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## Intimate Partner Aggression Perpetration in Primary Care Chronic Pain Patients

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## Abstract

This study examined the prevalence and correlates of partner aggression perpetration in 597 primary care chronic pain patients. Approximately 30% of participants reported perpetrating low-level aggression, 12% reported injuring their partner, and 5% reported engaging in sexual coercion. Women reported more low-level aggression perpetration than men, and men reported more engagement in sexual coercion than women. Substance use disorders (SUD) were associated with all outcomes, and both aggression victimization and lifetime ratings of posttraumatic stress disorder (PTSD) were associated with low-level aggression and injuries. In multivariate analyses, gender, aggression victimization, PTSD, and SUD evidenced associations with one or more outcomes. Findings indicate a need for aggression screening in this population and highlight avenues for intervention.

## Keywords

chronic pain; aggression; primary health care; substance use; posttraumatic stress disorder

An extensive literature documents the scope and impact of intimate partner aggression victimization among medical populations, including those experiencing chronic pain (Balousek, Plane, & Fleming, 2007). Relative to this research, little work has examined rates of perpetration of partner aggression in primary care medical settings, and none has focused on patients with chronic pain. Therefore, in the current investigation, we set out to examine the prevalence of behaviors reflecting intimate partner aggression perpetration among a sample of chronic pain patients, as well as potential correlates associated with these forms of aggression.

Chronic pain has been linked to psychiatric factors that are characterized by negative affect and impulsive behavior, and that confer risk for aggression. In particular, patients with

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chronic pain are likely to evidence heightened posttraumatic stress disorder (PTSD), depression, and substance use problems (Larson et al., 2007; Liebschutz et al., 2007; McWilliams, Cox, & Enns, 2003), all of which are strongly linked to relationship aggression perpetration in other populations (Jordan et al., 1992; Stuart, Moore, Gordon, Ramsey, & Kahler, 2006; Taft et al., 2005). Seminal theories of aggression, such as Berkowitz' cognitive-neoassociationistic model (Berkowitz, 1990), hold that those who experience more frequent and severe negative affect also experience heightened feelings, thoughts, and memories related to anger and have a higher propensity for aggressive behavior. Problematic substance use is further likely to decrease positive communication behaviors and disinhibit aggressive behavior (Leonard & Roberts, 1998), particularly in the presence of anger and heightened negative affect (Eckhardt, 2007).

While no theoretical or empirical models have been developed to explain the possible association of chronic pain with relationship aggression, Fishbain and colleagues (Fishbain, Cutler, Rosomoff, & Steele-Rosomoff, 2000) have developed a clinical model of patient violence toward physicians that describes some potential explanatory mechanisms. Specifically, this model, which has received some recent empirical support (Bruns, Disorbio, & Hanks, 2007), highlights the role of problematic and stressful interpersonal relationships with those involved in the patients' care, negative affect, physical symptom factors such as level of pain and perceptions of functional health and disability, and potential substance abuse. Analogous processes are likely to occur within the context of an intimate relationship, which has its own set of stressors, such as pain-related occupational and family role changes, financial difficulties, and impaired sexual functioning (Schwartz, Slater, & Birchler, 1996). Such relationship strains are likely to independently or jointly increase risk for aggression along with negative affect and possible substance abuse problems that accompany chronic pain.

We expected that variables reflecting negative affect and behavioral disinhibition would distinguish primary care chronic pain patients who report intimate partner aggression perpetration from their nonaggressive counterparts. Specifically, we examined PTSD, depression, and substance use disorders (SUD) as potential correlates of aggression. Consistent with the Fishbain model (Fishbain et al., 2000), it was also hypothesized that chronic pain severity and indices of physical and mental health disability would be associated with higher relationship aggression. Demographic and background correlates (age, gender, and race/ethnicity) were also explored, and we considered the role of victimization experience since much intimate aggression is bidirectional in community-based samples (Johnson & Ferraro, 2000) and individuals may aggress out of self-defense (White, Smith, Koss, & Figueredo, 2000).

