

Alcohol/Marijuana Dependence and Posttraumatic Stress Disorder

Data from a 30-year, longitudinal study in New Zealand improve our understanding of the relationship of alcohol and marijuana dependence to trauma and posttraumatic stress disorder (PTSD): **Koenen, K.C., Moffitt, T.E., Caspi, A., Gregory, A., Harrington, H., & Poulton, R. (2008). The developmental mental-disorder histories of adults with posttraumatic stress disorder: A prospective longitudinal birth cohort study. *Journal of Abnormal Psychology*, 117(2), 460-466.**

The authors followed a birth cohort of 1,037 participants who were assessed at different intervals over the first 32 years of their lives (972 of whom were available for the 32-year assessment). The assessments involved an 8-hour day of interviews and tests that assessed for mental as well as physical disorders. Participants were first assessed for PTSD at the 26-year assessment after being screened with a question that asked about persisting effects after a traumatic experience. At that assessment, 267 reported trauma exposure, of whom 93 individuals met criteria for a lifetime diagnosis of PTSD.

The longitudinal nature of this study makes it possible for the authors to more accurately describe differences in prior disorders between those who are exposed to trauma and develop PTSD and those who are exposed and do not develop it. In their analysis of the data, the authors present odds ratios comparing these two groups.

Over 93 percent of those who had PTSD by age 26 also had another mental disorder diagnosis by age 21. Over 60 percent of them had received a mental disorder diagnosis by age 15, compared to only 38.5 percent of those who were trauma-exposed by age 26 but had not developed PTSD. Thus, at age 15 those individuals who later developed PTSD were about 50 percent more likely to have had another mental disorder than were those who were exposed to trauma but did not develop PTSD by age 26.

Between ages 26 and 32, 238 participants (roughly one in four) reported being exposed to another traumatic event, of those 27 developed PTSD. Again, individuals who developed PTSD during this period were much more likely to have had another mental disorder by age 15 (77.8 percent) than were those who were exposed to

trauma during this period but did not develop PTSD (38.7 percent).

Of all the disorders evaluated at age 26, marijuana dependence was most strongly associated with having PTSD for the 267 people who were trauma exposed. Those who were marijuana dependent were 3 ½ times more likely to develop PTSD than were those who were trauma exposed but did not develop PTSD, while those with conduct disorder (the next most strongly associated disorder) were nearly 3 times as likely to have PTSD. Although the article does not include any stepwise analysis of results, Dr. Koenen supplied COCE with the results of such an analysis, showing that even after controlling for conduct disorder and alcohol dependency, individuals with marijuana dependence were over three times more likely to develop PTSD by age 26.

The associations for individuals who developed PTSD between the 26-year and 32-year assessments (27 of 238 who were trauma exposed) were somewhat different than for those who developed the disorder at an earlier age. The single largest association for those who developed PTSD that separated them from those who were exposed to trauma but did not develop PTSD was being previously diagnosed with prior alcohol dependence, while other anxiety disorders had the next strongest association.

Thus, both marijuana and alcohol dependence appear to be enmeshed with PTSD in terms of both lifetime precursors and relatively high associations with the development of new cases of PTSD. These data make clear that PTSD typically co-occurs with other disorders and has a particularly high rate of co-occurrence with alcohol and/or marijuana dependence. Also, these co-occurring dependencies had onset by age 21. More research is needed to determine to what extent or how marijuana and/or alcohol dependence influence the development of PTSD and/or to what extent or how non-use or propensity not to develop dependencies confers some protective or resilient capacities.

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COD Research

National Epidemiological Studies

Goodwin, R.D., Zvolensky, M.J., & Keyes, K.M. (2008). Nicotine dependence and mental disorders among adults in the USA: Evaluating the role of the mode of administration. *Psychological Medicine*, 38(9), 1277-1286.

