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# Understanding the Relationships Between Combat-Related PTSD Symptoms and Drinking Motives on Military Parental Satisfaction

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UNDERSTANDING THE RELATIONSHIP BETWEEN COMBAT-RELATED PTSD  
SYMPTOMS AND DRINKING MOTIVES ON MILITARY PARENTAL SATISFACTION

by

MELISSA C. HINELY

(Under the Direction of Dorthie Cross)

ABSTRACT

As of 2017, over 1.3 million Americans are enlisted in the U.S. Armed Forces (Department of Defense, 2017). Military personnel, particularly those exposed to combat, are significantly more likely to experience Posttraumatic Stress Disorder (PTSD; Xue et al., 2015). Furthermore, persons with PTSD are more likely to misuse alcohol, particularly when motivated to drink as a means to cope with negative emotions related to their PTSD symptoms (Simpson et al., 2014). Both PTSD and alcohol misuse have been found to contribute negatively to parental satisfaction and distress (Chesmore et al., 2018; McGraw et al., 2018). Veterans/service members who were parents ( $N=20$ ) recruited from MTurk completed self-report questionnaires on combat exposure, PTSD, alcohol use behavior and motivations, and parenting satisfaction and self-efficacy. Combat exposure and PTSD symptoms independently predict parenting self-efficacy, but neither predict parenting satisfaction, contrary to previous research. Furthermore, PTSD did not mediate the relationships between combat exposure and parenting variables, nor did alcohol variables (misuse and motivation) moderate the mediations. Study results are limited by small sample size.

INDEX WORDS: Posttraumatic stress disorder, Combat exposure, Military, Alcohol use,  
Parenting

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by

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COLLEGE OF BEHAVIORAL AND SOCIAL SCIENCES

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## CHAPTER 1: INTRODUCTION

### Rationale

The United States has seen a steady increase in volunteer service members since the September 11, 2001 terrorist attacks. In 2017, there were over 1.3 million active duty military personnel within the United States, including over 61,000 active duty servicemen and women in the state of Georgia (Department of Defense [DoD], 2017), with 2.7 million service members having served on 5.4 million deployments. Moreover, over 600,000 active duty military personnel are parents to one or more children under the age of 22, 42.3% of which have at least one child under the age of 5 years old. This accounts to over 2 million children affected by a wartime deployment, with more than 30,000 having lost a parent to war-related death (DoD, 2018; Esposito-Smythers et al., 2011). The potential impact of wartime deployment on service members, particularly on their important relationships (e.g., with their children), is vital to understanding the full scope of consequences of military service.

Service members deployed to war zones are at increased risk of exposure to combat trauma and development of Posttraumatic Stress Disorder (PTSD; Xue et al., 2015). Multiple studies have found comorbid rates of PTSD with mental and physical health diagnoses, including major depressive disorder, anxiety, substance abuse and dependency, cardiovascular disease, hypertension, obesity, and immune-related disorders (Armed Forces Health Surveillance Center, 2013; Armenta et al., 2018; Ramsey et al., 2017). Moreover, people with PTSD have elevated rates of misusing alcohol, particularly when motivated to drink as a means for coping with negative PTSD-related emotions (e.g., anxiety, fear, depression) and to avoid PTSD-related symptoms (e.g., hypervigilance, paranoia; Simpson et al., 2014). These problematic alcohol

consumption practices have a significant impact on the military as a whole. Alcohol misuse, binge drinking, and other alcohol-related actions cost the U.S. military over \$1.12 billion per year, contribute to over 320,000 lost workdays and 34,000 arrests annually, and hinder over 10,000 active-duty military personnel from being able to deploy as planned (Harwood et al., 2009).

As more and more service members are being exposed to traumatic events, more studies have explored the relationship between PTSD and its impact on service members beyond their roles in the military. In particular, research has examined the relationship between PTSD and interpersonal relationships, including with affected persons' spouses and children. Several studies have found parental PTSD is related to greater child abuse potential, increased parental distress, increased perceptions of having a "difficult" child, use of harsher punishments, less parental monitoring, and overall lower levels of effective parenting (Chesmore et al., 2018; Cross et al., 2017; Gerwitz et al., 2010). Moreover, McGraw et al. (2018) found veteran parents with PTSD were more likely than those without PTSD to report feeling emotionally and physically disconnected from their families after returning from deployment and more likely to self-medicate with alcohol to cope with their symptoms.

Rural residents are less likely to seek therapy for mental health concerns, and veterans reside disproportionately in rural areas compared to their civilian counterparts (Ohl et al., 2018). Adding to risk, rural veterans are significantly less likely to seek or receive therapy than veterans in urban areas (Cully et al., 2010). Similarly, fewer resources are available for parenting and family services in rural areas, as well as increased levels of stigma surrounding mental health care and seeking parenting education compared to non-rural communities (Cremers et al., 2014).

## Purpose

Studies have analyzed relationships between military alcohol use and PTSD, PTSD and parenting, and alcohol use and parenting, but few studies have explored the relationships among all three variables. This study aimed to parse out the relationships among alcohol use behaviors and drinking motivations, PTSD, and parenting with a focus on examining whether alcohol drinking motivations moderate the relationship between parental combat-related PTSD symptoms and overall parenting satisfaction. In addition, this study explored potential differences between rural and non-rural veterans in mental health variables and parenting satisfaction.

## Significance

This project aimed to help practitioners and researchers better understand the impact of PTSD on veterans with combat-related PTSD, particularly how PTSD influences the servicemember's relationship with their children and their sense of accomplishment and competence, or self-efficacy, as a parent. The study sought to clarify how the servicemember's alcohol use practices possibly influence their parenting satisfaction and is also the first to compare rural and non-rural veterans on parenting satisfaction. Such clarifications could allow practitioners to better understand the widespread impacts that combat-related PTSD has on servicemembers, as well as how to incorporate these aspects of servicemembers' lives within effective treatments. Similarly, this research could prompt future studies to explore the interactions between alcohol use and PTSD on various domains of peoples' lives, including parenting satisfaction and overall family dynamics.

## Definition of Terms

Posttraumatic Stress Disorder. Per the *Diagnostic and Statistical Manual of Mental Disorders - 5th Edition* (DSM-5; American Psychological Association, 2013), Posttraumatic Stress Disorder (PTSD) is a mental health diagnosis in which a person experiences a traumatic event, such as exposure to near death, witnessing the death or serious injury of others, or learning of the trauma of others. People with PTSD experience intrusive symptoms (e.g., nightmares, flashbacks), avoid thoughts, feelings, or external reminders of their traumatic experience, and experience negative alterations in their cognitions and/or mood (e.g., negative affect, feeling isolated, inability to recall parts of the trauma), as well as alterations in arousal and reactivity (e.g., hypervigilance, difficulty sleeping, trouble concentrating). These symptoms cause significant impairment in the various aspects of the person's life (e.g., interpersonal, occupational), and are not otherwise attributable to the use of a medication or substance, nor an illness of any sort.

Combat Trauma. Combat trauma occurs when someone experiences a traumatic event within the context of a wartime setting, such as when a military serviceperson is deployed to a combat theater (Peterson et al., 2018). These traumatic events may include, but are not limited to, being shot at or shot, witnessing a comrade be injured or killed, being involved in an explosion (e.g. improvised explosive devices), shooting at others, killing others, and seeing the aftereffects of war (e.g., dead bodies, bomb sites). For the purpose of this study, "combat trauma" will be defined as traumatic experiences directly tied to the results of combat.

Alcohol Misuse. Alcohol use disorder (AUD) is a psychological diagnosis given following a problematic pattern of alcohol use that causes significant impairment or distress within 12 months characterized by at least two of the following criteria: consuming alcohol in

larger amounts or within a longer time period than intended; a persistent desire to cut down or control use, or unsuccessful efforts to do so; spending large amounts of time attempting to obtain, use, or recover from alcohol use; craving alcohol; failure to fulfill obligations due to alcohol use; continued use despite direct consequences of use (e.g., interpersonal problems); missing or decreasing engagement in important social, occupational, or recreational events due to use; using alcohol in hazardous environments (e.g., driving); continued use despite known problems; tolerance; and withdrawal (APA, 2013). Though the definition of alcohol use disorder is clear within the DSM-5, the definition of alcohol misuse is less steadfast. For the purpose of this study, alcohol misuse will encompass hazardous drinking behaviors as measured by a score of 8 or above on Alcohol Use Disorder Identification Test (AUDIT; Saunders et al., 1993).

**Drinking Motivation.** Drinking motivations are the underlying drives that prompt individuals to consume alcohol (Cooper, 1994; Cox & Klinger, 1988). These motivations are broken down into four types: (1) internally generated, positive reinforcement motives (e.g., drinking to enhance positive emotions), (2) externally generated, positive reinforcement motives (e.g., drinking to obtain social rewards), (3) internally generated, negative reinforcement motives (e.g., drinking to reduce negative emotions), and (4) externally generated, negative reinforcement motives (e.g., drinking to avoid social rejection). While motives can vary from drinking episode to episode, an individual's primary drinking motive is related to different alcohol-related consequences and various psychopathology. In particular, people drinking to reduce negative emotions (e.g., depression, anxiety, loneliness) are more likely to engage in problematic alcohol use behaviors – alcohol misuse – and experience more alcohol-related consequences (e.g., drinking and driving, interpersonal difficulties; Debell et al., 2014; Dennhardt et al., 2016).

Parenting Satisfaction. Overall parenting satisfaction is comprised of multiple contributing domains, including affective responses to parenting (e.g., pride, frustration, discouraged) and feelings of efficacy (e.g., sense of competence at solving child's problems, believe that one has necessary parenting skills). Gibaud-Wallston and Wandersman (1978) established a strongly supported measure of parenting satisfaction, the *Parenting Sense of Competence Scale*, that measures satisfaction with one's role as a parent as a combination of both one's affective responses to parenting (i.e., "Even though being a parent could be rewarding, I am frustrated now while my child is at their present age") as well as perceived efficacy as a parent (i.e., "I honestly believe I have all the skills necessary to be a good parent"). These variables may further be influenced by external forces, such as overall life satisfaction, romantic satisfaction, and stressful life experiences (e.g., trauma). This study will define parenting satisfaction, as well as parenting self-efficacy, using Gibaud-Wallston and Wandersman's (1978) framework.

