American Journal of Psychology and Cognitive Science
Vol. 4, No. 1, 2018, pp. 1-7
http://www.aiscience.org/journal/ajpcs
ISSN: 2381-7453 (Print); ISSN: 2381-747X (Online)

Deployment-Related Differences in Posttraumatic Stress Disorder Symptoms and Benefit Finding in the Army National Guard

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Abstract

Research has shown that military members experience PTSD at higher rates than their civilian counterparts, but evidence is also accumulating that military personnel deal with adverse events, including deployment, and experience positive outcomes such as benefit finding and posttraumatic growth. The goal of the current paper was to explore the differences in posttraumatic stress disorder symptoms, benefit finding, and quality of life by deployment history in a sample of Army National Guard service members. We found that those who had experienced a combat deployment reported higher numbers of stress reactions, including PTSD symptoms, and more issues related to quality of life. Soldiers who had experienced a combat deployment were also more likely to report benefit finding from their military experience. We also examined the impact of both benefit finding and PTSD symptoms on overall quality of life simultaneously and found that both constructs act on quality of life in opposing directions.

Keywords

Benefit Finding, Military, Posttraumatic Stress Disorder, Deployment, Stress, Quality of Life, Army National Guard

Received: March 28, 2018 / Accepted: April 10, 2018 / Published online: June 6, 2018

1. Introduction

Throughout the conflicts in Iraq and Afghanistan, members of the United States National Guard and other Reserve Component forces have worked alongside active duty service members, played a central role in the war effort, and at times comprised a significant portion of the fighting force. At the end of 2007, nearly 28% of total U.S. forces in Iraq and Afghanistan consisted of mobilized personnel of the National Guard and other Reserve components with more than 250,000 having been deployed to Iraq and Afghanistan between 2001 and 2007 [1].

1.1. Stress in the Reserve Component

Despite the large involvement of National Guard and other Reserve forces in Iraq and Afghanistan, relatively little research has examined the stressors of these Reserve Component service members, especially those in the National Guard, and their responses to those stressors. A number of studies, however, have examined mental health problems such as posttraumatic stress disorder (PTSD) and depression [2–4] that are often associated with high stress levels. Thomas et al. [5] found that rates of PTSD and depression remained relatively stable among active duty soldiers 3- to 12-months after deployment to Iraq, but increased among National Guard soldiers, suggesting that Guard members may be at increased risk of problems over time.

In general, military stress can have multiple sources, including operational tempo, pre-deployment preparations, deployment experiences, and post-deployment reintegration. The stress experienced by National Guard personnel is thought to be greater than their active duty counterparts, and

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this may be due to several factors, one of which is the change in mission expected by those who signed up for Guard duty. Traditionally, most National Guard personnel served "one weekend a month, two weeks a year," although personnel in highly operational or high-demand units serve far more frequently. A significant number also serve in a full-time capacity in roles such as Active Guard and Reserve (AGR) or Air Reserve Technician or Army Reserve Technician (ART). Since the start of the wars in Iraq and Afghanistan, the "one weekend a month, two weeks a year" slogan has lost most of its relevance.

Another reason National Guard forces are subject to experiencing additional stress is that they are often assigned to duties that may be very different from those for which they were trained. Such assignments could include convoys, guarding prisoners, or mortuary duties. In addition, units or individuals can be assigned to work alongside troops from different branches of the Service with very different cultures, where the same level of camaraderie they have come to expect from their peers is often lacking. National Guard forces may also face added stress due to the expectation of suddenly reintegrating into society following their combat deployment. Whereas active duty military members return to their regular assignments, working with those with whom they were deployed, National Guard members most typically disband within days of returning from combat and may not have any daily contact with those with whom they served or any other combat veterans. Thus, they may lack the social support buffer of their active duty peers.

1.2. Mental Health in the Military

Extant research has shown that military members experience PTSD at higher rates than their civilian counterparts [6]. The lifetime prevalence of PTSD among adult Americans has been estimated at 6.8% [7], with past year prevalence being estimated at 3.5% [8]. In contrast, the prevalence rates of PTSD among those serving in Operation Enduring Freedom and Operation Iraqi Freedom have additionally been reported at 13.8% [9]. Rates of PTSD have also been found to be higher after return from a deployment to Iraq or Afghanistan than prior to deployment, suggesting that deployment is a risk factor for the development of PTSD among military service members [10]. Rates of PTSD also seem to increase from immediately following deployment to six months post-deployment, and this is particularly true for National Guard and Reserve Component service members [11].

