

The Role of Sexual Assault and Sexual Dysfunction in Alcohol/Other Drug Use Disorders

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Many women with sexual assault histories receive care in alcohol/other drug (AOD) treatment programs. Affected women frequently suffer from sexual dysfunction, leading investigators to suggest self-medication may be one path to AOD use disorders and relapse. This preliminary study examined sexual dysfunction and sexual assault in 71 women receiving treatment for addiction. Women with prior sexual assault scored higher than nonassaulted women on sexual dysfunction overall, a discrepancy accounted for by higher scores among assaulted women on sexual inhibition subscales. Sexual inhibition and sexual assault each predicted the use of alcohol or other drugs to increase sexual desire. These preliminary findings suggest sexually abused women may follow a different course into AOD-related problems than nonabused women, possibly including self-medication to relieve sexual inhibition.

KEYWORDS *Sexual assault, sexual dysfunction, substance use, alcoholism, treatment, women*

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INTRODUCTION

There is ample research suggesting that prior sexual assault and posttraumatic stress disorder (PTSD) are clinically relevant when treating patients with alcohol/other drug (AOD) use disorders (Brady, Back, & Coffey, 2004). The old school of thought was that when patients presented with both AOD use disorders and PTSD, one needed to treat the AOD use disorder first before even beginning to address the PTSD symptoms (Brown, 2000). Although this is still common practice in many places, research has discovered evidence that PTSD symptoms may exacerbate the risk for relapse to AOD use (Kofoed, Friedman, & Peck 1993; Norman, Tate, Anderson, & Brown, 2007). Substantial evidence exists indicating that even when they do not relapse more easily, individuals with PTSD/AOD comorbidity treated only for AOD use disorders do not find relief for their PTSD symptoms and continue to live dysfunctional lives with greater medical needs, unemployment, and social problems (Cohen & Hien, 2006; Read, Brown, & Kahler, 2004). These findings have resulted in the development of several treatment protocols that address trauma history in addicted individuals (Brady et al., 2004, 2005; Foa, 1997; Foa, Keane, Friedman, & Cohen, 2008; Foa, Molnar, & Cashman 1995; Foa & Rothbaum 1998; Najavits, Weiss, Shaw, & Muenz, 1998). However, more information must be gathered about this population to clarify the interplay between sexual assault histories and AOD use disorders, as well as to identify any special treatment needs of individuals with PTSD and AOD use disorders.

In the literature, reported rates of sexual assault found among women in the U.S. general population vary from 2.6% (Breslau, Davis, Andreski, & Peterson, 1991) to 23% (Letourneau, Resnick, Kilpatrick, & Saunders, 1996), but most cluster around the 9.2% rate found by Kessler, Sonnega, Bromet, and Hughes (1995) in the National Comorbidity Survey (NCS). Studies on women with AOD use disorders show higher rates ranging from 19.7% (Ladwig & Andersen, 1989) to 70% (Miller, Downs, & Testa, 1993). The wide ranges of these rates are most likely due to differing definitions of sexual assault used in the studies. For example, some studies include only acts that involved forced penile penetration, while other studies included any unwanted sexual touching or fondling, and most studies utilize questionnaires that do not clearly define terms such as "rape" or "sexual assault" for the participant (Acierno, Kilpatrick, Resnick, Saigh, & Bremner, 1999). Still, despite differences in assessment, the evidence indicates that sexual assault is more prevalent in populations of women with AOD use disorders than in the general population. The reverse is also true: women with a history of sexual assault are more likely to have AOD use disorders than women who have never been sexually assaulted (Acierno et al., 1999; Kilpatrick et al., 2000). In addition, a history of childhood sexual assault is a risk factor

for continued heavy drinking over time (Wilsnack, Wilsnack, Kristjanson, & Harris, 1998).

Research on trauma in general has found similar results. Studies examining the relationship between trauma and PTSD have demonstrated that victims of any violent crime frequently develop PTSD (Yehuda & McFarlane, 1995), and women who have been traumatized develop PTSD at higher rates than traumatized men. These studies have also found rape or other sexual molestation to be the traumatic event most likely to precede PTSD in women (Kessler et al., 1995). Samples of individuals with a history of sexual assault (Burnam et al., 1988; Frank & Anderson, 1987) or PTSD (Grice, Brady, Dustan, & Malcolm, 1995; Kessler et al., 1995) have been found to have higher rates of AOD use disorders than control groups.

