



Alcohol misuse and psychological resilience among U.S. Iraq and Afghanistan era veterans



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HIGHLIGHTS

- We examined the longitudinal effects of resilience against alcohol misuse over 1 year.
- Models adjusted for history of alcohol abuse, demographic and trauma variables.
- Adjusting for covariates, baseline resilience predicted alcohol misuse at 1 year.
- Baseline and change in resilience was related to alcohol misuse at 1 year.
- Combat exposure and baseline resilience was associated with alcohol misuse at 1 year.
- Resilience is an important factor for protection against alcohol misuse overtime.

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ABSTRACT

Objective: The present study sought to investigate the longitudinal effects of psychological resilience against alcohol misuse adjusting for socio-demographic factors, trauma-related variables, and self-reported history of alcohol abuse.

Methodology: Data were from the National Post-Deployment Adjustment Study (NPDAS) participants who completed both a baseline and one-year follow-up survey ($N = 1090$). Survey questionnaires measured combat exposure, probable posttraumatic stress disorder (PTSD), psychological resilience, and alcohol misuse, all of which were measured at two discrete time periods (baseline and one-year follow-up). Baseline resilience and change in resilience (increased or decreased) were utilized as independent variables in separate models evaluating alcohol misuse at the one-year follow-up.

Results: Multiple linear regression analyses controlled for age, gender, level of educational attainment, combat exposure, PTSD symptom severity, and self-reported alcohol abuse. Accounting for these covariates, findings revealed that lower baseline resilience, younger age, male gender, and self-reported alcohol abuse were related to alcohol misuse at the one-year follow-up. A separate regression analysis, adjusting for the same covariates, revealed a relationship between change in resilience (from baseline to the one-year follow-up) and alcohol misuse at the one-year follow-up. The regression model evaluating these variables in a subset of the sample in which all the participants had been deployed to Iraq and/or Afghanistan was consistent with findings involving the overall era sample. Finally, logistic regression analyses of the one-year follow-up data yielded similar results to the baseline and resilience change models.

Conclusions: These findings suggest that increased psychological resilience is inversely related to alcohol misuse and is protective against alcohol misuse over time. Additionally, it supports the conceptualization of resilience as a process which evolves over time. Moreover, our results underscore the importance of assessing resilience as part of alcohol use screening for preventing alcohol misuse in Iraq and Afghanistan era military veterans.

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1. Introduction

Alcohol misuse in the U.S. military is widespread (Ames & Cunradi, 2004; Institute of Medicine, 2013). Current population estimates range from 22% to 40%, a considerable higher rate when compared to non-

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military populations (Calhoun, Elter, Jones, Kudler, & Straits-Troster, 2008; Eisen et al., 2012; Seal et al., 2011). Although previous studies have attempted to clarify the rates of alcohol misuse in military samples, less attention has been placed on identifying protective mechanisms that buffer against high risk drinking in this population (Scott et al., 2012). Longitudinal assessment using standardized measures in the same sample could lead to a more complete understanding of the course of alcohol misuse and potential protective factors among U.S. Iraq/Afghanistan era service members.

1.1. Characterizing alcohol misuse

Alcohol misuse is a collective term for defining problems or conditions related to alcohol use. More specifically, it refers to any alcohol drinking behavior that increases an individual's risk for negative health and social consequences (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; U.S. Department of Health and Human Services, National Institutes of Health, & National Institute on Alcohol Abuse and Alcoholism, 2005). While repeated alcohol misuse has been linked to dependence, not all high-risk drinkers become dependent users (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) — suggestive of a protective mechanism at play. Further study of the mechanisms important for protection against alcohol misuse is needed for understanding the extent in which these mechanisms buffer against problem alcohol drinking in U.S. Iraq and Afghanistan era veterans.

1.2. Combat exposure, PTSD, and socio-demographic variables: documented risks of alcohol misuse

Combat exposure is a risk factor for a number of psychological conditions including alcohol misuse (Bray & Hourani, 2007; Goldberg, Eisen, True, & Henderson, 1990; Hoge, Auchterlonie, & Milliken, 2006; Kulka et al., 1990; Marx et al., 2009; Schlenger et al., 2007; Seal, Bertenthal, Miner, Sen, & Marmar, 2007). In a large-scale prospective study of 48,481 combat exposed veterans, Jacobson et al. (2008) found that National Guard/Reserve and younger aged service members were at a greater risk for alcohol misuse — described as alcohol-related problems, new onset of heavy weekly drinking, and binge drinking (Jacobson et al., 2008). Likewise, researchers observed a two-fold increase in post-deployment alcohol-related behavioral problems in a retrospective study involving 1080 U.S. soldiers returning from Iraq (Wilk et al., 2010). Moreover, in a representative, longitudinal study of 88,235 Operation Iraqi Freedom (OIF) veterans, Milliken, Auchterlonie, and Hoge (2007) found that 12% of active duty and 15% of National Guard/Reserve troops reported alcohol-related consequences 3 to 6 months post-deployment (Milliken et al., 2007). As these studies demonstrate, exposure to combat may result in an increased risk in alcohol misuse.

