

## Compensation and Treatment: Disability Benefits and Outcomes of U.S. Veterans Receiving Residential PTSD Treatment

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The U.S. Department of Veterans Affairs (VA) provides specialized intensive posttraumatic stress disorder (PTSD) programs to treat trauma-related symptoms in addition to providing service-connected disability to compensate veterans for injury sustained while serving in the military. Given the percentage of veterans who are receiving treatment for PTSD, in addition to seeking compensation for PTSD, a debate has emerged about the impact of compensation on symptom recovery. This study examined the associations among status of compensation, treatment expectations, military cohort, length of stay, and outcomes for 776 veterans who were enrolled in 5 VA residential PTSD programs between the years of 2005 and 2010. Mixed model longitudinal analyses, with age, gender, and baseline symptoms nested within treatment site in the model, found that treatment expectations were modestly predictive of treatment outcomes. Veterans seeking increased compensation reported marginally lower treatment expectations (d = .008), and did not experience poorer outcomes compared to veterans not seeking increased compensation with the effect of baseline symptoms partialled out. Veterans from the era of the Iraq and Afghanistan conflicts reported lower treatment expectations (d = .020) and slightly higher symptoms at intake (d = .021), but had outcomes at discharge equivalent to veterans from other eras with baseline symptoms partialled out. These findings help further inform the debate concerning disability benefits and symptom changes across time.

Posttraumatic stress disorder (PTSD) is the most commonly diagnosed psychiatric disorder in military veteran populations (Seal et al., 2009; U.S. Department of Veterans Affairs, 2011), with estimated lifetime prevalence rates of 30% for Vietnam veterans (Kulka et al., 1990), 12% for Gulf War veterans (Kang, Natelson, Mahan, Lee, & Murphy, 2003), and 14% for U.S. Iraq/Afghanistan-era veterans, which will likely grow as new cases are identified (Tanielian & Jaycox, 2008). To address this pervasive concern, the U.S. Department of Veterans Affairs (VA) sponsors over 200 PTSD-treatment centers within the VA's health care system (VHA), including specialized intensive

PTSD programs (SIPPS) that provide specialized PTSD care within a residential therapeutic community.

The VA also provides financial compensation to veterans who have sustained military-related injuries, or reaggravated preexisting injuries, resulting in disability. PTSD is the most common psychiatric disorder for which veterans seek and receive compensation (U.S. Department of Veterans Affairs, 2011). Veterans who are adjudicated as disabled as a result of the military-related injury are awarded compensation and subsequently identified as service-connected. Based on the extent of their injury, veterans are then provided a service-connected rating that ranges from 0% to 100%, with a higher percentage rating equaling a greater amount of compensation awarded. Service-awarded veterans with a rating disability below 100% may apply for an increase in disability rating and seek additional compensation. The number of veterans seeking and receiving PTSD-related compensation has jumped from just over 10,000 veterans in 1999 (U.S. Department of Veterans Affairs, 2000) to over 437,000 veterans receiving compensation for PTSD at the end of fiscal year 2010 (U.S. Department of Veterans Affairs, 2011).

A large proportion of veterans receiving treatment for PTSD are also seeking and receiving compensation for PTSD-related disabilities (Frueh et al., 2003). This is especially true within

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residential treatment centers for PTSD where around 95% of patients may be seeking and/or awarded compensation (Fontana & Rosenheck, 1998). There is a rich debate over the potential conflict between the provision of these two kinds of service and the concern that disability incentives based on symptom severity may hinder and potentially undermine treatment interventions designed to reduce symptoms and increase functioning (Frueh, Grubaugh, Elhai, & Buckley, 2007). Advocates of this argument suggest that disability compensation is associated with a number of factors that may impede recovery, including issues of secondary gain and financial incentives, assumptions of permanent disability, internal stigma, and even treatment discrimination by clinicians (Frueh, Elhai, & Kaloupek, 2004). Despite these arguments, only a few studies have directly evaluated whether seeking or receiving financial compensation for PTSD-related disability is associated with treatment processes and outcomes (Laffave, Rosen, Schnurr, & Friedman, 2007).