Various theories have been proposed to explain the association between sexual assault history or PTSD and AOD use disorders. One of these theories is that some women who have been sexually assaulted attempt to cope with their resultant distress by “self-medicating” with alcohol or other drugs (Brady et al., 2004; Chilcoat & Breslau, 1998; Dansky, Brady, & Saladin, 1998; Epstein, Saunders, Kilpatrick, & Resnick, 1998; Sharkansky, Brief, Peirce, Meehan, & Mannix, 1999). PTSD involves a constellation of unpleasant symptoms: persistent reexperiencing of the event, nightmares, numbing of general responsiveness, avoidance, and increased fear and anxious arousal (American Psychiatric Association, 2000). These are symptoms that are often temporarily alleviated by the use of alcohol or other drugs that produce relaxation, euphoria, amnesia, or inhibition of rapid eye movement (REM) sleep. As such, the self-medication hypothesis seems quite reasonable.

Sexual dysfunction may also be one of the common sequelae of sexual assault that women self-medicate with alcohol and other drugs. Unfortunately data about sexual dysfunction are often not collected in research examining PTSD and AOD use disorders in women with sexual assault histories. This remains an understudied area. Yet there is some research suggesting this could be a central factor in the initiation, maintenance, or escalation of AOD use by these women. Becker, Skinner, Abel, and Cichon (1986) examined data from women who were in a sexual assault treatment center and compared these women to controls from the general population. They found the survivors of sexual assault had more early response cycle inhibition sexual dysfunction (i.e., fear of sex, difficulty becoming aroused, or difficulty feeling any desire for sexual contact). Several symptoms of PTSD would be expected to manifest as this type of sexual dysfunction when sexual assault is the criterion A event. For example, avoidance of activities that remind the person of the trauma would often involve avoidance of sexual contact for sexual assault victims; reexperiencing fear when presented with cues that remind the person of their trauma would, for sexual assault victims, sometimes become manifest as fear of sex; and emotional numbing could easily translate into a lack of desire for sexual contact or the inability to

become sexually aroused in the sexual assault survivor. Sarwer and Durlak (1996) examined a group of adult women who were seeking sex therapy with their spouses and found childhood sexual abuse discriminated between women with and without a current sexual dysfunction. They also found that among abused women, abuse involving sexual penetration discriminated between sexually dysfunctional and nondysfunctional women.

In a study that more closely examined the self-medication hypothesis in this population, Wilsnack and others (1998) used data from a large sample of women to evaluate how well personal and social characteristics of those women predicted drinking behavior over a 10-year period. Wilsnack and others (1998) found that childhood sexual assault predicted a greater likelihood of persistent alcohol problems and continuation of drinking 10 years later. They also found that women who expected drinking would reduce sexual inhibition were more likely, 10 years later, to have alcohol problems.

Greater alcohol use tends to increase some types of sexual dysfunction, such as anorgasmia and vaginismus (Plant, 1997). Therefore one would expect to find evidence of self-medicating for sexual dysfunction only among women who are experiencing dysfunction due to anxiety, guilt, or reexperiencing of trauma, which are more consistent with the early response cycle inhibition sexual dysfunctions. These symptoms might successfully be ameliorated, at least temporarily, by the use of tension-reducing alcohol or other drugs.

In this preliminary study, addicted women with a history of sexual assault were expected to have higher scores on the sexual dysfunction measure—particularly on subtests that correspond to early sexual response cycle inhibition problems—than addicted women without a history of sexual assault. In addition, women with sexual assault or sexual inhibition were expected to report more use of alcohol and other drugs in order to increase sexual desire, and the interaction between sexual assault and sexual inhibition was also expected to predict such use, so that women with both sexual assault and sexual inhibition would report the most use of alcohol and other drugs to increase sexual desire.

