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PTSD Symptoms, Demographic Characteristics, and Functional Status Among Veterans Treated in VA Primary Care Clinics

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We hypothesized that PTSD symptomatology would have an inverse relationship with functional status and would vary as a function of sociodemographic variables. Primary care patients ($N = 513$) at two VA Medical Centers were randomly selected and recruited to participate. After adjustment for other demographic variables, PTSD symptom levels were significantly related to age (younger patients had more severe symptoms), employment status (disabled persons had higher symptom levels), war zone experience, and clinic location. PTSD symptomatology was inversely related to mental and physical functioning, even after control for potential confounding. These findings have implications for screening and service delivery in VA primary care clinics, and support the more general finding in the literature that PTSD is associated with impaired functioning.

KEY WORDS: PTSD; primary care; functioning status.

Symptoms of post-traumatic stress disorder (PTSD) are typically associated with a wide range of acute psychological distress and psychiatric comorbidity (Keane & Wolfe, 1990), poor quality of life (Zatzick et al., 1997), and severe social maladjustment (Frueh, Turner, Beidel, & Cahill, 2001). The disorder is highly prevalent throughout American society, including VA Medical Centers. Epidemiological estimates of PTSD put the lifetime prevalence at 8–14% in the general population (American Psychiatric Association [APA], 1994; Kaplan, Sadock, & Grebb, 1994; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), with higher rates of both current (up to 15%) and lifetime (up to 31%) prevalence for veterans exposed to war zone trauma (Card, 1987; Centers for Disease Control [CDC], 1988; Kulka et al., 1990). One study suggests that 20% of patients in VA primary care clinics (Northeast United States) have positive PTSD screens (Hankin, Spiro, Miller, & Kazis, 1999). Only 7%, however, carry a *DSM-IV* clinical diagnosis in their administrative record, and the prevalence varies from 4 to 10% depending on geographic region (Spiro, Miller, Lee, & Kazis, 2001). Among certain disadvantaged groups, history of trauma exposure and PTSD rates may be higher still (Mueser et al., 1998). PTSD is often chronic and many veterans still suffer severe symptoms from wars fought 30 (e.g., Vietnam) or 50 (WWII) years ago (Gold et al., 2000; Sutker, Winstead, Galina, & Allain, 1990). A striking example of this is that PTSD prevalence among WWII veterans remains high some 50 years after the combat has ended, with many veterans still suffering in their late 70s (Spiro, Schnurr, & Aldwin, 1994). Thus, it is evident that

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millions of traumatized Americans (veterans and civilians) suffer PTSD or symptoms characteristic of PTSD. Given that there are over 5-million surviving American veterans of foreign wars, the potential number of veterans currently with PTSD is well above the half-million mark. The VA medical system carries the burden of providing mental health, medical, social, and disability services to a large number of persons with severe PTSD and other associated mental illnesses.

Recent evidence suggests that the costs associated with PTSD, both to individuals and society at large, are extremely high (Hidalgo & Davidson, 2000; Kessler, 2000). In fact, compared to most other psychiatric disorders, PTSD in the general population is associated with higher rates of service use and higher medical and social costs (Deykin et al., 2001; Greenberg et al., 1999; Kessler et al., 1999; Marshall, Jorm, Grayson, & O'Toole, 1998; Solomon & Davidson, 1997; Walker et al., 2003). In studies within the VA system, PTSD has been associated with greater medical illness comorbidity (Schnurr, Spiro, & Paris, 2000; Wagner, Wolfe, Rotnitsky, Proctor, & Erickson, 2000). In a study of VA outpatients, it was found that 30% of nonpsychiatric patients seen within a medical center met criteria for PTSD, and this group reported more severe medical symptoms than their non-PTSD counterparts (Hankin, Abueg, Gallagher-Thompson, & Laws, 1996). Some studies have found greater use of medical services by patients with PTSD (Beckham et al., 1998; Ford, 1999), whereas a recent publication found that young VA patients with a clinical diagnosis of PTSD were at high risk for not receiving general medical services (Cradock-O'Leary, Young, Yano, Want, & Lee, 2002). It should be noted, though, that a substantial proportion of VA mental health patients also use non-VA services (Hoff & Rosenheck, 2000), so service use based exclusively on VA databases will underestimate total use. All told, the accumulation of evidence suggests that this disorder has a prominent impact on the public health in general and the VA in particular.

