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PTSD AND HEALTH RISK BEHAVIOR

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PTSD is associated with increased morbidity, utilization of medical care services, and premature death. The proclivity of individuals with PTSD to engage in behaviors with adverse health consequences likely contributes to these associations, along with dysregulated neuroendocrine and immune system pathways, genetic vulnerabilities, maladaptive psychological states, and learned illness behavior (Boscarino, 2004, 2006; Schnurr & Jankowski, 1999). This review summarizes key papers linking PTSD with the three leading causes of morbidity and mortality in United States.

Smoking

The National Comorbidity Survey (NCS) showed that the prevalence of smoking in PTSD is over 45% nationwide, compared to 23% for the adult population at large (Lasser et al., 2000). Although half of all ever-smokers have stopped using tobacco, this study found that only 23% of ever-smokers with PTSD had quit, placing them third from the bottom in a ranking of quit rates for 13 mental disorders. Extraordinarily high rates of smoking have been reported in several investigations involving clinical samples with PTSD. For example, Beckham, Kirby, and colleagues (1997) found that 53% of VA patients with combat-related PTSD smoked and that 48% of these veterans smoked heavily (> 25 cigarettes/day), compared to 28% of combat veterans without PTSD.

High concurrence of PTSD and smoking is similarly evident among recently traumatized individuals. Vlahov and colleagues (2002; Nandi et al., 2005) assessed PTSD and tobacco use in a large, representative sample of New York City residents following the September 11th terrorist attacks. Four months after the attacks, participants with probable nicotine dependence were more likely to report PTSD symptoms (18.1%) than were participants without nicotine dependence (5.7%). Also, PTSD was more prevalent among participants who had increased their rate of smoking 5 to 8 weeks after the attacks than in those who did not increase their rate of smoking (24.2% vs. 5.6%).

The causal relationship between PTSD and smoking has been examined in retrospective, longitudinal, and twin-study research designs. Breslau et al. (2003) analyzed prospective data from a sample of 1,200 enrollees in a health maintenance organization as well as retrospective, lifetime data in order to determine risk of onset of nicotine dependence in traumatized persons with and without PTSD. The 10-year cumulative incidence of smoking in individuals with PTSD was 31.7%, compared to 19.9% in persons with a history of trauma exposure without PTSD and 10.5% in those with no history of trauma. Koenen et al. (2005) analyzed the temporal order of onset of PTSD and daily smoking in 3,065 members of the Vietnam Era Twin Registry and tested whether the PTSD-smoking relationship was moderated by hereditary risk for smoking. PTSD increased risk of subsequent daily smoking over two-fold. Active PTSD predicted daily smoking for veterans with high as well as low genetic vulnerability for smoking. However, the effect for PTSD was strongest for those with low genetic liability, suggesting that PTSD is a non-genetic pathway for smoking among individuals at otherwise low risk to smoke. Smoking also may be functionally related to PTSD as a form of "self-medication" that temporarily relieves PTSD symptoms and negative mood states. Support for this hypothesis was found in a prospective observational study of cues associated with smoking behavior in smokers with and without PTSD (Beckham et al., 2005). Negative affect, positive affect, and PTSD symptoms were antecedents of naturalistic smoking in smokers with PTSD but not in smokers without PTSD.

Three preliminary studies show that nicotine dependence can be successfully treated in veterans with PTSD. In a controlled trial of bupropion, Hertzberg et al. (2001) found that 4 of 10 smokers with PTSD randomized to bupropion stopped smoking at 6-month follow-up compared to only 1 of 5 smokers who received placebo. McFall et al. (2005) tested the effectiveness of having mental healthcare providers integrate tobacco dependence treatment into psychiatric care of veterans with PTSD. Integrated Care (IC) for smoking was compared to usual care (UC), consisting of referral to a specialized tobacco cessation clinic, in a randomized controlled trial involving 66 VA PTSD patients. IC patients were more likely to stop smoking than UC patients across follow-up intervals at months 2, 4, 6, and 9 (OR = 5.2). A subsequent test of practice-based IC for smoking in PTSD was conducted in an open clinical trial involving 107 veterans with PTSD (McFall et al., 2006). Seven-day

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biologically verified point prevalence rates of abstinence were similar to those in the randomized controlled trial at 2, 4, 6, and 9 months follow-up (28% to 18%). These treatment-related quit rates are comparable to quit rates in individuals without mental disorders.

Alcohol and Drug Use

Several epidemiological studies document the high prevalence of substance use disorders (excluding tobacco use) among persons with PTSD (see review by Chilcoat & Menard, 2003). The NCS reported that 51.9% of persons with lifetime PTSD also had a lifetime diagnosis of alcohol abuse/dependence and 34.5% had a lifetime diagnosis of drug abuse/dependence (Kessler et al., 1995). PTSD increased the odds of having an alcohol use disorder two-fold and the odds of a drug use disorder nearly three-fold. The National Vietnam Veterans Readjustment Study (Kulka et al., 1990) found that 75% of male Vietnam veterans with PTSD had a lifetime alcohol abuse/dependence disorder, and 22% had these disorders currently. Veterans with PTSD were almost six times more likely than Vietnam veterans without PTSD to have a current drug use disorder.

The functional relationships between PTSD and substance use disorders have been studied both retrospectively and longitudinally. In a retrospective analysis of the order of onset of PTSD and substance use disorders, Kessler et al. (1995) concluded that PTSD was more often than not the primary disorder. Bremner and colleagues (1996) studied the longitudinal course of PTSD and substance abuse in 61 Vietnam combat veterans. The onset of PTSD and drug and alcohol abuse occurred shortly after combat exposure and followed a parallel course. Breslau et al. (2003) found that PTSD predicted subsequent onset of drug abuse/dependence, but not alcohol abuse/dependence, in their 10-year prospective and retrospective analysis of 1,200 community residents. Chilcoat and Breslau (1998) followed 1,007 midwestern community residents for 3-5 years after baseline assessment. PTSD increased risk for subsequent drug abuse/dependence four-fold, and this risk was greatest for prescribed drug abuse/dependence.

