Journal of Traumatic Stress, Vol. 16, No. 1, February 2003, pp. 5–16 (© 2003)

Posttraumatic Stress Disorder and Treatment Seeking in a National Screening Sample

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The behavioral model of service use was employed to identify predictors of mental health treatment seeking and treatment readiness among individual with PTSD ($N = 2{,}713$) in data from the 1996 National Anxiety Disorders Screening Day (NADSD). This model examines the contribution of predisposing (age, sex, marital status, race/ethnicity, education), enabling (employment, geographic location), perceived need (interference of symptoms with daily life), and evaluated need (other diagnoses) factors to treatment seeking and treatment readiness for individuals with PTSD. Results indicate that although need factors (interference by anxiety symptoms with daily life, diagnosis of panic disorder) are related to both receiving and readiness for treatment, predisposing (age, marital status, minority race) factors influence which individuals receive treatment for PTSD.

KEY WORDS: posttraumatic stress disorder; treatment seeking; comorbidity; anxiety disorders.

Posttraumatic stress disorder occurs following exposure to a traumatic event and is defined by three symptom clusters: reexperiencing, avoidance and numbing, and arousal. With lifetime prevalence rates of approximately 7.8% in the general population (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), PTSD has been identified as a notable mental health problem by a number of epidemiological studies during the past decade (Breslau, Davis, Andreski, & Peterson, 1991; Bromet, Sonnega, & Kessler, 1998; Davidson, 1991; Helzer, Robins, & McEvoy, 1987; Kulka et al., 1990; Norris, 1992; North et al., 1999; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Furthermore, PTSD has been strongly associated with decreased well-being, compromised health and quality of life, and poor psychosocial adjustment (Ferrada-Noli, Asberg, Ormstad, Lundin, & Sundbom, 1998; Kulka et al., 1990; McFarlane, Atchinson, Rafalowicz, & Papay, 1994; Zatzick et al., 1999).

Research has documented the efficacy of psychotherapy (Rothbaum & Foa, 1999) and psychopharmacology (Friedman, 2000) for treatment of PTSD. However, epidemiological studies have documented that many individuals with diagnosable mental disorders never receive treatment (Kessler et al., 1997; Magee, Eaton, Wittchen, McGonagle, & Kessler, 1996; Shapiro et al., 1984). Furthermore, previous studies of treatment seeking behavior among individuals with psychiatric disorders have not focused on PTSD. The limited research available suggests, however, that for many people the disorder may go undetected and untreated (Fifer et al., 1994) and that PTSD appears to have a large negative impact on functioning in a number of domains (Schonfeld et al., 1997). Although several previous studies have examined service use in individuals exposed to traumatic experiences like sexual assault (e.g., Sorenson & Siegel, 1992), these studies have not distinguished service use for individuals with

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and without PTSD. The few studies of service use by individuals with PTSD have focused on Vietnam veterans or clinical samples. The results of these studies have been inconsistent with some showing that individuals with PTSD use more mental health services than those without the diagnosis (Ronis et al., 1996; Switzer et al., 1999) and others that individuals with PTSD receive relatively few mental health services (Amaya-Jackson et al., 1999). Therefore, little is known about the characteristics that predict mental health service use and readiness for treatment among individuals in the community with PTSD.

The behavioral model of health service use is one framework that has been widely used to address the issue of why many individuals who appear to need health services do not use them (Andersen, 1995; Andersen & Newman, 1973; Andersen, Rice, & Kominski, 1996). The model was developed to explain the use of medical services; it has since been applied to mental health service use (Greenley, Mechanic, & Cleary, 1987; Leaf et al., 1988). The model proposes that the individual determinants of service use are composed of predisposing, enabling, and need factors. An essential aspect of the model is that while level of illness or need will influence who seeks and receives services, other characteristics of the individual and his or her place in the social hierarchy will also contribute to whether or not services are sought and/or received. The specific components of the model are described below.

Predisposing factors exist before the onset of illness and are not reasons for seeking treatment per se, but are related to the individual's propensity to use mental health services. These factors include demographics, social structure variables, and beliefs about treatment. Demographics include factors such as gender, age, and marital status; for example, it is well known that women are more likely to seek mental health treatment than men. Social structure variables are those factors such as minority race and level of education that reflect the individual's place in the social hierarchy; some authors have proposed that higher social status is associated with using mental health treatment even in the absence of a diagnosable mental disorder (Mechanic, 1975). Beliefs about treatment, such as being afraid of what other's might say or not thinking treatment will help, clearly appear to influence who seeks mental health services. Enabling factors are those related to the means by which the individual might access mental health services. These include being employed (which provides insurance or financial means to access services) and knowledge about where to seek help. Need factors are related to the level of the individual's illness. For individuals with PTSD, this might include the degree to which symptoms interfere with daily living and the number or type of comorbid diagnoses.

