

Supplemental Methods

Participants and Procedures

Soldiers were recruited in person during monthly drill weekends and by mail using a slightly modified version of the Dillman method (1). During drill weekends, a member of the study team would brief the soldiers, describing the survey. Team members would distribute the survey packets (which included questionnaires used in study measures) and remain onsite for several hours to collect completed surveys. Surveys that were not distributed during drill weekends were sent via USPS, with up to two additional follow-up mailings being sent to nonrespondents. The survey took approximately 30-45 minutes to complete. Soldiers received a \$50 gift card incentive and the response rate was 55%

Outcome Measures

PTSD. PTSD symptoms were measured using the posttraumatic disorder checklist – specific version (PCL-S), a 17-item self-report measure of PTSD symptoms based on DSM-IV criteria (2). Participants were asked to complete the questionnaire in reference to “the most distressing event” they had experienced in their lifetime, which could be either deployment-related incidents or non-deployment incidents during their lifetime. A score of 50 or above has often been used to indicate a high probability of a clinical diagnosis of PTSD (2). Internal consistency as measured by Cronbach’s alpha was .97 in our sample.

Mental Health Service Utilization. Participants were asked whether they had received mental health services for a stress, emotional, alcohol, or family problem from any of the following 14 sources in the past year: mental health professional at a VA hospital or Community Based Outpatient Center, general medical doctor at a VA hospital or Community Based Outpatient Center, mental health professional at a military facility, general medical doctor at a military facility, military chaplain, mental health professional at a civilian facility, general medical doctor at a civilian facility, civilian clergy, Military Family Life Consultant, individual and/or group counseling for Veterans at a Vet Center, family counseling for military-related issues at a Vet Center, military sexual trauma counseling or referral at a Vet Center, other Vet Center care, or other care. Participants were classified as having utilized mental health services if they provided an affirmative answer to any of the 14 items. Participants were then asked to check all specific types of services they received, if they had used services in the last 12 months: medication, individual therapy, group therapy, substance abuse treatment, and family/marital therapy.

Independent variables

Socioeconomic Status (SES). SES was measured via separate proxy variables and also by a composite score (3). Proxy variables included highest level of education (categorized as High School Diploma/GED, Some College/Associate’s Degree, or Bachelor’s Degree or greater); annual family income (categorized as \$25,000 or less, \$25,001 to \$50,000, or greater than \$50,000); and current rank or rank at last discharge (categorized as Junior Enlisted, Noncommissioned Officer (NCO), or Officer). Military rank may exhibit associations with

health status that are independent of other SES variables. For instance, across multiple large-scale veteran surveys, enlisted veterans report worse health than officers, even after controlling for sociodemographic characteristics (including education and income) and length of service (4). Composite SES score was calculated as the sum of Z-scores of education and income (5).

Short Form-12 Health Survey Physical component score (SF-12 version 2). This is a 12-item physical health component of the SF-12, a widely used shortened version of the SF-36 Health Survey. The SF-12 has good construct validity and test-retest reliability, and is strongly correlated with the SF-36 (6). The physical health component assesses the participant's subjective opinion of his/her health (e.g., "excellent" to "poor") and the extent to which physical health limits the participant's day-to-day activities. Higher scores indicate better health. Since comorbid medical illness in PTSD may be associated with greater use of mental health treatment (7), the physical component score was added as a covariate in regression analyses.

Any Mental Health Condition. Participants were classified as having a mental health condition by a PTSD Checklist Score Specific (PCL-S) score of 50 or above, a Patient Health Questionnaire Score-9 (PHQ-9) score of 10 or above (8), or a generalized anxiety disorder seven (GAD-7) score of 10 or above (9).

Health Insurance. Health insurance coverage is associated with healthcare utilization in national surveys (e.g., 10) and veteran samples (e.g., 11). In the current questionnaire, insurance was assessed using the question, "What kind of health insurance or health care coverage do you have?" Individual response options included private health insurance (i.e. employer sponsored), Medicaid, Medicare, military health care (such as TRICARE), VA Healthcare System, other government program, and no coverage of any type. For the current study, responses of private health insurance and TRICARE were coded as private health insurance. Private insurance status was then added to regression models as a dichotomous covariate.

