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POSTTRAUMATIC STRESS DISORDER AND FUNCTIONING

Steven R. Thorp, Ph.D., VA San Diego
Healthcare System
Murray B. Stein, MD, MPH, VA San Diego
Healthcare System and the University of
California, San Diego

In recent years there has been growing interest in how PTSD affects functioning and quality of life (QoL), fueled in part by concerns about the consequences for survivors of current wars and recent human-caused and natural disasters. In the legal arena, functional impairment may be more important than diagnosis when determining monetary damages (Simon, 2003). This issue of the *Research Quarterly* focuses on the impact on functioning that is often a consequence of PTSD. Our aim is to provide a survey of the literature on functioning in PTSD; we have limited our focus of inquiry to studies of adults that report measures of general or disorder-specific functioning, disability, or QoL rather than those that report on adverse outcomes such as suicide, physical illness, or more idiosyncratic outcomes.

As Mendlowicz and Stein (2000) have noted, "functioning" is a rather broad construct that is labeled in many different ways (e.g., functioning, disability, illness intrusiveness, well-being, interference, activities of daily living, QoL). Although distinctions do exist, these terms are often used interchangeably to describe the ability to complete tasks or fulfill roles successfully (e.g., work functioning), health status, or levels of satisfaction with particular aspects of one's life (e.g., social relationships and home life). Functioning measures range from crude, face-valid single items to more comprehensive, psychometrically supported instruments (see Mendlowicz & Stein, 2000, for a summary of well-validated multidimensional functioning measures). The issue of comorbidity is especially relevant to the measurement and interpretation of functioning and QoL in PTSD. Despite high rates of comorbidity with other mental disorders and physical disorders (e.g., Kulka et al., 1990), many studies do not assess the role of PTSD independent from these other problems. Consequently, it is possible that including co-occurring problems may inflate functional deficits attributed to PTSD.

among participants in a nationally representative sample (Kessler, 2000). The NCS revealed that PTSD was associated with approximately 3.6 days of work impairment per month, which was comparable to major depression (but less than panic disorder). Data from the NCS Replication (NCS-R; Kessler et al., 2005) provide an update to the original NCS prevalence data with the added benefit of severity ratings for mental disorders. The 12-month prevalence of PTSD was 3.5%. More than one-third (36.6%) of those with PTSD were rated as "serious" (based on several criteria, including work disability, role impairment, and suicide attempts), as compared to 30.4% of those with major depressive disorder (MDD). Higher severity was significantly associated with greater interference with normal activities and with more psychiatric comorbidities.

Stein et al. (1997) reported the results of a standardized telephone interview that was administered to a community sample to determine rates and functional consequences of full PTSD and partial PTSD (i.e., less than the required number of symptoms on Criteria C and D of the DSM-IV PTSD diagnosis). Both full and partial PTSD were more common in women (2.7% and 3.4%, respectively) than in men (1.2% and 0.3%, respectively). Although participants with PTSD showed the most substantial interference with occupational or school activities, those with partial PTSD showed more occupational impairment when compared to participants who had experienced trauma but did not meet criteria for full or partial PTSD. In a survey of a representative sample of residents in the Detroit area, Breslau et al. (2004) found that individuals with full PTSD, compared to those with partial PTSD, demonstrated greater impairment in terms of work days lost, interference with work or daily activities, decreased time with people in personal life, and increased tensions or conflicts because of their reactions to the traumatic experience. Thus, controversy remains about precisely where to draw a dividing line between posttraumatic stress symptoms and what should constitute posttraumatic stress "disorder"; this is a challenge with which the designers of DSM-V will need to grapple.

Until recently, much of the research on trauma has been limited to samples from the United States and Europe. Norris et al. (2003) provided an excellent description of the presence and course of symptoms (including functional impairment) among a sample of adults from four diverse cities in Mexico.

Community Studies

The original U.S. National Comorbidity Survey (NCS) assessed prevalence of mental disorders

Author Adresses: Steven R Thorp, Ph.D., VA San Diego
Healthcare System, and Murray B. Stein, MD, MPH,
VA San Diego Healthcare System and the University of
California, San Diego Email: sthorp@ucsd.edu

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VA Medical and Regional
Office Center (116D)
215 North Main Street
White River Junction
Vermont 05009-0001 USA
(802) 296-5132
FAX (802) 296-5135

Email: ptsd@dartmouth.edu
http://www.ncptsd.va.gov

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Functional impairment was assessed by three items on the Composite International Diagnostic Interview. The authors found that functional impairment was the best single predictor of duration (more than one year vs. less than one year) of PTSD symptoms. Among respondents who had serious reactions to the index trauma, those with PTSD symptoms lasting more than one year showed elevated depression scores and more physical problems and somatic complaints than those with PTSD symptoms lasting less than one year. This type of quality cross-cultural study, especially in developing countries, is invaluable in a literature dominated by studies based in the U.S. and Europe.

Primary Care Patients

Schonfeld et al. (1997) studied 319 members of a primary care health maintenance organization who met criteria for one of six anxiety disorders or major depression as assessed by a structured diagnostic interview. One third of this sample had untreated PTSD. Single disorder PTSD had significant adverse effects on eight areas of functioning, with effects comparable to depression, diabetes, and arthritis. Stein et al. (2000) compared primary care patients with PTSD to patients with no mental disorders, and found greater impairment in work, family/home life, and social life in the PTSD group. The patients in the PTSD group were also more likely to report at least one day in the past month that their work or productivity was adversely affected due to their psychiatric symptoms.