As far as we are aware, no previous study has applied the behavioral model of health service use to the study of the predictors and barriers of treatment seeking and readiness for treatment among a large community sample of individuals with PTSD. Identifying these predictors and barriers has important implications for developing public education campaigns and other interventions aimed at improving access to treatment and increasing treatment readiness among this population.

Method

Design and Procedure

The National Anxiety Disorders Screening Day (NADSD) survey was designed to screen for anxiety disorders in mental health and primary care settings. The NADSD takes place on 1 day each year in all 50 states in the United States. Advertisements about the 1996 screening were posted in various media outlets and participants were volunteers who showed up for the screening on the appointed day. Upon arrival, participants were first asked to view a video that dramatizes the symptoms for PTSD, panic disorder (PD), generalized anxiety disorder (GAD), obsessive–compulsive disorder (OCD), social phobia (SP), and major depression (MD). Participants were then asked to complete a screening questionnaire. After completing the questionnaire, participants met with a mental health professional. The mental health professionals were instructed to inquire as to whether the symptoms were distressing or resulted in functional impairment. This individual determined whether further evaluation was necessary and if so provided a referral.

Participants

Participants in this study were obtained from the total sample of 15,606 individuals who attended the 1996 NADSD. Details of the NADSD sample have been described previously (Struening, Pittman, Welkowitz, Guardino, & Hellman, 1998).

This study had three primary goals: (1) to identify the predisposing, enabling, and need factors for individuals with PTSD who have ever versus never sought mental health treatment; (2) to identify barriers to mental health treatment for individuals with PTSD as compared with other anxiety disorders; and (3) to use the behavioral

model of service use to predict readiness for mental health treatment among individuals with PTSD who have never been in mental health treatment.

In order to accomplish the first goal, individuals with PTSD ($N = 2{,}713$) who had ever ($n = 2{,}045$) versus never ($n = 668$) been in treatment were compared. In order to accomplish the second goal, the 668 participants with PTSD who had never been in treatment were compared to 908 participants who had (1) never been in treatment, (2) reported being exposed to a traumatic event, (3) did not meet criteria for a PTSD diagnosis, and (4) met criteria for another anxiety disorder. The third goal focused solely on participants with PTSD who had never been in treatment for a mental disorder ($n = 668$).

Measures

The 1996 NADSD questionnaire was designed to identify individuals with anxiety disorders. Items reference symptoms to the past month and are based on diagnostic criteria for the *Diagnostic and Statistical Manual—Fourth Edition* (DSM-IV; American Psychiatric Association, 1994).

PTSD Diagnosis

To meet criteria for PTSD, the individual must first answer "yes" to the gate question: "Have you ever had an extremely frightening, traumatic or horrible experience like being the victim of a violent crime, seriously injured in an accident, sexually assaulted, seeing someone seriously injured or killed, or been the victim of a natural disaster?" The individual must also then endorse three of the following four symptoms: "Did you relive the traumatic experience through recurrent dreams, preoccupations, or flashbacks?"; "Did you seem less interested in important things, not 'with it' or unable to experience or express emotion?"; "Did you have problems sleeping, concentrating, or have a short temper?"; and "Did you avoid any place or anything that reminded you of the original horrible event?" Finally, the individual must state that he or she has had the above problems for at least 1 month.

Predisposing Factors

The NADSD questionnaire included questions about age, gender, marital status, race, and education of the participants.

Enabling Factors

The NADSD questionnaire asked about the employment status of the respondent and place of residence. Participants who had never been in treatment for a mental disorder were asked to identify barriers to treatment, for example, "I'm afraid of what people might think or say" and "I don't think treatment will help."

Need Factors

Interference by symptoms with daily life was measured by participant's response to the question: "How much of the time does your anxiety interfere with your daily life?" on a 6-point Likert scale (from *not at all* to *almost all the time*). The diagnoses for MD, PD, GAD, OCD, and SP were made according to participant's endorsement of symptoms using algorithms based on DSM-IV criteria. The 1996 NADSD screening questionnaire diagnoses have been shown to have excellent internal consistency (Struening et al., 1998). Factor analysis of the questionnaire diagnoses demonstrated factorial invariance across racial/ethnic groups (Ritsher, Struening, Hellman, & Guardino, 2000). Questionnaire diagnoses were compared with diagnoses made by experienced clinicians using the Structured Clinical Interview for DSM-IV (First, Spitzer, Gibbon, & Williams, 1995; Spitzer, Williamsn, Gibbon, & First, 1992) on a sample of 203 individuals from two anxiety disorders clinics. Comparisons of screening and diagnostic outcomes revealed fair to moderate levels of agreement. The sensitivity and specificity for participants with a positive screen for PTSD were 62 and 94, respectively. Cohen's kappa for PTSD (percent agreement for screening diagnosis and SCID diagnosis corrected for chance agreement) was .44. The kappas, sensitivity, and specificity for other diagnoses were as follows: PD (.50, 87, 72); GAD (.34, 89, 55); OCD (.39, 50, 91); SP (.46, 64, 85); and MD (.44, 80, 72).