Studies evaluating the role of PTSD and status of compensation have typically focused on symptom exaggeration (DeViva & Bloem, 2003; Frueh, Gold, & Arellano, 1997; Smith & Frueh, 1996) and treatment utilization (Elhai, Reeves, & Frueh, 2004; Frueh et al., 2003; Grubaugh, Elhai, Monnier, & Frueh, 2004; Pary, Turns, Stephenson, Tobias, & Lippmann, 1992; Sayer, Clothier, Spoont, & Nelson, 2007). Surprisingly, the relationship of compensation status on treatment outcomes has received the least amount of attention, with only two relatively dated longitudinal studies evaluating whether status of compensation is associated with symptom outcomes for veterans receiving mental health treatment (DeViva & Bloem, 2003; Fontana & Rosenheck, 1998). Findings from these studies demonstrated mixed results, limiting the conclusions that can be drawn (Laffaye et al., 2007). Additionally, studies have yet to explore the potential pathways through which compensation status may influence treatment outcomes.

Fontana and Rosenheck (1998) compared veterans treated for PTSD within both inpatient and outpatient settings (N = 1,008) to determine whether treatment outcomes were related to self-reported compensation status. Inpatient veterans (n = 553) compensated and/or seeking compensation exhibited fewer treatment gains, as measured by ratings of clinicians and self-report scores, compared to those without or not seeking compensation. Because only 4% (n = 21) of inpatients were identified as not seeking or receiving compensation, a weighting procedure was used to compare the groups. Further analyses indicated that this relationship was significant only for those veterans in programs with longer lengths of stay (mean length of stay = 100 days). Outpatients demonstrated the reverse pattern where those compensated and/or seeking compensation demonstrated improved PTSD outcomes, though this relationship was statistically significant, but not clinically significant (Laffaye et al., 2007). Notably, the study separated participants into only two categories (noncompensated/nonseeking vs. compensated and/or seeking compensation), without further differentiating the latter participants (i.e., noncompensated and seeking compensation vs. compensated and seeking further compensation). In a separate study, DeViva and Bloem (2003) evaluated archival data drawn from records of veterans who were enrolled in an 8-week specialized PTSD residential program between the years of 1992 to 2001, and 141 patient files were categorized and labeled as service connected/compensationseeking, nonservice-connected/compensation-seeking, or noncompensation-seeking. Results indicated that inpatient treatment outcomes, as measured by depressive and PTSD symptom scores, were not significantly different based on status of compensation of participants. DeViva and Bloem (2003) noted that the majority of files screened were excluded due to unclear compensation status based on a single question in patient records.

Although these studies evaluated whether compensation status was associated with treatment outcomes, research has yet to explore how status of compensation may impact recovery. Treatment expectations may help clarify this question. Given that the benefits of disability status can be significant, concerns have arisen that disability compensation may provide a disincentive to improve in treatment (Drew et al., 2001; Mossman, 1996). Research indicating that disability compensation predicts lower treatment expectations may reflect this phenomenon (Goossens, Vlaeyen, Hidding, Kole-Snijders, & Evers, 2005). Treatment expectations, identified as a common factor associated with treatment outcomes (Greenberg, Constantino, & Bruce, 2006), may help explain a potential third variable involved between compensation-seeking status and poorer outcomes.

Previous studies exploring compensation status and treatment outcomes were conducted prior to the large influx of soldiers from the era of Iraq and Afghanistan conflicts. This newer cohort of soldiers may differ in important ways from previous military cohorts, with the former reporting higher employment levels, more social support, and fewer legal problems (Fontana & Rosenheck, 2008). Based on these differences, Fontana and Rosenheck (2008) suggest this younger cohort of soldiers may possess greater assets to help them realize a better recovery trajectory as compared to the previous cohorts of soldiers. Furthermore, given the increasing frequency of claims being filed and approved for disability compensation following the recent conflicts (U.S. Department of Veterans Affairs, 2011), it seems essential to evaluate the potential impact of compensation for this population.

