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Social and Psychological Risk and Protective Factors for Veteran Well-Being: The Role of Veteran Identity and Its Implications for Intervention

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ABSTRACT

Social psychological theory hypothesizes that one's identity, self-definitions, and meanings used for a particular social role fosters individual purpose in life and affects behavior in specific social situations. As such, it can be protective against the onset of psychological disorders. We examined this hypothesis with data collected from 1,730 military veterans recruited to study the health effects of warzone deployments. The sample was primarily male, older, and White. Our key independent variable was a Likert scale rating the prominence of a respondent's veteran identity: how important it is to the person. Outcome variables included posttraumatic stress disorder (PTSD), suicide ideation, depression, alcohol misuse, and use of VA services. Bivariate analysis suggested that veterans with a prominent veteran identity are older, noncollege graduates, have less income, and had their first deployment to Vietnam. In multivariate analyses, study participants with a prominent veteran identity were less likely to exhibit suicide ideation, but more likely to misuse alcohol and use VA services. We found no differences for PTSD, self-rated health, or depression by veteran identity. Veterans who scored higher on the veteran identity scale appeared to be protected from suicidal thoughts, although they had an elevated risk for alcohol misuse.

Over the past 20 years, there have been many studies on risk and protective factors related to veterans' post-deployment physical and mental well-being (Boscarino, 1995; Fontana & Rosenheck, 1994; Hoge et al., 2004; James, Van Kampen, Miller, & Engdahl, 2013; Kline et al., 2010; Kulka et al., 1990; Levy & Sidel, 2009; Thomas et al., 2010). These studies have shown that deployment stressors (e.g., combat exposure, unit cohesion), postdeployment experiences (e.g., social support), demographic factors (e.g., low socioeconomic status, being female), and other life experiences (e.g., adverse childhood events) are related to the physical and psychological health of veterans. Much less attention, however, has been paid to psychosocial factors related to veteran identity as a protective factor for veteran well-being. In this study, therefore, we have examined how veteran identity, or the ways in

which individuals view themselves in this role, relates to physical and mental health in a sample of postdeployed veterans receiving services from a large non-VA hospital system.

Much of the research on deployment and postdeployment experiences, as well as their relationship to veteran health and well-being, follows the stress process model (Adams et al., 2017; Pearlin et al., 1981; Thoits, 2013), with extensions made by Adler and Castro (2013; Castro and Adler, 2011) to better reflect military organizational context and combat related events. These models suggest that individuals subjected to disordered or challenging environments, usually assessed in terms of exposure to psychological trauma or negative life events, are typically required to respond both physiologically, through changes in the neuroendocrine and hormone systems (Boscarino,

2004), and psychologically, usually through a revision of cognitive functioning (Thoits, 2013; Wheaton, Young, Montazer, & Stuart-Lahman, 2013). Serious environmental challenges that result in significant biological and/or cognitive alterations are defined as stressful and referred to as stressors (Pearlin, et al., 1981; Thoits, 2013). The consequences of exposure to these stressors can be psychological and physical distress, often in the form of depression and physical health problems (Adams et al., 2002; Adams & Boscarino, 2005; Pearlin, et al., 1981; Thoits, 2013).

Studies employing the stress process model for military personnel show that traumatic and stressful events, both combat (e.g., having members of one's unit killed, killing enemy combatants) and noncombat experiences (e.g., adverse childhood events, getting a divorce) negatively impact their physical and mental health (Adams et al., 2017; Boscarino, 1995, 2006; Hoge et al., 2004; James et., 2013). Adler and Castro's model also places social and psychological resources as key protective factors that reduce the impact of traumatic and negative life events related to military experiences on well-being (Adams et al., 2017; Adler & Castro, 2013). These resources can be unit cohesion, supportive relationships with friends and family, as well as psychological factors, such as self-esteem and mastery (Castro & Adler, 2011; Williams, Brown, Bray, Goodell, Olmsted, & Adler, 2016).

Adler and Castro (2013; Castro & Adler, 2011) argued that professional identity is one occupational resource in their occupational health model for military mental health and acts as a protective factor against trauma and negative life events. Other researchers also use veteran identity in their assessment of risk and protective factors related to physical and mental health among active and formerly deployed military personnel (Di Leone, Wang, Kressin, & Vogt, 2016; Firmin, Luther, Lysaker, & Salyers, 2016). Di Leone et al., for instance, examine centrality and positive regard for veteran identity in a sample of female veterans and found they predicted use of VA mental health and medical services. They also find that centrality and positive regard predicted entitlement to use VA services and perceived fit within the VA. However, most of these studies tend to be limited in that they are qualitative, based on small samples, only examine factors affecting VA service use (e.g., Harada et al., 2002), or focus only on female veterans (Di Leone et al., 2016). Thus, we know relatively little about how veteran identity affects the health and well-being of veterans, more generally.

