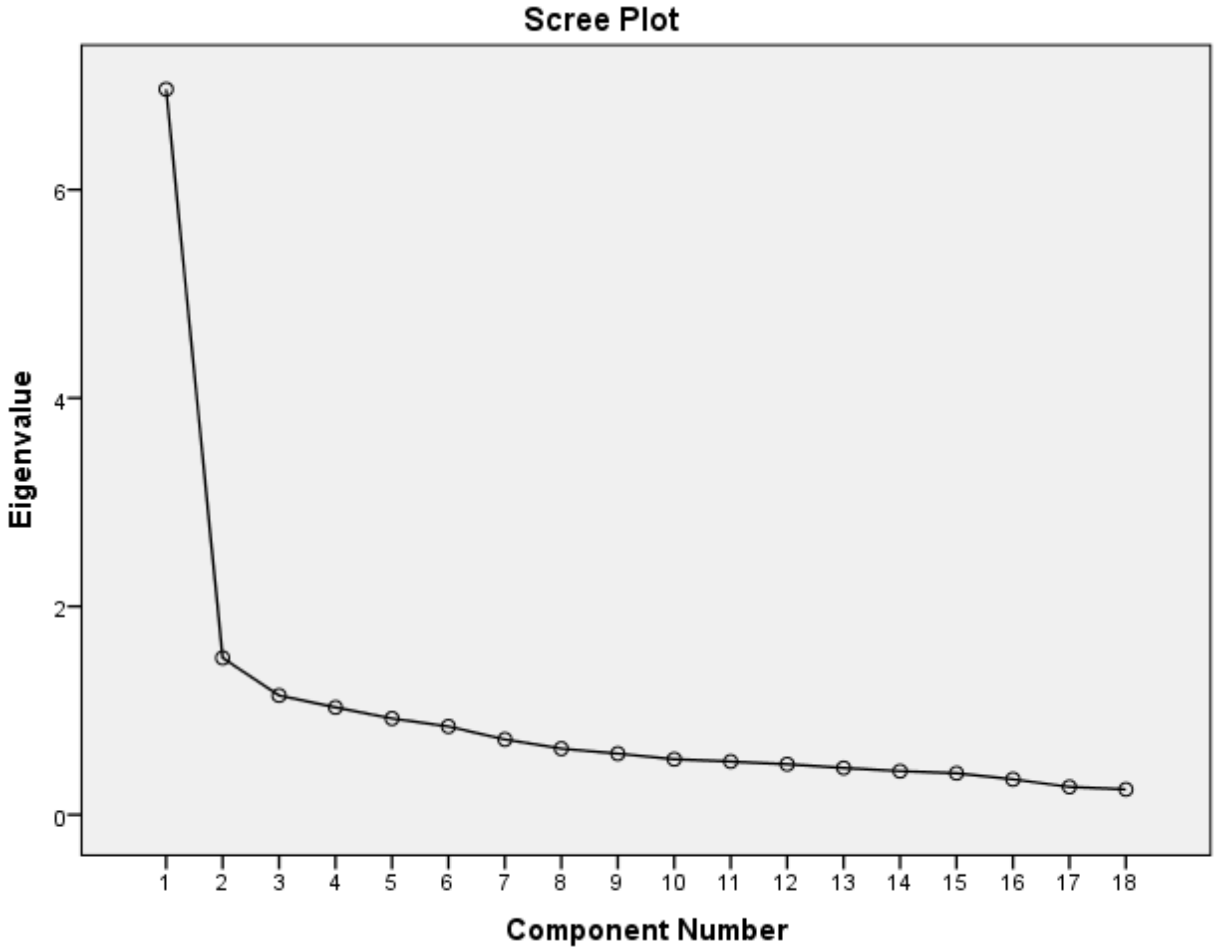

Figure 1. Scree Plot and Extracted Eigenvalues Suggested for 4-Component Solution.

Selection of specific cutoff loadings for a principal components analysis is still a matter of conceptual debate. The loadings for the four components (Table 8.0) indicate stronger justification for components 1 and 2 (Military Cohesion and Personal Military Morale) than components 3 and 4 (Esprit de Corps and Reflective Morale). The suggestion by Andy Field (2005) directs the researcher to accept any component or factor which has four or more loadings of .6. Under this model, only components 1 and 2 stand. A more appropriate measure for initial and investigative research may be Stevens (1992) which allows the acceptance of any score above .4. While not ideal, scores of .45 (Tabachnick & Fidell, 2007) can be considered "fair" with those above .71 as "excellent". Using this exploratory mindset for cutoffs allows each of the four components to handle items without significant cross-loading.

Table 8.0. Principal Component Analysis Item Loadings

IMMQ Item	Military Cohesion	Personal Morale	Esprit de Corps	Reflective Morale
Q1	.226	**.527**	.459	-.086
Q2	.181	**.671**	.337	.011
Q3	-.055	.081	**.832**	.234
Q4	.468	.038	**.636**	-.071
Q5	.155	.499	**.551**	.198
Q6	**.695**	.244	.336	.149
Q7	.280	-.102	.274	**.693**
Q8	**.725**	.103	.299	.105
Q9	**.585**	.389	.102	.147
Q10	**.754**	.177	.205	.078
Q11	**.486**	.358	.204	.045
Q12	.083	**.737**	.117	.231

Table 8.0. cont.

Q13	.263	**.697**	.214	.206
Q14	.230	**.670**	.115	.168
Q15	**.610**	.191	.299	.153
Q16	**.526**	.455	.117	.143
Q17	-.132	.195	-.089	**.811**
Q18	**.492**	.326	.154	.154

Notes: *N*=185; Rotation Method: Equamax with Kaiser Normalization; fixed factors (4); factor loadings > .4.

Table 8.1. Bivariate Correlations of Components with Maladjustment Indicators

	Military Cohesion	Personal Morale	Esprit de Corps	Reflective Morale	PTSD	TOTAL K10	TOTAL PCL-M
Military Cohesion	1						
Personal Morale	0	1					
Esprit de Corps	0	0	1				
Reflective Morale	0	0	0	1			
PTSD	-.165[b]	-.087	.117	.218[a]	1		
TOTAL K10	-.327[a]	-.115	-.056	.396[a]	.508[a]	1	
TOTAL PCL-M	-.234[a]	-.113	-.026	.420[a]	.534[a]	.852[a]	1

Notes: [a] Correlation is significant at the 0.01 level (2-tailed); [b] Correlation is significant at the 0.05 level (2-tailed).

