

12-2016

The Moderating Effects of Savoring Positive Life Experiences on the Relationship between Combat Exposure and Mental Health Symptoms

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THE MODERATING EFFECTS OF SAVORING POSITIVE LIFE EXPERIENCES ON
THE RELATIONSHIP BETWEEN COMBAT EXPOSURE AND MENTAL HEALTH
SYMPTOMS

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Applied Psychology

by
Anton I. Sytine
December 2016

Accepted by:
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ABSTRACT

Engaging in firefights or witnessing death and other types of combat experiences are occupational hazards associated with combat exposure facing military personnel. The present study examined whether savoring beliefs moderate the relationship between combat exposure and negative mental health symptoms among U.S. Army soldiers deployed to Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). Soldiers ($N = 885$) deployed on at least one combat operation completed a measure of combat exposure, savoring beliefs, depression and PTSD at two time periods separated by five months. Correlational and multiple regression analyses were conducted to assess the relationship between variables and for the moderating effect of savoring. Savoring was found to be negatively related to symptoms of depression and PTSD, as well as acted as a buffer between combat exposure and depression and PTSD among military personnel, for the larger Time 1 sample. However, the moderating effects were not obtained with the smaller matched sample. These findings demonstrate that savoring positive life experiences may be beneficial to overall positive mental health by increasing ones ability to experience and maintain enjoyment in the short term, while also buffering negative mental health symptoms related to traumatic experiences.

ACKNOWLEDGMENTS

I would like to begin by expressing my deepest gratitude to my advisor, Dr. Thomas Britt, for his continuous guidance and support. Dr. Britt's mentorship has contributed greatly to my development and I would not have been able to complete my thesis without him. I would also like to thank Dr. Cynthia Pury and Dr. Patrick Rosopa for serving on my committee and providing valuable guidance and feedback. I would finally like to thank my family, friends, and colleagues for their love and support, which gave me the strength to accomplish this feat.

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CHAPTER ONE

OVERVIEW AND THEORETICAL FRAMEWORK

Introduction

The occurrence of negative mental health symptoms amongst United States military personnel is an occupational hazard that may be attributed to the extreme occupational demands over which soldiers may have no control. Facing combat and traumatic experiences, such as involvement in firefights or witnessing death, may result in significant mental health problems, including depression, anxiety, and PTSD (Coll, Weiss, & Yarvis, 2011). However, research in positive psychology, specifically savoring, has revealed promising evidence suggesting that those who savor more are less symptomatic in depression and anxiety (Carl et al., 2014). The present study seeks to understand how beliefs about savoring positive life experiences may affect mental health symptoms among soldiers exposed to combat and traumatic experiences.

Savoring positive experiences has been shown to elicit greater positive affect (Wood, Heimpel, & Michela, 2003), which may be beneficial to soldiers who, due to the circumstances of combat, have difficulty fostering positive emotions. Savoring has often been studied among civilians experiencing mental health problems or adversity in their lives (Ho, Yueng, & Kwok, 2014; Croft et al., 2014). In addition, past research has indicated that emotion-focused coping may be an effective buffer of negative mental health symptoms related to extreme environmental stressors (Britt, Crane, Hodson, & Adler, 2015). However, no research has been conducted examining savoring among military personnel, who are likely to experience symptoms of mental health problems as a result of combat experience. Croft et al., (2014) suggested that utilizing a sample group

prone to experiencing especially high levels of adversity, such as soldiers, might reveal a scenario in which adversity fails to facilitate savoring behavior. The goal of the present study is to assess whether savoring beliefs may serve as a beneficial strategy for soldiers to defend against negative mental health symptoms that may result from exposure to combat and traumatic experiences.

For the present study, savoring is measured as a trait-level construct. By applying Fredrickson's (2004) broaden and build theory of positive emotions, we may implicate savoring as a beneficial strategy among soldiers whom have experienced combat. The broaden and build theory of positive emotions posits that positive emotions allow people to broaden their "momentary thought-action repertoires and *build* their enduring personal resources" (Fredrickson 2004; pg. 1369). Savoring positive life events may elicit positive emotions that could provide military personnel with additional resources necessary to address the consequences of combat exposure. In the face of adverse situations, actively reflecting upon positive life events may alleviate symptoms of depression and PTSD related to combat.

Purpose of the Present Study

The present study will examine whether savoring beliefs moderate the relationship between combat exposure and mental health symptoms among U.S. Army soldiers deployed to OIF and OEF (Figure 1). Survey data were collected at two Time points, with Combat exposure and savoring beliefs assessed at Time 1, and mental health symptoms assessed at both Time 1 and Time 2. With the proposed model, I hypothesize a positive relationship between combat exposure and negative mental health symptoms, with greater combat exposure being predictive of more symptoms of PTSD and

depression. In addition, savoring is hypothesized to function as a moderator of the relationships between combat exposure and PTSD and depression. High levels of savoring beliefs are expected to be related to decreased depression and PTSD symptoms under moderate levels of combat exposure. However, high levels of savoring will have little relationship with mental health symptoms at extremely low or high levels of combat exposure, resulting in no significant differences in symptoms of depression or anxiety.

Previous findings by Croft et al. (2014) indicated that experiencing current hardships was associated with less savoring; therefore, at high levels of combat exposure the adversity experienced by soldiers may be too severe to allow savoring beliefs to buffer its effects. Croft et al., (2014) additionally found, in contrast, that experiencing some past adversity was related to greater savoring; thus, at moderate levels of combat exposure soldiers may not be impacted as greatly allowing for the buffering effect. Practical implications of the findings may result in the identification of savoring as a mechanism for decreasing the impact of combat exposure on the mental health symptoms of military personnel.

In the following thesis I will first review the impact of combat exposure on mental health symptoms, followed by a discussion of the theoretical background of savoring and the implications of savoring for mental health. Second, the methods of the current study will discuss the participants, procedure, and proposed analyses to test the main hypotheses. Next, provide a comprehensive list of the main hypotheses will be presented and appendices of the survey measures. Then present the results of the data analyses relative to each hypothesis. Finally, I will conclude with a discussion of the findings,

including a summary of the findings, implications of the findings, limitations of the present study, and future directions for research related to savoring.

CHAPTER TWO

EFFECTS OF COMBAT EXPOSURE ON MENTAL HEALTH

Prevalence of Mental Health Problems

The prevalence of mental health problems reported by U.S military personnel has drawn increasing attention and concern as soldiers are returning from duty overseas, especially from OIF and OEF. According to the United States Army Medical Department (2008), up to 30% of all returning veterans will fulfill the conditions of the Diagnostic and Statistical Manual of Mental Disorders, *4th edition*, (DSM-IV; American Psychiatric Association, 2000) for serious mental health disorders, including posttraumatic stress disorder (PTSD), mood disturbances such as depression and anxiety, and co-morbid substance abuse (Coll et al., 2011).

Seal et al., (2009) collected data from 289,328 OIF and OEF veterans who were first time users of health care provided by the Department of Veterans Affairs (VA) between 2001 and 2008. The researchers focused on mental health problems most commonly associated with military service, including PTSD, depressive disorders, and alcohol and drug use. Diagnoses of mental health problems increased from 6.4% of the sample in 2001 to 36.9% of the sample in 2008; of whom 29% had 2 and 33% had 3 or more diagnoses (Seal et al., 2009).

A longitudinal examination of U.S Army units, pre and post-deployment to Iraq and Afghanistan, found an increased likelihood of the mental health problems of PTSD, major depression, and generalized anxiety post-deployment (Hoge et al., 2004). Additionally, while Marine Corps pre-deployment data was not available, post-deployment data from Marine Corps units reported similar rates of experiencing mental

health problems when compared to post deployment U.S. Army units (Hoge et al, 2004). Many veterans will attempt to reintegrate into civilian life post-deployment; however, these mental health issues may diminish a soldier's ability to achieve integration.

Combat Exposure and Mental Health Problems

One of the main determinants of these mental health problems is combat exposure. A reality of combat is the likelihood of exposure to traumatic experiences. Traumatic combat exposure may include experiences such as being attacked or ambushed, receiving incoming fire, seeing dead bodies, and knowing someone who was seriously injured or killed (Mitchell, Gallaway, Millikan, & Bell, 2011; Hoge et al., 2004). Mitchell et al., (2011) assessed combat exposure from soldiers who had reported experiencing any of 10 combat related events using items from Castro, Bienvenu, Huffman & Adler (2000) and Hoge et al. (2004). Mitchell et al., (2011) found that among a sample of 1,592 male soldiers, 92% indicated having received incoming fire, 84.9% saw dead bodies, and 75.9% had been attacked or ambushed. Additionally, using a modified version of the aforementioned combat exposure scale, soldiers indicated the degree of perceived stressfulness of their combat experiences ranging from 0=*Not at all* to 4=*Extremely*. The findings indicated that soldiers who had experienced more frequent and greater traumas were more likely to report greater perceived stress. A growing body of evidence suggests that greater perceived stress of combat exposure is likely associated with PTSD as well as other negative mental health symptoms.

Hoge et al., (2004) found a significant linear relationship between the number of firefights experienced by soldiers and the prevalence of PTSD for soldiers in both Iraq and Afghanistan. The rate of PTSD increased from 4.5% among those who had not

experienced firefights, to 19.3% among those who had experienced 5 or more returning from Iraq; and 4.5% to 18.9% respectively, among soldiers returning from Afghanistan. Additionally, there was a significant relationship between having been wounded or injured and the rate of PTSD among those deployed to Iraq and Afghanistan. Prigerson, Maciejewski, and Rosenheck (2002) found combat exposure was related significantly to PTSD, major depressive disorder, and job loss diagnosed within the previous 12 months; as well as current unemployment and spousal/marital issues during the time of the survey. After adjusting for control variables, combat exposure accounted for 27.8% of the variance in PTSD, 7.4% in major depressive disorder, and 8.0% in substance abuse diagnoses.