Expanding upon previous research (DeViva & Bloem, 2003; Fontana & Rosenheck, 1998), the current study sought to help clarify whether status of compensation was associated with symptom changes for veterans engaging in SIPPS. In line with suggestions made by Laffaye and colleagues (2007), this study incorporated clearer distinctions for status of compensation, utilized a large and diverse sample, controlled for baseline symptoms severity and treatment program variation to evaluate treatment gains, and explored a potential third variable involved in the relationship between status of compensation and outcomes. For this study, three categories were used: (a) noncompensated veterans who were seeking compensation, (b) veterans receiving compensation who were not seeking an increase in compensation, and (c) compensation-awarded veterans seeking increased compensation. Given the small percentage of veterans who were neither receiving nor seeking compensation in residential programs (e.g., 4% in the Fontana and Rosenheck's 1998 study; 1% in the current study), this small subset of veterans was not a focus. We predicted that (a) those with higher treatment expectancies would have longer lengths of stay (i.e., less likely to discharge prematurely) and report less PTSD and depressive symptoms at discharge, (b) those either seeking compensation or increased compensation would report lower treatment expectations than those with stable compensation, (c) those seeking some or increased compensation would report higher PTSD and depressive symptoms at discharge compared to those in the stable compensation group, (d) the association between compensation status and symptom course would be explained by shared variance with treatment expectancies, and (e) current era veterans would show greater reductions in symptoms regardless of their compensation status compared to those from previous eras.

### Method

### **Participants and Procedure**

Participants were 776 veterans who received specialized trauma care in one of the five VA SIPPS between the years of 2005 to 2010. Participants were recruited as part of a multisite trial of a postdischarge telephone care intervention. The outcome data reported here are for usual residential treatment, prior to any postdischarge intervention related to the randomized study. The five residential treatment programs were all based on a therapeutic milieu model; however, the programs varied in services provided, such as medication management, skills-focused psychotherapy (e.g., anger management, communication skills), and/or evidence-based psychotherapies targeting PTSD symptoms. Furthermore, these interventions not only varied across programs, but also varied within each program based on the clinicians' assessments of the needs of individual patients. Median length of stay varied by program, ranging from 25 to 63 days. The mean age of the sample was 49.9 (SD = 12.5) years and the mean years of education was 13.4 (SD = 2.2). Males accounted for 86.9% (n = 674) of the sample. Self-reported racial background was 63.1% (n = 490) Caucasian, 21.5% (n= 167) African American, 6.1% (n = 47) listed as Other, 5.5%(n = 43) Hispanic, 2.3% (n = 18) American Indian/Alaskan, 0.8% (n = 6) Asian/Pacific Islander, and 0.6% (n = 5) did not respond. Self-reported marital status was 39.8% (n = 309) married, 29.4% (n = 228) divorced, 14.9% (n = 116) never married, 9.3% (n = 73) separated, 3.2% (n = 25) remarried, 2.4% (n= 19) widowed, and 0.9% (n = 7) missing a response. There were 27.4% who identified as a current era veteran; 72.2% (n =560) identified as other-era veterans and 0.4% did not respond. Across the entire sample, 82.6% (n = 641) reported serving in a warzone, and 82.9% (n = 643) reported receiving hostile or friendly fire from small arms, artillery, rockets, mortars, or bombs.

Veterans who enrolled in the study completed a baseline assessment during intake into the residential program that included questions on compensation status, treatment expectations, and symptom severity. Just prior to discharge from the residential programs, participants were then asked to complete a predischarge survey that included questions on symptom severity. Of 776 patients enrolled into the study, 725 (93%) completed both baseline and predischarge data. We only analyzed cases with complete data as there were too few cases with missing data (7%) to justify multiple imputation.

### Measures

Status of compensation. The baseline questionnaire included two questions inquiring about veteran's compensation status. The first question asked whether participants were certified by the VA as service-connected for PTSD; the second whether participants were currently applying for or planning to apply for service connection or an increase in service connection for PTSD. Veterans were categorized into three groups: (a) those without compensation who were seeking compensation, 30.2% (n = 234); (b) those receiving compensation who were not seeking an increase, 20.6% (n = 160); and (c) those who were seeking increased compensation, 49.2% (n = 382). The 10 participants neither having nor seeking compensation were removed because the group was too small to analyze under the assumption of normality. Three participants who listed their service-connected compensation greater than 100% and 17 participants who indicated they were 100% service-connected and seeking an increase in compensation were also removed from the study. The value of 3% having unclear compensation status was comparable to 1% of inpatients excluded for the same reason in the Fontana and Rosenheck study (1998), but much smaller than the 80% of files excluded by DeViva and Bloem (2003).

