

# Social Support and Mental Health Treatment Among Persons With PTSD: Results of a Nationally Representative Survey

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**Objective:** Despite continued outreach efforts, levels of mental health care utilization for posttraumatic stress disorder (PTSD) remain low. As such, it is important to identify factors that may promote or discourage treatment engagement. This study was designed to examine the association between perceived social support and utilization of several types of PTSD services.

**Methods:** Data came from wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions, which was administered between 2004 and 2005. PTSD was assessed via structured interview, and perceived social support was assessed via the Interpersonal Support Evaluation List-12. Participants were asked about receipt of four modalities of PTSD-specific treatment: outpatient, hospitalization, emergency department visits, and psychiatric medication prescriptions. Weighted logistic regression

modeling was performed to examine associations between social support scores and the odds of receiving treatment for PTSD, and the analyses were adjusted for sociodemographic characteristics and PTSD severity.

**Results:** The final sample consisted of 2,811 individuals with PTSD. Social support was not associated with the odds of receiving any type of PTSD treatment.

**Conclusions:** Among individuals in the general population with PTSD, perceived social support may not be related to PTSD treatment utilization. Other factors, such as sociodemographic characteristics and symptom severity, may be more important predictors of receipt of PTSD-specific treatment.

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Despite continued efforts at outreach and engagement for individuals with posttraumatic stress disorder (PTSD) (1,2), treatment utilization among persons with PTSD remains low. By one recent estimate, only 21.6% of persons with PTSD currently seek treatment (3). As a result, there has been an effort to assess the potential barriers and facilitators of treatment engagement, and social support has emerged as a potentially important factor (4).

Lack of social support is associated with an increased likelihood of developing PTSD after a traumatic event (5–9) and with greater severity of PTSD among those with the disorder (10–12). However, the collected findings on the relationship between social support and mental health care engagement are equivocal. In some studies, greater levels of social support were associated with greater utilization of mental health services among individuals with PTSD (13–17). Social support may increase care utilization because an individual's support network encourages him or her to seek treatment when it is needed. In this conceptualization, social support acts as an “enabling” factor that facilitates treatment engagement (18).

In contrast, other studies have reported an inverse relationship between social support and treatment utilization, such that greater levels of social support were associated with reduced utilization of mental health services (19–21). Social support may reduce care utilization because the social network serves as an already established helping resource. Social support, therefore, may act as a “buffer” to mitigate the severity of PTSD, thus reducing the need for treatment (22). Still other studies have failed to find a relationship between social support and treatment utilization (23,24) or have found that the direction of the relationship depends on the quality of social support (4).

Most prior research examining the linkage between social support and treatment utilization has relied on modest sample sizes and has controlled for few, if any, demographic variables. In some cases, the studies lacked sufficient power to control for sociodemographic variables. As a result, treatment utilization patterns that are partially attributable to marital status or socioeconomic status, for example, may be attributed to other factors, such as social support. Another potential weakness of previous studies is their tendency to

focus on general mental health treatment rather than PTSD-specific treatment. In addition, previous investigations have rarely examined the influence of social support on different types of PTSD treatment.

In this study, we used a large, nationally representative sample to probe the relationship between social support and PTSD treatment utilization. We hypothesized that interpersonal support would be significantly associated with the likelihood of obtaining several types of PTSD-specific services, even after we controlled for a wide range of socio-demographic factors.

## METHODS

### Sample

Data came from wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). The NESARC is a two-wave, population-based, face-to-face survey of the adult (age 18 years and older) civilian population of the United States. Wave 1 was conducted in 2001–2002, and wave 2 was conducted in 2004–2005. A total of 34,653 individuals completed wave 2, representing 86.7% of those who completed wave 1 (25). All respondents provided written informed consent. The U.S. Census Bureau and U.S. Office of Management and Budget reviewed the research protocol and provided full ethical approval. Further details about the NESARC can be found elsewhere (25,26).