The first component to arise encapsulates the idea of Military Cohesion. Military Cohesion could be considered highly reliable (8 items; $\alpha = .87$) and included items such as "At the end of the day I think my leadership actually cares about me" (loading of .725) and "The direction and intent of my unit's leadership is clear" (loading of .754). Scores reflected by

Military Cohesion were associated significantly with PTSD, general distress, and PTSD symptomology (Table 8.1). The second component was Personal Military Morale, which encapsulates fewer items but still holds reasonable reliability (5 items; $\alpha = .823$). Items for Personal Military Morale include "The missions I do are important, even if only to me" (loading of .697) and "I would sacrifice a lot for those around me, even my leadership" (loading of .737). Scores for Personal Military Morale were not significantly associated with PTSD or general distress.

The third and fourth components do not have at least four items loading but are important to understand in context for investigation of morale. Esprit de Corps was less reliable (3 items; $\alpha = .655$) and contained items such as "I feel connected to other service members, even in other armies, even the enemy" (loading of .832). The fourth component, deemed Reflective Morale, had significant loading from only two items and was far below thresholds of reliability (2 items; $\alpha = .353$). Despite these issues, Reflective Morale is significantly correlated with PTSD, general distress, and PTSD symptomology (Table 8.1) and is driven mostly by item 17 ("Sometimes I think that the military has been the best and worst thing in my life"; loading of .811). For an initial investigation, all four components may be included as loading scores are all "fair" and above, but reasonable caution should be exercised when considering how few items are loading on Esprit de Corps and Reflective Morale.

The existing simple structure of Britt's Morale Measure was investigated for comparison (Table 9; Figure 2) and the 1-component solution accounted for 75.41% of the variance. The brief questionnaire in this arrangement was highly reliable (6 items; $\alpha = .93$) with all items inter-correlating around .8. The 6 items could be adequately captured by item number 4 "your level of drive" and all items relate to a parsimonious and direct understanding of morale.

Table 9. Principal Component Analysis Eigenvalues and Total Variance Explained for 1-Component Solution for Britt Morale Measure.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.52	75.41	75.41	4.52	75.41	75.41

Note: *N*=185

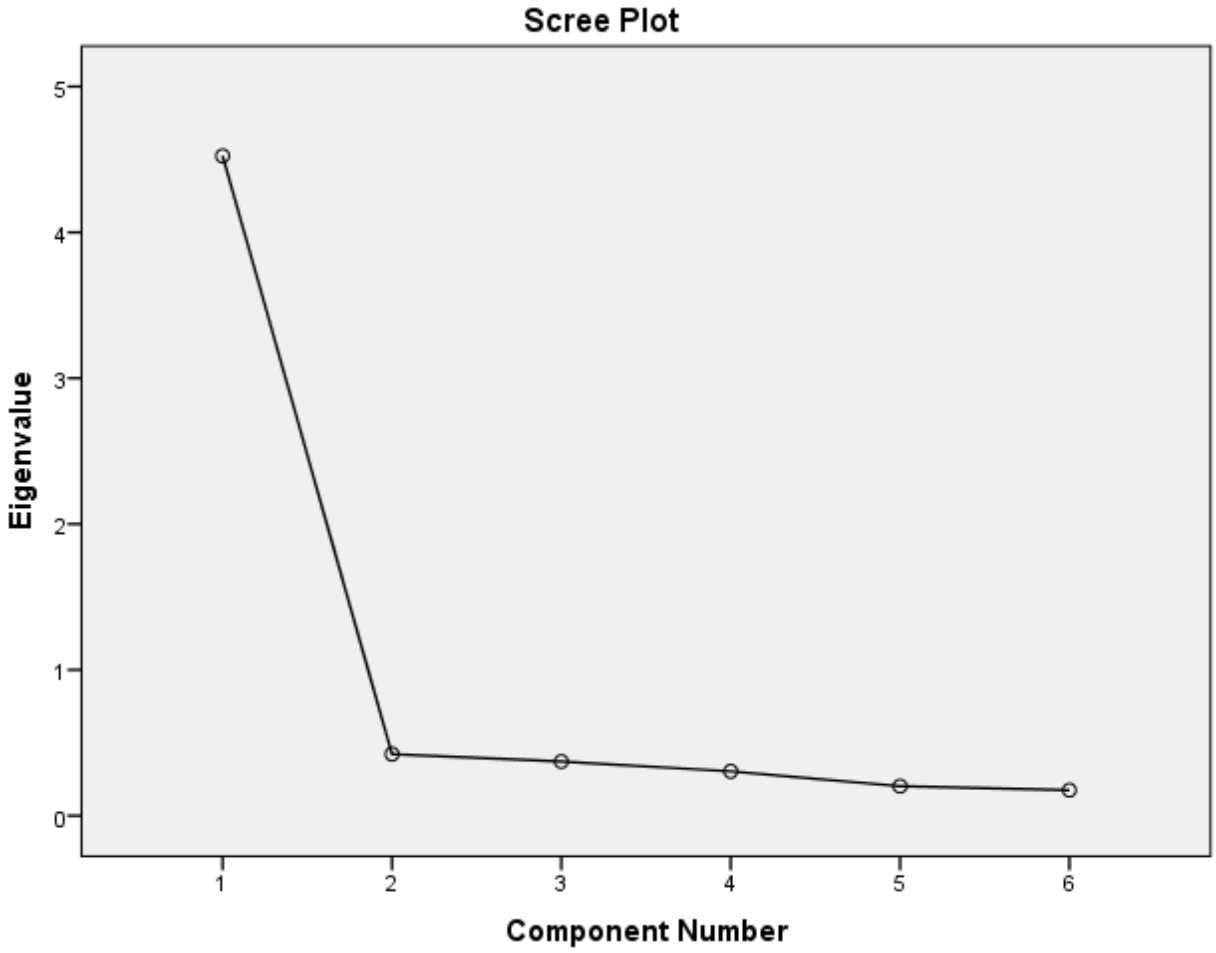

Figure 2. Scree Plot and Extracted Eigenvalues Suggested for 1-Component Solution for Britt Morale Measure.

Several bivariate correlations were completed to understand possible relationships between morale, PTSD, maladjustment, and various other topics of concern. Modest but significant correlations were present between IMMQ average scores and self-reported moral injury during combat experience (Table 10), as well as suicide attempts. Significant gender differences were not found on IMMQ average scores or on IMMQ question 17. IMMQ question 17 more strongly correlated with PID5 aspects, specifically the scales measuring psychoticism and detachment, as well as overall PID-5b scores.