Concurrent with findings of mental health problems associated with combat deployments, evidence is also accumulating that many military personnel are able to deal with extraordinarily adverse events, including deployment, and experience positive outcomes such as benefit finding and posttraumatic growth [12]. Increased appreciation in life following service, for example, has been reported by more than 85% of post-9/11 Veterans in a population-based sample, and that increased appreciation in life has been related to happiness and well-being [13]. It is important to note that stress reactions and growth outcomes are not mutually exclusive; in fact, they can, and often do, coexist [14, 15]. A recent study also showed that a stressful experience, such as deployment, may act as the impetus for both distress and growth, but that they may operate simultaneously in opposing directions to affect overall satisfaction with life [14]. These results suggest that while PTSD symptoms are predictive of lower overall well-being, the experience of posttraumatic growth is predictive of higher well-being, making the intentional facilitation of growth outcomes a possible point of intervention in the improvement of quality of life in military service members [16].

The current scientific literature about distress and posttraumatic growth is limited in a number of important ways. First, as Schok and colleagues [12] noted, many studies have failed to use standardized measures to assess growth outcomes. Secondly, most studies have failed to measure both growth and distress outcomes concurrently. Third, there is a need not only to measure both growth and distress outcomes, but also to examine their relation to more distal outcomes. Fourth and finally, no study has examined the effects of deployment on benefit finding and stress among the National Guard.

The overarching goal of the current paper was to explore the differences in current stressors, stress reactions, posttraumatic stress disorder symptoms, benefit finding, and quality of life by deployment history in a sample of Army National Guard service members. In support of this goal, our specific aims were (1) to estimate rates of posttraumatic stress disorder symptoms, benefit finding, current stressors, stress reactions, and quality of life in an Army National Guard sample; (2) examine relationships among these distress and growth constructs; (3) assess possible differences across these constructs by deployment history; and (4) examine the effects of growth and stress outcomes on quality of life. Figure 1 presents a conceptual view of the proposed relationships.