## **METHODS**

#### **Participants**

Participants were 597 patients who were 18 to 60 years of age, spoke English, endorsed pain of 3 months or more, reported use of any analgesic medication (over-the-counter or prescription) in the prior month, and had a scheduled primary care appointment. Of the 825 who met eligibility criteria for the study, 597 (76%) agreed to participate. When comparing

screening questions responses between those who enrolled and those who declined, enrollees were more likely to be African American (61% vs. 55%, p < .05), less likely to take over-the-counter pain medication (67% vs. 79%, p < .001), and more likely to take opioid pain medication (41% vs. 30%, p < .01). Age and gender were not different. Overall, the sample averaged 45.8 years of age and was 58.6% female, 60.8% African American, 27.8% with less than a high school education, 61.1% with a reported income less than US \$20,000, 60.5% unemployed, and the majority experienced high pain limitation.

Trained research interviewers consecutively approached patients in primary care waiting rooms of an academic, urban, safety-net hospital primary care practice. Potential participants were asked to complete a written screening instrument about their pain, analgesia use, and demographic characteristics. Written informed consent was obtained from eligible and interested patients. All study measures were administered via interviews that lasted 45 to 90 min and participants were compensated US\$10. Recruitment occurred between February 2005 and August 2006. The Boston University Medical Center Institutional Review Board approved the study, and National Institutes of Health issued a Certificate of Confidentiality.

#### Measures

Aggression perpetration was assessed with three questions taken from Wave III of the Add Health Home Questionnaire (Carolina Population Center, n.d.; Fang & Corso, 2007). Each question represented separate dependent variables: (1) Low-level aggression: Have *you* ever threatened your partner with violence, pushed or shoved [him or her], or thrown something at [him or her] that could hurt? (2) Injury: Has your partner ever had an injury, such as a sprain, bruise, or cut because of a fight with you? and (3) Sexual coercion: Have *you* ever insisted on or made your partner have sexual relations with you when [he or she] didn't want to? Participants reported on each outcome using a yes/no dichotomous scale. After each positive response, participants were asked the year of the last perpetration behavior. Each perpetrating behavior was analyzed as a separate outcome. Partner aggression perpetration assessed using the Add Health Questionnaire has been shown to be significantly associated with an index of general aggression perpetration in young adulthood, attesting to the construct validity of this outcome measure (Herrera, Wiersma, & Cleveland, 2008). Intimate partner victimization was measured using the same three questions. Any of the three victimization experiences constituted victimization in bivariate and regression analyses.

The Composite International Diagnostic Interview (CIDI; World Health Organization, 1997) was used to measure PTSD ever (lifetime) or in the past year (current). The CIDI has been shown to have good test-retest and interrater reliability and good validity (Andrews & Peters, 1998; Wittchen, 1994).

Major depression was measured using the Patient Health Questionnaire (PHQ) for Depression (Kroenke, 2002). The PHQ is a nine-item measure examining past 2 week major depression with items rated on a 4-point scale and total scores ranging from 9 to 27. The psychometric properties of the measure have been previously demonstrated (Kroenke, 2002).

SUD was defined as meeting *DSM-IV* criteria for any drug abuse or dependence ever, and/or past year alcohol dependence as measured by the CIDI version 2.1 for drug disorder (World

Health Organization, 1997) and Short-Form (SF) for alcohol dependence (World Health Organization, 1997). Past year SUD included active diagnosis in the past 12 months.

Pain-related disability (limiting or nonlimiting) was measured using the Graded Chronic Pain Scale, a seven-item validated measure of pain and disability that includes two subscales: Chronic Pain Intensity and Disability Points (Von Korff, Ormel, Keefe, & Dworkin, 1992). Scoring involves categorizing the participant into one of five pain grades: pain free, low disability-low intensity, low disability-high intensity, high disabilitymoderately limiting, and high disability-severely limiting.

Health-related quality of life was measured with the SF-12 Mental Health and SF-12 Physical Health composite scores (Ware, Kosinski, & Keller, 1996). This measure is derived from the SF-36 Health Survey and is scored using norm-based scoring. Several studies in both medical and general populations have shown the SF-12 to have good reliability and validity (Gandek et al., 1998; Salyers, Bosworth, Swanson, Lamb-Pagone, & Osher, 2000; Ware et al., 1996).