Table 10. Bivariate Correlations of Select Demographics, Maladjustment Indicators, and IMMQ Scores/Items.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
1. TOTAL PID5b	1												
2. PID5 Negative	.890[a]	1											
3. PID5 Detachment	.872[a]	.716[a]	1										
4. PID5 Antagonism	.843[a]	.664[a]	.636[a]	1									
5. PID5 Disinhibition	.907[a]	.788[a]	.753[a]	.696[a]	1								
6. PID5 Psychoticism	.916[a]	.781[a]	.754[a]	.734[a]	.785[a]	1							
7. Moral Injury	.574[a]	.547[a]	.472[a]	.509[a]	.500a	.515[a]	1						
8. 2016 Election	0.12	0.11	0.08	0.13	0.1	0.12	.156[b]	1					
9. Politics	-0.1	-0.11	-0	-0.1	-0.1	-0	-0.1	-.329[a]	1				
10. Suicide	.199[a]	.295[a]	.181[b]	0.05	.208[a]	.150[b]	0.107	-0	0.01	1			
11. Gender	-.176[b]	-.242[a]	-.216[a]	-0.1	-0.1	-.159[b]	-0.1	0.14	-.243[a]	-0	1		
12. IMMQ Q17	.324[a]	.290[a]	.331[a]	.192[a]	.253[a]	.367[a]	.148[b]	0.01	-0.1	0.14	-0.1	1	
13. IMMQ Avg	-0.1	-.147[b]	-.168[b]	-0	-0.1	-0.1	-.191[a]	.157[b]	0.03	-.173[b]	-0	.241[a]	1

Notes: [a] Correlation is significant at the 0.01 level (2-tailed); [b] Correlation is significant at the 0.05 level (2-tailed).

Overall, maladjustment indicators such as total K10 scores, K10 disorder cut off scores, total PCL-M scores, and PCL-M disorder cut off scores were not significantly correlated with total IMMQ or average IMMQ scores (Table 11), though were associated with the previously

indicated individual component scores. Both the Britt Morale Measure and IMMQ scores were significantly correlated ($p < .01$) and were further correlated with total satisfaction with life (SWLS; $p < .01$). Maladjustment indicators such as the PCL-M scores and K10 scores were strongly correlated at $r = .85$ ($p < .01$) indicating a strong relationship between endorsement of PTSD related symptomology and general distress related to anxiety and depression.

Table 11. Bivariate Correlations of PTSD Diagnosis, Maladjustment Indicators, and IMMQ Scores.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. TOTAL IMMQ	1								
2. IMMQ Avg	.993[a]	1							
3. TOTAL B-Morale	.382[a]	.379[a]	1						
4. TOTAL SWLS	.344[a]	.353[a]	.597[a]	1					
5. PTSD	-0.05	-0.05	-.211[a]	-.237[a]	1				
6. TOTAL K10	-0.12	-0.12	-.326[a]	-.423[a]	.508[a]	1			
7. K10 Dx	-0.05	-0.06	-.145[b]	-.240[a]	.463[a]	.823[a]	1		
8. TOTAL PCL-M	-0.04	-0.04	-.215[a]	-.320[a]	.534[a]	.852[a]	.682[a]	1	
9. PCL Dx	-0.06	-0.06	-.190[a]	-.282[a]	.496[a]	.749[a]	.613[a]	.878[a]	1

Notes: [a] Correlation is significant at the 0.01 level (2-tailed); [b] Correlation is significant at the 0.05 level (2-tailed).

Other aspects, such as political views, were not significantly correlated with morale (Table 12). Other facets, such as suicidality, were related to both Britt's morale measure as well as the IMMQ. A feeling of moral violation was related significantly to aspects of military punishment, use of the Veteran's Affairs system, and drug or alcohol abuse. Resistance to treatment, measured by the ATTSPH-SF, had no strong correlations but a few significant ones ($p < .05$) with PID5 aspects such as detachment and disinhibition (Table 13). Most PID5 indicators were highly correlated with one another ($p < .01$).

Table 12. Bivariate Correlations of Select Demographics, Political Feelings, Maladjustment Indicators, Morale Scores, and IMMQ Scores.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Moral Violation	1											
2. 2016 Election	.156[b]	1										
3. Politics	-0.1	-.329[a]	1									
4. Employed	-0.05	0.129	-0.11	1								
5. Suicide	0.107	-0.03	0.01	-0.1	1							
6. Military Punishment	.282[a]	0.087	-0.06	0.06	.184[b]	1						
7. VA Use	.361[a]	0.104	-0.09	-0.1	.163[b]	.211[a]	1					
8. G.I. Bill Use	0.141	0.054	-0.01	0.12	-0.14	0.121	.296[a]	1				
9. Drug/Alcohol	.250[a]	-0.05	-0.02	-0.1	0.126	.203[a]	.327[a]	-0.02	1			
10. TOTAL IMMQ	-.198[a]	.158[b]	0.039	.184[b]	-.184[b]	-0.09	0.041	.182[b]	-0.14	1		
11. IMMQ Avg	-.191[a]	.157[b]	0.029	.192[a]	-.173[b]	-0.08	0.042	.178[b]	-.144[b]	.993[a]	1	
12. Britt Morale	-.183[b]	.171[b]	-0	.157[b]	-.206[a]	0.033	-0.01	.179[b]	-0.09	.382[a]	.379[a]	1

Notes: [a] Correlation is significant at the 0.01 level (2-tailed); [b] Correlation is significant at the 0.05 level (2-tailed).

Table 13. Bivariate Correlations of Personality Indicators, Resistance to Treatment, Morale Scores, and IMMQ Scores.

	1	2	3	4	5	6	7	8	9	10
1. TOTAL IMMQ	1									
2. IMMQ Avg	.993[a]	1								
3. Britt Morale	.382[a]	.379[a]	1							
4. TOTAL PID5b	-.145[b]	-0.136	-.176[b]	1						
5. PID5 Negative	-.147[b]	-.147[b]	-.214[a]	.890[a]	1					
6. PID5 Detachment	-.179[b]	-.168[b]	-.270[a]	.872[a]	.716[a]	1				
7. PID5 Antagonism	-0.055	-0.039	0.016	.843[a]	.664[a]	.636[a]	1			
8. PID5 Disinhibition	-0.135	-0.131	-0.141	.907[a]	.788[a]	.753[a]	.696[a]	1		
9. PID5 Psychoticism	-0.127	-0.118	-.171[b]	.916[a]	.781[a]	.754[a]	.734[a]	.785[a]	1	
10. TOTAL ATSPH-SF	-0.006	-0.011	0.094	-.154[b]	-0.141	-.176[b]	-0.061	-.175[b]	-0.13	1

Notes: [a] Correlation is significant at the 0.01 level (2-tailed); [b] Correlation is significant at the 0.05 level (2-tailed).