METHOD

Participants

The sample consisted of 71 female patients who received either inpatient or outpatient treatment for AOD use disorders. These women comprised the female subset of a group of 372 AOD use patients from eight treatment centers in the northeast United States who were recruited as part of the Rutgers Research Diagnostic Project (RDP: reported elsewhere; Langenbucher et al., 2000). The mean age of the participants in the female subset was 33 years

(SD = 11.7), ranging from 17 to 66 years. These participants had a mean education level of 13 (equivalent to 1 year of college) and were primarily white/non-Hispanic (83.1%). An additional 8.5% reported their ethnicity as African American, 5.6% as Latino, and 2.8% as other. Almost half of the participants were never married (46.5%).

The participants were enrolled in the Rutgers Research Diagnostic Project (RDP) on a voluntary basis. They could terminate their participation at any time. Informed consent was obtained prior to the research interview. Masters- and doctoral-level diagnosticians interviewed participants about 2 weeks after admission. Participants were paid and were told they would be participating in a federally funded study of health and mental health problems in alcohol and drug users. The refusal rate was less than 5% at most sites.

Measures

A multidimensional battery of tests was administered at baseline and at 6- and 12-month follow-up intervals. Only the baseline data were utilized here, because the measures of interest for this study were only collected at baseline. The measures from the larger battery that were used in this study were as follows:

- Composite International Diagnostic Interview–Expanded Substance Abuse Module (CIDI-SAM): a semistructured interview administered by trained diagnosticians used to assess for alcohol and other drug DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th ed., American Psychiatric Association, 2000) diagnoses of abuse or dependence (Robbins, Cottler, & Babor, 1990).
- Structured Clinical Interview for DSM-III-R (SCID): a semistructured interview administered by trained diagnosticians used to assess for concurrent DSM-III-R (Diagnostic and Statistical Manual of Mental Disorders, 3rd ed., Revised; American Psychiatric Association, 1987) psychiatric diagnoses (Spitzer et al., 1988).
- Golombok Rust Inventory of Sexual Satisfaction–Female (GRISS-F) (Rust & Golombok, 1983): a short 28-item self-report questionnaire for assessing the existence and severity of sexual dysfunction in women. This questionnaire provides seven domains for women: anorgasmia, vaginismus, avoidance, nonsensuality, dissatisfaction, frequency, and noncommunication. Internal consistencies for all domains have been found to be within the acceptable range (.70 or greater with the exception of noncommunication at .61). Test-retest reliabilities ranged from .47 (dissatisfaction) to .82 (vaginismus). The GRISS-F has been shown to have reliable discrimination between sexually functional and dysfunctional women on all domains except communication (Meston & Derogatis, 2002; Rust & Golombok, 1985, 1986).

- **Emotion Regulation Reasons for Use Scale:** a scale designed specifically for the Rutgers Research Diagnostic Project (RDP) battery that was modeled from research on affect and feelings derived from the literature on reasons to drink alcohol (for more information on this literature see Sayette, 1993; Steele & Josephs, 1990). In this study only the items in the scale that pertained to the use of alcohol or drugs to facilitate or enhance sexual desire were used.

Whether or not participants reported a history of sexual assault was determined by examining responses to the entry question of the SCID PTSD module (Spitzer et al., 1988). This question reads as follows:

Sometimes things happen to people that are very stressful or disturbing—things that do not happen to most people and are so bad that they would be distressing, upsetting, or frightening to almost everyone. By that, I mean things like major earthquakes or floods, very serious accidents or fires, physical assault or rape, seeing other people killed or dead, being in a war or heavy combat, or some other type of disaster. At any time during your life have any of these kinds of things happened to you?

Participants who responded with the terms “rape” or “sexual assault” were coded as having reported a positive history of sexual assault. Twenty-four women (33.8%) reported having experienced sexual assault at some point in their lives.

Data Analysis

Before conducting the main statistical analyses, variables were examined to ensure that they exhibited adequate range and distribution properties and that they did not contain extremes, truncations, or any other property that would have required a different analytic test than those planned. The two groups, women with a sexual assault history versus those without a sexual assault history, were compared on demographic variables (race, marital status, number of children, age, employment, and education) to confirm group equality at intake. No demographic variables differed by condition at baseline.

The hypothesis predicted that women with a history of sexual assault (sexually assaulted women [SAW]) would have more sexual dysfunction than addicted women who did not report histories of sexual assault (non-sexually assaulted women [NSAW]). This was tested by comparing the means of the two groups (SAW vs. NSAW).

