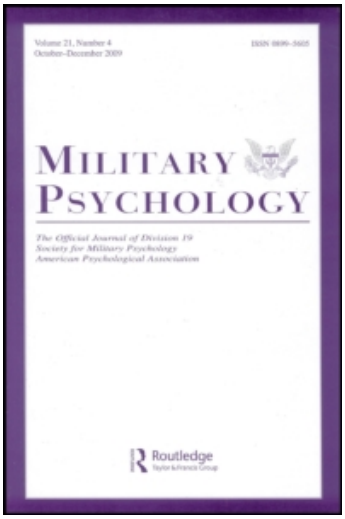

Military Psychology
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t775653681

Buffering Effects of Benefit Finding in a War Environment

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Online publication date: 04 March 2011

To cite this Article Wood, Michael D. , Britt, Thomas W. , Thomas, Jeffrey L. , Klocko, Robert P. and Bliese, Paul D.(2011) 'Buffering Effects of Benefit Finding in a War Environment', Military Psychology, 23: 2, 202 — 219
To link to this Article: DOI: 10.1080/08995605.2010.521732
URL: http://dx.doi.org/10.1080/08995605.2010.521732

MILITARY PSYCHOLOGY, 23:202–219, 2011

ISSN: 0899-5605 print / 1532-7876 online
DOI: 10.1080/08995605.2010.521732

Buffering Effects of Benefit Finding in a War Environment

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Benefit finding (BF) has been extensively examined after exposure to traumatic events. However, less research has examined BF as a buffer against the negative effects of an ongoing stressful event. Data from 1,925 U.S. Army soldiers deployed in support of Operation Iraqi Freedom (OIF) was used to examine whether BF would moderate the relationship between combat exposure and posttraumatic stress disorder (PTSD) and depression. Regression analyses revealed that BF was associated with lower levels of PTSD and depression. However, we found that BF during the combat deployment was found to moderate the combat exposure–PTSD relationship, such that the relationship was stronger when BF was low. Results are discussed in terms of BF being a form of meaning-based coping that may help soldiers adjust to the challenges of war.

Soldiers at war face a multitude of traumatic and stressful experiences unique to their combat environment. Among the many stressors are friend and family separation, barriers to communication with home, combat exposure, harsh living conditions, lack of privacy, environmental stressors, boredom, uncertainty,

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The findings described in this article were collected under a Walter Reed Army Institute of Research Protocol. The views expressed in this article reflect those of the authors and do not necessarily represent the official policy or position of the U.S. Army Medical Command or the Department of Defense.

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and threat (Bartone, Adler, & Vaitkus, 1998). Many of these stressful events lead to mental health problems. For example, mental health problem rates from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) indicate that approximately one in five soldiers meet the screening criteria for a mental health problem following deployment (Hoge et al., 2004). Additionally, 25% of the 103,788 OEF and OIF veterans evaluated at the Veterans Administration health care facilities received a mental health diagnosis (Seal, Bertenthal, Miner, Saunak, & Marmar, 2007).

Despite the many problems that result from war exposure, veterans of conflicts throughout the 20th century have also reported positive changes, personal growth, and in other ways benefiting from their war experience (Lewis, 2006; Schok, Kleber, Elands, & Weerts, 2007; Sledge, Boydstun, & Rabe, 1980; Stouffer, Suchman, DeVinney, Star, & Williams, 1949). Finding benefits in and following adverse circumstances and stressors, referred to as *benefit finding* (BF), reflects a positive psychological approach to the management of stress and trauma (Linley & Joseph, 2004). For example, a soldier exposed to war atrocities may at some point during or following war exposure recognize that difficulties experienced may enable personal strength and psychological growth. Benefit finding has been theorized as an adaptational process (Affleck & Tennon, 1996), or coping mechanism, that we argue may be useful for managing the aftermath of war (Aldwin, Levenson, & Sprio, 1994; Elder & Clipp, 1989; Helgeson, Reynolds, & Tomich, 2006; Schok et al.).

Although studies have examined BF following combat, no studies we are aware of have identified the role of BF during an actual combat deployment. Because of this, BF has been portrayed in the limited manner of being a coping mechanism following postwar periods, as opposed to an active process used to maintain mental health in a time of need. In the present research we examine BF among soldiers during a combat operation, focusing on how perceiving benefits in combat may buffer soldiers from the adverse effects of combat experiences.

