

Civilian Unemployment and Mental Health: The Moderating Impact of Alcohol Misuse in Returning National Guard

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ABSTRACT Postdeployment civilian unemployment has become a common problem and source of additional stress for National Guard (NG) personnel. This study evaluated 126 California NG members, exploring the relationship between immediate postdeployment employment status and self-reported mental health symptoms, including evidence of alcohol misuse. Participants were recruited from a NG unit within the first 3 months after returning home in August 2011. Over one-third of participants reported being unemployed beyond the part-time NG commitment. Mental health symptoms were greater in those participants without civilian employment. Additionally, those participants with comorbid alcohol misuse with either depression or post-traumatic stress disorder were significantly more likely to lack civilian employment. Interaction testing revealed a significant interaction between employment status and alcohol misuse for both depression and post-traumatic stress disorder. Alcohol use was concluded to moderate the relationship between civilian unemployment and mental health symptoms. Results suggest that the part-time employment provided through NG service may serve as a protective factor in the development of negative psychological outcomes, except for cases where alcohol misuse is present.

INTRODUCTION

National Guard (NG) members have played an integral role in recent conflicts, particularly in Iraq (Operation Iraqi Freedom, Operation New Dawn) and Afghanistan (Operation Enduring Freedom). In response to these operations, NG members have been mobilized and deployed at rates not seen since World War II.¹ As these service members return from deployment, they are faced with the challenges associated with readjustment to civilian life.^{2,3} This stage of the deployment cycle, known as reintegration, is characterized by a number of individual and family transitions.^{1,4-7} The reintegration experiences of NG members are often different from active duty service members.^{1,2,8} Although most active duty members returning from deployment remain in the military full-time, NG members transition into civilian communities often ill-prepared to accommodate their reintegration needs.⁹ The adjustment of NG members typically includes the transition from full- to part-time NG employment, thus the need to return to their civilian job or find additional civilian employment.¹ Securing postdeployment civilian employment is a key factor in the reintegration experience of NG.¹⁰

The Uniformed Services Employment and Reemployment Rights Act aims at protecting NG civilian jobs by requiring employers to reemploy service members returning from a period of service.¹¹ However, employers can choose to eliminate positions once held by NG members rather than adhere to the strict requirements of the law. NG members who were unemployed at the start of their deployment or who lost their

jobs because of company restructuring or closure are not protected under the law. The stigma related to the physical and mental health of service members as well as employer concerns of needed leave for future deployments have created barriers to employing NG members.¹²

NG members face an abrupt transition from military to civilian life that is often exacerbated by the need to identify a primary source of income.⁴ Although active duty military personnel who remain fully employed can continue their military-based lifestyle after deployment, unemployed/part-time NG members often struggle financially.^{4,13,14} Rates of unemployment in NG members have more than quadrupled since 2007 with rates as high as 13.8%.¹⁵ The economic stability of NG and their families is often a primary concern after deployment.^{16,17} The pressure to find employment often becomes a significant source of stress as the need for gainful employment becomes a primary goal during transition.¹⁸

Efforts to find employment during reintegration may be confounded by the psychological challenges some NG members face after deployment. Behavioral health problems such as depression, anxiety, post-traumatic stress disorder (PTSD), and alcohol misuse have been reported in returning NG members.^{14,19} Evidence suggests that NG members are particularly vulnerable to challenges to psychological functioning after deployment.^{5,19-22} Little has been done to explore the impact of unemployment as a contributor to negative psychological consequences during NG reintegration.