Because data on PTSD in VA primary care clinics are still underdeveloped and have focused either on screening prevalence (Hankin et al., 1999) or clinical diagnosis (e.g., Cradock-O'Leary et al., 2002), the purpose of the current project was to evaluate the cross-sectional associations between self-reported severity of PTSD symptoms, functional status, and demographic variables among veterans treated in VA primary care clinics in a multicenter study conducted in the Southeast United States. This project builds upon previous studies by including analyses that treat PTSD severity and functional status as continuous variables, and examines the role of demographic variables as they relate to PTSD symptom severity. It was expected that PTSD symptomatology would have an inverse relationship with functional status. On the basis of previous PTSD prevalence studies (e.g., Kessler et al., 1995), we also expected that levels of symptom severity would vary by age (being highest among our 45–54 year olds) and marital status (being highest for previously married and lowest for never married individuals). Kessler et al. (1995) found higher prevalence for women than for men; however, given that male veterans have more combat-related experiences, we anticipated that symptoms would be higher for men and for veterans who served in combat zones. Race was a variable of interest, as minority status could put people at higher exposure risk, resulting in more PTSD symptoms. We expected a wide range of current employment situations, ranging from retired or disabled to working, with higher levels of symptomatology among disabled and unemployed veterans. We expected education to be associated with PTSD symptoms as both a cause and consequence, because persons of low educational attainment were more apt to be exposed to traumas and because persons with high PTSD symptoms were unable to reach higher educational levels.

Method

Study Design and Participants

A total of 737 patients were approached for participation, 537 of whom consented (73.9%). Of these, 24 had missing or incomplete data for one of our key instruments (PCL or SF-36); thus, the data analysis is on the basis of 513 patients. This research was conducted as part of a cross-sectional study at four VA Medical Centers in the Southeast United States, the primary aim of which is to estimate the prevalence of PTSD in VA primary care clinics. Participants were a randomly selected sample of patients drawn from a master list of patients who had been seen at the VA primary care site at least once in the previous fiscal year. The preselected patients were approached at the time of their primary care visits and invited to participate in a brief clinic assessment at that time, with a follow-up telephone interview to be conducted at a later date. Study measures were read aloud to all participants because many were unable to read them due to vision problems or low levels of literacy. Data presented in this report were collected at two VA Medical Centers in South Carolina (Columbia, Charleston) over a 3-year period (2000–2002). The data we report here are all based on the clinic interview. This project had full IRB approval and all participants signed informed consent documents prior to their study participation. This paper reports on results

for 513 patients from the Charleston and Columbia sites, which started data collection ahead of the two Alabama sites (Tuscaloosa, Birmingham).

Instruments

PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993)

The PCL is a 17-item self-report measure of PTSD symptoms (in the past month) based on DSM-IV criteria (APA, 1994), with a 5-point Likert scale response format. There are not "stem" or "gateway" questions on the PCL referring to one or more specific traumatic events; rather, 8 of the 17 questions (including the first five) are constructed with the wording "past dangerous or frightening experiences." The PCL has been found to be highly correlated ($r = .93$) with the Clinician Administered PTSD Scale (CAPS; Blake et al., 1990), have good diagnostic efficiency (>.70), and robust psychometric properties with a variety of trauma populations (Andrykowski, Cordova, Studts, & Miller, 1998; Blanchard, Jones, Buckley, & Forneris, 1996; Manne, Du Hamel, Gallelli, Sorgen, & Redd, 1998). Scores on the PCL range from 17–85. Although there are a number of self-report inventories for evaluating symptoms of PTSD, the PCL was chosen because it is widely used, has strong psychometric properties, and its items correspond directly to *DSM-IV* diagnostic criteria. Objective psychometric inventories have a number of general strengths: they are usually easy to administer; do not require a great deal of time to score or interpret; allow for standardized assessment procedures across multiple patients and sites; allow for comparison of individual veterans to other veteran groups or clinical populations; offer known, and usually adequate, reliability and validity coefficients; and allow veterans to complete the testing procedures at their own pace and represent their affective experience without influence from examiners.