Researchers have studied both civilian and military samples to better understand BF as a buffer against different sources of stress. Studies involving civilian populations have yielded conflicting results. For example, some cross-sectional (Katz, Flasher, Caccaipaglia, & Nelson, 2001; Updegraff, Taylor, Kemeny, & Wyatt, 2002) and longitudinal (Carver & Antoni, 2004; Frazier, Conlon, & Glaser, 2001; Milam, 2004) studies have shown that BF was a moderator of stressor–mental health outcome relationship, with the pattern of results supporting BF as a buffer. In contrast, other studies have identified no significant moderating effect for BF, in both cross-sectional (Cordova, Cunningham, Carlson, & Andrykowski, 2001; Lehman et al., 1993; Park & Fenster, 2004) and longitudinal designs (Danoff-Burg & Revenson, 2005; Tennen, Affleck, Urrows, Higgins, & Mendola, 1992).

These conflicting findings were noted by Siegel and Schrimshaw (2007), who examined BF as a moderator of the relationships among stressors (AIDS symptoms and social conflict) and distress outcomes (anxiety and depression) in 138 women living with HIV/AIDS-related symptoms. Their findings revealed that BF was a successful buffer of AIDS symptoms on distress outcomes in women with high distress. However, BF failed to reduce distress related to social conflict. The authors concluded that BF possesses stress-buffering properties that may be specific to the severity of the stressor. Therefore, previous research that failed to identify a successful buffering effect may have been because the sample was not sufficiently challenged by the stressor. This argument is supported by another study involving coping with stressors varying in magnitude (Gilbert, Lieberman, Morewedge, & Wilson, 2004).

Evidence for the stress-buffering effects of BF in military populations is limited. One study has addressed the possible combat stress reduction effects of BF. Aldwin et al. (1994) studied World War I and II, Korean, and Vietnam veterans' war experiences and measured the relationships between these different experiences and posttraumatic stress disorder (PTSD) symptoms. Moderation analysis was used to determine whether desirable war experiences (in terms of mastery, self-esteem, and coping skills) and undesirable war experiences (separation from loved ones, combat anxiety, and loss of friends) would moderate the relationship between combat exposure and PTSD. Results revealed that desirable effects failed to moderate the relationship between combat exposure and PTSD. However, undesirable effects significantly intensified the effect of combat stress on PTSD symptoms. However, the authors issued a warning concerning the interpretation of these data because no control could be applied for the possible hardships or other coping resources gained in the 20–40 years of postcombat living (Aldwin et al.).

BENEFIT FINDING DURING A STRESSFUL EXPERIENCE

Most of the research on the usefulness of BF as a coping mechanism has been conducted after individuals have experienced a stressful or traumatic episode (Helgeson et al., 2006) or during the recovery process of a physical disease (Affleck & Tennen, 1996). Nonetheless, a few studies have focused on the usefulness of BF as a resource for dealing with stress during the diagnostic and treatment phases of breast cancer. For example, Antoni et al. (2001) tested the effects of 10 weeks of cognitive behavioral stress management (CBSM) training in early stage breast cancer patients on postintervention depression. Findings revealed that the intervention reduced moderate depression but failed to influence emotional distress. Further analysis also revealed an increase in generalized optimism and BF as a result of the training.

In a similar study, Antoni et al. (2006) tested the effects of 10 weeks of CBSM in early stage breast cancer patients on postintervention quality of life. CBSM increased emotional well-being, positive states of mind, BF, and positive affect when compared to controls 1 year following the CBSM intervention. It was proposed that CBSM produced beneficial effects on the quality of life following treatment, indicating that benefits derived from traumatic breast cancer can be learned through CBSM skills (see also Cruess et al., 2000). Conclusions drawn from these studies were that BF is associated with stress management techniques used to mitigate stressful situations despite the additional uncertainty, physical hardship, and other problems that accompany living with cancer.

