
Combat Experience and the Acquired Capability for Suicide



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Rising suicide rates are an increasing concern among military personnel. The interpersonal-psychological theory of suicide proposes that three necessary factors are needed to die by suicide: feelings that one does not belong with other people, feelings that one is a burden on others or society, and an acquired capability to overcome the fear and pain associated with suicide. The current study tests the theory's proposal that acquired capability may be particularly influenced by military experience, because combat exposure may cause habituation to fear of painful experiences such as suicide. Utilizing clinical and nonclinical samples of military personnel deployed to Iraq, results of the current study indicate that a greater range of combat experiences predicts acquired capability above and beyond depression and post-traumatic stress disorder symptoms, previous suicidality, and other common risk factors for suicide. Combat experiences did not, however, predict perceived burdensomeness or thwarted belongingness. The authors discuss how combat experiences might serve as a mechanism for elevating suicide risk and implications for clinical interventions and suicide prevention

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Introduction

Suicide is the second leading cause of death in the U.S. military, with rates ranging between 9 to 15 deaths per 100,000 service members (Ritchie, Keppler, & Rothberg, 2003; U.S. Department of Defense, 2007). Previous studies have indicated that military service may be a risk factor for suicidal behavior. For instance, the most common type of traumatic death suffered during military training is suicide (Scoville, Gardner, & Potter, 2004), and male veterans are twice as likely to die by suicide as male nonveterans in the general population (Kaplan, Huguet, McFarland, & Newson, 2007). Although the current suicide rate is similar to the civilian population, military suicide rates during times of peace are generally lower than the civilian rate (Kang & Bullman, 2008). Recently released data indicate that active duty males who have been exposed to combat carry, for the first time in known history, a suicide risk greater than that of comparable males in the general population (Kang & Bullman). This alarming increase—which exceeds the rate of increase recently seen among nonmilitary populations—suggests that combat exposure might be an important factor contributing to death by suicide. Given the rise in suicide rates in the military and the significant impact it can have on a unit's morale and its ability to complete its mission, the need for a clear, empirically supported model of suicidal behavior in a military population is needed to effectively guide suicide prevention and treatment efforts within the military.

One model that has established an increasing amount of empirical support is the interpersonal-psychological theory of suicidal behavior (IPTS; Joiner, 2005). Joiner's model proposes that three distinct variables must be present for an individual to die by suicide: perceived burdensomeness, thwarted belongingness, and acquired capability for suicide. Perceived burdensomeness is the sense that the individual is a burden to others, does not contribute to the group, and is a liability to the group's well-being or safety. Thwarted belongingness is the sense that the individual lacks important connections to others and that previously meaningful relationships have been strained or lost. According to IPTS, it is the combination of perceived burdensomeness and thwarted belongingness that composes the desire for suicide (i.e., *why* someone would want to die by suicide). The third variable, the acquired capability for suicide, is the degree to which an individual is able to enact a lethal suicide attempt (i.e., *who* can attempt suicide). Because a lethal or near-lethal suicide attempt is extremely fear-inducing and often pain-inducing, habituation to the fear and pain involved is a prerequisite for serious suicidal behavior. It is this variable that separates individuals who desire to die by suicide from those who actually attempt suicide. According to the theory, each of the components is necessary for suicide, but each in and of itself is not sufficient; only in the presence of both desire and capability will suicide occur.

This distinction is important and is supported by a considerable amount of evidence. For example, although one third of the U.S. population feels suicidal at

some point in the course of their life (Paykel, Myers, Lindenthal, & Tanner, 1974), only .01% of the population actually dies by suicide (McIntosh, 2009). Similarly, the suicide attempt to death ratio is 25:1, further indicating that a substantial number of people try to die by suicide, but only a few actually die as a result (McIntosh, 2009). This pattern is mirrored within the U.S. military. The Army's suicide attempt to death ratio, for example, has increased from 8:1 to 11:1 over the past few years (Gahm & Reger, 2007, 2008). Thus, there appears to be something preventing many suicidal people from dying by suicide, despite their desire and attempts.