REVIEW OF LITERATURE

A substantial body of literature does exist describing the relationship between unemployment and mental health symptoms in the general population.^{23,24} Unemployment has been linked to symptoms of depression, anxiety, post-traumatic stress as well as suicide and poor physical health.^{2,16,24} Paul and

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This article is based on a poster presentation from the American Psychological Association Convention, Washington, DC, XXX XX, 2014.

doi: 10.7205/MILMED-D-14-00466

Moser²⁵ conducted a meta-analysis summarizing the results of 237 cross-sectional studies exploring the impact of unemployment on psychological functioning. Research compared the mental health of unemployed individuals with an employed study group. Results of the meta-analysis demonstrated significantly lower levels of psychological health in the unemployed group as defined by symptoms of distress, anxiety, depression, psychosomatic symptoms, subjective well-being, and self-esteem. In a separate meta-analysis, authors summarized the results of 64 longitudinal employment studies and found a significant distress increase during unemployment. These findings were consistent with an earlier meta-analysis.²³

Despite the empirical support for the association between physical and psychological health and unemployment, caveats are necessary before extrapolating such general population findings to NG members. First, NG members are not unemployed. Although NG members lose active duty status after returning from deployment, they are still members of the NG and receive drill pay. NG members might also receive health insurance through the Veterans Affairs (VA) during reintegration. Second, NG members might be suffering from physical and psychological health issues related to military deployment that interfere with their ability to obtain post deployment employment. Riviere et al²² explored the impact of unemployment on mental health symptoms in a sample of 4,034 NG members at 3 and 12 months postdeployment. Authors examined the relationship between financial hardship and job loss, and the development of depression and PTSD. Findings demonstrated an association between both unemployment and subjective financial hardship with negative psychological outcomes (depression and PTSD) at both 3 and 12 (PTSD) months. Similar results have been reported in samples of Vietnam Veterans.^{26,27}

The link between unemployment and alcohol misuse is mixed. Although some research has demonstrated a significant relationship between alcohol misuse and unemployment, others have failed to show such an association.^{28,29} A recent study on over 14,000 individuals living in the United States demonstrated a significant positive relationship between job loss and alcohol use in terms of daily consumption, binge drinking, and the probability of a substance misuse diagnosis.³⁰ Authors concluded unemployment to be a risk factor for alcohol misuse.

Widely prevalent alcohol misuse may also compromise the overall well-being of NG members during and after reintegration. Rates of alcohol misuse in the military population are higher than that of the general population.^{31,32} A study from the Armed Forces Health Surveillance Center (2011, p. 1)³³ reported “sharp increases” in the “numbers and rates of incident alcohol related diagnoses and alcohol related encounters” among active duty military personnel, particularly since 2007. Research has demonstrated variability in rates of alcohol misuse in post-9/11 Veterans.^{14,21,31,34} Eisen et al³¹ reported alcohol misuse in 39% of a national sample

of 596 Operation Enduring Freedom/Operation Iraqi Freedom Veterans. In a study of over 21,000 Reserve or NG service members with combat exposure, Jacobson et al¹⁴ found rates of heavy weekly drinking, binge drinking, and alcohol-related problems to be 9.0%, 53.6%, and 15.2%, respectively. Authors compared Reserve and NG personnel who had been deployed with nondeployed personnel and found those with deployments were significantly more likely to experience new-onset heavy weekly drinking, binge drinking, and alcohol-related problems.

The mental health challenges often faced by NG members are well-documented within the literature, as are the prevalence of comorbidities of alcohol misuse and psychological health symptoms. In a large study of postcombat active duty and NG service members, Thomas et al¹⁹ reported rates of PTSD ranging from 21% to 31% and rates of depression ranging from 11.5% to 16% 3 months after deployment. Findings indicated significant increases in symptoms from 3 to 12 months, with larger increases observed in NG participants. Authors also reported high comorbidity of mental health symptoms and alcohol misuse. Fifty percent of soldiers who screened positive for depression or PTSD also met the criteria for alcohol misuse. Mental health disorders such as depression, anxiety disorder, and PTSD often co-occur with alcohol misuse.¹⁴ Seal et al³⁴ found NG and reservists with depression, anxiety disorders, or PTSD were 3.61, 2.10, and 4.01 times as likely to be diagnosed with alcohol-related disorders, respectively, when the prevalence of the alcohol-related disorder was compared with that of NG and reservists without any mental health diagnosis. A dose-response relationship between the number of comorbid mental health symptoms and alcohol misuse was also observed among NG and reservists who used VA health care facilities. Specifically, Veterans with more than two diagnosed mental health disorders were 1.98 times more likely to have an alcohol-related diagnosis compared with those with only one comorbid mental health disorder,³⁴ a higher comorbidity than that of active duty personnel.¹⁴

