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CRIME-RELATED PTSD: EMPHASIS ON ADULT GENERAL POPULATION SAMPLES

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This article highlights general population studies of crime-related PTSD that provide descriptive characteristics of crime events and information relevant to the study of PTSD etiology. Following a brief overview of critical issues in research on crime and its effects, the article is divided into two major areas: Prevalence, descriptive characteristics, and risk factors for exposure to crime events; and Prevalence, and risk factors for PTSD. Given the critical role of event characteristics in the etiology of PTSD based on the combat trauma literature, it is important to recognize the need to study the detailed characteristics of different types of crime in-depth. Information about PTSD etiology can be gained from and/or cross-validated using new populations other than combat veterans. The study of crime-related trauma permits examination of varied trauma and individual characteristics. Furthermore, crime is much more than an academic issue. Unfortunately, crime is an ongoing threat, both for individuals previously victimized who may continue to live in fear as well as for those who may falsely believe that they are invulnerable to crime. Thus, study of crime victims also allows us to look at individuals who have recently been exposed to extreme stressor events and to follow the course of PTSD and other outcomes over time.

Overview of Critical Issues in Research on Crime and Its Mental Health Impact. A basic limitation of most studies that have included detailed data on crime and crime-related PTSD in adults is that they have focused exclusively on women. Other issues that are problematic in many studies are outlined here. Most existing research on violence and its mental health impact suffers from conceptual or methodological limitations that include the following: a) focus on one type of violence occurring at one time of life, perpetrated by one type of assailant; b) failure to consider the potential impact of multiple violent events; c) use of non-representative samples; d) use of univariate models that do not examine for complex relationships between violence risk factors and mental health impact risk factors; and e) failure to establish the temporal sequence of violence, mental health functioning, and further violence. This review compiles articles that addressed at least some of these major factors to contribute to our knowledge of crime characteristics and outcomes. The data obtained from these studies show that actual crime incidents and effects violate many of our previously held assumptions about the nature of crime and its impact. To the degree that extant studies fail to address these methodological issues, we should critically evaluate findings related to crime prevalence and etiological factors in PTSD.

Prevalence, descriptive characteristics, and risk factors for exposure to crime. Data from several recent studies indicate that 39% to 70% of people in our society have been exposed to civilian traumatic events, a major portion of which are serious crimes (Breslau et al., 1991; Kilpatrick et al., 1987; Norris, 1992; Resnick et al., 1993). In the largest general population sample, which included 4,008 adult women, 36% of the sample reported exposure to rape, other sexual assault, aggravated assault, or the homicide death of someone close to them (Resnick et al., 1993). That large prospective and longitudinal study, called the National Women's Study, was conducted by Dean Kilpatrick and colleagues at the National Crime Victims Research and Treatment Center. Due to a study design that included weighting by age and race to national population estimates, the results allow for estimates of adult female population rates of specific crimes that can be compared to numbers of those exposed to combat or other extreme stressors. For the crime of rape alone, based on a 12.7% lifetime prevalence rate, it was estimated that over 12 million women in this country have had a completed rape sometime in their lives (Resnick et al., 1993). This rate may be conservative as the behaviorally specific items used to assess rape emphasized the presence of physical force or the threat of physical force along with unwanted vaginal, oral, or anal penetration. Thus, a portion of incidents in childhood were likely missed as well as adult cases in which alcohol or drug involvement might make a victim unaware of or unable to stop an assault.

As noted by Resnick et al. (1993), consistent overall crime and trauma exposure rates have been observed in the most recent epidemiological studies, which far surpass rates of civilian trauma estimated by Helzer and colleagues (1987). However, widely discrepant rates of completed rape and sexual assault were found across these studies. Koss (1993), in a special issue of the *Journal of Interpersonal Vio-*

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lence, concluded that this variance appears to be determined by the adequacy of the methods used to assess rape. She also observes that the biases that women may hold about rape often are based on societal stereotypes of crimes believed to involve stranger perpetrators and extensive physical injury. Therefore, as suggested by Resnick et al. (1993), studies that use terms like "rape" in assessment questions are likely to identify only these select cases that meet preconceived notions of rape. Since identification of critical traumatic events is typically the gate-keeping factor in assessment of PTSD, this factor should be considered when interpreting event-specific rates of PTSD as well as identified factors in PTSD etiology. For example, it is likely that an unidentified history of rape may influence development of PTSD in response to other "identified" traumatic events such as disaster, accidents, or other trauma. Due to the high rates of multiple trauma and crime events reported, such a scenario is plausible. This could lead to faulty conclusions about individual and stressor characteristics most likely to lead to PTSD.

Detailed descriptive characteristics about rape and rape victims or more generally classified sexual assault victims include the *Rape in America* report (Kilpatrick et al., 1992), and reports of studies by Koss et al. (1987), Burnam et al. (1988), Wyatt et al. (1992), and Koss and Dinero (1989). Empirical findings overwhelmingly refute many rape stereotypes and indicate that a majority of rapes happen in childhood and that perpetrators are most likely known to victims. Although there are high rates of intense fear reported, there is usually not substantial physical injury involved.