A logistic regression was completed to further understand the relationship between dimensional aspects of morale and PTSD (Table 14). A PTSD diagnosis was significantly related to satisfaction with life (SWLS; $p < .05$) but not with the IMMQ or Britt Morale scales.

Table 14. Coefficient Variables Resulting from Logistical Regression Analysis.

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	0.876	0.207		4.222	0.000
TOTAL SWLS	-0.011	0.005	-0.190	-2.078	0.039
TOTAL IMMQ	-0.015	0.032	-0.283	-0.463	0.644
PR AVG IMMQ	0.324	0.579	0.343	0.560	0.576
TOTAL B-Morale	-0.010	0.008	-0.119	-1.288	0.199

Note: Dependent variable: PTSD diagnosis.

Categorical measures were also assessed by assigning score groups to IMMQ participants based upon placement in the top 20%, bottom 20%, or middle 60% of scores. An analysis of variance was conducted (Table 15) and categorical scores displayed a main effect which differed significantly on maladjustment measures (K10 and PID5b) but not for PTSD ($p < .05$).

Table 15. Between Groups ANOVA Using IMMQ Score Category.

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
TOTAL K10	813.36	2	406.68	3.55	0.03
PTSD	0.54	2	0.27	1.13	0.33
TOTAL PID5b	3424.83	2	1712.42	5.36	0.01

Note: IMMQ categories include upper 20%, lower 20%, and middle 60% of total scores.

CHAPTER IV

DISCUSSION

The present results demonstrated the complex and nuanced nature of understanding the construct of morale, especially in a military context. Previous literature has led to what can be described as a positive and simple understanding of morale (Jones et al., 2012), a concept not supported by the current study. The proposed 4-component structure of morale had validity and reliability support when measuring 18 items related to military morale but was far less parsimonious than Britt's Morale Measure. While a reasonable amount of shared variance existed between the measures, the concurrent validity generally only focused on the positive aspects of the IMMQ (motivation related items). This positive focus detracts from the proposed 4-component solution which attempts to understand morale as more than a motivational construct but rather a complicated force comprised of Personal Morale, Esprit de Corps, Unit Cohesion, and Reflective Morale.

The concept of the fourth component, Reflective Morale, is the least reliable with fewest loadings but still demonstrates the strongest correlations with maladjustment such as PTSD and distress. Question 17 further descends into the complexity of military morale: the paradoxical question itself was significantly correlated with PID5b scores, morale injury, and several other maladaptive indicators. Some of the strongest correlations were between Question 17 and PID5 Detachment and PID5 Psychoticism, two possible implications of present-minded connection which may impact morale. Question 17 strikes the heart of understanding the dichotomy of the love/hate relationship combat and military service can foster in an individual. The PID5 relationships with Reflective Morale and overall morale scores require further investigation and analysis. Some key indicators of personality have been positively associated with PTSD in

military populations, such as novelty seeking and harm avoidance (Richman, & Frueh, 1997). The modern conceptualization of personality, possibly evolving with the PID5, allows some connections to be made between harm avoidance and Detachment from the PID5. Thus, several pre-existing steady personality characteristics may predispose individuals to lower morale regardless of exposure to trauma or difficulty.

The novel implementation of validity checks in an MTURK study have provided useful results. The demographics of the final 185 participants very closely resembled total American military forces (DOD, 2015) and even bolsters the addition of several facets not recorded or questioned by the Department of Defense, specifically political feelings, sexual orientation, suicidality, and others. This is information which may possibly be uncomfortable for active duty service members to share with their chain of command, even in "anonymous" situations. Rigor must be ensured to obtain a sample which mirrors the population when using online modalities; but the implementation of the military document question, as well as matched PTSD items in the survey, helped to ensure an accurate sample which may have the added benefit from actual perceived anonymity. This sense of true anonymity may allow for more open military sampling in the future as well as more honest and accurate responding from active duty participants.

The hypothesis that morale would be protective against PTSD was not widely supported, but partially supported for maladjustment indicators. Instances of PTSD were not associated with morale scores on the IMMQ, but the relationship between PTSD and morale is still not fully understood. Research indicates that severity of combat may negate the effects (Dickstein, McLean, Mintz, Conoscenti, Steenkamp, Benson, Isler, Peterson, Litz, 2010) or that in some cases those effects may not exist. Britt's Morale Measure has suggested that morale may act as a moderator and dampen PTSD severity (Britt et al., 2013), but that is a specific positive

encapsulation of morale and was not replicated in this study. Britt's Morale indicators were highly associated with satisfaction with life (SWLS; $r = .597$, $p < .01$) and were best at describing a general, positive feeling about one's situation. Britt's morale scale, as opposed to the IMMQ, was correlated with PTSD as measured by self-report and the PCL-M, but not as strongly as the SWLS. Satisfaction with life was the strongest indicator of PTSD symptomology via PCL-M and self-report.

A host of other adjustment indicators were investigated and those with higher morale correlated with individuals who attempted fewer suicide attempts, were employed to a sufficient extent, and those who were treated less for drug or alcohol use. Individuals who engaged in the consolidated systems of Veteran's Affairs tended to more often utilize G.I. Bill benefits and also had higher rates of substance use. Resistance to treatment was not generally a major variable in relation to morale, and only significantly correlated to PID-5 Detachment scale indicators. The PID-5 scales were highly inter-correlated overall, and elevations were related to those who experienced moral injury, suicide attempts, and other maladjustment aspects. Having been punished while in the military via an Article 15 or Captain's Mast was associated significantly with moral violations, suicide attempts, use of the VA, and drug or alcohol use.

These dimensional indicators were far more complex than categorical indicators based upon morale group. The groups, arranged into the top 20% of morale, bottom 20%, and middle 60%, had significant differences on all maladjustment indicators but did not show a significant PTSD difference. Individuals with higher morale generally reported fewer maladjustment issues as measured by the K10 (to include depression and anxiety) or PID5b facets. The IMMQ appears to be more useful at understanding maladjustment over PTSD and displays only weak correlations with PCL-M items.