For this investigation, the sample was the subset of individuals in wave 2 with a lifetime history of PTSD who completed a social support assessment and answered items about demographic variables of interest ( $N=2,811$ ). The NESARC employed the Alcohol Use Disorder and Associated Disabilities Interview Schedule–IV, a fully structured diagnostic interview for use by experienced interviewers without clinical training (27). The PTSD section of the interview began with an inventory of 33 traumatic events that operationalized the *DSM-IV* stressor criterion. Respondents who had experienced multiple traumatic events were asked to select the worst (“the most distressing”) traumatic event from the list of events they had endorsed. A series of questions with dichotomous (yes or no) responses were asked in connection with the worst (or only) event. The questions asked about symptoms that fulfill *DSM-IV* criteria for PTSD and other criteria that define the disorder, including the subjective response to the event, the event’s duration, and impairment. We used *DSM-IV* criteria to diagnose PTSD from the NESARC interview data. When two items in the interview were used to evaluate a single symptom, replies were combined as one item rather than counted as two symptoms (28).

### PTSD Severity

Symptom severity was not directly assessed in the NESARC; therefore, we used PTSD symptom count as a proxy for PTSD severity. Symptom count was generated by summing the number of reexperiencing, avoidance, and hyperarousal symptoms endorsed by the participant.

### Interpersonal Support

The 12-item Interpersonal Support Evaluation List (ISEL-12) was used to assess perceived interpersonal support (29–31). The ISEL-12 contains items such as “If I were sick, I know I would find someone to help me with my daily chores” and “If I wanted to go on a trip for a day, like to the country, city, mountains or beach, I would have a hard time finding someone to go with me.” Each item is rated on a scale from 1, definitely false, to 4, definitely true. Items for which higher scores indicate less social support are reverse coded. Possible scores range from 12 to 48, with higher scores indicating greater levels of social support. The ISEL-12 has good convergent and divergent validity and adequate test-retest and internal reliability (8,31,32).

### Sociodemographic Measures

Sociodemographic measures included age, sex, race-ethnicity, nativity, education level, household income, marital status, urbanicity, geographic region, and type of health insurance. We also calculated and controlled for the presence of other lifetime axis I psychiatric disorders, including major depressive disorder, bipolar disorder, dysthymia, panic disorder, agoraphobia, social phobia, specific phobia, generalized anxiety disorder, and alcohol and substance use disorders.

### Mental Health Treatment Seeking

Respondents were classified as seeking mental health treatment for PTSD if at some point in their lifetime they had visited a counselor, therapist, doctor, or psychologist for PTSD; were treated for PTSD in a hospital for at least one night; had visited an emergency room for PTSD; or were prescribed medications for PTSD. All questions about mental health treatment utilization in the NESARC were disorder specific.

### Statistical Analysis

Unadjusted and adjusted logistic regression modeling was performed to examine associations between ISEL-12 score and the odds of receiving treatment for PTSD. Separate models were conducted for each type of treatment (hospitalization, emergency department visit, outpatient visit, and psychiatric medication), and an overall model examined any type of treatment. Taylor series linearization was used to take into account the complex survey design of the NESARC. The adjusted models adjusted for PTSD symptom count and for sociodemographic variables that have previously been found to be associated with PTSD (6). Logistic regression calculates odds ratios as the measure of strength of association, and 95% confidence intervals are presented to aid interpretation. All analyses were conducted using Stata, version 11.

## RESULTS

Table 1 presents demographic characteristics of the final sample. Of the 2,811 individuals, 72% were female, 71% were non-Hispanic white, 57% were married or cohabiting, 46%