Gallaway et al., (2013) conducted a study in which they assessed the association between cumulative combat exposure, experienced throughout soldiers' deployment history, including scenarios such as being attacked or ambushed or knowing someone who was killed, with negative behavioral and psychiatric conditions. A significant relationship was found, indicating that combat exposure was a significant predictor of negative mental health symptoms, including behavioral health issues, major aggression, and alcohol use, compared to soldiers who had not been exposed to combat. Furthermore, soldiers who reported experiencing the highest level of combat were "more than 6 times more likely to report a history of behavioral and psychiatric diagnoses than those who were never deployed" (Gallaway et al., 2013, p. 575).

Consistent with these findings, Rona et al., (2009) found increased rates of PTSD among U.K. military personnel deployed to Iraq who had experienced more combat; especially those who had reported having "Saw personnel wounded or killed," "came

under small arms fire,” and were “in forward area in close contact with the enemy (p. 14). Those who showed symptoms of PTSD during an initial mental health screening delivered in 2002 were also more likely to report higher rates of PTSD (Rona et al., 2009; Rona et al., 2004).

A survey of Canadian military forces also revealed evidence of a relationship between combat exposure, traumatic experiences, and negative mental health symptoms, including an increased prevalence of suicidal ideation among those who had witnessed atrocities and massacres (Sareen et al., 2007). Feelings of guilt have also been suggested as a potential contributing factor to suicide risk among military personnel. Bryan, Ray-Sannerud, Morrow, and Etienne (2013b) found a significant interaction between combat exposure and guilt in predicting suicidal ideation, indicating that suicidal ideation increased as guilt increased among those who had experienced combat. Previous studies have also shown that among Vietnam veterans who’d experienced combat, combat related guilt was the most significant predictor of suicidal ideation and suicide attempts (Bryan et al., 2013b, p. 38; Hendin & Haas, 1991). Further findings suggest that increased amounts of combat exposure may habituate soldiers to fearfulness of death and pain, which may increase their capability of committing suicide (Bryan, Hernandez, Allison, & Clemans 2013a; Bryan & Cukrowicz, 2011; Bryan, Cukrowicz, West, & Morrow 2010).

An additional consequence of combat exposure is that soldiers, upon returning home, may participate in risky behaviors, such as alcohol abuse and increased aggression towards others. Killgore et al., (2008) administered a two-part survey to U.S. Army soldiers recently returned from OIF. The first survey, given within 3 days upon their

return, gauged their combat experience; while the second survey, given 3 months later, assessed their emotional and mental health, alcohol and drug use, aggressive behaviors, and propensity of risk taking. The investigators found soldiers who experienced violent combat, killed another person, and were exposed to human trauma, such as witnessing death, were more likely to engage in risky behaviors, have higher alcohol consumption, and engage in verbal or physical violence with others (Kilgore et al., 2008).

In addition to the immediate mental health impact of combat, combat exposure can have lasting effects upon soldiers returning home from deployment. In an initial analysis of soldiers returning from Iraq and Afghanistan, using the Post-Deployment Health Assessment (PDHA), Hoge, Auchterlonie, and Milliken (2006) found that 19.1% and 11.3% of all returning soldiers and marines met criteria for mental health problems from OIF and OEF, respectively (Hoge, et al., 2006). Soldiers were re-assessed 4 to 10 months following the PDHA survey using the Post-Deployment Health Re-Assessment (PDHRA); 88,235 soldiers were matched having completed both forms from the same deployment (Milliken, Auchterlonie, & Hoge, 2007). Results of the PDHRA indicated higher rates of reported mental health problems, personal conflicts, PTSD, and depression among soldiers compared to the PDHA, where PTSD and depression both increased between assessments from 11.8% to 16.7% and 4.7% to 10.3%, respectively (Milliken et al., 2007).

Prigerson et al., (2002) further found that PTSD resulting from combat may indirectly contribute to additional mental health issues, including major depressive disorder, mediating the relationship between combat exposure and major depression. These findings highlight the importance of rescreening soldiers at additional time periods

after their initial mental health screening, during which time mental health problems may foster within the individual.

The manifestation and prevalence of mental health problems, including PTSD, depression, anxiety, and substance abuse, is a significant issue among military personnel. With the growing number of cases of mental health problems among veterans and active service members, additional research is needed to discover factors that help buffer military personnel from the negative effects of combat exposure on mental health problems and methods of coping with combat exposure and trauma in order to reduce the severity of mental health issues. A growing body of research suggests that that savoring, a mindfulness-based strategy, may be associated with decreased combat related mental health symptoms.

CHAPTER THREE

SAVORING

Theoretical Development of the Savoring Construct

Positive psychology has been a re-emerging subject of focus to understand strengths and virtues among individuals, rather than the traditional focus of distress and dysfunction. Positive psychology aims to understand human flourishing occurring in the past, present, and future, including such qualities as well-being, satisfaction, happiness, hope, and optimism (Seligman & Csikszentimihalyi, 2000). At the individual level, positive psychology aims to identify positive individual traits, such as the capacity for love, forgiveness, and wisdom; while at the group level, it assess how people participate in civic virtues, such as altruism, civility, and tolerance (Seligman & Csikszentimihalyi, 2000). Further, Fredrickson (2001) suggests that positive emotions foster positive experiences and enhance one's psychological growth and well-being over time.

Savoring can be understood as a positive construct within the field positive psychology, defined as “a distinct form of perceived control over positive emotions;” whereby, an individual is capable of “generating, intensifying, and prolonging enjoyment through one's own volition” (Bryant, 2003, p. 176; Bryant, 1989). Bryant and Veroff (2007) additionally proposed that savoring functions as both a state and a trait variable. State savoring is a contextualized reaction toward the experience of a positive event, while trait savoring is a stable personality trait that elicits a predisposed response to a positive experience (Jose, Lim, & Bryant, 2012).

Bryant (1989) additionally posits that positive events can be more or less pleasurable depending on one's hedonic baseline (Brickman, 1978), or one's stable

relative level of happiness, indicating that experiencing positive events and enjoying them are separate processes. Therefore, understanding how one draws pleasure from positive experiences is critical to the development and maintenance of happiness.

In an effort to understand how life events affect mental health, Bryant (1989) developed a four-factor model of perceived control that combined primary and secondary control (attempts to change the world or attempts to change oneself) with positive and negative experiences: avoiding negative events, coping with negative events, obtaining positive events, and savoring positive events. The four-factor model was related to six dimensions of subjective mental health: unhappiness, lack of gratification, strain, feelings of vulnerability, lack of self-confidence and uncertainty (Veroff et al., 1981). Well-being is a measure of unhappiness and lack of gratification, and distress is a measure of strain (affective reactions to negative experiences) and feelings of vulnerability; while lack of self-confidence and uncertainty are a combined measure of well-being and distress.

The results showed savoring to be negatively related to unhappiness and lack of gratification, reflecting a positive relationship with well-being. Savoring was also found to be negatively related to strain, and unrelated to feelings of vulnerability, suggesting that savoring may reduce symptoms of strain, or that the lack of strain may enhance one's ability to savor (Bryant, 1989). Furthermore, savoring was found to be more related to happiness than obtaining positive events, suggesting that happiness is more dependent on perceived control over emotions rather than the events themselves.

Assessment of Savoring

The current study utilized a modified version of the Savoring Beliefs Inventory (SBI) developed by Bryant (2003), which focuses on an individual's ability to obtain

pleasure from experiencing positive events. In the SBI, Bryant identifies three components that facilitate savoring beliefs: positive anticipation (Anticipating scale), positive feeling in the moment (Savoring the moment scale), and positive reminiscence (Reminiscing scale). Positive anticipation is when an individual generates positive feelings while looking forward to an event. Then, while the event is occurring, an individual may foster positive feelings through specific thoughts and behaviors. Positive reminiscence occurs when one re-imagines the positive events and recalls their positive feelings.

The SBI was administered among six different participant groups to assess the validity and reliability of the measure (Bryant, 2003). In order to assess convergent and discriminant validity, studies 1-4 sampled university students from 4 Midwestern universities and compared scores on the SBI to hypothetically correlated and uncorrelated constructs. In Study 4, participants were sampled a second time 3 weeks later to measure test-retest reliability. Study 5 assessed the predictive validity of the SBI by how well it measured “individuals’ subsequent experiences with an actual, real-world positive event” (Bryant, 2003; pg. 188). Finally, Study 6 sampled older adults to gauge external validity by cross-validating their SBI total and subscale scores with the university student samples. The SBI total scores and subscales were found to show good convergent and discriminant validity, prospective validity, as well as be internally consistent and reliable between groups (Bryant, 2003).

Additionally, Bryant (2003) hypothesized that personality differences would be related to one’s capacity to savor, suggesting that those who experience greater positive affect ought to have a stronger ability to savor. SBI Total scores, Anticipating the

moment, Savoring the moment and Reminiscing subscales were positively correlated with affect intensity, extraversion, optimism, self-control behaviors, present happiness, gratification, self-esteem, and frequency and intensity of happy moods. However, Anticipating the moment was not significantly related to present happiness. In contrast, the four scale scores were negatively correlated with hopelessness, neuroticism, physical and social anhedonia, strain, and frequency of unhappy moods (Bryant, 2003).

Anhedonia is the reduced capacity to experience pleasure. Two separate causes are argued to lead to anhedonia. Firstly, in major depressive disorder anhedonia may result from a neurobiological mechanism involving lowered dopamine, glutamate, and serotonin resulting in fewer positive emotions (Gorwood, 2008). While in nondepressed people, anhedonia may occur as a function of dampening behaviors and low pleasure beliefs (i.e. savoring) (Strauss, 2013). Therefore, it is important to understand the root of the anhedonic symptoms before attempting to apply savoring strategies as they may not be as effective in depressed people.

In addition, guilt was negatively correlated with the SBI Total score and the Anticipating subscale, while guilt and shame were negatively correlated to Savoring the moment, and depression was negatively correlated to the SBI Total score and Savoring the moment (Bryant, 2003). Also, women had higher scores on all four scales compared to men. These findings suggest that personality and gender differences are related to savoring beliefs.