When individuals are exposed to extreme stressors, they may attempt to cope with the demands they face by finding meaning in their suffering (Britt, 2003). Butler et al. (2005) surveyed 1,505 survivors of the September 11, 2001, terrorist attacks to identify predictors of resilience. Results revealed that possession of a positive worldview (i.e., "My life has meaning") was associated with higher reported posttraumatic growth. Butler et al. (2009) later surveyed a sample of 1,281 surviving victims of the September 11, 2001, terrorist attacks to identify predictors of resilience. Findings revealed that greater psychosocial well-being and lower distress were associated with fewer negative worldview changes (i.e., "My life has no meaning," or "I don't look forward to the future anymore"). Thus, finding meaning derived from traumatic events may reduce stress and enable recovery.

In the present study we argue that soldiers in a combat environment are likely to find the need to better understand the meaning of their sacrifice in the face of traumatic events (see Britt, 2003). The purpose of this study is to examine whether BF during the experience of combat buffers soldiers from the adverse consequences of high levels of combat exposure. We predict that the relationship between combat exposure and symptoms of distress (PTSD and depression) will not be as strong when soldiers also report high levels of benefits from being involved in the combat operation. In contrast, when soldiers do not report as many benefits, combat exposure will be more strongly predictive of symptoms. Thus, we address BF as a potential buffer of combat stress on two separate mental health outcomes: PTSD symptoms and depression symptoms.

METHOD

Participants and Procedure

Participants consisted of 1,925 male and female junior enlisted soldiers and noncommissioned officers (NCOs) nested in several brigade combat teams (BCT)

who were deployed to Iraq. To ensure adequate geographical representation of soldiers in theater, eight separate brigades were selected from various locations in Iraq and at various durations of deployment (1–15 months). Additional surveys were given to division/corps units, transition teams, and medical personnel. Brigades assigned personnel to collect and deliver surveys to the principal investigators. Personnel tasked with presentation of the survey were given a script to read (describing purpose, anonymity, and consent) prior to administering the survey.

Participants' data were used only if consent was provided (91%; 2,095/2,279) and if soldiers identified their enlisted status (84%; 1,925/2,279). Response rates matched those of similar survey procedures of military personnel (Bliese, Wright, Adler, Thomas, & Hoge, 2007; Hoge et al., 2004). Table 1 illustrates demographics of the 1,925 soldiers surveyed; 52% (998/1,925) were between 20 and 24 years old, 92% (1,760/1,925) were male, which is considered normal representation for BCTs (Castro & McGurk, 2007; Mental Health Advisory Team, 2008). Most soldiers had a high school diploma (47%; 891/1,925) and a junior enlisted (64%; 1,235/1,925) rank. Approximately half of the soldiers were married 50% (940/1,925), had been in the military for less than 5 years (71%; 1,366/1,925), were active duty (96%; 1,841/1,925), and had been deployed for 9.4 months. Sixteen percent (305/1,925) of soldiers met screening criterion (Hoge et al.) for PTSD and 7% (133/1,925) for depression, which were similar to published reports collected in theatre (Mental Health Advisory Team). Personal demographic variables such as ethnicity, occupational specialty, location, and battalion were eliminated, per Army command regulations for collecting data in theater in order to better protect the anonymity of respondents.

An institutional board of review at the Walter Reed Army Institute of Research approved the procedure, consent question, survey, and research protocol. Procedures and consent for this data collection are similar to those used by Hoge et al. (2004).

Measures

Combat Experiences

Soldier combat experiences were assessed using 28 items based on previous scales evaluating the effects of combat in Iraq (Cabrera, Hoge, Bliese, Castro, & Messer, 2007; Hoge et al., 2004; Killgore, Stetz, Castro, & Hoge, 2006). For example, soldiers were asked to answer questions such as whether they experienced any of the following: "being attacked or ambushed," "engaging in hand to hand combat," and "seeing a unit member blown up or burned alive" during this deployment. The level of exposure was assessed on a 5-point equal distribution