Conclusions about the causal pathways linking PTSD and substance use disorders are summarized in three excellent reviews (see Jacobsen et al., 2001; Stewart, 1996; Stewart & Conrod, 2003). There is consensus that PTSD, more than trauma exposure alone, accounts for subsequent onset of substance use problems, notwithstanding the Breslau et al. (2003) negative findings with respect to alcohol use. There is also agreement that the "self-medication" hypothesis is valid, based on evidence that PTSD typically precedes onset of substance use and patients' perceptions that sedating substances ameliorate arousal-related symptoms and numb distressing emotions. Also supported is the "mutual maintenance" hypothesis whereby substance-related toxicity and withdrawal intensify PTSD symptoms and hence promote further substance use. Less compelling evidence has been found for the hypothesis that substance use increases risk for trauma exposure and hence liability for PTSD, and the hypothesis that substances enhance susceptibility for PTSD after trauma exposure. Type of substances abused appear functionally tied to the predominance of different PTSD symptom clusters (e.g., high physiological arousal symptoms predict alcohol use, while re-experiencing and avoidance/numbing symptom clusters are more strongly associated with drug abuse). Complex neurobiological mechanisms that underlie the pathophysiology of comorbid PTSD and addiction are detailed in Jacobsen et al. (2001).

Ouimette, Moos, Brown, and colleagues (2003) published six informative papers about the modifiability of substance use symptoms among veterans with PTSD (see Ouimette, Moos, & Brown, 2003 for review). These studies document 1, 2, and 5-year outcomes from longitudinal naturalistic assessment of inpatient substance abuse treatment for veterans with PTSD (n = 140) and those without PTSD (n = 1,116). Nearly half of substance users with PTSD were abstinent from alcohol and drugs at follow-up year 1 or 2. However, veterans with PTSD showed less improvement on substance use outcomes than patients without PTSD. Two years post-discharge, substance use remission for veterans with PTSD was associated with receiving more outpatient treatment sessions for substance abuse and mental health problems, as well as attendance and active participation in self-help groups (Ouimette et al., 2000). The odds of substance use remission at the 5-year mark were 3.7 times greater for veterans who received PTSD treatment during the first year after discharge and 4.6 times greater for veterans receiving PTSD treatment in the fifth year (Ouimette, Moos, & Finney, 2003). This research supports recommendations for proximate if not concurrent treatment of both conditions.

Poor Diet and Physical Inactivity

Obesity and physical inactivity may partially explain the elevated prevalence of diabetes and cardiovascular disease among individuals with PTSD (Boscarino, 2006). In a study of 221 help-seeking male veterans with PTSD, Vieweg et al. (2006a) reported that 82.8% were overweight or obese, having an average Body Mass Index (BMI) of 30.2. This rate exceeds estimates for these conditions in the U.S. adult population at large (64.5%; Flegal et al., 2002) and in veterans specifically. Dobie et al. (2004) surveyed 1,259 female veterans enrolled in VA healthcare and similarly found that those with PTSD were 1.8 times more likely to be obese (BMI > 30) than those without PTSD. David et al. (2004) compared the BMI of two populations of help-seeking veterans at risk for poor health practices, namely, those with PTSD and those with alcohol dependence. The average BMI was 30.1 for veterans with PTSD versus 25.1 for veterans with alcohol dependence.

Vieweg et al. (2006b) showed that psychotropic medication use did not account for the overweight and obesity problems of veterans with PTSD. A more likely explanation is the pronounced physical inactivity among these

veterans. Buckley (2004) performed an archival analysis of clinic records to assess preventative and health-risk-related behaviors in 826 treatment-seeking male veterans with PTSD. Fifty-nine percent of the sample reported exercising fewer than two times per week (> 20 min. duration), which is less than half the minimal standards for exercise recommended by the U.S. Surgeon General (USDHHS, 1996). McFall et al. (2005) similarly reported that among veterans with diabetes, those with PTSD (n = 11,775) were more physically inactive than those without any mental disorder (70% vs. 59%). Chronic pain explained nearly all of the association between PTSD and physical inactivity in this study.

Conclusions and Treatment Implications

A reliable association exists between PTSD and leading causes of morbidity and mortality. Health-risk behaviors constitute only one of several factors responsible for the poor health of individuals with PTSD, as the association between PTSD and adverse health outcomes holds even after they are statistically controlled (see review by Schnurr & Jankowski, 1999). Future research challenges include identifying: (1) the specific contribution of PTSD to increased health-risk behaviors compared with other disorders, such as depression, and (2) cognitive, affective, and neuroendocrine pathways that mediate poor health-habit choices in persons with PTSD. Further research should also replicate and expand preliminary investigations linking PTSD with other health-risk behaviors, such as aggression, weapons possession, and sensation-seeking behavior (Beckham, Feldman et al., 2005; Freeman & Roca, 2001; McFall et al., 1999).

Routine screening of health-risk behaviors in individuals seeking help for PTSD is clearly indicated, and interventions for these behaviors should be incorporated into treatment plans. Conversely, early detection and sustained intervention for PTSD should be a standard of care for persons primarily seeking help for substance use disorder. Although alleviation of PTSD symptoms favorably impacts some health-risk behaviors, it cannot be assumed that these behaviors will resolve on their own without direct, targeted intervention.