The average disability rating for those seeking increased compensation was 45.4%; the average rating for those having stable compensation was 82.2%. Over half (55.6%) of those with stable compensation was 100% service-connected. Table 1 describes disability characteristics of the sample.

**Treatment expectations.** Patient expectancies regarding treatment effectiveness were assessed using a procedure developed by Battle and colleagues (1966) and more recently replicated (Joyce, Ogrodniczuk, Piper, & McCallum, 2003). Participants were first asked to list the three most important problems that they wanted to address through mental health treatment (e.g., nightmares). Participants then rated the degree of improvement they expected to attain by participating in treatment, using an 11-point Likert scale that ranged from -5 = Will make it [identified problem] much worse to 5 = Will make it much better. Scores across the three treatment expectation questions were averaged to provide an overall index of the

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	Seeking	Seeking $(n = 234)$		Seeking increase $(n = 382)$		Receiving $(n = 160)$	
Variable	M or n	SD or%	M or n	SD or%	M or n	SD or%	ES <sup>a</sup>
Age	46.7	11.9	51.3	12.2	51.0	13.2	.03**
Female	55	23.6	29	7.6	16	10.0	.04**
Era							.18 <sup>b</sup>
Current	69	29.5	104	27.2	40	25.0	
Vietnam	84	35.9	221	57.9	98	61.3	
Other	81	34.6	57	14.9	22	13.8	
Received fire	155	66.2	341	89.3	147	91.9	.08**
Disability%	_	_	173	45.4	131	82.2	
Intake PCL <sup>c</sup>	69.0	10.1	67.	11.2	66.2	12.7	.01
Discharge PCL <sup>c</sup>	60.7	13.8	60.3	14.2	57.4	15.7	.01
Intake CED-D <sup>d</sup>	42.1	8.2	40.5	9.8	39.6	11.3	.00
Discharge CES-D	32.6	11.1	32.1	11.5	29.7	11.9	$.01^{*}$
Tx expectations	3.2	1.6	3.0	1.6	3.4	1.5	.01
LOSe	52.9	25.7	48.6	28.2	45.0	25.1	.02**

Table 1				
Demographics, Symptom,	and PTSD Percen	t Disability Characterist	tics by Status of	<sup>c</sup> Compensation

*Note. n* varies from 717–776 due to missing data for specific items. Significance indicates contrast between those with stable compensation to one or both other groups. PTSD = posttraumatic stress disorder; ES = effect size; PCL = PTSD Check List; CES-D = Center for Epidemiologic Studies-Depression Scale; Tx = treatment; LOS = length of stay.

<sup>a</sup>Index used partial  $\eta^2$ . <sup>b</sup>Cramer's V test. <sup>c</sup>PCL used modified instructions. <sup>d</sup>Kruskal-Wallis test. <sup>e</sup>Based on estimated marginal means partialling treatment site. <sup>\*</sup>p < .05. <sup>\*\*</sup>p < .01.

expectation that treatment would effectively address their three most salient problems.

current study, this modified PCL showed internal consistency of  $\alpha = .94$ .

PTSD symptoms. A modified version of the PTSD Checklist (PCL; Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers, Litz, Herman, Huska, & Keane, 1993) was used to assess PTSD symptoms at treatment intake and treatment discharge. The wording of the measure was slightly modified by replacing the phrase "problems and complaints that people sometimes have in response to stressful life experiences" to "problems and complaints that people sometimes have in response to extremely stressful events such as being in combat, being attacked, being sexually assaulted, being physically or sexually abused, seeing someone killed or injured, or being in a fire, flood, or natural disaster." This modification helped ensure that participants took into consideration both combat and noncombat traumatic events, but doing so makes the response not strictly comparable to the three standard versions. The standard 17 items that correspond to the criteria for PTSD according to the Diagnostic and Statistical Manual of Mental Disorders (4th ed., American Psychiatric Association, 1994) were used and respondents rated how much they have been bothered by each symptom using a 5-point Likert scale where 1 = Not at all bothered and 5 = Extremely bothered. The sum of all items indicated the severity of PTSD symptoms. The standard PCL has demonstrated good convergent validity (Blanchard et al., 1996) and sensitivity (Monson et al., 2008) when compared with the Clinician-Administered PTSD Scale (CAPS). In the