TABLE 1
Demographic Variables ($N = 1925$)

	n (% of sample)
Age	
18–19	83 (4%)
20–24	998 (52%)
25–29	455 (24%)
30–39	326 (17%)
40–Older	62 (3%)
Gender	
Male	1760 (92%)
Female	162 (8%)
Education	
Some High School	4 (< 1%)
High School Diploma	891 (47%)
Some College	792 (42%)
Associates Degree	117 (6%)
Bachelors Degree	83 (4%)
Masters Degree	5 (< 1%)
Rank	
Jr. Enlisted (E1-E4)	1235 (64%)
NCO's (E5-E9)	690 (36%)
Married	
Married	940 (50%)
Single	936 (50%)
Years in the Military	
Less than 5 years	1366 (71%)
Between 5 and 10 years	288 (15%)
More than 10 years	258 (14%)
Service Component	
Active Duty	1841 (96%)
Reserve	40 (2%)
National Guard	38 (2%)
Months Deployed	
0–5	250 (14%)
6–10	587 (33%)
11–15	954 (53%)
Screened Positive	
PTSD	305 (16%)
Depression	133 (7%)

scale of 1 (*never*) and 5 (*ten or more times*). Items were then dichotomized into no or yes exposure groups of 1 (*no*) and 2–5 (*yes*) and summed into the Combat Experience Scale for analytical purposes. The Kuder-Richardson 20 was used to test for internal validity (Raju, 1982) and yielded an alpha of .92.

Depression

Depression was assessed with the 9-item version of the Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke, & Williams, 1999). For example, soldiers were asked to answer questions such as how much they were bothered by "feeling down, depressed, or hopeless," "feeling tired or having little energy," and "moving or speaking so slowly that other people could have noticed" in the last 4 weeks. The Cronbach's alpha for the present study was .90. Participants responded to items experienced in the last 4 weeks and was measured using a 4-point scale ranging from 1 (*not at all*) to 4 (*nearly every day*). Individual responses were summed into a scale for depression.

PTSD

PTSD symptoms were assessed with the PTSD Checklist (PCL; Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Kang, Natelson, Mahan, Lee, & Murphy, 2003). For example, soldiers were asked to answer questions such as how much they were bothered by "repeated, disturbing dreams of the stressful experience," "trouble falling or staying asleep," and "loss of interest in activities that you used to enjoy" in the past month. The PTSD Scale featured all 17 items of the PCL and evidenced a Cronbach's alpha of .95. Participants reported symptoms in the last month using a 5-point Likert scale: 1 (*not at all*) to 5 (*extremely*). Individual responses were summed into a scale of PTSD.

Benefit Finding

The benefit items used in the present study began with modified versions of items used by Britt, Adler, and Bartone (2001) for peacekeeping operations, with additional items added to address benefits in a combat environment. Six items assessed a variety of positive domains, including changes in self perception (e.g., "I deal with stress better because of this deployment," "This deployment has made me more confident in my abilities"), changes in interpersonal relationships (e.g., "This deployment improved cohesion in my unit"), having gained a sense of accomplishment (e.g., "I feel pride from my accomplishments during this deployment," "I was able to demonstrate my courage"), and having an influence on future life directions (e.g., "Overall, this deployment has had a positive effect on my life").

Participants were asked to "indicate how much you disagree or agree with the following statements," and responded on a 5-point Likert scale: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither agree nor disagree*), 4 (*agree*). and 5 (*strongly agree*). The Cronbach's alpha for the scale was .82.

Statistical Procedures and Analysis

Demographic covariates were examined for bivariate association with one or more of the independent or dependent variables using Spearman correlation and analysis of variance (ANOVA). Bivariate scatterplots were used to test the linearity assumption. Significant bivariate associations were used as a step in the selection process for demographic covariates. Bivariate correlations between predictor, moderator, and outcome variables were examined using Spearman's correlation and partial correlations, after controlling for demographic covariates. The demographic variables of rank, gender, marital status, and months deployed were included as covariates in the moderation analysis, because results of a meta-analysis have shown inconsistencies in demographic relationships between demographics and BF (Linley & Joseph, 2004).

Prior to regression analysis, all continuous variables were mean centered, as outlined by Cohen, Cohen, West, and Aiken, (2003). The demographic variables of rank, gender, and marital status and the outcome variables were excluded from the mean centering procedure. Moderated multiple regression models were constructed and used per the guidelines of Baron and Kenny (1986). Models included a predictor variable (combat experiences), moderator (BF), and the two-way interaction term (Combat × BF) on the predicted variables (PTSD or depression). Because a series of independent and dependent variables was used we employed procedures described by Cohen and Cohen (1983) to control for Type I error in the hierarchical linear regression analysis. More specifically, we required that the F test for each step of the hierarchical model be statistically significant (i.e., a significant increase in R^2) prior to examination of individual t tests.

