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Alcohol Problems and Posttraumatic Stress Disorder in Female Crime Victims

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Abstract

Comorbidity between alcohol use and posttraumatic stress disorder (PTSD) has been well documented. However, there are few longitudinal studies with acute trauma samples. The present study examined symptoms of alcohol use disorders (AUDs) and PTSD longitudinally after assault. Female sexual ($n = 69$) and physical assault victims ($n = 39$) were assessed 2 to 4 weeks and 3 months post trauma. Women who had lifetime AUD had higher intrusive and avoidance symptoms than those who did not have AUD. Women who had any alcohol problems had higher PTSD symptoms. Participants who had alcohol problems had the same pattern of symptom recovery as those who did not have alcohol problems but remained more symptomatic over the 3 months. These findings suggest that early intervention strategies for women who have previous histories of alcohol problems and seek medical attention early post trauma may be indicated.

Exposure to traumatic stressors has been associated with development of posttraumatic stress disorder (PTSD), elevated rates of alcohol use disorders (AUDs) (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), and frequent comorbidity of the two disorders (Breslau, Davis, Peterson, & Schultz, 1997; Stewart, Pihl, Conrod, & Dongier, 1998). AUDs have been associated with more severe PTSD symptoms, such as elevated avoidance and hyperarousal symptoms (Back, Sonne, Killeen, Dansky, & Brady, 2003; Stewart, Conrod, Pihl, & Dongier, 1999) and more reexperiencing symptoms (Read, Brown, & Kahler, 2004).

Research examining temporal relationships between AUD and PTSD has yielded mixed results (Acierno, Resnick, Kilpatrick, Saunders, & Best, 1999; Breslau et al., 1997; Cottler, Compton, Mager, Spitznagel, & Janca, 1992; Darves-Bornoz et al., 1998; Sonne, Back, Zuniga, Randall, & Brady, 2003). Several studies have found PTSD increases risk of first onset of AUD in women (Sonne et al., 2003; Stewart et al., 1999), providing support for self-medication of

PTSD symptoms (Brady, Back, & Coffey, 2004; Stewart, 1996). Other studies have found AUD may increase risk of development of PTSD or be associated with a more severe and chronic course of symptoms (Acierno et al., 1999; Conrod & Stewart, 2003; Cottler et al., 1992). Additionally, women appear more vulnerable to alcohol-related consequences at lower levels of alcohol exposure than men (Nolen-Hoeksema, 2004). However, the impact of this vulnerability on the course of PTSD in women has not been examined to date.

Despite general consensus that the combination of PTSD and AUD is associated with worse outcomes for both disorders (Stewart et al., 1998), few longitudinal studies have been conducted soon after trauma exposure. Because the impact of previous AUD on development of PTSD has been relatively understudied, the purpose of this study is to examine the impact of AUD on the course of PTSD symptoms in female crime victims early post trauma. Our results represent a secondary set of analyses from a larger study designed to examine postassault changes in functioning and factors affecting recovery (Kaysen, Scher, Mastnak, & Resick, 2005). For the present study we hypothesized that previous alcohol problems would be associated with a more severe course of PTSD symptoms. We examined both more exclusive definitions of alcohol problems (AUDs) and inclusive definitions (any problems with alcohol) in order to include women who do not meet full diagnostic criteria for AUDs.

METHOD

Participants

Female participants were recruited through police, hospital, and victim service agencies. Women who were illiterate ($n = 1$), apparently psychotic ($n = 4$), intoxicated at the time of the assessment ($n = 1$), more than 4 weeks post trauma ($n = 3$), or who did not meet assault criteria ($n = 2$), were excluded ($n = 11$).

Participants were assessed at two periods, the first 2 to 4 weeks postassault (time 1) and again 3 months postassault (time 2). Of participants assessed at time 1 ($n = 193$), 64% returned for time 2 ($n = 124$). Of those, 101 had complete data at both time points on measures of interest for this study. There were no differences between completers and noncompleters on assault type, lifetime or current AUD, current PTSD, age, income, or education. Therefore, all further analyses were conducted on the complete longitudinal sample.