Dependent Variables

Whether participants were currently, had been in the past, or were never in mental health treatment was determined by self-reported treatment history. These include questions about whether the participant has ever sought mental health treatment and for which disorders the treatment was sought. Readiness for treatment was measured by participant's response to the question: "How ready are you to get professional help?" on a 5-point Likert scale (from *not even thinking about getting help* to *ready to seek treatment*).

Analytic Strategy

Predisposing, Enabling, and Need Factors as Predictors of Treatment Seeking

Participants with PTSD who have ever versus never been in mental health treatment were compared on predisposing, enabling, and need factors. The one-way ANOVA was used for continuous variables and the chi-square test for categorical variables. All tests were two-tailed and p was set to .01 for univariate tests to correct for multiple comparisons.

To identify predictors of treatment seeking, predisposing, enabling, and need (perceived and evaluated) factors were entered into a multivariate logistic regression in four blocks, corresponding to the four elements of the behavioral model of health service use, with treatment seeking (ever vs. never) as the dependent variable. Predisposing factors (age, gender, status, education, marital status) were entered in the first block. Enabling factors (employment, residence) were entered in the second block. Perceived need factors (interference by symptoms with daily living) were entered in the third block. Finally, evaluated need factors (psychiatric diagnoses) were entered in the fourth block. The significance of the model was assessed using the chi-square test. The strength of the association between an individual predictor and the outcome after adjusting for all other predictors was evaluated using the odds ratio (OR) and its 95% confidence interval (CI). A 95% CI that does not include one is statistically significant. Fit of the model was determined by the Hosmer–Lemeshow Goodness of Fit Test that follows a chi-square distribution with 8 degrees of freedom. A nonsignificant result indicates a good fit.

Barriers to Treatment

Only participants who had never been in treatment were included in this analysis. Participants with PTSD were first compared to those with other anxiety disorders on predisposing and enabling factors. Logistic regression analyses were then used to calculate odds ratios for the association between PTSD diagnosis and specific treatment barriers adjusted for differences in these factors.

Predictors of Treatment Readiness

Ordinary least squares regression analyses were used to identify predictors of treatment readiness among individuals with PTSD who had never been in treatment. Using the behavioral model of health service use, predictors were entered in four blocks (predisposing, enabling, perceived need, evaluated need) with treatment readiness as the dependent variable. The overall significance of the model was evaluated by the F statistic and the contribution of each block by the F change statistic and the change in R^2. The contribution of an individual predictor to the model after controlling for all others was assessed by comparing the standardized beta weights. Statistical significance was determined by the t test.

Missing Data

Analyses were undertaken to determine if missing data on one or more variables were associated with outcomes examined. There were no missing data for anxiety disorder symptoms, barriers to treatment, treatment seeking or readiness for treatment. Analyses demonstrated that missingness on other variables was not related to treatment seeking (ever vs. never) or readiness for treatment.

Cross Validation

Cross validation was conducted for the models predicting treatment seeking and readiness for treatment using data collected during the 1997 NADSD ($N = 9{,}358$). At least half the sites in the 1997 NADSD differed from those used in 1996. The procedure for collecting these data was identical to that used in 1996. Within the 1997 sample, 1651 (17.6%) participants met screening criteria for PTSD and 459 (27.8%) of those with PTSD had never been in treatment.

Predictors of Treatment Seeking

The logistic regression model predicting treatment seeking developed on the 1996 data was applied to the 1997 data. This resulted in a predicted probability of being in treatment for each individual in the 1997 data. The predicted probability of being in treatment was then dichotomized ($<.50 = 0$ *never in treatment*; $\geq .50 = 1$ *currently or had been in treatment*) and the resulting variable cross-tabulated against the observed treatment-seeking variable.

Predictors of Treatment Readiness

The regression model predicting readiness for treatment developed on the 1996 data was applied to the 1997 data. This resulted in a predicted readiness for treatment

value for each individual in the 1997 data. This value was then correlated with the observed readiness for treatment variable in the 1997 data. The result was squared to determine how much of the variance in the 1997 readiness for treatment variable was explained by the 1996 regression equation.

Replication of Treatment Barriers

Using data from the 1997 NADSD, participants with PTSD who had never been in treatment were compared to those with other anxiety disorders on predisposing and enabling factors. Logistic regression analyses were then used to calculate odds ratios for the association between PTSD diagnosis and specific treatment barriers adjusted for these differences in these factors.