According to Joiner (2005), the development of capability for suicide can occur through repeated exposure to painful and provocative events through which the individual habituates to previously aversive events (Joiner, 2005; Van Orden, Witte, Gordon, Bender, & Joiner, 2008). The absence of feeling pain during nonsuicidal self-injury, for example, predicts the number of lifetime suicide attempts (Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). Higher pain thresholds and pain tolerance have also been found among adolescents with multiple suicide attempts (Orbach, Mikulincer, King, Cohen, & Stein, 1997). Higher acquired capability and greater number of suicide attempts have also been associated with lifetime histories of risk-taking, aggression, and violence (Van Orden et al., 2008). Common military experiences such as basic military training, deployment training, and combat exposure can, therefore, serve as a mechanism for developing the acquired capability for suicide. During basic military training, for example, military members are routinely and intentionally exposed to repeated provocative experiences, including a high rate of injury (Cowan et al., 1988; Knapik et al., 1998), with the explicit purpose to habituate personnel to fearful and painful stimuli to dampen initial aversive responses (e.g., fear). Further, as the military member begins to use this training in combat settings, exposure to increasingly violent behaviors (e.g., hand-to-hand combat, firing weapons) occurs, which could directly increase the *acquired capability* for suicide among service members through habituation to suffering and death. Indeed, exposure to violent combat experiences is associated with risky behaviors (e.g., substance abuse, aggression) postdeployment (Killgore et al., 2008), which, in turn, contribute to acquired capability (Van Orden et al., 2008) and are established risk factors for suicidal behaviors.

Importantly, however, these experiences would not necessarily contribute to increased *desire* for suicide. Although it may be possible that combat experience can contribute to the increased desire for suicide (e.g., thwarted belongingness and perceived burdensomeness), this may not always be true. The IPTS suggests that painful and provocative events or experiences (e.g., combat experience) should increase acquired capability, but not necessarily perceived burdensomeness or thwarted belongingness. Selby et al. (2010) proposed that combat exposure might contribute to increased isolation and thwarted belongingness via guilt or shame secondary to specific combat experiences (i.e., killing), or "paranoia", hyperarousal, and emotional numbing after returning from a combat zone. They likewise proposed that increased feelings of perceived burdensomeness could emerge among injured combatants or among veterans experiencing high levels of survival guilt. It is possible, however, that in some circumstances combat experience may actually serve as a *buffer* against the desire for suicide via enhanced social cohesiveness and sense of purpose. For example, most combat experiences involve other military members (e.g., a group in which the member belongs) who have experienced a shared emotional/psychological event in which each member contributed to a common cause (e.g., member feels like he plays an active role in the group). Although the

military member has experienced a challenging event that may have led to the habituation to pain and fear, the same event can simultaneously strengthen his or her membership and worth within the unit (i.e., enhanced belongingness and reduced perceived burdensomeness). Combat experience is, therefore, likely to be a more distal contributor to the desire for suicide that is contingent upon how the veteran experiences and understands the events, whereas combat experience should be a proximal and direct contributor to the acquired capability for suicide. In other words, combat exposure theoretically contributes directly to the acquired capability for suicide regardless of the personal meaning associated with these events, whereas combat exposure theoretically affects perceived burdensomeness and thwarted belongingness only indirectly through such mechanisms as cognitive appraisal and emotional salience. However, these assumptions have not yet been tested empirically.

Although combat exposure as a contributor to the acquired capability for suicide has been proposed (e.g., Anestis, Bryan, Cornette, & Joiner, 2009; Selby et al., 2010), to date there has been limited research directly testing these assumptions among military samples. Bryan, Morrow, Anestis, and Joiner (2009) recently reported preliminary findings that acquired capability was significantly higher in a sample of 88 active duty Air Force personnel, but the study utilized a sample restricted to members with no combat experience from only one branch of service, which limits generalizability. Despite the intuitiveness of this theory and its growing scientific support, the fact remains that there are currently no rigorous empirical tests demonstrating that combat experience contributes to increased capability for suicide. The purpose of the current study was, therefore, to test the relationship between combat exposure and the acquired capability and desire for suicide. We hypothesized that combat exposure would predict acquired capability, but it would not predict perceived burdensomeness or thwarted belongingness.