The authors used data from the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) to determine whether rates of co-occurring mental disorders vary for individuals who are nicotine dependent according to whether they smoked or used smokeless tobacco as their primary method for receiving nicotine. For those who were nicotine dependent, the use of smokeless tobacco was associated with a significantly greater likelihood of having an anxiety disorder, a specific phobia, and/or an alcohol use disorder, while cigarette smoking was associated with higher rates of all mental disorders evaluated in the study. For respondents who were not nicotine dependent, cigarette smoking was still associated with higher rates of panic attacks and panic disorder.

Pulay, A.J., Dawson, D.A, Ruan, W.J., Pickering, R.P., Huang, B., Chou, S.P., & Grant, B.F. (2008) The relationship of impairment to personality disorder severity among individuals with specific axis I disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Personality Disorder*, 22(4), 405-417.

The authors analyzed data from the National Epidemiologic Survey on Alcohol and Related Conditions (N=43,093) to better understand the relationship between personality disorder symptom severity and other impairments, including co-occurring substance use disorders. While having more severe personality disorder symptoms was associated with increased disability in relation to almost all Axis I disorders, it was not associated with an increased disability in relation to drug dependence.

Client Characteristics

Acierno, R., Kilpatrick, D. G., Resnick, H., Saunders, B., De Arellano, M., & Best, C. (2000). Assault, PTSD, family substance use, and depression as risk factors for cigarette use in youth: Findings from the national survey of adolescents. *Journal of Traumatic Stress*, 13(3), 381-396.

The authors surveyed by phone a national household sample of 4,023 adolescents (ages 12 to 17) using a structured clinical interview in order to evaluate the relationship of smoking to trauma exposure, substance abuse in one's family, posttraumatic stress disorder (PTSD), and/or depression. They found that being older, being Caucasian, and experiencing a physical assault or witnessing violence towards others were all associated with an increased risk of smoking for all youth. For girls, but not boys, experiencing a sexual assault or depression was associated with increased smoking. For boys alone, familial substance use was associated with increased smoking risk. PTSD, however, was not associated with an increased risk for smoking.

Cardoso, B.M., Sant'Anna, M.K., Dias, V.V., Andrezza, A.C., Ceresér, K.M. and Kapczinski, F (2008). The impact of co-morbid alcohol use disorder in bipolar patients. *Alcohol*, 42(6), 451-457.

The authors assessed the relationship of alcohol use disorders on clinical severity, functioning, and quality of life for 186 Brazilians who had bipolar disorder. Participants were more likely to have a co-occurring alcohol use disorder if they were male, had a lower level of education, had an earlier age of onset for their bipolar disorder, had psychosis with their first manic episode, and/or had a greater level of depressive symptoms. Alcohol use disorders were also associated with a very high incidence of suicide attempts. The authors note that the greater rates of suicide attempts among people with bipolar disorders who also have alcohol use disorders may be the result of greater severity of symptoms and more impaired functioning.

Conne, K.R., Pinquart, M., & Holbrook, A.P. (2008). Meta-analysis of depression and substance use and impairment among cocaine users. *Drug and Alcohol Dependence*, 98(1-2), 13-23.

The authors conducted a meta-analytic review of research published in English, in peer-reviewed journals between 1986 and 2007 regarding depression and cocaine use. Their literature search yielded 60 studies that met their inclusion criteria. They found that higher rates of depression were associated with using alcohol and other drugs as well cocaine and with greater impairment for those who used cocaine. The effect sizes were small and not moderated by gender. They did not find any significant association between depression and treatment participation, future cocaine use, or impairment.

Friedmann, P.D., Melnick, G., Jiang, L., & Hamilton, Z (2008). Violent and disruptive behavior among drug-involved prisoners: relationship with psychiatric symptoms. *Behavioral Sciences & the Law*, 26(4), 389-401.