Many questions remain unanswered about how to best provide health-habit interventions for individuals with PTSD. These include questions about the timing and sequencing of interventions and whether (and how) standard health-promotion interventions should be tailored to accommodate special needs of individuals with PTSD. In the meantime, research supports the general principle of delivering concurrent (or closely proximate) treatment for PTSD and associated risk behaviors. Ideally, care of both conditions should be integrated into the clinical activities of a single provider team, in order to minimize barriers associated with referral to outside consultants that undermine treatment adherence. Remission of addictive disorders in veterans with PTSD is associated with providing treatment sessions of greater numbers and duration. The effectiveness of interventions for obesity, physical inactivity, and other health-risk behaviors common in PTSD remains undetermined.

REFERENCES

BOSCARINO, J.A. (2004). Posttraumatic stress disorder and physical illness: results from clinical and epidemiologic studies. Annals of the New York Academy of Science, 1032, 141-153.

BOSCARINO, J.A. (2006). Posttraumatic stress disorder and mortality among U.S. Army veterans 30 years after military service. Annals of Epidemiology, 16, 248-256.

USDHHS (1996). Physical Activity and Health: A Report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.

SELECTED ABSTRACTS

BECKHAM, J.C., FELDMAN, M.E., VRANA, S.R., MOZLEY, S.L., ERKANLI, A., CLANCY, C.P., et al. (2005). Immediate antecedents of cigarette smoking in smokers with and without posttraumatic stress disorder: A preliminary study. Experimental and Clinical Psychopharmacology, 13, 219-228. Using ambulatory methods for 1 day of monitoring, the authors of this study investigated the association between smoking and situational cues in 63 smokers with PTSD and 32 smokers without PTSD. Generalized estimating equations contrasted 682 smoking and 444 nonsmoking situations by group status. Smoking was strongly related to craving, positive and negative affect, PTSD symptoms, restlessness, and several situational variables among PTSD smokers. For non-PTSD smokers, the only significant antecedent variables for smoking were craving, drinking coffee, being alone, not being with family, not working, and being around others who were smoking. These results are consistent with previous ambulatory findings regarding mood in smokers but also underscore that, in certain populations, mood and symptom variables may be significantly associated with ad lib smoking.

BECKHAM, J.C., KIRBY, A.C., FELDMAN, M.E., HERTZBERG, M.A., MOORE, S.D., CRAWFORD, et al. (1997). Prevalence and correlates of heavy smoking in Vietnam veterans with chronic posttraumatic stress disorder. Addictive Behaviors, 22, 637-647. A study was conducted to investigate smoking patterns in 445 Vietnam veterans with and without PTSD. Combat veterans with PTSD reported similar occurrence of smoking (53%) compared to combat veterans without PTSD (45%). For those who smoked, combat veterans with PTSD reported a significantly higher rate of heavy smoking (greater than or equal to 25 cigarettes daily): 28% of combat veterans without PTSD were heavy smokers and 45% of combat veterans with PTSD were heavy smokers. PTSD diagnosis and heavy smoking status were independently and differentially related to motives for smoking. In combat veterans with PTSD, heavy smoking status was positively related to total health complaints, lifetime health complaints, health complaints in the past year, negative health behaviors, total PTSD symptoms, DSM-IV C cluster (avoidance and numbing) and D cluster (hyperarousal) PTSD symptoms. Heavy smoking status was also associated with fewer positive health behaviors.

BREMNER, J.D., SOUTHWICK, S.M., DARNELL, A., & CHARNEY, D.S. (1996). Chronic PTSD in Vietnam combat veterans: Course of illness and substance abuse. American Journal of Psychiatry, 153, 369-375. The purpose of this study was to measure the longitudinal course of specific symptoms of PTSD and related symptoms of alcohol and substance abuse and the effects of alcohol and substances on the symptoms of PTSD. Onset of symptoms typically occurred at the time of exposure to combat trauma in Vietnam and increased rapidly during the first few years after the war. Symptoms plateaued within a few years

after the war, following which the disorder became chronic and unremitting. Hyperarousal symptoms developed first, followed by avoidant symptoms and finally by symptoms from the intrusive cluster. The onset of alcohol and substance abuse typically was associated with the onset of symptoms of PTSD, and the increase in use paralleled the increase of symptoms. These findings suggest that symptoms of PTSD begin soon after exposure to trauma, that hyperarousal symptoms are the first symptoms to occur, that the natural course of alcohol and substance abuse parallels that of PTSD, and that specific substances have specific effects on PTSD symptoms. [adapted from abstract]

BRESLAU, N., DAVIS, G.C., & SCHULTZ, L.R. (2003). Posttraumatic stress disorder and the incidence of nicotine, alcohol, and other drug disorder in persons who have experienced trauma. Archives of General Psychiatry, 60, 289-294. We examine whether exposure to traumatic events increases the risk for nicotine dependence or alcohol or other drug use disorders, independent of PTSD. Data come from a longitudinal epidemiologic study of young adults in southeast Michigan. Prospective data covering a 10-year period and retrospective lifetime data gathered at baseline were used to estimate the risk for onset of substance use disorders in persons with PTSD and in persons exposed to trauma without PTSD, compared with persons who have not been exposed to trauma. The prospective and retrospective data show an increased risk for the onset of nicotine dependence and drug abuse or dependence in persons with PTSD, but no increased risk or a significantly lower risk (for nicotine dependence, in the prospective data) in persons exposed to trauma in the absence of PTSD, compared with unexposed persons. The findings do not support the hypothesis that exposure to traumatic events per se increases the risk for substance use disorders. Modestly elevated risk for nicotine dependence might be an exception. PTSD might be a causal risk factor for nicotine and drug use disorders or, alternatively, the co-occurrence of PTSD and these disorders might be influenced by shared risk factors other than traumatic exposure. [adapted from abstract]

