Journal of Psychiatric Research 55 (2014) 35–43

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/psychires

Trauma, PTSD, and binge and hazardous drinking among women and men: Findings from a national study

Lorig K. Kachadourian [a,b,1], Corey E. Pilver [c,1], Marc N. Potenza [b,*]

[a] National Center for PTSD, VA Connecticut Healthcare System, USA
[b] Yale University School of Medicine, USA
[c] Yale School of Public Health, USA

ARTICLE INFO

Article history:
Received 2 December 2013
Received in revised form
14 April 2014
Accepted 24 April 2014

Keywords:
Trauma
PTSD
Binge drinking
Hazardous drinking
Gender
Epidemiology

ABSTRACT

Objective: To examine whether trauma and posttraumatic stress disorder (PTSD) are differentially associated with binge and hazardous patterns of drinking among women and men.
Methods: Secondary analysis of the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC); the analytic sample included 31,487 respondents (54.6% female) without past-year alcohol abuse/dependence. Participants' trauma-exposure/PTSD status was characterized as: no exposure to trauma in lifetime (reference), lifetime trauma exposure, PTSD before past-year, or past-year PTSD. Past-year binge and hazardous drinking were examined with multinomial logistic regression models (past-year abstinence was modeled as the non-event); models included the main effects of trauma-exposure/PTSD status and gender, the trauma-exposure/PTSD status-by-gender interaction, psychiatric comorbidity, and socio-demographic covariates.
Results: The gender-specific effects of trauma, before past-year PTSD, and past-year PTSD were significantly elevated for all drinking behaviors in women (range of odds ratios (ORs) = 1.8–4.8), and for some drinking behaviors in men (range of ORs = 1.3–2.0), relative to no trauma exposure. Trauma exposure was more strongly associated with high-frequency binge drinking, low-frequency binge drinking, and non-binge drinking among women as compared to men. Past-year PTSD was also more strongly associated with low-frequency binge drinking and non-binge drinking among women compared to men. Findings for hazardous drinking followed a similar pattern, with significant gender-related differences in ORs for hazardous drinking and non-hazardous drinking observed with respect to trauma exposure and past-year PTSD..
Conclusion: Mental health practitioners should be mindful of the extent to which trauma-exposed individuals both with and without PTSD engage in binge and hazardous drinking, given the negative consequences associated with these patterns of drinking..

1. Introduction

Exposure to traumatic life events is common throughout the world with rates ranging from 2 to 30% (Stein et al., 2010). In the United States, exposure to traumatic life events such as physical and sexual assault, natural disasters, and motor vehicle accidents is also common (see Kessler, 2000). For example, in their community epidemiologic survey, Breslau et al. (1998) found that approximately 90% of respondents indicated that they had experienced at least one traumatic event (as defined by the Diagnostic and Statistical Manual of Mental Disorders; DSM-IV, American Psychiatric Association, 1994) at some point in their life. As a result of trauma, a significant proportion of individuals may go on to develop post-traumatic stress disorder (PTSD), a disorder that is characterized by re-experiencing symptoms related to the trauma (e.g., nightmares, flashbacks), avoidance of trauma-related stimuli, emotional numbing, and increased arousal (e.g., increased anger, hypervigilance).

Trauma exposure and PTSD are associated with high rates of alcohol-use disorders. For example, Kessler et al., 1996 found that that 3.7% and 8.8% of individuals with past-year PTSD met criteria for alcohol abuse and dependence in the past year, respectively, while 6.5% and 28.1% of those with lifetime PTSD met criteria for

* Corresponding author. Connecticut Mental Health Center, Room S-104, 34 Park St. New Haven, CT 06519, USA. Tel.: +1 203 974 7366.
E-mail address: Marc.Potenza@yale.edu (M.N. Potenza).
[1] Denotes shared first authorship.

http://dx.doi.org/10.1016/j.jpsychires.2014.04.018
0022-3956/

lifetime alcohol abuse and dependence, respectively. Frequent co-occurrences of trauma, PTSD and problematic alcohol use have been documented not only in community samples, but also in military (McDevitt-Murphy et al., 2010) and treatment-seeking samples (Swett et al., 1991). For example, many individuals seeking treatment for alcohol and other substance-use disorders have histories of trauma exposure (Ouimette et al., 2000; Rice et al., 2001), and as many as 61% of men and 30–59% of women seeking treatment for substance-use disorders meet diagnostic criteria for PTSD (Brady et al., 1994; Dansky et al., 1995; Sharkansky et al., 1999).

1.1. Binge and hazardous drinking: associations with trauma/PTSD

Binge drinking is defined as consuming at least 5 alcoholic beverages (4 for women) on a single occasion (NIAAA, 2004). These amounts when consumed typically bring an individual's blood alcohol concentration level up to .08 or above. At this level, individuals are more likely to engage in a multiple alcohol-related problematic behaviors, including drunk driving, vandalism, and fights. The amount of alcohol consumed in order to reach this specific level differs for men and women; hence, the different specified amounts. Hazardous drinking is defined consuming as 7 or more drinks per week or more than 3 drinks per occasion for women, 14 or more drinks per week or more than 4 drinks per occasion for men (US Department of Health and Human Services, 2005). Drinking in excess of these daily/weekly amounts is associated with an increased likelihood of being diagnosed with an alcohol-use disorder (Dawson et al., 2005). As with binge drinking, these amounts reflect the amount of alcohol that is associated with significant impairments in cognitive and psychomotor performance.