The purpose of this study was to examine the relationship between unemployment and mental health symptoms as well as the moderating impact of alcohol misuse in reintegrating NG. To guide these examinations, the following hypotheses were developed:

- (1) NG members without civilian employment will report greater mental health symptoms of depression, anxiety, and PTSD.
- (2) Alcohol misuse will moderate the relationship between unemployment and the mental health symptoms of depression, anxiety and PTSD.

METHOD

Participants and Procedures

This research is part of a pilot study examining the impact of reintegration skills training on NG members postdeployment

transition. Nonrandom convenience sampling was conducted within a deployed Army NG aviation battalion whose unit members totaled approximately 300. Participant recruitment took place in August 2011 at the unit postdeployment decompression site where potential participants were invited to participate in the study. From the unit, 126 NG agreed to take part yielding a participation rate of 42%, which is a typical response rate for unit-based assessments.³⁵ Data were collected through self-administered paper assessments, distributed by mail and in person, as well as through an online data collection program (i.e., Qualtrics). Assessments were completed on a rolling basis within 3 months of returning home from deployment and took approximately 45 minutes to complete. The majority of participants completed assessments approximately 60 to 75 days after their return. Participants received a \$15 gift card after completion. Data collection procedures were reviewed and approved by the [university] institutional review board.

Measures

Demographics and Employment Status

Basic demographic characteristics such as age, marital status, and race/ethnicity were collected. Employment status was assessed using a yes/no question: “Are you currently unemployed?”

Combat Exposure

Combat exposure was measured using the combat experiences subscale of the Deployment Risk and Resilience Inventory.^{36,37} The 15-item scale measures exposure to combat-related circumstance such as being or witnessing an attack, being fired on, and firing a weapon. Sample items include “I personally witnessed someone from my unit or an ally being seriously wounded or killed and I was exposed to hostile incoming fire.” Responses are measured on a scale ranging from 1 (never) to 6 (daily or almost daily). In a validation study, combat exposure subscale demonstrated adequate internal consistency level and moderate evidence for criterion validity.³⁶ The Cronbach’s α in this sample was 0.84.

Depressive Symptoms

Depressive symptoms were assessed with Patient Health Questionnaire-9 (PHQ-9). The PHQ-9 assesses the frequency with which respondents have been bothered by nine depressive symptoms, items include “interest in doing things and feeling down, depressed, or hopeless.” The PHQ-9 also includes an item assessing suicidal ideation. If the respondents indicated any positive answer to the suicidal ideation question, the research team initiated a Suicide Prevention Protocol, which included immediate counseling by a licensed psychiatrist or clinical social worker during the in person training and crisis intervention resources during online assessments. Responses to the items range from 0 (not at all) to 3 (nearly every day). Total score range was from 0 to 27, and the cutoff for clinical depression was 10.³⁸ The internal

consistency of the PHQ-9 has been found to be good ($\alpha = 0.86\text{--}0.89$).³⁸ The Cronbach’s α in this sample was .84.

Anxiety Symptoms

Anxiety symptoms were measured with the Generalized Anxiety Disorder-7 (GAD-7³⁹) form. The GAD-7 assesses how often respondents were bothered by anxiety symptoms, including “feeling nervous anxiety or on edge, not being able to stop or control worrying, and feeling afraid as if something awful might happen.” Response options ranged from “not at all” (0) to “nearly every day” (3), and the total score range was from 0 to 21. The GAD-7 has been found to have good internal consistency ($\alpha = 0.92$) and test–retest reliability (0.83³⁹). When the cutoff for clinical diagnosis was set to 10, the sensitivity and specificity were 0.89 and 0.82, respectively.³⁹ The reliability of the GAD-7 in this sample was $\alpha = 0.92$.