But why would a strong identification with being a veteran be protective for well-being? From a psychosocial perspective, researchers argue that identities are self-definitions about social roles (e.g., father, friend, coworker, nurse, teacher) that are important to people occupying these roles. These self-definitions and meanings influence behavior, give meaning to people's lives, and provide a sense of purpose, all of which can enhance physical and psychological health by protecting the person from the negative consequences of life events and trauma (Adams & Boscarino, 2015; Stets & Serpe, 2013; Thoits, 2012). In addition, individuals can have multiple identities which are arranged in a hierarchy of importance or centrality, with more central identities higher in the hierarchy. Theoretically, a more central identity should act as a key protective factor for psychological health (Thoits, 2012).

The study of veteran identity is important for several reasons. First, many veterans receive their healthcare from non-VA facilities, and recent changes in healthcare options for veterans will likely increase the use of non-VA providers in the future (Carey et al., 2008; Elbogen et al., 2013; Levy & Sidel, 2009; Liu et al., 2011; Trivedi et al., 2012). Research indicated that veteran identity influences service use (Di Leone et al., 2016; Harada et al., 2002). Further, knowing more about the risk and protective factors in this population is necessary for future policy planning and development of treatment options. Again, effectiveness of treatment or other types of interventions may be influenced by veteran identity (Di Leone et al., 2016; Harada et al., 2002).

Second, research related to veterans deployed during U.S. wars in Afghanistan (Operation Enduring Freedom) and Iraq (Operation Iraqi Freedom) suggests higher rates of physical and mental health problems in this population, again arguing for more research on how veteran identity relates to risk and protective factors for this population of veterans (Kline et al., 2010). As Hack et al. (2017) noted, many outreach and educational interventions that attempt to have veterans engage in healthy behaviors or seek treatment for psychological difficulties use some aspect of the veteran identity. In addition, they conclude that the impact of veteran identity on health behavior and service use is not well understood and has been understudied.

Finally, there is a growing concern over the rise in suicide rates among veterans (Boscarino, 2006; Bossarte et al., 2011; Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011; US Department of Veterans Affairs, 2016). Nock et al. (2013) reported that, historically, suicide rates among military personnel were well below rates for the civilian population. However, military suicide rates began to rise in the early 2000s and are now higher than matched civilians. In

addition, in their recent report on suicide rates among veterans and nonveterans, the Veterans Administration shows that after adjusting for age and sex, "The risk for suicide was 22 percent higher among Veterans when compared to U.S. non-Veteran adults" (US Department of Veterans Affairs, 2016, p. 4). If a strong veteran identity supplies military personnel with a sense of purpose and meaning in life, then it should be related to lower suicide ideation and attempts.

In this study, therefore, we focus on veteran identity as one possible protective factor that helps veterans adjust to stressful events. Past research (e.g., Hack, et al., 2017; Harada et al., 2002) defines *veteran identity* as the veteran's self-definitions derived from military experience. We operationalize this concept using a measure of veteran identity centrality or prominence, which is how important the identity is to the person's self-concept (Brenner, Serpe, & Stryker, 2014; Stets & Serpe, 2013). Relying on these theoretical concepts, the stress process model (Wheaton et al., 2013; Thoits, 2013), and the occupational health model for military mental health (Adler & Castro, 2013), we hypothesize that postdeployed veterans with a more central veteran identity are less likely to suffer from physical and mental health problems compared to veterans with a less central veteran identity. We also predict that veterans with a more central veteran identity will use VA services more often than those with a less central identity.

Method

Sample and procedure

The data used in this study come from a random sample of community-based U.S. military veterans recruited as part of a study on the health effects of military service. All participants were outpatients at Geisinger Clinic, the largest multihospital system in central and northeastern Pennsylvania. Geisinger provides comprehensive inpatient, outpatient, and community-based services to about one million residents, with about 30,000 patients reporting that they served in the US armed forces. Using medical electronic records, we randomly selected veterans and attempted to interview them by telephone between February 2016 and March 2017. Inclusion criteria were having at least one warzone deployment during their military career, being under 76 years old, and being able to give informed consent. The final sample size was 1,730, and the survey cooperation rate was estimated to be approximately 55% (American Association for Public Opinion Research, 2008; Groves et al., 2009). The Institutional Review Board at the Geisinger Clinic and the Department of Defense reviewed and approved all study protocols.