Rapaport et al. (2002) found high levels of impairment (comparable to the levels seen in severe and chronic depression) in outpatients with PTSD on several self-reported and clinician-rated scales measuring functioning and QoL. Moreover, they found substantial improvement in these measures after 64 weeks of treatment with a selective serotonin reuptake inhibitor (SSRI). Severity of PTSD accounted for approximately one quarter of the variance of QoL and functional impairment, whereas chronicity and comorbidity accounted for relatively little of the variance.

Among participants entering medication trials, those who met any diagnostic criteria for anxiety and mood disorders demonstrated QoL impairment (Rapaport et al., 2005). PTSD and mood disorders were particularly associated with profound and broad impairment. Among participants with PTSD, 59% were classified as "severely impaired," defined as two or more standard deviations below the community norm. PTSD-specific symptoms accounted for 23% of the variance in QoL scores. Although 37% of patients with PTSD had a current or lifetime history of a depressive disorder, depressive comorbidity was not a significant predictor of baseline QoL scores.

Veterans

Much of the research on PTSD has been conducted with samples of military veterans. Using data from the National Vietnam Veterans Readjustment Study (NVVRS), Kulka et al. (1990) found that male and female veterans with PTSD (compared to those without PTSD) reported poorer physical

health, more medical service utilization, and greater work impairment. These veterans were also less likely to be married than those without PTSD, and those who had married reported higher rates of marital problems and divorce. Of the male veterans in the NVVRS who had PTSD, one half had been arrested or jailed more than once since the age of 18, 35% were homeless or vagrant, and one quarter had committed 13 or more acts of violence in the previous year.

In one of the relatively few studies of female Vietnam veterans, those with PTSD (as compared to those without PTSD) were more likely to report currently not working, poor or fair physical health, and 1 or more days in bed in the past 90 days, even after controlling for comorbid psychiatric and medical disorders (Zatzick, Weiss, et al., 1997). These findings highlight the dramatic association between PTSD and poor functioning in military veterans. Ortega & Rosenheck (2000) found that although Hispanic Vietnam veterans had more severe PTSD symptoms, they showed no greater functional impairments than other minority veterans.

Other Trauma Survivors

Stein and Kennedy (2001) reported that among women with recent histories of intimate partner violence (IPV), those with PTSD (including participants with and without MDD) reported poorer occupational and overall functioning as compared to women without PTSD or MDD. Women with comorbid PTSD and MDD did not report significantly more functional impairment than those with PTSD alone.

Laffaye et al. (2003) found that PTSD accounts for substantial functional impairment, above and beyond any physical aspects of trauma in female IPV victims. On measures of physical functioning, vitality, social functioning, and role-limitations, IPV victims with PTSD showed more impairment than those without PTSD, who in turn showed more impairment than a control group of non-abused women. PTSD severity remained a significant predictor of self-reported mental health impairment (but not physical health impairment) even after controlling for depressive symptomatology and the extent of abuse, suggesting that it is not simply comorbid depression that is accounting for the functional impairments in the mental health domain.

Among 182 survivors of the Oklahoma City bombing disaster, over one third (34.3%) met criteria for PTSD as assessed by a structured clinical interview (North et al., 1999). Both PTSD with comorbid psychiatric disorders and PTSD alone (especially avoidance and numbing symptoms) were associated with functional impairment and relationship problems with friends and non-cohabiting relatives, and the comorbid group also expressed dissatisfaction with work performance and relationship problems with household members and significant others.

Several investigators have examined the functional impairment that results from physical injuries. Zatzick et al. (2002) found that 30% of patients met criteria for PTSD one year after enduring physical traumas that required being hospitalized for surgery. Those patients who had PTSD, compared to normative scores from the general popula-

tion, reported greater impairments in physical and emotional role functioning, pain, general health, vitality, social functioning, and mental health (but not physical functioning). PTSD was the strongest predictor of adverse outcomes, even after adjusting for age, injury severity, chronic medical conditions, sex, pre-injury physical functioning, and alcohol use.

Holbrook et al. (1999) reported results from a large prospective epidemiologic study designed to investigate outcomes (including functioning and well being) among adult patients who had been admitted to trauma center hospitals after sustaining major physical injuries. While quality of well-being scores before the injury (assessed retrospectively for the days preceding the injury) were in the normal range for healthy adults at the time of discharge from the hospital, patients showed substantial functional limitations at the follow-up assessments at 12 and 18 months post-discharge. Fewer than 60% of the patients returned to near pre-injury quality of well-being levels by 18 months. Quality of well-being outcomes were predicted by intrusion symptoms of PTSD and depression, as well as by serious extremity injury and days in intensive care. Surprisingly, the study found only a weak association between social support and functional outcomes. Functional limitations were predominantly independent of deficits in activities of daily living. Taken together, these studies suggest that functional impairment owes as much (or more) to psychological consequences as to physical consequences of traumatic injury.

Conclusions

The studies summarized here provide compelling evidence that PTSD is associated with substantial impairment in functioning and QoL, above and beyond that linked to depression or physical injuries subsequent to trauma. Preliminary evidence exists to suggest that treatment of PTSD not only reduces symptoms, but improves functioning and QoL. The cost-effectiveness of such treatments remains to be determined. Many more intriguing questions about functioning in PTSD exist. How do self-reported functional impairments relate to data from collateral informants (e.g., supervisor-rated data on work productivity)? How should functioning and QoL decrements be factored into legal standards for the demonstration of disability? How do cultures differ regarding the expression of functional impairment, and how is the impairment interpreted? Researchers are beginning to tackle these issues, and the future promises a much greater understanding of how functioning and quality of life are compromised by PTSD and other trauma-related disorders.