The hypothesis also predicted sexually assaulted women who also experienced sexual inhibition would be especially likely to use alcohol or other drugs in order to increase sexual desire (INCDES). This relationship was

examined by performing linear regressions to see if using alcohol or other drugs to increase sexual desire was predicted by sexual assault and sexual inhibition. Scores on the GRISS-F Avoidance and Nonsensuality subscales were highly correlated, and since both conceptually reflect sexual inhibition (early response cycle inhibition sexual dysfunction), they were collapsed to form a new sexual inhibition variable. The use of alcohol or other drugs to increase sexual desire was measured by counting the number of times, on the Emotion Regulation Reasons for Use Scale, a respondent had written "sexual desire" as a feeling they used alcohol or other drugs to enhance. For example, participants were asked how often they used alcohol or other drugs to "make it easier to express certain feelings or desires freely and openly." They were then asked, "What feelings or desires?" Participants had a list of possible feelings or desires from which to choose or they could write in a feeling or desire not on the list. The number of times participants identified "sexual desire" (one of the choices on the list) on items that were positively scaled was calculated as a rough estimate of how much they used alcohol or other drugs to increase sexual desire (self-medicating sexual inhibition). Two models predicting the use of alcohol or other drugs to increase sexual desire were tested, one with and one without the interaction between sexual assault and sexual inhibition.

The size of the sample in this preliminary study was relatively small ($N = 71$). This resulted in low statistical power for the statistical analyses. In order to partially compensate for this shortcoming, effect sizes were calculated for each analysis in addition to p levels (Cohen, 1992). In addition, an alpha level of .05 was used to test all hypotheses, since performing adjustments to this alpha level, based on the number of tests conducted, would have significantly increased the risk of making type II errors. In this way we tried to balance the risk of type I and type II errors for this study.

RESULTS

Overall there was a large amount of sexual dysfunction in both groups. Sexually assaulted women had a mean that was above the clinical cutoff for the total score on six of the seven subscales. Women not reporting a sexual assault history (NSAW) also had a high level of sexual dysfunction, with means above the cutoff on four of the seven subscales. Sexually assaulted women had higher means on the total GRISS-F score ($M = 41.5$) compared to non-sexually assaulted women ($M = 32.47$). However, when the scores were examined at the level of the subscales, the only differences between sexually assaulted and non-sexually assaulted women were on two of the subscales. Sexually assaulted women had higher means on the Avoidance ($M = 5.79$) and Nonsensuality ($M = 4.22$) subscales compared to NSAW ($M = 3.73$ and $M = 2.27$, respectively). The mean scores of sexually as-

TABLE 1 *t* Tests for Sexual Dysfunction

	Cut	ES	<i>t</i>	Sexually assaulted			Not sexually assaulted		
				<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Sexual dysfunction	37	0.56	-2.26*	41.50	16.54	24	32.47	15.46	45
Infrequency	3	0.28	-1.12	4.54	2.19	24	3.93	2.14	45
Noncommunication	3	0.15	-1.36	3.75	1.82	24	3.07	2.05	44
Dissatisfaction	7	0.43	-1.63	7.35	3.43	23	5.75	3.98	44
Avoidance	3	0.60	-2.47*	5.79	3.97	23	3.73	2.86	44
Nonsensuality	3	0.71	-2.42*	4.22	3.93	23	2.27	1.82	44
Vaginismus	3	0.27	-1.09	4.13	3.08	24	3.36	2.61	45
Anorgasmia	8	0.17	-0.70	6.30	3.98	23	5.66	3.34	44

Note: Cut = GRISS-F cutoff score, where a score of this magnitude or larger indicates a clinically relevant problem.

* $p < .05$.

saulted and non-sexually assaulted women did not differ for the remaining subscales of Infrequency, Noncommunication, Dissatisfaction, Vaginismus, or Anorgasmia (see Table 1).

