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Trauma, Gender, and Mental Health Symptoms in Individuals With Substance Use Disorders

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1. Introduction

Substance use disorders (SUDs) often co-occur with psychiatric sequelae and conditions. One third of individuals who exhibit substance abuse or dependence also experience serious psychological distress (SAMSHA, 2003). Furthermore, one in five individuals in treatment for a SUD has received previous treatment for a psychiatric health problem (Marsden et al., 2000). Research also suggests that individuals struggling with both addiction and mental health symptoms exhibit more severe psychological challenges, which are likely due to an additive effect when managing both disorders (Gonzalez et al., 2007).

Gender appears to play a role in the relationship between substance use disorders and psychiatric comorbidity. Women with SUDs are more likely to report a higher rate of lifetime psychiatric disorders, including affective and anxiety disorders. On the other hand, men with SUDs are twice as likely as women to meet criteria for a diagnosis of antisocial personality disorder (Zlotnick et al., 2008). While rates of psychiatric disorders are generally higher in women, the magnitude of depressive symptoms and anxiety are not, suggesting that psychiatric comorbidities may moderate gender differences in mental health symptoms of individuals with SUDs (Gearon et al., 2003; Compton et al., 2003). Further, comorbid mental health issues (most commonly antisocial personality disorder, depressive disorders,

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phobias and generalized anxiety), have been strongly associated with poor substance abuse treatment outcomes, with men exhibiting such comorbidities faring much worse than those not evidencing symptoms (Compton et al., 2003).

In addition to psychiatric comorbidities, individuals with SUDs are also more likely to have been the victim of some sort of physical and or sexual abuse (described hereafter as trauma). Although prevalence estimates of trauma vary across samples due to differences in measures used and how trauma is defined, overwhelming evidence supports the increased risk for trauma among individuals entering treatment for substance use disorders trauma. (Pirard, et al., 2005; Gearon et al., 2003). Further, an estimated 60–75% of women enrolled in substance abuse treatment report a history of partner violence in their lifetime (El-Bassel, Gilbert, Schilling, & Wada, 2000; Lincoln, Liebshutz, Chernoff, Nguyen, & Amaro, 2006), compared to 25% of women in the general population (Tjaden & Thoennes, 1998). Similar to non-treatment seeking individuals, women with SUDs are more likely than men to experience sexual and physical trauma (Briere and Elliot, 2003; Elliott et al., 2004; Tjaden and Thoennes, 1998; Pirard et al., 2005; Gearon et al., 2003). Gender differences are also noted with regard to childhood histories of trauma. For example, when looking at childhood history, women were more likely to experience sexual trauma as children (Ullman and Filipas, 2005; Walker et al., 2004), whereas rates of reported childhood physical trauma were higher in men (Thompson et al., 2004). Though men and women are both adversely affected by specific types of childhood trauma, including physical and sexual trauma, the association between childhood trauma and the risk of developing psychiatric and substance use disorders appears to be stronger in women (MacMillan et al., 2001; Simpson and Miller, 2002; Sinha and Rounsaville, 2002; Thompson et al., 2004; Widom and Hiller-Sturmhofel, 2001; Widom and White, 1997).

History of physical and sexual trauma has also been associated with an increased severity in psychiatric symptoms as well as other indicators of diminished psychosocial functioning, including unemployment, separation/divorce, decreased family/social status, and a lower level of global daily functioning (Pirard et al, 2005). Further, strong cumulative effects of childhood trauma experiences on adult mental health outcomes have been found in both males and females, with increased severity of psychological problems (including depression and substance use) associated with greater number of reported childhood traumatic events (Dube, et al., 2003; Edwards et al., 2003). Research has also confirmed that even when receiving similar treatment for SUDs, individuals with a history of trauma show significantly higher levels of psychiatric distress and report receiving more psychiatric treatment than those without a history of trauma, with trauma impacting treatment outcomes similarly in males and females (Pirard et al., 2005).

Not surprisingly, strong relationships exist between the presence of SUDs, mental health symptoms and a history of trauma. Gearon and colleagues (2003) found that 60% of women and 30% of men with a SUD and a co-morbid severe mental illness, reported a history of physical trauma. In another recent study, 47% of women and 17% of men with a SUD and comorbid severe mental disorder reported a history of sexual trauma (Zlotnick et al, 2008). Subsequently, the authors suggested that a history of trauma may increase the vulnerability of individuals with SUDs to psychiatric comorbidity (Zlotnick et al, 2008).