REFERENCES

- Mendlowicz, M.V., & Stein, M.B. (2000). **Quality of life in individuals with anxiety disorders.** *American Journal of Psychiatry*, 157, 669-682.
- Simon, R.I. (Ed.). (2003). *Posttraumatic stress disorder in litigation: Guidelines for forensic assessment* (2nd ed.). Washington, DC: American Psychiatric Publishing.

ABSTRACTS

BRESLAU, N., LUCIA, V.C., & DAVIS, G.C. (2004). **Partial PTSD versus full PTSD: An empirical examination of associated impairment.** *Psychological Medicine*, 34, 1205-1214. The extent to which partial PTSD is distinguishable from full DSM-PTSD with respect to level of impairment was examined. A representative sample of 2181 persons was interviewed by telephone to record lifetime traumatic events and to assess DSM-IV PTSD criteria. Partial PTSD was defined as 1 symptom in each of three symptom groups (criteria B, C and D) and duration of 1 month. Impairment in persons with PTSD and partial PTSD was measured by number of work-related and personal disability days during the 30-day period when the respondent was most upset by the trauma. Compared to exposed persons with neither PTSD nor partial PTSD, increment in work-loss days associated with PTSD was 11.4 days and with partial PTSD, 3.3 days. Similar disparities were found across other impairment indicators. PTSD was associated with excess impairment, controlling for number of symptoms. A significantly lower proportion of persons with partial PTSD than full PTSD experienced symptoms for more than 2 years. A lower proportion of persons with partial PTSD than full PTSD had an etiologic event of high magnitude. PTSD identifies the most severe trauma victims, who are markedly distinguishable from victims with subthreshold PTSD. [Adapted from Abstract]

HOLBROOK, T.L., ANDERSON, J. P., SIEBER, W. J., BROWNER, D., & HOYT, D.B. (1999). **Outcome after major trauma: 12-month and 18-month follow-up results from the Trauma Recovery Project.** *Journal of Trauma*, 46, 765-773. The Trauma Recovery Project (TRP) is a large prospective epidemiologic study designed to examine multiple outcomes after major trauma in adults aged 18 years and older, including quality of life, functional outcome, depression, and PTSD. Patient outcomes were assessed at discharge and at 6, 12, and 18 months after discharge. Of the 1,048 eligible trauma patients enrolled, follow-up was completed with 806 at 12 months and 780 at 18 months. Only 18 percent of patients followed at 12 months had Quality of Well-Being (QWB) scores above 0.8, the norm for a healthy population. The majority of patients (80%) at the 18-month follow-up continued to have QWB scores below the healthy norm. Postinjury depression, PTSD, serious extremity injury, and intensive care unit days were significant independent predictors of 12-month and 18-month QWB. This study demonstrated a prolonged and profound level of functional limitation 12 and 18 months after major trauma. [Adapted from Abstract]

KESSLER, R.C. (2000). **Posttraumatic stress disorder: The burden to the individual and to society.** *Journal of Clinical Psychiatry*, 61 (Suppl. 5), 4-12. *Background:* Little is known about the total population prevalence and societal costs of PTSD; this report reviews relevant literature on these topics. *Method:* A literature search of computerized databases for published reports on trauma and PTSD was conducted. This literature was reviewed to find data on general population exposure to trauma, conditional risk of PTSD among those exposed to trauma both in focused samples of trauma victims and in general population samples, and the adverse consequences of PTSD. *Results:* PTSD was found to be a commonly occurring disorder that often has a duration of many years and is frequently associated with exposure to multiple traumas. The impairment associated with PTSD in U.S. samples, where the majority of research on these consequences has been carried out, is comparable to, or greater than, that of other seriously impairing mental disorders. Risk of suicide

attempts is particularly high among people with PTSD. Available evidence suggests that the prevalence of PTSD and the adverse emotional and psychological consequences of PTSD are much greater in the many countries around the world that are in the midst of armed conflicts involving political, racial, or ethnic violence. *Conclusion:* PTSD is a highly prevalent and impairing condition. Only a minority of people with PTSD obtain treatment. Early and aggressive outreach to treat people with PTSD could help reduce the enormous societal costs of this disorder.

KESSLER, R.C., CHIU, W.T., DEMLER, O., MERIKANGAS, K.R., & WALTERS, E.E. (2005). **Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication.** *Archives of General Psychiatry*, 62, 617-627. *Background:* Little is known about the general population prevalence or severity of DSM-IV mental disorders. *Objective:* To estimate 12-month prevalence, severity, and comorbidity of DSM-IV anxiety, mood, impulse control, and substance disorders in the recently completed US National Comorbidity Survey Replication. *Design and Setting:* Nationally representative face-to-face household survey conducted between February 2001 and April 2003 using a fully structured diagnostic interview, the World Health Organization World Mental Health Survey Initiative version of the Composite International Diagnostic Interview. *Participants:* Nine thousand two hundred eighty-two English-speaking respondents 18 years and older. *Main Outcome Measures:* Twelve-month DSM-IV disorders. *Results:* Twelve-month prevalence estimates were anxiety, 18.1%; mood, 9.5%; impulse control, 8.9%; substance, 3.8%; and any disorder, 26.2%. Of 12-month cases, 22.3% were classified as serious; 37.3%, moderate; and 40.4%, mild. Fifty-five percent carried only a single diagnosis; 22%, 2 diagnoses; and 23%, 3 or more diagnoses. Latent class analysis detected 7 multivariate disorder classes, including 3 highly comorbid classes representing 7% of the population. *Conclusion:* Although mental disorders are widespread, serious cases are concentrated among a relatively small proportion of cases with high comorbidity.