A number of studies provide data on prevalence and characteristics of varied crime incidents including rape, other sexual assault, and aggravated assault (Bachman, 1994; Breslau et al., 1991; Kilpatrick et al., 1985; Kilpatrick et al., 1987; Kilpatrick et al., 1989; Norris, 1992; Norris & Kaniasty, in press; Resnick et al., 1993; Vrana & Lauterbach, 1994). Importantly, the series of studies by Kilpatrick et al., 1987; Koss et al., 1987; and Resnick et al., 1993, contain detailed descriptions of thorough structured assessment instruments for identifying rape or rape and other crime events. As suggested by Resnick et al. (1991), development of good assessment instruments in the PTSD area should focus as heavily on event characteristics as on PTSD and other comorbid symptoms. Currently our PTSD assessment instruments are inadequate in this component of assessment.

Beyond the high rates of exposure observed, a consistent finding across studies is that a large portion of those experiencing one event experience more than one. In the subset of studies that examined risk factors for exposure to crime, a consistent finding is that previous history of crime is a risk factor for new crime. This important finding has also been observed in prospective analyses (Kilpatrick et al., in press; Norris & Kaniasty, in press). Finally, the DSM-IV Field Trial study (Kilpatrick, Resnick, Freedy et al., in press) also found that a majority of those in a primarily outpatient sample had experienced multiple Criterion A events. Data related to characteristics of surviving family members of homicide victims and factors that put them at risk for PTSD are described in Amick-McMullan et al. (1991). This group has largely been underserved and unrecognized by both the mental health and criminal justice systems. Aspects of crime victims' experiences with the criminal justice system are described in Freedy et al. (in press). Several papers have focused on domestic violence trauma and begun to clarify parameters that are important to study including types of injury and chronicity (Astin et al., 1993; Dutton, 1992; Kemp et al., 1991) that may increase risk for PTSD.

Prevalence and risk factors for PTSD. Data from general population studies cited above clearly indicate that crime events are associated with high rates of PTSD. Breslau et al. (1991) found a rate of PTSD of 24% among those exposed to civilian trauma. Resnick et al. (1993) observed lifetime prevalence (one month duration of symptoms) rates ranging from 25% for crime more generally, 32% for completed rape, and rates approaching 50% for those whose crimes include fear of death and receipt of injury, regardless of specific crime type (Resnick et al., 1993). The latter rate is quite consistent with the high chronic rates of PTSD observed in rape victim samples that are self-identified or who report the crime to someone (Kramer & Green, 1991; Rothbaum et al., 1992). As previously noted, these types of rape cases are most likely to be violent or stereotypic incidents which may account for the high PTSD prevalence. Consistent with this notion, Kilpatrick et al. (1989) identified critical crime risk factors for PTSD which included completed rape, life threat and injury. Rates of PTSD (regardless of symptom duration) of 80% were observed when all three characteristics were present in an individual's history. That rate is similar to the rate of PTSD specific to rape observed by Breslau et al., indicating that Breslau's subjects were likely to have experienced rapes that fit stereotypic characteristics.

Several papers noted in this edition of the *PTSD Research Quarterly* have examined more varied mental health effects associated with crime trauma (Burnam et al., 1988; Gidycz & Koss, 1991; Kilpatrick et al., 1985; Saunders et al., 1992). In addition to studying the effects of crime on other mental health outcomes, these factors need to be evaluated in terms of risk factors for exposure to subsequent events and subsequent mental health outcomes. Such studies require careful assessment of age of onset of mental health disorders and crime events and should include sensitive screening for incidents that may occur in childhood. Also, prospective studies such as those reported by Norris and Kaniasty (in press) and Kilpatrick, Resnick, Saunders et al. (in press) will be most useful for addressing these issues.

In terms of event types, rape and aggravated assault are consistently associated with highest PTSD rates. Several studies have examined risk factors for PTSD, given event exposure. A major caution in interpreting some extant studies is the fact that rape and other sexual assault were likely vastly underdetected and underestimated. This criticism likely also applies to our work and that of others in

reference to adequacy of tapping domestic violence versus more stereotypic aggravated assaults. As suggested by Resnick et al. (1993), examination of potential premorbid vulnerability factors such as demographic characteristics may be premature without first controlling for critical event characteristics. Despite this limitation, a consistent finding across several studies cited above is that history of multiple traumatic events is an important risk factor for PTSD. Data from Kilpatrick, Resnick, Saunders et al. (in press) indicate that there is an additive effect of prior crime history such that it puts one at risk of exposure to further crime and additionally puts one at risk for PTSD or psychological distress given exposure. In contrast to some original descriptions of the Criterion A stressor as a discrete, acute event, the picture emerging is that repeated exposure to such events is associated with greatly increased risk of PTSD.