Savoring and Well-Being

Endorsing stronger beliefs about savoring has been found to promote one's ability to maintain or increase positive emotions and happiness (Carl et al., 2013; Quoidbach et

al., 2010; Wood, Heimpel, & Michela, 2003). Wood et al., (2003) examined differences in positive affect regulatory behaviors (savoring) across levels of self-esteem in response to self-relevant and not self-relevant events. Wood et al., (2003) hypothesized that those with high self-esteem (HSE) would engage in more efforts to enhance or continue positive affect, compared to those with low self-esteem (LSE). In addition, the influence of neuroticism and extraversion on positive affect regulation and self-esteem were examined.

Five studies were conducted in order to capture differences in positive affect regulation across personal positive events, successes, and failures. The results showed that participants with LSE dampened (diminished) their positive feelings more than HSE participants (Study 1) and that dampening was associated with lower positive affect and higher negative affect (Study 2). Studies 3 and 4 were conducted to assess whether neuroticism and extraversion accounted for the differentiation between positive and negative affect. A regression analysis showed that extraversion was more predictive of positive affect regulation than neuroticism, while neuroticism was more predictive of negative affect regulation than extraversion. In addition, self-esteem was predictive of each form of affect regulation while controlling for neuroticism and extraversion; suggesting it is not “differentially associated with positive or negative affect regulation (Study 3 and 4) (Wood et al., 2003).

Finally, Study 5 examined the effect of the self-relevance of an event on the relationship between self-esteem and affect regulation. The self-relevant event described in this study was a personal success, while the non-self-relevant event was imagining a close friend was in an automobile accident. The results indicated that HSE was more

predictive of savoring when the event was personally relevant, while LSE was also found to be predictive of dampening and low savoring for both personally relevant and non-relevant of events. From these findings, we may infer that having HSE would facilitate savoring only when a positive event is personally relevant, contrarily, LSE would yield more dampening and difficulty savoring in both self-relevant and non-relevant events (Wood et al., 2003).

To further understand the impact of savoring on positive affect, Quoidback et al., (2010) sought to address the unique impact of savoring and dampening strategies on well-being. Quoidbach et al., (2010) suggested that there are four strategies of savoring and dampening behaviors. Savoring strategies include behavioral displays of positive emotional experiences, deliberate attention to the present positive experience, celebrating positive events with others, and anticipating future or remembering past positive events. Dampening strategies include suppressing positive emotions, engaging in distracting behaviors, identifying negative aspects of positive situations, and anticipating future or remembering past negative events.

Savoring and dampening strategies were assessed using the Emotion Regulation Profile-Revised (ERP-R; Nelis et al., 2011) that presented several real-life scenarios where participants were to select any of 8 possible reactions that best represented how they might react. The reactions represented either amplifying strategies, such as savoring the moment, or dampening strategies, such as suppressing positive emotions. Emotional and cognitive well-being were measured using the Positive and Negative Affect Schedule and the Satisfaction with Life Scale (SWLS) respectfully (Watson, Clark, & Tellegent,

1988; Diener, Emmons, Larsen, & Griffin, 1985), and overall happiness was measured using the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999).

The results indicated that positive affect was positively predicted by being present and having anticipatory or reminiscent positive thoughts, and negatively predicted by distractive behaviors. Life satisfaction was positively predicted by celebrating positive events with others, while negatively predicted by fault finding and anticipatory or reminiscent thoughts (Quoidbach et al., 2010). In addition, the researchers assessed how using multiple savoring strategies may impact overall happiness. The findings revealed, firstly, that overall happiness was related to savoring collectively, and second, that happiness may be achieved using few savoring strategies in diverse situations or using many strategies in few situations.

The findings by Quoidbach et al. (2010) suggested that there is no one method that fits all application of savoring, rather individual differences may uniquely allow individuals to adaptively apply savoring to different situations to enhance their emotional well-being. Carl et al., (2013) conducted a daily diary study in order to assess and compare the relationship between momentary processes of positive emotion (PE) regulation, including positive emotion reactivity, regulatory goals and regulatory effectiveness, and baseline anxiety and depressive symptoms with savoring beliefs. Emotion regulation refers to the degree to which emotions can be maintained/increased (up-regulated) or decreased (down-regulated), explicitly (consciously) or implicitly (non-consciously). Previous research suggested that greater ability to up-regulate PE may enhance resilience to stress, negative emotions, and mental dysfunction (Fredrickson, 2001).

Carl et al., (2013) utilized the following scales for their assessment of anxiety and depressive symptoms: Overall Anxiety Severity and Impairment Scale (OASIS; Norman et al., 2006) and the Beck Depression Inventory-II (BDI-II; Beck et al., 1996). Savoring was measured by the SBI, and positive and negative affect were measured using the Positive and Negative Affect Schedule-Global (PANAS-G; Watson et al., 1988). Student participants answered questions about their daily PE, daily positive events, and their emotion regulatory responses, for 14 consecutive days. The results revealed that higher baseline anxiety and depressive symptoms were associated with reduced PE regulation (down-regulation) and lower daily PE; while higher baseline savoring beliefs were associated with increased PE regulation tendencies (up-regulation) and reduced down-regulation (Carl et al., 2013).

Savoring has additionally been described as a “regulatory mechanism” between an individual’s perception of positive events and their positive emotional reactions (Jose, Lim, & Bryant, 2012; Bryant & Veroff, 2007). Jose et al., (2012) hypothesized that momentary savoring would moderate the relationship between daily positive events and momentary happy mood on a given day. Participants reported daily positive events on three dimensions: frequency, intensity, and impact. Trait measures of savoring were collected using an abbreviated version of the WOSC that assessed how the respondents reacted mentally and behaviorally to recent positive events (Bryant & Veroff, 2007).

Jose et al., (2012) found that momentary happy mood was highest among high savoring individuals irrespective of the number of positive events they experienced. The relationship between the experience of momentary positive events and momentary savoring was stronger for those who were higher in trait amplifying savoring. In contrast,

the relationship between momentary events and momentary savoring was weaker for people higher in trait dampening savoring. Individuals low in savoring showed a stronger relationship between their experience of positive events and their mood (Jose et al., 2012). These findings suggest that individuals who regularly savor are more likely to sustain a happy mood even in the absence of positive daily events.

In a conceptually related study, Hurley and Kwon (2013) investigated the relationships between savoring the moment and daily uplifts with positive affect and life satisfaction. In addition, the authors also examined if there was an interaction between savoring the moment and daily uplifts on positive affect and overall life satisfaction, and whether the interaction would be more predictive of positive affect and life satisfaction than either variable independently. University students were recruited to participate in a longitudinal, 2-week, study with two testing sessions during which participants completed the SBI, Hassles and Uplifts Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981), and Satisfaction with Life Scale (SWLS) at Time 1, and Hassles and Uplifts Scale, PANAS-X, and SWLS at Time 2.

The findings by Hurley and Kwon (2013) replicated those found by Jose et al. (2012). Hurley and Kwon (2013) found that greater uplifts and higher savoring both independently contributed to higher levels of positive affect and life satisfaction at Times 1 and 2, while those who reported low levels of savoring and low levels of daily uplifts also had the lowest levels of positive affect and life satisfaction. Additionally, there was a significant interaction with higher savoring enhancing the relationship between daily positive events and positive affect and life satisfaction. However, the interaction was not more predictive than the main effects between savoring the moment or number of daily

uplifts and positive affect or life satisfaction. Interestingly, daily positive affect was affected more among those who savor less but the number of daily positive events increased.

Although savoring positive events has been shown to be beneficial, experiencing too many of positive events may hinder our ability to savor them. Quoidbach and Dunn (2013) found that when given unlimited access to a common pleasure, participants were less likely to savor it compared to when they were temporarily deprived of it. University undergraduates participated in two lab visits a week apart, Time 1 and Time 2. At Time 1 the participants were randomly assigned to a restricted access condition, must refrain from eating chocolate, the abundant access condition, must eat up to two pounds of chocolate over a week, or control condition in which they were not given specific instructions related to eating chocolate. Participants from both groups then tasted a piece of chocolate followed by completing a dispositional happiness (Subjective Happiness scale) and positive affect (PA) (PANAS) measures. Additionally, savoring was measured by relating the four components of savoring described by Bryant and Veroff (2007) to chocolate.

At Time 2 the participants tasted a piece of chocolate a second time and again completed the savoring and positive affect measures. Quoidbach and Dunn (2013) found that there was a significant difference in PA between groups at Time 2, where the restricted group had higher PA than the control and abundance group, whose PA decreased after tasting the chocolate again. There were also significant between group differences in savoring at Time 2, where the restricted group savored the chocolate at Time 2 more than the control and abundance group, both of whom showed decreases in

savoring after tasting the chocolate again. There was no significant difference between the control and abundance group at Time 2 for either PA or savoring. Following these findings, Quoidbach and Dunn (2013) conducted a bootstrapping procedure to test whether savoring mediated the effect of being in the restricted or abundance group on PA at Time 2. The results of the bootstrapping revealed that participants in the restricted access group had higher PA at Time 2 due to their greater readiness to savor the chocolate.

These findings are further supported by additional research in which individuals who had overcome previous hardships reported an elevated capacity to savor positive events (Croft, Dunn, & Quoidbach, 2014). Croft et al., (2014) hypothesized that those who had experienced more hardship in their lives would be more inclined to savor positive events when they occur; however, in the face of present hardship savoring would be diminished.

Participants from French speaking countries participated in an online study in which they were asked about the number of negative events they had experienced in their lives, including: divorce of self/parent, discrimination, combat experience, etc; as well as whether they had dealt with the event or were still struggling with it. Savoring was assessed using the ERP-P, which allowed participants to respond to various scenarios with either a savoring strategy or dampening strategy. Additionally, the participants reported their current mood using a single item scale and completed a personality inventory using the Ten-Item Personality Inventory, an abbreviated measurement of the Big-5 (TIPI; Gosling, Rentfrow, & Swann, 2003). The findings supported the hypothesis that past adversity was associated with greater savoring, while experiencing current

hardship was associated with less savoring. Interestingly, the results were significant even when controlling for individual differences, including personality variables (Croft et al., 2014).