Methods

Participants and Procedures

Subjects included 522 service members who were deployed in support of Operation Iraqi Freedom. Data were acquired via three sources: service members referred to a forward-deployed (e.g., in-theatre) Traumatic Brain Injury (TBI) Clinic ($n = 151$, 28.9%); service members who self-identified for routine services at a forward-deployed mental health clinic ($n = 44$, 8.4%); and noninjured service members who participated in baseline psychological and neurocognitive testing in the event of subsequent head injury while deployed ($n = 327$, 62.6%). As such, the sample comprised 195 (37.4%) clinical cases and 327 (62.6%) nonclinical cases. Both clinical and nonclinical cases were included to increase the range of all variables. Participants were predominantly (90.4%) male from various branches: Air Force (74%), Army (24.4%), and Marines (1.6%). Racial distribution was 67.6% White, 14.6% Black, 10.6% Hispanic, 3.4% Asian/Pacific Islander, and 3.8% "Other." Fifty-two (9.5%) service members reported some level of previous suicidality: In decreasing order of severity, 4 (.7%) reported past suicide attempts (i.e., with intent to die), 1 (.2%) reported past nonsuicidal self-injury, 7 (1.3%) reported some level of planning for suicide, and 40 (7.2%) reported suicidal ideation at some point in their life. Of the sample, 22 (4.7%) reported thinking about suicide within the previous year.

All questionnaires were administered and completed by each participant as part of a comprehensive biopsychosocial evaluation, although the intent of the evaluation differed for each subgroup. For clinical cases, data were completed as a part of

routine initial assessment for either a TBI evaluation after a head injury or as part of routine intake assessment for outpatient mental health services. Because of the comorbidity of mental health issues and head injuries among service members, TBI and outpatient mental health services were combined in the TBI Clinic. For nonclinical cases, service members completed surveys assessing baseline psychological, medical, and neurocognitive functioning at the beginning of their deployments. These data were stored at the TBI Clinic for utilization in the event of a head injury sustained later during the deployment, at which time the baseline data were retrieved as a reference point for postinjury comparison. Data from all service members were included in the analyses without exclusion. The study was approved as retrospective exempt research by the Department of Defense Institutional Review Board charged with overseeing all studies conducted in combat zones.

Instruments

Interpersonal Needs Questionnaire (INQ). The INQ is a 10-item self-report questionnaire that measures current beliefs about the extent to which the respondent feels connected to others (i.e., thwarted belongingness) and the extent to which he or she feels like a burden on the people in their lives (i.e., perceived burdensomeness). Five items measure thwarted belongingness and five items measure perceived burdensomeness. Items were selected from a 25-item version of the questionnaire to balance brevity with psychometric utility. Respondents indicated the degree to which each item was true for them recently (on a 7-point Likert scale). Scores are coded such that higher numbers reflect higher levels of thwarted belongingness (“These days I feel disconnected from other people”) and perceived burdensomeness (e.g., “These days people in my life would be better off if I were gone”). Internal consistency coefficients for both the perceived burdensomeness and the thwarted belongingness items were very good for the current study ($\alpha = .81$ for perceived burdensomeness, $\alpha = .82$ for thwarted belongingness) and were consistent with prior research using the same survey (Bryan et al., 2009). Importantly, the two dimensions of the INQ correlate in the expected direction with measures of emotional distress such as depression and posttraumatic stress disorder (PTSD) symptoms (see Table 1), but they share only a small amount of variance, indicating that they are distinct constructs. Factor analysis of the INQ has confirmed two factors that comprise the five perceived burdensomeness items and the five thwarted belongingness items (Bryan, Cukrowicz, Joiner, & Cornette, 2010). Higher scores on each scale are also associated with significantly increased likelihood for current suicide ideation (Bryan et al., 2010).

Acquired Capability for Suicide Scale (ACSS). The ACSS is a 5-item self-report questionnaire that assesses the respondent’s fearlessness about lethal self-injury (e.g., “I am not at all afraid to die”). Individuals are asked to rate each item on a 7-point Likert scale. The scale is correlated with the Fear of Suicide subscale of the Reasons for Living Inventory (Linehan, Goodstein, Nielsen, & Chiles, 1983) in the expected direction and a Beck Suicide Scale item that asks about one’s courage to kill oneself (Bender, Gordon, & Joiner, 2007). The ACSS’s internal consistency in the current study ($\alpha = .71$) was adequate for an instrument measuring two overlapping but distinct constructs (i.e., fearlessness about death and habituation to pain) and consistent with internal consistencies reported in several prior studies (Bryan et al., 2009; Van Orden et al., 2008). Also consistent with theory, the ACSS does not