PTSD Symptoms

PTSD symptoms were assessed using the 17-item PTSD Checklist—Military Version (PCL-M). The PCL-M contains the criteria for PTSD diagnosis by the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition.⁴⁰ We assessed the extent to which respondents had been presenting with PTSD symptoms in the past 3 months. The response options ranged from (1) “not at all” (5) to “extreme”; the total score range was from 17 to 85. In some studies, a score of 50 or higher indicated probable PTSD diagnosis.^{35,40,41} The Cronbach’s α in this sample was 0.95.

Alcohol Misuse

The CAGE questionnaire was used determine participants’ levels of alcohol misuse.⁴² The CAGE consists of four questions assessing alcohol consumption. Responses include “yes” (scored as 1) or “no” (scored as 0) and possible scores range from 0 to 4. Higher scores indicate alcohol problems and a total score of 2 or greater is considered clinically significant.⁴² Clinical studies on the CAGE have demonstrated good internal consistency ($\alpha = 0.80\text{--}0.95$) and reliability for use in diverse sample populations.^{43–45} The Cronbach’s α in this sample was 0.54. Reliabilities in this range are consistent with other literature in which the CAGE is used to assess alcohol use in nonprimary care patients.⁴⁶

Analysis Plan

Data analyses were conducted with SPSS version 17. Descriptive statistics were reported for all study variables. Chi-square tests were conducted to evaluate statistically significant associations. To take into account the effect of confounders in the associations, ordinary least squares regression with interaction terms between alcohol misuse and employment status were used.⁴⁷ A series of analyses with different sets of variables with confounders were conducted with the MODPROBE macro.⁴⁸

TABLE I. Descriptive Statistics of Samples by Employment Status

	Missing Cases	Employed, 76 (60.8%)	Unemployed, 49 (39.2%)	<i>p</i>
Gender				
Male	14 (11.1%)	62 (62.6%)	37 (37.4%)	0.10
Female		8 (61.5%)	5 (38.5%)	
Hispanic ^a				
Yes	1 (0.8%)	40 (63.5%)	23 (36.5%)	0.53
No		36 (58.1%)	26 (41.9%)	
Education ^b				
Less Than College Degree		36 (54.5%)	30 (45.5%)	0.17
Some College or Graduate	14 (11.1%)	31 (67.4%)	15 (32.6%)	
Marital Status				
Married	14 (11.1%)	44 (67.7%)	21 (32.3%)	0.07
Separated, Divorced, Widowed		7 (63.6%)	4 (36.4%)	
Never Married		16 (44.4%)	20 (55.6%)	
Age (Years)	14 (11.1%)			
18–25		9 (34.6%)	17 (65.4%)	0
26–30		11 (45.8%)	13 (54.2%)	
31–35		11 (57.9%)	8 (42.1%)	
36–40		16 (94.1%)	1 (5.9%)	
41+		20 (76.9%)	6 (23.1%)	
Mean (SD), Combat Exposure (0–14)	15 (11.9%)	2.45 (2.00)	3.23 (3.25)	0.12

^aNG who reported unknown (9) were categorized into non-Hispanics. ^bNG who reported others (5) were equivalent to high school diploma such as GED or trade school.

MODPROBE macro provides the difference of predicted values of outcomes, depending on given values of independent and moderating variables, and its results are easily interpreted. Logistic regression analysis was not used because the number of respondents within each cell was too small, inducing bias of the estimated odds ratio. Six models were run to estimate the association between employment and comorbidity of alcohol misuse and mental health symptoms. Control variables included gender, ethnicity, education, marriage, age, and combat exposure. Missing data were excluded through listwise deletion, the default procedure for the MODPROBE macro. Statistical significance was determined with a one-sided $p < 0.05$.