Future Directions. Further research is necessary to identify more detailed characteristics involved in exposure to multiple traumatic events and risk of PTSD given such exposure. Our knowledge of strategies for thorough crime and other traumatic event history assessment should be employed in the study of a variety of mental and physical health as well as behavioral outcomes that may relate to extreme stress; for example, to further our understanding of the increased health complaints and utilization of medical services among crime victims (Kimerling & Calhoun, in press; Koss et al., 1991). Recently, Kessler et al. (1994) published a report of lifetime and past-year prevalence of psychiatric disorders within a nationally representative sample of men and women. Although the data are not included in that report, the study also included a thorough assessment of lifetime history of traumatic events and crime. Analyses of associations between PTSD and other psychiatric disorders with a variety of traumatic events should be available in the future from that study.

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KESSLER, R.C., MCGONAGLE, K.A., ZHAO, S., NELSON, C.B., HUGHES, M., ESHLEMAN, S., WITTCHEN, H.-U. & KENDLER, K.S. (1994). **Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States.** *Archives of General Psychiatry, 51,* 8-19.

SELECTED ABSTRACTS

AMICK-MCMULLAN, A., KILPATRICK, D.G. & RESNICK, H.S. (1991). **Homicide as a risk factor for PTSD among surviving family members.** *Behavior Modification, 15,* 545-559. In this National Institute of Justice-funded study, random digit dialing telephone survey methodology was used to screen a large, nationally representative sample (N = 12,500) of the noninstitutionalized U.S. adult population to identify surviving family members and friends of victims of criminal homicide and alcohol-related vehicular homicide. A total of 9.3 percent of the national sample had lost a family member or friend to homicide. Immediate family survivors (n = 206) completed an interview assessing demographic characteristics and DSM-III-R criteria for homicide-related PTSD. The interview participation rate was 84 percent. Among immediate family survivors, 23.3 percent developed PTSD at some point in their lifetimes, and 4.8 percent met full diagnostic criteria for PTSD during the preceding 6 months. Survivors of criminal and vehicular homicide victims were equally likely to develop PTSD. Survivors who experienced the homicide during their childhood, adolescence, or adulthood also showed equal likelihood of PTSD. Clinical implications of findings are discussed.

ASTIN, M.C., LAWRENCE, K.J. & FOY, D.W. (1993). **Posttraumatic stress disorder among battered women: Risk and resiliency factors.** *Violence and Victims, 8,* 17-28. This study proposed that diagnosable levels of PTSD would be found among battered women and that the level of exposure to violence in the battering relationship would be an important contributing factor to the development of PTSD while other pre-trauma and post-trauma variables such as social support, intercurrent life events, religiosity, and developmental family stressors would also be related to PTSD symptom levels. Fifty-three battered women were given standardized self-report measures to assess these variables. As hypothesized, a significant proportion of battered women in the sample were diagnosed as PTSD positive. Multiple regression analyses revealed that violence exposure severity, recency of the last abusive episode, social support, intercurrent life events, intrinsic religiosity, and the developmental family stressors predicted 43% of the variance in PTSD symptomatology.

BACHMAN, R. (1994). **Violence against women. A National Crime Victimization Survey report.** U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics. This report uses data from the National Crime Victimization Survey (NCVS) of the Bureau of Justice Statistics (BJS) to provide a detailed accounting of violent crime victimization against women and how this victimization differs from victimization against men. Several types of violent crime were investigated, including rape, robbery, and assault. In addition, a special section examined the incidence rates and contextual characteristics of personal larceny victimizations which involved contact, such as purse snatching and pocket picking.

BRESLAU, N., DAVIS, G.C., ANDRESKI, P. & PETERSON, E. (1991). **Traumatic events and posttraumatic stress disorder in an urban population of young adults.** *Archives of General Psychiatry, 48,* 216-222. To ascertain the prevalence of PTSD and risk factors associated with it, we studied a random sample of 1007 young adults from a large health maintenance organization in the Detroit, Michigan area. The lifetime prevalence of exposure to traumatic events was 39.1 percent. The rate of PTSD in those who were exposed was 23.6 percent, yielding a lifetime prevalence in the sample of 9.2 percent. Persons with PTSD were at increased risk for other psychiatric disorders; PTSD had stronger associations with anxiety and affective disorders than with substance abuse or dependence. Risk factors for exposure to traumatic events included low education, male sex, early conduct problems, extraversion, and family history of psychiatric disorder or substance problems. Risk factors for PTSD following exposure included early separation from parents, neuroticism, preexisting anxiety or depression, and family history of anxiety. Life-style differences associated with differential exposure to situations that have a high risk for traumatic events and personal predispositions to the PTSD effects of traumatic events might be responsible for a substantial part of PTSD in this population.