BUCKLEY, T.C., MOZLEY, S.L., BEDARD, M.A., DEWULF, A.-C., & GREIF, J.L. (2004). Preventive health behaviors, health-risk behaviors, physical morbidity, and health-related role functioning impairment in veterans with post-traumatic stress disorder. Military Medicine, 169, 536-540. An examination of the relationships between health behaviors, physician-diagnosed medical problems, role-functioning impairment because of physical morbidity, and PTSD was conducted on a large cohort of consecutive treatment-seeking cases (N = 826) presenting to a VA outpatient PTSD clinic. Sample rates of several medical conditions were markedly elevated when compared with general population rates for men of comparable age. The rates of smoking and other behavioral risk variables were greater than rates among men in the general population. Moreover, the majority of the sample did not engage in preventive health behaviors such as exercise and medical screening. Physical role functioning indices of the SF-36 reveal greater role-functioning impairment because of physical morbidity in this psychiatric sample relative to the age adjusted general population norms. [adapted from abstract]

CHILCOAT, H.D., & BRESLAU, N. (1998). Posttraumatic stress disorder and drug disorders: Testing causal pathways. Archives of General Psychiatry, 55, 913-917. Although there is a high degree of comorbidity between PTSD and drug use disorders, little is known about causal relationships between PTSD, exposure to traumatic events, and drug use disorders. In a longitudinal study in southeast Michigan, 1,007 adults aged 21 to 30 years were initially assessed in 1989 and were followed up 3 and 5 years later, in 1992 and 1994. PTSD signaled an increased risk of drug abuse or dependence, whereas exposure to traumatic events in the absence of PTSD did not. The risk for abuse or dependence was the highest for prescribed psychoactive drugs. There was no evidence that preexisting drug abuse or dependence increased the risk of subsequent exposure to traumatic events or the risk of PTSD after traumatic exposure. Drug abuse or dependence in persons with PTSD might be the inadvertent result of efforts to medicate symptoms, although the possibility of shared vulnerability to PTSD and drug use disorders cannot be ruled out. [adapted from abstract]

DAVID, D., WOODWARD, C., ESQUENAZI, J., & MELLMAN, T.A. (2004). Comparison of comorbid physical illnesses among veterans with PTSD and veterans with alcohol dependence. Psychiatric Services, 55, 82-85. PTSD is associated with high rates of medical service use and self-reported poor health. Male veterans admitted to a rehabilitation unit for PTSD (n = 55) or alcohol dependence (n = 38) were evaluated for comorbid psychiatric and medical conditions and health risk factors. Patients with PTSD were more likely to have osteoarthritis, diabetes, heart disease, comorbid depression, obesity, and elevated lipid levels. These findings suggest that there may be a relationship between specific medical conditions, possibly mediated by behavioral risk factors, among the aging population of veterans with PTSD.

DOBIE, D.J., KIVLAHAN, D.R., MAYNARD, C., BUSH, K.R., DAVIS, T.M., & BRADLEY, K.A. (2004). Posttraumatic stress disorder in female veterans: Association with self-reported health problems and functional impairment. Archives of Internal Medicine, 164, 394-400. The purpose of this report is to identify self-reported health problems and functional impairment associated with screening positive for PTSD in women who received VA care. Of the 1259 eligible women who completed the survey, 266 women (21%) screened positive for current PTSD. In age-adjusted bivariate analyses, women who screened positive for PTSD reported more psychiatric problems, substance abuse, and lifetime exposure to domestic violence. They were significantly more likely to endorse physical health problems including obesity, smoking, irritable bowel syndrome, fibromyalgia, chronic pelvic pain, polycystic ovary disease, asthma, cervical cancer, and stroke. In addition, PTSD was associated with poor health-related quality of life in these patients. These findings have implications for the design of VA primary care services for the growing population of female veterans. [adapted from abstract]

HERTZBERG, M.A., MOORE, S.D., FELDMAN, M.E., & BECKHAM, J.C. (2001). A preliminary study of bupropion sustained-release for smoking cessation in patients with chronic posttraumatic stress disorder. Journal of Clinical Psychopharmacology, 21, 94-98. This study was conducted to evaluate the effect of bupropion sustained-release (SR) on smoking cessation in patients with chronic PTSD. Fifeteen veterans with chronic PTSD who desired to stop smoking enrolled in a 12-week double-blind evaluation of bupropion SR and placebo. Patients were randomly assigned in a 2:1 ratio to receive either bupropion SR or placebo. Bupropion SR was initiated at 150 mg daily for 3 or 4 days and increased to a final dose of 150 mg twice daily (300 mg daily total). Ten patients received bupropion SR and 5 received placebo. Nine of the patients who received bupropion SR were already being treated with at least one other psychotropic medication. One of the 10 patients did not complete the study because of medication side effects. Eighty percent of patients receiving bupropion SR successfully stopped smoking by the end of week 2, and 6 (60%) of these 10 maintained smoking cessation at the study endpoint (week 12). At the 6-month followup, 40% of the patients (4 of 10) who received bupropion SR maintained smoking cessation. One (20%) of the 5 patients who received placebo stopped smoking and maintained smoking cessation

at the 6-month follow-up. Bupropion SR was generally well-tolerated in combination with other psychotropic medications. Bupropion SR may be effective in helping patients who desire to quit smoking and who also have a concomitant anxiety disorder, such as PTSD.