The relationship between substance use, trauma history, and employment is worth noting. In the United States, unemployment is a chronic problem among persons with SUDs (McCoy et al, 2007; Wong and Silverman, 2007). Recent national Drug and Alcohol Services (DASIS) data confirm low rates of employment (31%) in a SUD treatment sample of persons 18 to 64 years of age (SAMHSA, 2008). Domestic violence has also been associated with high rates of unemployment for a variety of reasons, including mental health issues, increased tardiness and lost time from work, and unstable housing, and direct actions made by the perpetrator (e.g., stalking), to interfere with employment (Lindhurst, Oxford & Gilmore, 2007; Swanberg & Logan, 2005).

The goal of the current project was to further examine relationships between trauma history, participant demographic characteristics (e.g., gender, race), treatment modality, and self reported mental health symptoms, utilizing a multi-site sample of treatment-seeking individuals with SUDs participating in an employment intervention study conducted by the National Institute on Drug Abuse Clinical Trials Network (NIDA CTN). Further, given the inclusion criteria for the clinical study from which the current sample was drawn (currently unemployed or underemployed), the relationship between the above-mentioned predictors on both engagement in the employment intervention and subsequent employment outcomes at 3 and 6 months post-intervention will be explored. It is hypothesized that: 1) a high percentage of participants (>40%) will endorse experiencing some form of trauma in their lifetime, 2) women will be more likely to report experiencing trauma than men, 3) trauma history will uniquely contribute to endorsement of psychiatric symptoms (after controlling for other demographic/treatment variables of interest), and 4) trauma history will uniquely contribute to employment outcomes. Prior research has investigated the relationship between trauma history and treatment outcomes (e.g., relapse to substance use), with mixed results (Charney, Palacios-Boix, & Gill, 2007; Gil-Rivas, Prause, & Grella, 2009; Heffner, Blom, & Anthenelli, 2011; Pirard et al, 2005). The current study will extend the existing literature by examining the influence of trauma on mental health and employment outcomes in a multi-site, mixed treatment modality (psychosocial and methadone), sample of individuals.

2. Materials and Methods

2.1 Participants

Study participants were recruited as part of a larger clinical trial of an employment intervention for individuals with substance use disorders (Svikis et al, 2012). Both men and women of all racial and ethnic groups were invited to participate in the research. Inclusion criteria for the larger study consisted of: 1) 18 years of age or older; 2) met DSM-IV diagnostic criteria (lifetime) for Alcohol and or Drug Abuse or Dependence; 3) enrolled in outpatient substance abuse treatment program for a minimum of 30 days; 4) unemployed (no taxed or non-taxed work in the four weeks prior to study enrollment) or underemployed (worked no more than 20 hrs/week in the past four weeks); and 5) reported interest in obtaining a job. Individuals who were unable to provide informed consent due to cognitive impairment, psychiatric instability or language barriers were excluded from study participation. Ability to provide informed consent required a score of 80% or above on a 10-item, true-false exam that assessed client understanding of the research design and study

procedures. A total of 657 individuals were consented for study participation and assessed for eligibility for the clinical trial. Of those, 22 participants (3.3%) did not meet study inclusion criteria, and 7 participants (1.1%) did not return for the baseline assessment. The remaining 628 participants (95.6%) were randomized into the larger randomized clinical trial. Of those, 3 participants (0.4%) recruited for the larger study were excluded from the current analyses due to missing abuse history data. The final sample size for the current study was 625.

2.2 Study Sites

Treatment programs serving as participant recruitment sites were all members of the NIDA CTN. Both urban and rural localities were represented among the participating sites, as well as both psychosocial counseling and methadone treatment modalities. The six outpatient psychosocial counseling treatment sites were located in Michigan, Virginia, Massachusetts, South Carolina, New Mexico, and Oregon. The five methadone maintenance programs were located in Michigan, Maryland (2), Massachusetts and California. All sites had obtained prior approval from their local institutional review board prior to study implementation.