Results

Predisposing, Enabling, and Need Factors as Predictors of Treatment Seeking

Table 1 presents predisposing and enabling factors of participants with PTSD who have ever versus never been in any kind of mental health treatment. Predisposing factors significantly associated with ever having been in mental health treatment include older age, marital status (being separated or divorced), and race (White vs. minority). Enabling factors significantly associated with ever having been in mental health treatment include employment status, specifically being unemployed or disabled.

Table 2 presents need factors of participants with PTSD who have ever versus never been in any kind of mental health treatment. After adjusting for differences in predisposing and enabling factors presented in Table 1, participants with PTSD who have been in mental health treatment demonstrate more perceived and evaluated need. Specifically, those who have ever been in treatment report more perceived need in terms of interference by symptoms in daily life and more evaluated need in that they are also more likely to qualify for a diagnosis of MD, PD, GAD, OCD, or SP than participants who have never been in treatment. In addition, participants with PTSD who have ever been in mental health treatment have more evaluated need in that they qualify for two or more other diagnoses. Despite these differences, both those who had and had not been in treatment were equally likely to be referred for a PTSD evaluation, $\chi^2(1, N = 2713) = 1.09$, $p = .30$.

Table 3 presents the results of the logistic regression analysis predicting ever versus never having been in treatment among individuals with PTSD. The value for the model is highly significant, $\chi^2(17, N = 2713) = 156.59^{***}$, $p < .001$. The Hosmer–Lemeshow chi-square for model fit was $\chi^2(8, N = 2713) = 7.04$, *ns*. The blocks of predisposing, enabling, and perceived need factors each contributed significantly to the model over and above that explained by previously entered blocks. The block of evaluated need factors did not contribute significantly to the model over and above the other factors. However, a diagnosis of PD was positively associated with ever having been in treatment. When PD was entered as the single evaluated need factor, it contributed significantly to the model, $\chi^2(1, N = 2713) = 6.04$, $p < .05$, and improved model fit. The Hosmer–Lemeshow chi-square for model fit became $\chi^2(8, N = 2713) = 3.22$, *ns*. The predisposing factor of older age and perceived need factor of more interference by symptoms in daily life were positively associated with having been in treatment. Minority race was associated with decreased likelihood of having been in treatment.

Barriers to Treatment

Table 4 presents barriers to treatment reported by those with PTSD as compared to those with other anxiety disorders among participants who have never been in treatment. After adjusting for predisposing and enabling characteristics, participants with PTSD were more likely to report that they did not seek treatment because they were "afraid of what others might think," "not sure where to get help," and "can't afford treatment" than those with other anxiety disorders.

Predictors of Treatment Readiness

Table 5 presents the results for the regression analysis predicting readiness for treatment among individuals with PTSD who have never been in treatment. The overall model was highly significant ($p < .001$) with $R = .58$. Predisposing, enabling, perceived need, and evaluated need factors were entered in four blocks. Each block significantly contributed to explaining the variance in treatment readiness over and above that explained by the previously entered blocks. Individual items that had a significant negative association with treatment readiness were the predisposing factor of beliefs about one's disorder—"I don't have an anxiety disorder" and "I can handle it on my own." Items that have a significant positive association with treatment readiness were the enabling factor of not knowing where to get help, the perceived need

Table 1. Predisposing and Enabling Factors for Individuals With PTSD as a Function of Treatment Seeking Status

	Treatment status					
	Ever[a] ($N = 2045$)		Never[a] ($N = 668$)		Analysis	
Characteristic	n	%	n	%	df	χ^2
Predisposing factors: Demographics						
Age					3	27.45***
18–24	181	8.9	99	14.8		
25–44	1028	50.3	336	50.3		
45–64	700	34.2	179	26.8		
65+	136	6.7	54	8.1		
Sex					1	0.07
Male	354	17.3	117	17.5		
Marital status					3	31.36***
Married	858	43.1	306	47.7		
Widowed	119	6.0	37	5.8		
Separated/divorced	580	29.1	118	18.4		
Never married	436	21.9	180	28.1		
Predisposing factors: Social structure						
Race or ethnicity					5	15.70**
White	1701	84.0	525	79.2		
Black	164	8.1	74	11.2		
Hispanic	85	4.2	42	6.3		
Asian	23	1.1	12	1.8		
Native American	25	1.2	5	0.8		
Did not answer	27	1.3	5	0.8		
Education					3	3.13
No high school degree	111	5.5	28	4.3		
High school	955	47.3	307	46.7		
Some college	577	28.6	184	28.0		
College or more	377	18.7	139	21.1		
Enabling factors						
Employment status					5	64.43***
Employed	1052	52.0	403	61.1		
Unemployed	377	18.6	95	14.4		
Homemaker	155	7.7	54	8.2		
Student	47	2.3	30	4.2		
Disabled	276	13.6	27	4.1		
Retired	118	5.8	51	7.7		
Geographic location					2	1.55
Rural or small town	730	37.3	255	40.0		
Small or medium city	936	47.8	293	46.0		
Large city	291	14.9	89	14.0		

[a]The exact N for each comparison varies due to missing data.
$^{**}p < .01$. $^{***}p < .001$.

factor of interference of daily life by symptoms, and the evaluated need factor of having a diagnosis of panic disorder. The model was highly significant and explained 30% of the variance in readiness for treatment.