#### Analysis

This is a secondary analysis of a cross-sectional study of primary care patients with chronic pain designed to look at correlates of pain, SUD, and violence-related mental health problems. After computing descriptive statistics for the aggression outcomes, bivariate analyses were performed examining differences in characteristics associated with each perpetrating behavior. Logistic regression models were created using those variables found to be significantly associated with aggression perpetration at the bivariate level, as well as victimization for all models.

## RESULTS

#### **Descriptive Statistics for Aggression**

Descriptive statistics for the study correlates are reported in Table 1. As is shown in Table 2, almost one-third of participants (30%) reported perpetrating low-level aggression toward their partner, and less than half of the sample (44%) reported low-level aggression victimization. The prevalence of injury stemming from intimate partner physical aggression victimization (33%) was approximately 3 times greater than was the prevalence of participants reported engaging in sexual coercion, and 20% of participants indicated that their partners sexually coerced them. Participants reported a mean of about 10 years since the last perpetration behavior (9.9 for low-level aggression and sexual coercion and 13.2 for injuring partner) and 12 years since last victim experience (11.2 for low-level aggression, 12.1 for injury by partner, and 11.8 for sexual coercion).

We further examined intimate partner aggression prevalence by victim–perpetrator status (victim-only status, perpetrator-only status, or both victim and perpetrator). As Table 3 indicates, most participants who reported aggression perpetration also reported victimization (of any type). For example, 85% of participants who reported low-level intimate partner aggression perpetration also reported victimization. It is not known whether this was

bidirectional in the same relationship or victimization and perpetration in different relationships.

#### **Correlates of Intimate Partner Aggression Perpetration**

Several potential correlates were examined as factors that may distinguish those who report intimate partner aggression perpetration versus those who do not. Results from these analyses are presented in Table 4. A gender effect was found, such that women were more likely to report perpetration of low-level aggression, and men were more likely to report sexual coercion of a partner. Partner aggression victimization was strongly associated with both low-level aggression and partner injury, and its association with sexual coercion approached significance. Lifetime PTSD represented a significant correlate of low-level aggression and partner injury, whereas a current diagnosis of PTSD was associated only with low-level aggression. Current major depression, on the other hand, was not significantly associated with any form of aggression, though its association with low-level aggression approached significance. SUD represented a significant correlate for all three outcomes. Mental health–related quality of life score was lower (worse) in perpetrators of low-level aggression but not the other types of aggression.

#### **Regression Analyses**

Table 5 reports the outcomes of regression models predicting the three outcomes. In Model 1, female gender, any victimization, lifetime PTSD, and SUD were associated with low-level aggression perpetration, whereas mental health–related quality of life was not. When we substituted current PTSD for lifetime PTSD, it was not statistically significant (data not shown). For Model 2, any victimization and SUD were associated with higher infliction of injury, whereas lifetime PTSD was not. For Model 3, female gender was associated with less sexual coercion, while any victimization experience was associated with more sexual coercion and SUD was not associated with this outcome.

## DISCUSSION

High rates of intimate partner aggression perpetration and victimization were reported in this sample of primary care patients with chronic pain recruited from an urban academic practice, with almost one-third reporting perpetration of low-level aggression and almost one half of the sample reporting low-level aggression victimization. More than 12% of the sample reported the infliction of injuries on their partner, and rates of injury victimization were almost 3 times higher. Approximately 5% of this sample reported engaging in sexual coercion, while rates of sexual coercion victimization were 4 times higher. Considering data on relationship aggression rates obtained from representative sample studies of the general population (Coker et al., 2002), and being mindful of the use of different aggression measures across studies, current findings suggest elevated rates of aggression occurring in the intimate relationships of patients experiencing chronic pain.

Reports of higher rates of intimate partner aggression victimization than perpetration are consistent with the focus of the broader literature that has emphasized associations between abuse victimization experiences and chronic pain (Bailey, Freedenfeld, Kiser, & Gatchel,

2003; Balousek et al., 2007; Walsh, Jamieson, Macmillan, & Boyle, 2007). It is important to note, however, that individuals tend to underreport their intimate relationship perpetration behavior relative to their victimization due to social desirability and other biases (Moffitt et al., 1997). Thus, perpetration reports in this study are likely to represent underestimates, and the true rates of aggression victimization and perpetration are likely to be more comparable than current study findings indicate. In addition, study findings indicate that a number of correlates were associated with intimate relationship aggression perpetration in this sample, even when controlling for victimization experiences, suggesting that aggression perpetrated in this sample was not exclusively due to acts of self-defense or bidirectional aggression.