Assaults consisted of either sexual assaults ($n = 69$; completed vaginal, oral, or anal penetrative assault) or first-degree physical assaults ($n = 39$; experienced injury or felt perpetrator was trying to kill/injure her). The mean age was 31.48 years ($SD = 8.60$; range = 18–55). Average education was 12.36 years ($SD = 2.50$; range = 2–20). Fifty-four percent of participants were single, 19% were married/cohabiting, and the remainder were separated, widowed, or divorced. Forty-five percent earned less than \$5,000 annually; 69% were African American, 27% white, and 1% Hispanic.

Measures

Participants completed the following interviews and self-report questionnaires relevant to this article:

Structured Interview for DSM-III-R Non-Patient Version (SCID-NP; Spitzer, Williams, Gibbon, & First, 1989) is a semistructured diagnostic interview based on DSM-III-R criteria. Alcohol abuse and dependence modules were used to assess lifetime AUD. Of the women 23% met criteria for lifetime alcohol dependence, and 4% met criteria for lifetime alcohol abuse. In addition, SCID items measuring abuse/dependence symptoms were collapsed into a dichotomous variable wherein an affirmative response on any item was coded as presence of an alcohol problem. On the basis of this measure 42% reported lifetime alcohol problems.

The Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995), is a clinician-administered diagnostic interview that measures PTSD symptoms. The instrument can provide severity scores for each of the PTSD symptom clusters, including intrusive, avoidance, and hyperarousal symptoms. Interrater reliabilities on CAPS and SCID were established for both diagnostic and item reliability, as described elsewhere (Kaysen, Scher, et al., 2005).

RESULTS

Data Analytic Plan

We conducted two related analyses, one examining the impact of AUD on the course of PTSD symptoms, and a second examining the impact of any degree of alcohol symptoms on PTSD symptom course. Each analysis consisted of repeated measures multivariate analysis of variance (MANOVA) on three dependent variables: intrusion, avoidance, and hyperarousal symptoms. Independent variables were time and AUD (analysis 1) or alcohol problems (analysis 2). There were no univariate or multivariate within-cell outliers at $p < .001$ for either analysis. Results of evaluation of assumptions of normality, homogeneity of variance-covariance matrices, linearity, and multicollinearity were acceptable (Tabachnick & Fidell, 2001) for both analyses.

Alcohol Use Disorders and PTSD Symptoms

Using Wilks' criterion, the combined dependent variables were significantly affected by time, $F(3, 97) = 25.90, p < .001$, and AUD, $F(3, 97) = 3.50, p < .05$, but not the interaction, $F(3, 97) = 1.95, ns$. On the basis of univariate tests, time was significant for all three dependent variables: for intrusion, $F(1, 99) = 58.40, p < .001$; avoidance, $F(1, 99) = 31.99, p < .001$; and hyperarousal, $F(1, 99) = 54.27, p < .001$. Scores consistently decreased over time (see Table 1 for means and standard deviations). AUD was a significant predictor for two of the three dependent variables, intrusion, $F(1, 99) = 8.02, p < .01$, and avoidance, $F(1, 99) = 8.82, p < .01$; those who had AUDs had consistently higher scores than those who did not have a history of AUD. Hyperarousal symptoms were not significantly different between the two groups, $F(1, 99) = 3.61$.

Alcohol Problems and PTSD Symptoms

For analysis 2, the combined dependent variables were significantly affected by time, $F(3, 97) = 34.94, p < .001$; alcohol problems, $F(3, 97) = 4.25, p < .01$; and the interaction, $F(3, 97) = 2.95, p < .05$. On the basis of univariate tests, time was a significant predictor for all three dependent variables: for intrusion, $F(1, 99) = 72.16, p < .001$; avoidance, $F(1, 99) = 44.03, p < .001$; and hyperarousal, $F(1, 99) = 80.76, p < .001$. Scores consistently decreased over time (see Table 1). The presence of alcohol problems was significant for all three dependent variables: for intrusion, $F(1, 99) = 7.90, p < .01$; avoidance, $F(1, 99) = 12.45, p < .01$; and hyperarousal, $F(1, 99) = 4.85, p < .05$. Those who had lifetime histories of alcohol problems had consistently higher scores than those who did not. The interaction was not significant for intrusion or avoidance symptoms but was significant for hyperarousal, $F(1, 99) = 4.17, p < .05$. A plot of the interaction suggested that women who had alcohol problems experienced less symptom improvement over time than women who did not have alcohol problems.