2.3 Procedures

Assessment procedures for the larger clinical trial are described in detail elsewhere (Svikis et al, 2012). Briefly, participants for the larger study completed a baseline and three follow-up assessment interviews (at 1, 3, and 6 months post-randomization) conducted by research assistants who were fully trained and certified on the research protocol and assessments. Compensation was provided to participants in the form of gift cards to local retailers for their time and effort following each assessment. Assessments consisted of a number of standardized measures which focused on participant demographics, alcohol and drug use severity, psychosocial functioning and employment/work history, and were administered primarily in semi-structured interview format.

Data abstracted for the current study included baseline information from the *Addiction Severity Index-Lite (ASI-Lite)*, an amended version of the ASI (McLellan et al., 1999), which was used for all research protocols conducted through the NIDA CTN and has a high level of psychometric support (McLellan et al., 1980, 1999; Alterman et al., 1994, 2001). The ASI-Lite is a semi-structured interview that examines seven domains of psychosocial functioning: general information, medical status, employment, alcohol/drug use, legal status, family/social, and psychiatric status. ASI items from the Family/Social domain were used in the current investigation to determine trauma history: 1) Did anyone ever abuse you physically? (Caused you physical harm); 2) Did anyone ever abuse you sexually? (Forced sexual advances/acts). Respondents were asked whether such abuse occurred (Yes/No) either past 30 days, lifetime, or both. For the present study, data analyses were restricted to lifetime trauma, due to low reported rates of any trauma experienced in the past 30 days ($n=14$). Information regarding presence of psychiatric symptoms was obtained from the Psychiatric Status domain of the ASI. Respondents were asked to indicate if they experienced the symptom in the past 30 days, during their lifetime, or both. Responses were again provided in a yes/no format. Items included: 1) Have you had a significant period of time (that was not a direct result of alcohol/drug use) in which you have experienced serious

depression-sadness, hopelessness, loss of interest, difficulty with daily function?; 2) Have you had a significant period of time (that was not a direct result of alcohol/drug use) in which you have experienced serious anxiety/tension, uptight, unreasonably worried, inability to feel relaxed?; 3) Experienced serious thoughts of suicide? (patient seriously considered a plan for taking his/her life-patient could have been under the influence of alcohol/drugs); 4) Attempted suicide (including suicidal gestures or attempts-patient could have been under the influence of alcohol/drugs)? For the present study, data analyses have been restricted to “lifetime” endorsement of symptoms. For females in the current sample, descriptive analyses also utilized data from the *Addiction Severity Index Addendum for Women*, a tool developed by the NIDA Clinical Trials Network. The variables of interest for the present study focused on perpetrators of abuse (sexual and physical) to the participant. The four items involving perpetrators of abuse were separate for physical and sexual violence and also for childhood (prior to age 18) and adult trauma. Items included: “As an adult, over the age of 18, has anyone used physical violence (such as being slapped, pushed, hit, or punched), or threat of physical violence against you?”. Response options targeted perpetrator relationship to the participant (e.g., spouse, stranger, etc.) Participants were asked to provide a yes/no response for each perpetrator type listed. Finally, given the nature of the study sample with regard to limited employment status, the relationship between trauma history and subsequent employment outcomes was of interest. Items were abstracted from the employment measures developed for the primary study, including employment status at 3 and 6 months post-intervention, and Job Seekers’ workshop session attendance (for the JS W group only, used to measure engagement in the intervention/intervention “dose”).

2.4 Data Analysis

Descriptive statistics were conducted on the sample. Rates of lifetime trauma (sexual and/or physical) were compared between men and women using chi-square analyses. Multiple logistic regression analyses were performed to examine the relationship between trauma type, demographic characteristics (race, gender, age), and treatment modality (methadone, psychosocial outpatient), on participant endorsement of psychiatric symptoms (e.g., lifetime depression, lifetime anxiety, suicidal thoughts, and suicidal ideation). Chi-square analyses were performed to examine the relationship between trauma type and psychiatric symptoms within gender. Finally, logistic regression models were run to examine the relationship between trauma and employment-related variables (e.g., intervention workshop participation, employment status at 3 and 6 month follow-up).

3. Results

The total sample was comprised of 625 participants. Participants were largely non-Hispanic (89.4%), never married (46.7%), and female (53.4%), with an average age of 41 years (10.7 SD) and an average of 11.9 years of education (2.3 SD). Sample characteristics are presented in Table 1.