Consistent with the Fishbain model (Fishbain et al., 2000) adapted for intimate partner aggression, it was predicted that variables reflecting negative affect and behavioral disinhibition, as well as chronic pain severity and disability would emerge as significant correlates of aggression perpetration. Among these predictors, SUD generally emerged as the strongest relative predictor. This correlate was associated with each of the three aggression perpetration outcomes at the bivariate level and both measures reflecting nonsexual aggression when statistically accounting for the other significant correlates. Problematic substance use leads to disinhibition of aggressive impulses (Eckhardt, 2007; Leonard & Roberts, 1998), and previous research indicates that substance abuse is associated with violent ideation in this population (Bruns et al., 2007). Substance use may be particularly problematic in the context of PTSD and poor mental health functioning, which were also associated with aggression perpetration at the bivariate level. PTSD and not poor mental health functioning was associated with low-level aggression perpetration in the context of the other significant correlates.

Women appeared to report more low-level aggression than men, while men reported more engagement in sexual coercion behavior. These findings are generally consistent with the broader literature on intimate partner aggression perpetration. A meta-analysis by Archer (2000) indicated that women engage in slightly higher rates of noninjurious intimate aggression than men, particularly in community-based samples (Archer, 2000). Men's aggression is more likely to lead to victim injury, though current study findings did not find such gender differences. Regarding differences in sexual coercion, previous research indicates that men engage in higher levels of sexual coercion or sexual aggression than women (Hartwick, Desmarais, & Hennig, 2007; Stets & Pirog-Good, 1987).

The current investigation has some important clinical implications. Intimate partner aggression victimization as well as perpetration appears to be heightened in the chronic pain population, suggesting that increased screening, prevention, and intervention efforts focused on partner aggression are warranted for these individuals. Such efforts should target both men and women, as current study findings suggest that although some gender differences were noted, both genders may engage in or experience intimate partner aggression. It appears that interventions that target SUD in particular, as well as symptoms of PTSD, may be especially effective in reducing aggression. Couples-based interventions also appear warranted for this population, as the aggression reported in this study suggests that it may frequently be bidirectional in nature, and victimization was a robust predictor of perpetration. Previous work indicates that the response of the intimate partner to a patient's

negative pain behaviors can serve as powerful determinants of adjustment and the maintenance of such behaviors, lending further support for couples-based intervention approaches (Burns, Johnson, Mahoney, Devine, & Pawl, 1996; Cano, Gillis, Heinz, Geisser, & Foran, 2004; Cano & Leonard, 2006; Newton-John & Williams, 2006; Romano et al., 1992; Schwartz et al., 1996). However, couples therapy may be contraindicated in cases of moderate- to severe-aggression or in the presence of a pattern of coercive control in the relationship.

The cross-sectional nature of this study precludes us from drawing firm conclusions regarding the directionality of obtained associations. Findings that much of the aggression may have occurred several years prior to study participation (taking into account the previously described possible deflated self-reported rates of aggression) suggest that aggression victimization led to the experience of chronic pain in this sample. Moreover, aggression perpetration may also lead to higher levels of chronic pain because anger expression may alienate patients from their partners and other sources of support (Burns et al., 1996), and several other psychological, biological, and genetic mechanisms have been proposed for this relationship (Bruehl, Chung, & Burns, 2006). Prospective designs are needed to more fully examine the directionality of associations among the variables investigated in the current study. It is perhaps most likely that associations among chronic pain, aggression victimization and perpetration, and the correlates of interest are bidirectional in nature. Future research in this area should also utilize more comprehensive measures of different forms of physical, psychological, and sexual intimate partner aggression and should obtain reports from both members of the couple. Finally, sampling was limited to one primary care setting in one locale. It is possible that findings would not generalize to other settings or study sites.

Despite these limitations, this study represents an initial attempt to examine reports of intimate relationship aggression perpetration in a sample of chronic pain patients, including correlates of such aggression. Findings suggest relatively high rates of aggression perpetration and victimization in this sample and highlight the role of substance use problems in particular as a correlate of perpetration. Additional work is needed to better understand the nature and scope of the relationship aggression problem in patients experiencing chronic pain and to ultimately reduce aggression and enhance intimate relationships in this population.