It may be logically surmised that an individual is more likely to experience additional hardships as they get older. Ramsey and Gentzler (2014) investigated the relationship between age differences in subjective well-being and savoring and whether the perceived amount of time left to live mediated the relationship between age and savoring. Ramsey and Gentzler (2014) hypothesized that older adults would have higher subjective well-being, savoring would be related to subjective well-being, and that older adults with less perceived time would have savor more.

Previous research suggests that age differences in savoring may partially explain age differences in subjective well-being across adulthood (Bryant & Veroff, 2007). In one study, savoring was assessed using three measures via the SBI, the Positive Events and Responses Survey for Adults (PEARS-A; Gentzler, Palmer, & Ramsey, 2013) and the Ways of Savoring Checklist (WOSC; Bryant & Veroff, 2007). The PEARS-A assessed participant's savoring responses to hypothetical positive experiences, while the WOSC assessed participant's use of savoring strategies for past positive experiences. Subjective happiness, satisfaction with life, and perceived time left to live were measured using the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999), Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), and the Future Time Perspective Scale (FTPS; Cate & John, 2007; Lang & Carstensen, 2002).

Ramsey and Gentzler (2014) found a non-linear relationship between age differences and subjective well-being, where older adults had the highest subjective well-

being compared to younger adults, and middle-aged adults had the lowest. All three measures of savoring were positively related to subjective well-being, however, age was not correlated with savoring. Contrary to the hypotheses, perceived time to live was significantly related to savoring, such that greater perceived time to live was more predictive of savoring than less perceived time to live. Further, a significant mediation effect was found where perceived time to live mediated the relationship between age and savoring; younger adults with greater perceived time to live had a greater capacity to savor, could savor hypothetical positive events more, and could savor past events more.

Savoring Interventions

The possible use of savoring as a coping strategy to reduce negative mental health symptoms has been suggested throughout savoring research. Therefore, authors have begun investigating whether savoring can be enhanced through interventions. In an intervention study assessing savoring the moment and positive and negative mental symptoms among university students, Hurley and Kwon (2012) examined changes in emotional symptoms at two testing periods across 14 days. The intervention group was provided information about positive psychology and savoring the moment, as well as active methods of savoring as proposed by Bryant and Veroff (2007). During the first testing session, the intervention participants were asked to recall recent positive events in their lives and list possible ways in which they may have savored them in order to facilitate the ability to savor similar events over the following two weeks. All the participants completed the Positive and Negative Affect Schedule-Expanded (PANAS-X) and the Beck Depression Inventory II. Hurley and Kwon (2012) found that those in the intervention group scored higher on savoring and had significantly lower scores on

negative affect and depressive symptoms compared to the control group; however, there was no significant difference between groups on positive affect.

Additional research by Ho, Yeung, and Kwok (2014) provided further support that positive psychology interventions incorporating savoring may offer benefits for reduced negative mental health symptoms and enhanced positive mental well-being. Older adults, ages 60 or higher, were recruited in Hong Kong to participate in a positive psychology intervention program spanning 9 weeks and incorporating 8 positive psychology themes including happiness, gratitude, optimism, savoring, curiosity, courage, altruism, and life meaning. The participants completed pre-test and post-test measures of depression, life satisfaction, gratitude, and subjective happiness. Each week participants were introduced to a single theme of positive psychology and taught how to experience and identify real life examples of the theme. For example, during the savoring session, “Participants were given a cup of tea to drink and another cup of tea to savor, followed by a discussion on their differences in order to help them find appreciation and enjoyment in life” (Ho, Yeung, & Kwok, 2014, p. 192); additionally, the participants were then to practice savoring once a day. At the conclusion of the intervention, the participants demonstrated lower depression and higher life satisfaction, gratitude, and subjective happiness compared to the pre-test measures. A limitation of this study is that the effectiveness of each session on the health outcomes was not assessed; therefore, the specific contribution of savoring to the intervention could not be determined.

Savoring strategies may also contribute to mindfulness interventions. Bryant and Veroff (2007) suggest that mindfulness and savoring are related in their shared component of experiencing emotional states; whereby, mindfulness involves recognizing

the experience and savoring involves eliciting positive emotions from the experience (Beaumont, 2011). Geschwind, Peeters, Drukker, van Os, and Wichers found that mindfulness based cognitive therapy that teaches awareness of pleasant events and nourishing behaviors was positively related to positive affect, ability to enhance momentary positive mood from engaging in pleasant activities, and decreased depressive symptoms. Zautra et al., (2008) found decreased recurrent depression among rheumatoid arthritis patients who received mindfulness treatment focusing on savoring positive emotional and social resources. In addition, Garland, Froeliger and Howard (2013) found that mindfulness based interventions that incorporate savoring may facilitate natural reward responses that could alleviate drug related addictions.

Savoring research has revealed positive mental health outcomes and implications for coping with negative mental health symptoms by savoring positive life experiences. These findings pertain to the current study as I will examine how savoring beliefs may be applied to participants exposed to a unique form of hardship, U.S. Army soldiers exposed to combat. Soldiers returning from deployment may struggle with symptoms of PTSD and depression, and according to previous research, higher savoring has been related to lower anxiety and depressive symptoms (Carl et al., 2013; Hurley & Kwon, 2014). However, no previous research I have found has examined savoring as a moderator (buffer) of negative events on mental health symptoms. I hypothesize that savoring may act as a buffer of negative mental health symptoms associated with combat exposure.

CHAPTER FOUR
SUMMARY OF HYPOTHESES

The aim of the present study is to better understand how savoring the moment may moderate the relationship between exposure to combat and negative mental health symptoms among soldiers returning from OIF/OEF (Figure 1). Therefore, the following hypotheses are proposed:

Hypothesis 1a: Increased combat exposure at Time 1 will be associated with higher depression at Time 1 and Time 2.

Hypothesis 1b: Increased combat exposure at Time 1 will be associated with higher PTSD at Time 1 and Time 2.

Hypothesis 2a: Greater savoring beliefs at Time 1 will be associated with lower depression at Time 1 and Time 2.

Hypothesis 2b: Greater savoring beliefs at Time 1 will be associated with lower PTSD at Time 1 and Time 2.

Hypothesis 3: Savoring beliefs will have a curvilinear relationship with combat exposure; with either very low or very high combat exposure being associated with less savoring.

Hypothesis 4a: Savoring beliefs will moderate the relationship between combat exposure and depression, where those with high savoring beliefs will experience less depression under moderate levels of combat exposure than those with low savoring beliefs.

Hypothesis 4b: Savoring beliefs will moderate the relationship between combat exposure and PTSD, where those with high savoring beliefs will experience less PTSD under moderate levels of combat exposure than those with low savoring beliefs.

CHAPTER FIVE

METHODS

Participants

A total of 1,911 soldiers from a single U.S. Army base participated in the Time 1 survey, of whom 1,725 provided consent to use their responses for research purposes, and 885 had been deployed on at least one combat operation and completed the combat exposure measure. A total of 1,652 soldiers participated in the Time 2 survey, of whom 1,324 provided consent to use their responses for research purposes. Only data of participants who provided consent was used for further analysis. Demographics of the Time 2 survey participants were similar to the Time 1 survey participants. Between the Time 1 and Time 2 survey administrations, 485 soldiers participated in both and provided consent for the use of their responses in research. Among the 485 soldiers who participated in both survey assessments, 214 reported having been on a combat deployment.

A Pearson Chi-square test was run to assess whether there was a significant association between gender and rank with the Time 1 sample that did not complete the Time 2 survey and the Time 1 sample that did complete the Time 2 survey. The Chi-square test revealed a significant association between gender and the Time 1 sample that did not complete the Time 2 survey and the Time 1 sample that did complete the Time 2 survey, $\chi^2(1) = 5.373, p = .020$. There was also a significant association between rank and Time 1 sample that did not complete the Time 2 survey and the Time 1 sample that did complete the Time 2 survey, $\chi^2(5) = 13.126, p = .022$. As a result of these findings, I decided to control for gender and rank in the analyses using the matched Time 2 sample.

Procedure

This study utilized data collected from a longitudinal study that assessed the degree of combat exposure, traumatic experience, savoring beliefs and mental health symptoms of soldiers at two Time points. A comprehensive survey was administered at two Time periods to soldiers at a military base in the United States. The assessment at Time 1 measured combat exposure, traumatic experiences, savoring beliefs, and mental health symptoms, while the assessment at Time 2 only measured mental health symptoms. The survey utilized scales that assessed the mental health status, including symptoms of PTSD and depression; deployment history, including how long they were abroad, exposure to combat, traumatic experience; and beliefs about savoring. All measures utilized for the present study are included in the Appendices section. The survey was based upon previous research examining barriers and facilitators to mental health treatment seeking behaviors among active duty soldiers (Britt et al., in press; Zinzow et al., 2013; Zinzow et al., 2015).

The Time 1 surveys were distributed 9 months following deployment in 29 data collection sessions spanning 5 consecutive days. Soldiers completed the survey in a classroom with a maximum capacity of 150 soldiers per session. Two faculty and two graduate students were present during each session, as well as an ombudsman who could answer questions about soldier participation. Soldiers were briefed by the principal and co-investigators about the purpose of the study and informed consent was obtained for participation.

Time 2 surveys were distributed 5 months following the Time 1 assessment. The same measures, with minor adjustments, were used. Soldiers completed the survey during

processing prior to redeployment at designated processing locations or at the research team's assigned station. Soldiers were briefed as a group about the purpose of the study and given informed consent forms for additional information.