Covariates

Age group, sex, race/ethnicity, and marital status were determined by soldiers' responses to demographic items on the survey.

Combat exposure was determined by an affirmative response to at least one of three combat questions on the Post-deployment Health Assessment, in regards to the most recent or any prior deployment ("Did you encounter dead bodies or see people killed or wounded?", "Were you engaged in direct combat where you discharged a weapon?", and "Did you ever feel that you were in great danger of being killed?").

The Alcohol Use Disorders Identification Test. Hazardous alcohol use was assessed using the AUDIT-C, a 3-item alcohol screen for hazardous drinking and active alcohol use disorders (12). The 3-item measure is an abbreviated version of the original 10-item AUDIT. Each question in the AUDIT-C is scored 0 to 4 points, with the scores summed for a possible score of 0 to 12. For detection of heavy drinking, the AUDIT-C performs better than the entire AUDIT, and has equivalent performance to the entire AUDIT for detection of either heavy drinking and/or active

alcohol abuse or dependence (12). In men, a score of 4 or more is considered positive, and in women, a score of 3 or more is considered positive.

Data Analysis

All of the analyses for this study were conducted using SAS version 9.3 (SAS Institute, Inc., 2010). Wilcoxon-Mann-Whitney and chi-square tests examined the relationship between measures of SES and PCL symptoms consistent with a PTSD diagnosis, as well as the relationship between SES and mental health service utilization. Linear regression was used to examine associations with PTSD symptom severity. Multivariable logistic regression was used to calculate adjusted odds ratios (ORs) with 95% confidence intervals (CIs) for PTSD diagnosis and service utilization.

References

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Characteristic	N	%	Supplemental Table 1 Demographic characteristics of the sample (N=1,268)
Gender			
Male	1179	93	
Female	89	7	
Age			
18–21	100	8	
22–30	542	43	
31–40	318	25	
41–50	252	20	
Over 50	56	4	
Marital status			
In committed relationship	787	62	
Not in committed relationship	481	38	
Ethnicity			
White	1065	84	
Non-white	203	16	
Education			
High school diploma/GED	323	26	
Some college/Associate's degree	705	56	
Bachelor's degree or greater	240	19	
Income			
\$25,000 or less	347	27	
\$25,001 to \$50,000	449	35	
Greater than \$50,000	472	37	
Rank			
Enlisted	538	42	
Noncommissioned Officer (NCO)	564	45	
Officer	166	13	
Combat exposure during deployment			
Yes	875	69	
No	393	31	
Mental health			
Likely PTSD diagnosis (PCL \geq 50)	193	15	
Likely GAD diagnosis (GAD-7 \geq 10)	197	16	
Likely depression diagnosis (PHQ-9 \geq 10)	245	19	
Any likely mental health diagnosis	321	25	
Hazardous alcohol use (AUDIT-C \geq 4)			
Yes	615	49	
No	651	51	
Insurance Coverage			
Private/Military Insurance	977	77	
Medicare/Medicaid/Other Government program	32	3	
VA Healthcare System	290	23	
No Coverage	56	4	
SF-12 physical component T-score mean \pm SD	50.6 \pm 9.1		

Supplemental Table 2 Rates of mental health treatment utilization among the entire sample, the

Treatment type	Entire sample (N=1,268)		Any mental health condition (N=321)		PTSD (N=193)	
	N	%	N	%	N	%
Any treatment	401	32	188	59	135	70
Medication	196	16	97	31	75	39
Individual therapy	199	16	118	37	93	48
Group therapy	32	3	25	8	18	9
Substance abuse treatment	15	1	10	3	5	3
Family/Marital therapy	64	5	25	8	20	10

subset with mental health conditions, and the subset with PTSD

Supplemental Table 3 SES Differences in Mental Health Service Utilization (N=1,268)