BURNAM, M.A., STEIN, J.A., GOLDING, J.M., SIEGEL, J.M., SORENSON, S.B., FORSYTHE, A.B. & TELLES, C.A. (1988). **Sexual assault and mental disorders in a community population.** *Journal of Consulting and Clinical Psychology, 56,* 843-850. In a cross-sectional probability survey [the Epidemiologic Catchment Area program] of 3,132 household adults representing two Los Angeles communities, lifetime diagnoses of nine major mental disorders were compared between those who reported that they had been sexually assaulted at some time in their lives and those who reported no sexual assault. Sexual assault predicted later onset of major depressive episodes, substance use disorders (alcohol and drug abuse or dependence), and anxiety disorders (phobia, panic disorder, and obsessive-compulsive disorder) but was not related to later onset of mania, schizophrenic disorders, or antisocial personality. Those who were assaulted in childhood were more likely than those first assaulted in adulthood to report the subsequent development of a mental disorder. Demographic characteristics of gender, age, Hispanic ethnic background, and education, however, were generally unrelated to the probability of developing any specific disorder after being assaulted. Finally, major depression, drug abuse or dependence, antisocial personality, and phobia were all associated with a higher probability of subsequent sexual assault.

KILPATRICK, D.G., BEST, C.L., VERONEN, L.J., AMICK, A.E., VILLEPONTEAUX, L.A. & RUFF, G.A. (1985). **Mental health correlates of criminal victimization: A random community survey.** *Journal of Consulting and Clinical Psychology, 53,* 866-873. Abstracted in *PTSD Research Quarterly, 1(3),* 1990.

KILPATRICK, D.G., RESNICK, H.S., SAUNDERS, B.E. & BEST, C.L. (in press). **Rape, other violence against women, and posttraumatic stress disorder: Critical issues in assessing the adversity-stress-psychopathology relationship.** In B. Dohrenwend (Ed.), *Adversity, stress, and psychopathology.* Washington, DC: American Psychiatric Press. Data are presented from a representative national sample of women (N=4,008) assessed initially (Wave 1) and at two yearly follow-up waves (Waves 2 and 3) to prospectively evaluate risk factors for exposure to crime as well as risk factors for development of PTSD. A total of 3,359 women who had initial assessment and follow-up data were included in analyses. Descriptive data are presented about prevalence and characteristics of lifetime incidents of completed rape (N=714) and history of aggravated assault reported at Wave 1, as well as prospectively assessed incidents of completed rape (N=41) and aggravated assault (N=115) that occurred at follow-up. Univariate and multivariate analyses were used to determine risk factors for any new assault victimization (rape or aggravated assault) which occurred among 4.3% of women and for past 6 month prevalence of PTSD (5.1%). Results of multivariate logistic regression analyses indicated that Wave 1 history of assaults, income less than $10,000 and the trait measure of sensation seeking were significant predictors of assault victimization at follow-up. Significant predictors of current PTSD at follow-up assessment included Wave 1 victimization history, new victimization by assault at follow-up, and high sensation seeking. The finding that prior history of rape or aggravated assault substantially increased risk for both new victimization and PTSD is consistent with results of several studies. Implications for preventive approaches are discussed.

KILPATRICK, D.G., SAUNDERS, B.E., AMICK-MCMULLAN, A., BEST, C.L., VERONEN, L.J. & RESNICK, H.S. (1989). **Victim and crime factors associated with the development of crime-related post-traumatic stress disorder.** *Behavior Therapy, 20,* 199-214. This study examined the relationships between the development of Crime-Related Post-Traumatic Stress Disorder (CR-PTSD) and selected victim and crime characteristics. The sample consisted of 391 adult female residents of Charleston County, South Carolina, of whom 294 were crime victims assessed for CR-PTSD. Comparisons of CR-PTSD positive (n = 82) and CR-PTSD negative (n = 212) groups found significant differences on the variables of current age, years since most recent crime, experiencing a completed rape, perceiving a life threat during a crime, and sustaining physical injury during a crime. No differences existed on other assessed victim or crime variables. Hierarchical multiple regression analysis found that life threat, physical injury, and completed rape each made significant individual contributions to explaining CR-PTSD. Hierarchical discriminant function analysis correctly classified 80.6 percent of the respondents. Rape, life threat, and physical injury had a synergistic effect on CR-PTSD in that victims whose crime history included all three elements were 8.5 times more likely to have developed CR-PTSD than those with none of the three elements. Rape was associated with CR-PTSD after controlling for the effects of violence and dangerousness, suggesting that rape has other elements important to the development of CR-PTSD.

KOSS, M.P. (1993). **Detecting the scope of rape: A review of prevalence research methods.** *Journal of Interpersonal Violence, 8,* 198-222. This article focuses on rape prevalence research and examines the relationship between measurement methods and level of rape detection. After a brief overview of empirical data, the relative threat to the validity of prevalence estimates posed by fabrication versus nondisclosure is weighed. Then various methodological choices and their relationship to the magnitude of prevalence estimates are examined. Addressed are the definitions underlying the studies, the questions used to elicit reports of rape, the context in which rape questioning occurred, the confidentiality of the responses, the method of data collection, and the sample integrity. The conclusions include 10 recommendations for the design of future studies of rape prevalence.