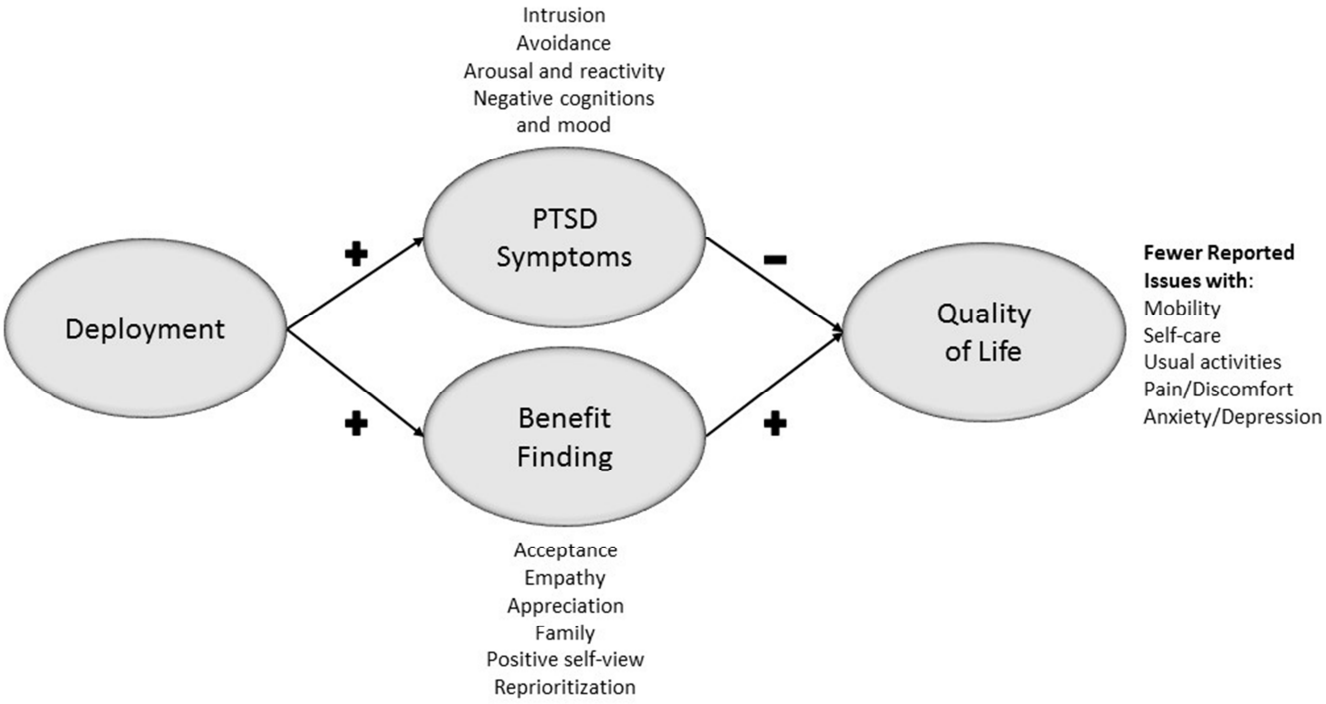

Figure 1. Conceptual model of the relationships among deployment, PTSD symptoms, benefit finding, and quality of life.

2. Methods

2.1. Participants

Participants (N = 320) consisted of a convenience sample of National Guard members in military units throughout two southern states who volunteered to take part in the study. They were enrolled over a 20-month period from December 2014 to August 2016 as part of a larger clinical trial. They were invited to enroll in the study during an onsite in-person introduction which consisted of reviewing information provided on a study brochure. From December 2014 through August 2016, the study introduction was conducted at unit formations, soldier readiness processing (SRP) and Yellow Ribbon events, the annual chaplain training conference, meetings with medical and behavioral health providers, and family support groups. Subjects were eligible to take part in the study if they were current National Guard members, reported at least two stress reactions, and did not meet criteria for alcohol dependence. Data for the current analyses were restricted to responses from baseline survey questionnaires.

2.2. Measures

2.2.1. Demographics

Standard demographic and background data were obtained. Information included age, gender, race/ethnicity, education, marital status, rank, and state of service. Gender was defined as male or female. Following the current U.S. Bureau of the Census classification, personnel were divided into four racial/ethnic groups: white, non-Hispanic; African American, non-Hispanic; Hispanic; and "other" (including all other persons not classified elsewhere, such as Native Americans or Asians). Education was defined as the highest level of educational attainment. Categories were high school or less, some college, and college degree or beyond. Personnel with General Equivalency Diplomas (GEDs) were classified as high school graduates. Age of respondents was defined as current age at the time of the survey. For descriptive statistics, estimates are presented for the age groups 20 or younger, 21 to 25, 26 to 34, and 35 or older. Military paygrades for enlisted personnel were grouped as E1 to E3, E4 to E6, and E7 to E9. Pay grades for commission officers and warrant officers were combined as W1-W5/O1-O6. Marital status was divided into two groups: Married or Living as Married and Not Married (including personnel who were single, widowed, or divorced). State was defined as the state in which the service member was currently serving.

2.2.2. Deployment History

Deployment history (frequency, location, and duration) was assessed using a subset of items designed by the Land Combat Study Team at the Walter Reed Army Institute of Research [10]. These items characterize length and recency of deployment, deployment location, and number of deployments in the past 3 years. Deployment history was categorized as Not Previously Deployed, Noncombat Deployed (with no prior combat deployments) and Combat Deployed (including prior combat deployments).

2.2.3. Number of Reported Stressors

Number of reported stressors and sources of stress were assessed using the U.S. Naval Unit Behavioral Health Needs Assessment Survey (NUBHNAS [17] adaptation of the Department of Defense Survey of Health Related Behaviors [18] items. This scale includes 24 items assessing potential work and family stress sources (e.g., having a permanent change of station [PCS] and conflicts between military and family responsibilities), each measured on a 4-point scale of none at all (0), a little (1), some (2), and a lot (3). Scores range from 0 to 72. In the current sample, internal consistency for this scale was good (Cronbach's $\alpha = 0.85$).

2.2.4. Stress Reactions

A list of 20 common Stress Reactions were measured in the domains of thoughts, behaviors, emotions, and physical reactions. Example stress reactions included problems concentrating, restlessness or fidgeting, and having problems making decisions or processing information. Service members reported how much they experienced a reaction to each stressor over the past 30 days, on a scale of none (0), a little (1), some (2), and a lot (3). Scores range from 0 to 60. Stress reaction scores showed excellent internal reliability in this sample (Cronbach's $\alpha = 0.94$).

2.2.5. Posttraumatic Stress Disorder Symptoms

Post-traumatic stress disorder symptoms (PTSD) were measured using the PTSD Checklist–Military version (PCL-M [19]). The PCL-M is a 17-item questionnaire that asks about problems and complaints related to a stressful military experience. Respondents rated items on a 1–5 Likert scale which were then summed for a total score of 17–85. Persons scoring ≥ 44 were classified as screening positive for PTSD. In this sample, PCL scores showed excellent internal reliability (Cronbach's $\alpha = 0.95$).