Measures

Combat Exposure

Combat exposure was assessed using a modified 20-item measure from the Combat Experiences Scale (Kilgore et al., 2008; Hoge et al., 2004), gauging whether soldier had experienced combat or trauma during any of their deployments. Soldiers responded whether they had experienced each combat event on a 4 point scale (Never, One Time, Two to Four Times, Five or More). Responses were then recoded to "yes" or "no" to whether they had experienced each event, and the degree of combat exposure was calculated by summing the number of "yes" responses (see Thomas, Wilk, Riviere, McGurk, Castro, & Hoge, 2010). Scores range from 0 to 20, with a higher number of "yes" responses indicated greater exposure to combat. The breadth of combat exposure for the original scale has demonstrated high reliability ($\alpha = .91$) (Hoge et al., 2004).

Mental Health Symptoms

PTSD symptoms were assessed at Time 1 and Time 2 using the PTSD Checklist-Military Version (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993). This measure included 17 items reflecting the DSM-IV symptoms of PTSD, including, "Repeated, disturbing dreams of the stressful experience" and "Feeling emotionally numb or being unable to have loving feelings for those close to you." Responses for the items were on a 5-point scale (1=*Not at all* to 5=*Extremely*). Previous research has shown Cronbach's

alpha for the PCL to be .94 and .95 (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Zinzow et al., 2015).

Depressive symptoms were assessed using a 9-item Patient Health Questionnaire (PHQ; Kroenke, Spitzer, & Williams, 2001). Soldiers were asked whether they had been experienced 9 symptoms of depression during the previous 2 weeks. An example item had soldiers rate how often they had been bothered by “Feeling down, depressed, hopeless;” items were rated on a 4-point scale (1=*Not at all* to 4=*Nearly everyday*). Reliability for the PHQ was high (e.g., Kroenke et al., 2001; Zinzow et al., 2015; $\alpha = .90$).

Savoring beliefs inventory

Savoring beliefs were assessed at Time 1 using a modified version of the Savoring Beliefs Inventory (SBI) (Bryant, F.B., 2003). Two items, one positively worded and one negatively worded, were selected that best loaded on each subscale (past, present, future). The loadings for these six items were obtained from Bryant (2003). Additionally, the scale was modified to a seven point scale, ranging from strongly disagree to strongly agree, to match the other scales in the survey. Example items included, “I can make myself feel good by imagining what a happy time that is about to happen will be like,” and “It’s easy for me to enjoy myself when I want to.” The SBI in Bryant (2003) demonstrated to have high reliability for the overall measure, with the alpha coefficient ranging from 0.88 to 0.94, and all subscales also showing high reliability ($\alpha > 0.80$). Additional research has shown the SBI to have high reliability ($\alpha = .96$ and $.90$) with 218 and 168 participants, respectfully (Ramsey & Gentzler, 2014; Hurley & Kwon, 2012). In the present study, the modified six-item scale had an alpha coefficient of 0.80.

Data Analysis

All statistical analyses for the present study were conducted using SPSS. In order to test the hypotheses, correlational analyses were conducted to assess the relationship between combat exposure and PTSD and depression (H1a & H1b), and then the relationship between savoring and PTSD and depression (H2a & H2b). In order to test the predicted curvilinear relationship between savoring beliefs and combat exposure (H3), a nonlinear regression was used using the squared combat exposure variable as the predictor variable. Finally, to test for moderation of savoring beliefs on the relationship between combat exposure and mental health symptoms (H4a & H4b), two multiple regressions were conducted using the quadratic function of combat exposure (Cohen et al., 2013). If the specific interaction between combat exposure and savoring is found to be significant, tests of simple slopes between savoring and mental health symptoms will be conducted at low, medium, and high levels of combat exposure.

CHAPTER SIX

RESULTS

Descriptive and Correlational Statistics

Table 1 presents the means, standard deviations, bivariate correlations and Cronbach Alphas for the measures assessed at Time 1. Table 2 presents the means, standard deviations, bivariate correlations and alphas for each measure, including Time 1 combat exposure and savoring and Time 2 depression and PTSD, using the matched data. Soldiers, on average, reported having experienced moderate combat exposure ($M = 6.64$) and high savoring ($M = 4.59$) at Time 1. In addition, soldiers rated experiencing low symptoms of depression ($M = 1.59$) and PTSD ($M = 1.84$) at Time 1, and low symptoms of depression ($M = 1.40$) and PTSD ($M = 1.67$) at Time 2.

Combat exposure at Time 1 was positively related to depression at Time 1 ($r = .14, p < .01$), but was not significantly related to depression at Time 2. These results provide partial support for hypothesis 1a, such that as combat exposure increases symptoms of depression also increase. Combat exposure at Time 1 was positively related to PTSD at Time 1 and Time 2 ($r = .42, p < .01; r = .26, p < .01$, respectively), supporting hypothesis 1b.

Savoring at Time 1 was found to be negatively related to depression at Time 1 and Time 2 ($r = -.57, p < .01; r = -.29, p < .01$, respectfully), supporting hypothesis 2a. Savoring was also found to be negatively related to PTSD at Time 1 and Time 2 ($r = -.51, p < .01; r = -.31, p < .01$, respectfully), supporting hypothesis 2b. Hypothesis 3, that savoring beliefs would have a curvilinear relationship with combat exposure, was not supported; however, I did find a significant linear relationship between combat exposure

and savoring ($r = -.15, p < .01$) at Time 1, suggesting that as combat exposure increases savoring decreases.

In addition, using Steiger's Z test for correlated correlations (Steiger, 1980), I found that the correlation between Time 1 savoring and Time 1 depression was significantly stronger than the correlation between Time 1 savoring and Time 1 PTSD ($Z = 2.86, p < .01$). However, with the matched sample, the correlation between Time 1 savoring and Time 2 depression was not found to be significantly stronger than the correlation between Time 1 savoring and Time 2 PTSD ($Z = .42, p = .67$).

Hypothesis Testing: Moderated Regressions for Savoring and Combat as Predictors of Symptoms at Time 1

To test hypotheses 4a and 4b, I conducted a moderated regression analysis to examine the interaction between combat exposure and savoring as a predictor of depression and PTSD after controlling for the main effects of the predictors. First, when mean-centered combat exposure and savoring were entered in the model, savoring was found to significantly predict symptoms of depression, $B = -.281, S.E. = .014, p < .001$; combat exposure did not significantly predict symptoms of depression. After controlling for the two main effects, there was a significant interaction between combat exposure and savoring predicting symptoms of depression at Time 1 (see Table 3). The R^2 for the interaction was .003. I then included the quadratic version of combat exposure and its interaction with savoring to assess whether the variables significantly predicted symptoms of depression while controlling for the linear version of combat exposure. The quadratic version of combat exposure and its interaction with savoring did not significantly predict symptoms of depression (see Table 4).

As seen in Table 5, mean-centered combat exposure and savoring were found to significantly predict symptoms of PTSD at Time 1. After controlling for the two main effects, there was a significant interaction between combat exposure and savoring predicting symptoms of PTSD at Time 1 (see Table 5). The R^2 for the interaction was .01. The quadratic version of combat exposure and its interaction with savoring, again, did not significantly predict symptoms of PTSD (see Table 6).

Tests of simple slopes were conducted to interpret the interaction between combat exposure and savoring as a predictor of depression and PTSD, using guidelines developed by Cohen et al. (2003). The simple slopes were estimated at high (+1 SD), medium (0 SD), and low (-1 SD) values of savoring. At low levels of savoring there was a significant positive relationship between combat exposure and depression, $t(882) = 2.79, p < .01$, whereas at medium levels of savoring the relationship between combat exposure and depression was not significant, $t(882) = 1.80, p = .07$. At high levels of savoring there was also a non-significant relationship between combat exposure and depression, $t(882) = -.12, p = .90$. As seen in Figure 2, people with low savoring had a significant increase in symptoms of depression as combat exposure increased. However, combat exposure was not significantly related to depression symptoms at moderate or high levels of savoring.

Viewing the interaction differently, simple slopes showed there was a significant positive relationship between combat exposure and PTSD at low savoring, $t(882) = 12.01, p < .01$, medium savoring, $t(882) = 12.59, p < .01$, and high savoring, $t(882) = 5.68, p < .01$. As seen in Figure 3, combat exposure was related to PTSD symptoms at each level of savoring. However, the relationship was strongest under low savoring.

Hypothesis Testing: Moderated Regressions with the Matched Time 1-Time 2

Sample

Moderated regression analyses were conducted using the matched data to examine the interaction between Time 1 combat exposure and savoring as a predictor of depression and PTSD at Time 2. By replicating the procedures used in examining the Time 1 hypotheses and controlling for gender and rank of the participants, savoring at Time 1 was found to significantly predict symptoms of depression at Time 2; however, neither Time 1 combat exposure nor the interaction between Time 1 combat exposure and savoring were found to significantly predict symptoms of depression at Time 2 (see Table 7). I then included the quadratic version of combat exposure and its interaction with savoring at Time 1 to assess whether it significantly predicted symptoms of depression at Time 2. Interestingly, the quadratic version of Time 1 combat exposure did predict depression at Time 2 (see Figure 4); however, its interaction with savoring at Time 1 did not significantly predict symptoms of depression at Time 2 (see Table 8).

Both Time 1 savoring and Time 1 combat exposure were found to significantly predict symptoms of PTSD at Time 2; however, the interaction between combat exposure and savoring at Time 1 did not significantly predict symptoms of PTSD at Time 2 (see Table 9). I again included the quadratic version of combat exposure and its interaction with savoring at Time 1 to assess whether it significantly predicted symptoms of PTSD at Time 2. The quadratic version of Time 1 combat exposure and its interaction with savoring at Time 1 did not predict symptoms of PTSD at Time 2 (see Table 10).

CHAPTER SEVEN

DISCUSSION

Summary of Findings

In the present study, savoring positive life experiences was examined as a buffer of negative mental health symptoms that may result from combat and traumatic experiences among U.S. military personnel. First, the relationships between Time 1 combat exposure and Time 1 and Time 2 depression and PTSD were examined. The analyses revealed that Time 1 combat exposure did predict higher depression at Time 1, however, not at Time 2. Time 1 combat exposure was also shown to predict greater PTSD at Time 1 and Time 2. These findings support previous research that has demonstrated that soldiers who had experienced combat or trauma were more likely to report symptoms of major depressive disorder and PTSD (Mitchell et al., 2011; Hoge et al., 2004).