Medical Outcomes Study (MOS) 36-Item Short-Form Health Survey (SF-36; Ware & Sherbourne, 1992)

The SF-36 is a self-report, generic measure of functional health status that assesses two factor analytically derived dimensions (physical health and mental health) with multiple subscales: physical functioning, role functioning limited by health, energy and fatigue, pain, general health, role functioning limited by emotional problems, emotional well-being, and social functioning. The SF-36 discriminates severity of functional impairment across a variety of disease states such as hypertension, arthritis, gastrointestinal disorders, and myocardial infarction (e.g., Stewart, Hays, & Ware, 1988; Ware & Sherbourne, 1992), and has been shown to be a valid and reliable instrument for use with elderly populations (Walters, Munro, & Brazier, 2001). In a preliminary study this measure was shown to be associated with PTSD symptoms and was sensitive to change in response to treatment for PTSD symptoms (Malik et al., 1999). The SF-36 raw scores were transformed to a 0–100 scale according to the formulas for scoring and transforming in the SF-36 Health Survey Manual.

Statistical Analyses

Simple descriptive summary statistics (means ± standard deviations for continuous variables and proportions for categorical variables) were obtained to describe the characteristics of the total sample.

Relationship of PCL to Demographic Variables

Mean PCL scores were compared across categories of demographic variables using the independent sample t-test or one-way analysis of variance. Post hoc comparisons following a significant ANOVA result were carried out using the Bonferroni correction for multiple comparisons. The relationship between PCL score and patients' demographic characteristics was further investigated using regression analysis with PCL score as the dependent variable and demographic variables as independent variables (using SAS General Linear Models procedure). In the first set of analyses, each demographic variable was considered separately to evaluate the univariate (unadjusted) relationship with PCL. In a second set of analyses, a multivariable model was used to evaluate the association between PCL and each demographic variable adjusting for other variables. The control variables were selected on the basis of significance with PCL in univariate analyses and to minimize multicollinearity in the multivariable models. These latter analyses were equivalent to an Analysis of Covariance (ANCOVA) comparing mean PCL scores across categories of a given demographic variable adjusting for the other covariables (i.e., comparison of adjusted least squares means). A variable for clinical site was included in all multivariable models.

Relationship Between PCL and Functional Status

The relationship between PTSD symptom severity as measured by the PCL and the SF-36 subscales general

health, mental health, vitality, and physical functioning was evaluated using simple and multiple linear regression modeling as described above. Because scores for role-physical and role-emotional grouped in a few distinct categories, these variables were treated as categorical (ordinal). The categories for role-physical were 0 (31.4%), 25 (12.7%), 50 (9.9%), 75 (11.5%), 100 (34.5%); for role-emotional they were 0 (15.4%), 33.3 (9.0%), 66.7 (9.4%), 100 (66.3%). For social functioning, 45.4% of participants had a score of 100, with the remainder of participants having a wide distribution across the remaining scale. The cutpoints selected for this scale were <33.3 (11.7%), 33.3–66.7 (17.1%), 67–80 (12.7%), >80 (55.8%). The cutpoints for this subscale were selected based on natural breaks in the distribution and an attempt to create categories as similar as possible to the two other subscales. Logistic regression for multicategory ordinal responses was used to evaluate the simple relationship (unadjusted association) between PTSD symptom severity (PCL score) and the role-physical, role-emotional, and social functioning subscales. The multivariable relationship between PCL scores and these SF-36 subscales (adjusted association) was evaluated using multivariable logistic regression with PCL score as the primary independent variable, and age, race, and VA site as covariables (control variables). The subset of control variables was selected to represent those that a priori were considered as potential confounding variables and to minimize the effects of multicollinearity in the model. To determine if demographic characteristics age or race modified the relationship between PTSD symptom severity (PCL score) and functional status dimensions (SF-36 subscales), we added PCL by covariable interaction terms to the model. The interaction terms for each covariable were added individually to the model containing PCL score and the covariable of interest. A significant age by PCL interaction term, for example, would suggest that the relationship between PTSD symptom severity and general health was different for the different age groups.