Table 1
Means, Standard Deviations, and Intercorrelations for All Variables

	1	2	3	4	5	6	7	8
1. ACSS	—							
2. Gender	-.147*	—						
3. PCL-M	.126*	-.006	—					
4. SBQ-R	-.018	.004	.258*	—				
5. BHM Depression	.015	.020	.670*	.431*	—			
6. Combat Experience	.250*	-.094*	.488*	.094*	.218*	—		
7. Burden	.047	.058	.406*	.434*	.541*	.112*	—	
8. Belong	-.052	.015	.454*	.360*	.648*	.104*	.446*	—
9. <i>M</i>	4.447	10.0 ^a	23.620	3.343	3.374	4.646	1.114	2.210
10. <i>SD</i>	1.278		10.906	1.262	.740	5.936	.413	1.350

Note. ACSS = Acquired Capability for Suicide Scale; PCL-M = Posttraumatic Stress Disorder Checklist-Military Version; SBQ-R = Suicide Behaviors Questionnaire-Revised; BHM = Behavioral Health Measure; Burden = perceived burdensomeness; Belong = thwarted belongingness; *M* = mean; *SD* = standard deviation.

^aGender was coded such that male = 0 and female = 1; for the categorical variable of gender, mean, therefore, reflects the percentage that is female.

**p* < .01.

correlate with mood ratings (see Table 1; Bryan et al., 2009), indicating that it is independent from emotional distress.

Behavioral Health Measure (BHM) Depression subscale. The BHM is a 20-item self-report questionnaire that uses a five-point Likert scale to assess global mental health functioning (Kopta & Lowry, 2002). The BHM’s depression subscale was used to measure depression symptoms and comprises six items that measure depressed mood, decreased motivation and energy, hopelessness, suicidal ideation, self-image, and concentration, with higher scores indicating greater health (i.e., less depression). For ease of data interpretation, the scale was, therefore, reverse-keyed, such that higher scores indicated greater depression. In the current study, an adjusted depression score was calculated by subtracting the suicidal ideation item (item 10) score from the total depression score to remove the potential artificial inflation of association between depressive symptoms and risk factors for suicidality. Others have previously utilized this procedure (Dworkin & Gitlin, 1991; Smith, Perlis, & Haythornthwaite, 2004). The measure has considerable psychometric strength (Kopta & Lowry), although convergent and divergent validity for the depression scale have not yet been published. In a subgroup of our participants (*n* = 210), who also completed the 9-item depression scale of the Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001), the BHM’s adjusted depression scale demonstrated a large correlation in the expected direction (*r* = .763, *p* = .000), suggesting that the scale is a good measure of depression.

Combat Experiences Scale (CES). The CES is a 23-item checklist of a range of combat-related experiences (e.g., being attacked or ambushed, shooting or directing fire at the enemy, seeing dead or seriously injured Americans, handling or uncovering dead bodies or body parts, etc.). Respondents are asked to indicate which events they have experienced at any time in their lives during a deployment. The CES has been previously utilized in military-related research (e.g., Hoge et al., 2004). In the current study, a total combat experience score was calculated by summing the number of experiences endorsed.

PTSD Checklist-Military Version (PCL-M). The PCL-M (Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item self-report inventory that assesses the severity of each PTSD symptom as defined by the Diagnostic and Statistical Manual of Mental Disorders 4th edition. The PCL-M is widely used in the Department of Defense and the Veterans Affairs and has excellent reliability and validity (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers et al., 1993).

Suicidal Behaviors Questionnaire-Revised (SBQ-R). The SBQ-R (Osman et al., 2001) is a brief self-report measure of past suicidal behaviors. The questionnaire assesses four domains: previous suicide attempts, frequency of suicidal ideation, previous suicidal communication, and subjective likelihood of future suicide attempt. The SBQ-R total score has adequate psychometric properties, including the ability to differentiate between suicidal and nonsuicidal subgroups in both clinical and nonclinical samples (Osman et al.). The total SBQ-R score was utilized to provide a continuous measure of suicidal history.