Measures

To assess how veteran identity affects well-being, we included both mental and physical health outcomes, as well as service utilization. First, the survey focused on three measures of psychological well-being. Suicidal ideation was assessed using one item asking if there was ever a period of 2 weeks or more "that things were so bad that you thought about hurting yourself or that you'd be better off dead," coded no or yes. Depression was the sum of 10-items used in previous studies (Adams & Boscarino, 2015; Boscarino, Adams, & Figley, 2011). Following *DSM-IV* criteria (American Psychiatric Association, 1994), respondents met criteria for depression if they had five or more depressive symptoms for at least 2 weeks in the past year (Cronbach's alpha = 0.87). To assess PTSD, we used items based on the D*iagnostic and Statistical Manual of Mental Disorders,* 5th ed. (*DSM-5*), the PTSD Checklist (American Psychiatric Association [APA], 2013; Wortmann et al., 2016). To be classified as having probable PTSD in the current study, veterans had to meet criteria A–E and G for *DSM-5* (APA, 2013). These criteria include trauma exposure (criterion A), intrusive symptoms (criterion B), persistent avoidance (criterion C), negative alterations in cognitions/mood (criterion D), increased arousal (criterion E), and reported impairment/distress related to these symptoms (criterion G). Altogether, 77% of our sample of veterans reported that one of the significant lifetime stressors they experienced was warzone or combat exposure.

Our fourth outcome measure was self-rated health, where respondents were asked, "How would you currently rate your overall physical health?" Responses ranged from excellent to poor. Past research shows this one-item question has very good reliability and validity and is a significant predictor of future mortality and disability (Ferraro & Farmer 1999; Idler et al., 2004). We coded these responses into self-ratings of unhealthy (classified as fair or poor) versus healthy (classified as excellent, very good, or good). Fifth, we included a measure of problematic alcohol use based on the three-item AUDIT-C scale (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998; Crawford et al., 2013). The items inquire about how often respondents drank alcohol in the past year, how many drinks they

have on a typical day when drinking, and how often they have consumed 6 or more drinks on one occasion in the past year. We summed the items and followed standard scoring so that respondents with a higher score (4 for men and 3 for women) were coded as having met criteria for elevated alcohol use. Lastly, the survey asked if the participant had "Ever had any health care coverage or receive health care services through the VA?" (coded yes or no).

Our key independent variable in this study was Centrality of Veteran Identity. This measure was the sum of three survey questions inquiring about how strongly participants agreed or disagreed, on a 0 to 4 scale, with the following statements: "Being a veteran is an important reflection of who I am; I have come to think of myself as a veteran" and "It is important to me that others know about me as a veteran." These items were taken from several studies examining identity centrality (Di Leone et al., 2016; Brenner et al., 2014) and assessed the degree to which respondents view the veteran role as central or important to how they think about themselves and how they want others to view them (Cronbach's Alpha = 0.71). This three-item scale has been widely used in identity research and shows good reported reliability and validity (Brenner et al., 2014). We summed the three-item scale (range = 0 to 12). As with many such scales, it was negatively skewed, with over 50% scoring 11 or 12 (i.e., the veteran identity was very central to how respondents saw themselves). Based on an evaluation of the distribution, we recoded the variable so that those scoring between 0 and 11 were defined as not having high centrality versus those scoring 12 being defined as having high centrality. We used this strategy for highly skewed variables in the past (e.g., Adams & Boscarino, 2015) and argue that veterans who do not score high on all three items in the scale have a less central veteran identity, even if they scored high on most of the items. We did assess this measure using other coding schemes (e.g., coded as an ordinal scale [low, medium, and high centrality]). The results were essentially the same, with high centrality consistently different from lower centrality and are available from Joseph A. Boscarino.

We also included a number of other independent variables known to affect mental and physical health. Age was coded to the nearest year, whereas the other demographic factors were dummy coded such that female, White, married or living together as married, college graduate, and income over $100,000 were coded as 1 and male, all other racial/ethnic groups,

not married, and educational status lower than college graduate were coded as 0 for the reference value.