All statistical analyses were conducted using SAS statistical software (SAS Institute Incorporated, Cary, NC). Statistical tests were two-sided maintaining an overall $\alpha = .05$ level of significance.

Results

Demographic and Clinical Characteristics

The demographics of our sample are typical of veterans who utilize VA primary care clinics. As can be seen from Table 1, the average age (standard deviation) of the total sample ($N = 513$) was 60.3 (12.4) years, with nearly 40% being 65 years or older (the range was from 23 to 81 years); 92.2% of the participants were men; 61.0% were White; 24.2% had less than a high school education, and 17.4% had at least a college degree (modal education level was some college or technical school); 50.9% reported serving in a war zone; 67.2% were currently living with someone; and 38.6% were working. The sample was about evenly split between the Charleston (46.6%) and Columbia (53.4%) sites.

Table 1. Demographic Characteristics of Total Sample and PTSD Symptom Severity Scores in Veterans ($N = 513$)

Participant characteristics	%	Frequency
Age (years) [M ± SD = 60.3 ± 12.4]		
% ≥65	39.6	203
Gender (male)	92.2	473
Education		
<HS diploma	24.2	124
High school diploma	26.5	136
Some college	32.0	164
≥College degree	17.4	89
Race (White)	61.0	313
Work status (working)	38.6	198
Marital status[a] (living with someone)	67.2	344
VA site (Charleston)	46.6	239
War zone (yes)	50.9	261

[a]For marital status, total does not add to 513 because of missing values for that variable.

Relationship Between PTSD Symptoms and Patient Demographic Characteristics

Table 2 shows the relationship between PCL score (the dependent variable) and patient demographic characteristics in unadjusted models as well as in models adjusted for age, race, clinic location, education, employment, and war zone. In unadjusted models, age, race, VA location, education, employment, and war zone service were significantly related to PCL score. Only age, clinic site, war zone service, and employment remained significantly associated with PCL in the adjusted multivariable model. The model accounted for 20.8% of the variance observed. Below we describe details of the individual variables that reached significance.

Treating age categorically (<50, 50–64, ≥65), there was a significant relationship between age and PCL scores, with both younger- and middle-aged patients indicating significantly more severe PTSD symptoms compared to older patients. The relationship between age and PCL score remained highly significant following adjustment for the other covariables with the older age group having significantly less severe symptoms than the other age categories.

Table 2. Relationship between PCL Scores and Patient Demographic Characteristics

	PCL score				
	N	*M* (*SD*)	F^a	Adjusted LS means (*SE*)[b]	F^b
Overall	513	26.1 (13.8)			
Age groups (years)			19.72**		16.31**
<50	98	30.1_a (15.7)		32.4_a (1.4)	
50–64	212	28.6_a (15.3)		28.5_b (0.9)	
≥65	203	21.6_b (9.0)		21.7_c (1.1)	
Gender			0.12		Not included
Female	40	26.9 (13.8)			
Male	473	26.1 (13.8)			
Race			9.68*		1.40
White	313	24.6 (11.8)		26.6 (0.8)	
Non-White	200	28.5 (16.1)		28.5 (0.9)	
Location			9.44*		8.37*
Charleston	239	24.2 (12.1)		26.0 (0.9)	
Columbia	274	27.9 (14.9)		29.0 (0.8)	
Education			5.34*		1.64
<High school	124	23.5_a (10.3)		27.8_a (1.3)	
HS diploma	136	26.5_a (14.0)		27.3_a (1.1)	
Some college or tech.	164	29.2_b (16.3)		29.4_a (1.0)	
≥College degree	89	23.6_a (11.3)		25.7 (1.4)	
Employment			18.51**		15.96**
Not working/retired	193	23.3_a (11.3)		27.0_a (1.1)	
Not working/disabled or other	122	32.4_b (16.3)		31.7_b (1.2)	
Working	198	25.0_a (13.1)		23.9_c (1.0)	
Marital status			0.87		Not included
Not living with someone[c]	168	27.0 (13.7)			
Living with someone[d]	344	25.7 (13.8)			
War zone			12.53**		24.26**
Yes	261	28.2 (16.2)		25.0 (0.8)	
No	252	24.0 (10.3)		30.1 (0.9)	