KULKA, R.A., SCHLENGER, W.E., FAIRBANK, J. A., HOUGH, R.L., JORDAN, B.K., MARMAR, C.R., & WEISS, D. S. (1990). *Trauma and the Vietnam War generation: Report of findings from the National Vietnam Veterans Readjustment Study.* New York: Brunner/Mazel. This book presents findings from the National Vietnam Veterans Readjustment Study, which was mandated by the U.S. Congress in 1983 to establish the prevalence and incidence of PTSD and other psychological problems in readjusting to civilian life among Vietnam veterans. [Adapted from Preface]

LAFFAYE, C., KENNEDY, C., & STEIN, M.B. (2003). **Posttraumatic stress disorder and health-related quality of life in female victims of intimate partner violence.** *Violence and Victims*, 18, 227-238. The association between PTSD and health-related quality of life (QOL) in female victims of intimate partner violence (IPV) was examined. The Short-Form Health Survey (SF-36) was used to evaluate health-related QOL. IPV victims with PTSD (IPV/PTSD+; n = 18), IPV victims without PTSD (IPV/PTSD-; n = 22), and a non-abused control group (NA; n = 30) were compared. Multiple Analyses of Covariance (covarying for socioeconomic status and age) indicated that the three groups scored significantly differently on health-related QOL, and the three groups scored significantly more impaired than the NA group. IPV/PTSD+ subjects were significantly more impaired than IPV/PTSD- subjects on physical functioning, mental health, vitality, role limita-

tions due to emotional health, and social functioning. Multiple regression analyses indicated that PTSD severity was a significant statistical predictor of SF-36 mental health composite scores (but not of physical health composite scores), after controlling for depressive symptomatology and extent of physical and psychological abuse.

NORRIS, F.H., MURPHY, A.D., BAKER, C.K., & PERILLA, J.L. (2003). **Severity, timing, and duration of reactions to trauma in the population: An example from Mexico.** *Biological Psychiatry*, 53, 769-778. Of 2509 Mexican adults interviewed with the Composite International Diagnostic Interview, 1241 met trauma exposure criteria for index events occurring more than 1 year previously. The modal response, describing 45%, was a reaction to trauma that was mild (present but below levels of PTSD symptom criteria), immediate (within the first month), and transient (over within a year). Nonetheless, 29% experienced immediate and serious reactions. Of these, 44% had chronic PTSD symptoms. Those whose reactions were serious and chronic differed in many ways from those whose reactions were serious but transient. They had more traumatic events during their lives, and their index events were more likely to have occurred in childhood and to have involved violence. They had more symptoms and functional impairment after the trauma and higher levels of depressive and somatic symptoms when data were collected. Psychiatrically significant reactions to trauma persist often enough to justify their detection and treatment. Persons in need of acute intervention can be identified on the basis of the nature and severity of the initial response as well as characteristics of the stressor. [Adapted from Abstract]

NORTH, C.S., NIXON, S.J., SHARIAT, S., MALLONEE, S., McMILLEN, J.C., SPITZNAGEL, E.L., & SMITH, E.M. (1999). **Psychiatric disorders among survivors of the Oklahoma City bombing.** *Journal of the American Medical Association*, 282, 755-762. The psychiatric impact of the bombing of the Alfred P. Murrah Federal Building in Oklahoma City on 182 adult survivors of the direct blast was examined 6 months postdisaster. Forty-five percent of the subjects had a postdisaster psychiatric disorder and 34.3% had PTSD. Predictors included severity of disaster exposure, female sex, and pre-disaster psychiatric disorder. Onset of PTSD was swift, with 76% reporting same-day onset. The relatively uncommon avoidance and numbing symptoms virtually dictated the diagnosis of PTSD (94% meeting avoidance and numbing criteria had full PTSD diagnosis) and were further associated with psychiatric comorbidity, functional impairment, and treatment received. Intrusive reexperience and hyperarousal symptoms were nearly universal, but by themselves were generally unassociated with other psychopathology or impairment in functioning. A focus on avoidance and numbing symptoms could have provided an effective screening procedure for PTSD and could have identified most psychiatric cases early in the acute postdisaster period. Psychiatric comorbidity further identified those with functional disability and treatment need. The nearly universal yet distressing intrusive and hyperarousal symptoms in the majority of nonpsychiatrically ill persons may be addressed by nonmedical interventions of reassurance and support. [Adapted from Abstract]

ORTEGA, A.N., & ROSENHECK, R.A. (2000). **Posttraumatic stress disorder among Hispanic Vietnam veterans.** *American Journal of Psychiatry*, 157, 615-619. PTSD among Hispanics who served in the Vietnam War was examined. The authors conducted secondary data analyses of the National Vietnam Veterans Readjustment Study, a national epidemiologic study completed in 1988 of a

representative sample of veterans who served during the Vietnam era ($N = 1,195$). After adjustment for premilitary and military experiences, Hispanic, particularly Puerto Rican, Vietnam veterans had significantly more severe PTSD symptoms and a higher probability of experiencing PTSD than nonminority veterans. They had no greater risk for other mental disorders, and their greater risk for PTSD was not explained by acculturation. Despite their more severe symptoms, Hispanic veterans, especially Puerto Rican veterans, showed no greater functional impairment than non-Hispanic white veterans. [Adapted from Abstract]