Because our research was guided by both occupational health model (Adler and Castro, 2013) and the stress process model (Pearlin et al., 1981; Wheaton et al., 2013), we included several military service stress-related variables. First, deployment theater was categorized as Vietnam, Persian Gulf, Iraq/Afghanistan/Global War on Terrorism, and other warzone deployments, as currently defined by the Department of Veterans Affairs (VA; http://www.va.gov). We dummy coded this variable, with Vietnam theater as the reference group. We also coded other service-related variables (deployed as National Guard/Reserve, multiple warzone tours, high combat exposure, and low unit support) as indicator variables. More specifically, the survey inquired about whether the respondent had ever served and been deployed as a National Guard or the Active Reserves (coded no or yes). Those respondents who indicated that they had two or more deployments were coded as having multiple deployments versus those with only one deployment coded as the reference group. Combat exposure was based on eight items from the Combat Experiences Scale (Hoge et al., 2004; Janes, Goldberg, Eisen, & True, 1991). A number of military health studies used versions of this scale since the Vietnam war period (Boscarino, 1995). The items (rated on a 1 to 4 scale) asked about encountering dead bodies, being wounded by hostile fire, killing enemy combatants, and other combat related events (Cronbach's alpha = 0.84). We took the mean of these items ($M = 8.8$; $SD = 6.2$) and coded the sample into high combat exposure ($\geq$ 75th percentile) versus not high exposure ($\leq$ 75th percentile) as was done in previous research (Boscarino, Hoffman, Pitcavage, & Urosevich, 2015). Finally, unit support/morale was the mean of six items from the Deployment Risk and Resilience Inventory (King et al., 2006; Vogt et al., 2013) that inquired about a sense of camaraderie in the unit, trust of other unit members, commanding officers being interested in how they felt, feeling like efforts counted in the military, during deployment, etc. (Cronbach's alpha = 0.78). Individual response categories, on a 5-point scale, ranged from 1 (strongly disagree) to 5 (strongly agree; total M score = 20, $SD = 3.9$). We coded respondents into those who felt a high sense of support and unit morale versus those who did not by using the scale's 25th percentile.

In addition to these military-related events and perceptions of support, the survey, again following both the stress process (Pearlin et al., 1981; Pearlin & Bierman, 2013) and occupational mental health models (Adler & Castro, 2013), asked about nonmilitary

events and psychosocial resources that can affect mental and physical health. The Stressful Life Events Scale was the sum of eight experiences that could have happened to the respondent in the past 12 months (e.g., spouse or close family member died, being injured, having problems as work, getting married, having serious financial problems). Experiencing two or more of these events in the past 12 months (75th percentile) was classified as high exposure to stressful events versus not high exposure. The Traumatic Events Scale was the sum of 12 lifetime extraordinarily stressful events, such as experiencing a natural disaster, forced sexual contact, being physically attacked, being in combat, being seriously injured, etc. Similar to the Stressful Events Scale, we classified this as high traumatic stress exposure versus not high traumatic exposure based 6 or more traumatic events (75th percentile). In addition, both stress exposure measures were extensively used in previous studies, with demonstrated good validity and reliability (Adams & Boscarino, 2015; Boscarino, Adams, & Figley, 2011).

Analyses

We present the bivariate cross-tabular results for centrality of veteran's identity by the demographic characteristics, stress/risk factors, disability and psychological service use, and the six outcome variables (Table 1). Following those analyses, we estimated six multivariate logistic regressions, one each for suicidal ideation, depression, PTSD, self-rated health, alcohol misuse, and lifetime use of VA services, with demographic, stress, resource, use of psychological services, and centrality of veteran's identity as independent variables. We conducted preliminary analyses (available upon request from Joseph A. Boscarino) and only retained independent variables what were statistically related to at least one of the dependent variables. In addition, we only present complete logistic regression results (Table 2) for the three outcomes (suicide ideation, alcohol misuse, and use of VA services) where veteran identity was statistically significant. We do, however, discuss all outcomes in the Results section below. Complete multi-variate results for the PTSD, Depression, and Self-Rated Health are available upon request from Joseph A. Boscarino.