Cross Validation

The logistic regression model predicting treatment seeking was run using the 1997 data. The percent of participants accurately classified by the 1996 model using 1997 data was 83.0%. The prediction of treatment seeking in 1997 by the model developed on the 1996 data was significant, $\chi^2(1, N = 1651) = 9.55$, $p < .01$.

The model predicting readiness for treatment developed on the 1996 data was run using the 1997 data. The resulting variable—"predicted readiness for treatment"—was correlated with the observed value for "readiness for treatment" giving an $R = .59$, $p < .001$. These values are similar to those for the model using the 1996 data ($R = .58$) and indicate that the model explains a similar proportion of the variance in both data sets.

Replication of Treatment Barriers

Participants in the 1997 NADSD endorsed the same barriers as those in 1996. After controlling for

Table 2. Need Factors for Individuals With PTSD as a Function of Treatment Seeking Status

Characteristic	Ever[a] ($N = 2045$) Mean	Ever[a] ($N = 2045$) *SD*	Never[a] ($N = 668$) Mean	Never[a] ($N = 668$) *SD*	Univariate test statistic	*df*	Adjusted *OR*[b] ever vs. never (95% CI)
Perceived need factors							
Interference by symptoms	4.37	1.20	3.92	1.19	$F = 44.26^{***}$	2,2711	1.26* (1.16, 1.36)
	n	%	*n*	%			
Evaluated need factors							
Other DX (vs. not)							
Major depression	1636	80.0	471	70.5	$X^2 = 26.15^{***}$	1	1.47* (1.19, 1.82)
Panic disorder	1504	73.5	423	63.3	$X^2 = 25.57^{***}$	1	1.55* (1.27, 1.89)
GAD	1809	88.5	556	83.2	$X^2 = 12.30^{***}$	1	1.42* (1.10, 1.84)
OCD	781	38.7	224	33.5	$X^2 = 5.70^{*}$	1	1.23* (1.01, 1.49)
Social phobia	1683	82.3	499	74.7	$X^2 = 18.46^{***}$	1	1.80* (1.34, 2.41)
Number of comorbid anxiety diagnoses							
0	65	3.2	44	6.6	$X^2 = 45.24^{***}$	4	1.00
1 vs. 0	273	13.3	139	20.8			1.31 (0.83, 2.07)
2 vs. 0	562	27.5	187	28.0			1.86* (1.20, 2.91)
3 vs. 0	656	32.1	169	25.3			2.40* (1.53, 3.77)
4 vs. 0	489	23.9	129	19.3			2.27* (1.43, 3.61)

[a]The exact *N* for each comparison varies due to missing data.
[b]*OR*s are adjusted for age, race/ethnicity, marital status, education, and employment status.
$^{*}p < .05$. $^{***}p < .001$.

demographic characteristics, the following barriers were significantly endorsed by those with PTSD: "afraid of what people will think," "not sure where to get help," and "can't afford treatment." These barriers are identical to those in the 1996 NADSD.

Discussion

This study is the first to use the behavioral model of health service use to examine treatment-seeking behavior in individuals with PTSD from a large community sample. Our findings suggest that treatment seeking is associated with certain predisposing, enabling, and need factors among individuals with PTSD. Examining predisposing and enabling factors, those who seek treatment are more likely to be aged 45–64, separated or divorced, White, and unemployed or disabled. Furthermore, after controlling for predisposing and enabling factors, certain need factors are strongly associated with treatment seeking including the degree to which symptoms interfere with daily living and comorbidity (MD, PD, GAD, OCD, SP). It is important to note, however, that a high degree of impairment was also found among individuals with PTSD who had never sought treatment; the mean interference score for this group indicated that anxiety interferes with their daily life about 40–60% of the time. Moreover, 50% of these individuals had two or more comorbid anxiety diagnoses and over 70% met criteria for major depression (MD). This suggests that those with PTSD who had never been in treatment are suffering and in need of mental health services, even though they had not received such services prior to this study.