KOSS, M.P., GIDYCZ, C.A & WISNIEWSKI, N. (1987). **The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students.** *Journal of Consulting and Clinical Psychology, 55,* 162-170. Because of inadequacies in the methods used to measure sexual assault, national crime statistics, criminal victimization studies, convictions, or incarceration rates fail to reflect the true scope of rape. Studies that have avoided the limitations of these methods have revealed very high rates of overt rape and lesser degrees of sexual aggression. The goal of the present study was to extend previous work to a national basis. The Sexual Experiences Survey was administered to a national sample of 6,159 women and men enrolled in 32 institutions representative of the diversity of higher education settings across the United States. Women's reports of experiencing and men's reports of perpetrating rape, attempted rape, sexual coercion, and sexual contact were obtained, including both the rates of prevalence since age 14 and of incidence during the previous year. The findings support published assertions of high rates of rape and other forms of sexual aggression among large normal populations. Although the results are limited in generalizability to postsecondary students, this group represents 26% of all persons aged 18-24 in the United States.

NORRIS, F.H. (1992). **Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups.** *Journal of Consulting and Clinical Psychology, 60,* 409-418. The frequency and impact of 10 potentially

traumatic events were examined in a sample of 1,000 adults. Drawn from four southeastern cities, the sample was half Black, half White, half male, half female, and evenly divided among younger, middle-aged, and older adults. Over their lifetimes, 69 percent of the sample experienced at least one of the events, as did 21 percent in the past year alone. The 10 events varied in importance, with tragic death occurring most often, sexual assault yielding the highest rate of PTSD, and motor vehicle crash presenting the most adverse combination of frequency and impact. Numerous differences were observed in the epidemiology of these events across demographic groups. Lifetime exposure was higher among Whites and men than among Blacks and women; past-years exposure was highest among younger adults. When impact was analyzed as a continuous variable (perceived stress), Black men appeared to be most vulnerable to the effects of events, but young people showed the highest rates of PTSD.

NORRIS, F.H. & KANIASTY, K. (in press). **Psychological distress following criminal victimization in the general population: Cross-sectional, longitudinal, and prospective analyses.** *Journal of Consulting and Clinical Psychology.* Samples of 105 violent crime victims, 227 property crime victims, and 190 nonvictims provided normative data regarding levels of psychological distress following criminal victimization. At points approximately 3 months, 9 months, and 15 months postcrime, symptoms of depression, somatization, hostility, anxiety, phobic anxiety, fear of crime, and avoidance were assessed. Although crime victims showed substantial improvement between months 3 and 9, thereafter they did not. Over the course of the study, violent crime victims remained more distressed than property crime victims who remained more distressed than nonvictims. Regression analyses revealed that the effects of crime could not be accounted for by precrime differences between victims and nonvictims in either social status or psychological functioning. However, lasting effects were often contingent upon the occurrence of subsequent crimes. Clinical implications are discussed.

RESNICK, H.S., KILPATRICK, D.G., DANSKY, B.S., SAUNDERS, B.E. & BEST, C.L. (1993). **Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women.** *Journal of Consulting and Clinical Psychology*, *61*, 984-991. Prevalence of crime and noncrime civilian traumatic events, lifetime PTSD, and PTSD in the past 6 months were assessed in a sample of U.S. adult women (N = 4,008). Random digit-dial telephone methods were used to identify study participants. Structured telephone interviews for assessment of specific crime or other traumatic event history and PTSD were conducted by trained female interviewers. Lifetime exposure to any type of traumatic events was 69 percent, whereas exposure to crimes that included sexual or aggravated assault or homicide of a close relative or friend occurred among 36 percent. Overall sample prevalence of PTSD was 12.3 percent lifetime and 4.6 percent within the past 6 months. The rate of PTSD was significantly higher among crime versus noncrime victims (25.8 percent vs. 9.4 percent). History of incidents that included direct threat to life or receipt of injury was a risk factor for PTSD. Findings are compared with data from other epidemiological studies. Results are discussed as they relate to PTSD etiology.

ROTHBAUM, B.O., FOA, E.B., RIGGS, D.S., MURDOCK, T. & WALSH, W. (1992). **A prospective examination of post-traumatic stress disorder in rape victims.** *Journal of Traumatic Stress, 5*, 455-475. PTSD and related psychopathology were examined in 95 female rape victims beginning soon after the assault (mean = 12.64 days). Subjects were assessed weekly for 12 weeks. 94 percent of women met symptomatic criteria for PTSD at Assessment 1, decreasing to 65 percent at Assessment 4 (mean = 35 days postassault), and 47 percent at Assessment 12 (mean = 94 days postassault). PTSD and related psychopathology decreased sharply between Assessments 1 and 4 for all women. Women whose PTSD persisted throughout the 3-month study did not show improvement after the fourth assessment; women who did not meet criteria for PTSD 3 months postassault showed steady improvement over time. This pattern was evidenced even after initial PTSD severity was statistically controlled. Moreover, PTSD status at 3 months postassault could be predicted with a high degree of accuracy by two brief self-report measures administered at the first assessment. The implications of the present findings and directions for future research are discussed.