**TABLE 1. Characteristics of 2,811 individuals with PTSD**

Characteristic	N	Weighted % <sup>a</sup>
Age (years)		
18–29	368	15.1
30–44	958	33.2
45–64	1,145	40.1
≥65	340	11.7
Sex		
Male	716	27.8
Female	2,095	72.2
Race-ethnicity		
Non-Hispanic white	1,617	70.5
Non-Hispanic black	599	12.9
Hispanic	469	10.9
Other	126	5.8
Nativity		
U.S.-born	2,480	90.1
Foreign-born	331	9.9
Education		
Less than high school	497	16.1
High school graduate	731	26.2
Some college	1,583	57.7
Household income (\$)		
≤19,999	876	26.5
20,000–34,999	600	20.4
35,000–69,999	777	29.3
≥70,000	558	23.8
Marital status		
Married or cohabitating	1,315	56.7
Divorced, separated, or widowed	977	27.8
Never married	519	15.5
Urbanicity		
Urban	972	33.3
Suburban	1,392	50.5
Rural	447	16.3
Region		
Northeast	510	18.3
Midwest	554	19.6
South	1,051	37.1
West	696	25.0
Employment (full-time)		
Unemployed	1,544	54.3
Employed	1,267	45.7
Health insurance		
No	340	12.0
Yes	2,471	88.0
Number of other psychiatric disorders (lifetime)		
0	397	14.4
1	527	18.3
2	493	17.1
≥3	1,394	50.2
PTSD treatment		
Any	1,475	53.3
Outpatient	1,326	48.3
Hospitalization	278	9.1
Emergency department	251	8.5
Medication use	865	31.3

*continued***TABLE 1, continued**

Characteristic	N	Weighted % <sup>a</sup>
PTSD symptom severity (M±SD score) <sup>b</sup>	12.4±2.8	
Social support (M±SD score) <sup>c</sup>	41.0±6.8	

<sup>a</sup> Percentages are weighted to account for selection probabilities, non-response, and sociodemographic factors in order to be representative of estimates of the population from the 2000 U.S. census.

<sup>b</sup> Sum (weighted M±SD) of reexperiencing, avoidance, and hyperarousal symptoms endorsed by each individual (range 6–17)

<sup>c</sup> Weighted mean score on the 12-item Interpersonal Support Evaluation List. Possible scores range from 12 to 48, with higher scores indicating higher levels of social support.

were employed, 88% had health insurance, and 86% had at least one other comorbid psychiatric disorder.

Results from the unadjusted logistic regression models are displayed in Table 2. Social support was not associated with receipt of any services overall for PTSD nor was it associated with receipt of three out of four specific kinds of PTSD services (outpatient treatment, hospitalization, or emergency department visits). A modest association between social support and PTSD medication use was observed, such that each increase of one unit of social support was associated with a 2% decrease in the odds of receipt of medication for PTSD.

Table 3 depicts results from the adjusted logistic regression models estimating the associations between level of social support and the odds of receiving PTSD services. After adjustment for all sociodemographic variables and PTSD symptom severity, the analyses showed that social support was not associated with the overall odds of receiving any PTSD-related services nor was it associated with receipt of specific types of PTSD services. The following variables were associated with greater odds of receipt of any treatment: female sex; higher educational attainment; greater income; divorced, separated, or widowed status; health insurance coverage; greater levels of psychiatric comorbidity; and greater PTSD symptom severity. Individuals who were older (age ≥65), non-Hispanic black, foreign born, and employed had lower odds of receiving treatment.

To further probe the hypothesized relationship between level of social support and PTSD treatment utilization, we conducted supplementary analyses. For these analyses, following Moak and Agrawal (33), we categorized the ISEL-12 scores into quartiles of high social support, intermediate-high social support, intermediate-low social support, and low social support. In the first set of supplementary analyses, we tested whether the interaction of ISEL-12 scores and PTSD severity had an effect on treatment utilization. The results indicated that none of the interactions were significantly related to the overall odds of treatment or specific types of PTSD treatment. In the second set of supplementary analyses, we investigated the effects of potential interactions between ISEL-12 results and marital status on utilization of PTSD treatment. The results indicated that the relationship

**TABLE 2. Associations between social support and treatment for PTSD**

Variable	OR	95% CI	p
Any treatment	.99	.98–1.01	ns
Outpatient	1.00	.99–1.01	ns
Hospitalization	.98	.96–1.00	.056
Emergency	.98	.96–1.01	ns
Medication	.98	.97–1.00	.021

between social support and PTSD treatment utilization did not vary by marital status.