DISCUSSION

The present study is one of a few that address comorbidity between AUD and PTSD symptoms over time in acute trauma samples (Acierno et al., 1999; Zatzick et al., 2002). Guided by previous work indicating increased risk for PTSD in women who had previous AUD (Acierno et al., 1999; Cottler et al., 1992), we focused our analyses on whether lifetime AUD and alcohol problems were related to chronicity of PTSD symptoms. The study adds to previous work in

two primary ways. First, it consisted of a community sample of women assessed soon after trauma exposure. Second, use of longitudinal data allowed for better understanding of the course of symptom improvement. We hypothesized alcohol problems would be associated with increased PTSD symptom severity and a more chronic course of symptoms.

Results indicated both AUD and alcohol problems were associated with greater PTSD symptom severity. Women who had lifetime AUD reported significantly worse intrusion and avoidance PTSD symptoms and women who had alcohol problems reported significantly worse PTSD symptoms than those who did not have such a history. Moreover, women who had histories of alcohol problems or AUD continued to have higher PTSD symptoms over time. In sum, these findings support the hypothesis that alcohol problems prior to trauma exposure are associated with a more severe and chronic course of PTSD symptoms for female crime victims.

There are limitations to the present study. Given low base rates of AUD among women (Grant et al., 2004), the sample sizes for testing specific relationships in the present study became very small. Thus, especially for more conservative analyses of the impact of AUD specifically, there may not have been enough power to detect differences, especially interaction effects. Despite this, we found overall support for the impact of alcohol problems on PTSD severity and course. In addition, this study was based on secondary data analyses, and there were no measures of alcohol consumption or alcohol-related consequences beyond the SCID. This lack limited our ability to examine more fine-grained distinctions in drinking behavior and PTSD symptoms. Finally, the sample predominantly consisted of crime victims who reported their experiences to police or other authorities, thereby overrepresenting crimes involving assaults by strangers, the presence of a weapon, and more severe injuries (Kaysen, Morris, Rizvi, & Resick, 2005). These factors may affect the way the crimes are viewed by others and by the victims themselves and may consequently influence ways victims cope with trauma.

Despite these limitations, this study builds upon existing literature in numerous ways. The vast majority of existing literature has used populations who had chronic conditions to explore hypotheses about the development and maintenance of these two disorders. By using an acute trauma sample coupled with a longitudinal design, this study was better able to examine this relationship over time. In order to parse out the factors contributing to this pattern of results and examine longer-range clinical outcomes, future studies would benefit from longer follow-up and thorough assessment of both drinking and general coping behaviors among women who have past or current AUD after an acute trauma.

In conclusion, women who have histories of alcohol problems may be at increased risk for more severe PTSD in response to interpersonal violence when compared with women who do not have histories of AUD or alcohol problems. This finding highlights the importance of screening for past and current AUD as well as subthreshold alcohol problems among acute trauma survivors and close monitoring of those who screen positive so they can be referred to specialty care if either alcohol problems or PTSD worsen or fail to improve.

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Table 1

Mean Scores and Standard Deviations for Posttraumatic Stress Disorder Clusters as a Function of Time and Alcohol Problems

Posttraumatic stress disorder symptoms	Lifetime alcohol abuse/dependence		Lifetime alcohol problems	
	Yes (<i>n</i> = 27) <i>M</i> (<i>SD</i>)	No (<i>n</i> = 74) <i>M</i> (<i>SD</i>)	Yes (<i>n</i> = 43) <i>M</i> (<i>SD</i>)	No (<i>n</i> = 58) <i>M</i> (<i>SD</i>)
Time 1				
Intrusion	22.67 (7.54)	17.80 (8.42)	21.74 (8.23)	17.15 (8.12)
Avoidance	29.37 (11.41)	22.58 (12.13)	29.07 (12.04)	20.97 (11.34)
Hyperarousal	23.96 (7.21)	22.21 (9.07)	23.86 (8.08)	21.81 (8.95)
Time 2				
Intrusion	15.85 (9.16)	11.59 (8.01)	14.70 (8.64)	11.27 (8.16)
Avoidance	22.96 (16.25)	14.81 (11.33)	21.30 (15.11)	13.81 (10.74)
Hyperarousal	19.04 (10.90)	13.63 (9.92)	18.12 (10.07)	12.83 (10.17)