The authors examined the relationship of psychiatric symptoms and violent behaviors for 192 prison inmates who were participating in a substance abuse treatment program. They found that having a lifetime history of ideation about thought insertion/control increased the odds of violent behavior by 11.6 times, having antisocial personality disorder increased them by 3.3 times, and having had disciplinary action for possession of controlled substances or other contraband increased them by 4.9 times. Having a lifetime history of phobic symptoms and having graduated high school significantly decreased the odds of violent behavior, with odds ratios of .2 and .4 respectively.

Hu, M.C., Muthén, B., Schaffran, C., Griesler, P.C., & Kand, D.B. (2008). Developmental trajectories of criteria of nicotine dependence in adolescence. *Drug and Alcohol Dependence*, 98(1-2), 94-104.

The authors analyzed data from a longitudinal study of 324 youth in grades 6 to 10 who had recently begun smoking and were reassessed at 6 month intervals for 2 ½ years after they started to smoke. In modeling the progression of these individuals' nicotine dependence, the authors determined that four categories best described the different development trajectories: (1) youth who smoked with no DSM-IV criteria for dependence (accounting for 47.7 percent), (2) those with an early onset of dependence and a chronic course (19.8 percent), (3) those with an early onset and remission (17.3 percent), and (4) those with a late onset of dependence (15.2 percent). The presence of conduct disorder and prior heavy smoking were associated with being in Class 2, and conduct disorder differentiated Class 2 from Class 4. Having a pleasant initial sensation as a result of one's first experience of tobacco was associated with membership in Class 2 and Class 3, and also served to differentiate Class 2 from Class 4. Class was characterized by novelty seeking. Having a parent who was nicotine dependent differentiated Class 2 from Class 3.

Jacobson, I.G., Ryan, M.A.K., Hooper, T.I., Smith, T.C., Amoroso, P.J., Boyko, E.J., Gackstetter, G.D., Wells, T.S., & Bell, N.S. (2008). Alcohol use and alcohol-related problems before and after military combat deployment. *JAMA*, 300 (6), 663-675.

The authors reviewed data from 48,481 military personnel (26,614 on active duty and 21,868 in the Reserve or National Guard) enrolled in the Millennium Cohort Study. Of those participants, 5,510 were deployed and had combat exposure and 5,661 were deployed without combat exposure. The study reports on a number of variables in relation to heavy alcohol use, binge drinking, and alcohol-related problems. However, the one most relevant to COD is the presence of posttraumatic stress disorder (PTSD) symptoms or PTSD diagnosis. For active duty personnel, PTSD symptoms or a PTSD diagnosis did not have a significant effect on altering the adjusted odds (adjusted for all other variables including tobacco use, other mental disorders, and demographic variables) for newly developed (i.e., developed after deployment) heavy weekly drinking or binge drinking, but did increase the adjusted odds ratio for having new alcohol-related problems (defined as having at least one of five problems related to drinking as determined by a screening questionnaire) to 1.43. For Reserve or National Guard personnel, PTSD had a greater effect in increasing the odds of binge drinking and alcohol-related problems that developed after deployment, increasing the odds to 1.32 and 1.9 respectively. However, the adjusted odds ratio for newly developed heavy weekly drinking for Reserve or National Guard personnel was only .89 for those with PTSD or PTSD symptoms.

Ringen, P.A., Lagerberg, T.V., Birkenaes, A.B., Engh, J.A., Faerden, A., Jonsdottir, H., Nesvag, R., Friis, S., Opjordsmoen, S., Larsen, F., Melle, I., & Andreassen, O.A. (2008) Differences in prevalence and patterns of substance use in schizophrenia and bipolar disorder. *Psychological Medicine*, 38(9), 1241-1249.

The authors evaluated substance use patterns for 336 Norwegian individuals who had either schizophrenia or bipolar disorder. They found that individuals with bipolar disorder had greater levels of alcohol consumption than did those with schizophrenia. Those with schizophrenia were more likely to use stimulant drugs, illicit drugs, and more likely to use multiple drugs.