Savoring was found to predict lower depression and lower PTSD at both Time 1 and Time 2. These results are similar to the findings by Hurley and Kwon (2012), who demonstrated that savoring the moment may dampen negative affect and depressive symptoms. In addition, savoring was found to have a stronger negative relationship to Time 1 depression than Time 1 PTSD, providing evidence that the anhedonic aspect of depression may be related to lower pleasure beliefs (i.e. savoring) and dampening behaviors (Strauss, 2013).

The relationship between savoring and combat exposure did not demonstrate the curvilinear relationship that was hypothesized, with either very low or very high combat exposure being associated with less savoring. However, there was a negative linear

relationship, such that as combat exposure increased ones savoring decreased. The negative relationship between combat exposure and savoring suggests that the adversity experienced by soldiers exposed to high levels of combat may inhibit their ability to savor positive experiences in the future.

Based on prior research suggesting that savoring positive life experiences may elicit positive mental health outcomes and implications for coping with negative mental health symptoms (Carl et al., 2013; Quidbach et al., 2010; Ho, Yeung, & Kwok, 2014), the present study is the first to have examined how savoring moderates the relationship between combat exposure and depression and PTSD. It was hypothesized that savoring beliefs would moderate the relationship between combat exposure and depression, where those with high savoring beliefs would experience less depression under moderate levels of combat exposure than those with low savoring beliefs. Support was found for the interaction at Time 1; those who savored little experienced greater symptoms of depression at higher levels of combat exposure compared to those who had moderate and high savoring. Combat exposure was not significantly related to symptoms of depression at moderate or high levels of savoring.

The quadratic version of combat exposure and its interaction with savoring did not significantly predict symptoms of depression at Time 1. This finding may be explained by the lack of a significant quadratic relationship between savoring and combat exposure.

The analyses using the Time 1-Time 2 matched sample did not support the interaction between combat exposure and savoring predicting depression at Time 2; neither was there a main effect for Time 1 combat exposure predicting depression at

Time 2. The lack of an interaction and main effect may be a result of insufficient power to detect the relationships. The matched sample was substantially smaller compared to the analyses with the entire Time 1 sample. Interestingly, the quadratic version of Time 1 combat exposure did predict depression at Time 2, while its interaction with Time 1 savoring did not. The quadratic main effect demonstrates that symptoms of depression are lowest at either low or high levels of combat exposure. It is difficult to explain this effect because it only occurred using the matched sample at one time period of depression. A potential explanation for this finding is that soldiers who experienced little combat naturally had fewer symptoms of depression at Time 2. In contrast, those who experienced high levels of combat may have sought treatment following their deployment, therefore reporting fewer depressive symptoms when taking the survey at Time 2.

I also hypothesized that savoring beliefs would moderate the relationship between combat exposure and PTSD, where those with high savoring beliefs would experience less PTSD under moderate levels of combat exposure than those with low savoring beliefs. The results provided support for the interaction at Time 1; those lower in savoring experienced greater symptoms of PTSD at higher levels of combat exposure compared to those who had moderate and high savoring. The test of simple slopes revealed that combat exposure was related to PTSD symptoms at each level of savoring, with the relationship being strongest under low savoring. As with depression, the quadratic version of combat exposure and its interaction with savoring did not significantly predict symptoms of PTSD.

Using the Time 1-Time 2 matched sample, there were significant main effects of Time 1 savoring and Time 1 combat exposure predicting PTSD symptoms at Time 2. However, the interaction was not significant, which may again be attributed to a lack of power. The quadratic version of Time 1 combat exposure and its interaction with Time 1 savoring did not predict PTSD at Time 2.

Implications of Findings

Theoretical Findings

The results of this study have both theoretical and practical implications. First, the present study contributes to the research literature showing that exposure to combat is related to symptoms of depression and PTSD (Coll, Weiss, & Yarvis, 2011). Second, the present study uniquely examined savoring beliefs among U.S. military personnel, whom may have difficulty fostering positive emotions due to the circumstances of combat. Most previous research has demonstrated that savoring is related to positive affect and dampening beliefs, trying to make oneself feel worse (Wood et al., 2003; Quoidbach et al., 2010), whereas this study focuses on the relationship between savoring and depression and PTSD. This study has provided evidence that the lack of savoring beliefs is related to greater symptoms of depression and PTSD. In addition, these findings contribute to Carl et al.'s (2013) research showing that increased savoring was associated with reduced depressive symptoms.

Third, the present study examined savoring as a moderator of the combat exposure-mental health symptoms relationship among U.S. Army soldiers. Few studies have examined the buffering effects of savoring on mental health symptoms. Jose et al., (2012) examined how momentary savoring would moderate the relationship between

daily positive events and momentary happy mood on a given day. The results revealed that momentary happy mood was highest among high savoring individuals irrespective of the number of positive events they experienced. However, individuals low in savoring showed a stronger relationship between their experience of positive events and their mood (Jose et al., 2012). These findings suggest that individuals who regularly savor are more likely to sustain a happy mood even in the absence of positive daily events.

In the present study, savoring was found to moderate the relationship between combat exposure and depression at Time 1, as well as between combat exposure and PTSD at Time 1 among military personnel. From these findings we may surmise that soldiers who savor are better able to foster and maintain positive emotions in the face of adversity, therefore inhibiting symptoms of depression and PTSD. These results provide additional evidence of the potential of savoring to suppress the magnitude of negative mental health symptoms resulting from combat or traumatic experiences.

Practical Implications

The results of the present study bear several practical implications. Firstly, the results show that savoring buffers negative mental health symptoms for those in high risk occupations. However, savoring positive life events can also be beneficial to the general public in diminishing the symptoms of depression and PTSD. The regular practice of savoring may be beneficial to overall positive mental health by increasing ones ability to experience and maintain enjoyment. In addition, savoring more may enhance resilience to depressive symptoms by adjusting ones hedonic baseline to be more receptive to experiencing pleasure and joy from positive events and diminishing dampening behaviors.

Second, these findings have implications for savoring training. Previous research has shown that training in savoring the moment and other active savoring strategies may reduce negative affect and depressive symptoms (Hurley & Kwon, 2012). Savoring training may also help alleviate symptoms of current mental health problems by allowing individuals to foster and retain positive emotions from positive life events. Therefore, developing the ability to savor positive experiences should be considered as a preventative measure for those at risk for mental health issues. In addition, savoring training may also be beneficial to those in high risk occupations and occupations that are more susceptible to negative mental health symptoms.

Limitations and Future Directions

There are limitations of the present study to provide direction for future research. First, the study utilized self-report to assess all of the constructs examined. Although self-reports are insightful in assessing individuals' personal beliefs about savoring and combat experiences, people may be susceptible to errors in accuracy. For example, individuals may have difficulty recalling precise combat experiences or traumas following deployment. Individuals may also provide socially desirable responses that may undermine the accuracy of their combat experience, savoring beliefs, and/or mental health symptoms. The present study ensured anonymity in order to encourage honest responding.

Second, the savoring measure was assessed with a modified version of the full 24 item SBI, using three positively and three negatively worded items that best loaded from the past, present, and future scales of the SBI. Future studies should assess savoring using the full measure to enhance the reliability of the assessment. Researchers could also

incorporate measures of mindfulness, which are related to savoring through their shared component of emotional states (Bryant & Veroff, 2007; Beaumont, 2011). This study also did not have pre-deployment data related to savoring beliefs and the mental health conditions of soldiers.

The present study was also not able to replicate the interaction between combat exposure and savoring to predict depression and PTSD using the matched sample. As mentioned earlier, the matched sample was much smaller than the Time 1 sample. Future studies should seek to have a larger matched sample in order to accurately investigate the longitudinal relationship between combat exposure and savoring and their interaction predicting negative mental health symptoms.

This study is the first to exam savoring as a moderator of negative events on mental health symptoms. The present study found savoring to moderate the relationship between combat exposure and depression and PTSD. Therefore, future research should strive to better understand how savoring may function as a moderator of other negative mental health symptoms among soldiers and other at risk groups. Future studies ought to consider examining the effect of survivor guilt on individuals' ability to savor positive events and negative mental health symptoms; whereby, guilt may lead one to believe they are undeserving of happiness and therefore unable to savor. Future studies should also examine the effects of savoring training and interventions as preventative measures and treatment for negative mental health symptoms. Studies should also seek to understand the predictors of savoring among employees in high risk occupations, including positive affect, emotion regulation, and mindfulness.

Conclusion

Engaging in firefights or witnessing death are occupational hazards associated with combat exposure facing military personnel. Furthermore, these traumatic experiences may lead to significant mental health problems, including depression and PTSD. However, research in savoring has revealed promising evidence suggesting that those who savor more are less symptomatic in depression and anxiety. The present study adds that savoring may buffer the severity of depression and PTSD resulting from combat and traumatic experiences among soldiers. Furthermore, savoring needs to continue to be researched as an effective measure of diminishing and treating negative mental health symptoms, including depression and PTSD.