Predictors of Treatment Seeking

Predisposing and need factors were associated with mental health service use by individuals with PTSD. Specifically, age, being separated or divorced, race/ethnicity, interference by symptoms in daily life, and having panic disorder (PD) predicted service use. Particularly striking is the fact that minority individuals with PTSD were less likely to have received mental health treatment, even though enabling and need factors were accounted for in the analyses. It may be that specific barriers exist that prevent minority individuals with PTSD from receiving mental health care; on the other hand, minority individuals may make use of resources other than mental health services (e.g., clergy) to address PTSD. Further research is needed to determine if and why minority individuals with PTSD are in fact being underserved by the mental health system. Racial bias on the part of clinicians might contribute to minority individuals not pursuing treatment for PTSD (Whaley, 1998). For example, research on Vietnam veterans seeking treatment for PTSD suggests that African Americans may be more likely than Whites to prematurely terminate treatment—but that this only occurs when African American's are paired with White clinicians (Rosenheck, Fontana, & Cottrol, 1995).

Table 3. Results of Logistic Regression Predicting the Probability of Treatment Seeking for Individuals With PTSD

Predictors	Block *df*	Block χ^2	OR (95% CI)
Predisposing factors	9	50.95***	
Demographic			
Age			
18–24[a]			1.00
25–44			1.54* (1.09, 2.20)
45–64			2.05* (1.38, 3.05)
65+			1.46 (0.84, 1.56)
Gender (male vs. female)			
Female[a]			1.00
Male			1.01 (0.78, 1.31)
Marital status			
Married[a]			1.00
Not married			1.23 (0.92, 1.63)
Separated/divorced			1.88* (1.40, 2.51)
Widowed			1.39 (0.83, 2.34)
Social structure			
Race			
White[a]			1.00
Minority			0.71* (0.54, 0.94)
Education (more than high school vs. high school or less)			
High school or less[a]			1.00
More than high school			0.86 (0.69, 1.08)
Enabling factors	2	8.35**	
Employment			
Not employed[a]			1.00
Employed			0.87 (0.70, 1.09)
Residence			
Rural/small town[a]			1.00
Small to large city			0.86 (0.69, 1.07)
Perceived need factors	1	34.63**	
Interference by symptoms			1.23* (1.11, 1.37)
Evaluated need factors	5	9.31	
Major depression			1.10 (0.85, 1.43)
Panic disorder			1.32* (1.04, 1.68)
GAD			0.98 (0.72, 1.34)
OCD			0.98 (0.77, 1.25)
Social phobia			1.20 (0.95, 1.50)

[a]Reference group.
*$p < .05$. **$p < .01$. ***$p < .001$.

Treatment Barriers

Individuals with PTSD endorsed more barriers to mental health treatment than individuals with other anxiety disorders. With regard to beliefs about treatment, PTSD was associated with not seeking treatment because of being afraid of what others might think (18.4%). In terms of resource barriers, one striking finding was that almost 40% of those with PTSD who had never sought treatment indicated they were "not sure where to get help." A significant minority also indicated financial concerns—"can't afford treatment" and "no insurance" as barriers. These belief and resource barriers suggest targets for public education efforts aimed at improving access to treatment among individuals with PTSD. Specifically, these efforts should aim at reducing stigma surrounding the disorder and at increasing knowledge about the availability and efficacy of current treatments and how to access them—particularly those provided at low or no cost (e.g., sliding scale, treatment outcome studies).

Predictors of Treatment Readiness

Specific barriers were also important in predicting treatment readiness. Beliefs about the disorder such as "I don't have an anxiety disorder" and "I can handle it on my own" were negatively associated with treatment readiness. Clearly, individuals who don't think they have a mental health problem and believe they don't need help, are going to be less amenable to treatment. However, these individuals met screening criteria for PTSD and most for

Table 4. Barriers to Treatment for Individuals With PTSD Who Have Never Been in Treatment

Barrier	PTSD+[a] ($N = 668$)		Other anxiety disorder[a] ($N = 908$)					
	n	%	*n*	%	Univariate	*df*	Adjusted OR[b]	95% CI
Beliefs								
Don't have a disorder	63	9.4	119	13.1	5.09*	1	0.69	0.47–1.00
Afraid of what people will think	123	18.4	76	8.4	35.19***	1	2.30*	1.62–3.26
Afraid to take meds	91	13.6	104	11.5	1.69	1	1.07	0.75–1.52
Treatment won't help	44	6.6	32	3.5	7.87**	1	1.73	1.00–2.99
Can handle it on my own	192	28.7	279	30.7	0.72	1	0.92	0.71–1.18
Resources								
No insurance	121	18.1	110	12.1	11.07***	1	1.38	0.99–1.93
Not sure where to get help	264	39.5	263	29.0	19.27***	1	1.46*	1.14–1.87
Can't afford treatment	189	28.3	152	16.7	30.30***	1	1.65*	1.24–2.18

[a]The exact N for each comparison varies due to missing data.
[b]ORs are adjusted for age, gender, race/ethnicity, marital status, education, and employment status.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < 001$.