Rural Status. Rurality is defined differently by various sources. Most often, rurality is defined using population-based definitions, where an area is considered rural if it does not meet criteria for an urban area or urban cluster (Office of Management and Budget, United States Department of Agriculture). Per the OMB and USDA, urban areas are populated by at least 50,000 individuals, with surrounding areas being designated as urban clusters if they contain at least 10,000 but fewer than 50,000 residents. These urban areas and urban clusters have a population density of at least 1,000 people per square mile (ppsm), or 500 ppsm if the land is also being used for nonresidential land (e.g., schools, parks, commercial buildings). Other studies utilize self-report of rural status using subjective survey measures wherein the participants respond based on their own definition of rurality status (e.g., Ford et al., 2016).

The US Census Bureau classifies areas based on similar qualifications (Ratcliffe et al., 2016). Areas are considered urban if they house at least 50,000 residents with 1,000 ppsm, encompassing residential, commercial, and other non-residential land (e.g., retail, schools). Moreover, areas are considered urban if the population density is at least 500 ppsm when the land is being used for noncommercial purposes (e.g., parks, industrial buildings). Urban clusters are areas on the outskirts of urban areas with 2,500 to 50,000 residents. Thus, areas are considered rural if they do not meet qualifications for urban areas or urban clusters. Per the 2010 US Census, approximately 19.3% of the US population lives in rural areas (59.5 million people; United States Census Bureau, 2010). For this study, rural status will be defined using the US Census Bureau's definition of rurality.



## CHAPTER 2: LITERATURE REVIEW

### Combat Trauma

Numerous studies have analyzed the impact of combat and combat-related trauma on military personnel's mental health, primarily the development of PTSD. Studies suggest a variety of deployment experiences (e.g., seeing the death of a peer, being shot at, shooting at someone) contribute to the development of PTSD. Estimates vary, though studies show an elevated rate of experiencing trauma among service members deployed to combat zones compared to civilian populations. These combat-related traumatic experiences include, but are not limited to, being injured as a result of enemy fire, having their lives threatened, witnessing the death or injury of their comrades and/or civilians, causing the death of others, and not being able to save their comrades' from injury or death. Fulton and colleagues (2015) investigated how repeated deployments exacerbate symptoms and concluded that increased exposure to traumatic events via multiple deployments increases risk for PTSD development in service members.

Combat exposure is related to increased rates of various mental health diagnoses, including PTSD (Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010), major depressive disorder (MDD; Ramsey et al., 2017), and alcohol use disorder (AUD; Cucciare, Blonigen, & Sox-Harris, 2015; Debell et al., 2014). Furthermore, combat exposure is related to maladjustment within the family. In particular, returning soldiers may report difficulty bonding with their children after deployment (Lewis et al., 2012). These parents report their children engage in elevated rates of hazardous drinking and weapon-carrying behaviors compared to children with civilian parents (Reed et al., 2014). Ruscio et al., (2002) found veterans experiencing higher amounts of emotional numbing were more likely to report lower levels of parenting satisfaction

and overall relationships with their children. Moreover, veterans that reported reexperiencing, hyperarousal, avoidance of their symptoms, and depression also reported at least one negative consequence within their relationships with their children. These findings suggest emotional numbing and other PTSD symptoms can diminish parents' ability to reach out emotionally to their children and strengthen their relationships. Sherman et al. (2016) corroborated these findings, finding veterans with PTSD believed their PTSD symptoms caused a sense of detachment from their family members. These veterans reported thinking their parenting difficulties were due to their arousal and reactivity symptoms (e.g., hyperarousal, exaggerated startle response, hypervigilance), as well as increased irritability and aggressive behavior.

#### Posttraumatic Stress Disorder

**Prevalence.** Though millions of service members have deployed to combat zones since the invasion of Iraq in 2003, not all service members exposed to traumatic events develop PTSD. Research shows a range of PTSD prevalence estimates among active duty military personnel, with meta-analyses estimating prevalence between 5% and 45% (Fulton et al., 2015; Xue et al., 2015) and averaging to approximately 23%. From 2006 to 2013, PTSD diagnoses increased almost 200% among active duty and recently retired military personnel such that PTSD became the leading cause of treatment within the Department of Veterans Affairs (Armed Forces Health Surveillance Center; AFHSC; 2013). Per the AFHSC (2013), PTSD is also the only category for medical treatment that has increased in military populations since the invasion of Iraq.

**Risk factors.** An individual servicemember's risk of developing PTSD or other combat-related mental health problems can vary depending on their level of combat exposure, as well as demographic characteristics. Recent findings suggest the operations in Afghanistan and Iraq pose a great risk for all service members due to the intense nature of the combat exposures (Armenta

et al., 2018). Xue et al. (2015) conducted a meta-analysis of risk-factors for developing combat-related PTSD in military personnel and veterans. The researchers found multiple factors increased chances for a PTSD diagnosis directly related to combat exposure, including being a woman, having low education, being enlisted, more deployments, longer cumulative deployment lengths, and prior exposure to trauma. Hall-Clark et al. (2017) analyzed differences in PTSD symptom presentations as well as trauma-related cognitions among treatment-seeking active-duty service members based on race. In particular, African American and Hispanic/Latinx service members endorsed greater overall symptom severity, more reexperiencing, avoidance, and arousal symptoms, and more frequent flashbacks than their White comrades. Similarly, Hispanic/Latinx and African American service members reported more fear-related, guilt, and numbing-related emotions during the traumatic event, and more fear-related emotions after the event, than their White peers. These Hispanic/Latinx and African American service members reported more ruminative cognitions and being unable to put the trauma into perspective more so than Whites. Hispanic/Latinx soldiers endorsed significantly more reexperiencing symptoms than both African American and White soldiers, and African Americans were more likely to report less blaming of others, but more feelings of guilt compared to the other racial groups.

Though studies show a high proportion of service members and veterans experience PTSD and comorbid depression and/or hazardous alcohol use behaviors, only approximately 10% of affected service members seek treatment (Seal et al., 2010). Miller et al. (2017) analyzed perceived stigma of help-seeking behaviors among veterans with combat-related PTSD who also engaged in problematic alcohol use. The researchers found that veterans with combat-related PTSD were more likely to report stigma as a significant barrier to seeking treatment for their psychological diagnoses compared to veterans without PTSD. These veterans were also more

likely to engage in drinking alcohol to cope with their symptoms, particularly negative affect, compared to veterans without PTSD. These factors – perceived stigma to receiving mental health treatment and drinking alcohol to cope with their symptoms – predicted greater frequencies of alcohol-related consequences in veterans experiencing more severe PTSD symptom presentations.

Comorbid conditions. Service members with PTSD also report higher levels of comorbid psychological diagnoses compared to their civilian counterparts, with over half of hospitalized soldiers diagnosed with PTSD having a comorbid psychological diagnosis (AFHSC, 2013). Depression and alcohol use disorder are frequently comorbid with PTSD, with findings suggesting upwards of 36% of active-duty soldiers with PTSD experience comorbid major depression (Campbell et al., 2007), and 10-15% of military personnel diagnosed with PTSD engage in alcohol misuse behaviors (Debell et al., 2014; Fuehrlein et al., 2016). Studies suggest soldiers with PTSD tend to engage in problematic drinking behaviors as a means to cope with their negative, depressive emotions surrounding their traumatic experience and symptoms, with deployment and combat exposure associated with higher rates of binge drinking upon return (Cucciare et al., 2015). Similarly, service members diagnosed with PTSD as a result of their combat exposure tend to experience greater levels of interpersonal conflict and difficulty connecting with their intimate partner/spouse, and/or their children (Armenta et al., 2018; Campbell & Renshaw, 2018; Yablonsky et al., 2016).

Consequences. Campbell et al. (2007) reported soldiers diagnosed with Major Depressive Disorder (MDD) and PTSD experience greater likelihoods of being disabled (52% compared to 27%) than patients with MDD only, and were more likely to be younger, not identify as White/Caucasian, and have received higher education than patients with MDD alone. These

service members reported lower levels of social support and higher levels of relational and occupational challenges, similar to findings from other studies (Lewis et al., 2012; Lorber et al., 2017), suggesting PTSD and MDD negatively influence interpersonal relationships in a manner leaving the service member feeling isolated, further exacerbating their depressive symptomology.

These findings suggest service members with PTSD experience more hardships than from PTSD alone. Instead, service members are likely to experience comorbid MDD, isolative behaviors, and elevated risk for suicidal behaviors (Armenta et al., 2018; Campbell et al., 2007), interpersonal problems and decreased relationship satisfaction (Campbell & Renshaw, 2018), and elevated rates of hazardous alcohol use, binge drinking, and Alcohol Use Disorder (AUD) diagnoses (Fuehrlein et al., 2016). These occurrences are often intertwined, such that service members with PTSD have higher rates of being diagnosed with comorbid MDD and AUD than their civilian counterparts with non-combat PTSD. These symptom sets exacerbate each other and cause difficulties maintaining healthy, positive relationships with loved ones.

Parenting. Yablonsky et al. (2016) explored parenting stress levels among service members recently returned from deployment and found perceived threat during deployment, and warfare exposure, increased parenting stress scores significantly. The researchers also found that parenting stress was mostly explained by comorbid depressive symptoms, which was in turn explained by perceived threat and warfare exposure. Veteran status and exposure to combat are also related to overall marital quality, as well as marital dissolution following a service member returning from deployment (Heerwig & Conley, 2013), such that military spouses engage in higher levels of violent behaviors toward their non-military partner, report higher levels of emotional numbing, and engage in increased rates of drug and alcohol use compared to civilian

populations. Furthermore, Lewis et al. (2012) reported higher conflict and violence, as well as less familial cohesion among families with a spouse/parent with combat-related PTSD.