Results

Basic demographic characteristics of the sample and bivariate relationships between centrality of veteran identity and the independent variables are shown in

Table 1. This shows that more than half of study veterans are 65 or older (56%), male (95%), and White (96%). Over 75% are married, with about a similar percentage having less than a college degree. In terms of military experiences, 56% had a deployment during the Vietnam War, 38% were deployed as part of the National Guard/Reserve, almost 40% had multiple warzone tours, about 24% experienced high combat exposure, and 21% perceived their unit as having low support/morale. For the other nonmilitary factors the survey measured, noteworthy is that nearly 21% experienced a high number of traumatic life events, and 36% have a current VA service-connected disability. Lastly, about 11% of our survey participants reported ever having suicidal thoughts, 8% met study criteria for depression, almost 8% met criteria for PTSD, 37% rated their current health as fair or poor, 24% scored positive for alcohol misuse on the Audit-C, and over 60% reported to have ever used VA health services.

Table 1 also suggests statistically significant relationships between centrality of veteran identity and the independent and dependent variables of interest. Veterans with a high centrality score for their veteran identity tended to be older ($p = .001$), have less than a college education ($p < .001$), and have lower incomes ($p = .009$). They also were more likely to have had a deployment to Vietnam, and less likely report low unit support/morale ($p < .001$). For the six outcomes of interest, having a high centrality for veteran identity was associated with never having suicidal thoughts ($p < .005$), having fair/poor self-rated health in the past month ($p = .008$), and having ever used VA services ($p < .001$). Centrality of veteran identity was not related to current depression, PTSD, or alcohol misuse.

Although the focus of this study is on the relationship between veteran identity and our mental health outcomes, we did examine identity centrality, and the three individual items comprising this measure, relative to participants' first deployment. Cross-tabulations showed that Vietnam theater veterans tended to have the strongest identification with being a veteran, with 35% of them having high veteran centrality. On the other hand, Iraq/Afghan veterans showed the opposite pattern with only 21.5% scoring high on centrality. Veterans from other theaters fell between these two extremes. With regard to the individual items used to construct our Veteran Identity Centrality Scale, the main difference across theaters was for the question about it being important that others knew the participant was a veteran. Here, again, Vietnam veterans were much more likely to state that it was

Table 1. Sample Characteristics Related to Centrality of Veteran Identity ($n = 1717$–1730).

Sample characteristics	Entire sample, n (%)	Veteran identity low, n (%)	Veteran identity high, n (%)	χ^2 (p-value)a
Age				
18–44	264 (15.3)	215 (18.1)	49 (9.2)	
45–64	487 (28.3)	345 (29.1)	142 (26.6)	
65+	969 (56.3)	626 (52.8)	343 (64.2)	28.61 (.001)
Sex				
Male	1,645 (95.1)	1129 (94.7)	516 (95.9)	
Female	85 (4.9)	63 (5.3)	22 (4.1)	1.14 (.337)
Race				
Non-white	75 (4.3)	51 (4.3)	24 (4.5)	
White	1,655 (95.7)	1141 (95.7)	514 (95.5)	0.03 (.899)
Marital status				
Not married	390 (22.5)	270 (22.7)	120 (22.3)	
Married	1,340 (77.5)	933 (77.3)	418 (77.7)	0.03 (.901)
Education				
Noncollege graduate	1,301 (75.2)	860 (72.1)	441 (82.0)	
College graduate	429 (24.8)	332 (27.9)	97 (18.0)	19.18 (<.001)
Income				
Under $100,000	1,344 (77.7)	905 (75.9)	439 (81.6)	
$100,000 or more	386 (22.3)	287 (24.1)	99 (18.4)	6.89 (.009)
First deployment				
Vietnam	964 (56.0)	627 (52.8)	337 (63.1)	
Persian Gulf	252 (14.6)	174 (14.6)	78 (14.6)	
Iraq/Afghanistan/GWOT	338 (19.6)	264 (22.2)	74 (13.9)	
Other combat zones	168 (9.8)	123 (10.4)	45 (8.4)	21.56 (<.001)
Deployed Guard/Reserve				
No	1,065 (61.6)	717 (60.2)	348 (64.7)	
Yes	665 (38.4)	475 (39.8)	190 (35.3)	3.22 (.078)
Multiple warzone tours				
No	1,041 (60.3)	723 (60.8)	318 (59.2)	
Yes	686 (39.7)	467 (39.2)	219 (40.8)	0.37 (.559)
High combat exposure				
No	1,322 (76.4)	905 (75.9)	417 (77.5)	
Yes	408 (23.6)	287 (23.1)	121 (22.5)	0.52 (.501)
Low unit support/morale				
No	1,366 (79.0)	912 (76.5)	454 (84.4)	
Yes	364 (21.0)	280 (23.5)	84 (15.6)	13.84 (<.001)
Stressful events past year				
Low	1,355 (78.3)	935 (78.4)	420 (78.1)	
High	375 (21.7)	257 (21.6)	118 (21.9)	0.03 (.900)
Lifetime traumatic events				
Low	1,373 (79.4)	950 (79.7)	423 (78.8)	
High	356 (20.6)	242 (20.3)	114 (21.2)	0.20 (.653)
Ever apply VA disability				
No	918 (53.1)	657 (55.1)	261 (48.5)	
Yes	812 (46.9)	535 (44.9)	277 (51.5)	6.48 (.006)
Current VA disability				
No	1,101 (63.6)	777 (65.2)	324 (60.2)	
Yes	629 (36.4)	415 (34.8)	214 (39.8)	3.94 (.052)
Lifetime suicide ideation				
No	1,534 (88.7)	1,040 (87.2)	494 (91.8)	
Yes	196 (11.3)	152 (12.8)	44 (8.2)	7.72 (.005)
Lifetime depression				
No	1,349 (91.7)	1,086 (91.1)	501 (93.1)	
Yes	143 (8.3)	106 (8.9)	37 (6.9)	1.13 (.316)
Met criteria PTSD past year				
No	1,598 (92.4)	1,102 (92.4)	496 (92.2)	
Yes	132 (7.6)	90 (7.6)	42 (7.8)	0.04 (.845)
Self-rated health fair/poor				
No	1,094 (63.3)	778 (65.4)	316 (58.7)	
Yes	633 (36.7)	411 (34.6)	222 (41.3)	7.16 (.008)
Alcohol misuse past year				
No	1,313 (75.9)	910 (76.3)	403 (74.9)	
Yes	417 (24.1)	282 (23.7)	135 (25.1)	0.42 (.278)
Lifetime use VA services				
No	657 (38.0)	489 (41.0)	168 (31.2)	
Yes	1,073 (62.0)	703 (59.0)	370 (68.8)	15.10 (<.001)