RAPAPORT, M.H., CLARY, C., FAYYAD, R., & ENDICOTT, J. (2005). **Quality-of-life impairment in depressive and anxiety disorders.** *American Journal of Psychiatry*, 162, 1171-1178. Administration of the same quality-of-life scale to subjects entering 11 large-scale trials for treatment of depression and anxiety disorders allowed us to compare the impact of these disorders on quality of life. The proportion of patients with clinically severe impairment (two or more standard deviations below the community norm) in quality of life varied with different diagnoses: major depressive disorder (63%), chronic/double depression (85%), dysthymic disorder (56%), panic disorder (20%), OCD (26%), social phobia (21%), premenstrual dysphoric disorder (31%), and PTSD (59%). Regression analyses conducted for each disorder suggested that illness-specific symptom scales were significantly associated with baseline quality of life but explained only a small to modest proportion of the variance in Quality of Life Enjoyment and Satisfaction Questionnaire scores. Because diagnostic-specific symptom measures explained only a small proportion of the variance in quality of life, an individual's perception of quality of life is an additional factor that should be part of a complete assessment. [Adapted from Abstract]

RAPAPORT, M.H., ENDICOTT, J., & CLARY, C.M. (2002). **Posttraumatic stress disorder and quality of life: Results across 64 weeks of sertraline treatment.** *Journal of Clinical Psychiatry*, 63, 59-65. Quality of life (QOL) and psychosocial functioning were analyzed in 359 randomly assigned patients across a 3-phase study of sertraline in the treatment of chronic DSM-III-R-defined PTSD: (1) 12 weeks of double-blind, placebo-controlled acute treatment with sertraline in flexible doses of 50 to 200 mg/day, (2) 24 weeks of open-label continuation treatment with sertraline among all study completers (regardless of initial study drug assignment or endpoint responder status), and (3) 28 weeks of double-blind, placebo-controlled maintenance treatment with sertraline in continuation phase responders. At acute phase baseline, QOL was significantly impaired. Sertraline treatment was associated with marked improvement on all QOL/functional measurements: at the end of the acute treatment phase, 58% of responders on treatment with sertraline had achieved QOL scores within 10% of community norms. Twenty-four weeks of continuation treatment led to an additional 20% improvement in QOL and measures of functioning. Double-blind discontinuation of sertraline resulted in recurrence of PTSD symptoms and a worsening of QOL and functional measures, although the degree of exacerbation in symptomatology and psychosocial impairment was notably less than at study entry. Sertraline treatment of chronic PTSD is associated with rapid improvement in quality of life that is progressive and sustained over the course of more than 1 year of treatment.

SCHONFELD, W.H., VERBONCOEUR, C.J., FIFER, S.K., LIPSCHUTZ, R.C., LUBECK, D.P., & BUESCHING, D.P. (1997). **The functioning and well-being of patients with unrecognized anxiety disorders and major depressive disorder.** *Journal of Affective Disorders*, 43, 105-119. This study examines the degree to which untreated anxiety disorders and major depressive disorder, occurring either singly or in combination, reduce functioning and well-being among primary care patients. Adult patients were screened using the SCL-52 to identify those with clinically significant anxiety symptoms. They also completed the Rand Short-Form (SF-36) to measure self-reported patient functioning and well-being. Patients with untreated disorders were identified using the Q-DIS-III-R to diagnose six DIS-anxiety disorders (generalized anxiety disorder, PTSD, simple phobia, social phobia, panic/agoraphobia, obsessive/compulsive disorder), and major depression. Of 319 patients identified, 137 (43 percent) had a single disorder and 182 (57 percent) had multiple disorders. Regression models estimated the relative effects of these disorders on health status (SF-36) by comparing patients with the disorders to patients screened as being not-anxious. Estimates of these effects were consistent with available national norms. The estimated effect of each single disorder on all subscales for physical, social, and emotional functioning was negative, often as much as a 20-30 point reduction on this 100-point scale. Major depression had the greatest negative impact, followed by PTSD and panic/agoraphobia. For patients with multiple disorders, the presence of major depression was associated with the greatest reduction in functioning status. The impact of untreated anxiety disorders and major depressive disorder on functioning was comparable to, or greater than, the effects of medical conditions such as low back pain, arthritis, diabetes, and heart disease.

STEIN, M.B., & KENNEDY, C. (2001). **Major depressive and post-traumatic stress disorder comorbidity in female victims of intimate partner violence.** *Journal of Affective Disorders*, 66, 133-138. *Background and Methods:* Victims of intimate partner violence (IPV) often develop psychiatric disorders. We examined the extent and correlates of comorbidity between two of the disorders most frequently linked to trauma — major depressive disorder (MDD) and PTSD — in a group of 44 women who were victims of IPV within the preceding 2 years. *Results:* MDD (68.2 percent) and PTSD (50.0 percent) were highly prevalent on a lifetime basis in female victims of IPV. On a current basis, MDD (18.2 percent) and IPV-related PTSD (31.8 percent) were more frequently comorbid (42.9 percent of cases of current IPV-related PTSD also had MDD) than would be expected by chance ($P < 0.001$). Most cases of current MDD occurred in persons who also had current IPV-related PTSD. Severity of depressive and PTSD symptoms were highly correlated ($r = 0.84$). Although women with PTSD were significantly more disabled than women without PTSD, persons with comorbid PTSD and MDD were not significantly more disabled than those with PTSD alone. *Limitations:* Cross-sectional study; entry criteria for study may limit generalizability. *Conclusions:* PTSD and MDD symptoms are frequently seen in the aftermath of IPV, and often co-occur. The usefulness of the distinction between PTSD and MDD in this context remains to be determined, both in terms of diagnostic classification and prognostic implications.