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APPENDICES

Appendix A

Measure of Combat Exposure

| II. Combat and Traumatic Experiences | | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|-----------------------|
| 1. The next questions are about stressful experiences. Think of all your deployments in answering the questions. How many times did you ever have each of these experiences during any of your deployments? | | | | | | | |
| | Never | One time | Two to four times | Five to nine times | Ten or more times | Did this happen during your most recent deployment? | |
| | | | | | | Yes | No |
| Being attacked or ambushed | <input type="radio"/> | <input type="radio"/> |
| Receiving incoming artillery, rocket, or mortar fire | <input type="radio"/> | <input type="radio"/> |
| Being shot at or receiving small arms fire | <input type="radio"/> | <input type="radio"/> |
| Shooting or directing fire at the enemy | <input type="radio"/> | <input type="radio"/> |
| Being responsible for the death of an enemy combatant | <input type="radio"/> | <input type="radio"/> |
| Being responsible for the death of a noncombatant | <input type="radio"/> | <input type="radio"/> |
| Seeing dead bodies or human remains | <input type="radio"/> | <input type="radio"/> |
| Seeing dead or seriously injured Americans | <input type="radio"/> | <input type="radio"/> |
| Knowing someone seriously injured or killed | <input type="radio"/> | <input type="radio"/> |
| Improved explosive device (IED) /booby trap exploded near you | <input type="radio"/> | <input type="radio"/> |
| Being physically moved or knocked over from an explosion | <input type="radio"/> | <input type="radio"/> |
| Being in threatening situations where you were unable to respond because of the rules of engagement. | <input type="radio"/> | <input type="radio"/> |
| Saved the life of a Soldier or civilian | <input type="radio"/> | <input type="radio"/> |
| Participating in demining operations | <input type="radio"/> | <input type="radio"/> |
| Seeing ill/injured women or children who you were unable to help | <input type="radio"/> | <input type="radio"/> |
| Being wounded or injured | <input type="radio"/> | <input type="radio"/> |
| Had a close call, was shot or hit, but protective gear saved you | <input type="radio"/> | <input type="radio"/> |
| Had a buddy shot or hit who was near you | <input type="radio"/> | <input type="radio"/> |
| Clearing or searching homes or buildings. | <input type="radio"/> | <input type="radio"/> |
| Engaging in hand-to-hand combat | <input type="radio"/> | <input type="radio"/> |

Appendix B

Measure of PTSD

| III. Health & Well-Being | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Below is a list of reactions that soldiers sometimes experience following deployment or in response to other stressful life experiences. Please mark how much you have been bothered by each problem in the past month. | | | | | |
| | Not at all | A little bit | Moderately | Quite a bit | Extremely |
| Repeated, disturbing memories, thoughts, or images of the stressful experience | <input type="radio"/> |
| Repeated, disturbing dreams of the stressful experience | <input type="radio"/> |
| Suddenly acting or feeling as if the stressful experience were happening again (as if you were re-living it) | <input type="radio"/> |
| Feeling very upset when something reminded you of the stressful experience | <input type="radio"/> |
| Having physical reactions (like heart pounding, trouble breathing, sweating) when something reminded you of the stressful experience | <input type="radio"/> |
| Avoiding thinking about or talking about the stressful experience or avoiding having feelings related to it | <input type="radio"/> |
| Avoiding activities or situations because they reminded you of the stressful experience | <input type="radio"/> |
| Trouble remembering important parts of the stressful experience | <input type="radio"/> |
| Loss of interest in activities that you used to enjoy | <input type="radio"/> |
| Feeling distant or cut-off from other people | <input type="radio"/> |

| | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Feeling emotionally numb or being unable to have loving feelings for those close to you | <input type="radio"/> |
| Feeling as if your future somehow will be cut short | <input type="radio"/> |
| Trouble falling or staying asleep | <input type="radio"/> |
| Feeling irritable or having angry outbursts | <input type="radio"/> |
| Having difficulty concentrating | <input type="radio"/> |
| Being "super alert" or watchful or on-guard | <input type="radio"/> |
| Feeling jumpy or easily startled | <input type="radio"/> |

Appendix C

Measure of Depression

| 2. Over the LAST 2 WEEKS , how often have you been bothered by any of the following problems? | Not at all | Few or several days | More than half the days | Nearly everyday |
|--|-----------------------|-----------------------|-------------------------|-----------------------|
| Little interest or pleasure in doing things. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Feeling down, depressed, or hopeless. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Trouble falling or staying asleep, or sleeping too much. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Feeling tired or having little energy. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Poor appetite or overeating. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Feeling bad about yourself-or that you are a failure or have let yourself or your family down. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Trouble concentrating on things such as reading the newspaper or watching television. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 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. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Thought you would be better off dead or of hurting yourself in some way. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Appendix D

Measure of Savoring

| 6. For each statement listed below, please pick the one number that best indicates how true the particular statement is for you . There are no right or wrong answers. Please be as honest as you can. | | | | | | | |
|---|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Strongly disagree | | | | | Strongly Agree | |
| I can make myself feel good by imagining what a happy time that is about to happen will be like. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It's hard for me to get very excited about fun times before they actually take place. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It's easy for me to enjoy myself when I want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I don't enjoy things as much as I should. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It's easy for me to rekindle the joy from pleasant memories. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| When I reminisce about pleasant memories, I often start to feel sad or disappointed. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

CHAPTER TEN
TABLES AND FIGURES

Table 1

Descriptive statistics and correlations among measured variables at Time 1

| Variable | M | SD | 1 | 2 | 3 | 4 |
|------------------------|------|------|--------|--------|-------|---|
| 1. Combat exposure | 6.64 | 5.50 | - | | | |
| 2. Savoring | 4.56 | 1.27 | -.15** | - | | |
| 3. PTSD symptoms | 1.85 | 0.88 | .42** | -.51** | - | |
| 4. Depression symptoms | 1.59 | 0.64 | .14** | -.57** | .72** | - |

Note: Analyses conducted with mean centered combat exposure and savoring. * $p < .05$, ** $p < .01$.

Table 2

Descriptive statistics and correlations among measured variables using the matched sample

| Variable | M | SD | 1 | 2 | 3 | 4 |
|------------------------|------|------|-------|--------|-------|---|
| 1. Combat exposure | 6.80 | 5.56 | - | | | |
| 2. Savoring | 4.59 | 1.20 | -.15* | - | | |
| 3. PTSD symptoms | 1.67 | 0.82 | .26** | -.31** | - | |
| 4. Depression symptoms | 1.40 | 0.54 | 0.10 | -.29** | .74** | - |

Note: Analyses conducted with Time 1 mean centered combat exposure and savoring predicting Time 2 PTSD symptoms and depression symptoms. * $p < .05$, ** $p < .01$.

Table 3

Moderated regression of combat exposure and savoring as predictors of depression at Time 1

| Predictors | <i>Unstandardizea</i> | SE | t-value | p-value |
|-------------------|-----------------------|------|---------|---------|
| | <i>B</i> | | | |
| Intercept | 1.59 | 0.02 | 87.88 | .000 |
| Savoring | -0.28 | 0.01 | -19.76 | .000 |
| Combat Exposure | 0.01 | 0.00 | 1.81 | .071 |
| Combat Exposure X | | | | |
| Savoring | -0.01 | 0.00 | -1.97 | .049 |

N range = 885 – 895.

Table 4

Moderated regression of combat exposure and savoring as predictors of depression at Time 1, including the squared combat exposure variable and its interaction

| Predictors | <i>Unstandardized</i> <i>B</i> | SE | t-value | p-value |
|--|-----------------------------------|------|---------|---------|
| Intercept | 1.58 | 0.03 | 59.81 | .000 |
| Savoring | -0.28 | 0.02 | -13.35 | .000 |
| Combat Exposure | 0.01 | 0.00 | 1.39 | .165 |
| Combat Exposure ² | 0.00 | 0.00 | 0.31 | .759 |
| Combat Exposure X Savoring | -0.01 | 0.00 | -1.59 | .113 |
| Combat Exposure ² X Savoring | -7.96E-05 | 0.00 | -0.15 | .883 |

N range = 885 – 895.

Table 5

Moderated regression of combat exposure and savoring as predictors of PTSD at Time 1

| Predictors | <i>Unstandardized</i> <i>B</i> | SE | t-value | p-value |
|-------------------------------|-----------------------------------|------|---------|---------|
| Intercept | 1.84 | 0.02 | 78.41 | .000 |
| Savoring | -0.31 | 0.02 | -16.98 | .000 |
| Combat Exposure | 0.05 | 0.00 | 12.46 | .000 |
| Combat Exposure X Savoring | -0.01 | 0.00 | -4.04 | .000 |

N range = 885 – 895.

Table 6

Moderated regression of combat exposure and savoring as predictors of PTSD at Time 1, including the squared combat exposure variable and its interaction

| Predictors | <i>Unstandardized</i> <i>B</i> | SE | t-value | p-value |
|--|-----------------------------------|------|---------|---------|
| Intercept | 1.82 | 0.03 | 52.98 | .000 |
| Savoring | -0.32 | 0.03 | -11.70 | .000 |
| Combat Exposure | 0.05 | 0.01 | 10.43 | .000 |
| Combat Exposure ² | 0.00 | 0.00 | 0.82 | .415 |
| Combat Exposure X Savoring | -0.01 | 0.00 | -3.47 | .001 |
| Combat Exposure ² X Savoring | 0.00 | 0.00 | 0.18 | .855 |

N range = 885 – 895.

Table 7

Moderated regression of combat exposure and savoring as predictors of depression at Time 2

| Predictors | <i>Unstandardized</i> <i>B</i> | SE | t-value | p-value |
|-----------------------------|-----------------------------------|------|---------|---------|
| Intercept | 1.4 | 0.04 | 38.46 | .004 |
| Gender | 0.23 | 0.38 | 0.60 | 0.55 |
| <i>Rank</i> | | | | |
| Junior enlisted vs. NCO | -0.12 | 0.24 | -0.50 | 0.62 |
| Junior enlisted vs. officer | -0.16 | .25 | -0.65 | 0.52 |
| Savoring | -0.13 | 0.03 | -4.14 | .000 |
| Combat Exposure | 0.01 | 0.01 | 0.80 | .338 |
| Combat Exposure X | | | | |
| Savoring | 0.00 | 0.01 | 0.19 | .890 |

N range = 174 – 218.

Notes: Gender coded as male (reference) = 1; female = 2. Rank coded as junior-enlisted (reference) = 1; NCO = 2; Officer = 3.