Note. GWOT = Global War on Terrorism; VA = Veteran's Administration; PTSD = posttraumatic stress disorder.
aFisher's Exact test, except age and first deployment; which used χ^2 test.

Table 2. Logistic Regression Odds Ratios (OR) and 95% Confidence Intervals (CI) for Suicide Ideation, Alcohol Misuse, and VA Service Use in the Veterans' Health Study (N = 1,719).

Sample characteristics	Lifetime suicide ideation, OR (95% CI)	Alcohol misuse past year (AUDIT-C), OR (95% CI)	Lifetime use VA services, OR (95% CI)
Age	0.99 (0.97–1.02)	0.96 (0.94–0.98)***	1.02 (1.00–1.04)*
Sex			
Female	2.89 (1.61–5.17)***	0.40 (0.23–0.71)**	1.50 (0.92–2.47)
Race			
White	1.11 (0.53–2.35)	0.74 (0.44–1.25)	0.67 (0.40–1.13)
Marital status			
Married	1.06 (0.70–1.47)	0.75 (0.57–0.98)*	1.03 (0.80–1.32)
Education			
College graduate	0.87 (0.60–1.27)	0.89 (0.67–1.18)	1.00 (0.78–1.28)
Income			
$100,000 or more	0.85 (0.57–1.27)	1.19 (0.90–1.58)	0.65 (0.50–0.84)***
First deployment			
Persian Gulf	1.33 (0.74–2.40)	0.90 (0.57–1.41)	0.86 (0.58–1.29)
Iraq/Afghan/GWOT	1.10 (0.52–2.36)	0.90 (0.51–1.58)	1.42 (0.85–2.37)
Other Zone	1.57 (0.83–2.98)	1.32 (0.81–2.14)	0.70 (0.45–1.07)
Deployed Guard/Reserve			
Yes	0.98 (0.69–1.39)	1.12 (0.87–1.45)	1.18 (0.94–1.49)
Multiple tours			
Yes	0.88 (0.64–1.23)	0.84 (0.66–1.07)	1.18 (0.96–1.47)
High combat exposure			
Yes	1.47 (1.03–2.09)*	1.01 (0.76–1.33)	2.22 (1.71–2.88)***
Stress events past Yr.			
High	2.31 (1.64–3.25)***	1.02 (0.77–1.36)	1.40 (1.07–1.84)*
Lifetime trauma			
High	1.56 (1.09–2.22)*	1.16 (0.88–1.55)	1.18 (0.90–1.54)
Centrality vet identity			
High	0.60 (0.42–0.87)**	1.28 (1.00–1.65)*	1.51 (1.21–1.90)***

Note. AUDIT-C = AUDIT alcohol consumption questions; GWOT = Global War on Terrorism; VA = Veterans Administration.
*p < .05. **p < .01. ***p < .001.

very important to them (36.2%), whereas only 22.2% of Iraq/Afghan veterans reported that this was very important to them. All of these differences are statistically significant (p < .001). We return to these findings in the Conclusion.