Data Analytic Approach

A series of regression equations were constructed to test the relationships among the dependent variables and predictors. A linear regression equation model was constructed with acquired capability as the dependent variable since this variable was normally distributed. Perceived burdensomeness and thwarted belongingness each had significant positive skews consistent with negative binomial distributions, however, rendering linear regression inappropriate due to the violation of normality required for linear regression modeling. Use of linear regression with a highly skewed dependent variable can result in significant errors in outcome because of its inability to adequately fit the data. Generalized linear modeling for negative binomial distributions were, therefore, constructed to reduce the likelihood of error. Gender, past suicidality, PTSD symptoms, and depression symptoms were entered into the first step of each equation because of their established or theorized connections with acquired capability, perceived burdensomeness, and thwarted belongingness. To ensure results were not affected by differences in participant subgroups, we additionally entered a clinical subgroup dummy variable (i.e., nonclinical = 0, TBI = 1, mental health = 2) as a covariate. In the second step, combat experience was added to the equations.

Results

Means, standard deviations, and intercorrelations for all variables are displayed in Table 1. Clinical variables (i.e., depression, PTSD, past suicidality) were on average minimally elevated, although a wide range from no symptoms to very severe symptoms was noted. Mean perceived burdensomeness, thwarted belongingness, and acquired capability for suicide scores were consistent with prior military studies (Bryan et al., 2009) with mean acquired capability scores being significantly higher than in civilian populations (cf. Van Orden et al., 2008). More combat experiences were associated with higher levels of depression symptoms, PTSD symptoms, past suicidality, acquired capability, burdensomeness, and thwarted belongingness. Consistent with prior research and theory, higher acquired capability scores were associated with male gender and PTSD symptoms. Unexpectedly, acquired capability was not significantly associated with past suicidality in our sample. Not

surprisingly, depression symptoms, PTSD symptoms, past suicidality, burdensomeness, and thwarted belongingness were all positively correlated with each other.

Does Combat Exposure Predict the Acquired Capability for Suicide?

Statistics for the linear regression equation predicting the acquired capability for suicide are summarized in Table 2. The first model, which comprised only covariates, was statistically significant and accounted for 5.4% of the variance in acquired capability. Male gender, past suicidality, and nonclinical subgroup status significantly predicted higher levels of acquired capability, but depression and PTSD symptoms did not. To determine if combat experience incrementally contributed to acquired capability, it was added to the model in the next step, resulting in a significant model and accounting for an additional 4.8% of unique variance in acquired capability. Even when considering the relationship between combat exposure and acquired capability without factoring in covariates, combat exposure shares only a small portion (6.25%) of the variance in acquired capability.

Does Combat Exposure Predict Perceived Burdensomeness?

A negative binomial regression equation was next constructed with perceived burdensomeness as the dependent variable. Statistics are summarized in Table 3. The first step was statistically significant, likelihood ratio (*LR*) $\chi^2(5) = 237.259, p = .000$, with mental health subgroup, past suicidality, PTSD symptoms, and depression symptoms significantly predicting higher levels of perceived burdensomeness. Combat experience was next added to the equation, which resulted in a model that did not improve model fit (deviance difference = .091, degree of freedom [*df*] = 1, $p = .899$) and a statistically nonsignificant relationship between combat experience and burdensomeness, indicating that combat experience does not uniquely explain variance in burdensomeness in the presence of other clinical variables.

Table 2
Linear Regression Predicting the Acquired Capability for Suicide

Step	Predictors	F	df	R ²	β	SE	t	p
1		7.509	5, 516	.059				
	Constant				3.773	.598	6.308	.000
	Gender				-.630	.185	-3.415	.001
	Clinical group				-.284	.103	-2.747	.006
	SBQ-R				.032	.007	4.653	.000
	PCL-M				.013	.048	.270	.787
2	BHM Depression	.208	.111	1.874	.061			
		10.330	6, 515	.107				
	Constant				4.205	.593	7.095	.000
	Gender				-.547	.182	-3.009	.003
	Clinical group				-.346	.102	-3.387	.001
	SBQ-R				.016	.007	2.068	.039
	PCL-M				.012	.047	.254	.800
BHM Depression	.106				.111	.958	.338	
Combat Experience	.050	.011	4.781	.000				

Note. F = F-test; df = degree of freedom; SE = standard error; gender was coded male = 1 and female = 2; SBQ-R = Suicide Behaviors Questionnaire-Revised; PCL-M = Posttraumatic Stress Disorder Checklist-Military Version; BHM = Behavioral Health Measure.