A reasonable and convenient sample of military members polled online allowed for a new look into surveying a difficult population. While a 4-component solution was viable and highly reliable, morale stands as a nebulous and complicated idea. The parsimonious implications of Britt's Morale Measure are clear: morale can be about positive enthusiasm and motivation. While this may be appropriate in a host of situations and professions, military morale may also be seen as a far more complicated situation. Military morale, with its long and complicated history, may not be able to overpower the peritraumatic circumstances of combat, but can possibly impact maladjustment. Attention can be given to specific dissociative aspects, such as detachment on the PID-5, to fully understand the relationships between morale and maladjustment in military populations.

Limitations

Several clear and reasonable limitations exist in the current study. The performance of any research in an online modality can lead to a host of identity, validity, and response questioning issues. Beyond the primary validity and consistency measures, no in-depth attempts were made to obtain documentation to validate responses. Future research may consider requesting a DD214 or documentation of PTSD diagnosis to ensure more accuracy. All measures were self-reported, such as a formal PTSD diagnosis, and no clear documentation was required for participants to provide in this study. Only a few maladjustment measures were included, and further expansion could be provided in future research to understand a more complete picture of current maladjustment issues.

Conceptual limitations included an unrefined conceptualization of morale which does not easily align with modern, streamlined psychology. The vague nature of morale is somewhat

further complicated by the proposed structure. The primary purpose of the study was to verify the structure of the IMMQ when a current conceptualization of morale exists which is defiant of the proposed measure. The author is personally associated with the content and is an army combat veteran of Iraq and Afghanistan and thus may be directed by personal life experiences in the pursuit of a new understanding of morale over objective scientific clarity. While this was an initial investigation to understanding morale and military populations via an online modality, the true purpose and implementation of this information is scantly explored. The exploratory nature of the study was only a first step; further attempts to validate online surveying of a military population are required.

Future Studies

A deeper need for more than a correlative understanding is required for future research to successfully understand not only the facets of morale but also the implications and purpose. Qualitative research could provide a strong boost when attempting to understand morale; stories and thoughts may provide a host of content which may help to more properly encapsulate true maladjustment or traumatic experiences. While the online survey was successful in many ways, there is no form or question which could replace the narrative identity of a combat soldier, nor provide the detailed insight required to understand battlefield motivation.

Special consideration should be given to understanding and investigating the links between personality and military morale. While some response tendencies can be linked with the etiological elements of PTSD, the impact or possible mediation between personality and morale is not fully understood. The initial findings and associations with items and scales from the PID5b are a step into understanding how morale and personality may be correlated, but more

direct research is needed to know if stressful combat events may exacerbate preexisting personality disorders and what implications that may have for specific domains of morale.

Future research may consider the import aspects of sexuality and social support in relation to PTSD and morale. Sexual orientation is underrepresented in military research due to historical stigma and the complicated relationship the United States military has had with sexual orientation and identity. The current debate about transgendered soldiers may lead to new conceptualizations of morale and may hold interesting implications not yet explored. Social support has been shown to be important in understanding PTSD outcomes (Iversen, Fear, Ehlers, Hughes, Hull, Earnshaw, & Hotopf, 2008) and should possibly be further understood in the mediating context of morale. After an initial understanding of the context, future research should also provide possible implications to active combat duty in terms of morale. An investigation into how to implement and possibly increase morale changes could be vital for soldiers in active combat situations, and any possible implementations may save lives.

APPENDICES

Appendix A

Electronic consent form

TITLE: Military Morale and Adult Mental Health Functioning

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RESEARCH STATEMENT

You have been invited through the Mechanical Turk website (www.mturk.com/mturk/welcome) to participate in a research study on developmental factors that may be associated with adult psychological functioning and military morale. If you remain interested, your participation will consist of answering a series of questions below about your life history, requiring roughly 30 minutes. You will be paid $1.00 as compensation for your participation if you elect to participate in the entire questionnaire. Your participation first requires your informed consent. This consent form that you are now reading provides information that describes this study and any risks involved in participation. Please take your time in making your decision as to whether or not to participate. If you choose to participate in this study, you are free to skip any questions that you would prefer not to answer. If you consent to participate after reading this form, click the yes box and begin to respond to the questions that follow.

WHAT IS THE PURPOSE OF THIS STUDY?

You are invited to be a participant in this research study examining developmental factors that

may be associated with adult psychological functioning and military morale, including post-traumatic stress. You have been given an opportunity to participate as a member of military service population for compensation provided through the Mechanical Turk website.

HOW MANY PEOPLE WILL PARTICIPATE?

Approximately 350 current and former American military members will participate in this version of the study.

HOW LONG WILL I BE IN THIS STUDY?

This is a single session study expected to require approximately 30 minutes. You are expected to complete this testing immediately after affirming the consent requested for your participation at the end of this form.

WHAT WILL HAPPEN DURING THIS STUDY?

If you agree to be in this study, the following will happen:

You will be asked to complete a series of questions about a variety of topics that will follow this consent form. Your participation and completion of the testing will be documented in the electronic system known as Qualtrics.

You are permitted to leave any items blank for any reason you choose (including a belief that the requested information is unduly personal). You may withdraw from the study at any time by discontinuing completion of the requested items. You will be compensated $1.00 for the information you provide, only if you finish the questionnaire.

WHAT ARE THE RISKS OF THE STUDY?

You may experience frustrating feelings that are sometimes experienced when completing questionnaires sampling content from such a wide range of topics. Some questions may be of a sensitive nature and can make you feel uncomfortable as a result. However, such risks are minimal. If, however, you become upset by questions or procedures, you may stop participation at any time or choose not to answer a question. Any action taken to alleviate personal distress over any survey question must occur at your expense.

BENEFITS OF THIS STUDY

The benefits of this study include the increased knowledge of how various aspects of military morale and experiences may influence adult psychological functioning, which includes post-traumatic stress. This information may be helpful to professionals in the field, while also serving to advance the objectives of research being conducted by other future investigators in the field.

WILL IT COST ME ANYTHING TO PARTICIPATE IN THIS STUDY?

You will not have any direct costs for being in this study, other than the time involved to complete the survey.

WILL I BE PAID FOR PARTICIPATING?

You will be paid $1.00 for completion of the entire questionnaire upon leaving the survey. Compensation will be provided for a successfully completed survey.

WHO IS FUNDING THE STUDY?

This research is being funded with monies provided by the researcher. Some funds have been acquired through grants at the University of North Dakota. The website Mechanical Turk (www.mturk.com) is responsible for issuing your compensation.

CONFIDENTIALITY

All of the information you contribute to this study will be maintained electronically through the Qualtrics software system. All of your responses will be copied without any identification to a file used to conduct statistical analyses. You should not provide any identifying information when completing this questionnaire. The principal investigator (Corey M. Doan) and his supervisor (Alan R. King) will be the only people with access to the data you provide (other than possible Institutional Review Board auditors at the University of North Dakota at some point in the future). Your unsigned consent form and answers will be deleted no sooner than November 10, 2020. You will not be personally identified in any reports or publications that may result from this study.