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Descriptive Statistics for Study Correlates (N = 597)

Variable	N	%
Female	350	58.6
Race		
Black	363	60.8
Hispanic	59	9.9
White	103	17.3
Other	70	11.7
Victimization	316	52.9
Current PTSD	123	20.6
Lifetime PTSD	219	36.7
Depression	249	41.7
Current or lifetime SUD	256	42.9
Limiting pain	535	89.6
	М	SD
Age in years	45.8	9.6
SF-12 physical health	36.5	11.7
SF-12 mental health	42.2	12.7

*Note.* Victimization includes at least one of the three forms of aggression (i.e., low-level aggression, injury, sexual coercion). PTSD = Posttraumatic Stress Disorder; SUD = Substance Use Disorder; SF-12 = Short Form-12 Physical and Mental Health Related Quality of Life.

Intimate Partner Aggression Descriptives (N = 597)

	N	%
Perpetration	:	
Low-level aggression	180	30.15
Injury	74	12.40
Sexual coercion	30	5.03
No perpetrator experiences	382	65.64
Any 1 perpetrator experience	124	20.77
Any 2 perpetrator experiences	67	11.22
Any 3 perpetrator experiences	9	1.51
	М	SD
Mean number of perpetration behaviors	0.49	0.76
	N	%
Victimization		
Low-level aggression	262	43.90
Injury	199	33.34
Sexual coercion	119	19.93
No victim experiences	281	48.28
	96	16.08
Any 1 victim experience		
Any 1 victim experience Any 2 victim experiences	125	20.93
	125 80	20.93 13.40
Any 2 victim experiences		

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	Vic	Victim	Perpe	<b>Perpetrator</b>	ğ	Both
	N	%	N	%	N	%
Perpetration						
Low-level aggression			27	15.1	152	84.9
Injury			6	12.0	99	88.0
Sexual coercion			10	32.3	21	67.7
	W	SD	W	SD	М	SD
Mean number of perpetration behaviors			1.31	0.63	1.45	0.57
	N	%	N	%	N	%
Victimization						
Low-level aggression	116	43.9			148	56.1
Injury	81	40.5			119	59.5
Sexual coercion	50	40.9			72	59.0
	Μ	SD	Μ	SD	Μ	SD
Mean number of victimization experiences	1.82	0.76			2.05	0.75

Bivariate Correlates of Perpetration Behaviors

	, ,	.	'			,	6							.	
	Low-Le	Low-Level Aggression Perpetration	sion Perp	etration		, ul	Injury Perpetration	petratio			Sexual	Sexual Coercion Perpetration	l Perpet	ration	
	Yes (n	= 179)	No $(n = 403)$	= 403)		Yes $(n = 75)$	= 75)	No $(n = 507)$	= 507)		Yes (n	= 31)	No $(n = 550)$	= 550)	
Variable	и	%	u	%	<i>p</i> Value	u	%	u	%	<i>p</i> Value	u	%	u	%	<i>p</i> Value
Gender															
Male	56	31.4	185	45.9	.001	26	34.7	215	42.4	.20	23	74.2	218	39.6	.000
Female	123	68.7	218	54.1		49	65.3	292	57.6		8	25.8	332	60.4	
Race															
Black	108	60.3	246	61.4	96.	45	60.0	309	61.2	.94	20	64.5	333	60.8	.80
White	32	17.9	68	16.9		14	18.7	86	17.0		4	12.9	96	17.5	
Other	39	21.8	87	21.7		16	21.3	110	21.8		7	22.6	119	21.7	
Victimization															
Yes	152	84.9	149	36.9	<.0001	99	88.0	235	46.4	<.0001	21	67.7	280	50.9	.07
No	27	15.1	254	63.0		6	12.0	272	53.6		10	32.3	270	49.1	
Current PTSD															
Yes	55	30.8	67	16.6	.000	17	22.7	105	20.7	69.	10	32.3	112	20.4	.11
No	124	69.3	336	83.4		58	77.3	402	79.3		21	67.7	438	79.6	
Lifetime PTSD															
Yes	100	55.9	116	28.9	<.0001	49	52.0	177	34.9	.004	12	38.7	204	37.1	.86
No	62	44.1	287	71.2		36	48.0	330	65.1		19	61.3	346	62.9	
Major depression															
Yes	74	41.3	134	33.3	.06	30	40.0	178	35.1	.41	11	35.5	197	35.5	76.
No	105	58.7	269	66.8		45	60.0	329	64.9		20	64.5	353	64.2	
Substance use disorder															
Past year	55	30.7	64	15.9	<.0001	22	29.3	76	19.1	<.0001	12	38.7	107	19.5	.02
Prior to past year	47	26.3	80	19.9		28	37.3	66	29.5		×	25.8	119	21.6	
No lifetime SUD	LL	43.0	259	64.3		25	33.3	311	61.3		11	35.5	324	58.9	
Limiting pain															
Yes	164	91.6	358	88.8	.31	67	89.3	455	89.7	.91	27	87.1	494	99.8	.55
No	15	8.4	45	11.2		×	10.7	52	10.3		4	12.9	56	10.2	