### Alcohol Misuse

Prevalence and risk factors. Civilian rates of AUD across the lifetime are approximately 29%, while US military members are at a higher risk of developing AUD in their lifetime (Norman et al., 2018). In military populations, prevalence rates of AUD hover around approximately 15% within the past year, with lifetime rates rising to over 42% (Fuehrlein et al., 2016). Service members with AUD are more likely to be younger men (18-25 years old), earn less than \$30,000 per year, have no college education, and have experienced some traumatic event.

Though alcohol use is associated with many adverse consequences within active duty and veteran populations, factors of military culture itself contribute to elevated alcohol use problems within the military. Ames et al. (2009) analyzed normative beliefs regarding alcohol use within military populations and discovered that servicemen who perceived their active-duty peers as heavy drinkers were more likely to engage in heavy drinking following deployment. Moreover, service members reported few barriers to accessing alcohol (e.g., low cost of alcohol overseas, lower drinking ages, inconsistent enforcement of alcohol-related regulations) and increased use after enlisting as a means to make new peer relationships, enhance bonding, and cope with boredom and loneliness. Service members also report perceiving the military as supportive of their drinking and noting their supervisors rarely discourage their alcohol use (RAND National Defense Research Institute, 2015). Furthermore, studies show descriptive norms (i.e., typical behavior in a group or population) are positively associated with binge drinking behaviors, elevated blood alcohol levels, greater quantity of alcohol consumed, higher frequency of

consumption, and increased likelihood of meeting criteria for AUD (Ames, Cunradi, et al., 2007; Ames, Duke, et al., 2007; Kreiger et al., 2017).

**Risk factors.** Research suggests problematic drinking behaviors are strongly correlated with exposure to traumatic events, including combat exposure, with studies finding PTSD is four times more prevalent in veterans with alcohol use disorder compared to civilian populations (Norman et al., 2018; Stewart et al., 2004; Hawn et al., 2018). Service members are more likely to engage in binge drinking following deployment to Iraq or Afghanistan if they are non-commissioned officers (Cucciare et al., 2015). Furthermore, over 60% of veterans who served in Iraq or Afghanistan diagnosed with Alcohol Use Disorder following their deployment also met criteria for PTSD (Possemato et al., 2015). These service members are also more likely to experience comorbid depression, anxiety, suicidal ideation, and are three times more likely to attempt suicide than their peers without PTSD (Norman et al., 2018). Furthermore, service members with high levels of combat exposure are significantly more likely to engage in heavy drinking (26.8% vs. 17%) and binge drinking (54.8% vs. 45%) than service people not exposed to combat (Bray et al., 2013), with recently deployed personnel reporting significantly greater rates of heavy weekly drinking, binge drinking, and alcohol-related problems than non-deployed military personnel (Jacobson et al., 2008).

**Drinking motives.** PTSD symptoms are associated with drinking motives, such that those with PTSD reported significantly higher likelihood to report drinking as a coping mechanism on the *Drinking Motives Questionnaire* compared to those without PTSD (DMQ; Cooper et al., 1992; Stewart et al., 2004). Moreover, persons experiencing greater hyperarousal symptoms and persons with higher frequency of avoidance behaviors related to their PTSD were also found to engage in more coping-motivated drinking (e.g., drinking to cope with anxious or depressive

symptoms associated with their PTSD; Debell et al., 2014; McDevitt-Murphy et al., 2014; Stewart et al., 2004). Similarly, service members with PTSD experience significantly more total consequences of their drinking, as reported on the Drinker Inventory of Consequences (DrInC; Miller et al., 1990), and were more likely to engage in frequent alcohol consumption, engage in more frequent binge drinking, experience greater interpersonal consequences of their drinking, report significantly more impulse control consequences, and report significantly higher problematic drinking scores on the Alcohol Use Disorders Identification Test compared to veterans without PTSD and civilian populations (AUDIT; McDevitt-Murphy et al., 2014; McDevitt-Murphy et al., 2017). Many service members engaging in alcohol misuse also report physical consequences from their drinking (e.g., hangovers), impulse-control problems (e.g., drinking while intoxicated, getting arrested), interpersonal problems and violence (Dennhardt et al., 2016; Teeters et al., 2017), and veterans engaging in similar alcohol use behaviors are at a greater risk for poor health and mortality (Bridevaux et al., 2004).

### Parenting Satisfaction

The majority of active-duty military personnel are also parents, with 60% of active-duty personnel claiming at least one child as a dependent (Garamore, 2016). Over 2 million children have an enlisted parent, and approximately 43% of those children are under the age of five years old. Currently, the majority of research regarding combat-related PTSD analyzes how the service member themselves is impacted by the PTSD symptoms. Although a majority of enlisted members have a child, minimal research examines how combat-related PTSD impacts the soldier's family. Deployment and combat-related stressors have been shown to increase levels of familial distress and cause poor child reactions to deployment, reintegration, and overall adjustment to changing familial dynamics (Cozza et al., 2010). Of the existing research, the majority focuses on the



influence of the service member's PTSD on their spouse or the family unit as a whole. Such research shows parental combat-related PTSD moderated the efficacy of interventions in family therapy upon reintegration, particularly when the father had combat-related PTSD (Chesmore et al., 2017).

Though research demonstrates the impact of trauma on a service member and their perceptions of their roles (e.g., as a parent, as a spouse), little research focuses on how children are impacted by their parents' PTSD or how parents evaluate their relationship with their children post-deployment. Children of veterans with PTSD exhibit more maladaptive behaviors display deficits in social-emotional and psychological functioning, and experience increased rates of emotional problems, depression, and anxiety compared to children of parents without PTSD (Banneyer et al., 2017). Similarly, children frequently experience an increase in behavioral and emotional problems when a parent is deployed. From 2003 to 2008, outpatient emotional/behavioral health visits for children on military bases and through military hospitals and Veterans Administration (VAs) doubled from 1 million to 2 million per year. Approximately 39% of the children are at risk for developing internalizing symptoms (e.g., low mood, anxiety), 29% are at risk for exhibiting externalizing symptoms (e.g., conduct problems), 56% experience sleep problems and disturbances, and 14% experience school-related problems (Esposito-Smythers et al., 2011). Furthermore, parents with PTSD also attributed their child's behavioral problems to their own PTSD-related symptoms, such that veterans with PTSD report their children have sensitivities to loud or unexpected noises, anger management problems, self-isolation from peers, and anxiety mirroring their own symptoms (McGaw et al., 2018).

Parents with PTSD report various consequences on their family life due to their PTSD. McGaw et al. (2018) conducted a thematic content analysis of interviews of parents with PTSD

and found several common themes: disconnectedness from their family, their roles, and their community; a belief that their symptoms have manifested in their children via a transgenerational effect; and a sense that PTSD has an "umbrella effect" on their lives. The veterans involved in the analysis met criteria for PTSD using the *Posttraumatic Stress Disorder Checklist - Version 5* (PCL-5; Blevins et al., 2015). These parents noted feeling detached from their family members, such that they felt they could not connect with them on the same emotional level as prior to their traumatic experience, and many noting feeling shame because they no longer identified as a provider for their family. Many reported noticing behavioral problems in their children similar to those of their own PTSD symptoms, such as anger, irritability, isolation, and sensitivity to noise. They described these presentations as transgenerational, caused by their own PTSD. The veterans also reported feeling a close bond with their family with the caveat that the family was no longer engaging in activities (e.g., school functions, social events) they did as a family prior to the parent's PTSD diagnosis. They also noted difficulty adhering to treatment, including pharmacological or psychotherapeutic, due to a desire to be more engaged in other activities (e.g., delaying taking medication in order to be more alert when with children or in social environments), and frequently engaging in alcohol or substance use to cope with their symptoms.

Furthermore, problematic alcohol use behaviors interfere with positive parenting practices, thus diminishing the relationship between parent and child (Godleski et al., 2018). Regular parental alcohol use predicts lower overall family socioeconomic status, lower rates of on-time child development, and lower child developmental functioning (Guttmanova et al., 2016). Though the relationship between alcohol use and parenting is universal, the negative impacts are commonly seen in military populations as well. Military bases with higher rates of

hazardous alcohol use also have lower levels of personal, family, and workplace adjustment, as well as higher levels of depression (Lorber et al., 2017).

### Rural Veterans

After retiring from the military, approximately 4.7 million service members have relocated to rural areas, with approximately half of these rural veterans living in the South (U.S. Department of Veterans Affairs, 2019; Holder, 2017). These rural areas offer multiple benefits attractive to veteran populations, including increased privacy, lower cost of living, less crowded communities, as well as potentially living closer to family members. While these communities offer benefits, rural areas are also more likely to have higher poverty rates, poorer overall health rates, fewer health resources (e.g., physicians, hospitals, therapists), and increased barriers to obtaining high quality mental and physical health care (e.g., longer distances to providers), compared to non-rural areas. Furthermore, veterans report higher rates of stigma for seeking mental health care in rural areas, and lower overall quality of life scores than their veteran counterparts in urban areas (Weeks et al., 2004).

### Current Study

**Study aims.** The present study aimed to examine the relationship between self-reported parent-child relationships and drinking motivations in parents with combat-related PTSD. Drinking motivations forecast problematic drinking behaviors, with those drinking to cope with negative emotions (e.g., anxiety, depression) more likely to engage in hazardous drinking and experience more alcohol-related consequences (e.g., violence, hangovers, interpersonal problems; McDevitt-Murphy et al., 2014). These drinking motives are common in populations with PTSD, as those experiencing PTSD symptomology are more likely to engage in hazardous drinking behaviors to cope with their experiences. Military populations have significantly greater

rates of PTSD and alcohol use disorder, as well as overall greater rates of problematic alcohol use behaviors (e.g., binge drinking), compared to civilian populations with higher rates occurring in veterans who experienced combat compared to veterans with no combat experience (Ames & Cunradi, 2004). Furthermore, drinking behaviors relate to parent-child relationships and overall parental satisfaction (Godleski et al., 2018). The current study hoped to parse out the relationship between alcohol use motivations and self-reported parental satisfaction and parental self-efficacy within populations experiencing combat-related PTSD.