Two multiple moderated regression models were used to examine the moderating effects of BF on the relationships between combat associated mental health outcomes (PTSD symptoms, depression symptoms). Each moderation model consisted of a series of three hierarchical linear regression equations used, so that demographic controls were entered first, followed by the predictors in step 2, and the two-way interaction term in step 3. Significant interactions were plotted using one standard deviation (*SD*) above and below the mean as sample discrimination values. Subsequently, significant slope differences were tested by post hoc analysis, as outlined by Holmbeck (2002) and Dawson and Richter (2006).

RESULTS

Bivariate correlations and ANOVAs revealed that all demographic covariates showed a significant relationship with one or more of the predictor or outcome variables. Education ($R = .513$, $p < .01$) and age ($R = .261$, $p < .01$) showed a

strong correlation with rank. Thus, where rank is used as a covariate along with education and age, we excluded education and age from further analysis.

Demographic Covariates

An ANOVA revealed that the increase in rank from junior enlisted to NCO was associated with a decrease in depression symptoms, $F(1, 1837) = 4.29$, $p < .05$. Junior enlisted soldiers reported higher depression symptoms ($M = 16.07$, $SD = 6.31$), than NCOs ($M = 15.44$, $SD = 6.62$). There were no significant relationships between rank and combat experiences, BF, or PTSD symptoms. We also obtained effects of gender on combat experiences, $F(1, 1913) = 77.76$, $p < .01$, and depression symptoms, $F(1, 1835) = 4.29$, $p < .05$. Males ($M = 10.22$, $SD = 6.80$) reported more combat experiences than females ($M = 5.40$, $SD = 4.58$), even though females ($M = 17.51$, $SD = 6.34$) reported more depression symptoms than males ($M = 15.70$, $SD = 6.27$). There were no significant effects of gender on BF or PTSD symptoms. Marital status was predictive of PTSD symptoms, $F(1, 1873) = 29.80$, $p < .01$, and depression symptoms, $F(1, 1803) = 18.53$, $p < .01$. Married individuals reported higher PTSD symptoms ($M = 35.20$, $SD = 16.31$) and depression symptoms ($M = 16.47$, $SD = 6.72$) than their nonmarried associates ($M = 31.34$, $SD = 14.30$; $M = 15.20$, $SD = 5.77$). In contrast, nonmarried individuals reported higher BF ($M = 17.80$, $SD = 5.31$) during the deployment than married individuals ($M = 17.12$, $SD = 5.26$). Marital status failed to show a relationship with combat experiences. Finally, deployment length was positively associated with combat exposure, $F(15, 1784) = 12.201$, $p < .01$, PTSD symptoms, $F(15, 1784) = 4.289$, $p < .01$, and depression symptoms, $F(15, 1714) = 2.980$, $p < .01$, but negatively associated with BF, $F(15, 1784) = 1.974$, $p < .05$. Spearman's correlations revealed that months deployed was positively correlated with depression (Spearman's $r = .07$, $p = .01$) and PTSD (Spearman's $r = .109$, $p = .01$) symptoms, although these correlations were small in magnitude.

Bivariate Associations

Table 2 illustrates bivariate Spearman's correlations and partial correlations (which controlled for rank, gender, marital status, and deployment length) of predictor, moderator, and outcome variables used in the regression model. Spearman's and partial correlations revealed a relatively consistent increase in correlation value when demographic variables (rank, gender, marriage, deployment length) were controlled, indicating that demographic variables contribute little

TABLE 2
Sample Means, Standard Deviations, Spearman Correlation Coefficients (below diagonal) and Patrial Correlations (above diagonal)