## DISCUSSION

In this study, we investigated the hypothesized relationship between perceived social support and the receipt of several types of health care services for PTSD. With the exception of the medication outcome, we failed to detect associations between social support and PTSD-specific treatment utilization. Moreover, after adjustment for sociodemographic variables and symptom severity, there was no significant association between level of social support and the odds of any type of PTSD treatment. Our work extends previous research by utilizing a large, nationally representative sample and by taking into account demographic and illness factors that have previously been found to be associated with treatment utilization.

Previous findings about the relationship between social support and mental health treatment engagement have varied. Several studies supported an inverse relationship between social support and mental health care utilization. For instance, among 154 veterans filing claims for U.S. Department of Veterans Affairs disability benefits for PTSD, those in mental health treatment reported lower social support (21). In another study, greater readjustment stress (marital and family problems, loss of a loved one, or other indicators of lower social support) was associated with a greater number of mental health visits by National Guard soldiers (20). In another sample of National Guard soldiers, lower social support after deployment was related to greater psychiatric medication usage but was not related to psychotherapy utilization (19). That study echoed our unadjusted finding that social support was related to use of psychiatric medication specifically.

Other studies, however, have reported a positive relationship between social support and mental health service utilization. One study found that seeking mental health services was associated with greater levels of social support among women with PTSD (13). Another study reported that greater spousal involvement was associated with greater engagement in trauma-focused treatment among Vietnam veterans (14).

In line with our findings, additional research indicates that there is not a significant association between social support and treatment seeking. Pietrzak and colleagues (23) found that social support after deployment was not related to perceived barriers to care among returning veterans. Another

study found that after the analyses controlled for PTSD symptom severity and cumulative trauma exposure, social support was not associated with treatment seeking in a sample of 549 Canadian veterans (24).

Reasons for the inconsistent findings in the literature remain unclear; however, the conflicting results may be due to variation in study design and sampling (such as studies of small groups of veterans in clinic-based settings versus large, general population-based surveys), measurement of social support, and adjustment for other important factors.

In the analyses in this study, we included several socio-demographic factors that have been found to be related to mental health treatment seeking. Indeed, several of these demographic variables were significantly associated with PTSD treatment utilization. These included age, sex, race-ethnicity, education, income, marital status, and psychiatric comorbidity. These findings are largely consistent with the published literature. For instance, among all individuals with anxiety disorders in the NESARC survey, middle-aged adults were the most likely to have received mental health services in the past year, and older adults were the least likely (3). These results are consistent with our finding that older adults were less likely than young adults to use PTSD services and that adults age 45–64 were more likely than young adults to use PTSD medications. We also found that women were more likely than men to receive PTSD services. The NESARC data set supported this finding—among all individuals with anxiety disorders, women were more likely than men to have received mental health services in the past year (3).

Another study from the NESARC data set also supported our finding that blacks were less likely than whites to receive medication for PTSD and also less likely to receive any type of PTSD services. It found that racial-ethnic minority groups (including black, Asian, and Hispanic individuals) were less likely than whites to receive outpatient care for PTSD (34). In regard to marital status, we found that individuals who were divorced, separated, or widowed were more likely to receive services than individuals who were married. Previous findings on marriage and health service use are mixed (17), although, consistent with our findings, some investigations have reported greater use of services among divorced or separated individuals (35,36). Finally, we found that individuals with three or more comorbid axis I disorders were more likely to use PTSD services compared with persons without a psychiatric comorbidity. Similarly, a previous study found that among all individuals with anxiety disorders in the NESARC data, individuals with comorbid mood and anxiety disorders were more likely than those without such disorders to use services in the past year (3). Thus sociodemographic characteristics and psychiatric comorbidities may be salient factors in PTSD treatment utilization.