In order to examine the relationship between sexual assault, sexual inhibition, and self-medication, regressions were run to analyze the amount of variance in the use of alcohol or other drugs to increase sexual desire (INCDES) that could be accounted for by a history of sexual assault, sexual inhibition, and the interaction between both variables (see Table 2). For Model 1, only sexual assault and sexual inhibition were entered. This model accounted for 28.6% of the variance in INCDES, and was the better model. The main effects were found for sexual assault (accounting for 14.6% of the variance) and sexual inhibition (accounting for 5.0% of the variance in INCDES). The remaining 9% of the variance was shared variance. For Model 2, the interaction between sexual assault and sexual inhibition was

TABLE 2 Summary of Linear Regression Analysis for Variables Predicting Use of Alcohol or Other Drugs to Enhance Sexual Desire ($N = 66$)

Variable	<i>b</i>	<i>SE</i>	β	SSR^2	<i>ES</i>
Model 1 ($R^2 = 0.2859$, $F = 12.812^{***}$)					
Sexual assault	1.32	0.36	0.41***	0.146	lg
Sexual inhibition	0.07	0.03	0.24*	0.050	m
Model 2 ($R^2 = 0.3121$, $F = 9.512^{***}$)					
Sexual assault	1.29	0.36	0.40***	0.139	lg
Sexual inhibition	0.01	0.05	0.03	0.000	
Interaction: (Assault \times Inhibition)	0.10	0.06	0.26	0.026	s

Note: ES = effect size, n = none, s = small, m = medium, lg = large; SSR^2 = squared semipartial correlation.

* $p < .05$; ** $p < .01$; *** $p < .001$.

entered as well. The interaction did not improve the model and accounted for only 2.6% of the variance in INCDES.

DISCUSSION

Sexually assaulted women had higher total sexual dysfunction scores on the sexual dysfunction measure (GRISS-F) than women with no history of sexual assault. In addition, sexually assaulted women on average scored above the clinical cutoff for sexual dysfunction, while non-sexually assaulted women did not. Still, the sample as a whole had a fairly high degree of sexual dysfunction at the subscale level, with both groups scoring above the clinical cutoff for a number of subscales. Women not reporting a history of sexual assault had a mean above the cutoff for four subscales: Infrequency, Noncommunication, Avoidance, and Vaginismus subscales. Sexually assaulted women had means above the cutoff for the total dysfunction score and for six of the seven subscales: Infrequency, Noncommunication, Dissatisfaction, Avoidance, Nonsensuality, and Vaginismus. However, statistical differences between the mean scores of the two groups only existed in the total dysfunction score and two of the subscales—Avoidance and Nonsensuality—where sexually assaulted women had significantly higher mean scores than women not reporting a history of sexual assault, consistent with previous research by Becker et al. (1986). The constructs evaluated by these two subscales are equivalent to those Becker et al. described as comprising early response cycle inhibition sexual dysfunction (i.e., fear of sex, difficulty becoming aroused, or difficulty feeling any desire for sexual contact). As such, these two scales can be considered to fall under the single construct, sexual inhibition, which is the type of sexual dysfunction that was expected to be more prevalent among sexually assaulted women because of the likelihood of sexual contact triggering reexperiencing of the trauma or of eliciting trauma-associated guilt, fear, and avoidance.

Sexual inhibition may intuitively be one of the few types of sexual dysfunction that would (temporarily) be alleviated by the use of psychoactive substances because of their disinhibiting effects. We found some support for the theory that women who have been sexually assaulted may be likely to experience greater amounts of sexual inhibition and may attempt to control these symptoms by using drugs or alcohol. Results of our first linear regression indicated that sexual assault accounted for a large portion of the variance in the use of alcohol or other drugs to increase sexual desire. Sexual inhibition accounted for a moderate portion of this variance as well. However, the results of the second linear model where the interaction was entered did not adequately support the hypothesis that the women who had been sexually assaulted and experienced sexual inhibition were most likely to be using alcohol or other drugs to enhance sexual desire. This lack of an

effect could have been due to the lack of statistical power in this preliminary study, or it could have been a true lack of association between the variables examined. For example, both women who experience sexual inhibition secondary to sexual assault and those who experience similar inhibition for other reasons may be more likely to use alcohol or other drugs to increase sexual desire than women without sexual inhibition. Further investigation of this possible relationship is required in a larger sample.