Depression. The Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977) was used to assess depressive symptoms at treatment intake and treatment discharge. The CES-D comprises 20 self-statement items (e.g., "I felt hopeful about the future") that assess depressive symptoms. Respondents rate how frequently each item applies to them on a 4-point Likert scale ranging from 0 = Rarely or noneof the time [less than 1 day] to 3 = Most or all of the time [5–7 days]. The CES-D total score is computed by summing up all of the individual items (reverse scoring four items) to obtain a total score to assess degree of depressive symptoms. The CES-D demonstrates high internal consistency (.85-.90), adequate test-retest reliability (r > .51-.67), and good convergent validity with other measures of depressive symptoms (Radloff & Locke, 2000). In the current study, internal consistency was  $\alpha = .92.$ 

### **Data Analysis**

Descriptive statistics were computed for preliminary analyses to examine means, standard deviations, and ranges. In all the analyses, missing data were handled by excluding cases listwise, where if one or more of the variables included was missing for a particular case it was removed from the analysis. A correlation was used to determine if treatment expectations were associated with length of stay, and a mixed model longitudinal analyses with age, gender, received friendly/hostile fire during service, and baseline symptoms nested within treatment site included in the model was used to determine if treatment expectations predicted PTSD and depressive symptoms at discharge. An analysis of variance (ANOVA) was performed to determine if veterans seeking compensation and veterans seeking increased compensation endorsed lower treatment expectation than veterans receiving compensation (Tukey's honest significant difference [HSD] test was used for multiple comparisons). Next, mixed model longitudinal analyses including age, gender, receiving friendly/hostile fire during service, and baseline symptoms nested within treatment site were used to determine if veterans seeking initial or increased compensation would experience poorer PTSD and depressive symptom outcomes compared to veterans with stable compensation (models included admission PTSD and depressive symptoms, respectively). Finally, general linear models were used to determine if current era veterans would experience greater reductions in PTSD and depressive symptoms regardless of their compensation status partialling admission PTSD and depressive symptoms, respectively.

Power analyses were performed for the regression models used in the data analyses. In a regression model with eight predictors, two-sided tests,  $\alpha < .05$ , and a variance inflation factor of no more than 1.4 (assumes other predictors explain no more than 30% of the variance in any independent variable), we have at least 91% power to detect effects of  $\beta = .15$ .

Correlations and partial correlations between percent disability for PTSD at intake, PTSD, and depressive symptoms at intake and discharge were performed. The correlations between percent disability for PTSD at intake and PTSD symptoms at intake and at discharge were r = -.06 (p = .21) and -.09 (p =.05), respectively. The correlations between percent disability for PTSD at intake and depressive symptoms at intake and at discharge were r = -.03 (p = .46) and -.09 (p = .04), respectively. The partial correlation between percent disability for PTSD at intake and PTSD symptoms at discharge, partialling intake PTSD symptoms, was  $r_p = -.06$ , p = .16. The partial correlation between percent disability for PTSD at intake and depressive symptoms at discharge, controlling for intake depressive symptoms, was  $r_p = -.09$ , p = .04.

#### Results

Baseline characteristics of participants are reported in Table 1. Baseline PTSD symptoms between compensation groups did not differ significantly, F(2, 750) = 2.87, p = .06, but baseline depressive symptoms did differ significantly, F(2, 765) = 3.35, p = .04; however, the latter result should be interpreted with caution as the assumption of equal variance between groups was violated. A nonparametric test (Kruskal-Wallis; Kruskal & Wallis, 1952) was performed and found that the median depressive symptoms at intake did not differ significantly between groups,  $\chi^2(2, N = 768) = 2.80$ , p = .25.