KESSLER, R.C., SONNEGA, A., BROMET, E., HUGHES, M., & NELSON, C.B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. Archives of General Psychiatry, 52, 1048-1060. Data from a representative national sample of 5877 persons aged 15 to 54 years were used to examine the general population epidemiology of DSM-III-R PTSD, including information on estimated lifetime prevalence, the kinds of traumas most often associated with PTSD, sociodemographic correlates, the comorbidity of PTSD with other lifetime psychiatric disorders, and the duration of an index episode. Modified versions of the DSM-III-R PTSD module from the Diagnostic Interview Schedule and of the Composite International Diagnostic Interview were administered to a part II subsample of the National Comorbidity Survey. The estimated lifetime prevalence of PTSD is 7.8%. Prevalence is elevated among women and the previously married. The traumas most commonly associated with PTSD are combat exposure and witnessing among men and rape and sexual molestation among women. PTSD is strongly comorbid with other lifetime DSM-III-R disorders. Survival analysis shows that more than one third of people with an index episode of PTSD fail to recover even after many years. PTSD is more prevalent than previously believed, and is often persistent. [adapted from abstract]

KOENEN, K.C., HITSMAN, B., LYONS, M.J., NIAURA, R., McCAFFERY, J., GOLDBERG, J., et al. (2005). A twin registry study of the relationship between posttraumatic stress disorder and nicotine dependence in men. Archives of General Psychiatry, 62, 1258-1265. To test competing explanations for the association between PTSD and nicotine dependence (ND), data were analyzed on 6744 members of the Vietnam Era Twin Registry, a national registry of all male-male twin pairs who served in the military during the Vietnam era interviewed in 1991-1992. The prevalence of ND was elevated among trauma-exposed individuals (52.0%) and those with PTSD (71.7%) compared with unexposed individuals (40.5%). This association was significant for ND and for trauma without PTSD and was not entirely explained by shared risk factors. Shared genetic effects explained 63% of the PTSD-ND association; the remaining covariance was explained by individual-specific environmental effects. Using survival analysis with time-dependent covariates, ND was associated with a substantially increased risk of PTSD among trauma-exposed men. Trauma and PTSD were less strongly but significantly associated with increased risk of ND onset after controlling for shared risk factors. Most of the PTSD-ND association is explained by shared genetic effects. However, there is a substantial, robust PTSD-ND association not explained by shared risk factors. Multiple explanations for the association were supported; however, the strongest association was consistent with preexisting ND increasing the risk of PTSD onset. These data suggest that male veterans with a history of ND may be at increased risk for PTSD. [adapted from abstract]

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 overview is offered to provide access to a more general, thematic perspective of the study. [Text, p. 265] Topics addressed include an overview of findings keyed to specific issues of Public Law 98-160 (the prevalence of PTSD among Vietnam veterans; the prevalence of other postwar psychological problems among Vietnam veterans; the relationship between PTSD and other postwar psychological problems; the relationship between service-connected disabilities and postwar psychological problems; the relationship between alcohol and drug abuse and postwar psychological problems).

LASSER, K., BOYD, J.W., WOOLHANDLER, S., HIMMELSTEIN, D.U., McCORMICK, D., & BOR, D.H. (2000). Smoking and mental illness: A population-based prevalence study. Journal of the American Medical Association, 284, 2606-2610. Studies of selected groups of persons with mental illness have reported rates of smoking to be higher than in persons without mental illness. However, recent population-based, nationally representative data are lacking. To assess rates of smoking and tobacco cessation in adults with and without mental illness, data were analyzed on 4411 respondents aged 15 to 54 years from the National Comorbidity Survey. Current smoking rates for respondents with no mental illness, lifetime mental illness, and past-month mental illness were 22.5%, 34.8%, and 41.0%, respectively. Lifetime smoking rates were 39.1%, 55.3%, and 59.0%, respectively. Smokers with any history of mental illness had a self-reported quit rate of 37.1%, and smokers with past-month mental illness had a self-reported quit rate of 30.5% compared with smokers without mental illness (42.5%). Persons with mental illness are about twice as likely to smoke as other persons but have substantial quit rates. [adapted from abstract]

McFALL, M.E., ATKINS, D.C., YOSHIMOTO, D., THOMPSON, C.E., KANTER, E., MALTE, C.A., et al. (2006). Integrating tobacco cessation treatment into mental health care for patients with posttraumatic stress disorder. American Journal on Addictions, 15, 336-344. The integration of tobacco cessation treatment into mental health care for posttraumatic stress disorder (PTSD), known as Integrated Care (IC), was evaluated in an uncontrolled feasibility and effectiveness study. Veterans (N = 107) in PTSD treatment at two outpatient clinics received IC delivered by mental health practitioners. Outcomes were seven-day point prevalence abstinence measured at two, four, six, and nine months post-enrollment and repeated seven-day point prevalence abstinence (RPPA) obtained across three consecutive assessment intervals (four, six, and nine months). Abstinence rates at the four assessment intervals were 28%, 23%, 25%, and 18%, respectively, and RPPA was 15%. The number of IC sessions and a previous quit history greater than six months predicted RPPA. Stopping smoking was not associated with worsening PTSD or depression.