**Hypotheses.** The present study examined what, if any, relationship PTSD has with perceived parenting satisfaction and efficacy in veterans who experienced combat. Furthermore, the study whether alcohol use behaviors and drinking motivations influence the relationship between PTSD symptoms and parenting in the aforementioned population. Based on the previous literature, the present study tested the following hypotheses:

1. It was expected combat exposure, PTSD symptoms, alcohol use, and alcohol coping motivation would positively correlate with each other and negatively correlate with parenting satisfaction and efficacy.
2. It was expected that PTSD symptoms mediate the relationship between combat exposure and parenting satisfaction, as well as between combat exposure and parenting efficacy.
3. It was expected that alcohol use behaviors would moderate the mediating effects of PTSD symptoms on combat and parenting, such that PTSD symptoms would mediate the relationship between combat exposure and parenting satisfaction and efficacy for parents who report high levels of alcohol misuse.

4. Alcohol use motivations were expected to moderate the mediating effects of PTSD symptoms on combat and parenting, such that PTSD symptoms were expected to mediate the relationship between combat exposure and parenting satisfaction and efficacy for parents who report internal motives to drink as a means to reduce negative emotions (i.e., coping motivations).

Exploratory aim. Rurality status was explored to determine if alcohol use behaviors and motivations, combat exposure, PTSD symptoms, and parenting satisfaction and efficacy differed by rural versus non-rural status.

## CHAPTER 3: METHOD

### Participants

Participants were recruited using Amazon's Mechanical Turk (MTurk), an online crowdsourcing site where individuals ("workers") can complete tasks, such as participating in research, in exchange for compensation. All individuals in the MTurk workforce are at least 18 years old. Workers were able to participate in the current study if they met the MTurk qualifications of having military experience and being parents. Interested workers were directed to a Qualtrics study, where they read an informed consent document and indicated whether they agreed to participate. There were no other inclusion or exclusion criteria for participating in the study.

Eighty-one workers clicked on the MTurk study link and were directed to Qualtrics. Of the 81 who viewed the informed consent, 80 chose to participate and indicated so on the informed consent document. A CAPTCHA was added immediately following the informed consent, and two participants were eliminated from participating further because they did not pass that verification. Of the initial sample of 78 participants, only 20 were retained for further analysis (see Data Quality, p. 34, for more information on data quality decisions).

Participants in the retained sample ( $N = 20$ ) ranged in age from 28 to 73 years old ( $M = 41.65$ ,  $SD = 10.95$ ), and the sample was relatively diverse in terms of gender, race/ethnicity, and rural status, though it was still majority men, half white, and majority suburban. See Table 1 for participant demographics. The mean number of children reported by participants was 1.70 ( $SD = 0.86$ ; range: 1-4). Based on an independent T-test and Pearson  $\chi^2$  analyses, there was no difference in demographics between participants whose data were retained and those whose data were removed.

Table 1. *Participant demographics (N = 20)*

<b>Demographic Variable</b>	<b><i>n</i> (%)</b>
Gender	
Cisgender Men	14 (70)
Cisgender Women	6 (30)
Race/ethnicity	
American Indian/Alaska Native	2 (10)
Asian	3 (15)
Black/African American	2 (10)
Hispanic	1 (5)
White	10 (50)
American Indian/Alaska Native and Black/African American	1 (5)
Hispanic and White	1 (5)
Current Rural Status	
Rural	4 (20)
Suburban	14 (70)
Urban	2 (10)

In terms of military service, most participants reported that they served in the Army or Army National Guard, were retired or discharged, and were combat veterans (see Table 2). The mean number of years in military service reported by participants was 9.97 ( $SD = 6.84$ ; range: 1-25), and the mean number of deployments was 2.05 ( $SD = 1.79$ ; range: 0-5).

Table 2. *Participant military service (N = 20)*

<b>Military Service Variable</b>	<b><i>n</i> (%)</b>
Branch	
Air Force	4 (20)
Army	9 (45)
Army National Guard	3 (15)
Marine Corps	1 (5)
Navy	3 (15)
Current Status	
Current	4 (20)
Discharged or Retired	16 (80)
Combat Veteran Status	
Yes	13 (65)
No	7 (35)

## Materials

Primary Study Measures. Participants completed a series of self-report questionnaires to assess three domains (i.e., trauma and PTSD, alcohol use and drinking motivations, and parenting satisfaction and self-efficacy), as well as demographics, using the assessments below.

*Combat Exposure Scale* (CES; Keane et al., 1989). The CES is a 7-item self-report questionnaire assessing for various combat experiences (e.g., being under enemy fire, how often they fired at the enemy). Each question lies on the same 5-point Likert-type scale (1 = *Never*, 2 = *1-2 times*, 3 = *3-12 times*, 4 = *13-50 times*, 5 = *51+ times*); however, items vary in terms of scoring weight. Final scores are tallied and classified as light (0-8), light-moderate (9-16), moderate (17-24), moderate-heavy (25-32), or heavy (33-41). Keane et al. (1989) found the scale had strong one-week test-retest reliability ( $r = 0.97$ ), as well as internal consistency ( $\alpha = 0.85$ ). The scale also showed good internal consistency within the current study ( $\alpha = 0.81$ ); however, the CES would be considered an inventory of casual contributors (i.e., a cumulative index of events that, in this case, is thought to contribute to stress), instead of an inventory of effects indicators (i.e., a list of intercorrelated manifestations of a theoretically-meaningful construct), suggesting internal consistency data are not particularly informative here (Smith & McCarthy, 1995). Study analyses used the continuous total score made up of all items, weighted according to Keane et al. (1989).

*Traumatic Life Events Questionnaire, second edition* (TLEQ-2; Kubany et al., 2000). The TLEQ-2 is a 22-item self-report questionnaire assessing exposure to a range of traumatic events, including but limited to experiencing a natural disaster (e.g., tornado, hurricane), motor vehicle accidents, the sudden and unexpected death of a loved one, wartime and/or combat, childhood physical abuse, nonconsensual sexual contact at a variety of ages, and intimate partner violence.



The prompts are presented in a manner such that less-personal items (e.g., natural disasters, automobile accidents) are presented first, followed by more personal events (e.g., intimate partner violence, sexual assault). Participants are asked to report the how many times they experienced each event on a 4-point Likert-type scale (0 = *Never*, 1 = *Once*, 2 = *Twice*, 3 = *More than twice*). The TLEQ-2 has high positive predictive power of traumatic experiences, particularly wartime/combat exposure, such that Kubany et al. (2000) found all 61 documented war veterans with verified combat exposure endorsed experiencing combat during the first administration, with one of the 61 increasing reported exposure upon the second administration. Similarly, test-retest studies found high temporal stability for items measuring childhood physical abuse ( $\kappa = 0.63$  to  $0.91$ , witnessing family violence ( $0.60$  to  $0.79$ ), and childhood sexual abuse by someone more than 5 years older ( $0.70$  to  $0.90$ ). Moreover, the TLEQ-2 was more sensitive in capturing traumatic lifetime events than the *Structured Clinical Interview for the DSM-IV* (SCID), such that participants reported 9 times more traumatic life events on the TLEQ-2 than the SCID (Pierce et al., 2009). Within this study, the TLEQ-2 had acceptable internal consistency ( $\alpha = .65$ ), but like with the CES, the TLEQ-2 is an index of causal contributors, instead of effects indicators, so internal consistency estimates are not as informative here as they are for other study measures (Smith & McCarthy, 1995). Study analyses used the continuous total score.

*Posttraumatic Stress Disorder Checklist for the DSM-5* (PCL-5; Belvins et al., 2015).

The PCL-5 is a 20-item self-report questionnaire assessing whether someone experiences any symptoms of PTSD, and further assesses the symptom severity (Weathers et al., 2013).

Participants were asked to rate how much they were bothered each symptom within the past month, responding on a 5-point Likert-type scale (0 = *not at all*, 1 = *a little bit*, 2 = *moderately*, 3

= *quite a bit*, 4 = *extremely*) asking. A score of 33 suggests an individual may be at risk for a PTSD diagnosis, though the PCL-5 cannot be used as a lone diagnostic tool. Furthermore, the questions are centered around four primary symptom clusters: intrusive thoughts, avoidance behaviors, negative alterations in cognitions and mood, and alterations in arousal and reactivity (Weathers et al., 2013). The PCL-5 is a sound measure, with strong internal consistency ( $\alpha = 0.94$ ), test-retest reliability ( $r = 0.82$ ), convergent validity ( $r = 0.74-0.85$ ), and discriminant validity ( $r = 0.31-0.60$ ; Blevins et al., 2015). Within this survey, the PCL-5 had excellent internal consistency ( $\alpha = 0.97$ ). Study analyses used the continuous total score.

*Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993)*. The AUDIT is a 10-item self-report questionnaire assessing alcohol drinking behaviors, adverse reactions to drinking, and alcohol-related problems. The AUDIT is on a 5-point Likert-type scale (0 = *Never*, 1 = *Less than monthly*, 2 = *Monthly*, 3 = *Weekly*, 4 = *Daily or almost daily*). Each question is scored from 0 to 4, with possible scores ranging from 0 to 40. A cutoff score of 8 is highly sensitive and specific to hazardous drinking behaviors, such that 95% to 100% of hazardous consumption, 93% to 100% of abnormal drinking behavior, and 91% to 100% of alcohol-related problems within the last year are captured by the cutoff score. Moreover, a score of 8 captures 98% of persons meeting criteria for alcohol use disorder (AUD). The AUDIT has good internal consistency within the present study ( $\alpha = 0.73$ ). Study analyses used the continuous total score.

*Drinking Motives Questionnaire, Revised (DMQ-R; Cooper, 1994)*. The DMQ-R is a 20-item self-report questionnaire surveying what motivates people to drink alcohol. The DMQ divides these motivations into 4 domains: social (e.g., drinking in social situations, to celebrate), coping (e.g., drinking to cope with negative emotions or to forget problems), enhancement (e.g., drinking to feel better or enhance positive emotions), and social conformity/pressure (e.g.,

drinking to fit in). Respondents answer each prompt on a five-point Likert-type scale (0 = *almost never/never*, 1 = *some of the time*, 2 = *half of the time*, 3 = *most of the time*, 4 = *almost always/always*) denoting the frequency of drinking based on the particular motive (e.g., to cheer up when you are in a bad mood). Cooper (1994) found drinking motives, as measured in the DMQ-R, account for 20% of heavy alcohol use and 26% of drinking problems, with coping motivations being the strongest predictor of drinking problems. Furthermore, coping motivations directly predicted drinking problems after controlling for usual alcohol use ( $r = 0.28, p < 0.001$ ). In the present study, the DMQ Coping subscale had good internal consistency ( $\alpha = 0.83$ ). Study analyses used the continuous score for the DMQ Coping subscale.