SAUNDERS, B.E., VILLEPONTEAUX, L.A., LIPOVSKY, J.A., KILPATRICK, D.G. & VERONEN, L.J. (1992). **Child sexual assault as a risk factor for mental disorders among women: A community survey.** *Journal of Interpersonal Violence*, *7*, 189-204. A community sample of 391 adult women was screened for a history of sexual assault during childhood and assessed for lifetime and current mental disorders using a structured victimization history interview and the Diagnostic Interview Schedule. One third of the women had been victims of rape, molestation, or sexual assault not involving physical contact prior to the age of 18 years. Child rape victims were more likely than nonvictims to have ever met DSM-III diagnostic criteria for a major depressive episode, agoraphobia, obsessive-compulsive disorder, social phobia, and sexual disorders. Molestation victims were overrepresented on major depressive episode, obsessive-compulsive disorder, and sexual disorders. Noncontact child sexual assault was not a significant risk factor for any disorder. Child rape and molestation victims were more likely than victims of noncontact assault to have had crime-related PTSD. Mental disorder lifetime prevalence risk ratios for child rape and molestation victims versus nonvictims ranged from 1.5 for major depressive episode to 6.7 for obsessive-compulsive disorder.

VRANA, S. & LAUTERBACH, D. (1994). **Prevalence of traumatic events and post-traumatic psychological symptoms in a nonclinical sample of college students.** *Journal of Traumatic Stress*, *7*, 289-302. The lifetime prevalence of traumatic events and their psychological impact were assessed in 440 undergraduate students. 84 percent of the subjects reported experiencing at least one event of sufficient intensity potentially to elicit PTSD. One-third of the sample had experienced four or more traumatic events. Subjects who had experienced trauma reported higher levels of depression, anxiety, and PTSD symptomatology than nontraumatized subjects, and these symptoms were more intense in subjects who experienced multiple traumas. Events that were particularly negative in their impact included unwanted sexual experiences and events that subjects reported were too traumatic to discuss openly. Males and females differed in their probability of experiencing some types of events and in the psychological response to certain events.

ADDITIONAL CITATIONS
Annotated by the Editors

DUTTON, M.A. (1992). **Assessment and treatment of post-traumatic stress disorder among battered women.** In D.W. Foy (Ed.), *Treating PTSD: Cognitive-behavioral strategies* (pp. 69-98). New York: Guilford Press.

Reviews the assessment of trauma and of PTSD and other reactions to domestic violence in women. The author also proposes a set of assumptions that are necessary for treating battered women and discusses a wide range of issues that may come up in therapy with this population.

FREEDY, J.R., RESNICK, H.S., KILPATRICK, D.G., DANSKY, B.S. & TIDWELL, R.P. (in press). **The psychological adjustment of recent crime victims in the criminal justice system.** *Journal of Interpersonal Violence.*

Examined PTSD prevalence and service utilization among 251 crime victims and family members recently involved in the criminal justice system. Victims of more violent crimes, who sustained physical injuries, who perceived that they would be seriously injured, and who perceived life threat were more likely to suffer from PTSD than victims who did not have these characteristics. Most participants reported inadequate access to services.

GIDYCZ, C.A. & KOSS, M.P. (1991). **Predictors of long-term sexual assault trauma among a national sample of victimized college women.** *Violence and Victims, 6,* 175-190.

Examined predictors of long-term negative psychological effects of trauma in a cross-sectional study of 1,213 college students who had been victims of sexual assault. The authors found that long-term effects were predicted by mental health problems before the assault, force during the assault, and two cognitive factors (adversarial sexual beliefs and sexual conservatism).

HELZER, J.E., ROBINS, L.N. & MCEVOY, L. (1987). **Post-traumatic stress disorder in the general population: Findings of the Epidemiologic Catchment Area survey.** *New England Journal of Medicine, 317,* 1630-1634. Abstracted in *PTSD Research Quarterly 1(3),* 1990.

KEMP, A., RAWLINGS, E.I. & GREEN, B.L. (1991). **Post-traumatic stress disorder (PTSD) in battered women: A shelter sample.** *Journal of Traumatic Stress, 4,* 137-148.

Assessed PTSD in 77 battered women who were living in a shelter for the homeless at the time of assessment. Prevalence according to self-reported symptoms was 84%. Extent of violence (frequency and severity) was somewhat better than length of the battery relationship in predicting PTSD and other negative psychological outcomes.

KILPATRICK, D.G., EDMUNDS, C.N. & SEYMOUR, A.K. (1992). **Rape in America: A report to the nation.** Arlington, VA and Charleston, SC: National Victims Center. Cited in *PTSD Research Quarterly, 3(3),* 1992.