The multivariate logistic regression results for suicide ideation, alcohol misuse, and VA service use are shown in Table 2. We discuss the other outcomes in the text only. These results suggested that the more veterans in our study hold their veteran identity as a central aspect of how they see themselves, the less likely they were to report lifetime suicide ideation (odds ratio [OR] = 0.60, p < .01), but the more likely they were to meet criteria for alcohol misuse (OR = 1.28, p < .05) and to have ever used VA services (OR = 1.51, p < .01). Centrality of veteran identity was not related to depression, PTSD, or self-rated health, after controlling for other demographic, stress, and service use factors.

Demographic associations in the study tended to replicate other research based on the stress process model. More specifically, older veterans were less likely to meet criteria for depression (OR = 0.97, p < .01) or alcohol abuse (OR = 0.96, p < .001) but more likely to rate their health as poor/fair (OR = 1.02, p < .01) and to ever have used VA services (OR = 1.02, p < .05). Women were more likely to contemplate suicide (OR = 2.89, p < .01) and meet criteria for

depression (OR = 2.32, p < .01) but less likely to meet criteria for alcohol abuse (OR = 0.40, p < .01), compared to men. Whites and college educated were less likely to rate their health poor/fair (OR = 0.52 and 0.77, respectively, p < .05 for both), than other racial groups and the less educated, married participants were less likely to meet criteria for alcohol abuse (OR = 0.75, p < .05), compared to the nonmarried, and veterans in the high income category were less likely to rate their health fair/poor or use VA services (OR = 0.57 and 0.64, p < .001 and .01, respectively). Neither deployment theater nor being deployed as a National Guard/Reserve were statistically related to any of the six dependent variables.

The stress variables assessed were also associated with the mental and physical well-being measures in expected directions. Veterans who reported high combat exposure were more likely to meet criteria for depression and PTSD (OR = 2.20 and 3.84, p < .001, respectively), compared to those who had less exposure to combat. In addition, veterans who scored high in combat exposure were more likely to rate their health as fair/poor and to have used VA services (OR = 1.42 and 2.22, p < .05 and .001, respectively). Experiencing many stressful life events over the past year had a significant association with most of our outcomes, with high stress related to suicide ideation, depression, PTSD, and poor health (ORs = 2.31, 2.58,

4.03, and 2.56, all $p < .001$). The outcomes related to lifetime traumatic events were suicide ideation ($OR = 1.56$, $p < .05$), depression ($OR = 1.65$, $p < .001$), and PTSD ($OR = 1.91$, $p < .01$).

Discussion

In this study, we focused on a number of variables deemed to be significant risk and protective factors for physical and mental health problems among a sample of formerly deployed veterans. All of them experienced deployment to combat zones and all received health care from the Geisinger Clinic in Pennsylvania. We used the stress process model and occupational mental health model to guide our variable selection. We also used social psychological theory (i.e., identity theory) to guide our discussion about associations between having a strong belief in the importance of one's veteran identity and measures of well-being. The main findings of our multivariate analyses suggested that the more central or important the veteran identity is to our study participants, the less likely they are to report suicide ideation, but the more likely they are to meet criteria for alcohol misuse. This suggests that veteran identity is not uniformly protective for this population and may have a complex relationship with well-being. The analysis also indicated that a prominent or important veteran identity was associated with ever receiving treatment services from the VA. As suggested, many veterans receive their healthcare from non-VA facilities, and recent changes in healthcare options for veterans will likely increase the use of non-VA providers in the future. Thus, understanding the risk and protective factors for veterans in non-VA healthcare delivery environments is critical (Boscarino et al., 2015). Further research is planned.