2.2.6. Benefit Finding

The Benefit Finding Scale [20] contains 17 items that express some potential benefit that might be derived from a specific experience. For the present study, the scale was made specific by referring to "your military experiences," example items include "Let me be more accepting of things" and "Contributed to my overall emotional and spiritual growth." Responses were rated on a 5-point scale ranging from 0 (totally disagree) to 4 (totally agree). The items assessed benefits in a variety of domains, including acceptance of life's imperfections, becoming more cognizant of the role of other people in one's life, and developing a sense of purpose in life. Internal reliability of benefit finding scale scores in this sample was excellent ($\alpha = .96$).

2.2.7. Quality of Life

Quality of life was measured using the EQ-5D-3L Health-Related Quality of Life Scale [21]. This scale measures five domains (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression) by respondents classifying themselves as (a) having no problems (0), (b) having some or moderate problems (1), or (c) being unable to do/having extreme problems (3). The scale ranges from 0 to 10, with higher numbers indicating a greater number of problems. For analyses, this scale was recoded such that higher numbers indicate greater quality of life. As this scale is an index measure a quality of life issues, internal consistency was not calculated.

2.3. Statistical Analyses

All data were analyzed using SAS 9.4 software (SAS Institute Inc., Cary, NC, USA). In support of Aim 1, descriptive statistics were run to describe the sample and estimate average levels of posttraumatic stress disorder symptoms, benefit finding, current stressors and stress reactions, and quality of life. To support Aim 2, bivariate correlations were analyzed to assess collinearity and identify significant associations. In support of Aim 3, analyses of variance were then conducted to examine differences in key variables by deployment status (combat deployed versus never deployed). Finally, in order to support Aim 4 and examine the role of different constructs on quality of life, we ran a multiple regression among only those with combat deployments, in which posttraumatic stress disorder symptoms and benefit finding were regressed on quality of life.

3. Results

3.1. Descriptive Analyses

Table 1 presents the sociodemographic characteristics of the sample. As shown, a total of 320 National Guard members from two southern states were included (62.1% Georgia; 37.9% North Carolina). The majority of the sample was White, male, and had completed at least some college. The average participant age was 32.10 years ($SD = 8.65$) (not shown in table) and most were E4-E6. Almost two-thirds of Guardsmen were married or living as married and one-third had not previously deployed.

Table 1. Sociodemographic characteristics of the sample.

Sociodemographic Characteristics	Sample (*n*)	Percent (%)
Gender		
Female	96	30.0
Male	224	70.0
Race/Ethnicity		
White	199	64.0

Sociodemographic Characteristics	Sample (*n*)	Percent (%)
Black	72	23.2
Hispanic	23	7.4
Other	17	5.5
Education		
High school or less	38	11.9
Some college	156	48.8
College graduate or higher	124	38.8
Age		
18-20	19	5.9
21-25	63	19.7
26-34	123	38.4
35-60	114	35.6
Paygrade		
E1-E3	29	9.1
E4-E6	189	59.4
E7-E9	48	15.1
W1-W5/O1-O6	52	16.3
Marital Status		
Married or living as married	202	63.4
Single/Divorced/Widowed	117	36.6
Deployment		
Not previously deployed	105	32.9
Noncombat deployed	28	8.8
Combat deployed	187	58.4
State		
Georgia	198	62.1
North Carolina	121	37.9

3.2. Bivariate Analyses

Bivariate correlations revealed that current stressors, stress reactions, and posttraumatic stress disorder symptoms were all highly correlated (all *r*'s > 0.60). Additionally, benefit finding was negatively related to current stressors, stress reactions, and posttraumatic stress disorder symptoms. All three stress measures (current stressors, stress reactions, and posttraumatic stress disorder symptoms) were related to lower ratings of quality of life, but higher levels of benefit finding were associated with higher quality of life (see Table 2).

Table 2. Bivariate correlations among mental health variables.