3.1 Self-reported lifetime trauma

Approximately one-half (49.3%), of all participants reported being physically and/or sexually victimized in their lifetime, with the odds of women reporting trauma being 5 times that of men ($\chi^2=90.79$, $df=1$, $p<0.001$, $OR=5.018$, 95% CI (3.568, 7.058)). Lifetime trauma experiences were consistently higher in women than men across all three trauma categories (See Figure 1). This relationship was particularly notable for lifetime history of both physical and sexual trauma, with the odds of women endorsing histories of both physical and sexual trauma being 8 times that of men ($\chi^2=94.90$, $df=1$, $p<0.001$, $OR=8.150$, 95% CI (5.125, 12.960)). Additional information regarding perpetrator of trauma was available for women. Descriptive statistics performed on childhood trauma (sexual and physical) and adult trauma experienced by perpetrator revealed that childhood trauma was most often perpetrated by a family member or friend (84% for physical trauma and 59% for sexual trauma). As adults, over half (59%) of females endorsed physical trauma being perpetrated by a spouse or significant other. Conversely, for sexual trauma, nearly half of female participants (47%), reported their assailants were strangers (See Figures 2 & 3). Data regarding perpetrators of abuse were not available for males included in the sample.

3.2 Predictors of mental health sequelae

Over one-third (36.8%), of all participants reported experiencing serious thoughts of suicide in their lifetime, and serious depression and anxiety were each reported by roughly two-thirds of all participants (67.7% and 64.4%, respectively). Table 2 summarizes results of logistic regression models run for each psychiatric symptom category. In addition to trauma type and gender, participant age, race, and treatment modality were added to the model as predictors. With regard to depression, a modest relationship was revealed for race ($p<0.05$), with Caucasians being 1.7 times more likely to experience depression than African-Americans. Substantial differences were noted for trauma history ($p<0.001$), with individuals in the physical trauma only (PO) group being 2.5 times more likely to endorse depression, and those in the Physical and Sexual trauma (PS) group being over 4 times more likely to endorse lifetime depression than individuals without trauma history.

The prediction model for anxiety revealed a similar pattern. Again for trauma, striking differences were noted ($p<0.001$). Individuals in the Physical trauma only (PO) group were over three times more likely to endorse lifetime anxiety, and individuals in the Physical and Sexual trauma (PS) group being over 5 times more to endorse lifetime anxiety than individuals in the No Trauma group. No other differences were noted for the remaining variables in the model.

Lifetime thoughts of suicide were also significantly predicted by trauma history ($p<0.001$). Individuals in the Physical trauma only (PO) and Sexual trauma only (SO) groups were both over 3 times more likely to endorse suicidal thoughts, while individuals in the Physical and Sexual trauma (PS) group were over 6 times more likely to endorse suicidal ideation than individuals in the No trauma group. Racial differences were also observed ($p<0.01$), with Caucasians being over 1.6 times more likely to report suicidal ideation in their lifetime. Additionally, differences were noted for modality ($p<0.02$), with individuals receiving

Psychosocial Outpatient treatment being over 1.5 times more likely to endorse lifetime thoughts of suicide than individuals enrolled in Methadone treatment.

Similar findings were noted for the prediction model for lifetime suicide attempts. A substantial effect was found for abuse history ($p < .001$), with individuals in the Physical trauma only (PO), Sexual trauma only (SO), and Physical and Sexual trauma (PS) groups all being significantly more likely to endorse Suicide Attempts than individuals in the No trauma group. Further, treatment modality was also significant ($p < .05$), with individuals enrolled in psychosocial outpatient treatment being over 1.5 times more likely to endorse Suicide Attempts (See Table 2).