There may also be other symptoms triggering self-medicating behavior among sexually assaulted women. For example, these women may not experience guilt or flashbacks as avoidance or nonsensuality, but they may nonetheless use alcohol to rid themselves of unpleasant thoughts and feelings, perhaps proactively in anticipation of sexual activity. Or they may find that the general hyperarousal symptoms of PTSD make it difficult for them to relax in any situation, including sexually charged ones, and they may use alcohol or other drugs to reduce general tension. Ullman, Filipas, Townsend, and Starzynski (2005) found that trauma history, drinking to cope, and drinking for tension reduction were risk factors distinguishing sexually assaulted women who developed drinking disorders from those who did not develop such problems. Other research has found that sexual assault victims that develop PTSD comorbid with drinking problems are more likely to have less education, multiple trauma histories, blame their character more for the assault, believe that drinking will reduce distress, drink to cope, and receive negative social reactions to their assault than survivors who do not develop comorbid drinking problems and PTSD (Ullman, Filipas, Townsend, & Starzynski, 2006). These factors may all interact with preexisting factors such as a tendency toward emotional dysregulation, poor coping skills, as well as sexual assault sequelae including sexual dysfunction to determine which survivors of sexual assault develop comorbid drug and alcohol disorders. The large amount of variance in the women's use of alcohol or drugs to increase sexual desire accounted for by prior sexual assault in this study needs to be examined more closely in future studies in this population. However, this relationship needs to be examined more closely, specifically in relationship to other factors sustaining AOD use behavior to assess the relative importance of AOD use to relieve sexual inhibition.

Limitations of the Study

The use of the PTSD entry question of the SCID to identify women with a history of sexual assault, while similar to many other studies in the same area, was very conservative and probably did not identify all individuals with such a history (Acierno et al., 1999). While it may have been more likely to identify those women who experienced greater levels of trauma sequelae from the event, it is very likely that the magnitude of the effect was diminished and the power of this preliminary study was compromised. Moreover, the sample

size of 71 was small, and with such limited statistical power, these analyses were also more likely to result in type II errors; we mitigated this by not using a larger multivariate omnibus test for the subscales of the GRISS-F, thus increasing our chances of type I error. The small sample size also limited our subject-to-variable ratio, and so we were unable to include other factors that may have been related to the tendency to use alcohol or other drugs to counter sexual inhibition, such as personality disorders, other anxiety disorders, or mood disorders. Nevertheless, as a preliminary study, these results are intriguing and need further examination.

Female AOD users in this clinical population may not have been representative of female AOD users in the general population. In addition, these results may not generalize to women addicts who are demographically substantially different from this participant population. It may also be the case that women who were using alcohol or other drugs to self-medicate sexual inhibition did not report sexual inhibition as a problem on the GRISS-F in cases where self-medicating was seen by them as a successful method to overcome inhibition, thus reducing our ability to detect this relationship with the current measures.

CONCLUSION

The findings from these data support adding assessment and treatment of sexual dysfunction for women with a history of sexual assault who seek treatment for AOD use disorders, particularly if they report they are using those substances to increase sexual desire. Assessment of alcohol and other drug expectancies is likely to permit detection of such a self-medicating tendency. In cases where expectancies for AOD use include reduction of sexual inhibition, the expectancy itself can be a target of treatment. Research has found that individuals with physical and sexual abuse histories continue to have increased psychiatric, medical, and associated disability up to 2 years after treatment for AOD use disorders alone (Back, Brady, Sonne, & Verduin, 2006; Mills, Teesson, Ross, & Darke, 2007; Pirard, Sharon, Kang, Angarita, & Gastfriend, 2005) and it is more cost effective to treat the AOD use disorder and the trauma symptoms concurrently (Domino, Morrissey, Nadlicki-Patterson, & Chung, 2005). Sexual dysfunction, specifically sexual inhibition, may be one associated disability affecting interpersonal romantic relationships for these women, and if, like other sexual assault sequelae, it does not resolve with treatment for AOD use disorders, this could continue to cause marital and romantic difficulties for them. Since the women without sexual assault also had some elevated scores on the measure of sexual dysfunction, this type of assessment and treatment may also be indicated in women seeking treatment who do not have a sexual assault history.

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