*Parenting Sense of Competence Scale (PSOC; Gibaud-Watson & Wandersman, 1978).* The PSOC is a 17-item self-report questionnaire assessing two domains: parenting satisfaction and overall sense of efficacy as a parent. The satisfaction subscale captures affect, such as frustration, motivation, and anxiety towards parenting, while efficacy reflects competence and capability within the parental role (Johnston & Mash, 1989). Participants answered each question using a 6-point Likert scale (1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *disagree*, 4 = *agree*, 5 = *somewhat agree*, 6 = *strongly agree*). The scale developers reported an alpha coefficient of 0.82 for the Satisfaction scale, and 0.70 for the Efficacy scale. Furthermore, the scale is validated within a military population (Bui et al., 2017). Overall PSOC scales within military parent respondents were found to strongly correlate with family dysfunction ( $r = -0.53$ ), and moderately correlate with military parent's depressive ( $r = -0.22$ ) and anxious symptoms ( $r = -0.33$ ). Cronbach's alpha coefficients were 0.85 for the total PSOC scale, 0.82 for the efficacy subscale, and 0.78 for the satisfaction subscale. Furthermore, Bui et al. (2017) found very good temporal stability such that the first and second assessments were strongly correlated ( $r = 0.81$ ).

Within the present study, the PSOC Self-Efficacy scale had questionable internal consistency ( $\alpha = 0.65$ ) while the PSOC Satisfaction scale had acceptable internal consistency ( $\alpha = 0.75$ ). Study analyses used the continuous scores for the Satisfaction and Self-Efficacy subscales.

*Military Veteran Parenting Issues Checklist* (MVPIC; Curry, Kiser, Fernandez, Elliott, & Dowling, 2018). The MVPIC is a 30-item self-report checklist analyzing the relationship between the respondent (a veteran) and their children, as well as parenting-related changes following deployment. Of the 30 items, 20 surveyed negative experiences/challenges (e.g., being too protective or controlling), while 10 surveyed positive experiences (e.g., enjoying seeing growth in their child). Items fall on a 4-point Likert scale (0 = *not at all*, 1 = *just a little*, 2 = *pretty much/often*, 3 = *very much/very often*), representing the frequency of intensity of each particular experience. Both the positive questions and negative experiences/challenges questions have high internal consistencies ( $\alpha = 0.93$  and  $0.91$  respectively), and the total scores for positive and negative experiences was found to be inverse ( $r = -0.56$ ), though the survey has not been widely validated. Within the present study, the MVPIC Positive Experiences subscale had good internal consistency ( $\alpha = 0.85$ ), with the Negative Experiences subscale having excellent internal consistency ( $\alpha = 0.92$ ). Study analyses used the continuous scores for each subscale.

*Demographics Form.* The demographics form was modified from demographics forms used in other studies in the lab. Participants were asked about their age, gender, race/ethnicity, and rural status, as well as questions about their status as a parent and military service member.

*Data Quality Measures.* To ensure that data quality could be assessed, several data quality measures were added to the study. First, an attention check item ("Paying attention is important. Leave this question blank.") was embedded in the PCL-5. Then, following the surveys of the target variables, participants completed a brief questionnaire to verify their military status and a

self-report attention item. The Military Validity Screener (Lynn, 2014) is a 5-item questionnaire to identify participants who may have falsely reported that they had military experience. Questions are based on information considered general knowledge for US military service members across branches and ranks, such as commonly used acronyms. Lynn (2014) recommended a cutoff of two. In other words, participants only had to get two of the five questions right to be included in study analyses. If none or only one item was correct, participants' data were not included in study analyses. Lastly, participants rated their attention during the study, reporting if their attention levels were or were not sufficient to provide accurate responses. At the end of the study, after all questionnaires, demographics, and the military validity screen, participants were asked whether they paid close attention throughout the study or whether they mostly clicked through without paying attention and should have their data thrown out. This item was included based on the recommendations of Aust et al. (2013).

### Procedure

The study involved the online completion of various self-report measures. Participants were recruited via MTurk, which lists ongoing research projects and online job tasks. Individuals interested in participating in research or other job tasks can use MTurk to view all available studies and job descriptions and choose studies or job tasks in which they want to participate. Eligible workers who were interested in completing this study were redirected to Georgia Southern University's Qualtrics Research Suite and presented with an informed consent page. If they chose not to participate, they were presented the option to click a button labeled "I do not choose to participate," and the survey immediately ended. The participants who chose to provide their consent via a button labeled "I give my consent to participate" were then required to complete a Captcha verification to eliminate possible bots interfering with data collection. After

passing the Captcha verification, participants were presented three blocks of questionnaires assessing the three study domains: alcohol use (AUDIT and DMQ-R, in that order), trauma (CES, TLEQ-2, and PCL-5, in that order), and parenting (PSOC and MVPIC, in that order). The order of the blocks was randomized to reduce possible priming effects. A MANOVA was conducted to test whether viewing the trauma block first influenced scores on the primary study variables, and the results were not significant, Wilk's  $\lambda = .88$ ,  $F = .14$ ,  $p = .99$ , partial  $\eta^2 = .11$ .

After completing the main questionnaires, participants were directed to a demographics survey that also included questions about military status (current, retired, or discharged), combat veteran status, branch affiliation, years served, and number of times deployed. Then, participants completed the questions designed to screen for false military endorsement and, finally, asked to rate their attention during the questionnaires ("I paid close attention in the study – keep my data" or "I did not pay close attention in the study – do not keep my data").

Lastly, participants were directed to a debriefing passage with information about the purpose of the study, as well as information on various low-cost or free mental health resources (e.g., National Suicide Hotline) and were provided with a code for compensation. Each participant who completed the survey was compensated with \$2.00. The average survey duration for the entire sample was 1423.29 second (approximately 23 minutes;  $SD = 865.27$  seconds; range: 601-3744 seconds), whereas the length for the retained samples was 1351.80 second (approximately 22 minutes;  $SD = 791.21$  seconds; range: 601.00-3744.00 seconds).

#### Data Quality

The study was closed to participants after 6 weeks, following a period of no new participants in over 7 days. Data were evaluated for quality purposes and included in analyses if the participant passed each of the following inclusion criteria: completion, duration, attention

check, self-reported military service, military validity screener, and self-reported attention during the study. Participants were considered incomplete and were excluded from analyses if they had more than 10% missing data on one or more of the primary study questionnaires. (For questionnaires missing at least one item but less than 10% of items, missing data were replaced with the series mean.) Moreover, participants were only included in analyses if they passed the duration requirement by spending at least 316 seconds, about 5 minutes (2 seconds per item), to complete the study. Participants were asked to leave one question blank within the assessment battery. If the participant answered the questions on either side of the attention check, they were deemed to have passed that check. After completing the questionnaire battery, participants were asked to report if they were actively enlisted in the armed forces, were retired or discharged, or were never affiliated with a branch of the armed forces on the Demographics Form. Participants were only included if they disclosed being actively enlisted or retired/discharged. Similarly, participants were included if they correctly responded to 2 of 5 military validity screener questions (Lynn, 2014). Lastly, participant's data were included only if they reported they paid close attention in the study. See Table 3 for information on pass/fail rates for inclusion criteria.

Of the 78 participants in the initial sample, only 20 were included based on passing each of the aforementioned inclusion requirements. In the initial sample, the mean number of data quality variables passed was 3.78 out of 6 ( $SD = 1.96$ ; range: 0-6). Among participants who passed all but one, 7 failed the military check, 3 failed the attention check, and 1 self-reported poor attention while completing the study. No participants failed only the completion, duration, or self-report military status criteria. Furthermore, participants who passed each variable were more likely to pass other variables, though participants who passed the self-reported military

status and self-reported attention did not pass significantly more other data quality variables than those who failed (see Table 4).

Table 3. *Number of participants who passed, failed, or provided no response for data quality variables (N = 78)*

<b>Data Quality Variable</b>	<b>Pass</b>	<b>Fail</b>	<b>No Data</b>
Completion	56	22	N/A
Duration	67	11	N/A
Attention Check	37	26	15
Self-Reported Military Service	54	7	17
Military Check	28	22	28
Self-Reported Attention During Study	47	3	28

Table 4. *Mean (SD) of other data quality variables passed if listed data quality variable was failed or passed (N = 78)*

<b>Data Quality Variable</b>	<b>Mean Number of Passes for Participants who FAILED this Data Quality Variable</b>	<b>Mean Number of Passes for Participants who PASSED this Data Quality Variable</b>
Completion	1.18 (1.53)	3.66 (1.31)***
Duration	.18 (.60)	3.30 (1.52)***
Attention Check	3.15 (1.43)	4.08 (1.12)**
Self-Reported Military	3.14 (.69)	3.80 (1.12)
Military Check	3.91 (.97)	4.57 (.74)**
Self-Reported Attention	4.33 (.58)	3.87 (1.21)

NOTE: *Total passes* was calculated for each data quality variable so that the table reflects the mean number of total *other* variables passed (i.e., total number of passes minus passes for that specific variable); \*\* $p < .01$ , \*\*\* $p < .001$



## CHAPTER 4:

## RESULTS

## Preliminary Analyses

Preliminary analyses were conducted to describe the overall data and determine whether certain statistical assumptions would be met for subsequent analyses. First, descriptive statistics were produced for all primary study variables (see Table 5). Then, these variables were also assessed for normality using the Kolmogorov-Smirnov (K-S) test, and the CES [K-S (20) = .21,  $p = .03$ ], PCL-5 [K-S (20) = .28,  $p < .001$ ], and MVPIC Negative Experiences [K-S (20) = .24,  $p = .004$ ] were each found to be non-normally distributed.