STEIN, M.B., McQUAID, J. R., PEDRELLI, P., LENOX, R.J., & McCAHILL, M.E. (2000). **Posttraumatic stress disorder in the primary care medical setting.** *General Hospital Psychiatry*, 22, 261-269. PTSD is a prevalent disorder that adversely affects

2-5 percent of the general population. Little is known about PTSD in the primary care setting. The purpose of the present study was to evaluate the utility of a screening instrument for PTSD (the PCL-C) in primary care and to examine comorbidity, disability, and patterns of healthcare utilization among persons with PTSD in this setting. Adult, English-speaking patients attending for routine medical care (N = 368) participated in a two-stage screening consisting of the administration of a self-report measure for PTSD (the PCL-C) followed by a structured diagnostic interview. Current (1-month) prevalence of PTSD was determined, as were current comorbid disorders. Brief functional impairment and disability indices were administered, and healthcare utilization in the prior 6 months was ascertained. 11.8 percent (standard error 1.7 percent) of primary care attendees met diagnostic criteria for either full or partial PTSD. Comorbidity with major depression (61 percent of cases of PTSD) and generalized anxiety disorder (39 percent) was common, but less so with social phobia (17 percent) and panic disorder (6 percent). Substance use disorder comorbidity (22 percent) was also fairly common. Patients with PTSD reported significantly more functional impairment than patients without mental disorders. Patients with PTSD also made greater use of healthcare resources than not mentally ill patients. PTSD frequently is encountered in primary care, and is associated with considerable functional impairment and healthcare utilization. Comorbidity with other mood and anxiety disorders is extensive. It remains to be seen if greater awareness and more aggressive treatment of PTSD in primary care will lead to improved functioning and reduced (or more appropriate) healthcare utilization. These are topics for further study.

STEIN, M.B., WALKER, J.R., HAZEN, A.L., & FORDE, D. R. (1997). **Full and partial posttraumatic stress disorder: Findings from a community survey.** *American Journal of Psychiatry*, 154, 1114-1119. A standardized telephone interview with a series of trauma probes and a DSM-IV PTSD checklist was administered to a random sample of 1,002 persons in a mid-sized Midwestern Canadian city. The authors determined current (i.e., 1-month) prevalence rates of full PTSD, i.e., all DSM-IV criteria, and partial PTSD, i.e., fewer than the required number of DSM-IV criterion C symptoms (avoidance/numbing) or criterion D symptoms (increased arousal). Additional questions about interference with functioning were also posed. The estimated prevalence of full PTSD was 2.7% for women and 1.2% for men. The prevalence of partial PTSD was 3.4% for women and 0.3% for men. Interference with work or school was significantly more pronounced in persons with full PTSD than in those with only partial symptoms, although the latter were significantly more occupationally impaired than traumatized persons without PTSD. These findings in an epidemiologic sample underscore observations from patient and military groups that many traumatized persons suffer from a subsyndromal form of PTSD. These persons with partial PTSD, although somewhat less impaired than persons with the full syndrome, nonetheless exhibit clinically meaningful levels of functional impairment in association with their symptoms. This subthreshold form of PTSD may be especially prevalent in women. [Adapted from Abstract]

ZATZICK, D.F., JURKOVICH, G.J., GENTILELE, L., WISNER, D., & RIVARA, F.P. (2002). **Posttraumatic stress, problem drinking, and functional outcomes after injury.** *Archives of Surgery*, 137, 200-205. *Hypothesis:* Patients undergo-

ing trauma surgery for injury who have subsequent PTSD or problem drinking will demonstrate significant impairments in functional outcomes compared with patients without these disorders. Design: Prospective cohort study. Setting: Level I academic trauma center. Participants: 101 randomly selected survivors of intentional and unintentional injuries were interviewed while hospitalized and again 1 year later. The investigation achieved a 73 percent 1-year follow-up rate. Main Outcome Measures: PTSD was assessed with the PTSD Checklist and problem drinking was assessed with the Alcohol Use Disorder Identification Test. Functional status was assessed with the Medical Outcomes Study 36-Item Short-Form Health Survey. Results: One year after injury, 30 percent of patients (n = 22) met symptomatic criteria for PTSD and 25 percent (n = 18) had Alcohol Use Disorder Identification Test scores indicative of problem drinking. Patients with PTSD demonstrated significant adverse outcomes in 7 of the 8 domains of the Medical Outcomes Study 36-Item Short-Form Health Survey compared with patients without PTSD. In multivariate models that adjusted for injury severity, chronic medical conditions, age, sex, preinjury physical function, and alcohol use, PTSD remained the strongest predictor of an adverse outcome. Patients with problem drinking did not demonstrate clinically or statistically significant functional impairment compared with patients without problem drinking. Conclusions: PTSD persisted in 30 percent of patients 1 year after traumatic injury and was independently associated with a broad profile of functional impairment. The development of treatment intervention protocols for trauma patients with PTSD is warranted.