McFALL, M.E., SAXON, A.J., THOMPSON, C.E., YOSHIMOTO, D., MALTE, C., STRAITS-TROSTER, K., et al.. (2005). Improving the rates of quitting smoking for veterans with posttraumatic stress disorder. American Journal of Psychiatry 162,1311-1319. Smoking is highly prevalent and refractory among people with PTSD. This study aimed to improve the rate of quitting smoking for veterans with PTSD by integrating treatment for nicotine dependence into mental health care. Smokers undergoing treatment for PTSD (n = 66) were randomly assigned to (1) tobacco use treatment delivered by mental health providers and integrated with psychiatric care (integrated care) versus (2) cessation treatment delivered separately from PTSD care by smoking-cessation specialists (usual standard of care). 7-day point prevalence abstinence was the primary outcome, measured at 2, 4, 6, and 9 months after random assignment. Data were analyzed by using a generalized estimating equations approach following the intent-to-treat principle. Subjects assigned to integrated care were 5 times more likely than subjects undergoing the usual standard of care to abstain from smoking across follow-up assessment intervals. Subjects in the integrated care condition were significantly more likely than subjects in the usual standard of care to receive transdermal nicotine and nicotine gum. They also received a greater number of smoking-cessation counseling sessions. Integrating cessation treatment into psychiatric care may have the potential for improving smoking quit rates in other populations of chronically mentally ill smokers. [adapted from abstract]

NANDI, A., GALEA, S., AHERN, J., & VLAHOV, D. (2005). Probable cigarette dependence, PTSD, and depression after an urban disaster: Results from a population survey of New York City residents 4 months after September 11, 2001. Psychiatry, 68, 299-310. Disaster exposure may exacerbate psychopathology and substance-related disorders. Four months after September 11, 2001, using random-digit dialing to contact a representative sample of adults (N = 2001) living in New York City, we assessed cigarette smoking and symptoms of probable cigarette dependence using measures from the National Survey on Drug Use and Health. A total of 36.8% of smokers reported increased cigarette use; 10.4% of respondents reported 3 or more symptoms of cigarette dependence and were considered cases of probable cigarette dependence based on DSM–IV criteria. Cases were more likely to report an increase in cigarette use since September 11 than non-cases (69.4% among cases vs. 2.2% among non-cases). Cases were more likely to have probable PTSD and depression than non-cases (18.1% vs. 5.7% for PTSD, $p < 0.001$; 23.6% vs. 6.0% for depression). Increased cigarette use since September 11 was associated with probable PTSD among cases (23.4% vs. 6.4%) and non-cases (15.1% vs. 5.5%), but was associated with probable depression only among cases of probable cigarette dependence (28.3% vs. 13.3%). This study showed the co-occurrence of probable cigarette dependence with increased cigarette use and the co-occurrence of probable cigarette dependence with probable PTSD and depression after September 11. [adapted from abstract]

OUIMETTE, P.C., MOOS, R.H., & FINNEY, J.W. (2000). Two-year mental health service use and course of remission in patients with substance use and posttraumatic stress disorders. Journal of Studies on Alcohol, 61, 247-253. This study examines the association between outpatient PTSD treatment and the long-term course of SUD-PTSD patients. Male substance abuse/dependence patients (N = 125) with a comorbid diagnosis of PTSD completed 1- and 2-year follow-ups. Based on these reports, 26 patients were stably remitted from substance abuse, 39 were partially remitted and 60 were not remitted at either follow-up. These three groups were compared on mental health service use indices gathered from patients' self-reports of inpatient treatment and nationwide (VA) databases abstracting outpatient visits. SUD-PTSD patients who attended more outpatient substance abuse, psychiatric and PTSD services in the first year following treatment (and cumulatively over the 2-year follow-up) were more likely to maintain a stable course of remission from substance use in the 2 years following inpatient SUD treatment. PTSD sessions in the second year and the total number of PTSD sessions over the 2 years following the index treatment episode emerged as the most significant predictors of remission. Self-help group participation was also associated with a remitted course. These data suggest that PTSD-focused treatment services are an essential treatment component for substance abuse/dependence patients with PTSD. [adapted from abstract]

OUIMETTE, P.C., MOOS, R..H., & FINNEY, J.W. (2003). PTSD treatment and 5-year remission among patients with substance use and posttraumatic stress disorder. Journal of Consulting and Clinical Psychology, 71, 410-414. Given the high prevalence of comorbid substance use and posttraumatic stress disorders (SUD-PTSD), how to best treat these patients is a pressing concern for SUD providers. PTSD treatment may play an important role in patients' recovery. 100 male SUD-PTSD patients who attended SUD treatment completed 1-, 2-, and 5-year follow-ups. Outpatient treatment information was gathered from Veterans Affairs databases. PTSD treatment and 12-Step group attendance in the 1st year predicted 5-year SUD remission. Patients who received PTSD treatment in the first 3 months following discharge and those who received treatment for a longer duration in Year 1 were more likely to be remitted in Year 5. The receipt of PTSD-focused treatment immediately after SUD treatment may enhance long-term remission.

VIEWEG, W.V., JULIUS, D.A., BENESEK, J., SATTERWHITE, L., FERNANDEZ, A., FEUER, S.J., & PANDURANGI, A.K. (2006a). Posttraumatic stress disorder and body mass index in military veterans: preliminary findings. Progress in Neuro-Psychopharmacology & Biological Psychiatry, 30, 1150-1154. We used the database of the recently constituted PTSD program at the Hunter Holmes McGuire Veterans Affairs Medical Center in Richmond, Virginia to assess and better understand the prevalence and severity of overweight and obesity among military veterans with PTSD. We used PTSD CheckList-Military Version (PCL-M) to assess current complaints and service-connected disability (SCD) to estimate the long-term severity of PTSD. Of the 221 male veterans extracted from our PTSD database for purposes of this study, 144 (65.2%) were in the age range of 50 to 59 years consistent with Vietnam veterans dominating our study population. Their mean body mass index (BMI) was 30.2 ± 5.8 kg/m2 placing the typical veteran in the obese range. Far exceeding the current US population rate of 64.5%, 82.8% of our study population was either overweight or obese. Our sample had BMI measurements greater than those reported for non-PTSD veterans and also BMI measurements reported in the literature for veterans with PTSD. Current (PCL-M) and long-term (SCD) markers of PTSD did not relate to obesity. The prevalence of overweight and obesity among our veterans with PTSD far exceeded current US population findings and those of other veteran groups with and without PTSD. PTSD symptoms, whether assessed acutely or chronically, did not explain our findings. [adapted from abstract]