Potential relationships between social support and treatment utilization may also be accounted for by PTSD severity. Symptom severity is a robust and reliable predictor of service utilization (37–43) and is also highly correlated with social support (10–12,44). Among National Guard soldiers, greater

TABLE 3. Associations between sociodemographic and other characteristics of 2,811 persons with PTSD and use of PTSD treatment<sup>a</sup>

Variable	Any treatment			Outpatient			Hospitalization			Emergency			Medication		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Social support	.99	.98–1.01	ns	1.00	.99–1.02	ns	.99	.97–1.02	ns	.99	.97–1.03	ns	.99	.97–1.00	ns
Age group (reference: 18–29)															
30–44	.99	.72–1.37	ns	.96	.70–1.33	ns	1.05	.59–1.88	ns	1.12	.60–2.09	ns	1.05	.73–1.50	ns
45–64	1.02	.74–1.41	ns	.98	.71–1.34	ns	1.24	.67–2.27	ns	1.03	.56–1.92	ns	1.61	1.13–2.31	.009
≥65	.48	.32–.72	.001	.37	.24–.57	<.001	.34	.15–.78	.012	.42	.16–1.08	.071	.94	.62–1.43	ns
Female (reference: male)	1.34	1.07–1.65	.011	1.21	.97–1.51	.091	.61	.43–.88	.009	.71	.49–1.03	.072	1.13	.87–1.47	ns
Race-ethnicity (reference: non-Hispanic white)															
Non-Hispanic black	.46	.35–.61	<.001	.44	.33–.58	<.001	.60	.40–.90	.014	.80	.51–1.26	ns	.52	.37–.74	<.001
Hispanic	.78	.55–1.12	ns	.72	.50–1.04	.080	.70	.46–1.06	.093	.86	.52–1.41	ns	.78	.52–1.16	ns
Other	.90	.57–1.41	ns	1.09	.70–1.70	ns	1.17	.68–2.02	ns	.85	.42–1.70	ns	.85	.53–1.34	ns
Foreign-born (reference: U.S.-born)	.65	.43–.99	.035	.66	.44–.99	.046	.49	.29–.83	.008	.65	.34–1.24	ns	.85	.53–1.36	ns
Education (reference: less than high school)															
High school graduate	1.07	.78–1.45	ns	1.04	.76–1.41	ns	.68	.43–1.09	ns	.87	.53–1.43	ns	1.11	.79–1.57	ns
Some college	1.85	1.39–2.46	<.001	1.93	1.46–2.54	<.001	.69	.43–1.10	ns	1.07	.66–1.72	ns	1.40	1.01–1.93	.043
Household income (\$) (reference: ≤19,999)															
20,000–34,999	1.09	.81–1.47	ns	.97	.72–1.30	ns	1.14	.39–1.87	ns	1.16	.70–1.91	ns	1.22	.92–1.62	ns
35,000–69,999	1.18	.88–1.59	ns	1.12	.83–1.49	ns	1.26	.83–1.94	ns	1.01	.62–1.62	ns	1.31	.96–1.77	.083
≥70,000	1.43	1.02–2.00	.039	1.34	.95–1.88	.096	1.16	.68–1.99	ns	.70	.39–1.26	ns	1.50	1.05–2.15	.026
Marital status (reference: married or cohabitating)															
Divorced, separated, or widowed	1.43	1.11–1.84	.006	1.47	1.13–1.92	.005	1.40	.96–2.05	.078	1.43	.91–2.25	ns	1.64	1.27–2.12	<.001
Never married	1.02	.74–1.39	ns	1.09	.79–1.51	ns	1.43	.88–2.33	ns	1.32	.82–2.11	ns	1.01	.73–1.38	ns
Urbanicity (reference: urban)															
Suburban	1.11	.89–1.38	ns	1.14	.91–1.43	ns	.90	.62–1.29	ns	1.06	.74–1.53	ns	.98	.77–1.24	ns
Rural	1.28	.94–1.73	ns	1.41	1.04–1.91	.027	.92	.56–1.52	ns	.68	.40–1.17	ns	1.19	.88–1.61	ns
Region (reference: Northeast)															
Midwest	1.23	.87–1.74	ns	1.26	.88–1.80	ns	1.48	.88–2.49	ns	1.40	.80–2.44	ns	.93	.66–1.31	ns
South	1.22	.89–1.66	ns	1.11	.81–1.50	ns	1.01	.61–1.68	ns	1.13	.69–1.85	ns	1.14	.84–1.55	ns
West	.99	.73–1.35	ns	.93	.68–1.26	ns	1.18	.72–1.94	ns	1.15	.67–1.96	ns	1.10	.78–1.56	ns
Employed (reference: unemployed)	.69	.54–.87	.002	.73	.57–.93	.012	.38	.25–.59	<.001	.61	.40–.94	.027	.60	.47–.78	<.001
Insured (reference: uninsured)	1.72	1.28–2.30	<.001	1.61	1.20–2.17	.002	1.05	.61–1.82	ns	1.24	.75–2.04	ns	1.74	1.23–2.46	.002
Number of comorbid lifetime psychiatric disorders (reference: 0)															
1	1.06	.75–1.51	ns	1.17	.81–1.67	ns	.84	.44–1.59	ns	.69	.34–1.42	ns	1.47	.99–2.19	.058
2	1.11	.79–1.57	ns	1.19	.84–1.69	ns	1.27	.65–2.47	ns	1.39	.71–2.71	ns	1.40	.91–2.17	ns
≥3	1.50	1.10–2.05	.012	1.78	1.27–2.49	.001	1.13	.60–2.10	ns	1.25	.67–2.35	ns	2.07	1.40–3.06	<.001
PTSD symptom severity	1.13	1.09–1.17	<.001	1.12	1.08–1.17	<.001	1.17	1.10–1.25	<.001	1.12	1.04–1.20	.002	1.10	1.06–1.15	<.001