	Current Stressors	Stress Reactions	Benefit Finding	Quality of Life
PTSD Symptoms	0.66***	0.75***	-0.15**	-0.59***
Current Stressors		0.64***	-0.17**	-0.41***
Stress Reactions			-0.20**	-0.59***
Benefit Finding				0.18**

Note. PTSD = posttraumatic stress disorder.
*** p <.001
**p <.01
*p <.05

3.3. Multivariate Analyses

Results of analyses of variance showed that participants who reported a combat deployment also reported significantly more current stressors, stress reactions, and posttraumatic stress disorder symptoms than those who had never deployed, as well as a lower quality of life. However, those who had experienced a combat deployment also reported significantly more benefit finding than those who had never deployed (Table 3). Results of our multiple regression among combat Veterans significantly predicted quality of life issues (R^2 = 0.74, F [2] = 229.80, p <.001), with posttraumatic stress disorder symptoms predicting lower quality of life (β = 0.06, t = 14.23, p <.001) and benefit finding predicting higher quality of life (β = -0.01, t = -3.00, p =.003).

Table 3. Mean scores (and standard errors) on mental health measures by deployment status.

Mental Health	Full Sample (n = 320)		Not Deployed (n = 105)		Combat Deployed (n = 187)	
Posttraumatic Stress Symptoms***	28.8	(0.71)	24.8	(1.20)	31.5	(0.90)
Current Stressors*	12.5	(0.50)	10.9	(0.86)	13.5	(0.64)
Stress Reactions**	15.4	(0.68)	12.6	(1.17)	16.7	(0.88)
Benefit Finding**	42.5	(0.83)	38.7	(1.49)	44.2	(1.06)
Quality of Life***	1.2	(0.07)	0.6	(0.12)	1.6	(0.09)

*** p <.001
** p <.01
*p <.05.
For Quality of Life, higher numbers indicate lower quality of life.

4. Discussion

4.1. Summary of Findings

In a sample of National Guard Soldiers, we found that those who had experienced a combat deployment reported higher levels of stress and more stress reactions, including PTSD symptoms, and more issues related to quality of life, such as problems with self-care, pain, and discomfort. At the same time, however, Soldiers who had experienced a combat

deployment were also more likely to report benefit finding from their military experience, endorsing increased acceptance, empathy, appreciation, positive self-view, and reprioritization. We also examined the impact of both benefit finding and PTSD symptoms on overall quality of life simultaneously and found that both constructs act on quality of life in opposing directions.

4.2. Implications

These findings offer insight into the co-occurrence of both stress and growth outcomes following adversity such as a combat deployment. Since both are taken into account when predicting overall wellbeing, bolstering a protective factor may be a viable complementary and alternative option for treatment, in addition to reducing risk. The military is already utilizing a positive psychology framework for increasing resilience among its forces, but more targeted interventions at benefit finding, meaning making, or narrative reconstruction may foster growth that offsets some of the negative effects of stress symptomatology. It is worth stating again that the presence of benefit finding does not negate the experience of PTSD symptoms or stress reactions. It does, however, attenuate the effect of mental health symptoms on more distal outcomes, such as quality of life, as we found in this study.

4.3. Limitations and Future Directions

A few limitations of this study design should be noted. First, the cross-sectional nature of this study does not allow us to infer causation. Second, the use of a convenience sample may limit generalizability, and future research should replicate our findings among different samples. Third, we relied on self-report of the outcomes of interest, which may introduce self-report error or bias [22]. However, prior research findings support the use of self-reported mental health as both valid and reliable [23]. Additionally, we argue that the perception of constructs such as benefit finding and quality of life are valuable, regardless of their subjective nature.

5. Conclusion

These limitations notwithstanding, the present study advances our understanding of the relationship between a stressful event, stress reactions, and perceived positive changes, as well as the cumulative impact of all three on wellbeing. Specifically, we found support for the framing of a combat deployment as the impetus for both PTSD symptoms and benefit finding, and a simultaneous effect of both on quality of life. This study benefited from the use of standardized measures when assessing benefit finding, the concurrent measurement of both growth and distress outcomes, as well as the measurement of a distal outcome (i.e., quality of life). In addition, this study examined these constructs among National Guard Soldiers who had experienced high levels of stress related to deployment. These findings have implications for both research and practice. Specifically, researchers and clinicians should be aware of the possibility for growth and distress outcomes to co-occur and allow participants and patients to report on both. Additionally, future research should examine specific mechanisms that may facilitate growth outcomes intentionally in order to foster higher quality of life among those who have experienced trauma or adversity.

Acknowledgements

This work was supported by grant number W81XWH-11-2-0197 from the U.S. Army Medical Research and Materiel Command The sponsor had no role in study design; in the collection, analysis and interpretation of data; in the writing of the report; or in the decision to submit the article for publication. The views expressed in this article are those of the authors and do not necessarily represent the views of the Departments of Department of Defense, Veterans Affairs, or any US government agency.

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