RESULTS

Sample Characteristics

Participants were predominately male (88%) and ranged in age from 20 to 58 (mean = 33.15, SD = 8.76). The majority

of participants identified as Hispanic (57%) followed by Caucasian (28%). Table I displays the study sample characteristics. Fifty-two percent of the sample reported being married. The sample demographics were similar to that of the 2011 NG population in terms of gender, age, and marital status (DoD, 2012). The large population of Hispanics in the sample was largely due to the geographic location of the unit. Regarding employment status, 61% ($n = 76$) of participants were currently employed beyond the part-time NG commitment with younger NG members more likely to report unemployment.

Table II shows the prevalence of alcohol misuse and mental health symptoms by employment status. Approximately 10% ($n = 12$) of participants reported alcohol misuse. The prevalence of mental health symptoms was relatively low in the sample. Approximately 8.3% ($n = 10$) reported clinically significant depressive symptoms, 11.5% ($n = 14$) reported generalized anxiety symptomatology, and 5% ($n = 6$) reported PTSD symptoms. Mental health symptoms were greater in

TABLE II. Prevalence of Clinically Significant Comorbidity of Alcohol Misuse and Mental Health Symptoms

Variable	Missing Cases, <i>N</i> (%)	Total	Employed, <i>N</i> (%)	Unemployed, <i>N</i> (%)	<i>p</i>
Alcohol Misuse ^a	6 (4.8)	12 (10.0)	3 (4.1)	9 (19.1)	0.01 ^b
Depression ^c	5 (4.0)	10 (8.3)	3 (4.1)	7 (14.6)	0.05 ^b
Anxiety ^d	4 (3.2)	14 (11.5)	8 (10.7)	6 (12.8)	0.72
PTSD ^e	4 (3.2)	6 (4.9)	1 (1.4)	5 (10.4)	0.03 ^b
Comorbidity					
Alcohol + Depression	8 (6.3)	5 (4.2)	0 (0.0)	5 (10.9)	0.01 ^b
Alcohol + Anxiety	8 (6.3)	4 (3.4)	1 (1.4)	3 (6.7)	0.15 ^b
Alcohol + PTSD	6 (4.8)	4 (3.3)	0 (0.0)	4 (8.5)	0.02 ^b

^aAge ≥ 2. ^bAny cell has expected count less than 5, Fisher’s exact test was used. ^cPHQ-9 ≥ 10. ^dGAD-7 ≥ 10. ^ePCL-M ≥ 49.

TABLE III. Models With Interaction Terms Between Employment Status and Alcohol Misuse

	Unstandardized Coefficient (SE)		
	Depression (n = 107)	Anxiety (n = 106)	PTSD (n = 107)
Constant	5.85 (2.06)**	3.54 (2.64)	18.16 (5.02)***
Male	0.18 (1.17)	-0.59 (1.50)	1.33 (2.85)
Hispanic	0.58 (0.71)	0.44 (0.91)	1.66 (1.72)
Some College or Graduates	-0.75 (0.78)	-0.09 (1.00)	-3.52 (1.90)
Separated	0.86 (1.16)	0.46 (1.48)	-3.00 (2.82)
Never Married	-0.38 (0.86)	0.06 (1.11)	-0.75 (2.10)
Age	-0.01 (0.05)	-0.02 (0.07)	0.02 (0.12)
Combat Exposure	0.45 (0.15)**	0.54 (0.19)**	2.06 (0.35)***
Unemployment	-0.96 (0.81)	-0.62 (1.04)	-0.99 (1.97)
Alcohol Misuse (Cage ≥ 2)	-0.28 (2.13)	2.46 (2.72)	3.48 (5.18)
Unemployment + Alcohol Misuse	6.97 (2.55)**	3.20 (3.26)	12.99 (6.21)*
Explained Variance	R ² = 0.38	R ² = 0.24	R ² = 0.50
R ² Increase Because of Interaction	0.05	0.01	0.02

*p < 0.05. **p < 0.01. ***p < 0.001.

those who lacked civilian employment. Results indicated that those with comorbid alcohol misuse with either depressive symptoms or PTSD symptoms were significantly more likely to lack civilian employment (*p* < 0.05). However, for comorbid alcohol misuse and anxiety symptoms, there was not a significant relationship with employment status (*p* > 0.05).