Table 5. *Descriptive statistics for primary study variables (N = 20)*

<b>Study Variable</b>	<b>M</b>	<b>SD</b>	<b>Observed Range</b>	<b>Possible Range</b>
AUDIT (10 items)	7.21	4.34	1-17	0-40
DMQ Coping (5 items)	3.85	4.03	0-14	0-20
CES Total (7 items)	8.55	7.97	0-27	0-41
TLEQ-2 frequency (16 items)	10.95	6.14	1-21	0-48
TLEQ-2 types (16 items)	5.50	.50	1-9	0-16
PCL-5 Total (20 items)	18.75	16.88	1-62	0-80
PSOC Efficacy (9 items)	38.75	6.51	25-48	9-54
PSOC Satisfaction (8 items)	36.00	5.51	21-45	8-48
MVPIC Positive Experiences (10 items)	24.55	4.95	11-30	0-30
MVPIC Negative Experiences (20 items)	14.80	10.71	4-44	0-60

## Hypothesis 1

*Combat exposure, PTSD symptoms, alcohol use, and alcohol coping motivation will positively correlate with each other and negatively correlate with parenting satisfaction and efficacy.* The present study utilized nonparametric correlations (Spearman's rho [ $\rho$ ]) to examine relationships among study variables (see Table 6). Of the 35 possible relationships, three were statistically significant. Total AUDIT scores showed a moderate positive correlation with

frequency of traumatic lifetime experiences (TLEQ frequency) scores ( $\rho = 0.455, p < 0.05$ ), such that those endorsing higher levels of alcohol use on the AUDIT were more likely to endorse more instances of experiencing a traumatic event. Moreover, PCL-5 total scores were moderately negatively correlated with PSOC Self-Efficacy scores ( $\rho = -0.536, p < 0.05$ ) and moderately positively related to MVPIC Negative Experiences ( $\rho = 0.449, p < 0.05$ ). These results suggest that participants endorsing more symptoms of PTSD on the PCL-5 were both more likely to feel less effective as a parent and to experience more negative experiences (e.g., being overcontrolling of their child/children, arguing with their child/children) following deployments. As such, Hypothesis 1 was only partially met. Of note, two relationships trended toward significance, possibly due to small sample size. In particular, drinking behaviors (AUDIT) and total combat exposure experiences (CES) are trending toward a significant positive correlation ( $\rho = 0.405, p = 0.08$ ), as well as parenting efficacy (PSOC Self-Efficacy) and positive parenting experiences (MVPIC Positive Experiences;  $\rho = 0.414, p = 0.07$ ). In addition, many of the observed null correlations fall in the moderate to relatively strong range for correlation sizes (between .30 and .40, roughly), suggesting the correlational analyses may be underpowered.

Table 6. *Nonparametric correlations among study variables*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) AUDIT	-							
(2) DMQ Coping	.13	-						
(3) TLEQ-2	.46*	.08	-					
(4) CES	.41†	.35	.20	-				
(5) PCL-5	.21	.35	.23	.26	-			
(6) PSOC Self-Efficacy	-.04	-.21	-.18	-.26	-.54*	-		
(7) PSOC Satisfaction	.12	.10	.02	.14	.15	.31	-	
(8) MVPIC Positive Experiences	.16	.20	.11	.03	-.16	.41†	.07	-
(9) MVPIC Negative Experiences	.18	.38	-.06	.01	.45*	-.35	.04	.04

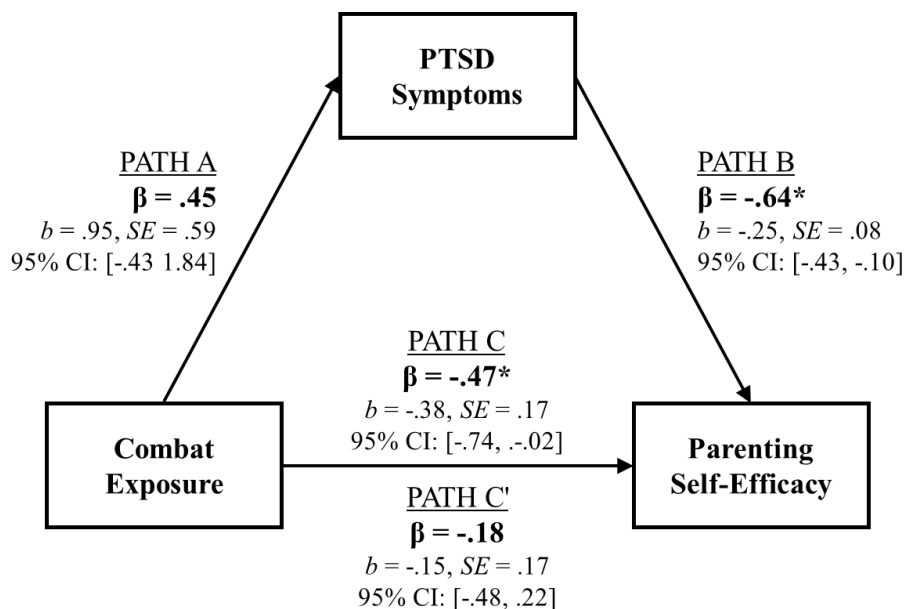
Note: AUDIT = total score on *Alcohol Use Disorder Identification Test*; DMQ Coping = coping-motivated drinking subscale score on the *Drinking Motivations Questionnaire – Revised*; TLEQ-2 = total score on the *Traumatic Life Events Questionnaire*; CES = total score on the *Combat Exposure Scale*; PCL-5 = total score on the *Posttraumatic Checklist for the DSM-5*; PSOC Self-Efficacy and PSOC Satisfaction = sense of efficacy and satisfaction subscale scores on the *Parenting Sense of Competence Scale*; MVPIC Positive Experiences and MVPIC Negative Experiences = positive experiences and negative experiences with children post-deployment subscale scores on the *Military Veteran Parenting Issues Checklist*; †  $p < .10$ , \*  $p < .05$

## Hypothesis 2

*PTSD symptoms will mediate the relationship between combat exposure and parenting satisfaction, as well as between combat exposure and parenting efficacy.* To test this hypothesis, two simple mediation analyses (Process Model 4; 5,000 bootstrap samples with 95% bias-corrected confidence intervals) were conducted. The first mediation model examined the indirect effect of PTSD symptoms on the relationship between combat exposure and parenting self-efficacy. The second mediation model examined the indirect effect of PTSD symptoms on the relationship of combat exposure and parenting satisfaction.

In the first model, the *a* pathway represented the path between combat exposure and PTSD symptoms, the *b* pathway represented the path between PTSD symptoms and parenting self-efficacy, pathway *c* represented the total relationship between combat exposure and parenting self-efficacy, and pathway *c'* represented the directional relationship between combat exposure and parenting self-efficacy once PTSD symptoms were accounted for (see Figure 1).

Path *a* was not significant, suggesting combat exposure did not significantly predict PTSD symptoms ( $\beta = 0.45$ ,  $b = 0.95$ ,  $SE = 0.59$ ; 95% CI: [-0.43, 1.84]). Path *b* was significant ( $\beta = -0.64$ ,  $b = -0.25$ ,  $SE = .08$ ; 95% CI: [-0.43, -0.10]) such that PTSD symptoms significantly predicted parenting self-efficacy. The total effect between combat exposure and parenting self-efficacy was significant ( $\beta = -0.28$ ,  $b = -0.15$ ,  $SE = 0.17$ ; 95% CI: [-0.48, 0.22]). However, the direct effect was not significant ( $\beta = -.29$ ,  $SE = .20$ ; 95% CI: [-.72, .09]) such that combat exposure did not predict parenting self-efficacy when accounting for PTSD symptoms. Furthermore, the indirect effect was not significant ( $\beta = -.29$ ,  $SE = .20$ , 95% CI: [-.72, .09]), therefore not supporting Hypothesis 2. As such, combat exposure and PTSD symptoms independently predicted parenting self-efficacy, though the pattern of the results suggests there could be reason to explore mediation further in a larger sample. Of note, standardized power for this analysis using G\*power parameters for linear regression with two predictors was 0.87 (87%), meaning there is a 13% chance the analysis failed to capture a significant effect if, in fact, the actual effect size of the indirect effect is the same as the general population.

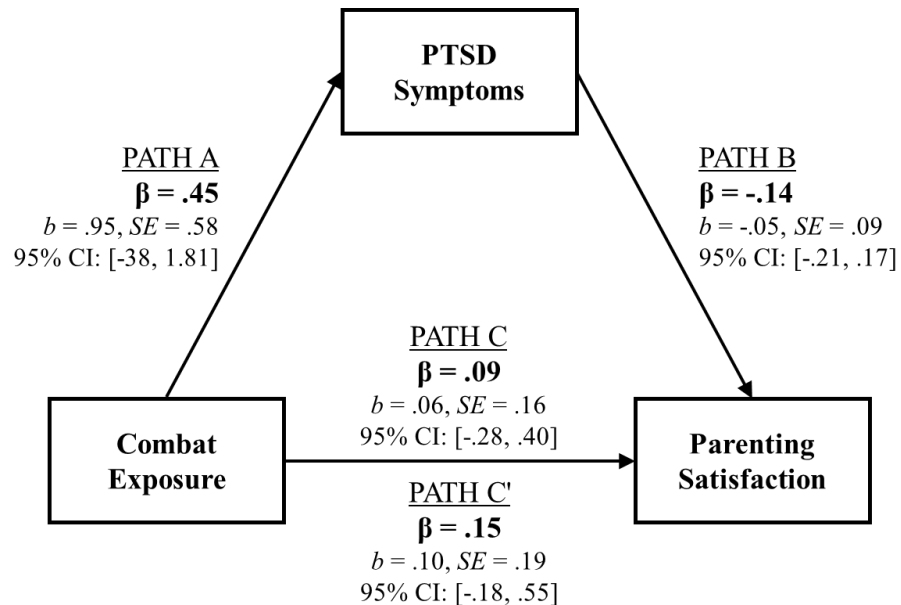
Figure 1. *Direct and Indirect Pathways between Combat Exposure and Parenting Efficacy.*

