

Stress

as a Risk Factor for Alcohol Abuse and Dependence

by Mark S. Gold, M.D. and Kimberly Frost-Pineda, M.P.H.

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There are many factors — psychological, social, environmental and genetic — that determine whether a person develops alcohol dependence. Researchers who study risk factors have developed “models” of the ways that known risk factors may interact to create pathways to alcohol dependence. One model pathway focuses on stress and distress. Recent events, such as the September 11th terrorist attacks, have prompted researchers to expand what is known about the relationship between alcohol use and stress, trauma and Post Traumatic Stress Disorder (PTSD).

Stress and Distress

One explanation for part of how a risk factor may lead to alcohol dependence focuses on drinking to regulate inner distress (Conrod et al. 1995). Some children have temperaments that make them highly reactive to stress and disruption. This type of child may be born into an alcoholic family, where the stressors may be intense, or a nonalcoholic family with everyday types of low-level stressors. No matter which type of family these children find themselves in, they maintain higher levels of inner distress (anxious and depressed feelings) than other children. When they take their first drink, the inner distress dissipates for a while, which leads to more and more drinking and may lead to alcohol dependence. Some recovering alcoholics report that the first time they drank was the first time they felt like themselves.

For some individuals, at certain doses, alcohol may induce, rather than reduce, the stress response. Alcohol can actually induce the stress response by stimulating hormone release by the hypothalamus, pituitary and adrenal glands (Soderpalm and DeWit 2002). Alcohol may be more rewarding when taken under duress, extreme trauma or inescapable stress. Alcohol is rewarding when taken in any situation, but stress appears to make it even more rewarding and dependency producing. More research is needed before we understand the exact role of stress as a risk factor in alcohol dependence. However, stress is a critical factor in terms of relapse (Liu and Weiss 2002).

Early Trauma and Alcohol Abuse

Childhood abuse is a significant risk factor for later alcohol and substance abuse (Schuckit and Widom 2001). Women who were physically abused are 1 1/2 - 2 times more likely to abuse alcohol than non-abused adults. Children who are quick to anger, perceive themselves to be highly stressed, are resentful of parents' absences, or who have repeated conflicts at home are more likely to abuse alcohol as teens.

Disasters, the Events of 9/11, Terrorism and Alcohol Use

Disasters have a significant impact on mental health. Anxiety and panic disorders, depression and Post Traumatic Stress Disorder are just some of the commonly documented psychological consequences of these horrific events (Smith et al. 1990). Studies since September 11th have shown high levels of stress, depression and PTSD in New York and throughout the U.S. (Galea et al. 2002 and Schuster et al. 2002). Recently published results of a telephone survey of Manhattan residents compared alcohol, cigarette and marijuana use prior to and after September 11th (Vlahov et al. 2002). Use of all three substances increased. Of those who consumed alcohol prior to the terrorist attacks, 41.7 percent increased the frequency of alcohol consumption and 20.8 percent reported consuming one or more extra drinks per day. In this study, increased alcohol consumption was associated with current depression, but not current PTSD. The authors suggest that alcohol use may be an important factor in terms of PTSD in the medium to long-term (Vlahov et al. 2002).

Trauma, Stress and Post-Traumatic Stress Disorder (PTSD)

Symptoms of PTSD may include re-experiencing the trauma; avoiding people, places and thoughts associated with the event; and arousal, which may include exaggerated startle response, hypervigilance and trouble sleeping. People who have these symptoms may use drugs and alcohol to self-medicate to escape these realities (Khantzian 1985, Chilcoat et al. 1998). One study of adolescent psychiatric inpatients found that 93 percent had been exposed to one or more traumatic events and 32 percent met diagnostic criteria for current PTSD (Lipschitz 1999). Research has shown high rates of PTSD and Substance Use Disorder comorbidity. In one study, 75 percent of veterans with combat related PTSD also met alcohol abuse or dependence criteria (Kulka et al. 1990). In the general population, rates of drug abuse and dependence are much higher among persons with a history of PTSD. Of those with a history of PTSD, 34.5 percent of males and 26.9 percent of females had a lifetime history of drug abuse and dependence, compared to 7.8 percent of males and 7.6 percent of females without PTSD (Kessler et al. 1995).

In men who have a lifetime history of PTSD, rates of comorbid alcohol abuse or dependence are highest, in women, rates of comorbid depression and some anxiety disorders are highest followed by alcohol abuse and

dependence (Kessler et al. 1995). In a community-based study of 15 to 19 year olds, rates of PTSD ranged from 6.3 percent, in the general sample, to almost 30 percent among substance dependent teens (Giaconia et al. 1995). Another study found PTSD prevalence of 19.2 percent among chemically dependent teens (Deykin and Buka 1995).

Substance Use Disorders and PTSD occur together frequently, suggesting that the two are related (Jacobsen et al 2001). Substance abuse and dependence, particularly on CNS depressants, is common in patients with PTSD. In general, the onset of PTSD is thought to precede the onset of substance abuse and dependence (Saxon et al. 2001). In a study designed to explore the relationship between PTSD and substance abuse and dependence, researchers found that persons with PTSD had a four times greater risk of Substance Use Disorders (Chilcoat et al. 1998). Research suggests that patients with PTSD have lower benzodiazepine receptor binding in the prefrontal cortex, which may bring about symptoms of PTSD (Bremner et al. 2000). Again, persons with PTSD may be self-medicating to relieve their symptoms.

Volpicelli and colleagues suggest that people may use alcohol to compensate for decreased endorphin activity following trauma (1999). Endorphins help to numb the pain of trauma during the experience, but levels decrease after the trauma and can lead an endorphin withdrawal (Volpicelli et al. 1999). Because drinking increases endorphins, persons may drink to avoid endorphin withdrawal and to ease the psychological distress of trauma (Volpicelli et al. 1999).

For many reasons, PTSD is hard to prevent. Usually, we do not know when or where disasters will happen, terrorists will attack or when individuals or groups will be victimized or witness violent/traumatic events. In addition, different people may have different reactions to the same event, so there is individual variation in the development of PTSD. It is important that those who have PTSD receive appropriate treatment and that substance use is assessed and monitored. Since comorbidity is high, it is also important that persons with a Substance Use Disorder be evaluated for PTSD.

Conclusions

Alcohol abuse and dependence affects millions of Americans; those suffering from the disease, their families and friends, victims of alcohol related accidents and crimes and society, which bears a huge economic burden. Risk factors for alcohol dependence include but are in no way limited to stress and traumatic events. The recent tragic events surrounding 9-11 have underscored the role of trauma, inescapable stress, depression and other "environmental factors" in risk of abuse and dependence. ▼

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