	M	*(SD)*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Rank	1.36	0.48	–	–	–	–	–	–	–	–
Gender	1.09	0.28	0.020	–	–	–	–	–	–	–
Marital Status	0.50	0.50	0.283**	−0.054*	–	–	–	–	–	–
Months Deployed	9.36	3.30	0.015	–	0.002	–	–	–	–	–
Combat Experiences	9.83	6.78	0.094**	0.036	0.055*	0.158**	–	0.082**	0.367**	0.199**
Benefit Finding	17.46	5.28	−0.021	−0.025	–	0.077**	0.012	–	0.282**	0.360**
PTSD Symptoms	33.3	15.5	−0.001	0.028	0.116**	0.374**	0.109**	−0.259**	–	0.766**
Depression Symptoms	14.6	5.97	−0.053*	0.087**	0.085**	0.192**	0.071**	−0.344**	0.775**	–

**$p < .01$. *$p < .05$.

variance to our model and may be operating as suppressor variables. Combat experiences positively correlated with BF, PTSD, and depression symptoms, although these correlations were relatively small in magnitude. Benefit finding was moderately negatively correlated with PTSD and depression symptoms. Lastly, PTSD showed a highly positive correlation with depression symptoms.

Multivariate Associations

Two hierarchical regression models were used to analyze the effects of the moderating variable (BF) on the relationship between combat exposure and mental health symptoms (PTSD and depression symptoms) relationships. Results for these models are presented in Table 3. Potential demographic confounds were entered in step 1 of both regression models. Demographic variables significantly predicted PTSD symptoms, $\Delta R^2 = .034$, F change $(4, 1743) = 15.15$, $p < .01$, and depression symptoms, $\Delta R = .032$, F change $(4, 1680) = 14.86$, $p < .01$.

Combat experiences were entered in step 2 and were significantly associated with PTSD symptoms, $\Delta R^2 = .130$, F change $(1, 1738) = 270.50$, $p < .01$, and depression symptoms, $\Delta R^2 = .038$, F change $(1, 1675) = 69.14$, $p < .01$. Step 3 included the moderator, BF, in the hierarchal model. Benefit finding was significantly negatively associated with PTSD symptoms, $\Delta R^2 = .093$, F change $(1, 1737) = 218.40$, $p < .01$, and depression symptoms $\Delta R^2 = .140$, F change $(1, 1674) = 297.40$, $p < .01$. These results indicate that a decrease in BF was related to an increase in both PTSD ($p < .01$) and depression symptoms ($p < .01$).

Interaction effects are featured in step 4 of Table 3. Step 4 includes one two-way interaction: BF × Combat. The BF × Combat interaction significantly predicted PTSD symptoms, $\Delta R^2 = .004$, F change $(1, 1736) = 8.32$, $p < .01$, but failed to predict depression symptoms, $\Delta R^2 = .000$, F change $(1, 1673) = 1.05$, $p > .05$. The complete model, including demographic controls, main effects for combat, deployment length, and BF, and the interaction terms explained 26% of the variance in PTSD symptoms, $F(7, 1743) = 68.28$, $p < .01$, and 21% of the variance in depression symptoms $F(7, 1678) = 52.88$, $p < .01$.

The plot of regression lines from the significant two-way interaction of BF × Combat predicting PTSD is presented in Figure 1. The plot illustrates that high BF is related to reduced PTSD symptoms when compared to low BF. Moreover, high BF reduces the impact of high combat on PTSD symptoms when compared to low BF. Simple slopes tests revealed that level of combat exposure was positively associated with elevated PTSD symptoms for soldiers reporting both low BF, $t(1,736) = 7.47$, $p < .01$, and high BF, $t(1,736) = 8.98$, $p < .01$. Simple slopes tests also revealed that BF was negatively associated with PTSD symptoms for soldiers reporting low combat exposure, $t(1,736) = -2.89$, $p < .01$, and especially high combat exposure, $t(1,736) = -24.67$, $p < .01$.