Note:  $\beta$  = standardized coefficient,  $b$  = unstandardized coefficient, CI = 95% confidence intervals (bootstrapped)

In the second model, pathway *a* represented the path between combat exposure and PTSD symptoms, pathway *b* represented the path between PTSD symptoms and parenting satisfaction, pathway *c* represented the total relationship between combat exposure and parenting satisfaction, and pathway *c'* represented the relationship between combat exposure and parenting satisfaction accounting for PTSD symptoms (see Figure 2). Path *a* was not significant, suggesting combat exposure did not significantly predict PTSD symptoms ( $\beta = 0.45$ ,  $b = 0.95$ ,  $SE = 0.58$ ; 95% CI: [-38, 1.81]). Similarly, path *b* was not significant ( $\beta = -0.14$ ,  $b = -0.05$ ,  $SE = .09$ ; 95% CI: [-0.21, -0.17]). The total effect between combat exposure and parenting self-efficacy was not significant ( $\beta = 0.09$ ,  $b = 0.06$ ,  $SE = 0.17$ ; 95% CI: [-0.28, 0.40]), the direct effect was not significant ( $\beta = 0.15$ ,  $b = 0.10$ ,  $SE = 0.19$ ; 95% CI: [-0.18, 0.55]), and the indirect effect was not significant ( $\beta = -.07$ ,  $SE = .15$ , 95% CI: [-.47, .10]). As such, there is no significant impact of combat on parenting satisfaction when PTSD symptoms are accounted for

in the relationship between combat exposure and parenting satisfaction, again offering no support for Hypothesis 2.

Figure 2. *Direct and Indirect Pathways between Combat Exposure and Parenting Satisfaction.*

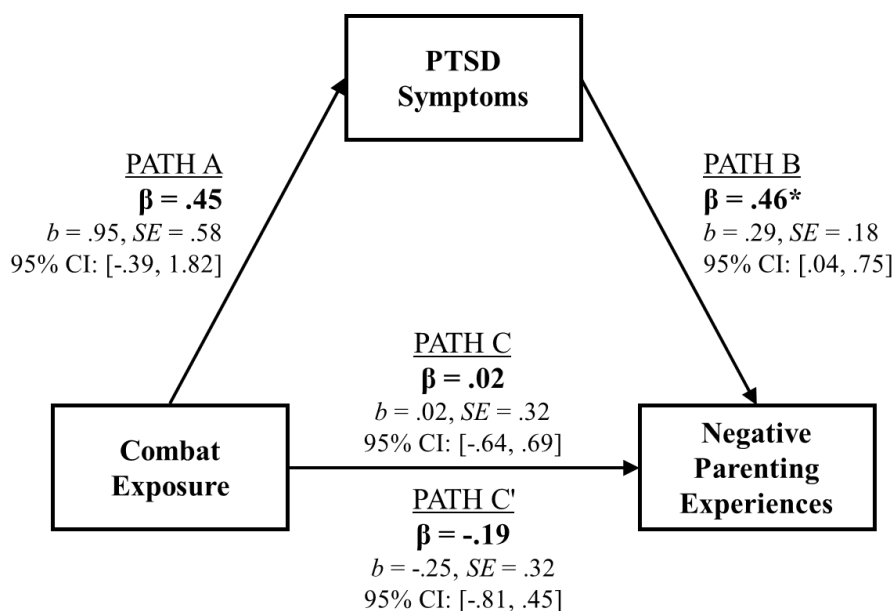


Note:  $\beta$  = standardized coefficient,  $b$  = unstandardized coefficient, CI = 95% confidence intervals (bootstrapped)

An exploratory simple mediation analysis was conducted to test whether PTSD mediated the relationship between combat exposure and negative parenting experience. In this model, the  $a$  pathway represented the path between combat exposure and PTSD symptoms, the  $b$  pathway represented the path between PTSD symptoms and negative parenting experiences, pathway  $c$  represented the total relationship between combat exposure and negative parenting experiences, and  $c'$  represented the direct relationship between combat exposure and negative parenting experiences when PTSD symptoms were accounted for (see Figure 3). Path  $a$  was not significant, suggesting combat exposure did not significantly predict PTSD symptoms ( $\beta = 0.45$ ,  $b = 0.95$ ,  $SE = 0.58$ ; 95% CI: [-0.39, 1.82]). Path  $b$  was significant ( $\beta = 0.46$ ,  $b = 0.29$ ,  $SE = 0.18$ ; 95% CI: [0.04, 0.75]), such that PTSD symptoms significantly predicted negative parenting experiences. The total effect between combat exposure and negative parenting experiences was not significant

( $\beta = -0.02$ ,  $b = 0.02$ ,  $SE = 0.32$ ; 95% CI: [-0.64, 0.69]), nor was the direct effect ( $\beta = -0.19$ ,  $b = -0.25$ ,  $SE = 0.32$ ; 95% CI: [-0.81, 0.45]) or indirect effect ( $\beta = .21$ ,  $SE = .16$ , 95% CI: [-.11, .53]). These results suggest that, though PTSD symptoms predict negative parenting experiences, there is no significant effect of combat exposure on negative parenting experiences when accounting for PTSD symptoms. Of note, as path  $c$  was not significant, there were no grounds for investigating a potential mediating effect. The analysis was completed to provide information on each pathways and complete analyses for Hypothesis 2.

Figure 3. *Direct and Indirect Pathways between Combat Exposure and Negative Parenting Experiences.*



Note:  $\beta$  = standardized coefficient,  $b$  = unstandardized coefficient, CI = 95% confidence intervals (bootstrapped)

### Hypothesis 3

*Alcohol use behaviors and motivation will moderate the mediating effects of PTSD on combat and parenting, such that PTSD symptoms will mediate the relationship between combat exposure and parenting variables for parents who report high levels of alcohol misuse or high levels of coping-motivated drinking.* To test this hypothesis, four moderated mediations were

conducted using SPSS Model 14 (95% confidence intervals, 5,000 bootstrapped samples). These separately analyzed the moderating effects of alcohol use (measured by AUDIT scores) and drinking motivations (measured by DMQ-R) on the mediating effects of PTSD on the relationship between combat experiences and parenting self-efficacy and satisfaction. No moderated mediations were found for any of the analyses, such that none of the models demonstrated significant mediation, as discussed for Hypothesis 2, and neither problematic alcohol use behaviors (AUDIT) nor coping-motivated drinking behaviors (DMQ-R) moderated the indirect relationships between combat exposures and parenting self-efficacy and or combat exposure and parenting satisfaction.

Specifically, problematic alcohol use behaviors did not moderate the indirect effect of PTSD symptoms on combat exposure and parenting self-efficacy (index of moderated mediation = -0.004, SE = 0.03, 95% CI: [-0.07, 0.05]). Observed power for this analysis using G\*power parameters for a linear regression with four predictors was 0.90 (90%). The moderated mediation analysis with parenting satisfaction was also not significant (index of moderated mediation = 0.002, SE = 0.03, 95% CI: [-0.10, 0.04]).

Similarly, coping-motivated drinking did not moderate the indirect effect of PTSD symptoms on combat exposure and parenting self-efficacy (index of moderated mediation = -0.06, SE = 0.05, 95% CI: [-0.16, 0.04]). Observed power for this analysis using G\*power parameters for a linear regression with four predictors was 0.81 (81%). The moderated mediation analysis with parenting satisfaction was also not significant (index of moderated mediation = 0.01, SE = 0.05, 95% CI: [-0.10, 0.12]). Based on the results of the moderated mediation analyses, Hypotheses 3 was not supported.



Exploratory moderated mediation analyses were conducted. Problematic alcohol use behaviors (AUDIT) did not moderate the indirect effect of PTSD symptoms on the relationship between combat and negative parenting experiences (index of moderated mediation = 0.004, SE = 0.07, 95% CI: [-0.20, 0.10]), nor did coping-motivated drinking (DMQ) moderate the indirect effect of PTSD symptoms on the relationship between combat and negative parenting experiences (index of moderated mediation = 0.09, SE = 0.10, 95% CI: [-0.13, 0.128]).

#### Exploration of Rurality Status

An independent samples Mann-Whitney U test was used to compare participants who were currently living in a rural area and participants who were living in a non-rural (i.e., either a suburban or urban area, collapsed into one non-rural category). Based on the assessment, there were no significant differences in measures across rural status.

An additional exploratory analysis was conducted to compare participants who reported being combat veterans with those who did not on study variables. Based on independent samples Mann-Whitney U tests comparing participants who were and were not combat veterans, combat veterans reported significantly higher scores than other participants on the AUDIT ( $M = 8.23$ ,  $SD = 3.45$  vs.  $M = 5.3$ ,  $SD = 5.37$ ;  $p = 0.046$ ) and CES ( $M = 12.00$ ,  $SD = 7.34$  vs  $M = 2.14$ ,  $SD = 4.49$ ;  $p = 0.002$ ). No other differences in measures were found.

## CHAPTER 5: DISCUSSION

### Review of Purpose

The overarching goal of this study was to examine the relationships between alcohol use behaviors and motivations, combat experiences and trauma symptoms, and parenting satisfaction and self-efficacy within a sample of military members/veterans. Moreover, the study aimed to determine whether PTSD symptoms mediate the relationships between combat experiences and parenting satisfaction, as well as the relationship between combat experiences and parenting self-efficacy. The study further attempted to examine whether alcohol use behaviors (hazardous alcohol use behaviors as measured by the AUDIT) moderate the aforementioned mediation, expecting participants reporting higher levels of PTSD symptoms will report poorer parenting satisfaction and self-efficacy when they endorse higher levels of alcohol misuse. Similarly, the study aimed to determine whether coping-motivated drinking behaviors as measured by the DMQ-R moderate the above mediation analyses. Lastly, the study was interested in exploring potential differences between study variables among active duty or retired military servicemembers residing in rural areas compared to non-rural (i.e., suburban and urban) areas.