Services & Service Systems

Screening & Assessment

Goldberg, J.F., Garno, J.L., Callahan, A.M., Kearns, D.L., Kerner, B., & Ackerman, S.H. (2008). Overdiagnosis of bipolar disorder among substance use disorder inpatients with mood instability. *Journal of Clinical Psychiatry*, e1-e7.

The authors performed a retrospective case review of 85 sequential admissions of individuals with suspected bipolar disorders to a COD treatment program that specialized in co-occurring substance use and mood disorders. A senior psychiatrist reassessed participants while they were abstinent and those findings were compared to the information included in their charts. The authors found that only 33 percent of those who were suspected of having bipolar disorder on treatment entry met DSM-IV diagnostic criteria for a bipolar disorder during abstinent periods. Those individuals who did not meet DSM-IV criteria at their reassessment were typically believed to have the disorder based on the presence of mood instability, which has elsewhere been shown to have poor predictive value in making a diagnosis of bipolar disorder.

Duncan, A., Sacks, S., Melnick, G., Cleland, C.M., Pearson, F.S., & Coen, C. (2008) Performance of the CJDATS Co-Occurring Disorders Screening Instruments (CODSIs) among minority offenders. *Behavioral Sciences & the Law*, 26(4), 351-368.

The authors evaluated the use of two Criminal Justice Drug Abuse Treatment Studies (CJDATS) Co-Occurring Disorders Screening Instruments (CODSI) with a population of offenders entering prison: the CODSI-MD designed to screen for the presence of any mental disorder and the CODSI-SMD designed to screen for severe mental disorders. Specifically they evaluated its performance with members of three different racial/ethnic groups: African Americans (n=96), Latinos (n=120), and Whites (n=137). Results from the screening instruments were compared to results from the Structured Clinical Interview (SCID). The authors found no significant differences in sensitivity or specificity for either version of the instruments across ethnic/racial groups.

Treatment Planning & Services

Aliyev, Z.N. & Aliyev, N.A. (2008). Valproate treatment of acute alcohol hallucinosis: A double-blind, placebo-controlled study. *Alcohol and Alcoholism*, 43(4), 456-459.

The authors conducted a randomized, double-blind study of valproate (Depakine-Chrono) to treat acute alcohol hallucinosis for 40 individuals, half given valproate and half given a placebo. Participants were evaluated using the Clinical Global Improvement (CGI) and the Positive and Negative Syndrome Scale (PANSS) subscales for hallucinosis. Those treated with valproate had significantly greater improvements on the CGI and the PANSS subscale for verbal hallucinosis. Valproate was also well tolerated by recipients.

Berk, M., Ng, F., Wang, W.V., Tohen, M., Lubman, D.I., Vieta, E., & Dodd, S. (2008). Going up in smoke: Tobacco smoking is associated with worse treatment outcomes in mania. *Journal of Affective Disorders*, 110 (1-2), 126-134.

The authors analyzed data from three controlled trials for pharmacological treatments of people with bipolar disorder. In the first trial, 70 individuals were randomly assigned to receive olanzapine and 69 to receive a placebo. In the second, 234

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received olanzapine and 216 received haloperidol. In the third, 125 received olanzapine and 126 received divalproex. Participants in all three studies were assessed using the Young Mania Rating Scale and the Clinical Global Impressions scale for bipolar disorder, and the authors compared scores on these measures for smokers and non-smokers. When pooling data for all three trials, they found that non-smokers had significantly better treatment outcomes as measured by either instrument. In individual trial arms, they found non-smokers had significantly better outcomes when receiving either haloperidol or olanzapine in the second trial and when receiving olanzapine in the third trial. There were no significant differences among participants in the first trial.

Melnick, G., Coen, C., Taxman, F.S., Sacks, S., & Zinsser, K.M. (2008) Community-based co-occurring disorder (COD) intermediate and advanced treatment for offenders. *Behavioral Sciences & the Law*, 26(4), 457-473.