Although the use of veteran identity to better understand the general well-being of veterans has rarely been used (Hack, DeForge, & Lucksted, 2017), the few which have (Di Leon et al., 2016; Harada, et al., 2002) report results similar to ours for VA service use. More specifically, the more central or important the veteran identity was to the veteran, the more likely he or she used VA services. Although their measures of veteran identity were different from ours, Harada et al. (2002) also found lower suicide ideation among African American and Latino veterans who strongly identified as a veteran. Another point from our study is that Vietnam theater veterans are more likely to have a central veteran identity related to their military service. Hack et al. (2017) argued

that VA outreach efforts that try to lower barriers to services, often use the veteran identity in their messages. An implication of our study is that the VA, and other service providers, may increase access among younger veterans, especially those serving in the Iraq/Afghan wars, by increasing the centrality of their veteran identity.

However, our results are not uniform in showing veteran identity as a protective factor. Alcohol misuse has been a longstanding concern among military healthcare providers and policy makers (Institute of Medicine[IOM], 2013), and as the results indicate, there is a slightly elevated risk of meeting criteria for alcohol misuse among those with high centrality for their veteran identity. Social psychological theory suggests several reasons for why this might be the case. Thoits (2013) has noted that some negative events can be related to valued identities and that these events can be particularly harmful to well-being. Given that over 50% of our sample scored very high on our veteran identity measure (11 or 12), it is possible that negative responses related to homecoming or inadequate social support for combat related trauma may be harmful to military personnel. This aspect of military personnel self-concept and self-definitions clearly warrants greater study.

We focus on centrality or importance of the veteran identity in this article, since almost all perspectives in psychiatry and clinical psychology contend that people's mental health is at least partially the result of positive self-definitions and possession of valued social identities (Thoits, 2013). Thus, having a strong, positive view of oneself as a veteran is a potential protective factor in this population. Additionally, the veteran identity connects veterans to other people and to military organizations which have provided support and care to them in the past during training and deployment (Greenberg & Jones, 2011). Finally, in their Occupational Mental Health Model, Adler and Castro (2013) argue that occupational resources can include the professional identity, which they describe as, "the willingness to embrace military values and culture" (pg. 43). In our study, military values and cultures are incorporated into the veteran identity, which provides one source of self-meaning and of mattering to others. (See Adams & Boscarino, 2015; Thoits, 2012, for an application of these ideas to the volunteer identity.)

As with any research project, our study has several strengths and limitations. In terms of strengths, we recruited a large random sample of community-based veterans receiving at least some of their treatment

from a non-VA facility. We also used standardized and validated scales and measures in our study from previous research (Boscarino et al., 2015; Boscarino et al., 2011). In addition, we included veterans from Vietnam to current conflicts and included multiple post-deployment outcomes, including PTSD, depression, suicidality, and use of VA health and mental health services. We used an explicit model (stress process and occupational mental health models) and social psychological theory to identify key variables affecting veteran well-being. Lastly, our study is one of the few to examine veteran identity and its relationship to health and service use outcomes. It adds to the growing, body of research on veteran identity and, hopefully, will encourage more studies on this -social psychological concept (Hack et al., 2017).

Nevertheless, our study has several limitations, including that it was based on a cross-sectional survey. It is possible that the associations found could be reversed in their causal ordering, such that those with postdeployment mental health issues may have a more negative recall of past events related to military service. In addition, although our sample was large and randomly selected, it was predominantly White male patients in s single multihospital system located in central and northeastern PA. We also specifically focused on veterans deployed to combat zones. Therefore, our results may not generalize to other geographic areas and other veteran populations. Our measure of suicide was only one item. Finally, we only examined one identity. Most people will have multiple identities (Stets & Serpe, 2013) and future research should explore how veteran identity relates to other identities that military personnel might have when examining their well-being. Despite these limitations, our study findings are consistent with the recent literature on military experiences (Adams et al., 2017; Adler & Castro, 2013; Bossarte et al., 2011; Boscarino et al., 2015; Fontana & Rosenheck, 1994; Hoge et al., 2004; Hoge, Auchterlonie, & Milliken, 2006; James et al., 2013; Kulka et al., 1990; Smith, Wang, Vaughn-Coaxum, Di Leone, & Vogt, 2017; Thomas et al., 2010), which suggests that veterans face a complex set of physical and mental health issues upon returning to civilian life. Veteran identity and postdeployment experiences related to that identity may have a significant impact on mental health outcomes and the utilization of both VA and non-VA healthcare services.

In conclusion, we argue that incorporating identity theory into the stress process (Thoits 2013) and occupational mental health model offers one way to use social psychological theory to increase our understanding of how military experiences impact the health and well-being of veterans. We are not the first to suggest merging identity theory and stress process (e.g., Thoits 1991) and hope that this study stimulates other research on veteran identity.

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