<sup>a</sup> Odds ratios are adjusted for PTSD symptom severity and sociodemographic variables that have previously been found to be associated with PTSD (6).



psychiatric medication usage was related to both reduced postdeployment social support and greater PTSD severity (19). Furthermore, Meis and colleagues (17) found that the impact of social support on treatment utilization was fully accounted for by PTSD symptom severity. Although the NESARC did not collect information on symptom severity per se, we included the number of PTSD symptoms as a proxy for severity. Moreover, this variable was robustly related to the odds of receiving all types of PTSD treatment.

Our study had several potential limitations. First, the NESARC survey used retrospective data, potentially reducing the accuracy of recall. Second, the survey was conducted by nonclinician interviewers, which precludes the use of clinical judgment in determining diagnoses. Third, the cross-sectional design prevents any determination of causality. Limitations of our social support measure included the fact that the ISEL-12 assesses only positive aspects of social support and does not address the negative aspects of social relationships or social strains. Furthermore, the ISEL-12 may not specifically address how members of a participant's social network affect that participant's health-related problems or service utilization.

Another limitation of our data was that we assessed current levels of social support but assessed PTSD and mental health service utilization over the course of the participant's lifetime. This study feature may mask potential temporal relationships between social support and help seeking. For example, diminished social support may be a consequence of failing to receive treatment after PTSD onset rather than a contributor to not seeking treatment. Consequently, additional longitudinal data are required to better address such concerns. Finally, the mean ISEL-12 score for the NESARC sample was relatively high. It is possible that results may differ among populations with lower levels of social support.

## CONCLUSIONS

In this study, we reported a null association between perceived social support and PTSD treatment utilization. For those in the general population with PTSD, other factors, including sociodemographic characteristics and symptom severity, may be more important influences on receipt of PTSD-specific treatment. Future work is needed to assess whether social support influences other aspects of treatment, such as adherence.