VLAHOV, D., GALEA, S., RESNICK, H., AHERN, J., BOSCARINO, J.A., & BUCUVALAS, M., et al. (2002). Increased use of cigarettes, alcohol, and marijuana among Manhattan, New York, residents after the September 11th terrorist attacks. American Journal of Epidemiology, 155, 988-996. The September 11, 2001, terrorist attacks were the largest human-made disaster in the United States since the Civil War. Studies after earlier disasters have reported rates of psychological disorders in the acute postdisaster period. However, data on postdisaster increases in substance use are sparse. A random digit dial telephone survey was conducted to estimate the prevalence of increased cigarette smoking, alcohol consumption, and marijuana use among residents of Manhattan, New York City, 5-8 weeks after the attacks. Among 988 persons included, 28.8% reported an increase in use of any of these three substances, 9.7% reported an increase in smoking, 24.6% reported an increase in marijuana use. Persons who increased smoking of cigarettes and marijuana were more likely to experience PTSD than were those who did not (24.2 % vs. 5.6% PTSD for cigarettes; 36.0% vs. 6.6% for marijuana). Depression was more common among those who increased than for those who did not increase cigarette smoking (22.1% vs. 8.2%), alcohol consumption (15.5% vs. 8.3%), and marijuana smoking (22.3% vs. 9.4 %). Increase in use of different substances may be associated with the presence of different comorbid psychiatric conditions. [adapted from abstract]

CITATIONS

BECKHAM, J.C., FELDMAN, M.E., KIRBY, A.C., HERTZBERG, M.A., & MOORE, S.D. (1997). Interpersonal violence and its correlates in Vietnam veterans with chronic posttraumatic stress disorder. Journal of Clinical Psychology, 53, 859-869.

Combat veterans with PTSD reported significantly greater occurrence of violent behaviors over the past year than veterans without PTSD. Among veterans with PTSD, lower socioeconomic status increased aggressive responding, and increased PTSD severity was related to interpersonal violence.

CHILCOAT, H.D., & MENARD, C. (2003). Epidemiological investigations: Comorbidity of posttraumatic stress disorder and substance use disorder. In P. Ouimette & P.J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 9-28). Washington, DC: American Psychological Association.

The authors reviewed epidemiological evidence of the association between PTSD and substance use disorders, explored potential causal relationships between them, and proposed future directions for research in this area.

FLEGAL, K.M., CARROLL, M.D., OGDEN, C.L., & JOHNSON, C.L. (2002). Prevalence and trends in obesity among US adults, 1999-2000. Journal of the American Medical Association, 288, 1723-1727.

The authors used data from the National Health and Nutrition Examination Survey (NHANES) to estimate age-adjusted prevalence of obesity in the U.S. The age-adjusted prevalence of obesity was 30.5% in 1999-2000 compared with 22.9% in 1988-1994. Results are presented by gender and ethnicity as well as for the total population.

FREEMAN, T.W., & ROCA, V. (2001). Gun use, attitudes toward violence, and aggression among combat veterans with chronic posttraumatic stress disorder. Journal of Nervous and Mental Disease, 189, 317-320.

Veterans with chronic PTSD reported different attitudes toward violent crime, higher levels of aggression, and more potentially dangerous firearm-related behaviors than did non-PTSD veterans with equivalent histories of substance abuse.

JACOBSEN, L.K., SOUTHWICK, S.M., & KOSTEN, T.R. (2001). Substance use disorders in patients with posttraumatic stress disorder: A review of the literature. American Journal of Psychiatry, 158, 1184-1190.

The authors reviewed studies pertaining to the epidemiology, phenomenology, and pathophysiology of comorbid PTSD and substance use disorders. They concluded that PTSD and substance use disorders are functionally related and advocated for the inclusion of patients with comorbid PTSD and substance use disorders in neurobiologic research and in clinical trials.

McFALL, M.E., FONTANA, A., RASKIND, M.A., & ROSENHECK, R. (1999). Analysis of violent behavior in Vietnam combat veteran psychiatric inpatients with posttraumatic stress disorder. Journal of Traumatic Stress, 12, 501-517.

In a study comparing male Vietnam veterans seeking inpatient treatment for PTSD, male psychiatric inpatients without PTSD, and a community sample of Vietnam veterans with PTSD not undergoing inpatient treatment, PTSD inpatients engaged in more types of violent behavior than both comparison conditions. Correlates of violence among PTSD inpatients included PTSD symptom severity and substance abuse.

McFALL, M.E., MACKAY, P.W., & DONOVAN, D.M. (1992). Combat-related posttraumatic stress disorder and severity of substance abuse in Vietnam veterans. Journal of Studies on Alcohol, 53, 357-363.

Vietnam-theater veterans with PTSD experienced more severe drug and alcohol-abuse problems than did theater veterans without PTSD and were at greater risk for having both forms of substance abuse. PTSD was significantly related to some dimensions of drug- and alcohol-abuse problems but not to other dimensions. These findings indicate that PTSD, rather than combat stress per se, is linked to severity of substance abuse.

OUIMETTE, P., MOOS, R.H., & BROWN, P.J. (2003). Substance use disorder—posttraumatic stress disorder comorbidity: A survey of treatments and proposed practice guidelines. In P. Ouimette & P.J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 91-110). Washington, DC: American Psychological Association.