Table 8

Moderated regression of combat exposure and savoring predicting depression at Time 2, including the squared combat exposure variable and its interaction

| Predictors | <i>Unstandardized</i> | SE | t-value | p-value |
|--------------------------------|-----------------------|------|---------|---------|
| | <i>B</i> | | | |
| Intercept | 1.51 | 0.05 | 28.10 | .002 |
| Gender | 0.32 | 0.38 | 0.86 | 0.39 |
| <i>Rank</i> | | | | |
| Junior enlisted vs. NCO | -0.19 | 0.24 | -0.80 | 0.42 |
| Junior enlisted vs. officer | -0.26 | -.25 | -1.05 | 0.30 |
| Savoring | -0.12 | 0.05 | -2.61 | .014 |
| Combat Exposure | 0.02 | 0.01 | 2.02 | .068 |
| Combat Exposure ² | -0.00 | 0.00 | -2.84 | .022 |
| Combat Exposure X | -0.00 | 0.01 | -0.32 | .747 |
| <i>Savoring</i> | | | | |
| Combat Exposure ² X | 8.63E-05 | 0.00 | 0.07 | .869 |
| <i>Savoring</i> | | | | |

N range = 174 – 218.

Notes: Gender coded as male (reference) = 1; female = 2. Rank coded as junior-enlisted (reference) = 1; NCO = 2; Officer = 3.

Table 9

Moderated regression of combat exposure and savoring as predictors of PTSD at Time 2

| Predictors | <i>Unstandardized</i> <i>B</i> | SE | t-value | p-value |
|-----------------------------|-----------------------------------|------|---------|---------|
| Intercept | 1.66 | 0.05 | 31.58 | .003 |
| Gender | -0.32 | 0.55 | -0.58 | 0.56 |
| <i>Rank</i> | | | | |
| Junior enlisted vs. NCO | -0.02 | 0.35 | -0.06 | 0.96 |
| Junior enlisted vs. officer | -0.01 | .36 | -0.02 | 0.99 |
| Savoring | -0.18 | 0.04 | -4.21 | .000 |
| Combat Exposure | 0.03 | 0.01 | 3.22 | .049 |
| <i>Combat Exposure X</i> | | | | |
| Savoring | .000 | 0.01 | -0.04 | .879 |

N range = 174 – 218.

Notes: Gender coded as male (reference) = 1; female = 2. Rank coded as junior-enlisted (reference) = 1; NCO = 2; Officer = 3.

Table 10

Moderated regression of combat exposure and savoring as predictors of PTSD at Time 2, including the squared combat exposure variable and its interaction

| Predictors | <i>Unstandardized</i> <i>B</i> | SE | t-value | p-value |
|--------------------------------|-----------------------------------|------|---------|---------|
| Intercept | 1.79 | 0.08 | 22.62 | .000 |
| Gender | -0.20 | 0.55 | -0.37 | 0.71 |
| <i>Rank</i> | | | | |
| Junior enlisted vs. NCO | -0.11 | 0.35 | -0.32 | 0.75 |
| Junior enlisted vs. officer | -0.14 | 0.37 | -0.37 | 0.71 |
| Savoring | -0.17 | 0.07 | -2.49 | .022 |
| Combat Exposure | 0.04 | 0.01 | 3.77 | .009 |
| Combat Exposure ² | -0.00 | 0.00 | -2.06 | .051 |
| Combat Exposure X Savoring | -0.00 | 0.01 | -0.32 | .741 |
| Combat Exposure ² X | | | | |
| Savoring | 0.00 | 0.00 | -0.14 | .970 |

N range = 174 – 218.

Notes: Gender coded as male (reference) = 1; female = 2. Rank coded as junior-enlisted (reference) = 1; NCO = 2; Officer = 3.

Figure 1

Savoring beliefs moderate the relationship between CE and MHO

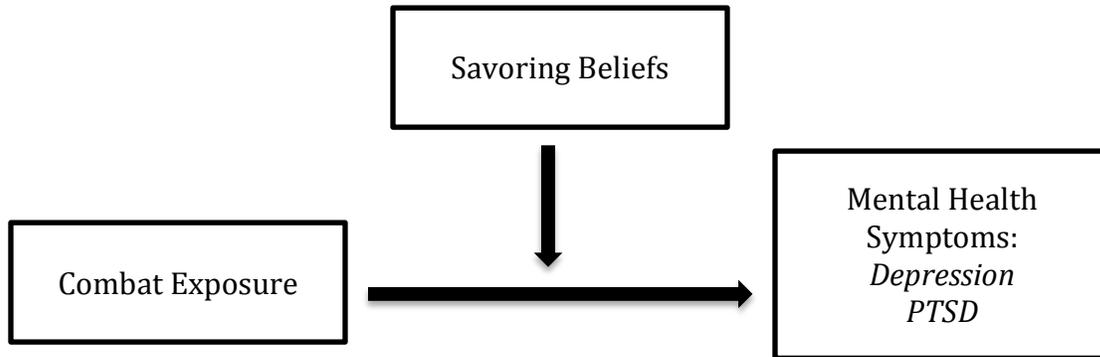


Figure 2

The interaction between combat exposure and savoring predicting symptoms of depression at Time 1

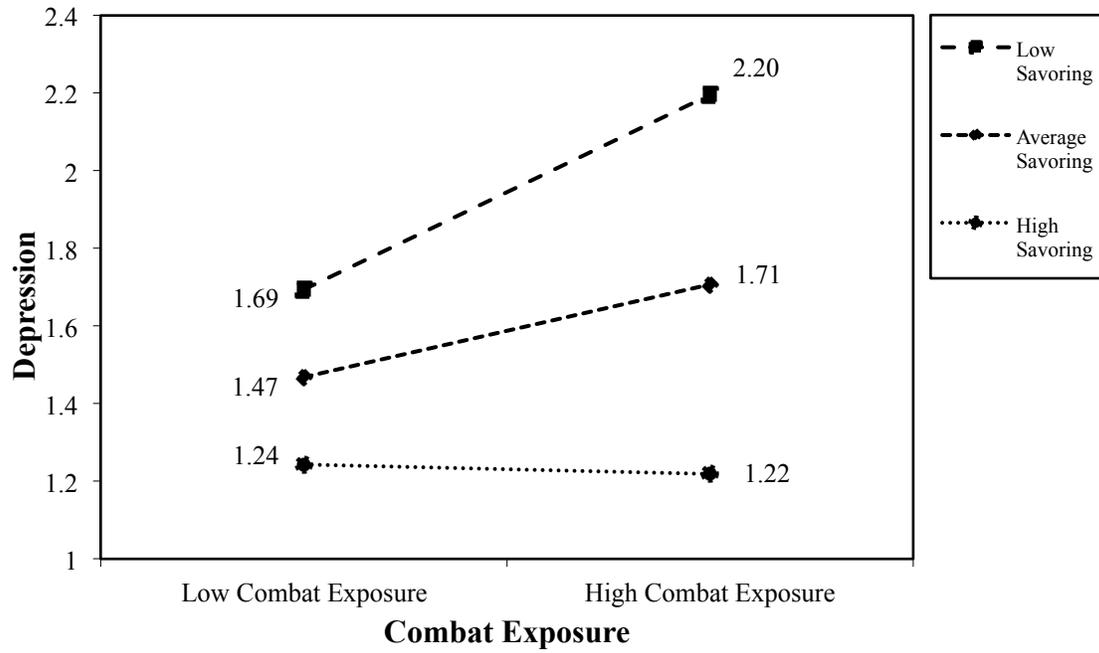


Figure 3

The interaction between combat exposure and savoring predicting symptoms of PTSD at Time 1

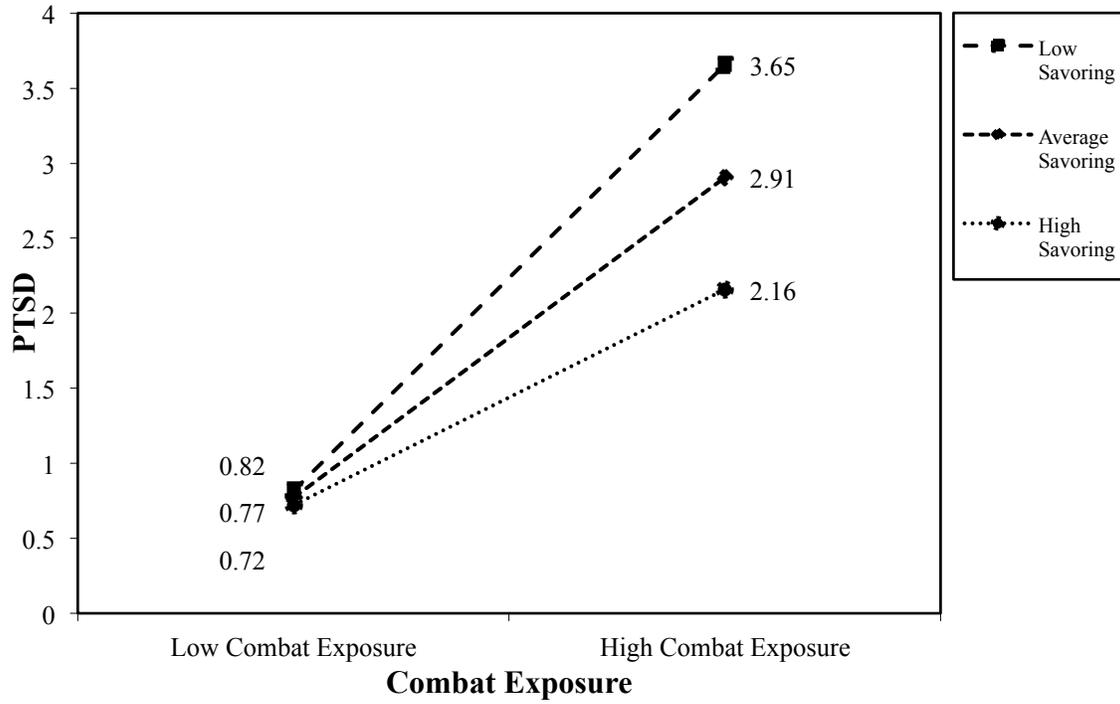


Figure 4

The relationship between the quadratic version of combat exposure and depression