In addition prediction models (controlling for race and age) were run to examine within-gender differences regarding relationships between trauma history and mental health symptoms. Generally speaking, the odds of individuals with trauma histories to experience any of the mental health symptoms were greater than individuals with no trauma history, within both genders. Moreover, differences were also observed across abuse categories. Specifically, the odds of women experiencing both physical and sexual trauma to report depression were from 3 times than that of individuals reporting sexual trauma only ($\chi^2 = 4.88$, $df = 1$, $p = .027$, $OR = 3.38$, 95% CI (1.15, 9.95). Similar differences were found for lifetime anxiety symptoms in men reporting both physical and sexual trauma compared to men experiencing sexual trauma only ($\chi^2 = 5.10$, $df = 1$, $p = .023$, $OR = 8.74$, 95% CI (1.33, 57.33). Similarly, the odds of women who experienced both physical and sexual trauma to endorse lifetime anxiety were over 6 times that of women reporting having experienced sexual trauma only ($\chi^2 = 11.80$, $df = 1$, $p < .001$, $OR = 6.34$, 95% CI (2.21, 18.20). Finally, the odds of women who experienced physical trauma only to endorse anxiety symptoms were 4 times that of women who experienced sexual trauma only ($\chi^2 = 6.43$, $df = 1$, $p = .01$, $OR = 4.28$, 95% CI (.071, 39.13). No differences were observed between individuals who reported physical trauma only vs physical and sexual trauma on self-reported depression or anxiety symptoms, by either gender.

The occurrence of any trauma (defined as sexual, physical, or both) was associated with higher rates of both men and women reporting suicidal thoughts. The odds of men who were both physically and sexually victimized to report suicidal thoughts were 3 times that of men who had experienced physical trauma only ($\chi^2 = 4.70$, $df = 1$, $p = .030$, $OR = 3.34$, 95% CI (1.12, 9.96). No other differences emerged between trauma subsets.

3.3. Trauma and Employment

Analyses were run to examine the relationship between trauma history and employment-related variables. First, an ordinal logical regression was run in order to determine if trauma history type (no abuse, sexual only, physical only, physical and sexual) predicted engagement in the employment intervention (e.g., workshop “dose”) as measured by the number of JSW sessions attended (range of 0 to 3 sessions) by participants randomized to the JSW intervention group. No significant differences were noted ($p = .604$). Logistic regression models were also run for employment outcomes (securing a new job) at 3 and 6 months post-JSW intervention. In addition to trauma type and gender, participant age, race, and treatment modality, and intervention group assignment (JSW vs SC) were added to the

model as predictors. With regard to New Job acquisition at 3 months, a strong relationship was revealed for treatment modality ($p<0.001$), with participants enrolled in psychosocial treatment being 2 times more likely to obtain a new job at 3 month follow-up ($\chi^2=12.41$, $df=1$ OR=2.02, 95% CI (1.37, 3.00) than their methadone treatment counterparts. This relationship was also apparent at 6 month follow-up, with individuals in psychosocial treatment being twice as likely to obtain a new job ($\chi^2=14.73$, $df=1$, OR=2.06, 95% CI (1.43, 2.99). However, none of the other predictors (including trauma history) in the model contributed to employment acquisition at either 3 or 6 months follow-up time periods.

4. Discussion

Consistent with previous research and confirming our hypothesis, a substantial proportion, nearly 50% of the sample, reported a lifetime history of physical and/or sexual victimization. Also not surprisingly, our hypothesis regarding gender differences in rates of abuse was also confirmed in the present study. Women experienced higher rates of sexual and physical abuse, both singularly and combined. The present findings are consistent with prior research which has found that women with substance use disorders typically experience dramatically higher rates of lifetime physical and sexual trauma, with reported estimates two times or greater than those of men (Windle, Windle, Scheidt, & Miller, 1995). Similarly in the current sample, women reported having experienced over two times more physical/or sexual trauma, and over five times more physical and sexual trauma than men.

Results of the logistic regression models examining the influence of trauma history, demographic characteristics, and treatment modality also confirmed our hypothesis that the experience of trauma was associated with an increase in report of psychiatric symptoms, even after controlling for selected demographic and treatment characteristics. This relationship was evident across all psychiatric symptoms for individuals reporting either lifetime histories of physical only or combined physical and sexual trauma. It was also found for suicidal thoughts and suicide attempts among individuals reporting lifetime histories of sexual trauma only. The apparent lack of a relationship between depression, anxiety, and lifetime sexual trauma may be accounted for by the low incidence of individuals reporting sexual trauma only ($n=29$). Subsequently, the substantial impact of sexual trauma on psychiatric functioning should not be disregarded. Schnieder and colleagues (2008), noted that men enrolled in substance abuse treatment who reported histories of sexual abuse experienced more severe psychiatric problems at follow-up, and were also more likely to report suicidality. Tuccia et al. (2010), found that women with SUDs and a diagnosis of depression experienced statistically more emotional and sexual abuse than men with the same diagnoses. Interestingly, the vast majority of individuals who endorsed childhood sexual abuse (92.5%) reported never disclosing the abuse to their psychiatrists (Tuccia et al, 2010).