Variable	Any treatment (N=401)		Medication (N=196)		Individual therapy (N=199)		Group therapy (N=32)		Substance abuse treatment (N=15)		Family/Marital therapy (N=64)	
	N	%	N	%	N	%	N	%	N	%	N	%
Education												
High school diploma/GED	100	31	56	17	45	14	15	5	11	3	17	5
Some college/Associate's degree	222	32	115	16	113	16	14	2	3	.4	28	4
Bachelor's degree or greater	79	33	25	10	41	17	3	1	1	.4	19	8
<i>Chi-square^a</i>	.26		5.93		1.17		8.31*		—		5.86	
<i>Effect size (phi)</i>	.01		.07		.03		.08		—		.07	
Income												
\$25,000 or less	100	29	61	18	36	10	10	3	7	2	10	3
\$25,001 to \$50,000	145	32	72	16	78	17	15	3	5	1	21	5
Greater than \$50,000	156	33	63	13	85	18	7	2	3	1	33	7
<i>Chi-square</i>	1.80		2.92		10.29**		3.48		3.29		7.25*	
<i>Effect size (phi)</i>	.04		.05		.09		.05		.05		.08	
Rank												
Enlisted	147	27	72	13	66	12	14	3	10	2	23	4
NCO	206	37	111	20	108	19	16	3	5	1	27	5
Officer	48	29	13	8	25	15	2	1	0	0	14	8
<i>Chi-square</i>	11.43**		16.86***		9.91**		1.41		4.51		4.72	
<i>Effect size (phi)</i>	.09		.12		.09		.03		.06		.06	
Composite SES												
<i>Z-score</i>	1.47		-2.01*		2.86**		-2.20*		-2.74**		2.92**	

^adf=2

NCO=Noncommissioned Officer

*p<.05, **p<.01, ***p<.001

Supplemental Table 4 Summary of logistic regression analyses examining associations between SES variables and PTSD among the entire sample (N=1,268)^a

Variable	OR	95% CI	SE
Income			
>\$50,000	.60*	.38–.95	.23
Non-white ethnicity	1.65*	1.11–2.45	.20
Combat exposure	4.82***	2.92–7.95	.26
Rank			
Officer	.49*	.26–.91	.32
Non-white ethnicity	1.66*	1.12–2.47	.20
Combat exposure	4.67***	2.83–7.72	.26
Composite SES			
SES	.89*	.80–.99	.06
Non-white ethnicity	1.66*	1.12–2.46	.20
Combat exposure	4.75***	2.88–7.83	.25

^aAll models are adjusted for age, marital status, ethnicity, and combat exposure.

*p<.05, ***p<.001

Supplemental Table 5 Summary of linear regression analyses predicting PTSD severity from composite SES^a

Variable	Entire sample (N=1,268)		PTSD subset (N=193)	
	β	SE	β	SE
Total PCL score				
Composite SES	-.81**	.29	-1.03*	.47
Non-white ethnicity	3.33**	1.17	.40	1.66
Combat exposure	8.83***	.95	.96	2.38
PCL reexperiencing symptoms				
Composite SES	-.11	.08		
Non-white ethnicity	1.05**	.35		
Combat exposure	2.61***	.28		
PCL avoidance symptoms				
Composite SES	-.28*	.12		
In committed relationship	-.86*	.39		
Non-white ethnicity	1.42**	.49		
Combat exposure	3.02***	.39		
PCL hyperarousal symptoms				
Composite SES	-.43***	.10		
Age 41-50	1.55*	.72		
Combat exposure	3.16***	.35		

*p<.05, **p<.01, ***p<.001

^aAll models are adjusted for sex, age, marital status, ethnicity, and combat exposure.

PCL=PTSD Checklist. Possible scores range from 17 to 85.

Supplemental Table 6 Summary of logistic regression analyses predicting types of mental health service utilization from Composite

Variable	Medication		Individual Therapy		Group Therapy		Substance Abuse Treatment		Family/Marital Therapy	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
SES	.83*	.72–.96	1.12	.98–1.29	.70	.38–1.29	.75	.36–1.57	1.21	1.00–1.47
SES*PTSD diagnosis										
PTSD			5.04*	2.81–8.90						
No PTSD			1.13	.99–1.30						
SES (N=1,262)^a										

^aModels are adjusted for sex, age, marital status, ethnicity, combat exposure, hazardous alcohol use, private insurance status, SF-12 physical health subscale, psychiatric diagnosis, and SES*psychiatric diagnosis.

^bReference group aged 18-21.

*p<.05.