The authors discuss two different settings for COD treatment within the criminal justice system: (1) intermediate programs, which are designed primarily for the treatment of mental or substance use disorders, and (2) advanced programs, which make use of fully integrated services for COD. They note that while both types of programs are similar in their approach to substance abuse treatment they typically have significant differences in regards to treatment for mental disorders, and advanced programs make greater use of evidence-based practices for mental disorders.

Lamps, C.A., Sood, A.B., & Sood, R. (2008). Youth with substance abuse and comorbid mental health disorders. *Current Psychiatry Reports*, 10(3), 265-271.

The authors review research on youth/adolescents with COD. They discuss epidemiological data on the magnitude and extent of COD, theories about the development of COD, and best practices for treating and preventing COD in this population.

Rowe, C.L., & Liddle, H.A. (2008). When the levee breaks: Treating adolescents and families in the aftermath of hurricane Katrina. *Journal of Marital Family Therapy*, 34(2), 132-148.

The authors present a family-based intervention to help youth who have survived disasters. The intervention, based on Multidimensional Family Therapy, addresses both trauma and substance abuse. Currently the intervention is being evaluated in a randomized clinical trial with adolescents and their families in the New Orleans area who were affected by Hurricane Katrina.

Sacks, S., Melnick, G., & Grella, C.E. (2008). Synthesis of studies of co-occurring disorder(s) in criminal justice and a research agenda. *Behavioral Sciences & the Law*, 26(4), 475-486.

The authors discuss the contents of this special issue of *Behavioral Sciences & the Law*, which focuses on treating COD. In addition, they present ideas for future research relating to COD treatment for offenders.

Taxman, F.S., Cropsey, K.L., Melnick, G., & Perdoni, M.L. (2008). COD services in community correctional settings: an examination of organizational factors that affect service delivery. *Behavioral Sciences & the Law*, 26(4), 435-455.

The authors used data from the National Criminal Justice Treatment Practices survey (NCJTP) on community corrections and jails to assess differences in correctional treatment programs that offer services specifically tailored to COD from those that do not. They found that programs that treated COD specifically were considered more "service friendly," were more likely to adopt new innovations (especially evidence-based ones), and provided a more favorable atmosphere for staff to embrace new learning.

Wobrock, T. & Soyka, M. (2008). Pharmacotherapy of schizophrenia with comorbid substance use disorder - Reviewing the evidence and clinical recommendations. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 32(6), 1375-1385.

The authors review research on the pharmacological treatment of people with co-occurring schizophrenia and substance use disorders. They note that randomized, controlled studies involving this population are rare and therefore most of the research they reviewed was in the form of open studies or case studies. What research is available suggests that second generation antipsychotic agents (e.g., clozapine, olanzapine, quetiapine, risperidone) are the preferred medications for this population and have a greater effect on also reducing substance-related craving and substance use than conventional

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antipsychotic medications. Also, tricyclic antidepressants may provide an additional benefit in reducing substance use and craving. Research on naltrexone for this population also shows that it can decrease drug intake, but no research is available on the use of acamprosate for those with co-occurring schizophrenia and alcohol use disorders.

Wojnar, M., Igen, M.A., Jakubczyk, A., Wnorowska, A., Klimkiewicz, .& Brower, K.J. (2008). Impulsive suicide attempts predict post-treatment relapse in alcohol-dependent patients. *Drug and Alcohol Dependence*, 97(3), 268-275.

The authors evaluated the relationship of prior suicide attempts to relapse after treatment for 118 individuals who received treatment for alcohol use disorders in Warsaw, Poland. Participants were assessed at treatment entry for suicide attempts and 12 months after treatment to evaluate relapse histories. Participants had high rates of suicide attempts (43 percent reported a prior attempt). Of those who had attempted suicide, 62 percent reported doing so on impulse. Having made a suicide attempt was not associated with higher rates of relapse. However, having made an impulsive suicide attempt increased the odds of relapse by nearly three times (with an odds ratio of 2.81).