Note. For each variable, column means that do not share the same subscript differ from each other by Bonferroni-corrected multiple comparison.

[a]From one-way ANOVA comparing mean PCL scores across given demographic categories.

[b]From multivariable model with dependent PCL scores and age (continuous), race, location, war zone, education, and employment as independent variables (ANCOVA). Age treated as categorical to obtain LS means for age groups.

[c]Includes: Single (never married), separated, divorced, and widowed.

[d]Includes: Living with someone (not married) and living with someone (married).

*$p < .01$. **$p < .001$.

The average PCL score was higher among nonwhite patients than among White patients. When adjustments were made, the relationship between PCL and race was no longer significant.

The average PCL scores were higher for patients at the VA site in Columbia, SC, than at the Charleston, SC, site. The difference in mean PCL scores for the two sites remained significant after adjustment for covariables. Because of these findings, we looked at the particular branch of service of veterans for each site. Indeed, Columbia had more veterans who served in the Army (59.1% vs. 49.2% for Charleston), whereas Charleston had more Navy and Coast Guard veterans (24.8%) than did Columbia (13.9%), $\chi^2(3, N = 512) = 10.45$, $p < .05$.

When employment status was defined in three categories (not working due to retirement, not working due to disability or other reason, working), there was a significant relationship with PCL score, with those not working due to disability or other reason having higher scores than those not working due to retirement or than those working. This relationship held after adjustment for covariables. After correction for covariables, all working groups were significantly different from one another.

Though veterans who reported living with someone had lower symptom levels than those not living with someone, this difference was not statistically significant.

Those veterans having some college or technical school had the highest average PCL score, followed by those with a high school diploma, and those with a college degree or less than high school having the lowest average scores. Participants with some college or technical schooling had significantly higher PCL scores compared to those with at least a 4-year college degree or those with less than a high school diploma. After adjustment for other covariables, there were no significant differences for any of the other education categories.

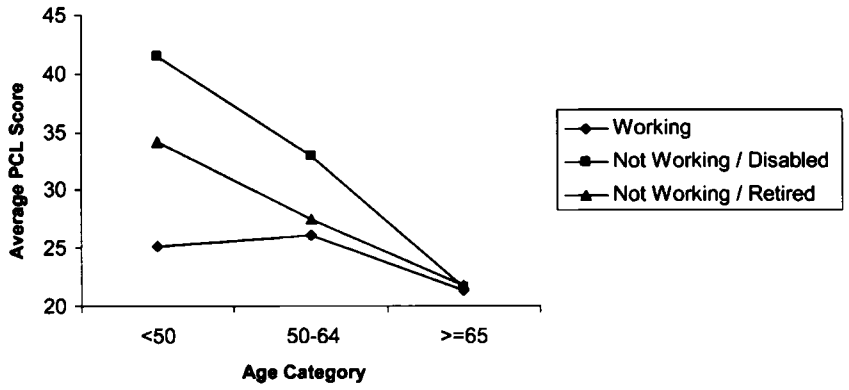

Fig. 1. PTSD Checklist scores as a function of age and work status in veterans.

Veterans who served in a war zone had higher symptom levels than those who did not. This relationship remained significant in the multivariate model.