ZATZICK, D.F., WEISS, D. S., MARMAR, C.R., METZLER, T.J., WELLS, K.B., GOLDING, J.M., STEWART, A., SCHLENGER, W.E., & BROWNER, W.S. (1997). **Post-traumatic stress disorder and functioning and quality of life outcomes in female Vietnam veterans.** *Military Medicine*, 162, 661-665. *Objective:* This investigation assessed whether current PTSD was associated with impaired functioning in a nationally representative sample of female Vietnam veterans. *Methods:* Logistic models were used to determine the association between PTSD and outcome while adjusting for demographic characteristics and medical and psychiatric co-morbidities. *Results:* PTSD was associated with significantly elevated odds of poorer functioning in 5 of the 6 outcome domains; only the association between perpetration of violence in the past year and PTSD did not achieve statistical significance. After adjusting for demographics and medical and psychiatric co-morbidities, PTSD remained associated with significantly elevated odds of bed days, poorer physical health, and currently not working. *Conclusions:* Among female Vietnam veterans PTSD is associated with a broad profile of functional impairment. The significantly increased odds of impaired functioning and diminished quality of life suggest that PTSD may be the core problem of the set of problems affecting female Vietnam veterans.

CITATIONS

Annotated by the Editor

AMAYA-JACKSON, L., DAVIDSON, J.R.T., HUGHES, D.C., SWARTZ, M.S., REYNOLDS, V., GEORGE, L.K., & BLAZER, D.G. (1999). **Functional impairment and utilization of services associated with posttraumatic stress in the community.** *Journal of Traumatic Stress*, 12, 709-724.

Data from 49 cases and 147 controls who participated in the North Carolina component of the Epidemiologic Catchment Area study were examined. Symptoms of posttraumatic stress were associated with impairment along several domains of functioning: social, financial, physical, and psychological. Individuals with posttraumatic stress were found to have more socioeconomic disadvantages and impaired functioning, but received relatively few mental health services.

BOOTH, B.M., BLOW, F.C., & COOK, C.A.L., (1998). **Functional impairment and co-occurring psychiatric disorders in medically hospitalized men.** *Archives of Internal Medicine*, 158, 1551-1559.

A random sample of 1007 male medical and surgical admissions to 3 Department of Veterans Affairs Medical Centers was enrolled in the study. Almost half (47%) met lifetime criteria for at least 1 DSM-III-R disorder, most commonly for alcohol abuse or dependence (33%), PTSD (10%), and major depression or dysthymia (9%). Co-occurring psychiatric disorders were associated with substantial and significant impairment on all dimensions of functioning, with the greatest decrements observed in physical and emotional role functioning. Given the observed additional burden of psychiatric disorders on functioning in medically hospitalized patients, the study indicates the importance of identification and treatment of co-occurring psychiatric disorders in this high-risk and clinically challenging group of patients.

COKER, A.L., SMITH, P.H., BETHEA, L., KING, M.R., & McKEOWN, R.E. (2000). **Physical health consequences of physical and psychological intimate partner violence.** *Archives of Family Medicine*, 9, 451-457.

To examine the physical health consequences of psychological forms of intimate partner violence (IPV), 1152 women were recruited from family practice clinics. Of these, 13.6% had experienced psychological IPV without physical IPV. They were significantly more likely than were women without IPV to report poor physical and mental health. Psychological IPV was as strongly associated with the majority of adverse health outcomes as physical IPV.

COOK, J.M., RIGGS, D.S., THOMPSON, R., COYNE, J.C., & SHEIKH, J.I. (2004). **Posttraumatic stress disorder and current relationship functioning among World War II ex-prisoners of war.** *Journal of Family Psychology*, 18, 36-45. The authors examined the association between PTSD with the quality of intimate relationships among ex-prisoners of war (POWs) from World War II. Ex-POWs with PTSD were more likely than were ex-POWs without PTSD to report relationship problems. Emotional numbing was significantly related to relationship difficulties independent of other symptom complexes.

HATHAWAY, J.E., MUCCI, L.A., SILVERMAN, J.G., BROOKS, D.R., MATHEWS, R., & PAVLOS, C.A. (2000). **Health status and health care use of Massachusetts women reporting partner abuse.** *American Journal of Preventive Medicine*, 19, 302-307.

In a population-based sample of 2043 adult women, 6.3% reported intimate partner abuse (IPA) in the past year. They were more likely than were other women to report depression, anxiety, sleep problems, suicidal ideation, disabilities, smoking, unwanted pregnancy, HIV testing, and condom use. They were less likely to have health insurance but received routine health care at rates similar to other women.

KAPFHAMMER, H.P., ROTHENHÄUSLER, H.B., KRAUSENECK, T., STOLL, C., & SCHELLING, G. (2004). **Posttraumatic stress disorder and health-related quality of life in long-term survivors of acute respiratory distress syndrome.** *American Journal of Psychiatry*, 161, 45-52.

Of 46 long-term survivors of acute respiratory distress syndrome, 20 suffered from PTSD at discharge, and 11 suffered from PTSD at follow-up. Those with PTSD showed major impairments in some dimensions of health-related quality of life, whereas those without PTSD had scores in the normal range.

MOLLICA, R.F., McINNES, K., SARAJLIC, N., LAVELLE, J., SARAJLIC, I., & MASSAGLI, M.P. (1999). **Disability associated with psychiatric comorbidity and health status in Bosnian refugees living in Croatia.** *Journal of the American Medical Association*, 281, 433-439.

The relation between psychiatric symptoms and disability was studied in a sample of 534 refugee survivors of mass violence. Refugees with comorbid PTSD and depression were at high risk for disability compared to asymptomatic refugees.

MURDOCH, M., HODGES, J., HUNT, C., COWPER, D., KRESSIN, N., & O'BRIEN, N. (2003). **Gender differences in service connection for PTSD.** *Medical Care*, 41, 950-961.