KILPATRICK, D.G., RESNICK, H.S., FREEDY, J.R., PELCOVITZ, D., RESICK, P.A., ROTH, S. & VAN DER KOLK, B. (in press). **The Posttraumatic Stress Disorder Field Trial: Emphasis on Criterion A and overall PTSD diagnosis.** *DSM-IV sourcebook.* Washington, DC: American Psychiatric Press.

Gathered data regarding the impact of alternative versions of Criterion A (the stressor criterion) upon prevalence of PTSD diagnosis as defined by Criteria B (reexperiencing), C (avoidance or numbing), D (arousal), and E (duration of symptom pattern). A major method of addressing the utility of the various options involved descriptive evaluation of PTSD prevalence in conjunction with each possible combination of proposed options.

KILPATRICK, D.G., SAUNDERS, B.E., VERONEN, L.J., BEST, C.L. & VON, J.M. (1987). **Criminal victimization: Lifetime prevalence, reporting to police, and psychological impact.** *Crime and Delinquency, 33,* 479-489. Cited in *PTSD Research Quarterly, 3(3),* 1992.

KIMERLING, R. & CALHOUN, K.S. (1994). **Somatic symptoms, social support, and treatment seeking among sexual assault victims.** *Journal of Consulting and Clinical Psychology, 62,* 333-340.

Longitudinally assessed rape victims and controls in order to study change in physical and psychological outcomes during the year after a rape. Initially rape victims, relative to controls, reported more somatic complaints, poor physical health, more psychological distress, and increased utilization of medical services. At the one-year follow-up, the victims' health complaints were no longer elevated, although victims continued to show increased medical service utilization.

KOSS, M.P. & DINERO, T.E. (1989). **Discriminant analysis of risk factors for sexual victimization among a national sample of college women.** *Journal of Consulting and Clinical Psychology, 57,* 242-250.

Examined predictors of rape in a national sample of 2,723 college women. The authors used discriminant analysis to combine measures of vulnerability-creating trauma, social psychological vulnerability, and vulnerability-enhancing situations. A final model correctly identified 50% of women (according to five trauma groups). Most of the errors were the identification of victims as non-victims.

KOSS, M.P, WOODRUFF, W.J. & KOSS, P.G. (1991). **Criminal victimization among primary care medical patients: Prevalence, incidence, and physician usage.** *Behavioral Sciences and the Law, 9,* 85-96.

Conducted a questionnaire study of criminal victimization and physical health service utilization in 2,291 female primary care patients. The annual rate of victimization was 118 per 1000 women. Among victims, physician visits were reported by 93% in the year following the crime and by 100% in the second year.

KRAMER, T.L. & GREEN, B.L. (1991). **Posttraumatic stress disorder as an early response to sexual assault.** *Journal of Interpersonal Violence, 6,* 160-173.

Assessed acute PTSD in 100 female sexual assault victims within 72 hours of the assault. Of 30 women reinterviewed 6-8 weeks later, 73% met criteria for PTSD. Prior history of sexual assault was associated with increased likelihood of PTSD.

RESNICK, H.S., KILPATRICK, D.G. & LIPOVSKY, J.A. (1991). **Assessment of rape-related posttraumatic stress disorder: Stressor and symptom dimensions.** *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 3,* 561-572. Abstracted in *PTSD Research Quarterly, 3(4),* 1992.

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PILOTS UPDATE

We are in the process of making several changes in our products. We expect to describe these in more detail in our next issue, but here is some advance notice of them.

The PILOTS database continues to grow. With the July update, the number of citations in the database reached 6,505. Since October 1992, when PILOTS became available through the Dartmouth College Library Online System, over 2,400 searches have been performed by users around the world—and that number does not include usage by people at Dartmouth. We are now in the process of field testing a 240-page user's guide, which we hope to make available by the end of the year. This new *PILOTS Database User's Guide* will include a complete revision of the PILOTS Thesaurus, the controlled vocabulary of indexing terms that we apply to the papers listed in the database. It will also include instructions and suggestions on planning and executing a search of the database. Some of this material has appeared in preliminary form in this column.

We used the term "make available" deliberately, for we shall be using several ways of distributing the *User's Guide*. A printed version will be available for sale from the U.S. Government Printing Office; a copy will be sent to each VA medical library and vet center. An electronic version will be posted on a host computer at Dartmouth College so that ftp and gopher users can download it free of charge. And we are beginning to explore the possibility of integrating an online version of the PILOTS Thesaurus (and perhaps the entire *User's Guide*) into the Dartmouth College Library Online System, as an adjunct to the database itself.

We plan to use the Dartmouth computer host to distribute electronic versions of other publications as well. Some of these will be spinoffs from PILOTS, such as the PILOTS Database Instruments Authority List (a list of nearly 1,000 measurement instruments used in traumatic stress research) and bibliographies on subjects of current interest (such as natural disasters). And we shall also be making the *PTSD Research Quarterly* and the *NCP Clinical Quarterly* available electronically.