Because our sample had such an unusual employment status distribution (including the large number of retired and disabled persons), we looked more closely at the interrelationship of age and work status with PCL (see Fig. 1). In models containing an age by work strata interaction term, the interaction effect was significant, $F(2, \infty) = 5.71$, $p < .05$, indicating that the relationship between PCL score and age differed by work strata. The relationship between age and PCL was strongest for the not working/disabled group and weakest in the working group.

We constructed a similar model to examine whether education level modified the relationship between age and PCL through inclusion of an age by education strata interaction term (see Fig. 2). The interaction term was significant, $F(3, \infty) = 3.77$, $p < .05$, implying that the relationship between PCL score and age differs for the different education categories. The relationship between age and PCL was strongest for those with less than a high school diploma and weakest in the highest-educated group.

Relationship Between PTSD Symptoms and Functional Status

Table 3 displays the analyses for functional status using SF-36 subscale scores. As previously noted, subscale scores were kept as continuous (and linear regression models employed) for all subscales except social functioning, role-physical, and role-emotional.

In the series of univariate regression analyses, treating each SF-36 subscale score separately as the dependent variable and PCL as a continuous primary independent variable, we found significant univariate associations between each SF-36 subscale and PCL score. Univariate correlations with PCL scores were all negative indicating that high PCL scores were associated with poor scores on functional status dimensions (low SF-36 subscale values).

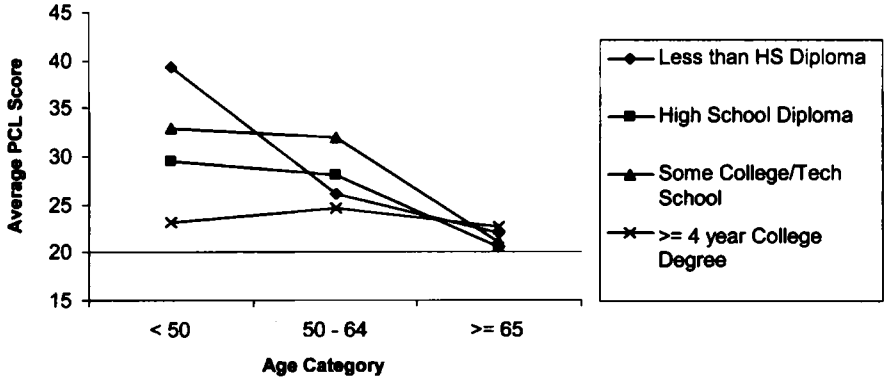

Fig. 2. PTSD Checklist scores as a function of age and education in veterans.

Table 3. Relationship Between PTSD Symptom Severity and SF-36 Subscales

SF-36 subscale	Unadjusted *B*	*SE*	R^2	Adjusted[a] *B*	*SE*	R^2	Interaction of PCL with age, race, gender
General health[b]	−0.13***	0.03	.03	−0.17***	0.04	.05	Age ($p = .08$)
Mental health[b]	−1.20***	0.04	.62	−1.20***	0.04	.62	Race**
Vitality[b]	−0.79***	0.07	.10	−0.90***	0.07	.24	None
Physical functioning[b]	−0.68***	0.09	.20	−0.84***	0.09	.18	None
Social functioning[c]	−0.10***	0.01		−0.10***	0.01		None
Role-physical[c]	−0.08***	0.01		−0.09***	0.01		Race ($p = .08$)
Role-emotional[c]	−0.12***	0.01		−0.12***	0.01		Age,* race**

[a] Adjusted for age, race, gender, and site.
[b] From univariate and multivariate general linear models using subscale as continuous dependent variable.
[c] From univariate and multivariate logistic regression models using subscale as ordinal dependent variable.
*$p < .05$. **$p < .01$. ***$p < .001$.

The coefficient of determination (R^2) ranged from a low of 3% for the measure of general health (3% of the variation in general health score is explained by variation in severity of PCL symptom ratings) to a high of 62% for the mental health dimension.