Finally, our hypotheses regarding trauma and employment outcomes were not confirmed. Trauma history did not appear to predict either engagement in the employment intervention, or employment outcomes (obtaining a new job) at 3 or 6 months post-intervention. This finding was unexpected, as individuals who experience trauma/PTSD, have been found to exhibit poorer treatment and psychosocial functioning outcomes across a variety of domains,

including employment for individuals with PTSD (Ouimette, Finney, & Moos, 1999; Rosen, Ouimette, Sheikh, Gregg, & Moos, 2002). Future research should continue to explore the relationship between trauma and employment as an indicator of psychosocial functioning. It may be that recent trauma experience is more influential on employment outcomes. Although no differences were found among trauma groups, treatment modality did contribute significantly to the employment prediction model, with individuals enrolled in psychosocial treatment being two times more likely to obtain a new job at both 3 and 6 month post-intervention follow-up time points.

4.1 Study Limitations

Several limitations of the current study should be noted. First, the cross-sectional study design only allows for data collection at a single time point and does not track changes over time, therefore we are only able to support an association. Second, the participants in the study were all unemployed or underemployed (working less than 20 hours/week) due to inclusion criteria for the larger study, therefore potentially limiting generalizability to patients who are employed. Additionally, the assessment measure used in this study (*ASI-Lite*) is not a specialized sexual and/or physical trauma screening tool; therefore rates of trauma in this population may not have been adequately captured. For example, information regarding frequency of occurrence is not captured on the ASI, so individuals who had experienced single traumatic episodes are indistinguishable from those who may have lifetime histories of repeated victimization. . Similarly, information regarding the severity of victimization/abuse is not collected, so results must be interpreted with caution. In spite of these weaknesses, previous work by Najavits and colleagues (1998), provide some support for the use of the ASI as a screening tool for PTSD. Specifically, they found that when compared to the Trauma History Questionnaire (THQ), the ASI trauma questions were found to exhibit high sensitivity (.91), in eliciting a trauma history among participants with a diagnosis of PTSD. However, the ASI was not as effective as the THQ in obtaining report of trauma from participants not currently exhibiting PTSD symptoms. Subsequently, trauma history in the current sample may have been underreported. Finally, psychiatric symptoms of depression and anxiety in the current sample were based upon self-report data abstracted from the ASI, rather than DSM diagnostic criteria.

4.1 Clinical Implications—Despite the aforementioned limitations, the current study utilized of a multi-site, multi-treatment modality sample, and provides additional support for implementation of a trauma-informed model of care. These findings also highlight the need for improved gender-specific trauma screening and intervention strategies, with particular attention to suicide risk.

The co-occurrence of mental health issues and a history of trauma is undoubtedly prevalent in individuals with SUD. Although rates of trauma in the current sample were higher for women, the severity of mental health symptoms was comparable in males and females. These findings highlight the fact that the aftermath of trauma equally affects men and women and underscores the need to consistently assess history of trauma and provide ancillary treatment services for both men and women. Further, the strong relationship between trauma history and psychological sequelae (most notably suicidal thoughts and

suicide attempts across all trauma categories) in the current study accentuates the vulnerability of both men and women exposed to trauma psychiatric consequences. Consequently, evidence-based practices which can appropriately identify and address the multiple needs of this high-risk population are critical to successful treatment outcomes. Trauma-informed services, in which service delivery is influenced by an understanding of the impact of interpersonal violence and victimization on an individual's life and development, is one such approach that has demonstrated success in women with substance abuse disorders (Elliot, Bjelajac, Fallot, Markoff, & Reed, 2005).