The authors reviewed research on the treatment course of substance use disorder-PTSD comorbidity and advocated for the development of a set of evidence-based practice guidelines specific to the treatment of SUD-PTSD comorbidity. [Text, p. 91]

READ, J.P., BROWN, P.J., KAHLER, C.W. (2004). Substance use and posttraumatic stress disorders: Symptom interplay and effects on outcome. Addictive Behaviors, 29, 1665-1672.

The authors examined concurrent and prospective associations between substance use disorder (SUD) and PTSD diagnosis and symptoms and mechanisms underlying these associations in a sample of persons receiving inpatient SUD treatment. Patients differed by baseline PTSD status on psychiatric comorbidity and substance use history. Baseline PTSD status did not predict substance use outcome. However, change in PTSD status over follow-up predicted substance use outcomes; those with unremitted PTSD demonstrated poorer SUD outcome than those with remitted PTSD.

SCHNURR, P., & JANKOWSKI, M.K. (1999). Physical health and post-traumatic stress disorder: Review and synthesis. Seminars in Clinical Neuropsychiatry, 4, 95-304.

The authors reviewed the empirical evidence showing that PTSD is associated with poor self-reported health and increased utilization of medical services. Possible psychological, behavioral, and biological mechanisms are discussed, and a model integrating these mechanisms is presented.

STEWART, S.H. (1996). Alcohol abuse in individuals exposed to trauma: A critical review. Psychological Bulletin, 120, 83-112.

The author reviewed studies on the relationship between exposure to trauma, PTSD, and alcohol abuse, discussed various mechanisms to account for these associations, drew implications for assessment and treatment, and made suggestions for methodological improvements in future research.

STEWART, S.H., & CONROD P.J. (2003). Psychosocial models of functional associations between posttraumatic stress disorder and substance use disorder. In P. Ouimette & P.J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 29-55). Washington, DC: American Psychological Association.

The authors reviewed studies that have used varying types of psychosocial research methodologies to investigate potential causal-maintenance relations between PTSD and substance use among victims of various types of trauma. [Text, pp. 30-31]

VIEWIG, W.V.R., JULIUS, D.A., FERNANDEZ, A., TASSONE, D.M., NARLA, S.N., & PANDURANGI, A.K. (2006b). Posttraumatic stress disorder in male military veterans with comorbid overweight and obesity: Psychotropic, antihypertensive, and metabolic medications. Primary Care Companion Journal of Clinical Psychiatry, 8, 25-31.

The authors retrospectively examined PTSD program data to assess the prevalence and severity of comorbid overweight and obesity. Overweight and obese and dyslipidemia correlated significantly with Body Mass Index. The authors concluded that obesity probably worsened the chronic conditions and necessitated more aggressive treatment.

PILOTS UPDATE

Those of you who use the PILOTS Database frequently may have noticed something different about it in the past few months. We have changed hosting services, and access to the database is now provided on the CSA Illumina platform.

CSA is one of the major players in the information industry. It provides database searching to many academic libraries, so you may already be familiar with the Illumina interface. And you may already be accustomed to some of the features that we are now able to offer PILOTS Database users.

The basic principles of searching the PILOTS Database have not changed, nor has there been any change in our coverage or our approach to indexing.

For access to the database you will continue to use the "Search PILOTS" link from our website. (The redesign of our website that will be introduced in January 2007 will make this link more visible on every page.) This will take you directly to the "Quick Search" screen.

"Quick Search" is easy to use. Just enter the terms you want to search in the Query Box, use the "Date Range" pull-down list to search one of the defined time periods, and click the "Search" button. When the results of your search appear on your screen, you will have the opportunity to refine your original search or submit a new one.

Clicking on the "Advanced Search" tab will allow you to construct and execute detailed, powerful searches. You can perform field-specific searches (e.g., author, title, keyword), construct Boolean searches (i.e., AND, OR, NOT), limit searches by publication type and date, and specify how your search results will be presented.

The "Search Tools" tab gives you access to several resources that will make your searching more precise and more productive. "Command Search" allows power searching with a command-line search box, using Boolean Operators, Field Codes, Wildcard Symbols, and Proximity Search. "Combine Searches" enables you to combine results from two or more searches or to add new search terms to an existing search. And "History" gives you a list of up to fifty searches in your current session, with the opportunity to edit or save a search. Why would you want to save a search? Because on the CSA Illumina platform we can now offer "Alerts," which you can set up to notify you whenever new records matching the criteria you specify are added to the PILOTS Database. This offers a new way of keeping track of new literature relevant to your research or clinical practice.

Clicking the "Thesaurus" tab allows you to browse the PILOTS Thesaurus, to choose an alphabetical, hierarchical, or rotated index display, and to select and "explode" terms for searching. The "Index" tab offers lists of authors, journal names, languages, publication types, and tests and measures, allowing you to find the exact forms of names used in the PILOTS Database, and use checkboxes to incorporate them into your search.

When it comes time to view your search results, you will be able to control both the on-screen display and the format in which records can be saved, printed, or emailed. You can even use "Quikbib" to translate your search results into a bibliography in APA or a dozen other formats.

If your institution subscribes to other databases through CSA Illumina, you may have access to additional CSA features we haven't mentioned here. Your library can tell you if Crossfile searching or document acquisition features are available. (Even if you search the PILOTS Database from the National Center, you will still be able to link to the full text of thousands of documents, subject to the costs and limitations imposed by their publishers.)

If you are overwhelmed by all this — don't be! The new 4th edition of the PILOTS Database User's Guide will explain these new features in more detail (and with illustrations). It will be available for consultation or download at our website early in 2007. And by clicking on the "Help & Support" button while searching the database, you will be connected to CSA Illumina's extensive onscreen help system.

Once you have tried the new CSA Illumina version of the PILOTS Database, we think you will share our enthusiasm. Give it a try and let us know if you do.

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