IS THIS STUDY VOLUNTARY?

Your participation is voluntary. You may choose not to participate or you may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. If you choose to withdraw without completing the protocol, you will no longer be entitled to receive the compensation agreed to for your participation. We do hope, of course, that you appreciate the value and importance of your candid answers to this survey.

CONTACTS AND QUESTIONS

The principal investigator on this study is Corey M. Doan, who is a master's student in the Clinical Psychology program at the University of North Dakota (701-777-3451 or corey.doan@und.edu). He is supervised by Dr. Alan R. King, full professor in the Psychology Department at the University of North Dakota (701-777-3644 or alan.king@und.edu).

If you have questions regarding your rights as a research participant, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach the researcher, or if you wish to talk to someone else about the study.

You are highly encouraged to print a copy of this form for future reference.

I have read and understood the research project explained above. Anything that wasn't clear to me was explained so I could understand it. If I have any other questions later, I can have these answered, too. I understand that I don't have to help with the project and can discontinue participation at any time throughout the study without penalty. I wish to take part in this study.

Appendix B

Integrated Military Morale Questionnaire

Items are answered as following:

1 = Never or Almost Never

2 = Sometimes

3 = Often

4 = Always or Almost Always

Items:

1. My teammates and I are honest with each other

2. I take pride in my contributions to the mission

3. I feel connected to other service members, even in other armies, even the enemy

4. I have reasonable access to what I need compared to those around me

5. I would be dedicated and enthusiastic for any mission that comes my way

6. I know that I am supported and respected

7. Other people with my same job title have it worse than me

8. At the end of the day I think my leadership actually cares about me

9. I feel comfortable telling jokes and messing around with my fellow unit members

10. The direction and intent of my unit's leadership is clear

11. I think I am becoming a better person with my service

12. I would sacrifice a lot for those around me, even my leadership

13. The missions I do are important, even if only to me

14. I was trained well to do my job and get to do it

15. My unit policies do not negatively impact my lifestyle and identity

16. I feel as though joining the military has been positive thing in my life

17. Sometimes I think that the military has been the best and worst thing in my life

18. I feel ready for whatever is coming next

REFERENCES

Agaibi, C. E., & Wilson, J. P. (2005). Trauma, PTSD, and resilience: A review of the literature. *Trauma, Violence, & Abuse*, *6*(3), 195-216.

Allsep, L. J. (2013). The myth of the warrior: Martial masculinity and the end of Don't Ask, Don't Tell. *Journal Of Homosexuality*, *60*(2-3), 381-400. doi:10.1080/00918369.2013.744928

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Washington, DC: Author.

Andrews, G., & Slade, T. (2001). Interpreting scores on the Kessler psychological distress scale (K10). *Australian and New Zealand journal of public health*, *25*(6), 494-497.

Army, U. S. (2006). Field Manual 6-22: Army Leadership: Competent, Confident, and Agile. *Washington, DC: Headquarters, Department of the Army*.

Bartneck, C., Duenser, A., Moltchanova, E., & Zawieska, K. (2015). Comparing the similarity of responses received from studies in Amazon's Mechanical Turk to studies conducted online and with direct recruitment. *PloS one*, *10*(4), e0121595.

Baynes, J. C. M. (1988). *Morale: A study of men and courage*. Avery Publishing Group.

Bergman, H. E., Przeworski, A., & Feeny, N. C. (2017). Rates of subthreshold PTSD among US military veterans and service members: A literature review. *Military Psychology*, *29*(2), 117.

Blanchard, E. B., & Buckley, T. C. (1999). Psychophysiological assessment of posttraumatic stress disorder. In P. A. Saigh, J. D. Bremner, P. A. Saigh, J. D. Bremner (Eds.) , *Posttraumatic stress disorder: A comprehensive text* (pp. 248-266). Needham Heights, MA, US: Allyn & Bacon.

Britt, T. W., Adler, A. B., Bliese, P. D., & Moore, D. (2013). Morale as a moderator of the combat exposure-PTSD symptom relationship. *Journal Of Traumatic Stress, 26*(1), 94-101. doi:10.1002/jts.21775

Britt, T. W., & Dickinson, J. M. (2006). Morale during Military Operations: A Positive Psychology Approach. In T. W. Britt, C. A. Castro, A. B. Adler, T. W. Britt, C. A. Castro, A. B. Adler (Eds.) , *Military life: The psychology of serving in peace and combat: Military performance, Vol. 1* (pp. 157-184). Westport, CT: Praeger Security International.

Britt, T. W., Dickinson, J. M., Moore, D., Castro, C. A., & Adler, A. B. (2007). Correlates and consequences of morale versus depression under stressful conditions. *Journal of Occupational Health Psychology, 12*(1), 34-47. http://dx.doi.org/10.1037/1076-8998.12.1.34

Britt, T. W., Herleman, H. A., Odle-Dusseau, H. N., Moore, D., Castro, C. A., & Hoge, C. W. (2017). How the potential benefits of active combat events may partially offset their costs. *International Journal of Stress Management, 24*(2), 156-172. http://dx.doi.org/10.1037/str0000026

Cacioppo, J. T., Adler, A. B., Lester, P. B., McGurk, D., Thomas, J. L., Chen, H. Y., & Cacioppo, S. (2015). Building social resilience in soldiers: A double dissociative randomized controlled study. *Journal of personality and social psychology, 109*(1), 90.

Campbell, J. S., Loeffler, G. H., Pulos, S., & Campbell, A. W. (2016). Meta-analysis of average symptom change in inpatient treatment for posttraumatic stress disorder in veteran and active duty U.S. military samples. *Psychological Services, 13*(4), 389-400. doi:10.1037/ser0000104

Carper, M. M., McHugh, R. K., & Barlow, D. H. (2013). The dissemination of computer-based psychological treatment: a preliminary analysis of patient and clinician perceptions. *Administration and Policy in Mental Health and Mental Health Services Research*, *40*(2), 87-95.

Deane, F. P., Leathern, J., & Spicer, J. (1992). Clinical norms, reliability and validity for the hopkins symptom checklist-21. *Australian Journal of Psychology*, *44*(1), 21-25.