Watch this column for further details.

NEW SUBSCRIPTION POLICY FOR *PTSD RESEARCH QUARTERLY*

Rising printing and postage costs are forcing us to curtail unlimited distribution of the *PTSD Research Quarterly*.

Many of our readers will continue to receive the *Quarterly* free of charge. We shall continue to send copies to VA medical centers and vet centers, and to those agencies outside the Department of Veterans Affairs with which we exchange publications. We have also arranged for members of the International Society for Traumatic Stress Studies to receive the *Quarterly* on a continuing basis.

Others who wish to continue receiving the *PTSD Research Quarterly* may purchase a subscription from the Superintendent of Documents, the Washington-based sales agency of the U.S. Government Printing Office. Current as well as back issues may also be obtained electronically, by downloading them from the Dartmouth host computer. (We shall give detailed instructions for this in our next issue.) And copies will continue to be available for consultation in many document depository libraries.

By devolving the task of distributing the *PTSD Research Quarterly* onto the Government Printing Office, we shall be able to devote more of our time and efforts to reporting the results of traumatic stress research, and less to the mechanics of maintaining mailing lists and fulfilling subscription requests.

WATCH FOR THE SUBSCRIPTION FORM IN OUR NEXT ISSUE

PTSD RESEARCH AT THE MOUNT SINAI MEDICAL SCHOOL AND BRONX VA

Rachel Yehuda, PhD

We opened our Traumatic Stress Studies Program in September 1991 just as I joined the faculty at Mount Sinai. Although Mount Sinai and the Bronx VA had strong reputations in the field of biological and clinical psychiatry, there had not been a primary focus on trauma, nor were there any formal treatment programs for PTSD in either institution. Our clinical program began thanks to funding from VACO for a PTSD clinical team. This allowed us to hire three excellent clinicians, Robert Levengood, MD, Doug Gerber, CSW and Karen Binder-Brynes, PhD, who have been key contributors to the growth of our program. In 1991 and 1992, we also were awarded two grants from the NIMH to study the neurochemistry and psychoneuroendocrinology of PTSD in combat Vietnam Veterans and Holocaust survivors, respectively. In 1993, we were awarded a VA Merit grant to continue research on hormonal aspects of PTSD. The research grants allowed us to establish a fully functioning clinical neurobiology laboratory for PTSD at the Bronx VA and to hire Ms. Skye Wilson, who has been an outstanding research coordinator.

In 1992, largely as a result of the interest generated by our research, we established a Specialized Outpatient Treatment Program for Holocaust Survivors and their Families based at Mount Sinai Hospital. One of the unique features of this program is that it is run primarily by voluntary faculty at the Mount Sinai Medical School who lead short-term trauma-focus groups. There are now eight voluntary faculty members who provide direct care to over 80 patients. Services include psychopharmacology, individual psychotherapy, group therapy, and family therapy.

Meanwhile, the outpatient division at the Bronx VA blossomed into a full clinic serving over 300 veterans. This year we established an eight-bed Evaluation and Brief Treatment PTSD Unit to provide short-term hospitalization for combat veterans. The unit is currently staffed by Julia Golier, MD, Andrea Mosquewitz, RN, and Larry Ibisch, CSW, and we plan to hire two more clinicians. By fall, our program will have grown to include eight full-time clinicians, two clinical administrative support staffers, and five research assistants.

Our research has primarily focused on exploring the hypothalamic-pituitary-adrenal axis and catecholamine systems in PTSD, and has been a continuation of projects that were initially developed at Yale and the University of Connecticut in conjunction with Drs. Earl Giller, John Mason, and Steven Southwick. Building on initial findings of low cortisol and increased levels of catecholamines in PTSD, we have begun new studies that have attempted to describe in more detail the underlying mechanisms for the differences previously observed. For example, using chronobiological modeling techniques, we have looked at 24-hour baseline rhythms of stress hormones such as cortisol, norepinephrine, MHPG, HVA, prolactin, and growth hormone from combat veterans, Holocaust survivors, children of Holocaust survivors, and controls. We also have analyzed the response of treatment- and non-treatment-seeking Holocaust survivors and combat veterans to neuroendocrine-challenge tests using several paradigms such as the low-dose dexamethasone suppression test and the metyrapone-stimulation test. We are also pursuing studies of glucocorticoid-receptor function in PTSD using radioligand binding, in vitro strategies, and more recently, molecular biological techniques. We have published several papers based on this work that are compatible with the idea that individuals with PTSD have an enhanced negative feedback regulation of cortisol.

This past year has seen some important fine-tuning of methods in our laboratory. We have developed new assays for assessing salivary hormones such as cortisol, dexamethasone, MHPG, and HVA, which obviate the need for blood samples, and more refined protocols for assessing glucocorticoid receptors. We also have completed full pharmacokinetic studies of dexamethasone in saliva and plasma. These developments have allowed us to collaborate with new investigators from other institutions both nationally and internationally.

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