Table 3
 Negative Binomial Regression Predicting Perceived Burdensomeness

Step	Predictors	-2LL	LR χ^2	β	SE	Wald χ^2	df	p
1		319.946	237.259					.000
	Constant			0.262	0.030	75.981	1	.000
	Gender			0.014	0.010	1.916	1	.166
	Clinical sample*							
	Mental Health			0.040	0.012	10.367	1	.001
	TBI			-0.004	0.007	.239	1	.625
	SBQ-R			0.015	0.003	33.210	1	.000
	PCL-M			0.001	0.000	6.204	1	.013
2	BHM Depression			-0.034	0.006	31.755	1	.000
		319.108	238.096					
	Constant			0.257	0.030	71.439	1	.000
	Gender			0.013	0.010	1.680	1	.195
	Clinical sample*							
	Mental Health			0.041	0.012	10.571	1	.001
	TBI			-0.002	0.008	.086	1	.770
	SBQ-R			0.015	0.003	33.478	1	.000
PCL-M			0.001	0.000	7.029	1	.008	
BHM Depression			-0.033	0.006	29.441	1	.000	
Combat Experience			-0.001	0.001	.837	1	.360	

Note. LR = likelihood ratio; SE = standard error; df = degree of freedom; gender was coded male = 1 and female = 2; SBQ-R = Suicide Behaviors Questionnaire-Revised; PCL-M = Posttraumatic Stress Disorder Checklist-Military Version; BHM = Behavioral Health Measure; TBI = traumatic brain injury.

*In the negative binomial regression, categorical variables are analyzed by comparing all categories with a reference category (i.e., nonclinical sample), which is set to $\beta = 0$.

Does Combat Exposure Predict Thwarted Belongingness?

Last, a negative binomial regression equation was constructed with thwarted belongingness as the dependent variable. Statistics are summarized in Table 4. The first step was statistically significant, $LR \chi^2(5) = 237.259$, $p = .000$, with past suicidality, PTSD symptoms, and depression symptoms predicting higher levels of thwarted belongingness and TBI subgroup significantly predicting less thwarted belongingness. Combat experience was next added to the equation, which resulted in poorer model fit (deviance difference = -64.286, $df = 1$, $p = .000$). In this model, combat experience did not significantly predict thwarted belongingness in the presence of other clinical variables.

Discussion

As noted in the introduction, recent data have indicated that exposure to combat and other activities associated with military deployment elevates risk of suicide (Kang & Bullman; Kaplan et al., 2007). Although there is evidence that this population may be vulnerable to suicide, there have been few studies suggesting explanations for this trend. Thus, the purpose of this study was to test the hypothesis that combat experience is associated with increased risk for suicide as a function of its role in increasing the acquired capability for suicide. Further, as the IPTS suggests that painful and provocative events or experiences should increase acquired capability (but not perceived burdensomeness or thwarted belongingness), we expected that combat experience would predict acquired capability scores but not thwarted belongingness or perceived burdensomeness scores.

Table 4
 Negative Binomial Regression Predicting Thwarted Belongingness

Step	Predictors	-2LL	LR χ^2	β	SE	Wald χ^2	df	p
1		1423.760	304.418					
	Constant			0.994	0.092	116.812	1	.000
	Gender			-0.001	0.030	.002	1	.965
	Clinical sample							
	Mental health			0.067	0.038	3.105	1	.078
	TBI			-0.053	0.023	5.469	1	.019
	SBQ-R			0.019	0.008	5.596	1	.018
	PCL-M			0.002	0.001	4.167	1	.041
2	BHM Depression			-0.196	0.018	112.857	1	.000
		1488.046	306.132					
	Constant			0.974	0.093	109.408	1	.000
	Gender			-0.005	0.030	.027	1	.870
	Clinical sample							
	Mental health			0.069	0.038	3.269	1	.071
	TBI			-0.047	0.023	4.103	1	.043
	SBQ-R			0.019	0.008	5.748	1	.017
PCL-M			0.003	0.001	5.743	1	.017	
BHM Depression			-0.192	0.019	106.153	1	.000	
Combat Experience			-0.002	0.002	1.717	1	.190	

Note. LR = likelihood ratio; SE = standard error; df = degree of freedom; gender was coded male = 1 and female = 2; TBI = traumatic brain injury; SBQ-R = Suicide Behaviors Questionnaire-Revised; PCL-M = Posttraumatic Stress Disorder Checklist-Military Version; BHM = Behavioral Health Measure.