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## REFERENCES

1. Kelly VG, Merrill GS, Shumway M, et al: Outreach, engagement, and practical assistance: essential aspects of PTSD care for urban victims of violent crime. *Trauma, Violence and Abuse* 11:144–156, 2010
2. Grasso DJ, Webb C, Cohen A, et al: Building a consumer base for trauma-focused cognitive behavioral therapy in a state system of care. *Administration and Policy in Mental Health and Mental Health Services Research* 40:240–254, 2013
3. Mackenzie CS, Reynolds K, Cairney J, et al: Disorder-specific mental health service use for mood and anxiety disorders: associations with age, sex, and psychiatric comorbidity. *Depression and Anxiety* 29:234–242, 2012
4. Sayer NA, Friedemann-Sanchez G, Spont M, et al: A qualitative study of determinants of PTSD treatment initiation in veterans. *Psychiatry* 72:238–255, 2009
5. Coker AL, Smith PH, Thompson MP, et al: Social support protects against the negative effects of partner violence on mental health. *Journal of Women's Health and Gender-Based Medicine* 11:465–476, 2002
6. Brewin CR, Andrews B, Valentine JD: Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology* 68:748–766, 2000
7. Ozer EJ, Best SR, Lipsey TL, et al: Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis. *Psychological Bulletin* 129:52–73, 2003
8. Dinenberg RE, McCaslin SE, Bates MN, et al: Social support may protect against development of posttraumatic stress disorder: findings from the Heart and Soul Study. *American Journal of Health Promotion* 28:294–297, 2014
9. Platt J, Keyes KM, Koenen KC: Size of the social network versus quality of social support: which is more protective against PTSD? *Social Psychiatry and Psychiatric Epidemiology* 49:1279–1286, 2014
10. Boscarino JA: Post-traumatic stress and associated disorders among Vietnam veterans: the significance of combat exposure and social support. *Journal of Traumatic Stress* 8:317–336, 1995
11. Pietrzak RH, Johnson DC, Goldstein MB, et al: Psychosocial buffers of traumatic stress, depressive symptoms, and psychosocial difficulties in veterans of Operations Enduring Freedom and Iraqi Freedom: the role of resilience, unit support, and postdeployment social support. *Journal of Affective Disorders* 120:188–192, 2010
12. Zhao C, Wu Z, Xu J: The association between post-traumatic stress disorder symptoms and the quality of life among Wenchuan earthquake survivors: the role of social support as a moderator. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation* 22:733–743, 2013
13. Ullman SE, Brecklin LR: Sexual assault history, PTSD, and mental health service seeking in a national sample of women. *Journal of Community Psychology* 30:261–279, 2002
14. Sautter FJ, Glynn SM, Thompson KE, et al: A couple-based approach to the reduction of PTSD avoidance symptoms: preliminary findings. *Journal of Marital and Family Therapy* 35:343–349, 2009
15. Sherbourne CD: The role of social support and life stress events in use of mental health services. *Social Science and Medicine* 27:1393–1400, 1988
16. Mitchell ME: The relationship between social network variables and the utilization of mental health services. *Journal of Community Psychology* 17:258–266, 1989