Features of PTSD and exposure to different traumatic events in the US, both natural and man-made, have been shown to be associated with binge and hazardous drinking. For example, greater exposure to the World-Trade-Center disaster that occurred on September 11, 2001 was associated with greater alcohol consumption, in addition to binge drinking, one-year after the event (Boscarino et al., 2006). Additionally, hurricane-related traumatic events and post-hurricane stressors were associated with more drinking in general and more binge drinking after the Katrina and Rita hurricanes (Cerdá et al., 2011).

1.2. Gender-related differences in alcohol use, trauma and PTSD

Men drink more frequently and more heavily than women (Holmila and Raitasalo, 2005; Wilsnack et al., 2000; Wilsnack and Wilsnack, 1997). Men tend to engage in higher levels of binge and heavy drinking compared to women, and rates of alcohol abuse and dependence are higher among men than among women (Office of Applied Studies (2006)). Although there are several possible reasons for observed gender-related differences in drinking, explanations tend to focus on biological and/or cultural reasons (Wilsnack and Wilsnack, 1997; Wilsnack et al., 2000). For example, women may not need to consume as much alcohol as men to reach peak blood alcohol concentration because women have lower volumes of body water compared to men. In relation to socio-cultural factors, drinking among women may be more socially proscribed, whereas with men, drinking may be more acceptable (Wilsnack et al., 2000). Regardless of the reasons, the observation of these gender-related differences across societies and cultures speaks to the robustness of these findings (although see Keyes et al., 2008 who found that gender-related differences may be narrowing).

Men are exposed to a greater number of traumatic events compared to women (Breslau et al., 1998; Kessler et al., 1995; Stein et al., 1997), although the types of traumatic events tend to differ. Specifically, men are more likely to report being exposed to fire, life-threatening accidents, physical assaults, combat, and threats with a weapon, as well as being held captive, whereas women are more likely to report sexual molestation, sexual assault, and child abuse (Kessler et al., 1995). Although men report more exposure to traumatic events, rates of PTSD are higher among women. Women appear approximately twice as likely as men to develop PTSD, and PTSD tends to be more persistent and chronic in women than in men (Norris et al., 2002). Proposed explanations to account for this gender-related difference include insufficient social support resources among women, increased use of maladaptive coping strategies (including greater use of alcohol to manage trauma-related symptoms) among women, and gender-related differences in acute psychological reactions to trauma (Olf et al., 2007). Although some believe that the increased risk of PTSD among women may relate to their increased likelihood of experiencing rape and sexual assault (as these types of traumas have been considered more devastating compared to other types of trauma; Breslau et al., 1999; Norris, 1992), researchers also have shown that gender-related differences in the rate of PTSD still exist even after controlling for the specific type of threat experienced (see Olf et al., 2007 for a review). Thus, although women may be more likely to experience these types of traumas, this relationship does not seem to account fully for gender-related differences observed in PTSD.

In addition to the observed gender-related differences in alcohol use, trauma exposure, and PTSD, researchers have observed differences between men and women in the co-occurrence of PTSD and alcohol-use disorders. Helzer et al. (1987) found a trend toward higher risk for alcohol-use-disorder/PTSD comorbidity among women relative to men. More specifically, they found that women diagnosed with PTSD were 2.4 times more likely to be diagnosed with alcoholism, whereas men with PTSD were 1.7 times more likely to be diagnosed with alcoholism. Similar findings were reported by Kessler et al. (1997); specifically, they found that the odds of being diagnosed with PTSD in the presence of lifetime alcohol abuse is significantly greater among women than among men. Importantly, women compared to men are more likely to have experienced PTSD prior to developing their alcohol-use disorder (Stewart et al., 2002).

Although researchers have documented gender-related differences in the associations between PTSD and alcohol dependence/abuse, they have not systematically examined whether there are similar differences in the associations between PTSD and binge and hazardous drinking. Examining binge and hazardous drinking is important as both forms of drinking are associated with negative health consequences. For example, binge drinking can result in alcohol poisoning, hypertension, and diabetes-related problems (Naimi et al., 2003) and increase the risk of developing more serious alcohol-related psychiatric disorders (Kuntsche et al., 2004; Standridge et al., 2004). Knowing whether gender-related differences exist in the relationships between PTSD and binge and hazardous drinking has important clinical implications, as it could help inform both prevention and intervention efforts.

In addition, researchers have not consistently examined whether women and men who have been exposed to trauma but not diagnosed with PTSD engage in binge and hazardous drinking. Such research would be important given that researchers have found trauma exposure to be associated with problematic alcohol use even after accounting for symptoms of PTSD (Boscarino et al., 2006) and have observed elevated rates of alcohol use disorders among trauma-exposed individuals both with and without PTSD, compared to those with no trauma histories (Breslau et al., 1997). If trauma-exposed individuals not meeting criteria for PTSD may be at increased risk of engaging in binge and hazardous drinking,