*In the negative binomial regression, categorical variables are analyzed by comparing all categories with a reference category (i.e., nonclinical sample), which is set to $\beta = 0$.

The results of the first regression conducted in this study supported the above predictions. Even in the presence of gender, clinical grouping, past suicidality, depression symptoms, and PTSD symptoms, higher scores on an index of exposure to combat were associated with greater acquired capability. It is important to note, however, that combat experience explained only a small amount of the total variance in acquired capability (6.25%), of which only 4.24% was unique to combat, indicating that a considerable amount of acquired capability is because of other factors. Given that Bryan et al. (2009) have found that even junior military personnel have elevated levels of acquired capability before ever being deployed, it is possible that military training elevates acquired capability to such a level that actual combat experience itself does not incrementally contribute much more. Another possibility is that individuals who choose to join the military have elevated levels of fearlessness and pain tolerance to begin with, which is augmented through training and combat. Further research is needed to more fully understand how military experience contributes to acquired capability. Nonetheless, the present study provides the first empirical test of the impact of a specific feature of military experience on acquired capability and supports the claims of the IPTS (Joiner, 2005; Selby et al., 2010).

The IPTS posits that provocative experiences such as combat contribute to the decreased fear and pain responses required for suicidal behaviors, but not the negative emotional and psychological states fueling the desire for suicide (Van Orden et al., in press). The desire for suicide emerges instead from the individual's cognitive appraisals for the provocative events; in other words, from the meaning about themselves and others (i.e., perceived burdensomeness and thwarted belongingness) that they construct from the event. As such, combat experience would not be

expected to contribute directly to perceived burdensomeness or thwarted belongingness. This hypothesis was supported in the regression equations testing the influence of combat on each of these two variables. In the presence of emotional distress, combat experience was unrelated to these two belief systems.

The results of this study provide additional support for the necessary preconditions for an individual to acquire the capability for suicide. By the very nature of military service, many individuals may acquire this capability; however, it is important to recall that one is unlikely to attempt suicide or die by suicide in the absence of a desire for suicide. Importantly, our study demonstrates that combat itself does not uniquely contribute to those patterns of thought that comprise the desire for suicide. These data reinforce the point that although service members with combat experience might be more capable of suicidal behaviors, it is only those service members who also believe they are a burden on others and are socially isolated who are most likely to engage in suicidal behaviors. From a clinical standpoint, given that combat veterans have a higher capability for suicide, endorsement of the experiences associated with suicidal desire should be considered an indication of significant suicide risk. Joiner, Van Orden, Witte, and Rudd (2009) have recently offered a variety of cognitive and behavioral strategies designed to decrease thwarted belonging and perceptions of burdensomeness, which could be related to negative interpretations of combat experiences. It is also important to consider using and developing clinical interventions that would increase the positive psychological impact of combat (e.g., post-traumatic growth) and reduce the desire for suicide despite an increased acquired capability.

There are several limitations that should be considered when interpreting these results. First, practical constraints precluded administration of diagnostic interviews for psychological disorders such as major depressive disorder and PTSD. Thus, although assessment instruments that were used provided an indication of symptoms experienced, it is possible that additional symptoms were not assessed. Related to this, our reliance on self-report measures could provide potentially misleading results, given the context within which these measures were completed. For example, although use of the PCL-M to measure PTSD symptoms makes sense given the nature of the population and the likelihood for combat-related trauma symptoms, high scores on the PCL-M within days of an index event (e.g., gun battle, explosion, death of a friend) might be a natural and expected reaction that would not necessarily indicate the presence of PTSD. Therefore, interpretation of these self-report measures must factor in contextual and situational variables. It is important to note, however, that our use of self-report measures is consistent with general clinical and research practices within the field of psychology. Another limitation to our study design is the Combat Experiences scale, which measures the events that a service member took part in but does not measure how frequently each event occurred or the psychological impact of these events, which could theoretically contribute to higher levels of acquired capability (Selby et al., 2010). It is similarly possible that different types of combat experiences might differentially contribute to the acquired capability for suicide; for example, life-threatening (and theoretically more fear-inducing) combat events might contribute more directly to the acquired capability for suicide than less life-threatening events. Thus, future studies with military populations should include a more comprehensive assessment of events hypothesized to facilitate acquired capability to assist with enhancing our understanding of individual differences that may lead some to acquire greater capability through events that lead to less capability in others.

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