Table III presents a summary of the models for the interaction testing. The initial interaction analysis revealed a significant interaction between current employment status and alcohol misuse for depression and PTSD (*p* < 0.05). Combat exposure was the only controlled variable significant in the model. The variance explained by mental health symptoms ranged from 24% to 50%. Figure 1 presents graphical representations of the interactions and shows that those who lacked civilian employment and reported alcohol misuse showed greater symptoms of PTSD and depression. Conversely, those who lacked civilian employment but reported no alcohol misuse showed significantly fewer mental health symptoms. Thus, alcohol misuse moderates the relationship between civilian unemployment and mental health symptoms (depression and PTSD) among NG personnel.

DISCUSSION

In this study, 39% of NG members experienced civilian unemployment at 3 months postdeployment. Others have reported civilian unemployment of NG personnel as high as 50%.¹⁶ It is plausible that the difference between the present study and that of Elbogen et al¹⁶ is attributable to unit type. Elbogen et al¹⁶ recruited participants from infantry units, whereas our study recruited participants from an aviation unit where more unit members may possess job skills that are more transferrable to civilian jobs. The mental health status of the NG personnel from an aviation unit in the present study is consistent with the mental health status of similar aviation units.⁴⁹ Findings supported the first study hypothesis as higher mental health symptoms were observed in NG personnel who lacked civilian employment compared to NG

personnel who had civilian employment. Symptoms of depression, anxiety, and PTSD were more prevalent in the civilian unemployed participants. For those participants who did describe experiencing combat, levels of exposure were

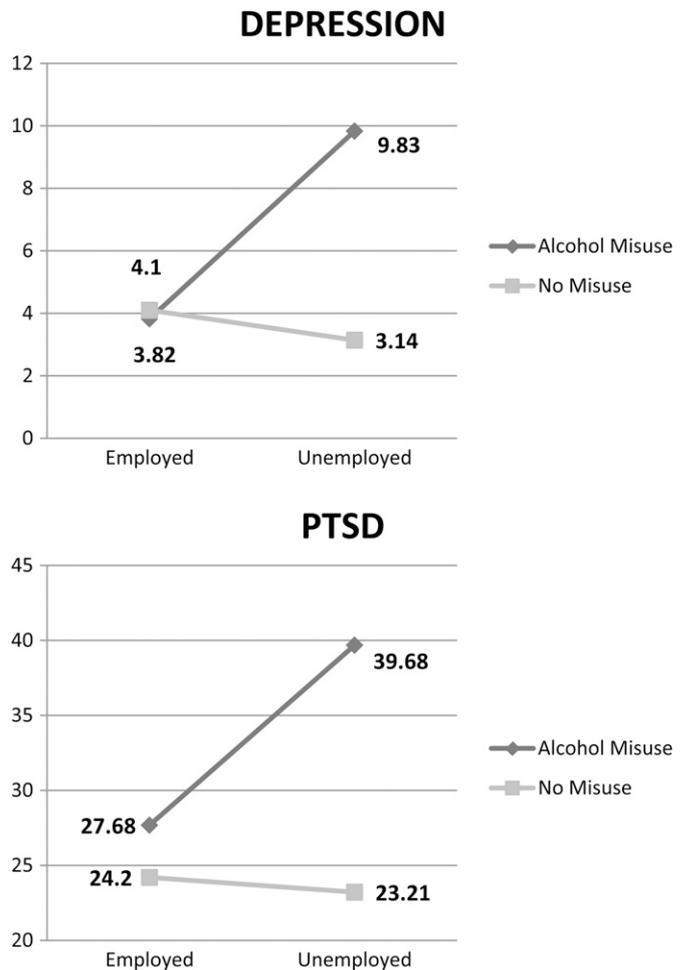


FIGURE 1. Interaction between employment status and comorbidity between alcohol misuse and mental health symptoms.

significantly related to mental health symptoms. Even among NG members in a unit with lower combat exposure, participants with higher rates of combat exposure were more likely to experience symptoms of depression, anxiety, and PTSD.