Department of Defense. (2015). PTSD: 2015 Demographics: Profile of the Military Community. From http://download.militaryonesource.mil/12038/MOS/Reports/2015-Demographics-Report.pdf

Department of Veterans Affairs. (2017). PTSD: National Center for PTSD. From https://www.ptsd.va.gov/public/ptsd-overview/

Dickstein, McLean, Mintz, Conoscenti, Steenkamp, Benson, Isler, Peterson, Litz. (2010). Unit Cohesion and PTSD Symptom Severity in Air Force Medical Personnel. *Military Medicine, 175*(7). https://doi.org/10.7205/MILMED-D-09-00178

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*, 71–75. 10.1207/s15327752jpa4901_13

Dixon, M., & Dixon, N. F. (2011). *On the psychology of military incompetence*. Random House.

Driskell, J. E., & Olmstead, B. (1989). Psychology and the military: Research applications and trends. *American Psychologist*, *44*(1), 43.

Dunbar, J. I. (2016). Symptoms of posttraumatic stress disorder (PTSD) and military occupational specialty (MOS): A causal comparative study. *Dissertation Abstracts International*, *76*.

Elder, G. H., & Clipp, E. C. (1989). Combat experience and emotional health: Impairment and resilience in later life. *Journal of personality, 57*(2), 311-341.

Elhai, J. D., Schweinle, W., & Anderson, S. M. (2008). Reliability and validity of the attitudes toward seeking professional psychological help scale-short form. *Psychiatry research, 159*(3), 320-329.

Fear, N. T., Jones, M., Murphy, D., Hull, L., Iversen, A. C., Coker, B., ... & Greenberg, N. (2010). What are the consequences of deployment to Iraq and Afghanistan on the mental health of the UK armed forces? A cohort study. *The Lancet, 375*(9728), 1783-1797.

Field, A (2005). Discovering statistics using SPSS. Second edition. Sage.

Fischer, E. H., & Farina, A. (1995). Attitudes toward seeking professional psychological help: A shortened form and considerations for research. *Journal of College Student Development, 36*, 368-373.

Fischer, E. H., & Turner, J. L. (1970). Orientations to seeking professional help: Development and research utility of an attitude scale. *Journal of Consulting and Clinical Psychology, 35*, 79-90.

Foran, H. M., Adler, A. B., McGurk, D., & Bliese, P. D. (2012). Soldiers' perceptions of resilience training and postdeployment adjustment: Validation of a measure of resilience training content and training process. *Psychological Services, 9*(4), 390-403. doi:10.1037/a0028178

Foy, D. W., Sipprelle, R. C., Rueger, D. B., & Carroll, E. M. (1984). Etiology of posttraumatic stress disorder in Vietnam veterans: analysis of premilitary, military, and combat exposure influences. *Journal of consulting and clinical psychology, 52*(1), 79.

Frueh, B. C., Elhai, J. D., Grubaugh, A. L., Monnier, J., Kashdan, T. B., Sauvageot, J. A., ... & Arana, G. W. (2005). Documented combat exposure of US veterans seeking treatment for combat-related post-traumatic stress disorder. *The British Journal of Psychiatry*, *186*(6), 467-472.

Frueh, B. C., Hamner, M. B., Cahill, S. P., Gold, P. B., & Hamlin, K. L. (2000). Apparent symptom overreporting in combat veterans evaluated for PTSD. *Clinical psychology review*, *20*(7), 853-885.

Green, K. T., Beckham, J. C., Youssef, N., & Elbogen, E. B. (2014). Alcohol misuse and psychological resilience among US Iraq and Afghanistan era veterans. *Addictive behaviors*, *39*(2), 406-413.

Green, D. E., Walkey, F. H., McCormick, I. A., & Taylor, A. J. (1988). Development and evaluation of a 21-item version of the Hopkins Symptom Checklist with New Zealand and United States respondents. *Australian Journal Of Psychology*, *40*(1), 61-70. doi:10.1080/00049538808259070

Greene-Shortridge T.M., Britt T.W., Castro C.A. (2007). The stigma of mental health problems in the military. *Mil Med 172*: 157–61. https://doi.org/10.7205/MILMED.172.2.157

Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I., & Koffman, R. L. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *N engl J med*, *2004*(351), 13-22.

Holeva, V., & Tarrier, N. (2001). Personality and peritraumatic dissociation in the prediction of PTSD in victims of road traffic accidents. *Journal of psychosomatic research*, *51*(5), 687-692.

Iversen, A. C., Fear, N. T., Ehlers, A., Hughes, J. H., Hull, L., Earnshaw, M., & Hotopf, M. (2008). Risk factors for post-traumatic stress disorder among UK Armed Forces personnel. *Psychological medicine, 38*(4), 511-522.

Ivey, G. W., Blanc, J. R. S., & Mantler, J. (2015). An assessment of the overlap between morale and work engagement in a nonoperational military sample. *Journal of occupational health psychology, 20*(3), 338.

Jinkerson, J. D. (2016). Defining and assessing moral injury: A syndrome perspective. *Traumatology, 22*(2), 122-130. doi:10.1037/trm0000069

Jones, N., Mitchell, P., Clack, J., Fertout, M., Fear, N. T., Wessely, S., & Greenberg, N. (2014). Mental health and psychological support in UK armed forces personnel deployed to Afghanistan in 2010 and 2011. *The British Journal Of Psychiatry, 204*(2), 157-162. doi:10.1192/bjp.bp.113.131433

Jones, N., Seddon, R., Fear, N. T., McAllister, P., Wessely, S., & Greenberg, N. (2012). Leadership. cohesion, morale, and the mental health of UK Armed Forces in Afghanistan. *Psychiatry: Interpersonal And Biological Processes, 75*(1), 49-59. doi:10.1521/psyc.2012.75.1.49

Jussim, L. (2012). Liberal privilege in academic psychology and the social sciences: Commentary on Inbar & Lammer (2012). *Perspectives On Psychological Science, 7*(5), 504-507. doi:10.1177/1745691612455205

Jussim, L., Crawford, J. T., Anglin, S. M., & Stevens, S. T. (2015). Ideological bias in social psychological research. In J. P. Forgas, K. Fiedler, W. D. Crano, J. P. Forgas, K. Fiedler, W. D. Crano (Eds.) , *Social psychology and politics* (pp. 91-109). New York, NY, US: Psychology Press.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological medicine*, *32*(6), 959-976.

Krueger, R. F., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2012). Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychological medicine*, *42*(9), 1879-1890.

Lilly, M. M., Pole, N., Best, S. R., Metzler, T., & Marmar, C. R. (2009). Gender and PTSD: What can we learn from female police officers?. *Journal of anxiety disorders*, *23*(6), 767-774.