Table 5. Predictors of Readiness for Treatment Among Individuals With PTSD Who Have Never Been in Treatment ($N = 668$)[a]

Predictors	Step 1 ($R^2 = .20^*$)			Step 2 ($R^2 = .22^*$)			Step 3 ($R^2 = .29^*$)			Step 4 ($R^2 = .30^*$)		
	B	*SE*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Predisposing factors												
Demographic												
Age												
25–44	0.056	0.189	.019	0.105	0.187	.036	0.038	0.180	.013	0.023	0.181	.008
45–64	−0.287	0.221	−.086	−0.187	0.221	−.056	−0.152	0.212	−.046	−0.172	0.212	−.052
65+	−0.540	0.307	−.095	−0.362	0.319	−.064	−0.227	0.307	−.039	−0.150	0.306	−.026
Male gender	−0.048	0.147	−.007	−0.066	0.147	−.018	−0.052	0.141	−.015	−0.039	0.140	−.011
Marital status												
Not married	−0.069	0.160	−.022	−0.090	0.159	.001	0.002	0.153	.001	0.045	0.154	.014
Separated/divorced	0.224	0.173	.056	0.253	0.171	.063	0.326	0.164	.081	0.346	0.163	.086
Widowed	0.208	0.314	.030	0.019	0.314	.003	−0.005	0.301	.001	−0.051	0.301	−.007
Social structure												
Minority race	0.027	0.149	.007	0.034	0.149	.010	0.141	0.144	.039	0.152	0.144	.042
More than high school education	−0.015	0.123	−.005	0.028	0.124	.010	0.095	0.119	.032	0.065	0.119	.022
Beliefs												
"Don't have an anxiety disorder"	−1.537	0.206	−.307*	−1.387	0.206	−.277*	−1.058	0.204	−.212*	−0.976	0.206	−.195***
"Afraid of what people will think"	0.433	0.157	.116*	0.386	0.157	.104*	0.228	0.152	.061	0.205	0.152	.055
"Afraid of medication"	0.169	0.178	.040	0.172	0.177	.041	0.178	0.170	.042	0.124	0.169	.029
"Treatment won't help"	−0.396	0.254	−.065	−0.414	0.251	−.068	−0.499	0.241	−.082	−0.448	0.239	−.074
"Can handle it on my own"	−0.835	0.130	−.262*	−0.667	0.134	−.209*	−0.534	0.130	−.168*	−0.504	0.129	−.158***
Enabling factors												
Employed				−0.029	0.12	−.010	0.105	0.123	.035	0.130	0.122	.044
Small to large city				0.056	0.122	.019	0.107	0.117	.036	0.125	0.116	.042
"No insurance"				0.260	0.177	.068	0.209	0.170	.055	0.116	0.172	.030
"Not sure where to get help"				0.549	0.127	.184*	0.493	0.122	.165*	0.471	0.122	.158***
"Can't afford treatment"				−0.102	0.151	−.032	−0.219	0.145	−.068	−0.207	0.144	−.064
Perceived need factors												
Interference by symptoms							0.362	0.066	.289*	0.364	0.061	.29***
Evaluated need factors												
Major depression										−0.093	0.138	−.029
Panic disorder										0.445	0.126	.148*
GAD										−0.144	0.163	−.037
OCD										0.160	0.132	.052
Social phobia										−0.143	0.128	−.049

[a]The total N for the regression model was reduced due to a number of participants who had missing data on one or more items.
$^{*}p < .05$. $^{***}p < .001$.

another comorbid disorder, suggesting that they have significant psychiatric symptoms. These individuals might be thought of as being in the "precontemplation" stage of treatment readiness (Prochaska, Velicer, DiClemente, & Fava, 1988). Because these individuals are unlikely to seek treatment, public education campaigns (e.g., advertising, commercials) targeted at challenging these beliefs may be necessary in order to encourage these individuals to access the services they seem to need. These campaigns might include television commercials depicting individuals with certain types of symptoms and indicating that these symptoms may reflect a psychiatric disorder for which effective treatments are available.

In terms of enabling factors, not being sure where to get help was positively associated with treatment readiness indicating that there is an inverse association between knowledge of treatment resources and desire to use them. Individuals who are ready to seek help might also be more likely to identify not knowing how to get help as a treatment barrier. Moreover, need factors—degree of interference of anxiety symptoms in daily life and PD—were important predictors of treatment readiness. Predisposing factors such as age, marital status, and status as well as enabling factors such as financial concerns and not having insurance were not associated with treatment readiness. This suggests that while these factors might influence who actually uses mental health services they do not influence readiness to use them. At the same time, interference and panic disorder predicted both treatment seeking and treatment readiness, indicating that these factors influence both readiness for treatment and who actually seeks treatment.