Gender appears to play a critical role in the clinical presentation of individuals with histories of trauma. Previous study findings suggest that men with a history of physical trauma present for treatment with somatic complaints, such as a chronic medical problems, while women tend to present for treatment with physical symptoms similar to symptoms for anxiety and depression (Bonomi, Anderson, Reid, Rivara, Carrell, & Thompson, 2009; Marsden et al, 2000; Randall, Book, Carrigan, & Thomas, 2008; Coker, Davis, Arias, Desai, Sanderson, Brandt, & Smith, 2002). Screening for trauma must take these gender differences into account. Further, systematic screening for trauma in men may fail to occur for many reasons, including lack of standardized IPV screening measures for men, and the potential stigma associated with victimization in males (Mechem, Shofer, Reinhard, Hornig, & Datner, 1999; Mills, Avegno, & Haydel, 2006). These gender-based screening discrepancies, as well as the increased potential for underreporting in males, and paucity of investigations targeting male trauma survivors with SUDs, underscore the need for evidence-based interventions that address SUD and incorporate assessment of and provide gender-specific services for individuals with histories of physical and sexual abuse. Future research should explore identification and treatment interventions for this overlooked population of men.

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Figure 1.
Lifetime trauma history by gender

Figure 2.
Perpetrators of Childhood Trauma (for females only)

Figure 3.
Perpetrators of Adult Trauma (for females only)

Table 1

Sample Characteristics (N=625)

	Males (n=291)	Females (n=334)
Race		
Caucasian	111 (38.1%)	145 (43.4%)
African American	119 (40.9)	123 (36.8)
Other (<i>includes multi-racial</i>)	61 (21.0)	66 (19.8)
Ethnicity		
Hispanic	30 (10.3%)	36 (10.8%)
Non Hispanic	261 (89.7)	298 (89.2)
Time in treatment at study enrollment		
1–6 months	187 (64.3%)	187 (56.0%)
7–12 months	39 (13.4)	43 (12.9)
More than 1 year	65 (22.3)	104 (31.1)
Marital status		
Married	33 (11.3%)	48 (14.4%)
Never Married	141 (48.5)	151 (45.2)
Other	117 (40.2)	135 (40.4)
Treatment modality		
Methadone	117 (40.2%)	184 (55.1%)
Psychosocial outpatient	174 (59.8)	150 (44.9)

Table 2

Prediction of lifetime psychiatric symptoms

Predictor Variable	Depression			Anxiety			Suicidal Thoughts			Suicide Attempts		
	B	SE	OR (95% CI)	B	SE	OR (95% CI)	B	SE	OR (95% CI)	B	SE	OR (95% CI)
Race (referent= Af American)												
Caucasian	0.55*	0.22	1.73 (1.11–2.70)	0.30	0.22	1.35 (0.87–2.08)	0.51**	0.23	1.67 (1.06–2.63)	0.17	0.25	1.19 (0.72–1.95)
Other (incl bi-racial)	0.24	0.27	1.27 (0.75–2.13)	0.14	0.26	1.15 (0.69–1.93)	0.41	0.27	1.50 (0.89–2.54)	0.31	0.28	1.37 (0.78–2.39)
Gender (referent= Male)												
Female	0.27	0.21	1.31 (0.87–1.96)	0.09	0.20	1.09 (0.73–1.63)	–0.31	0.22	0.74 (0.48–1.13)	0.19	0.23	1.20 (0.77–1.89)
Age	0.00	0.01	1.00 (0.99–1.02)	0.00	0.01	1.00 (0.98–1.01)	0.00	0.01	1.00 (0.99–1.02)	0.01	0.01	1.01 (0.99–1.03)
Trauma type (referent= No abuse)												
Physical only	0.92**	0.27	2.50 (1.47–4.24)	1.15**	0.27	3.16 (1.87–5.35)	1.13**	0.26	3.10 (1.88–5.12)	0.98**	0.28	2.68 (1.55–4.63)
Sexual only	0.26	0.41	1.30 (0.58–2.88)	–0.09	0.40	0.92 (0.42–1.99)	1.33**	0.42	3.78 (1.67–8.56)	1.23**	0.43	3.41 (1.46–7.96)
Physical & sexual	1.47**	0.29	4.37 (2.49–7.66)	1.67**	0.28	5.27 (3.05–9.12)	1.86**	0.26	6.42 (3.87–10.63)	1.69**	0.27	5.43 (3.22–9.18)
Treatment modality (referent= Psychosocial)												
Methadone	0.02	0.21	1.02 (0.68–1.54)	–0.16	0.21	0.85 (0.57–1.28)	–0.45*	0.21	0.64 (0.43–0.96)	–0.44	0.22	0.65 (0.42–1.00)

* p<05,

** p<01