There is considerable evidence for the link between PTSD and alcohol misuse among military veterans (Jakupcak et al., 2010; King, King, Fairbank, Keane, & Adams, 1998; Shipherd, Stafford, & Tanner, 2005). Research indicates that Iraq and Afghanistan veterans with PTSD have alcohol abuse rates that are twice as high as those found among non-military young males (Institute of Medicine, 2013). Additionally, a recent report which examined several factors related to post-deployment alcohol misuse in a sample of National Guardsmen ($n = 348$) cited combat related PTSD as a significant factor in the onset of alcohol use disorders (Kehle et al., 2012). PTSD is a psychiatric condition characterized by re-experiencing (e.g., acting or feeling as if the traumatic event were recurring), avoidant and/or numbing (e.g., feelings of detachment or estrangement from others), and hyperarousal symptoms (e.g., irritability or outbursts of anger; APA, 2000). Hypothesized explanations for the relationship between PTSD and alcohol misuse vary widely and include the use of alcohol to reduce symptom distress (e.g., self-medication; Khantzian, 1985), which subsequently, is reinforced through symptom alleviation (Jacobsen,

Southwick, & Kosten, 2001). Another theory points to a genetic and environmental vulnerability that increases the likelihood of developing both PTSD and alcohol use problems following a traumatic event (McLeod et al., 2001; Scherrer, Xian, Lyons, et al., 2008; Xian, Chantarujikapong, Scherrer, et al., 2000). Moreover, evidence has cited alcohol's role in the increase of endorphin levels as a possible reason for the co-morbidity between PTSD and alcohol misuse (Volpicelli, Balaraman, Hahn, Wallace, & Bux, 1999).

Socio-demographic factors such as younger age (Bray, Hourani, Rae, et al., 2003; Ferrier-Auerbach et al., 2009; Stahre, Brewer, Fonesca, & Naimi, 2009), White race (Naimi et al., 2003; Nolen-Hoeksema, 2004), male gender (Naimi et al., 2003; Nolen-Hoeksema, 2004), single marital status (Ferrier-Auerbach et al., 2009; Fertig & Allen, 1996), and lower levels of educational attainment (Ames & Cunradi, 2004; Bray et al., 2003) are well documented risk factors for alcohol misuse among military service members. A cross-sectional study of 514 National Guard members found that younger age predicted higher quantity of drinking prior to deployment (Ferrier-Auerbach et al., 2009). In the same study, single marital status was found to predict greater total drinking and higher frequency of heavy drinking (Ferrier-Auerbach et al., 2009). Together, these results suggest that certain socio-demographic variables contribute to an increased risk for high risk alcohol drinking.

1.3. Resilience

A recent report has suggested that a key factor playing a protective role against alcohol misuse among U.S. military combat troops is resilience (Green et al., 2010). Resilience is universally described as an individual's ability to thrive despite adversity (Connor & Davidson, 2003; Garmez, 1991; Luthar, Cicchetti, & Becker, 2000; Masten, 1994, p.3; Rutter, 1987). Additionally, resilience has been thought of as a dynamic, multidimensional construct (Luthar et al., 2000; Zimmerman & Arunkumar, 1994), largely comprised of protective processes (biological, cognitive, and spiritual), which aids in finding positive meaning in stressful situations (Richardson, 2002). While early scholars posited resilience as a biological (Rutter, 2008) or behavioral trait (Masten, 1994; Wagnild & Young, 1993), modern theories generally consider resilience as a state of functionality consisting of personal characteristics and protective factors that foster adaptation to stress (Luthar et al., 2000; Zautra, Hall, & Murray, 2010).

Validation studies of resilience (as measured by the Connor-Davidson Resilience Scale (CD-RISC)) in diverse samples have provided preliminary support for the inverse relationship between resilience and psychological trauma (Burns & Anstey, 2010; Campbell-Sills & Stein, 2007; Notario-Pacheco et al., 2011; Wang, Shi, Zhang, & Zhang, 2010). Furthermore, the relation between resilience and adverse physical and mental health outcomes has been documented among various samples including community (Connor, Davidson, & Lee, 2003), elderly (Wagnild & Young, 2007), and military populations (Green et al., 2010; Youssef, Green, Beckham, & Elbogen, 2013; Youssef, Green, Dedert, et al., 2013). The core characteristic of resilience (as measured by the 10-item version of the CD-RISC) encompasses the strengthening effect of stress, positive acceptance of and successful adaptation to change, and self-efficacy (Campbell-Sills & Stein, 2007; Connor & Davidson, 2003). Resilience characteristics have been shown to provide protection against alcohol misuse (Lerner & Vicary, 1984) as well as aid in the recovery from substance misuse (Benda & Belcher, 2006). Additionally, improvement in resilience over time among individuals with PTSD has been documented in a randomized pharmaceutical trial of venlafaxine (Davidson et al., 2008), providing initial evidence that resilience can be bolstered in trauma exposed populations.

Studies examining the longitudinal effects of resilience on alcohol misuse in Iraq and Afghanistan era samples are lacking. Given the

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