Previous studies have documented an association between PD and service use (Klerman, Weissman, Ouellette, Johnson, & Greenwald, 1991). The reasons for this are unclear. PD is associated with a great deal of immediate and acute distress. In terms of individuals with PTSD, PD could be a marker of the severity or reflect earlier onset of the illness. Because of space limitations on the screening instrument, we do not know if PD preceded or postdated the onset of PTSD. However, the association of PTSD with both mental health service use and with treatment readiness suggests an area worth further exploration. Individuals with PTSD have high rates of panic attacks; clinical evaluations of PTSD should include a careful assessment for PD (Falsetti & Resnick, 1997).

Limitations

This study has several limitations that should be noted. The sample used in this study, although large and distributed across the United States, is self-selected and not representative of the population as a whole. Although the screening instrument had good specificity, its sensitivity as compared to the SCID was .62, indicating that it may have missed some cases of PTSD. Examination of the discrepancies between the screening and SCID PTSD diagnoses suggests that this was due to the gate question for PTSD diagnosis. Because the gate question for the PTSD diagnosis only specified five types of events it is likely that this underestimates the prevalence of PTSD as specific trauma probes are needed to enhance recall of traumatic events (Kessler et al., 1995; Stein, Walker, Hazen, & Forde, 1997). Specifically, deficiencies in sensitivity of PTSD diagnosis would result in some PTSD cases wrongly identified as non-PTSD. This would primarily affect the analyses comparing barriers to treatment in those with PTSD versus other anxiety disorders. If the other anxiety disorder group contains misclassified PTSD cases, this would reduce the possibility of finding differences in treatment barriers endorsed by the two groups.

Another limitation of this study is our inability to distinguish between specific types of traumatic events that might be associated with certain patterns of mental health service use (Norris, Kaniasty, & Scheer, 1990). The data are also cross-sectional and do not allow us to distinguish whether comorbid disorders came before or after PTSD or whether the relationships between predictor variables and outcome are causal. PTSD is highly comorbid and analyses do not distinguish between patterns of treatment seeking and readiness for treatment among individuals with pure versus comorbid PTSD. Because this study was a cross-sectional investigation of predictors of treatment seeking, it is necessary for future researchers to conduct prospective studies to see how these factors predict which individuals actually seek treatment before solid conclusions can be drawn. The use of single self-report items to assess many of the variables is also a limitation. Finally, substance use was not assessed in this sample and has been shown to effect patterns of service use among individuals with PTSD (Brown, Recupero, & Stout, 1995; Brown, Stout, & Mueller, 1999).

Conclusions

Despite certain limitations, this study provides unique information about treatment seeking among individuals with PTSD. As far as we are aware, this is the first study to examine factors related to treatment seeking and treatment readiness in a large, national sample of individuals with PTSD, using a well-defined theoretical model of service utilization. The utility of the behavioral model of service use for predicting treatment seeking and treatment

readiness was further verified by the cross validation of the 1996 models on the 1997 data. The models developed on the 1996 data significantly predicted treatment seeking and treatment readiness in the 1997 sample and showed little shrinkage across samples. More specifically, the 1996 model for treatment seeking correctly classified treatment seeking for 83.0% of the 1997 participants with PTSD, whereas the model for treatment readiness explained about 31% of the variance in the treatment readiness of those 1997 participants with PTSD who were never in treatment. In addition, the treatment barriers identified by individuals with PTSD were consistent with those endorsed in the 1996 data. These results suggest that factors contributing to treatment seeking and treatment readiness as well as the beliefs or resources interfering with individuals seeking treatment for PTSD are not just sample artifacts. Instead, they appear to be stable relationships across different samples that offer some suggestions for increasing access to treatment among individuals with PTSD.

In summary, our data indicate that although need factors (interference by anxiety symptoms with daily life, diagnosis of panic disorder) are related to both receiving and readiness for treatment, predisposing demographic (age, marital status) and social structure (race/ethnicity) factors also influence which individuals receive treatment for PTSD. These results suggest that effort needs to be made to reduce treatment barriers and improve equitability of access to treatment for PTSD. Now that the trauma field has made great strides in developing empirically validated treatments for PTSD, it seems important to ensure that those treatments are disseminated and made available to the individuals who need them. Future research is needed to improve these models and investigate the role of other factors (e.g., social support, personality characteristics) in treatment seeking and treatment readiness among individuals with PTSD. In addition, investigations of the type of public education campaigns that are most effective in reducing treatment barriers, such as negative beliefs about treatment, are sorely needed.

Acknowledgment

This work was funded in part by an NIMH National Research Service Award (NRSA) postdoctoral training grant in psychiatric epidemiology (5T32MH13043).

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