17. Meis LA, Barry RA, Kehle SM, et al: Relationship adjustment, PTSD symptoms, and treatment utilization among coupled National Guard soldiers deployed to Iraq. *Journal of Family Psychology* 24:560–567, 2010
18. Andersen RM: Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior* 36:1–10, 1995
19. Kehle SM, Polusny MA, Murdoch M, et al: Early mental health treatment-seeking among US National Guard soldiers deployed to Iraq. *Journal of Traumatic Stress* 23:33–40, 2010
20. Interian A, Kline A, Callahan L, et al: Readjustment stressors and early mental health treatment seeking by returning National Guard soldiers with PTSD. *Psychiatric Services* 63:855–861, 2012
21. Sayer NA, Clothier B, Spont M, et al: Use of mental health treatment among veterans filing claims for posttraumatic stress disorder. *Journal of Traumatic Stress* 20:15–25, 2007
22. Gourash N: Help-seeking: a review of the literature. *American Journal of Community Psychology* 6:413–423, 1978
23. Pietrzak RH, Johnson DC, Goldstein MB, et al: Perceived stigma and barriers to mental health care utilization among OEF-OIF veterans. *Psychiatric Services* 60:1118–1122, 2009
24. Fikretoglu D, Brunet A, Guay S, et al: Mental health treatment seeking by military members with posttraumatic stress disorder: findings on rates, characteristics, and predictors from a nationally representative Canadian military sample. *Canadian Journal of Psychiatry* 52:103–110, 2007
25. Grant BF, Kaplan KD: Source and Accuracy Statement for the 2004–2005 Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. Bethesda, Md, National Institute on Alcohol Abuse and Alcoholism, 2005
26. Grant BF, Kaplan KD, Shepard J, et al: Source and Accuracy Statement for Wave 1 of the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions. Bethesda, Md, National Institute on Alcohol Abuse and Alcoholism, 2003
27. Grant BF, Dawson DA, Hasin DS: The Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions Alcohol Use Disorder and Associated Disabilities Interview Schedule DSM-IV Version. Bethesda, Md, National Institute on Alcohol Abuse and Alcoholism, 2004
28. Breslau N, Bohnert KM, Koenen KC: The 9/11 terrorist attack and posttraumatic stress disorder revisited. *Journal of Nervous and Mental Disease* 198:539–543, 2010
29. Cohen S, Wills TA: Stress, social support, and the buffering hypothesis. *Psychological Bulletin* 98:310–357, 1985
30. Cohen S, Hoberman HM: Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology* 13:99–125, 1983
31. Cohen S, Mermelstein R, Karmarck TW, et al: Measuring the functional components of social support; in *Social Support: Theory, Research and Application*. Edited by Sarason IG, Sarason BR. The Hague, the Netherlands, Martinus Nijhoff, 1985
32. Merz EL, Roesch SC, Malcarne VL, et al: Validation of Interpersonal Support Evaluation List–12 (ISEL-12) scores among English- and Spanish-speaking Hispanics/Latinos from the HCHS/SOL Sociocultural Ancillary Study. *Psychological Assessment* 26:384–394, 2014
33. Moak ZB, Agrawal A: The association between perceived interpersonal social support and physical and mental health: results from the National Epidemiological Survey on Alcohol and Related Conditions. *Journal of Public Health (Oxford, England)* 32:191–201, 2010
34. Roberts AL, Gilman SE, Breslau J, et al: Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine* 41:71–83, 2011
35. Fikretoglu D, Brunet A, Schmitz N, et al: Posttraumatic stress disorder and treatment seeking in a nationally representative Canadian military sample. *Journal of Traumatic Stress* 19:847–858, 2006
36. Koenen KC, Goodwin R, Struening E, et al: Posttraumatic stress disorder and treatment seeking in a national screening sample. *Journal of Traumatic Stress* 16:5–16, 2003
37. Cohen BE, Gima K, Bertenthal D, et al: Mental health diagnoses and utilization of VA non-mental health medical services among returning Iraq and Afghanistan veterans. *Journal of General Internal Medicine* 25:18–24, 2010
38. Elbogen EB, Wagner HR, Johnson SC, et al: Are Iraq and Afghanistan veterans using mental health services? New data from a national random-sample survey. *Psychiatric Services* 64:134–141, 2013
39. Elhai JD, Voorhees S, Ford JD, et al: Sociodemographic, perceived and objective need indicators of mental health treatment use and treatment-seeking intentions among primary care medical patients. *Psychiatry Research* 165:145–153, 2009
40. Elhai JD, Ford JD: Correlates of mental health service use intensity in the National Comorbidity Survey and National Comorbidity Survey Replication. *Psychiatric Services* 58:1108–1115, 2007
41. Elhai JD, Don Richardson J, Pedlar DJ: Predictors of general medical and psychological treatment use among a national sample of peacekeeping veterans with health problems. *Journal of Anxiety Disorders* 21:580–589, 2007
42. Fikretoglu D, Guay S, Pedlar D, et al: Twelve-month use of mental health services in a nationally representative, active military sample. *Medical Care* 46:217–223, 2008
43. Harpaz-Rotem I, Rosenheck RA, Pietrzak RH, et al: Determinants of prospective engagement in mental health treatment among symptomatic Iraq/Afghanistan veterans. *Journal of Nervous and Mental Disease* 202:97–104, 2014
44. Price M, Gros DF, Strachan M, et al: The role of social support in exposure therapy for Operation Iraqi Freedom/Operation Enduring Freedom veterans: a preliminary investigation. *Psychological Trauma: Theory, Research, Practice, and Policy* 5:93–100, 2013