#### Table 2

Stepwise Mixed Model Analysis for Variables Predicting PTSD Scores at Discharge

Variable	В	SE B	β			
Model 1						
Intercept	12.27	4.94				
Admission PTSD score	0.71	0.04	.56**			
Compensation status <sup>a</sup>						
Seeking compensation	0.55	1.25	.03			
Seeking increased compensation	0.39	1.11	.02			
Gender	-4.27	1.46	$10^{**}$			
Age	0.02	0.04	.02			
Receiving friendly/hostile fire	-1.14	1.33	03			
Model 2						
Intercept	15.48	4.85				
Admission PTSD score	0.72	0.04	.57**			
Compensation status <sup>a</sup>						
Seeking compensation	1.06	1.24	.05			
Seeking increased compensation	0.75	1.11	.04			
Gender	- 3.94	1.50	$09^{**}$			
Age	0.04	0.04	.03			
Receiving friendly/hostile fire	-1.03	1.32	03			
Length of stay	-0.04	0.02	$09^{*}$			
Treatment expectations	-0.97	0.28	$10^{**}$			

*Note.* n = 682 for Model 1 and 659 for Model 2. The -2 restricted log likelihood = 5,198.42 for Model 1 and 4,988.70 for Model 2, yielding a significant improvement in model fit, as  $\chi^2(2) = 209.73$ , p < .01.

<sup>a</sup>Receiving compensation served as the reference group.

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

# Treatment Expectations, Length of Stay, and Clinical Outcomes

As hypothesized, positive treatment expectations were modestly associated with longer length of stay, r = .12 (p = .002). Additionally, positive treatment expectancies were associated with greater reductions in both PTSD symptoms ( $\beta = -.10$ , p = .001) and depressive symptoms ( $\beta = -.11$ , p = .001) after nesting within treatment site and partialling baseline scores, compensation status, gender, age, received friendly/hostile fire during service, and length of stay (see Model 2 in both Tables 2 and 3).

Models partialling baseline PTSD and depressive symptoms did not reveal any significant symptom differences at discharge between the compensation status groups; F(2, 693) = 0.87, p = .42, and F(2, 709) = 2.41, p = .09 respectively. Similarly, models partialling baseline PTSD and depressive symptoms by cohort did not reveal any significant outcome differences between current era veterans and other-era veterans; F(1, 693) = 2.98, p = .09, and F(1, 709) = .15, p = .70, respectively. Baseline and post treatment symptom means by compensation group and cohort can be found in Tables 1 and 4, respectively. War era varied significantly among groups,  $\chi^2(4, N = 776) = 49.45$ ,

### Table 3

Stepwise Mixed Model Analysis for	Variables Predicting Depres-
sion Scores at Discharge	

Variable	В	SE B	β			
Model 1						
Intercept	9.47	3.71				
Admission depression score	0.57	0.04	.49**			
Compensation status <sup>a</sup>						
Seeking compensation	1.36	1.07	.08			
Seeking increased compensation	1.34	0.95	.08			
Gender	-2.39	1.26	.07			
Age	-0.04	0.03	.04			
Receiving friendly/hostile fire	-0.35	1.14	.01			
Model 2						
Intercept	12.59	3.76				
Admission depression score	0.57	0.04	.49**			
Compensation status <sup>a</sup>						
Seeking compensation	1.73	1.08	.11			
Seeking increased compensation	1.54	0.96	.09			
Gender	-2.17	1.30	06			
Age	-0.02	0.03	02			
Receiving friendly/hostile fire	-0.25	1.16	01			
Length of stay	-0.03	0.02	$08^{*}$			
Treatment expectations	-0.80	0.25	$11^{**}$			

*Note.* n = 697 for Model 1 and 676 for Model 2. The -2 restricted log likelihood = 5,121.35 for Model 1 and 4,953.61 for Model 2, yielding a significant improvement in model fit, as  $\chi^2(2) = 167.74$ , p < .01.

<sup>a</sup>Receiving compensation served as the reference group.

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

p < .001, with the seeking compensation group having the lowest proportion of Vietnam-era veterans (35%, vs. 58% to 61% in the seeking increased compensation and the receiving compensation groups, respectively) and the highest proportion (35%) of veterans who did not serve during either the Vietnam-era or current conflicts. The proportion of current era veterans was similar in all three groups (ranging from 25 to 30%). Because it included fewer Vietnam-era veterans, the seeking compensation group was significantly younger than the other two groups, F(2, 736) = 10.79, p < .001.