Ten percent of current sample met criteria for alcohol misuse, which was determined with self-reported measure.⁴⁴ This is most consistent with a study by Jacobson et al,¹⁴ where approximately 10% to 12% of the sample reported heavy drinking. Most importantly related to alcohol consumption, the regression model revealed alcohol misuse was a significant moderating variable for depression and PTSD with NG personnel who lack civilian employment. These results partially supported the second study hypothesis as the presence of alcohol misuse differentiated the relationship between civilian unemployment and symptoms of depression and PTSD but not anxiety. Contradictory to civilian literature that has clearly demonstrated a link between mental health and unemployment,¹² in the present study, civilian unemployment was significantly related to depression and PTSD only when alcohol misuse was also present. Those who lacked civilian employment but reported no alcohol misuse showed significantly fewer PTSD or depression symptoms.

These results suggest NG civilian unemployment after a military deployment may be qualitatively different from other populations who experience unemployment. The part-time employment provided through NG service may create a partial protective factor against the negative outcomes resulting from civilian unemployment following deployment. This may happen through several avenues. First, part-time NG employment may reduce the financial strain and stress associated with "total" unemployment. Reducing that stress may lessen the susceptibility to other negative psychological outcomes. Second, the part-time NG employment and service member status may reduce the stigma associated with civilian unemployment. Turner⁵⁰ describes the possible damage to an individual's concept of self-worth from unemployment. This could stem from the negative perception of the unemployed from society as well as internally from the individual. It is possible that the respected status and identity of a service member protects against potential damage to self-worth with psychological consequences. Of course it is important to note that this possible protective factor appears to be irrelevant when alcohol misuse is present.

Another possible explanation for the relationship between unemployment, alcohol misuse, and mental health symptoms demonstrated in this study could be the use of alcohol as a form of self-medication. Unemployed NG personnel with mental health symptoms may be using alcohol as a way of managing their symptoms. The role of alcohol misuse as a moderator in the development of mental health symptoms of depression and PTSD is an important finding. Postdeployment reintegration is a high-risk period for alcohol misuse as well as the development of mental health symptoms.^{14,34} Findings of this study suggest NG may be at an increased risk for comorbidity of alcohol misuse and mental health symptoms.

Although the findings are comparable to existing literature on the prevalence of comorbidity between alcohol misuse and mental health symptoms among NG personnel and other Veterans,^{14,34} the findings of this study broaden the issue by considering the variable of civilian employment.

As with all studies, the present research has several limitations that must be considered. As a cross-sectional study, causal relationships cannot be established. In particular, the underlying mechanisms by which the high comorbidity is associated with civilian unemployment cannot be determined.^{51,52} The directionality of the relationships in the model could also be challenged as some literature has suggested alcohol misuse and/or mental health symptoms cause unemployment. These contradictions of causal chains and directionality in the association among mental health symptoms, employment, and alcohol misuse require well-designed longitudinal studies allowing for more confidence in establishing such relationships.

This study did not use random sampling in recruiting participants, which limits the generalizability of findings. The study measure for unemployment creates limitations for closely examining the variable. Although participants were asked to report their civilian employment status, further data were not collected on the reason for not having a civilian job. As data were collected 3 months after return, it is possible some participants were taking personal time off after the deployment by choice. Information was not collected on possible physical or mental impediments to employment that may impact the relationships demonstrated in the findings. The cross-sectional study design also disallowed the opportunity to explore changes in employment status further after return. Despite these limitations, the study is the first to present NG employment as a possible protective factor in the development of symptoms of PTSD and depression during reintegration.

ACKNOWLEDGMENTS

This work was conducted with support from the Science Applications International Corporation and the Los Angeles County Department of Mental Health.

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