Manning, F. J. (1994). Morale and cohesion in military psychiatry. *Military psychiatry: Preparing in peace for war*, (Part 1), 1-18.

Marx, B. P. (2009). Posttraumatic stress disorder and Operations Enduring Freedom and Iraqi Freedom: Progress in a time of controversy.

McCormack, L., & Riley, L. (2016). Medical discharge from the 'family,' moral injury, and a diagnosis of PTSD: Is psychological growth possible in the aftermath of policing trauma?. *Traumatology*, *22*(1), 19-28. doi:10.1037/trm0000059

McDevitt-Murphy, M. E., Luciano, M. T., Tripp, J. C., & Eddinger, J. E. (2017). Drinking motives and ptsd-related alcohol expectancies among combat veterans. *Addictive Behaviors*, *64*217-222. doi:10.1016/j.addbeh.2016.08.029

McKinney, J. M., Hirsch, J. K., & Britton, P. C. (2017). PTSD symptoms and suicide risk in veterans: Serial indirect effects via depression and anger. *Journal Of Affective Disorders*, *214*100-107. doi:10.1016/j.jad.2017.03.008

Mohatt, N. V., Boeckmann, R., Winkel, N., Mohatt, D. F., & Shore, J. (2017). Military mental health first aid: Development and preliminary efficacy of a community training for improving knowledge, attitudes, and helping behaviors. *Military Medicine, 182*(1), e1576-e1583. doi:10.7205/MILMED-D-16-00033

Morgan, J. K., & Desmarais, S. L. (2017). Associations between time since event and posttraumatic growth among military veterans. *Military Psychology, 29*(5), 456-463. http://dx.doi.org/10.1037/mil0000170

Motowidlo, S. J., & Borman, W. C. (1977). Behaviorally anchored scales for measuring morale in military units. *Journal of Applied Psychology, 62*(2), 177-183.

Motowidlo, S. J., & Borman, W. C. (1978). Relationships between military morale, motivation, satisfaction, and unit effectiveness. *Journal Of Applied Psychology*, *63*(1), 47-52. doi:10.1037/0021-9010.63.1.47

Mount, S. D., Steelman, S. M., & Hertlein, K. M. (2015). 'I'm not sure I trust the system yet': Lesbian service member experiences with mental health care. *Military Psychology*, *27*(2), 115-127. doi:10.1037/mil0000071

Pavot, W., & Diener, E. (2008). The Satisfaction With Life Scale and the emerging construct of life satisfaction. *The Journal Of Positive Psychology*, *3*(2), 137-152. doi:10.1080/17439760701756946

Pavot, W., Diener, E. D., Colvin, C. R., & Sandvik, E. (1991). Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal of personality assessment, 57*(1), 149-161.

Peterson, C., Park, N. and Sweeney, P. J. (2008), Group Well-Being: Morale from a Positive Psychology Perspective. *Applied Psychology, 57*: 19–36. doi:10.1111/j.1464-0597.2008.00352.x

Richman, H., & Frueh, B. C. (1997). Personality and PTSD II: Personality assessment of PTSD-diagnosed Vietnam veterans using the Cloninger Tridimensional Personality Questionnaire (TPQ). *Depression and Anxiety*, *6*(2), 70-77.

Schnurr, P. P., Friedman, M. J., & Rosenberg, S. D. (1993). Preliminary MMPI scores as predictors of combat-related PTSD symptoms. *The American journal of psychiatry*.

Skitka, L. J. (2012). Multifaceted problems: Liberal bias and the need for scientific rigor in self-critical research. *Perspectives On Psychological Science*, *7*(5), 508-511. doi:10.1177/1745691612454135

Stevens, JP. (1992). Applied multivariate statistics for the social sciences (2nd edition). Hillsdale, NJ: Erlbaum.

Stouffer, S. A., Suchman, E. A., DeVinney, L. C., Star, S. A., & Williams, R. M., Jr. (1949). *The American soldier: Adjustment during army life*. Princeton, NJ: Princeton University Press

Tabachnick, B., & Fidell. (2007). Using multivariate statistics. Fifth Edition. Pearson Education Inc.

Thomas, J. L., Wilk, J. E., Riviere, L. A., McGurk, D., Castro, C. A., & Hoge, C. W. (2010). Prevalence of mental health problems and functional impairment among active component and National Guard soldiers 3 and 12 months following combat in Iraq. *Archives of general psychiatry*, *67*(6), 614-623.

Tramontin, M. (2010). Exit wounds: current issues pertaining to combat-related PTSD of relevance to the legal system. *Dev. Mental Health L.*, *29*, 23.

Trimble, M.D. (1985). Post-traumatic Stress Disorder: History of a concept. In C.R. Figley (Ed.), *Trauma and its wake: The study and treatment of Post-Traumatic Stress Disorder*. New York: Brunner/Mazel. Revised from Encyclopedia of Psychology, R. Corsini, Ed. (New York: Wiley, 1984, 1994)

Uhlaner, J. E. (1977). *The research psychologist in the Army—1917 to 1977 (Report No. 1155)*. Washington, DC: U.S. Army Research Institute for the Behavioral and Social Sciences.

van der Velden, P. G., & Wittmann, L. (2008). The independent predictive value of peritraumatic dissociation for PTSD symptomatology after type I trauma: A systematic review of prospective studies. *Clinical Psychology Review*, *28*(6), 1009-1020.

Walker, R. T. (2017). A comparison of resilience and performance among returning veterans of the wars in Afghanistan and Iraq. *Dissertation Abstracts International*, *77*.

Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993). *The PTSD Checklist (PCL): Reliability, validity and diagnostic utility*. Paper presented at the Ninth Annual Meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

Wessling, K. S., Huber, J., & Netzer, O. (2017). MTurk character misrepresentation: Assessment and solutions. *Journal Of Consumer Research*, *44*(1), 211-230. doi:10.1093/jcr/ucx053

Whitesell, A. A., & Owens, G. P. (2012). The impact of patriotism, morale, and unit cohesion on mental health in Veterans of Iraq and Afghanistan. *Traumatology*, *18*(1), 1-7. doi:10.1177/1534765610395625

Wright, P. J., Kim, P. Y., Wilk, J. E., & Thomas, J. L. (2012). The effects of mental health symptoms and organizational climate on intent to leave the military among combat veterans. *Military Medicine*, *177*(7), 773-779. doi:10.7205/MILMED-D-11-00403

Yerkes, R. M. (1918). Psychology in relation to the war. *Psychological Review*, *25*, 85–115.