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	Low-Le	Low-Level Aggression Perpetration	sion Perp	etration		Inj	ury Per	Injury Perpetration	Ę		Sexual	Coercior	Sexual Coercion Perpetration	ration	
	Yes $(n = 179)$	= 179)	No $(n = 403)$	= 403)		Yes (n	= 75)	Yes $(n = 75)$ No $(n = 507)$	= 507)		Yes (n	Yes $(n = 31)$	No $(n = 550)$	= 550)	
Variable	и	%	u	%	% <i>p</i> Value	% и	%	u	%	n % p Value	u	%	u	%	% <i>p</i> Value
	Μ	SD	Μ	SD	<i>p</i> Value	Μ	SD	М	SD	SD $p$ Value $M$ $SD$ $M$ $SD$ $p$ Value $M$ $SD$ $M$ $SD$ $p$ Value	Μ	SD	Μ	SD	<i>p</i> Value
Age in years	46.43	8.93	45.51	9.94	.29	46.56 9.1 45.7 9.7	9.1	45.7	9.7	.S	45.1 10.2 45.8 9.6	10.2	45.8	9.6	.87
SF-12 physical health score	36.17	11.22	36.70	11.80	9.	35.74	12.2	35.74 12.2 36.7	11.5	ŝ	37.3	37.3 11.6	36.5	11.4	69.
SF-12 mental health score	40.28	13.14	42.84	12.36	.02	40.49	12.6	40.49 12.6 42.3 12.9	12.9	i.	42.92	11.5	42.92 11.5 41.9 12.7	12.7	69.

Note. Victimization includes at least one of the three forms of aggression (i.e., low-level aggression, injury, sexual coercion). PTSD = Posttraumatic Stress Disorder; SUD = Substance Use Disorder; SF-12 = Short Form-12 Physical and Mental Health-Related Quality of Life.

#### Characteristics Associated With Intimate Partner Aggression Perpetration

Model	Odds Ratio (95% CI)
1. Low-level aggression	
Female vs. Male	1.97 (1.25–3.11)
Any victimization-Yes vs. No	7.18 (4.45–11.59)
Lifetime PTSD—Yes vs. No	1.81 (1.18–2.77)
Any SUD-Yes vs. No	2.23 (1.43-3.47)
SF-12 mental health score	1.01 (0.99–1.02)
2. Injury	
Any victimization-Yes vs. No	7.12 (3.40–14.90)
Lifetime PTSD—Yes vs. No	1.12 (0.66–1.89)
Current/lifetime SUD-Yes vs. No	2.42 (1.42-4.13)
3. Sexual coercion	
Female vs. Male	0.22 (0.09-0.53)
Any victimization-Yes vs. No	2.34 (1.04–5.30)
Current/lifetime SUD-Yes vs. No	1.54 (0.68–3.47)

*Note.* Victimization includes at least one of the three forms of aggression (i.e., low-level aggression, injury, sexual coercion). PTSD = Posttraumatic Stress Disorder; SUD = Substance Use Disorder; SF-12 = Short Form-12 Physical and Mental Health–Related Quality of Life.