Mail survey data were linked to administrative data in a sample of 3337 veterans seeking VA disability benefits for PTSD. Men's unadjusted rate of service connected disability was 71%, women's 52%. The discrepancy was explained by dissimilar rates of combat exposure but not by self-reported PTSD severity or functional impairment.

NORTH, C.S., McCUTCHEON, V., SPITZNAGEL, E.L., & SMITH, E.M. (2002). **Three year follow-up of survivors of a mass shooting episode.** *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 79, 383-391.

Survivors (n = 116) were assessed 1-2 months, 1 year, and 3 years after a mass shooting. Women and people with pre-existing disorders were at greater risk for the development of PTSD, but these variables did not predict chronicity. Chronicity of PTSD was predicted by functional impairment and seeking mental health treatment at baseline.

STEIN, M.B., KENNEDY, C.M., & TWAMLEY, E.W. (2002). **Neuropsychological function in female victims of intimate partner violence with and without posttraumatic stress disorder.** *Biological Psychiatry*, 52, 1079-1088.

Neuropsychological functioning was examined in 39 female victims of intimate partner violence (IPV), of whom 17 had current PTSD, and 22 nonvictimized controls. Cognitive deficits in IPV victims were confined to measures of working memory, visuoconstruction, and executive function and were not uniformly worse among those with PTSD.

ZATZICK, D.F., MARMAR, C.R., WEISS, D.S., BROWNER, W.S., METZLER, T.J., GOLDING, J.M., STEWART, A., SCHLENGER, W.E., & WELLS, K.B. (1997). **Posttraumatic stress disorder and functioning and quality of life outcomes in a nationally representative sample of male Vietnam veterans.** *American Journal of Psychiatry*, 154, 1690-1695.

Reanalysis of data from the National Vietnam Veterans Readjustment Study showed that participants with PTSD were far more likely than were veterans without PTSD to exhibit functional impairment, including physical limitations, not working, compromised physical health, and diminished well-being.

PILOTS UPDATE

The topic of this issue offers a study in the problems of using a bibliographic database. Consider the nouns contained in its title: “posttraumatic stress disorder” and “functioning”. At first glance, both seem straightforward enough to use as search terms. But in neither case will a search yield the desired results.

Entering “posttraumatic stress disorder” in the box labeled “Search titles, abstracts, index terms & other descriptive or full text” and selecting “contains phrase” from the drop-down menu yields over 5500 citations. But that represents only a fraction of the publications on PTSD indexed in the PILOTS Database. Our controlled indexing vocabulary uses the abbreviation “PTSD” and several more specific terms, such as “PTSD (DSM-IV)” and “PTSD (ICD-10)”. In order to ensure that your search retrieves all records indexed under any of these terms, you will need to enter “PTSD*” in the search box, and mark the “Index Terms” checkbox beneath it. (This restricts your search to descriptors listed in the PILOTS Thesaurus. The asterisk is a truncation symbol, invoking any descriptors whose first four characters are “PTSD”.)

The term “functioning” presents a different problem. It doesn’t appear in the PILOTS Thesaurus, even as an entry term with a cross-reference to an approved descriptor. (The same is true of PsycINFO’s *Thesaurus of Psychological Index Terms*.) You can enter “functioning” in the search box, leaving the “Index Terms” checkbox unmarked, but the 1500-odd results of such a natural-language search will include many that are irrelevant to the topic. Among the first few papers this search retrieved were one whose authors used the Family Functioning Scale as an assessment instrument, another that addressed the functioning of the Israeli Ministry of Health’s comprehensive emergency response system, and a case report describing the neurobiological functioning of the frontal lobes in a French road accident survivor.

So here we have a case in which the PILOTS Thesaurus isn’t as helpful as it should be, evidence perhaps of an inadequacy in our controlled indexing vocabulary. We’ll

have the opportunity to address this during our forthcoming revision of the Thesaurus, but that’s of no help now. What we need is a work-around, and fortunately we can find one.

Among the citations retrieved by our natural-language search, there are several in which “functioning” has precisely the meaning we are looking for. On the day that we performed this search, the very first citation was to a paper on “How trauma, recent stressful events, and PTSD affect functional health status and health utilization in HIV-infected patients in the South”. When we examine the full record, the abstract reassures us that its authors are using “functioning” in the same sense that we are. The next step is to look at the list of descriptors that our indexing staff has applied to this record. One of these is “Quality of Life”; and when we see that this descriptor has been applied to many of the likely-looking papers our “functioning” search has retrieved, we can infer that it would be worth our while to search the database using that term as a descriptor. (And indeed such a search retrieves over 150 citations.)

Whether you’re searching the PILOTS Database or any other bibliographic database, it’s a good idea to begin by examining the way some papers that you already know to be relevant have been indexed. This may alert you to some idiosyncracies in the database (such as the PILOTS Database’s distinctions among the several DSM and ICD definitions of PTSD), and can be invaluable when you haven’t got access to its thesaurus or can’t find your way to the descriptor that you need.

Sometimes your inability to find a descriptor that matches your area of interest is an indication that you’re searching in the wrong database. Sometimes (as in the case of “functioning”) it may reveal a weak spot in the database’s indexing vocabulary. And sometimes it’s simply an indication that your approach to characterizing a phenomenon is new enough that nobody else has thought of it — in which case what started out as a problem to be solved might turn into an opportunity to be seized.

National Center for PTSD (116D)
VA Medical and Regional Office Center
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