### **Compensation Status and Treatment Expectations**

Results were only weakly consistent with the second hypothesis. The ANOVA results to determine if veterans seeking compensation and veterans seeking increased compensation endorsed lower treatment expectation than veterans receiving compensation was significant, F(2, 754) = 3.06, (p = .05). Multiple comparisons using Tukey's HSD, however, showed only a near-significant difference between veterans seeking increased compensation versus veterans receiving compensation (p = .06.) and no difference between veterans seeking compensation versus veterans receiving compensation versus veterans receiving compensation (p = .75).

# Compensation Status and Length of Stay and Symptom Course

Partialling treatment site, compensation status did predict length of stay F(2, 709) = 5.25, p = .005. The estimated mean length of stay was longer among veterans seeking compensation (53 days) than among those seeking increased compensation (49 days) or those receiving compensation (45 days). Those seeking initial and increased compensation, however, did not experience poorer PTSD and depressive symptom outcomes after nesting within treatment site and partialling gender, age, receiving hostile or friendly fire during service, and symptoms at intake, F(2, 672) = 0.10, p = .91, and F(2, 687) = 1.13, p = .33, respectively (see Model 1 in Tables 2 and 3). The effect of compensation status on both PTSD and depressive symptom outcomes remained nonsignificant after partialling treatment expectations and length of stay (see Model 2 in Tables 2 and 3). Because there was no main effect of compensation status on symptom outcomes, treatment expectation could not be responsible for any portion of that effect.

### Military Cohort and Symptom Course

Preliminary analyses evaluating current era veterans in comparison to all other previous cohorts are listed in Table 4. The former endorsed significantly lower treatment expectations, t(338) = 3.66, p < .001; more PTSD, t(748) = -3.96, p <.001; and depressive, t(763) = -4.06, p < .001, symptoms at admission. Contrary to our expectation, the current era group did not experience a greater reduction in either PTSD or depressive symptoms when compared to all others, F(1, 693) = 2.98, p = .09, and F(1, 709) = 0.15, p = .70, with PTSD and depressive symptoms at admission in the models.

### Discussion

The aim of the current study was to evaluate the relationship of status of compensation on treatment expectations and symptom outcomes of veterans receiving residential PTSD care. Our results confirmed that positive treatment expectations were modestly associated with longer lengths of stay in residential programs and somewhat associated with greater improvement in symptoms. Veterans seeking increased compensation for PTSD endorsed marginally lower treatment expectations as compared to veterans receiving compensation for PTSD. There were no significant differences in symptoms at discharge between veterans seeking increased compensation and veterans receiving compensation. Veterans seeking compensation for PTSD did not report lower treatment expectations or endorse greater symptoms at discharge.

As noted earlier, status of compensation has been defined differently in previous studies (Laffaye et al., 2007), so it is difficult to draw direct comparisons with the results from the current study. Additionally, given that there was not a noncompensated/not seeking compensation comparison group

Variable	Iraq/Afghanistan ( $n = 216$ )		Other $(n = 560)$		
	M or n	SD or%	M or n	M or n	ES <sup>a</sup>
Age <sup>b</sup>	35.2	10.0	55.5	8.1	.53**
Female	32	14.6	68	12.1	.00
Received fire <sup>b</sup>	199	92.0	445	79.5	.03
Intake PCL (modified)	70.3	10.3	66.7	11.4	$.02^{*}$
Discharge PCL (modified) <sup>b</sup>	60.7	15.5	59.5	14.0	.00
Intake CED-D <sup>c</sup>	42.1	8.2	40.5	39.6	.00
Discharge CES-D	32.6	11.1	32.1	29.7	.01*
Treatment expectations <sup>b</sup>	2.8	1.7	3.3	1.5	.02
Length of stay <sup>c</sup>	48.7	26.3	49.4	29.7	.00

Comparison of U.S. I	raq/Afghanistan-Era	Veterans Versus	Other-Era	Veterans

Note. PTSD = posttraumatic stress disorder; ES = effect size; PCL = PTSD Check List; CES-D = Center for Epidemiologic Studies-Depression Scale.

<sup>a</sup>Index used partial n<sup>2</sup>. <sup>b</sup>Based on an adjusted *t* test. <sup>c</sup>Based on estimated marginal means partialling treatment site.