In the multivariate models, the associations still held for all subscales and their magnitude increased after adjustment for age, race, and site. For several SF-36 subscales, there were significant interactions between demographic variables and PCL. For the mental health scale, there was a significant interaction with race; for role-emotional there were significant interactions with age and race. In all of these cases, the interaction effect was one of magnitude. Slopes were steeper for the older-age group and for White patients than for their counterparts.

Discussion

These preliminary data suggest that there are a number of factors associated with PTSD symptomatology among persons treated in VA primary care clinics. This research builds upon previous research by identifying key demographic variables that are associated with increased likelihood of PTSD symptom severity. To elaborate, these results show that PTSD symptom levels were significantly associated with age, employment, war zone service, and clinic location. Stated another way, these results show that those veterans who report war zone service, were less than age 65, were unemployed due to disability, and at the Columbia clinic were more likely to exhibit high PTSD symptom levels. PTSD symptom levels decrease with age in the unemployed/disability group, and to a lesser extent in the unemployed/retirement group. This finding is particularly noteworthy given that the average age of the veterans treated in these clinics was 60 years of age, and that most combat veterans (e.g., those who served in World War II, Korean War, or Vietnam War) treated within the VA are 50 or older. Future research is planned to investigate the age effect found here, including examination of reported trauma histories and the role of medical illness comorbidity.

It is likely that our variable "war zone service" captures different combat experiences given the particular branch of service. Thus, Army and Marine veterans may have had more actual combat experiences (and thus more combat trauma) than other service branches, providing a possible explanation for our site differences.

Results also showed that PTSD symptom levels were significantly associated with functional status. The associations were strong and remained so even after adjustment for potential confounders. We expected the relationship with mental health and role-emotional scales but were surprised at how strong the relationship was with the other subscales. The presence of PTSD symptoms reduced functioning in all areas that we measured, further confirming how debilitating this disorder can be. Our results are consistent with the literature showing that PTSD diagnostic cases are associated with greater medical illness comorbidity (Schnurr et al., 2000) and use of medical services (Beckham et al., 1998), and help us understand why PTSD is such a costly psychiatric disorder (Kessler et al., 1999).

These findings have implications for the delivery of care in VA primary care clinics. First, it is important for both VA primary care clinicians and medical center administrators to understand the substantial mental and physical disability related to high levels of PTSD symptoms. Recognition and treatment of PTSD is a high priority issue in addressing the health care needs of this population. Effective PTSD screening strategies would be a critical step towards addressing this problem. Routine administration of the 17-item PCL measure to VA primary care patients may help identify those individuals most severely

affected and could lead to significantly improved health status through effective treatment of PTSD symptoms in such recognized individuals.

Several study limitations merit comment. First, although the PCL is a widely used and psychometrically robust self-report measure of PTSD symptoms, it is not considered to be the "gold standard" for making diagnoses of PTSD nor does it provide information about past history of trauma exposure. An additional concern is that the data collected are cross-sectional; thus we can only infer associations and relationships—not causality. Although some variables are immutable (i.e., age, race, gender), others could have been influenced by the onset and persistence of PTSD symptoms (e.g., employment) and others may have worked reciprocally (e.g., educational attainment—may have served to keep some veterans away from heavy combat zones; also may have been truncated for those with PTSD symptoms who were unable to continue studies). Furthermore, although we found an association between age and PTSD symptoms, it is difficult to interpret such findings. Given the cross-sectional study design, we could as well attribute the association to cohort effects as to age itself. Nevertheless, we cannot discount the possibility that the decline of PTSD symptoms in our older patients may be a function of higher mortality rates for persons with high PTSD symptoms. In other words, persons with high PTSD symptoms may not be as likely to live to older age.

In conclusion, results of this study demonstrate that PTSD symptom levels are significantly associated with a number of demographic factors and functional status. Patients with high PTSD symptoms exhibit worse functional status across both physical and mental health domains. Given that symptom levels were highest in the youngest group of patients, the VA should plan for appropriate service provision as these veterans age and become even heavier users of medical care.

Acknowledgment

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