### Summary of Findings

Prior studies show relationships between combat exposure and trauma symptomology (Fulton et al., 2015; Gerwitz et al., 2010), such that increased combat exposure further increases the likelihood of a serviceperson being diagnosed with PTSD. This relationship was not supported in the present study, as scores on the CES were not correlated to trauma symptomology as measured by the PCL-5. Similarly, research suggests trauma and alcohol use behaviors (e.g., hazardous drinking, coping-motivated drinking) are related, with those

experiencing increased PTSD symptoms engaging in more hazardous drinking behaviors (e.g., drinking and driving, binge drinking) and coping-motivated drinking (Cucciare et al., 2015; Debell et al., 2014; Fuehrlein et al., 2016). The present study corroborated the relationship between hazardous alcohol use behaviors, as measured by the AUDIT, and total traumatic events experiences within the lifetime, as measured by the TLEQ, but was not able to detect a relationship between coping-motivated drinking behaviors and trauma. Established research further denotes trauma symptoms and parenting variables are inversely related, such that satisfaction and efficacy decrease as a parent experiences more symptoms of trauma (Armenta et al., 2018; Yablonsky et al., 2016). This study detected a significant negative relationship between trauma symptoms, captured using the PCL-5, and sense of efficacy as a parent, measured by the PSOC. In particular, parents endorsing higher levels of trauma symptoms also reported lower levels of efficacy within their role as a parent. However, literature suggests trauma symptoms have significant impact on parenting satisfaction (Ruscio et al., 2002; Sherman et al., 2016), though this relationship was not detected in the present study. Moreover, parents returning from deployments in combat zones report significantly poorer relationships with their children when the parent had PTSD (Cheshmore et al., 2017). Similarly, the present study was able to detect a positive relationship between trauma symptoms captured using the PCL-5 and negative parenting experiences as reported on the MVPIC, suggesting parents experience increased negative experiences following deployment (e.g., being overly protective of their children) when they also experience greater levels of PTSD symptoms. Hazardous alcohol use behaviors are further indicated to be negatively related to parenting satisfaction, such that those engaging in problematic alcohol use behaviors often report decreased satisfaction and poorer family cohesion (Godleski et al., 2018; Lewis et al., 2012). The present study was unable to detect a relationship

between hazardous alcohol use behaviors and parenting variables, differing from the established literature. Finally, an exploratory analysis found no differences in relationships between alcohol use behaviors and motivations, trauma symptoms and combat experiences, and parenting satisfaction or efficacy with veterans living in rural areas compared to non-rural areas. Of note, combat veterans did report significantly greater levels of hazardous drinking behaviors and combat exposure compared to veterans who did not experience combat.

Furthermore, the present study established that both PTSD symptoms and combat exposure predict parenting efficacy; however, combat exposure did not predict parenting efficacy when accounting for PTSD symptoms. Moreover, results suggest combat exposure does not predict PTSD symptoms, contrary to established literature (Fulton et al., 2015; Gerwitz et al., 2010). Combat exposure and PTSD symptoms were not independent predictors of parenting satisfaction, nor did combat exposure predict parenting satisfaction when accounting for PTSD symptoms. This further contradicts the literature on relationships between combat, trauma, and parenting (Cozza et al., 2010; McGaw et al., 2018). However, PTSD symptoms were significant predictors of negative parenting experiences, but not within the broader relationship of combat and negative parenting experiences. This supports findings that PTSD symptoms are associated with negative parenting experiences (Blevine et al., 2015). Contrary to study hypotheses, alcohol use behaviors and coping-motivated drinking did not moderate any of the observed mediations.

#### Theoretical Implications

The present study findings that problematic alcohol use behaviors are related to total lifetime traumatic events, but not combat exposure or PTSD symptoms, suggest existing research findings may inadvertently be attributing alcohol use behaviors solely to PTSD or combat instead of incorporating assessment of total lifetime trauma. However, it is likely the present

study was unable to accurately capture relationships between said variables due to insufficient sample size, thus such findings may not be generalizable to the broader veteran population.

Similarly, previous findings assert trauma symptomology negatively impacts parenting variables (Chesmore et al., 2017; McGaw et al., 2018), though that effect was not detected within the present study. Alternatively, the present findings suggest increased PTSD symptoms instead are related to decreased feelings of efficacy as a parent. This finding may suggest that previous studies assessing for parenting satisfaction may have used a more generalized definition of satisfaction, thus potentially capturing sense of efficacy within their conceptualization of parenting efficacy. As such, the field would benefit from future studies parsing out the differences between satisfaction and efficacy, particularly among military populations.

#### Clinical Implications

Current results further emphasize the necessity for more research on the relationship between alcohol use behaviors, trauma and combat, and parenting variables within veteran populations. Significant research exists illuminating the relationships between alcohol use and trauma (Cucciare et al., 2015; Stewart et al., 2014), alcohol use and parenting (Godleski et al., 2018; Guttmanova et al., 2016), and trauma and parenting (Chesmore et al., 2017; Cozza et al., 2010), though no findings are known to exist that further explore the interactions between each domain. Further research could provide clinicians with valuable information when conceptualizing the wider impact of trauma and combat on veterans, as well as inform potential interventions designed to boost parenting satisfaction and efficacy within veteran populations.

Furthermore, previous studies show significant relationships between coping-motivated drinking and hazardous alcohol use (Cooper, 1994) and trauma symptoms (Simpson et al., 2014). Though the present study found no impacts of coping-motivated drinking or hazardous alcohol

use on the relationships between combat, trauma symptoms, and parenting variables, future studies with larger samples may clarify potential impacts of coping-motivated drinking or hazardous drinking behaviors within military populations. These findings could further inform the field of how alcohol use behaviors and motivations further influence veteran wellbeing.

### Rural Implications

The present study did not detect significant differences in relationships between trauma, combat exposure, hazardous alcohol use behaviors, coping-motivated drinking parenting competency, and parenting efficacy in veterans presently residing in rural areas compared to veterans in urban areas. However, there were differences among hazardous drinking behaviors and combat experiences among veterans living in rural areas, such that rural veterans with combat experience endorsed greater levels of hazardous alcohol use behaviors and more combat experiences than their veteran neighbors without combat experience. Further research studies should continue to explore differences between these variables in veteran populations residing in rural versus non-rural areas. If such findings determine combat and non-combat veterans report significantly different alcohol use behaviors, rural combat veterans may need further resources than currently available in their rural communities. For example, rural veterans and their communities could benefit from increased access to mental health counseling with particular emphasis on alcohol use behaviors to better mitigate the enhanced risk of problematic alcohol use. Similarly, these rural communities would benefit from increasing childcare and parenting resources (e.g., new parent support groups, education on effective discipline strategies, affordable childcare services) to bolster parenting satisfaction and efficacy.

## Limitations

The present study contains several noteworthy limitations. First, the current study utilized correlational and cross-sectional analyses, thus causation cannot be inferred. The study also had a small sample size causing very low power in each analysis, such that the study was unable to provide ample confidence the observed effects within the sample were representative of effects existing within the true population. Moreover, data were collected using MTurk, a platform where researchers compensate participants in exchange for participation in studies. Upon creation of their MTurk account, participants are screened for various demographic variables (e.g., veteran status, parenting status). As such, each participant who was presented with the present study on the MTurk page should have both had experience serving in the armed forces and been a parent. However, 50 (64%) participants did not pass the military screener, suggesting they were not affiliated with any branch of the armed forces, and 7 (9%) explicitly denied past or present service within any branch of the armed forces. These statistics suggest MTurk may not be a reliable source for assessing military populations, as the study should have only been visible to participants with military history. Participants who were excluded due to failing the military check or denying affiliation with the military may have been able to access the survey due to falsely claiming military status or errors within the MTurk classification process. Regardless of the cause of such an error, these findings further suggest future studies of military populations should either use a different platform where military status is verifiable or implement a verification of military status within their survey to assist in "cleaning" the data of participants without military experience.

Furthermore, data collection occurred for 6 weeks, from September 1, 2020, until October 15, 2020, in the midst of the worldwide COVID-19 novel coronavirus pandemic.

Emerging research shows increased distress across populations and presenting concerns (e.g., depression, anxiety, parenting, substance use). Moreover, daily routines were – and continue to be – disrupted as preventative measures (e.g., lockdowns, social distancing) require in-person activities to halt or transition to internet-based platforms (e.g., childcare facilities closed, schools and in-person counseling transitioned to web camera-based platforms). As such, it is likely that COVID-19-related stressors (e.g., children attending virtual school, parents working from home, increased social isolation, widespread community lockdowns) influenced participant responses regarding their perceived parenting satisfaction and efficacy. Similarly, studies are finding increased rates of alcohol use and higher rates of hazardous alcohol use behaviors (e.g., binge drinking; Chodkiewicz et al., 2020; Lechner et al., 2020), increased parental stress, child abuse potential, and negative parenting behaviors and affect (Brown et al., 2020; Janssen et al., 2020), and increased rates and severity of anxiety, depression, and stress (Wang et al., 2020). Therefore, the present study cannot confirm whether the observed findings were due to pre-existing alcohol-related behaviors, parenting variables, and trauma symptoms, or if the responses were skewed by COVID-19 related stressors.

### General Conclusions

The current study provided clarifications regarding the relationship between hazardous alcohol use and lifetime trauma, trauma symptoms and parenting efficacy, and trauma symptoms and negative parenting experiences post-deployment. Results did not confirm previously established findings that combat exposure and trauma symptoms predict poorer parenting satisfaction, instead finding those with more trauma symptoms were more likely to report decreased parenting efficacy and more parenting difficulties following deployments. Moreover, combat veterans exhibited greater levels of hazardous alcohol use behaviors than veterans



without combat exposure, though combat exposure was not a significant predictor of parenting variables. Furthermore, the study did not determine veterans experience differences in alcohol use behaviors, parenting variables, or trauma based on rurality status. The present study allows for better understanding of the relationships between trauma and parenting as well as alcohol and trauma, and provides evidence supporting the importance of verifying the validity of a participant's reported military affiliation when conducting online research on veteran populations; however, it should be noted that small sample size is a major limitation in interpreting the findings.

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