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

in the current study, conclusions cannot be generalized outside of the groups compared in the current study. In general, however, these findings tend to support previous studies (Deviva & Bloem, 2003; Fontana & Rosenheck, 1998; Solomon, Benbenishty, Waysman & Bleich, 1994; Taylor, Federoff, Koch, Thordarson, Fecteau, & Nicki, 2001) that suggest that status of compensation does not appear to be associated with symptom reporting over time. Of note, although Fontana and Rosenheck (1998) found no differences for compensation-seeking patients in moderate length of stay programs (M = 33 days), they did determine that compensation-seeking patients in longer length of stay programs (M = 100 days) reported greater symptoms at discharge. In the current study the mean length of stay was 44 days, which is comparable to the moderate length of stay programs described in the Fontana and Rosenheck study and the 8-week residential treatment program used in the Deviva and Bloem study (2003). It is possible that status of compensation may have a different association with symptom changes in residential programs with longer lengths of stay. Another relevant issue is the findings regarding military cohort. The analyses indicated that compared to other military cohorts, U.S. Iraq/Afghanistan-era veterans reported modestly higher symptoms at intake and slightly lower treatment expectations. Fontana and Rosenheck (2008) also found that current era veterans reported higher PTSD symptoms at treatment admissions compared to other cohorts. Nevertheless, the former reported similar symptom changes over time as compared to the other cohorts of veterans.

Several limitations to this study are worth noting. Given that the majority of subjects in the current study were either compensated or seeking compensation, we were unable to examine a group without and not seeking compensation. Therefore, our results do not allow us to draw definitive conclusions about the act of being awarded compensation and/or seeking compensation in isolation given that the groups evaluated within this study represent variations across both these conditions. Our finding that only 1% of the residential patient population was noncompensated/nonseeking compensation was similar to the 4% rate previously reported by Fontana and Rosenheck (1998) for this type of population. Even if outcomes in this tiny subgroup differ from those of other residential patients, they account for little of the variation in outcomes in the residential patient population as a whole. Other program evaluation data on residential treatment programs (e.g., Fontana & Rosenheck, 1998) are typically limited to whether patients are currently service-connected, not whether they are seeking a pension. The limitations of that approach have been previously discussed (Laffaye & Rosen, 2008).

The current study focused on a sample of veterans receiving specialized care for PTSD within residential treatment programs. Although the residential programs use a diverse array of different interventions that vary across settings and patients, there may still be some commonalities in selection factors of which patients receive such intensive treatment. The results, however, may not generalize to other populations, including veterans seeking outpatient care for PTSD. The current study also specifically inquired only about PTSD-related compensation without exploring whether veterans were awarded compensation for other service-related conditions. Status of compensation was determined through a self-report questionnaire without further substantiating status of compensation through a chart review. PTSD and depressive symptoms were also evaluated through self-report measures only, limiting our ability to evaluate the validity of self-reported symptoms and explore alternative explanations for differences in outcomes (e.g., overreporting to gain compensation). The ability to detect an association among the variables evaluated may have been weakened due to the limited range in improvement in PTSD and depressive symptoms. We did not have the data available to evaluate other potential variables (e.g., time since trauma,

Table 4

diagnostic comorbidities, type/dose of treatment received) and temporal relationships among the predictors that may also play a key role in the relationships under study. Finally, our version of the PCL was not a standard version; therefore, our data may not be comparable to those from the standard administration.

The present study indicated that status of compensation may be only minimally associated with treatment expectations and symptom outcomes when evaluating veterans receiving residential PTSD care. Veterans seeking initial compensation or an increase in compensation experienced comparable outcomes upon discharge from residential treatment programs when compared to veterans receiving compensation who were not seeking increased compensation. The results also indicated that current era veterans reported modestly lower treatment expectations, yet demonstrated comparable outcomes at discharge as compared to other cohorts. The findings from the current study increase our understanding of the association between compensation status and symptom changes for veterans engaged in residential PTSD programs. Future research incorporating outpatients (who may be less impaired than residential patients) who are receiving a more homogenous treatment intervention, and including noncompensated/not seeking compensation comparison group would serve to further clarify the relationship between compensation seeking and course of recovery among veterans with PTSD.

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