TABLE 3
Hierarchical Moderated Multiple Regression Predicting PTSD Symptoms
Among Soldiers Deployed to Iraq (N = 1925)

	PTSD Symptoms				*Depression Symptoms*			
	B	β	R^2	ΔR^2	*B*	β	R^2	ΔR^2
Step 1. Demographics			.034**	.034**			.032**	.034**
Rank	−1.34	−.041			−1.18	−.096**		
Gender	1.81	.033			1.95	.092**		
Married	4.09	1.33**			1.44	.122**		
Deployment Length in Months	.579	.124**			.17	.098**		
Step 2. Predictor			.164**	.130**			.070**	.038**
Combat Experiences	.864	.378**			.181	.205**		
Step 3. Moderator			.257**	.093**			.210**	.140**
Benefit Finding	−5.34	−.307**			−2.52	−.376**		
Step 4.Two way interaction variables			.261**	.004**			.210**	.000
BF X Combat	−.025	−.224**			−.004	−.083		

**$p < .01$. *$p < .05$.

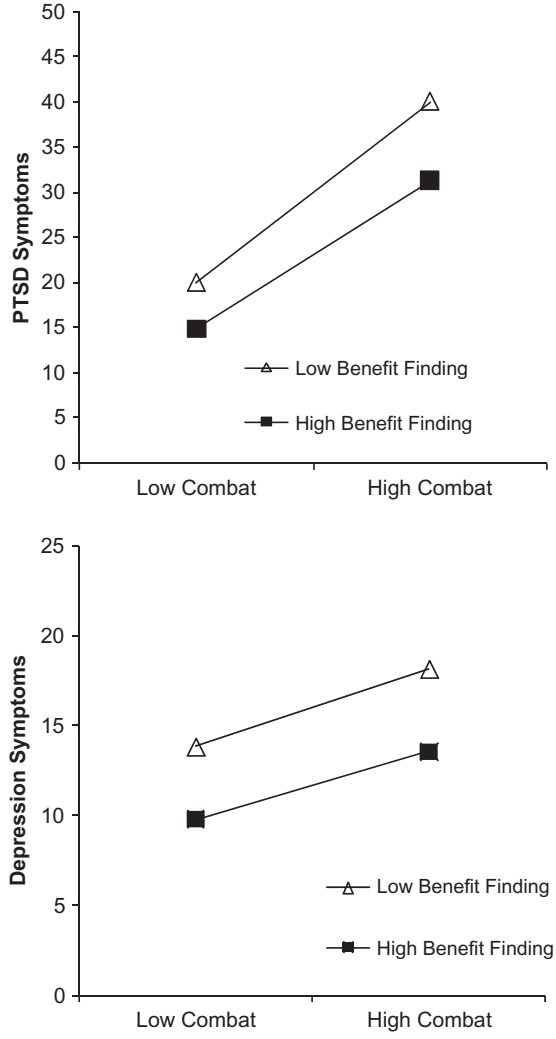

FIGURE 1 Interaction of benefit finding (±1 *SD*) by combat level on PTSD symptoms (±1 *SD*) and main effects of benefit finding (±1 *SD*) by combat level on depression symptoms (±1 *SD*) controlling for variables found in steps 1, 2, and 3 of the hierarchical regression models.

DISCUSSION

Finding benefits in stressful situations has long been considered a cognitive process for managing and reducing the impact of stressful events (Siegel &

Schrimshaw, 2007; Tedeschi & Calhoun, 1996). However, no studies have examined the utility of BF as a moderator of the stressor–outcome relationship during the experience of a stressor as great in magnitude as combat exposure. This study is the first to reveal BF as a moderator of the combat exposure–PTSD relationship during a combat deployment. Thus, the rate at which PTSD symptoms increase due to combat exposure is reduced for high BF when compared to low BF. Main effects revealed that high BF was associated with lower PTSD and depression symptoms, even after controlling for deployment length. These findings support studies that have shown that BF is associated with lower mental health outcomes in soldiers adjusting to war exposure ~20–40 years following their deployment (Aldwin et al., 1994; Elder & Clipp, 1989; Schnurr, Rosenberg, & Friedman, 1993).

These findings are consistent with Park and Folkman's (1997) concept of meaning-based coping, which is a coping mechanism used to create harmony—or reduce conflict—between one's global meaning (beliefs and goals) and the appraisals made of a stressful event. Within the present context, combat exposure (i.e., seeing dead bodies or human remains, being wounded or injured) may threaten one's belief in a just world (e.g., belief that goodness and badness are distributed fairly). To alleviate the stress the conflict must be resolved. Finding benefits from the stressful situation allows individuals to identify purpose in their suffering and therefore meaning for the event. Benefit finding, such as feeling pride in accomplishments and being more confident in one's abilities, may help one resolve the conflict created between the combat event and one's global meaning by finding meaning in their suffering.

The selective buffering effect of BF on PTSD symptoms as opposed to depression symptoms is in need of explanation. The ineffective buffering effect of BF for depressive symptoms may be a function of the stronger relationship between combat exposure and PTSD in comparison to combat exposure and depression. For example, the effect size of the relationship between combat and PTSD was of greater magnitude than that of combat and depression (see Table 3). Combat exposure has also been found to be more highly predictive of PTSD than depression symptoms in prior research (Hoge et al., 2004; Seal et al., 2007).

Zoellner and Maercker (2006) also reported that depression typically shows a strong negative association with BF and is usually accompanied by negative thinking, which makes positive outcomes less likely. Janoff-Bulman and Frantz (1997) explained that depression-like thinking may emerge in the initial trauma recovery phase, which is characterized by meaninglessness. Thus, the buffering capacity of BF for depressive symptoms may be delayed until sufficient meaning is found to enhance the perception of control (Taylor, 1983) or offset resource loss (Hobfoll, 2002). This may explain why BF moderated the relationship between combat exposure and PTSD but not combat exposure and depression, given that soldiers were still in the process of being exposed to stressors when benefit finding was assessed.

In addition to discussing the main findings of benefit finding as a moderator of the combat exposure–PTSD relationship, it is also worth addressing an unexpected finding, that married soldiers reported greater levels of PTSD and depression symptoms than unmarried soldiers. Under circumstances in which marital partners are not separated for long periods of time, the relationship functions as a source of social support, even a coping resource (Sherbourne & Hays, 1990). Interestingly, being in a marital relationship may contribute to the level of stress experienced during one's deployment. This may be due to the long separation period.

We now turn to a discussion of possible extensions and applications of our findings. The results of this study may apply to a broader audience that includes international military partners. In prior meta-analyses, combat exposure has been viewed, as other traumatic stressors, as sufficient to sponsor BF (Helgeson et al., 2006). However, researchers have discussed the difficulty in replicating BF as a buffer against stressors and indicate that the presence of buffering effects may depend on the type and severity of the stressor (Siegel & Schrimshaw, 2007). Thus, we have confidence that these results may apply to multinational military populations. For example, Solomon and Dekel (2007) have explored BF as an outcome of combat exposure in Israeli troops but have not yet studied BF as a moderator during war stress.

Further application of these findings may also result in recommendations regarding the type of training that should be employed to enable a more resilient fighting force. Although no military programs directly teach BF, the positive association between BF and other positive mental constructs (i.e., optimism, active coping, cognitive processing, acceptance, and positive reinterpretation coping; Lechner et al., 2003) indicate that training that enhances positive outcomes, such as the Army's Battlemind training (Adler, Bliese, McGurk, Hoge, & Castro, 2009), may also strengthen one's ability to manage combat stress. Thus, we recommend that military mental health training programs should focus on the application of training that enhances positive outcomes.

In all research, limitations arise and must be acknowledged. One limitation exists within our cross-sectional design. Without longitudinal data it is impossible to determine any causal relationships between the variables in the present study. Thus, we cannot argue that BF causes combat exposure to have less of an impact on PTSD. Second, all measures in the present study were collected via self-report. Therefore, we are only addressing the perception of benefits and not objective benefits accrued by the individual. Last, the BF scale used in the present study only included six items, although these items showed high internal consistency and are face valid for our population. Future research should replicate and extend these findings using more established measure of BF, such as the Post Traumatic Growth Inventory (Tedischi & Calhoun, 1996). Additionally, the effect size of the BF $\times$ Combat Exposure interaction was small ($\Delta R^2 = .004$) and indicates that

future research should explore other variables that may influence the buffering capacity of BF.

In summary, these data reveal that BF is associated with lower levels of perceived mental health problems (PTSD and depression). Additionally, these data are the first to reveal that BF reduces the impact of combat exposure and subsequent PTSD symptoms. However, the buffering effect of BF failed to reduce combat on depression due to a weak stressor (combat) outcome (depression) relationship. The results suggest that BF is a successful tool in managing and coping with the challenges of war.

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